DEEP CREEK PRESERVE

MANAGEMENT PLAN

PREPARED FOR:
COUNTY OF VOLUSIA
COMMUNITY SERVICES DEPARTMENT
RESOURCE STEWARDSHIP DIVISION

PREPARED BY:
RESOURCE STEWARDSHIP DIVISION
&
YOUNG BEAR ENVIRONMENTAL CONSULTING

August 28, 2026

INSERT FDEP APPROVAL LETTER HERE

LAND MANAGEMENT PLAN EXECUTIVE SUMMARY

Lead Agency: Volusia County Location: Volusia County, Florida
Common Name of Property: Deep Creek Preserve (DCP)
Acreage Total: 9,873 acres Acreage Breakdown:

Land Cover Classification	State Tract (BOT)		County Tract (non-BOT)		WMD Tract (non-BOT)	
	Acres	% Area	Acres	% Area	Acres	% Area
Artificial Pond	46.9	3.5	2	0.04	--	--
Basin Swamp	273.6	20.4	434.6	9.1	753.4	20.1
Baygall	176.9	13.2	--	--	--	--
Clearing/Regeneration	19.2	1.4	33.8	0.7	10.4	0.3
Developed	1.5	0.1	5.8	0.1	--	--
Dome Swamp	23.4	1.7	313.7	6.6	91.3	2.4
Floodplain Swamp	--	--	378.8	7.9	514.7	13.8
Improved Pasture	108.3	8.1	506.8	10.6	--	--
Mesic Flatwoods	421.1	31.4	76.6	1.6	231.5	6.2
Scrubby Flatwoods	34.1	2.5	--	--	--	--
Successional Hydric Forest	24.8	1.9	--	--	--	--
Utility Corridor	4.2	0.3	126.8	2.6	66.1	1.8
Wet Flatwoods	202.6	15.1	2910.3	60.8	2074	55.4
Wet Prairie	3.4	0.3	--	--	--	--
Total*	1,339.7	100	4789.2	100	3741.4	100

* Acres are GIS derived from parcel data and may not reflect survey acres

Lease/Management Agreement No.: 4890 (State Tract; App A); CMA (WMD Tract; App D)
Use: Single: _____ Multiple: X
Management Responsibilities:
Agency: Volusia County
Responsibilities: Resource restoration, management and protection, law enforcement, user group management
Designated Land Use: Conservation Sublease (s): See App H Encumbrances: See Sect I.A.5
Type Acquisition: Florida Forever Program.
Natural areas: Contains imperiled habitats (scrubby flatwoods), contains listed species.
Archaeological/Historical: One documented (includes non-state lands) archaeological/historical site (VO7236 withing the Florida Master Site File)
Management Needs: Habitat restoration and maintenance: user group management; hydrological preservation; exotic and invasive species maintenance; listed species habitat maintenance.
Acquisition Need: 5,711 ac. remaining; 9,873 ac. fee simple; 2,397 ac. less-than-fee-simple
Surplus Lands: None
Public Involvement: Management Plan Advisory Group, Public Hearing.

DO NOT WRITE BELOW THIS LINE (FOR DIVISION OF STATE LANDS USE ONLY)

ARC Approval Date: _____ BTIITF Approval Date: _____
Comments: _____

Land Management Plan Compliance Checklist

Required for State-owned conservation lands over 160 acres (Updated July 2022)

Instructions for managers:
Complete each item and fill in the applicable correlating page numbers and/or appendix where the item can be found within the land management plan (LMP). If an item does not apply to the subject property, please describe that fact on a correlating page number of the LMP. Do not mark an "N/A" for any items below.

For more information, please visit the stewardship portion of the Division of State Lands' website at: http://floridadep.gov/lands/environmental-services/content/land-stewardship

Section A: Acquisition Information Items

Item #	Requirement	Statute/Rule	Page (Numbers) and/ or Appendix (Letters)
1	The common name of the property.	18-2.018 & 18-2.021	Pg. 1
2	The land acquisition program, if any, under which the property was acquired.	18-2.018 & 18-2.021	Pg. 2
3	Degree of title interest held by the Board, including reservations and encumbrances such as leases.	18-2.021	Pg. 8-9
4	The legal description and acreage of the property.	18-2.018 & 18-2.021	App. A2, Pg. 1
5	A map showing the approximate location and boundaries of the property, and the location of any structures or improvements to the property.	18-2.018 & 18-2.021	Pg. 3, App. F1, O1
6	An **assessment** as to whether the property, or any portion, should be declared surplus. *Provide Information regarding* ***assessment and analysis*** *in the plan, and provide* ***corresponding map*** *.*	18-2.021	Pg. 13, 84
7	Identification of other parcels of land within or immediately adjacent to the property that should be purchased because they are essential to management of the property. *Please clearly indicate parcels on a map.*	18-2.021	Pg. 12-13
8	Identification of adjacent land uses that conflict with the planned use of the property, if any.	18-2.021	Pg. 115-116
9	A statement of the purpose for which the lands were acquired, the projected use or uses as defined in 253.034 and the statutory authority for such use or uses.	259.032	Pg. 4, 76, App. C1
10	Proximity of property to other significant State, local or federal land or water resources.	18-2.021	Pg. 9-11

Section B: Use Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
11	The designated single use or multiple use management for the property, including use by other managing entities.	18-2.018 & 18-2.021	Pg. 1
12	A description of past and existing uses, including any unauthorized uses of the property.	18-2.018 & 18-2.021	Pg. 69-76
13	A description of alternative or multiple uses of the property considered by the lessee and a statement detailing why such uses were not adopted.	18-2.018	Pg. 81-84
14	A description of the management responsibilities of each entity involved in the property's management and how such responsibilities will be coordinated.	18-2.018	Pg. 84-85

15	Include a provision that requires that the managing agency consult with the Division of Historical Resources, Department of State before taking actions that may adversely affect archeological or historical resources.	18-2.021	Pg. 69
16	Analysis/description of other managing agencies and private land managers, if any, which could facilitate the restoration or management of the land.	18-2.021	Pg. 84, 114
17	A determination of the public uses and public access that would be consistent with the purposes for which the lands were acquired.	259.032	Pg. 76-84
18	A finding regarding whether each planned use complies with the 1981 State Lands Management Plan, particularly whether such uses represent "balanced public utilization," specific agency statutory authority and any other legislative or executive directives that constrain the use of such property.	18-2.021	Pg. 76-84
19	Letter of compliance from the local government stating that the LMP is in compliance with the Local Government Comprehensive Plan.	BOT requirement	App. Q1
20	An assessment of the impact of planned uses on the renewable and non-renewable resources of the property, including soil and water resources, and a detailed description of the specific actions that will be taken to protect, enhance and conserve these resources and to compensate/mitigate damage caused by such uses, including a description of how the manager plans to control and prevent soil erosion and soil or water contamination.	18-2.018 & 18-2.021	Pg. 76-85
21	*For managed areas larger than 1,000 acres, an analysis of the multiple-use potential of the property which shall include the potential of the property to generate revenues to enhance the management of the property provided that no lease, easement, or license for such revenue-generating use shall be entered into if the granting of such lease, easement or license would adversely affect the tax exemption of the interest on any revenue bonds issued to fund the acquisition of the affected lands from gross income for federal income tax purposes, pursuant to Internal Revenue Service regulations.	18-2.021 & 253.036	Pg. 79-80
22	If the lead managing agency determines that timber resource management is not in conflict with the primary management objectives of the managed area, a component or section, prepared by a qualified professional forester, that assesses the feasibility of managing timber resources pursuant to section 253.036, F.S.	18-021	Pg. 79, 86-89
23	A statement regarding incompatible use in reference to Ch. 253.034(10).	253.034(10)	Pg. 79, 81

*The following taken from 253.034(10) is not a land management plan requirement; however, it should be considered when developing a land management plan: The following additional uses of conservation lands acquired pursuant to the Florida Forever program and other state-funded conservation land purchase programs shall be authorized, upon a finding by the Board of Trustees, if they meet the criteria specified in paragraphs (a)-(e): water resource development projects, water supply development projects, storm-water management projects, linear facilities and sustainable agriculture and forestry. Such additional uses are authorized where: (a) Not inconsistent with the management plan for such lands; (b) Compatible with the natural ecosystem and resource values of such lands; (c) The proposed use is appropriately located on such lands and where due consideration is given to the use of other available lands; (d) The using entity reasonably compensates the titleholder for such use based upon an appropriate measure of value; and (e) The use is consistent with the public interest.

Section C: Public Involvement Items

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
24	A statement concerning the extent of public involvement and local government participation in the development of the plan, if any.	18-2.021	Pg. 14, App. N

25	The management prospectus required pursuant to paragraph (9)(d) shall be available to the public for a period of 30 days prior to the public hearing.	259.032	Pg. 14, App. N
26	LMPs and LMP updates for parcels over 160 acres shall be developed with input from an advisory group who must conduct at least one public hearing within the county in which the parcel or project is located. *Include the advisory group members and their affiliations, as well as the date and location of the advisory group meeting.*	259.032	Pg. 14, App. N
27	Summary of comments and concerns expressed by the advisory group for parcels over 160 acres	18-2.021	App. N
28	During plan development, at least one public hearing shall be held in each affected county. Notice of such public hearing shall be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body before the actual public hearing. *Include a copy of each County's advertisements and announcements (meeting minutes will suffice to indicate an announcement) in the management plan. Additonally, please include evidence the draft plan was provided to State Lands at least 30 days prior to the public meeting in order to allow the Department to post to it's website.*	253.034 & 259.032	App. N
29	The manager shall consider the findings and recommendations of the land management review team in finalizing the required 10-year update of its management plan. *Include manager's replies to the team's findings and recommendations.*	259.036	*This is the first 10-year plan, the MRT related items will be provided in the next 10-year plan*
30	Summary of comments and concerns expressed by the management review team, if required by Section 259.036, F.S.	18-2.021	
31	If manager is not in agreement with the management review team's findings and recommendations in finalizing the required 10-year update of its management plan, the managing agency should explain why they disagree with the findings or recommendations.	259.036	

Section D: Natural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
32	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding soil types. *Use brief descriptions and include USDA maps when available.*	18-2.021	Pg. 18-26
33	Insert FNAI based natural community maps when available.	ARC consensus	Pg. 28-31
34	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding outstanding native landscapes containing relatively unaltered flora, fauna and geological conditions.	18-2.021	Pg. 32-75
35	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding unique natural features and/or resources including but not limited to virgin timber stands, scenic vistas, natural rivers and streams, coral reefs, natural springs, caverns and large sinkholes.	18-2.018 & 18-2.021	Pg. 68-69, App. I
36	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding beaches and dunes.	18-2.021	N/A
37	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding mineral resources, such as oil, gas and phosphate, etc.	18-2.018 & 18-2.021	App. O1

38	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding fish and wildlife, both game and non-game, and their habitat.	18-2.018 & 18-2.021	Pg. 63-65, App. L1
39	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding State and Federally listed endangered or threatened species and their habitat.	18-2.021	Pg. 63-68
40	The identification or resources on the property that are listed in the Natural Areas Inventory. *Include letter from FNAI or consultant where appropriate.*	18-2.021	Pg. 27-56, App. E1
41	Specific description of how the managing agency plans to identify, locate, protect and preserve or otherwise use fragile, nonrenewable natural and cultural resources.	259.032	Pg. 84-94
42	Habitat Restoration and Improvement	259.032 & 253.034	
42-A.	Describe management needs, problems and a desired outcome and the key management activities necessary to achieve the enhancement, protection and preservation of restored habitats and enhance the natural, historical and archeological resources and their values for which the lands were acquired.	↓	Pg. 86
42-B.	Provide a detailed description of both short (2-year planning period) and long-term (10-year planning period) management goals, and a priority schedule based on the purposes for which the lands were acquired and include a timeline for completion.		Pg. 98-103
42-C.	The associated measurable objectives to achieve the goals.		Pg. 84-86
42-D.	The related activities that are to be performed to meet the land management objectives and their associated measures. *Include fire management plans - they can be in plan body or an appendix.*		Pg. 84-86
42-E.	A detailed expense and manpower budget in order to provide a management tool that facilitates development of performance measures, including recommendations for cost-effective methods of accomplishing those activities.		Pg. 112-113
43	***Quantitative data description of the land regarding an inventory of forest and other natural resources and associated acreage. *See footnote.*	253.034	Pg. 33
44	Sustainable Forest Management, including implementation of prescribed fire management		
44-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).		Pg. 87-88
44-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 88
44-C.	Measurable objectives (see requirement for #42-C).		Pg. 88
44-D.	Related activities (see requirement for #42-D).		Pg. 87-88
44-E.	Budgets (see requirement for #42-E).	18-2.021, 253.034 & 259.032 ↓	Pg. 112-113
45	Imperiled species, habitat maintenance, enhancement, restoration or population restoration	259.032 & 253.034	
45-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Pg. 92-94
45-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 93-94
45-C.	Measurable objectives (see requirement for #42-C).		Pg. 93-94
45-D.	Related activities (see requirement for #42-D).		Pg. 92-94

45-E.	Budgets (see requirement for #42-E).		Pg. 112-113
45-F	Assess the feasibility of managing the lands > 40 contiguous acres as a recipient site for gopher tortoises consistent with rules of the Fish and Wildlife Conservation Commission, as prepared by the agency or cooperatively with a Fish and Wildlife Conservation Commission wildlife biologist.	259.105	Pg. 40, 65, 79, 92-93, App. G
45-G	Economic feasibility of establishing a gopher tortoise recipient site, including the initial cost, recurring management costs and the revenue projections.	259.105	Pg. 93, 114, App. G
46	***Quantitative data description of the land regarding an inventory of exotic and invasive plants and associated acreage. *See footnote.*	253.034	Pg. 90-91
47	Place the Arthropod Control Plan in an appendix. If one does not exist, provide a statement as to what arrangement exists between the local mosquito control district and the management unit.	BOT requirement via lease language	App. P1
48	Exotic and invasive species maintenance and control	259.032 & 253.034	
48-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Pg. 90-91
48-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 98-103
48-C.	Measurable objectives (see requirement for #42-C).		Pg. 91
48-D.	Related activities (see requirement for #42-D).		Pg. 90-91
48-E.	Budgets (see requirement for #42-E).		Pg. 112-113

Section E: Water Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
49	A statement as to whether the property is within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation. *If yes, provide a list of the appropriate managing agencies that have been notified of the proposed plan.*	18-2.018 & 18-2.021	Pg. 9-11
50	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding water resources, including water classification for each water body and the identification of any such water body that is designated as an Outstanding Florida Water under Rule 62-302.700, F.A.C.	18-2.021	Pg. 60
51	Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding swamps, marshes and other wetlands.	18-2.021	Pg. 41-52, 55-56
52	***Quantitative description of the land regarding an inventory of hydrological features and associated acreage. *See footnote.*	253.034	Pg. 33
53	Hydrological Preservation and Restoration	259.032 & 253.034	
53-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Pg. 89
53-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 98-103
53-C.	Measurable objectives (see requirement for #42-C).		Pg. 89
53-D.	Related activities (see requirement for #42-D).		Pg. 89
53-E.	Budgets (see requirement for #42-E).		Pg. 112-113

Section F: Historical, Archeological and Cultural Resources

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
54	**Location and description of known and reasonably identifiable renewable and non-renewable resources of the property regarding archeological and historical resources. *Include maps of all cultural resources except Native American sites, unless such sites are major points of interest that are open to public visitation.*	18-2.018, 18-2.021 & per DHR's request	Pg. 69
55	***Quantitative data description of the land regarding an inventory of significant land, cultural or historical features and associated acreage.	253.034	Pg. 69, 94
56	A description of actions the agency plans to take to locate and identify unknown resources such as surveys of unknown archeological and historical resources.	18-2.021	Pg. 94
57	Cultural and Historical Resources	259.032 & 253.034	
57-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Pg. 94
57-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 98-103
57-C.	Measurable objectives (see requirement for #42-C).		Pg. 94
57-D.	Related activities (see requirement for #42-D).		Pg. 94
57-E.	Budgets (see requirement for #42-E).		Pg. 112-113

**While maps of Native American sites should not be included in the body of the management plan, the DSL urges each managing agency to provide such information to the Division of Historical Resources for inclusion in their proprietary database. This information should be available for access to new managers to assist them in developing, implementing and coordinating their management activities.

Section G: Facilities (Infrastructure, Access, Recreation)

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
58	***Quantitative data description of the land regarding an inventory of infrastructure and associated acreage. *See footnote.*	253.034	App. F1, F2, F3
59	Capital Facilities and Infrastructure	259.032 & 253.034	
59-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Pg. 95
59-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 98-103
59-C.	Measurable objectives (see requirement for #42-C).		Pg. 95
59-D.	Related activities (see requirement for #42-D).		Pg. 95
59-E.	Budgets (see requirement for #42-E).		Pg. 112-113
60	*** Quantitative data description of the land regarding an inventory of recreational facilities and associated acreage.	253.034	
61	Public Access and Recreational Opportunities	259.032 & 253.034	
61-A.	Management needs, problems and a desired outcome (see requirement for # 42-A).	↓	Pg. 96
61-B.	Detailed description of both short and long-term management goals (see requirement for # 42-B).		Pg. 98-103
61-C.	Measurable objectives (see requirement for #42-C).		Pg. 96
61-D.	Related activities (see requirement for #42-D).		Pg. 96
61-E.	Budgets (see requirement for #42-E).		Pg. 112-113

Section H: Other/ Managing Agency Tools

Item #	Requirement	Statute/Rule	Page Numbers and/or Appendix
62	Place this LMP Compliance Checklist at the front of the plan.	ARC and managing agency consensus	Pg. II-IX
63	Place the Executive Summary at the front of the LMP. Include a physical description of the land.	ARC and 253.034	Pg. II
64	If this LMP is a 10-year update, note the accomplishments since the drafting of the last LMP set forth in an organized (categories or bullets) format.	ARC consensus	N/A
65	Key management activities necessary to achieve the desired outcomes regarding other appropriate resource management.	259.032	Pg. 84-97
66	Summary budget for the scheduled land management activities of the LMP including any potential fees anticipated from public or private entities for projects to offset adverse impacts to imperiled species or such habitat, which fees shall be used to restore, manage, enhance, repopulate, or acquire imperiled species habitat for lands that have or are anticipated to have imperiled species or such habitat onsite. The summary budget shall be prepared in such a manner that it facilitates computing an aggregate of land management costs for all state-managed lands using the categories described in s. 259.037(3) which are resource management, administration, support, capital improvements, recreation visitor services, law enforcement activities.	253.034	Pg. 112-114
67	Cost estimate for conducting other management activities which would enhance the natural resource value or public recreation value for which the lands were acquired, include recommendations for cost-effective methods in accomplishing those activities.	259.032	Pg. 112-114
68	A statement of gross income generated, net income and expenses.	18-2.018	Pg. 112-114

*** = The referenced inventories shall be of such detail that objective measures and benchmarks can be established for each tract of land and monitored during the lifetime of the plan. All quantitative data collected shall be aggregated, standardized, collected, and presented in an electronic format to allow for uniform management reporting and analysis. The information collected by the DEP pursuant to s. 253.0325(2) shall be available to the land manager and his or her assignee.

DEEP CREEK PRESERVE

MANAGEMENT PLAN

PREPARED FOR:
COUNTY OF VOLUSIA
COMMUNITY SERVICES DEPARTMENT
RESOURCE STEWARDSHIP DIVISION

PREPARED BY:
RESOURCE STEWARDSHIP DIVISION
&
YOUNG BEAR ENVIRONMENTAL CONSULTING

Management Plan Advisory Group Draft: April 28, 2026 (previous version)
Public Hearing Draft: May 7, 2026 (previous version)
Final Draft: August 28, 2026 (current version)

Section **Page**

I. GENERAL INFORMATION 1

A. Land Acquisition 2
1. Purchase 2
2. Location 5
3. Management Authority 7
4. Management Directives 7
5. Title Interest and Encumbrances 8

B. Proximity to Other Public Properties 9

C. Optimal Boundary 12

D. Public Involvement 14

II. NATURAL AND CULTURAL RESOURCES 14

A. Physiography 14
1. Topography 16
2. Soils 18

B. Natural Communities 27

C. Fish and Wildlife 63
3. Endangered, Threatened and Species of Special Concern 63
4. Imperiled Natural Communities 68

D. Archaeological and Historic Resources 69

III. USEAGE OF THE PROPERTY 69

A. Previous Use and Development 69

B. Current Use and Development 76

C. Purposes for Acquisition of the Property 77

D. Proposed Single or Multiple-Use Potential 79

E. Analysis of Multiple-Use Potential 79

F. Assessment of the Impact of Planned Use 80

G. Cooperating Agencies Responsibilities 84

H. Acreage that Should be Declared Surplus 84

IV. MANAGEMENT GOALS AND OBJECTIVES 84

A. Habitat Restoration and Improvement 86

B. Fire Management 87

C. Hydrological Preservation and Restoration 89

D. Sustainable Forest Management 89

E. Non-Native Invasive Species Maintenance and Control 90

F. Imperiled Species Habitat Management 92

G. Imperiled Natural Communities 94

H. Cultural and Historical Resources 94

I. Facilities and Infrastructure 95

J. Public Access, Recreational and Educational Opportunities 96

K. Conservation Acquisition and Stewardship Partnerships 97

V. MANAGEMENT CHALLENGES AND STRATEGIES 104

A. Law Enforcement / Historic Resources 104

B. Habitat Management 104

C. Prescribed Fire 105

D. Management Costs 106

VI. PRIORITY SCHEDULING, COST ESTIMATES AND FUNDING SOURCES FOR CONDUCTING MANAGEMENT ACTIVITIES 106

A. Priority Scheduling 106

B. Cost Estimates 112

C. Estimated Revenue Sources 114

VII. ANALYSIS FOR CONTRACTING PRIVATE VENDORSFOR RESTORATION AND MANAGEMENT 114

VIII. LAND MANAGEMENT REVIEW 114

IX. COMPLIANCE WITH STATE, FEDERAL AND LOCAL GOVERNMENT REQUIREMENTS 115

X. SOIL AND WATER RESOURCE CONSERVATION 117

XI. TECHNICAL LITERATURE REFERENCES 118

List of Figures

Figure 1. Ownership Map 3
Figure 2. Location Map 6
Figure 3. Adjacent Conservation Lands 11
Figure 4. Optimal Boundary Map 13
Figure 5. Preserve Aerial 15
Figure 6. Topography Map 17
Figure 7. Overall Soils Map 23
Figure 8. State Tract Soils Map 24
Figure 9. County Tract Soils Map 25
Figure 10. WMD Tract Soils Map 26
Figure 11. Overall Preserve Habitat Map 28
Figure 12. State Tract Habitat Map 29
Figure 13. County Tract Habitat Map 30
Figure 14. WMD Tract Habitat Map 31
Figure 15. Wet flatwoods existing conditions 34
Figure 16. Mesic flatwoods existing conditions 36
Figure 17. Mesic flatwoods post-restoration activities 38
Figure 18. Scrubby flatwoods existing conditions 39
Figure 19. Wet prairie existing conditions 41
Figure 20. Dome swamp existing conditions 43
Figure 21. Basin swamp existing conditions 46
Figure 22. Baygall existing conditions 50
Figure 23. Improved pasture existing conditions 53
Figure 24. Hydric successional shrubland/forest existing conditions 55
Figure 25. Utility corridor existing conditions 58
Figure 26. Artificial pond existing conditions 60
Figure 27. Clearing/regeneration existing conditions 61
Figure 28. Immokalee and Myakka Soils Map 67
Figure 29. State Tract Historic Aerial 71
Figure 30. Overall Preserve Historic Aerial 72
Figure 31. State Tract Historic Aerial 73
Figure 32. County Tract Historic Aerial 74
Figure 33. WMD Tract Historic Aerial 75
Figure 34. Future Land Use Map 116

List of Tables

1. Soil Types and Descriptions occurring within the Preserve
2. Preserve Land Cover and Associated Fire Return Interval
3. Wildlife species observed on the Preserve
4. Listed wildlife species known to occur on the Preserve
5. Listed plant species known to occur on the Preserve
6. Inventory of existing recreational and access facilities at the time of acquisition of the State (BOT) Tract.
7. Summary of activities and uses that were analyzed for compliance with the goals and objectives of the Plan.
8. Summarizing Goals and Objectives for the Preserve
9. Schedule of Events
10. Short Term Annual Expenditure Estimate (Years 1 - 2)
11. Long Term Annual Expenditure Estimate (Years 3 - 10)
12. Analysis for contracting private vendors for restoration and management

List of Appendices

Appendix A. State Tract Lease Agreement
- A1. Cover Letter
- A2. Lease Agreement on County Council Agenda
- A3. Executed Lease Agreement

Appendix B. Florida Forever Plan – Volusia Conservation Corridor
Appendix C. Florida Forever Project Evaluation Report: Carter Quail Ranch
Appendix D. WMD Tract Cooperative Management Agreement
- D1. 2012 Cooperative Management Agreement
- D2. Additions to the Cooperative Management Agreement

Appendix E. FNAI Preliminary Evaluation of the Carter Quail Ranch
Appendix F. Conceptual Recreation Plan
- F1. Overall Conceptual Recreation Plan
- F2. Enlarged Conceptual Recreation Plan
- F3. Legend Descriptions

Appendix G. FWC Gopher Tortoise Recipient Site
- G1. Recipient Site Guidelines
- G2. Signed Letter of Authorization
- G3. Deep Creek Preserve Unit 1 & 2 Consult Map

Appendix H. Hunting and Cattle Leases
- H1. County Tract Cattle Lease
- H2. County Tract Hunting Lease
- H3. WMD Tract Hunting Lease

Appendix I. Prescribed Burn Plan
Appendix J. Timber Inventory
Appendix K. Guidelines for Management of Archeological and Historical Resources
Appendix L. Species List
- L1. iNaturalist Species Observation Table
- L2. IPaC

Appendix M. FDEP Florida Forever Management Prospectus
Appendix N. Public Input
Appendix O. Encumbrances
- O1. WSP Survey
- O2. Natural Vegetation Easement
- O3. FPL Easement 1
- O4. Vacating Resolution
- O5. FPL Easement 2
- O6. ERP
- O7. Covenant and Restrictions

Appendix P. Arthropod Control Plan
Appendix Q. Local Government Comprehensive Plan Compliance Letter
Appendix R. SJRWMD Management Review

List of Acronyms

WMD – Water Management District
SJRWMD – St Johns River Water Management District
ARC – Acquisition and Restoration Council
BOT – Board of Trustees
FDEP – Florida Department of Environmental Protection
DSL – Division of State Lands
MPAG – Management Plan Advisory Group
UF – University of Florida
IFAS – Institute of Food and Agricultural Sciences
NAVD – North American Vertical Datum of 1988
USDA – United States Department of Agriculture
NRCS – Natural Resource Conservation Service
FNAI – Florida Natural Areas Inventory
FWC – Florida Fish and Wildlife Commission
FWS – United States Fish and Wildlife Service
FDACS – Florida Department of Agriculture and Consumer Services
DPI - Division of Plant Industry
IPaC – Information for Planning and Consulting
ESA – Endangered Species Act
FNPS – Florida Native Plant Society
OHV – Off-Highway Vehicle
DFC – Desired Future Conditions
FISC – Florida Invasive Species Council
ARM - Archaeological Resource Management
IPM – Integrated Pest Management
EDRR – Early Detection, Rapid Response

I. GENERAL INFORMATION

The Deep Creek Preserve Management Plan (Plan), presented here, includes three tracts with different ownerships, the State Tract (formerly known as the Carter Quail Ranch property) owned by the State of Florida, Board of Trustees (BOT), the WMD Tract (formerly known as the Kemcho Investment Group property) owned by the St. Johns River Water Management District (SJRWMD), and the County Tract (formerly known as the Leffler property) owned by Volusia County (Figure 1). Volusia County is the designated lead management agency for all three tracts, collectively known as Deep Creek Preserve (Preserve). As such, Volusia County intends to manage the Preserve in a holistic manner, and this Plan incorporates all three tracts into a single, holistic management plan. The County has designated the Preserve for multiple use management.

The incorporation of the State Tract into this Plan requires that it follow certain Florida statutes, and be submitted for review and approval to the Acquisition and Restoration Council (ARC) on behalf of the Board of Trustees of the Internal Improvement Trust Fund (BOT) of the State of Florida through the Department of Environmental Protection (FDEP), Division of State Lands (DSL), in compliance with paragraph eight (8) of Lease No. 4890 (Appendix A). This Plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Section 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. All development and resource alterations encompassed in this plan are subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the Plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. The Plan's format and content were drafted in accordance with ARC requirements for management plans and the model plan outline provided by the staff of DSL.

The total Preserve area under public ownership and managed by Volusia County is 9,873 acres. The reader of this Plan should note that the intended (and required) purpose is to show that the County is appropriately managing the State Tract which is 1,339.66 acres in size. The requirements noted in the above paragraph apply specifically to the State Tract. Therefore, when quantifying resources, the quantities will be presented for each tract and for the Preserve as a whole.

A. Land Acquisition

1. Purchase

The acquisition of the Preserve began in the early 2010's. The County of Volusia acquired the County Tract by purchasing approximately 4,771 acres in December of 2010 and acquiring an additional 35 acres, consisting of multiple parcels within antiquated plat (University Highlands) located in the northwestern quadrant of the County Tract, which were acquired over an extended period. Volusia County's acquisition funding sources include the "Volusia Forever" program, County Utilities, and General Fund monies. Small lots may also have been acquired through donations and tax sales. Volusia County retains sole ownership of the County Tract.

The SJRWMD acquired approximately 3,200 acres (WMD Tract) in the northern portion of the Preserve in May of 2011 and has acquired multiple adjacent parcels totaling 491 acres between 2020 and 2025. SJRWMD's acquisition funding sources include the Florida Department of Transportation mitigation program and "Florida Forever" funds. SJRWMD retains sole ownership of the WMD Tract.

Volusia Forever partnered with Florida Forever to acquire the State Tract in March of 2025. The State of Florida, Board of Trustees retains sole ownership of the State Tract.

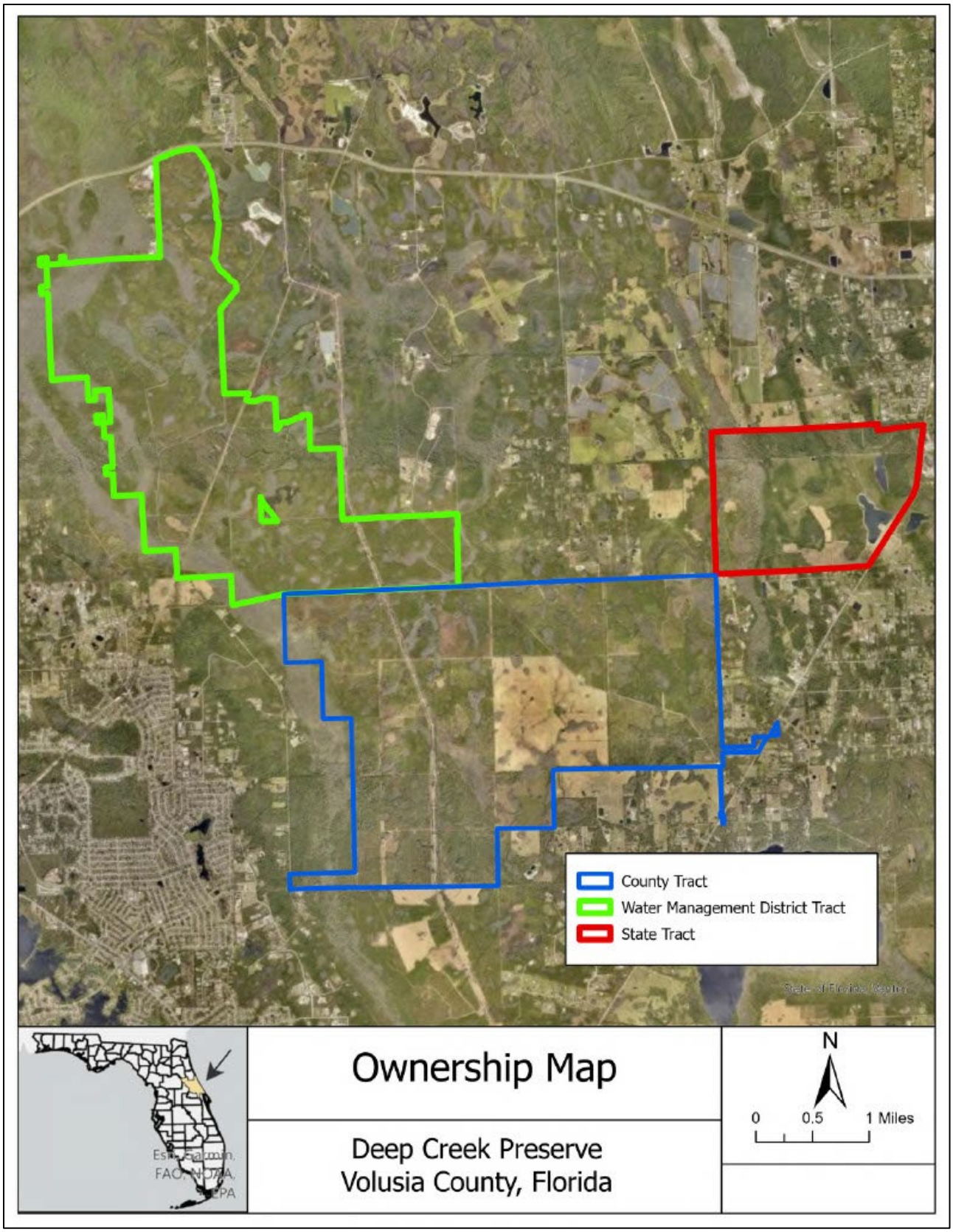


Figure 1. Ownership Map

The Preserve is located within the Volusia Conservation Corridor, a Florida Forever project. The purpose of acquisition of properties in this corridor is described in FDEP's Volusia Conservation Corridor Florida Forever Plan (Appendix B):

> The Volusia Conservation Corridor project will provide a continuous corridor of environmentally significant land from Tiger Bay State Forest, through the central wetlands and flatwoods of Volusia County, to the marshes of the St. Johns River. This project will also increase natural resource-based public recreation and education opportunities. This project will help ensure that enough water is available to meet the current and future needs of natural systems and the citizens of the state.

The specific purpose of acquisition of the State Tract is described in FDEP's Florida Forever Project Evaluation Report: Carter Quail Ranch (Appendix C):

> The Carter Quail Ranch project will contribute to a corridor of conservation lands that will support and provide crucial habitat protection and connectivity for rare and endangered plant and animal species. The project will provide critical water quality and quantity protection for Deep Creek and the St. Johns River while expanding public access to resource-based recreational opportunities in a rapidly growing region of the state.

Acquisition of this project would serve to:

- increase the protection of Florida's biodiversity at the species, natural community, and landscape levels
- increase natural resource-based public recreation or educational opportunities
- provide and enhance wildlife corridors and valuable habitat for rare and imperiled species
- provide surface and groundwater protection and protect natural floodplain functions
- increase the amount of forestland available for sustainable management of natural resources
- protect, restore, and maintain the quality and natural functions of land, water and wetland systems

2. Location

The Preserve is located in central Volusia County, generally south of State Road 44, west of State Road 415, and east of the municipalities of Deltona and Lake Helen. Deep Creek is partially included within some portions of the County and WMD Tracts and generally forms the western boundary. The total area managed by Volusia County within the Preserve is 9,873 acres.

State Tract

The State Tract is in the unincorporated area of New Smyrna Beach (Sections 33 and 34, Township 17 South, Range 32 East). The State Tract is east of the WMD Tract and northeast of the County Tract. The State Tract's southwest corner and County Tract's northeast corner meet but do not overlap. The main entrance to the State Tract is located on State Road 415, approximately 2 miles south of the intersection of State Road 44 and 415. There are 7 contiguous parcels that make up the State Tract, totaling 1,339.66 acres (Appendix A3).

County Tract

The County Tract is located in the southwestern portion of the Preserve, south of State Road 44 and west of State Road 415, east of the municipalities of Deltona and Lake Helen, in unincorporated Volusia County. The County Tract is southwest of the State Tract and south of the WMD Tract. The primary entrance to the County Tract is located on State Road 415 at Leffler Landing Road. The County Tract encompasses approximately 4,806 acres and was acquired by Volusia County in December of 2010. The County Tract contains the primary, existing public trailhead, parking area, and the majority of the existing multi-use trail system. Deep Creek generally forms the western boundary of the County Tract. The improved pasture and associated agricultural infrastructure are located in the south-central portion of the County Tract.

WMD Tract

The WMD Tract is located in the northern portion of the Preserve, south of State Road 44 and generally west of State Road 415 and Pioneer Trail (County Road 4113), in unincorporated Volusia County. The WMD Tract is north of the County Tract and is west of the State Tract. The WMD Tract encompasses approximately 3,691 acres and was acquired by the SJRWMD in May of 2011, and smaller adjacent parcels were added between 2020-2025. The WMD Tract is bounded to the south by the County Tract and to the north by Longleaf Pine Preserve. Vehicular access to the WMD Tract is currently limited to land managers and those authorized under the active hunting lease that encompasses the WMD Tract. However, the WMD Tract is open to public access. Volusia County serves as the lead management entity for the WMD Tract under a Cooperative Management Agreement with the SJRWMD (Appendix D)

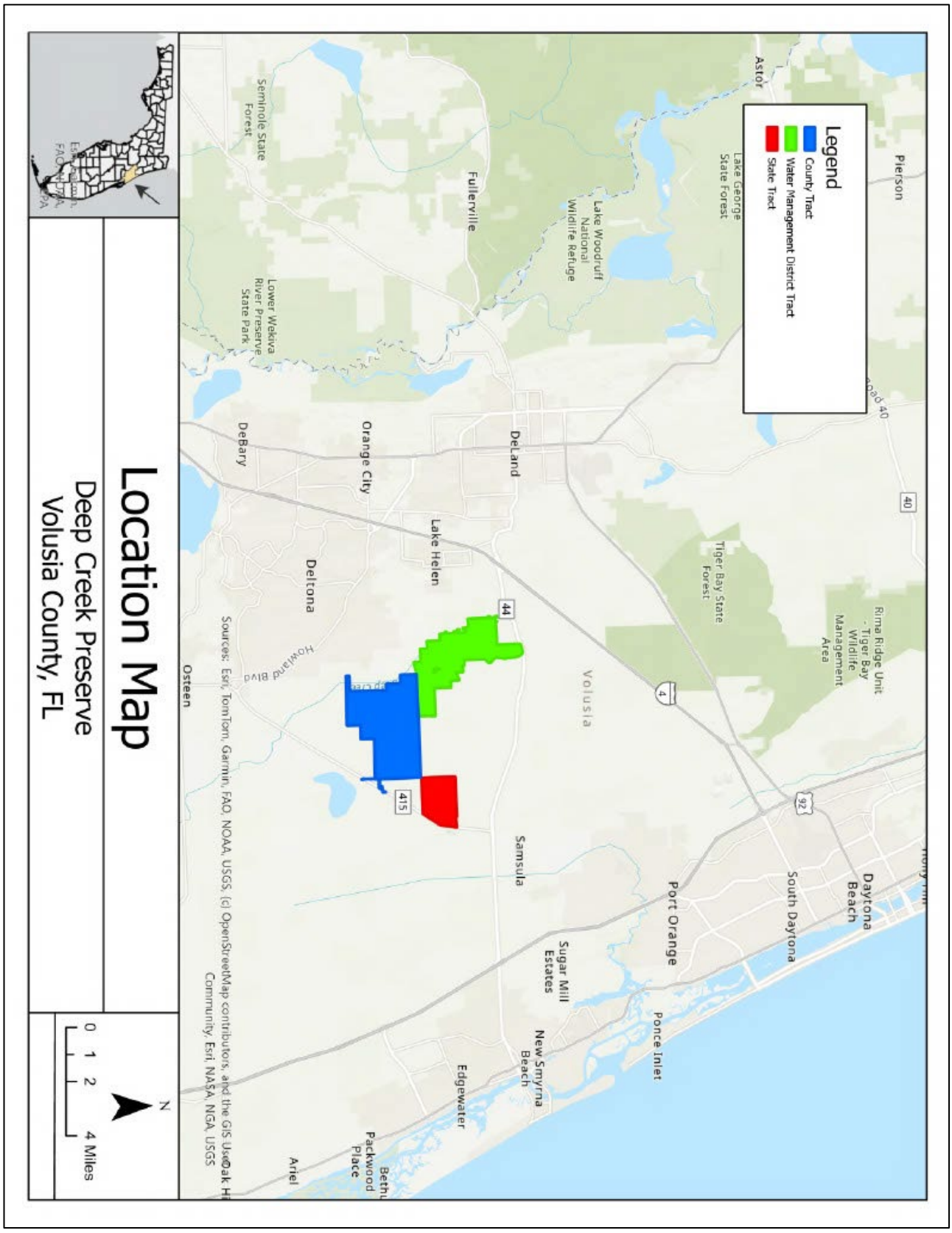


Figure 2. Location Map

3. Management Authority

Volusia County is the designated lead managing agency for the State Tract under the authority granted by Lease Number 4890 for the purposes of conservation, protection, and stewardship of natural and cultural resources (Appendix A). Under this lease, Volusia County is responsible for implementing land management activities consistent with state guidelines, including habitat restoration, invasive species control, and the provision of resource-based outdoor recreation. The lease allows for public access and compatible uses as outlined in the agreement, while ensuring the long-term preservation of the property's ecological value. The term of the lease is for a period of twenty-five years.

The County, through a "Cooperative Management Agreement" (Appendix D) with the SJRWMD, has been designated as the lead management entity for the conservation, protection, management, and enhancement of natural and cultural resources of the WMD Tract property within the Preserve. This Agreement also encompasses the development and management of resource-based outdoor recreation and other uses as provided for by the document. The term of the Agreement is for a period of twenty years with automatic renewal in twenty-year increments.

4. Management Directives

This Management Plan is to guide the appropriate development of facilities that will provide access to the Preserve, while preserving the integrity of its natural and cultural resources. The Plan identifies the objectives, criteria and standards that guide preserve development, administration and management and is intended to meet the requirements of Section 253.034, Section 259.032, Florida Statutes and Chapter 18-2, Florida Administrative Code (Appendix M).

Florida Statutes, subsection 253.023(11) directs the County to manage the leased premises only for the conservation and protection of natural and historical resources and resource-based, public outdoor recreation which is compatible with the conservation and protection of these public lands.

Thus, the fundamental goal of the County as the managing agency is the protection and preservation of the natural and cultural historic resources of the Preserve and serves as the goal guiding management of the Preserve and its associated uses.

The Florida Forever Report provided the Management Prospectus (Appendix M) that provided the framework to develop this Plan. Excerpts of the Prospectus are provided here. As described in that section, the land will be managed as a holistic system under the same guidelines as the County of Volusia's Deep Creek Preserve General Management Plan. This is due to the adjacency/proximity to the State Tract and the similar types of habitats. Management goals include implementation of an "Objective-based Management" program in furtherance of the "Desired Future Conditions", reintroduce prescribed burning, harvesting and other silvicultural activities, maintenance and restoration of surface hydrology protection and enhancement of listed species, and control of non-native invasive species.

5. Title Interest and Encumbrances

State Tract

Title to the State Tract, as State-owned lands, is held by the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Lessor). In December 2025, the Lessor entered into a lease agreement with Volusia County as lessee and lead manager of the Preserve (Appendix A). The term of this lease is 25 years.

On the State Tract, a 6.94-acre tree preservation easement is located within a baygall swamp on the east side of the property (Appendix O2).

Reservation of One Half of all oil, gas and sulfur and the right of ingress and egress for locating, producing and removing as set forth and reserved in that certain Special Warranty Deed recorded June 25, 1951 in Deed Book 442, page 579; as partially released by Warranty Deed recorded December 27, 1972 in Official Records Book 1519, page 394, all of the Public Records Volusia County, Florida. Note: Without Right of Entry.

Right of Way Agreement by and between Santona Land Corporation and Florida Power & Light Company recorded in Official Records Book 637, page 246, Public Records Volusia County, Florida.

Easement in favor of Florida Power & Light Company recorded September 4, 1987, in Official Records Book 3030, page 1989, Public Records Volusia County, Florida (Appendix O3).

Resolution vacating a portion of Howe & Currier Plat as recorded in Official Records Book 3496, Page 1114, of the Public Records of Volusia County, Florida (Appendix O4).

Easement in favor of Florida Power Corporation recorded January 22, 1991 in Official Records Book 3578, page 1369; as affected by Easement Deed in favor of the Utilities Commission, City of New Smyrna Beach, Florida, recorded July 12,1993 in Official Records Book 3841, page 1643, all of the Public Records Volusia County, Florida (Appendix O5).

Environmental Resource Permit recorded in Official Records Book 7217, Page 4739, of the Public Records of Volusia (Appendix O6).

Covenant and Restriction recorded in Official Records Book 7149, Page 1894, of the Public Records of Volusia (Appendix O7).

County Tract

Title to the County Tract is held by the County of Volusia. The County Tract was acquired in December of 2010 and Volusia County retains sole ownership of the Tract.

Two utility easements bisect the County Tract in a north to south direction. Regional electrical transmission lines are sited within both of these easements, which are held by Florida Power and Light Corporation. The easterly easement is approximately 300 feet in width and the westerly easement is approximately 175 feet wide.

At the time of the 2013 Deep Creek Preserve General Management Plan, no other restrictions or encumbrances were identified on the County Tract beyond the aforementioned utility easements. Subsequent to the 2013 plan, additional encumbrances have been recorded on the County Tract including a Natural Vegetation Easement, an Environmental Resource Permit recorded in the public records of Volusia County, and a Covenant and Restriction. These instruments are provided in the Appendices to this Plan and should be consulted prior to undertaking any ground disturbing or development activities on the County Tract.

WMD Tract

Title to the WMD Tract is held by the SJRWMD. The WMD Tract was acquired by the SJRWMD in May of 2011 and retains sole ownership of the WMD Tract. Volusia County serves as the lead management entity for the WMD Tract under a Cooperative Management Agreement with the SJRWMD, as described in Section I.A.3 of this Plan.

Two utility easements bisect the WMD Tract in a north to south direction. Regional electrical transmission lines are sited within both of these easements, which are held by Florida Power and Light Corporation. The easterly easement is approximately 300 feet in width and the westerly easement is approximately 175 feet wide.

Two non-exclusive perpetual access easements were granted by the Kemcho Investment Group to the SJRWMD concurrent with their acquisition of the property. The first of these easements provides access to the WMD Tract from State Road 44 across property retained by Kemcho. The second easement provides for use by the SJRWMD of certain roads located upon property retained by Kemcho that generally parallel the boundary between the two ownerships. The SJRWMD has subsequently granted the County permission to use these easements for management purposes.

A non-exclusive easement for remediation and access and right of way purposes was granted by the SJRWMD to the Kemcho Investment Group, located in the southeastern portion of the WMD Tract, providing access to adjoining lands owned by Kemcho. This easement was identified in the 2013 Deep Creek Preserve General Management Plan as non-perpetual, with a stated lapse date of 2016 unless terminated earlier by either party.

B. Proximity to Other Public Properties

The Preserve is contiguous with several publicly owned conservation areas that are managed by Volusia County. The Preserve is located adjacent to the south of Longleaf Pine Preserve and to the north of Palm Bluff Conservation Area. These public lands connect to additional publicly owned lands within the Volusia Corridor. In addition to fee-simple public lands, numerous parcels that have been placed under Conservation Easements granted to regulatory agencies (primarily the SJRWMD) have hydrologic connections via swamps and other watercourses that connect to Deep Creek. The Preserve is not within and/or adjacent to an aquatic preserve or a designated area of critical state concern or an area under study for such designation.

A map of conservation lands within a 10-mile radius of the Preserve is displayed below in the Adjacent Conservation Lands Map. Some of the notable lands in the region include:

State Owned Properties (BOT):

- Tiger Bay State Forest (includes Rima Ridge Wildlife Management Area)

SJRWMD Properties:

- Clark Bay Conservation Area
- Palm Bluff Conservation Area
- Turnbull Hammock Conservation Area

County Owned Properties:

- Longleaf Pine Preserve
- Doris Leeper Spruce Creek Preserve
- Wiregrass Prairie Preserve

City Owned Properties:

- Port Orange City Forest
- Ponce Preserve

Less Than Fee Simple/Privately Owned Properties

- Lefils Conservation Easement
- Double T Ranch Conservation Easement
- Gamble Place
- Farmton Mitigation Bank

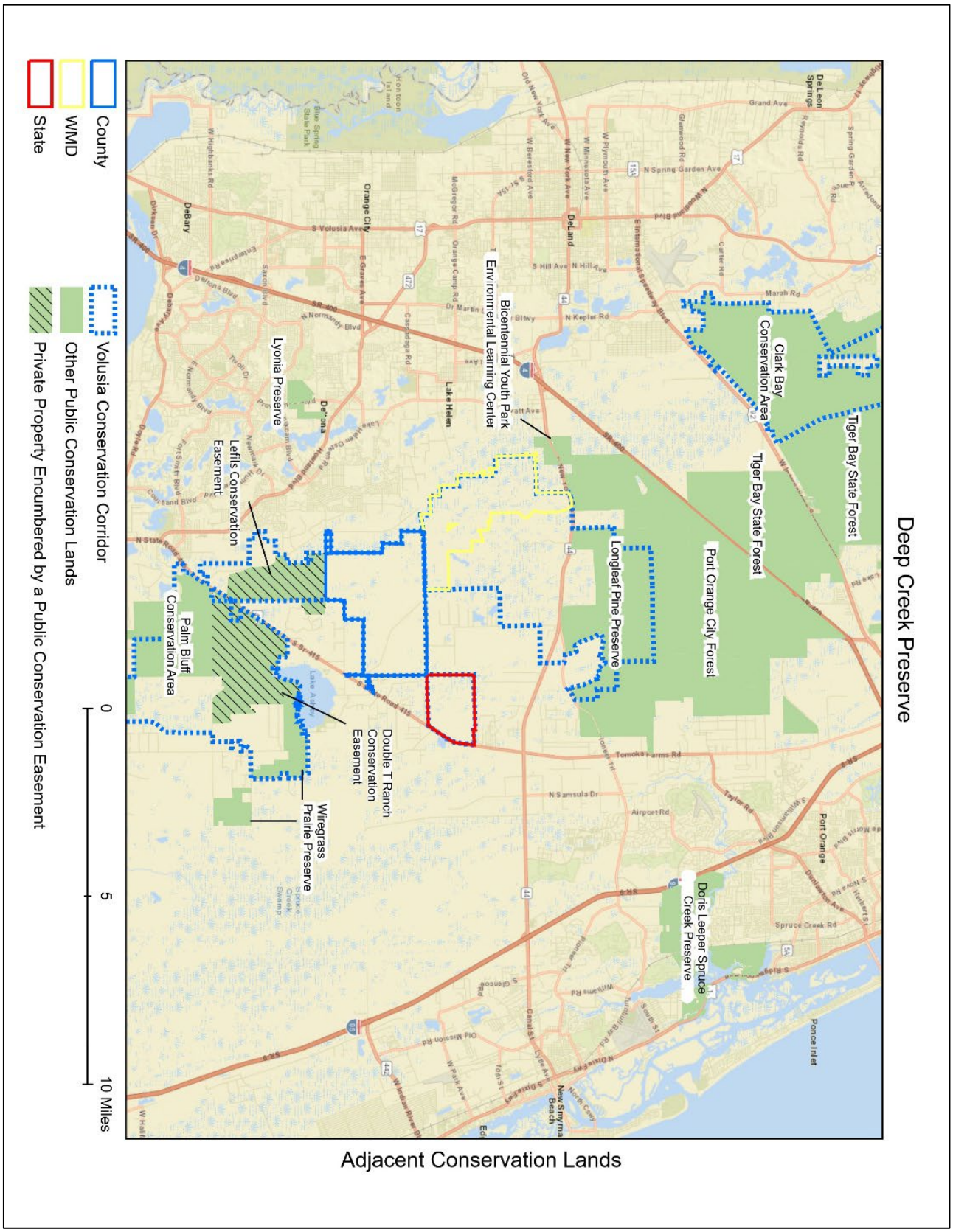


Figure 3. Adjacent Conservation Lands

C. Optimal Boundary

The optimal boundary is identified in Figure 4. The purpose of the optimal boundary is to guide acquisition of parcels towards those parcels that would promote the Florida Forever goals and the goals listed within this Plan. Adjustments to the boundary may add or remove parcels depending upon current conditions. If parcels that were formerly within an optimum boundary are developed, they may be removed from essential parcels list. Note that inclusion within this boundary does not equate to ownership. It is a guide to acquiring additional lands for public ownership and management.

The County, in partnership with others, has been able to acquire a significant portion of the properties within the Optimal Boundary. The acquisition of these lands is a significant focus of Volusia County's Resource Stewardship Division. The acquisition of these properties directly promotes the primary objective of the management directive noted above. The remaining properties include lands adjacent to the exterior boundaries of the overall publicly owned lands. As part of the management strategy, adjacent and contiguous lands are continuously reviewed and evaluated for potential incorporation into the Preserve's Florida Forever boundary.

The Preserve has been one of the several priority areas of the county's land acquisition programs, including Volusia Forever. The Volusia Forever program provides for the acquisition and management of environmentally sensitive and outdoor recreation lands. The program, created by the county's voters in 2000 and renewed in 2020, is funded through annual ad valorem assessment for a period of twenty years. Potential future acquisitions through this program, which is for willing sellers only, are dependent upon available funding.

The Volusia Forever program is administered by the County's Resource Stewardship Division. The responsibility for final decisions regarding property acquisition resides with the County Council.

The optimal boundary was developed, and parcels selected based, on the Florida Forever Volusia Conservation Corridor and the Florida Wildlife Corridor.

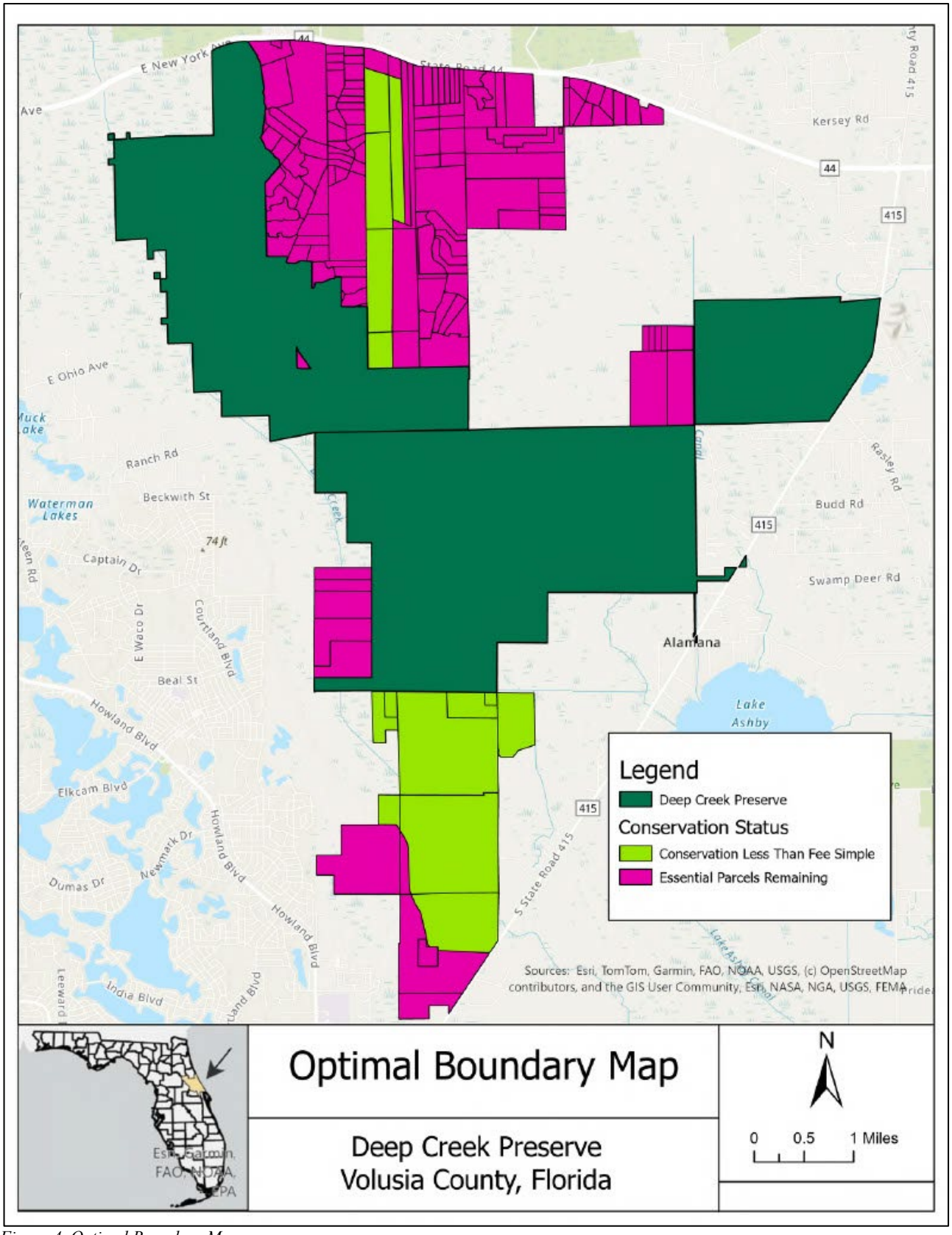


Figure 4. Optimal Boundary Map

D. Public Involvement

Prior to the State's acquisition of Carter Quail Ranch (the State Tract), the County's 2013 Deep Creek Preserve General Management Plan was available to the public on Volusia County's website, under the Land Management Plans webpage.

Following acquisition and execution of the lease, Volusia County, in accordance with Section 259.032, Florida Statutes, established an advisory group that provided input for development of this current Plan. The Management Plan Advisory Group (MPAG) meeting was held on April 28, 2026, at the County's Thomas C. Kelly Administration Center. The advisory group members consisted of representatives from the lead and co-managing agency, a local property owner, the soil and water conservation district, a local conservation organization, Florida Fish and Wildlife Commission, Florida Forest Service, and a local elected official.

The MPAG members were provided with FDEP's Management Prospectus (Appendix M), and an initial draft management plan (the MPAG draft) on April 21, 2026. The County considered input from the MPAG meeting, conducted on April 28, 2026, and provided an updated draft management plan (the public hearing draft) to the public via public notice, on May 7, 2026. The plan was noticed via FDEP's website, the County's website and signage posted at the State Tract.

The MPAG conducted a public hearing at the Volusia County UF IFAS Extension Office on June 11, 2026. The public were able to provide comments via email, written letters, and in person at the public hearing.

Volusia County, as the lead managing agency, considered this public input in the final version of this Plan. All relative documents produced during the public input process are provided in Appendix N in chronological order.

II. NATURAL AND CULTURAL RESOURCES

A. Physiography

The following section provides a description and assessment of existing natural and cultural resources found in the Preserve. An Aerial Map (Figure 5) and other supporting figures are provided in this section.

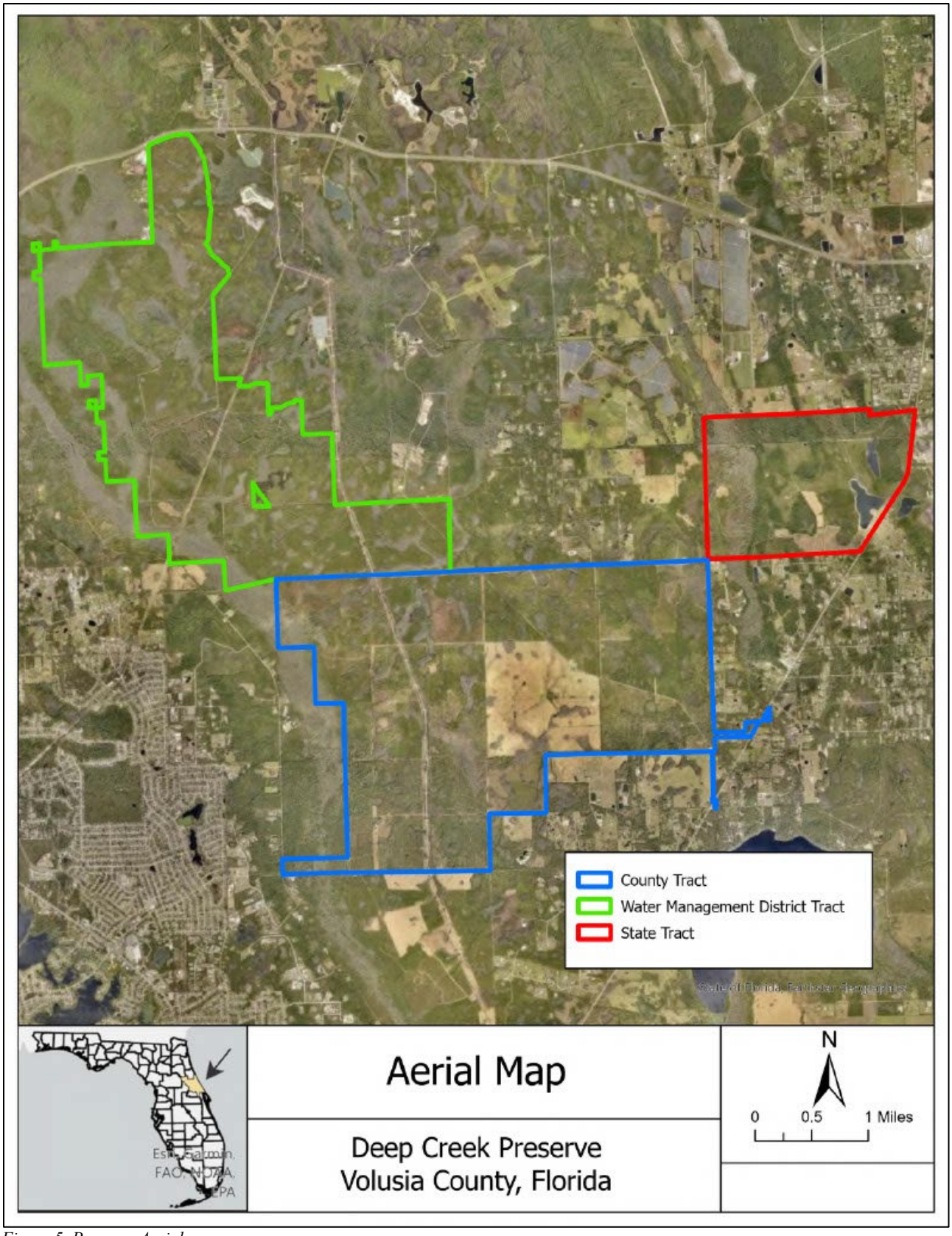


Figure 5. Preserve Aerial

1. Topography

Topographic relief across the Preserve is minimal, as is typical in this physiographic region. Elevations range from 24 NAVD in the basin and floodplain swamps to 50 feet NAVD in the northern central portion of the State Tract, representing the southern extent of the Volusia Ridge Sets region, a series of ridges and terraces resulting from ancient sea level fluctuations (Figure 6).

The Preserve is situated within the Deep Creek sub-basin of the middle St. Johns River basin. This sub-basin includes portions of southern Volusia and northeastern Seminole counties, covering approximately 274 square miles. Deep Creek, Lake Ashby Canal and Lake Ashby are waterbodies located on and near the Preserve that interact with waters coming from the Preserve and eventually discharging into Lake Harney and the St. John's River.

Portions of Deep Creek (the waterbody) are located within the County and WMD Tracts and are found along the western boundary of the Preserve. Significant segments of this watercourse, including those in the general vicinity of the Preserve, have previously been altered and channelized. This watercourse originates in the vast area of wetlands north of State Road 44, within and adjacent to Longleaf Pine Preserve. From its origins, it flows generally south and east and eventually empties into the St. Johns River, north of Lake Harney. Flows within the waterway typically fluctuate. During dry periods volume may be minimal and increase during wet periods or heavy rainfall.

In addition to seasonal variation, the natural surface hydrology of the Preserve is affected, to an undetermined degree, by the aforementioned systems of ditches (of varying depths) and roads established by the prior owners.

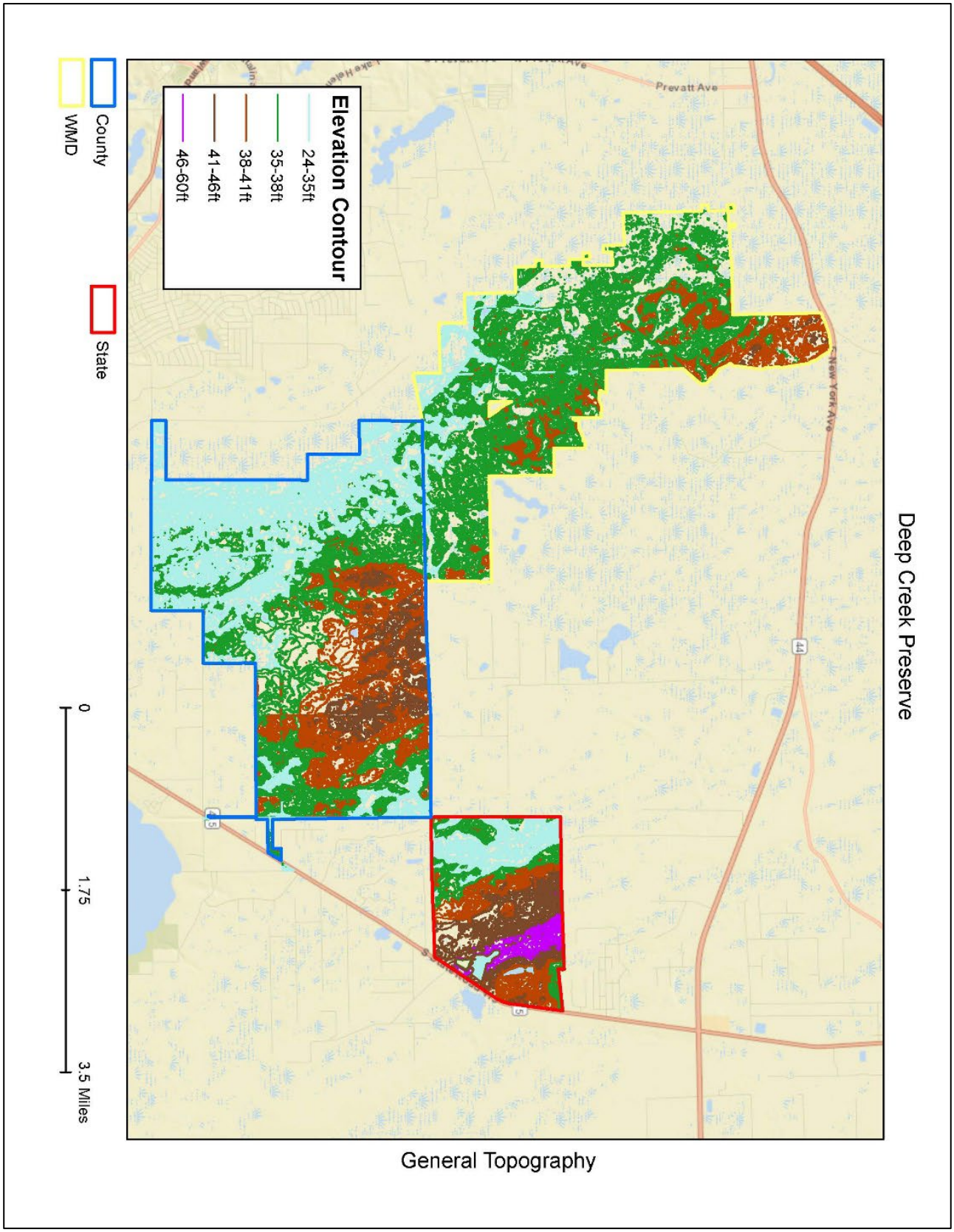


Figure 6. Topography Map

2. Soils

Specific soil map unit data were obtained from the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Volusia County (1980) (now the Natural Resource Conservation Service – NRCS). These soil map units, along with brief descriptions relating to natural communities and hydrology are listed in Table 1 below and displayed on the Soils Map (Figure 8). The categorization of soils as either *Hydric* or *Non-Hydric* was determined using the *Hydric Soils of Florida Handbook, 4th Edition*. Historic vegetation is per the Soil Survey of Volusia County (1980).

Soil map units provide insight into historic vegetation patterns, potential land uses, and appropriate plant selections for restoration areas. Revenue-generating mineral resources, such as oil, gas and phosphate, are not known to occur within the Preserve. However, mineral sands have been extracted from the State Tract, prior to State acquisition, which has resulted in the two reservoirs that now exist on that tract. Future mineral sands extraction is not considered a compatible use within the Preserve. Stockpiles of introduced soil are present on the State Tract. The nearby landfill offered this fill material, referred to as "enviro soil," for the cost of trucking. The exact quantity of stockpiled material is not known.

The dominant soil types in each of the three parcels as follows: the County Tract dominant soil types are Myakka-Myakka, Pomona fine sand and Wauchula fine sand soils, the WMD Tract dominant soil types are Tomoka muck, Wabasso-Wabasso and Wauchula fine sand soils, and the State Tract dominant soil types are Immokalee sand and Hontoon muck, frequently ponded, 0 to 1 percent slopes soils. This shows that the WMD and County Tracts are generally "wetter" overall and the State Tract has considerable hydrologic variation relative to the other two.

Table 1. Soil Types and Descriptions occurring within the Preserve

Soil Name and Map Symbol	Hydrologic Setting and Land Position	Seasonal High Water Table		Historic Vegetation	Hydric Status
		Depth (in)	Duration (mo)		
Basinger fine sand, frequently ponded, 0 to 1 percent slopes (8)	Poorly drained; nearly level	Above surface	4-7	St. John's wort. Maidencane, pond pine	Hydric
Daytona sand, 0 to 5 percent slopes (17)	Moderately well drained; nearly level to gently sloping	40-50	1-4	Sand pine, scrub oak, longleaf pine, rosemary, turkey oak, fetterbush, saw palmetto	Non-Hydric
EauGallie fine sand (20)	Poorly drained; nearly level	Within 10	1-4	Sand pine, longleaf pine, gallberry, wiregrass, saw palmetto	Hydric
Farmton fine sand (23)	Poorly drained; nearly level	Greater than 10	1-3	Saw pine, saw palmetto, runner oak, gallberry, fetterbush, waxmyrtle	Hydric
Hontoon muck, frequently ponded, 0 to 1 percent slopes (27)	Very poorly drained, nearly level	At or above the surface	6-9	Red maple, sweetgum, bald cypress, waxmyrtle, sawgrass, maidencane	Hydric
Immokalee sand (29)	Poorly drained; nearly level	Greater than 10	1-2	Slash pine, longleaf pine, saw palmetto, wiregrass, runner oak	Non-Hydric
Malabar fine sand (31)	Poorly drained; nearly level	Within 10	2-6	Cabbage palm, water oak, slash pine, laurel oak, waxmyrtle, gallberry, saw palmetto, fetterbush	Hydric
Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes (32)	Poorly drained; nearly level	Less than 12	6	Slash pine, longleaf pine, saw palmetto, wiregrass	Non-Hydric
Myakka fine sand, frequently ponded, 0 to 1 percent slopes (33)	Very poorly drained; nearly level	Within 10	3-6	Slash pine, longleaf pine, saw palmetto, maidencane, wiregrass, pineland threeawn	Hydric

Soil Name and Map Symbol	Brief Soil Description	Seasonal High Water Table		Historic Vegetation	Hydric Status
		Depth (in)	Duration (mo)		
Myakka-St. Johns complex (34)	Very poorly drained; nearly level	10 above surface, to within 10	9	Bald cypress, pond pine, sweetgum, bay, slash pine, waxmyrtle, gallberry, St. John's wort, saw palmetto, maidencane	Hydric
Paisley fine sand, 0 to 1 percent slopes, rarely flooded (38)	Poorly drained; nearly level	10	2-6	Cabbage palm, live oak, slash pine, longleaf pine	Hydric
Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes (45)	Poorly drained; nearly level	10	1-6	Longleaf pine, slash pine, saw palmetto, wiregrass, cabbage palm	
Pomona fine sand (49)	Poorly drained; nearly level	6 above surface to within 10	4-8	Slash pine, sweetgum, pond pine, gallberry, waxmyrtle, St. John's wort, fetterbush, saw palmetto, wiregrass	Hydric
Pomona fine sand, depressional, 0 to 2 percent slopes (50)	Very poorly drained; nearly level	6 above surface to within 10	4-8	Slash pine, sweetgum, pond pine, gallberry, waxmyrtle, St. John's wort, fetterbush, saw palmetto, wiregrass	Hydric
Pomona-St. Johns complex (51)	Very poorly drained; nearly level	10 above surface to within 10	9	Bald cypress, pond pine, sweetgum, slash pine, gallberry, St, John's wort, saw palmetto, waxmyrtle, maidencane	Hydric

Soil Name and Map Symbol	Brief Soil Description	Seasonal High Water Table		Historic Vegetation	Hydric Status
		Depth (in)	Duration (mo)		
Riviera fine sand (55)	Poorly drained; nearly level	Within 10	2-6	Cabbage palm, water oak, laurel oak, southern magnolia, slash pine, waxmyrtle, gallberry, fetterbush, maidencane	Hydric
Samsula muck, frequently ponded, 0 to 1 percent slopes (56)	Very poorly drained; nearly level	At or above surface	12	Red maple, cypress, sweetgum, cabbage palm, sedges	Hydric
Satellite sand, 0 to 2 percent slopes (57)	Somewhat poorly drained; nearly level	10-40	2-6	Longleaf pine, saw palmetto, scrub oak, sand pine	Non-Hydric
Scoggin sand (59)	Very poorly drained; nearly level	At or above surface	6	Slash pine, bald cypress, maidencane, gallberry, saw palmetto, wiregrass	Hydric
St. Johns fine sand (61)	Poorly drained; nearly level	Within 10	2-6	Pond pine, longleaf pine, slash pine, bay, saw palmetto, gallberry	Hydric
Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes (60)	Very poorly drained; nearly level	Within 10	1-4	Slash pine, saw palmetto, running oak, wiregrass	Hydric
St. Lucie fine sand, 0 to 5 percent slopes (62)	Excessively drained; nearly level to moderately sloping	Greater than 72	12	Sand pine, sand live oak, saw palmetto, fetterbush, rosemary	Non-Hydric
Tequesta muck, frequently ponded, 0 to 1 percent slopes (64)	Very poorly drained; nearly level	Within 10	9	Red maple, bald cypress, sweet gum, cabbage palm, waxmyrtle, fetterbush, and gallberry, maidencane	Hydric
Tomoka muck, frequently ponded, 0 to 1 percent slopes (66)	Very poorly drained; nearly level	At or above the surface	6-9	Red maple, bald cypress, cordgrass	Hydric

Soil Name and Map Symbol	Brief Soil Description	Seasonal High Water Table		Historic Vegetation	Hydric Status
		Depth (in)	Duration (mo)		
Valkaria fine sand, 0 to 2 percent slopes (72)	Poorly drained; nearly level	At or above the surface	6	St. John's wort, waxmyrtle, wiregrass, slash pine, cabbage palm	Hydric
Wabasso-Wabasso, wet, fine sand, 0 to 2 percent slopes (73)	Poorly drained; nearly level	Within 10	1-4	Slash palm, cabbage palm, saw palmetto, gallberry, runner oak, fetterbush, maidencane, wiregrass	Hydric
Wauchula fine sand (75)	Poorly drained; nearly level	Within 10	1-4	Longleaf pine, slash pine, saw palmetto, gallberry, wiregrass	Non-Hydric
Winder fine sand, 0 to 2 percent slopes (77)	Poorly drained; nearly level	Within 10	2-6	Live oak, laurel oak, red maple, cabbage palm	Hydric

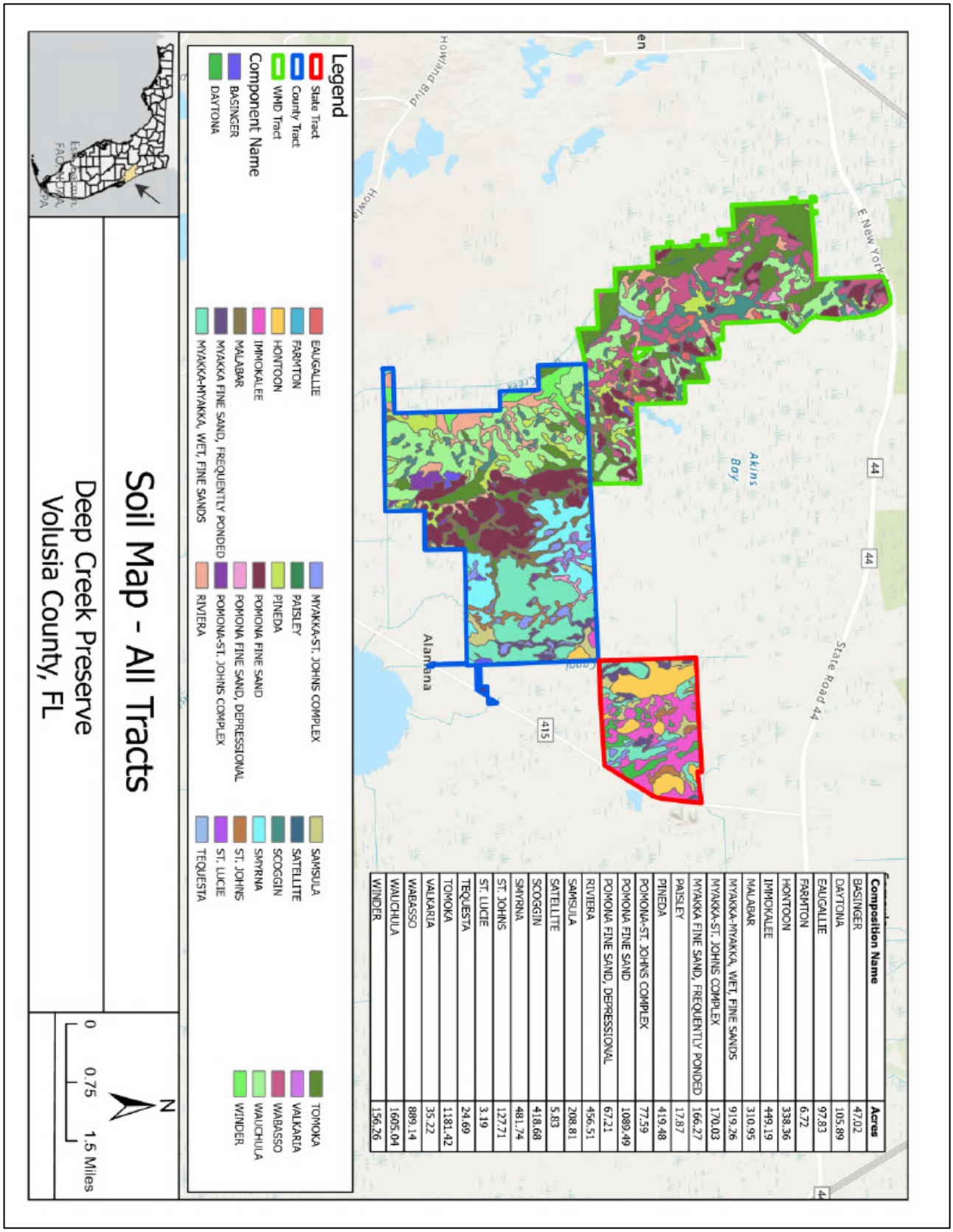


Figure 7. Overall Soils Map

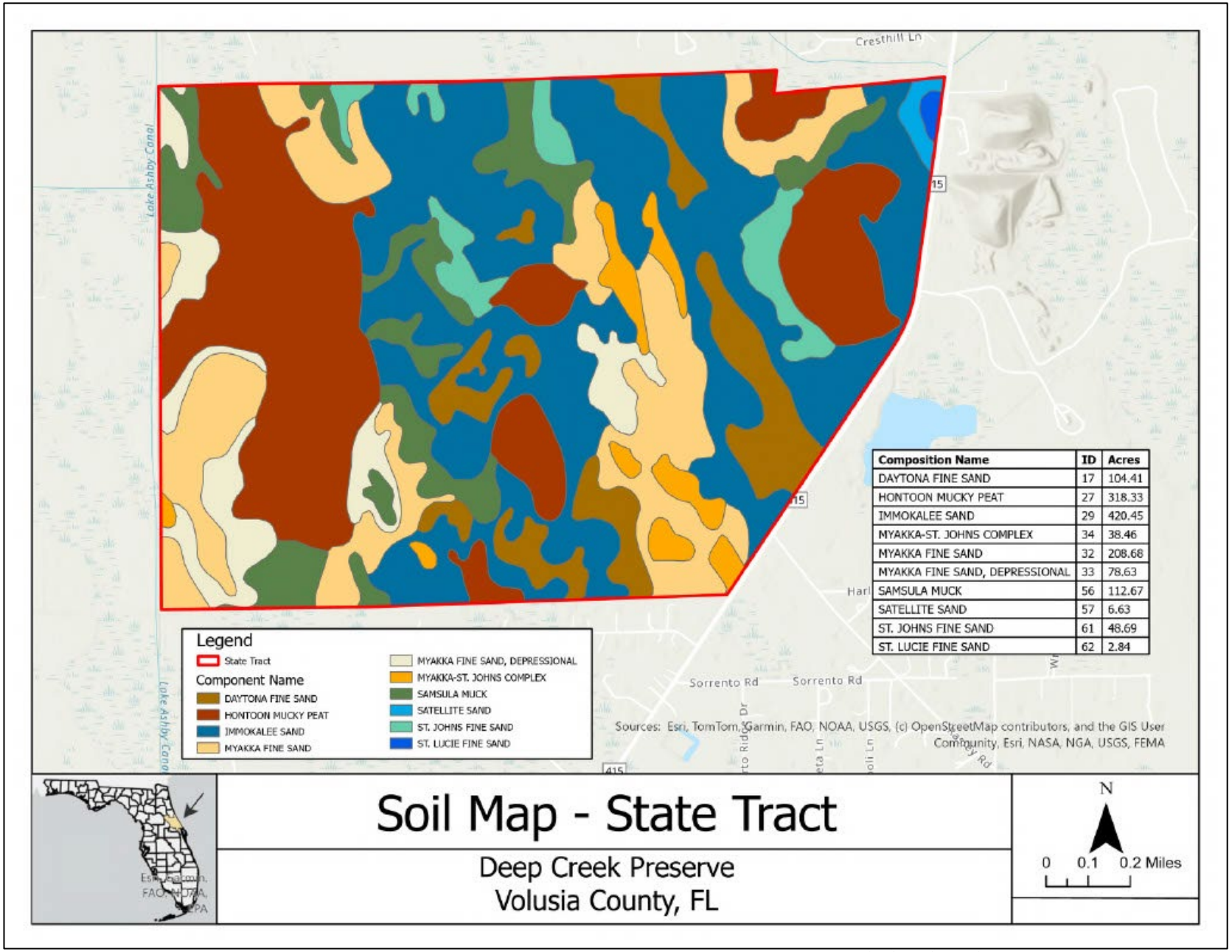


Figure 8. State Tract Soils Map

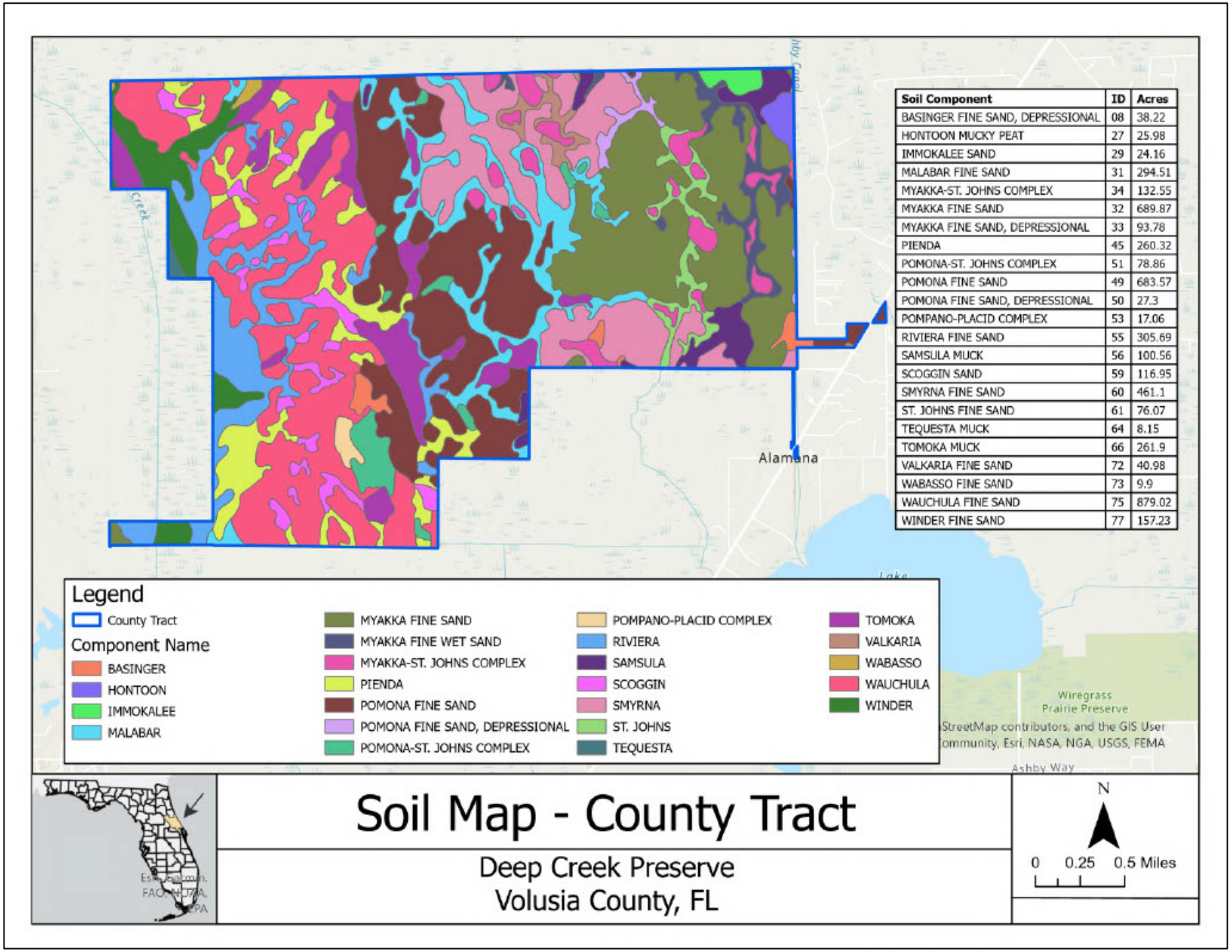
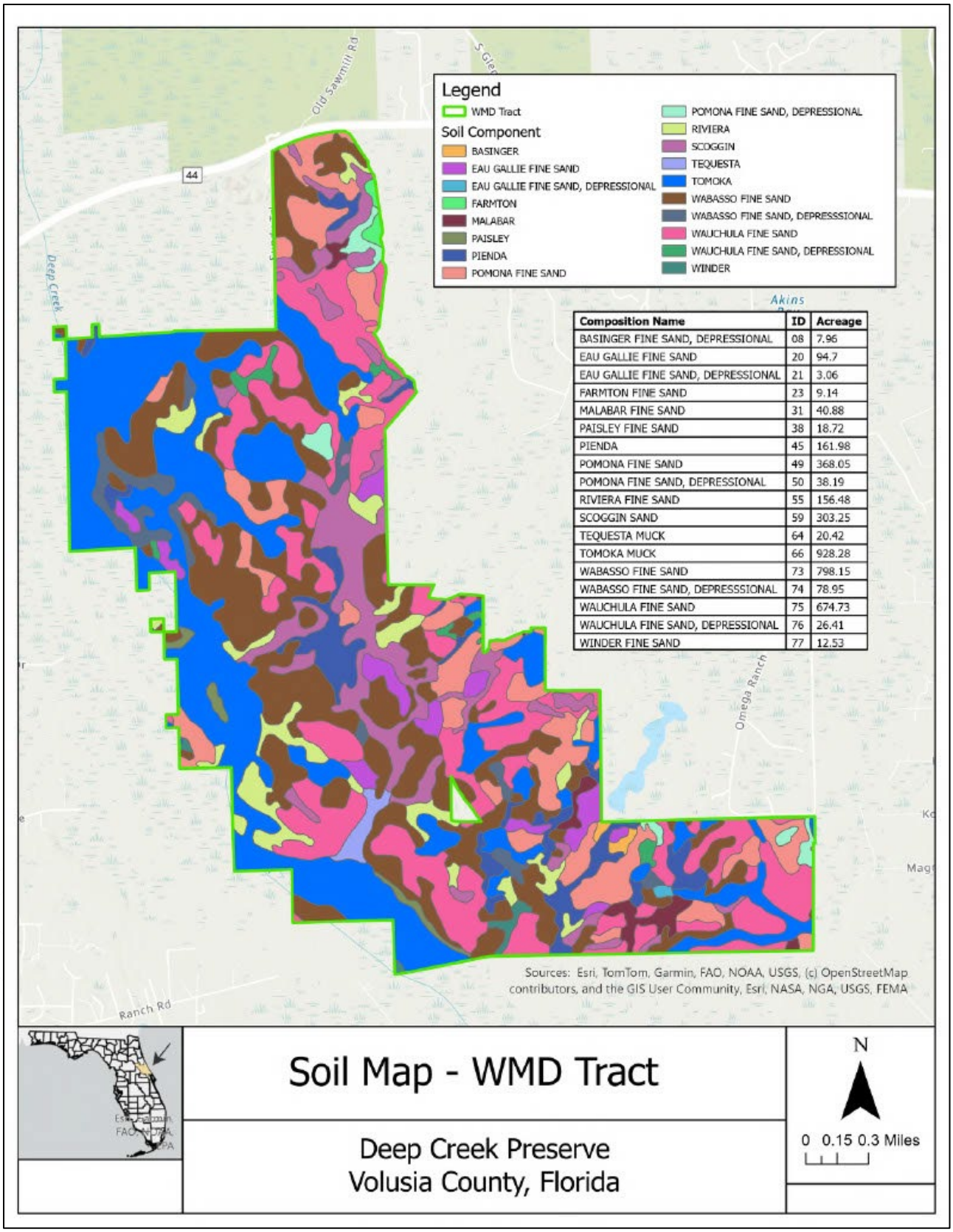


Figure 9. County Tract Soils Map



Composition Name	ID	Acreage
BASINGER FINE SAND, DEPRESSIONAL	08	7.96
EAU GALLIE FINE SAND	20	94.7
EAU GALLIE FINE SAND, DEPRESSIONAL	21	3.06
FARMTON FINE SAND	23	9.14
MALABAR FINE SAND	31	40.88
PAISLEY FINE SAND	38	18.72
PIENDA	45	161.98
POMONA FINE SAND	49	368.05
POMONA FINE SAND, DEPRESSIONAL	50	38.19
RIVIERA FINE SAND	55	156.48
SCOGGIN SAND	59	303.25
TEQUESTA MUCK	64	20.42
TOMOKA MUCK	66	928.28
WABASSO FINE SAND	73	798.15
WABASSO FINE SAND, DEPRESSSIONAL	74	78.95
WAUCHULA FINE SAND	75	674.73
WAUCHULA FINE SAND, DEPRESSIONAL	76	26.41
WINDER FINE SAND	77	12.53

Figure 10. WMD Tract Soils Map

B. Natural Communities

The system of classifying natural communities employed in this plan was developed in accordance with the Florida Natural Areas Inventory (FNAI) Guide to the Natural Communities of Florida – 2010 Edition. The premise of this system is that physical factors, such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas which are similar with respect to these factors will tend to have natural communities with similar species compositions.

Obvious differences in species composition can occur, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. An example of this in the Preserve is the distinction between baygall and wet flatwoods. In the State Tract, fire has been suppressed for decades, and as a result both baygall and wet flatwoods exhibit abundant loblolly bay in the canopy. However, baygall will typically only experience fire along its boundary when it is embedded within a pyrogenic community, whereas wet flatwoods require a frequent fire return interval to maintain proper species composition and habitat structure. In this example, the underlying soil map unit was utilized to establish the boundaries between these often-adjacent natural communities. Baygall is situated upon component hydric soils map units with a significant organic surface layer (e.g., Hontoon muck) while wet flatwoods are situated upon hydric soil map units lacking an organic surface layer (e.g., Myakka and St. Johns fine sands).

The Preserve contains fourteen (14) communities (Figure 12, below) including altered cover types. Preserve-specific assessments of the existing natural communities are provided in the narrative below and a summary of the communities and their relative cover and acreages is provided in Table 2 below. The descriptions below summarize the generalized condition of the community, followed by details of the specific community occurring within the Preserve. Details such as fire return intervals, timber thinning, and other specific restoration details are provided in separate plans within the Appendices.

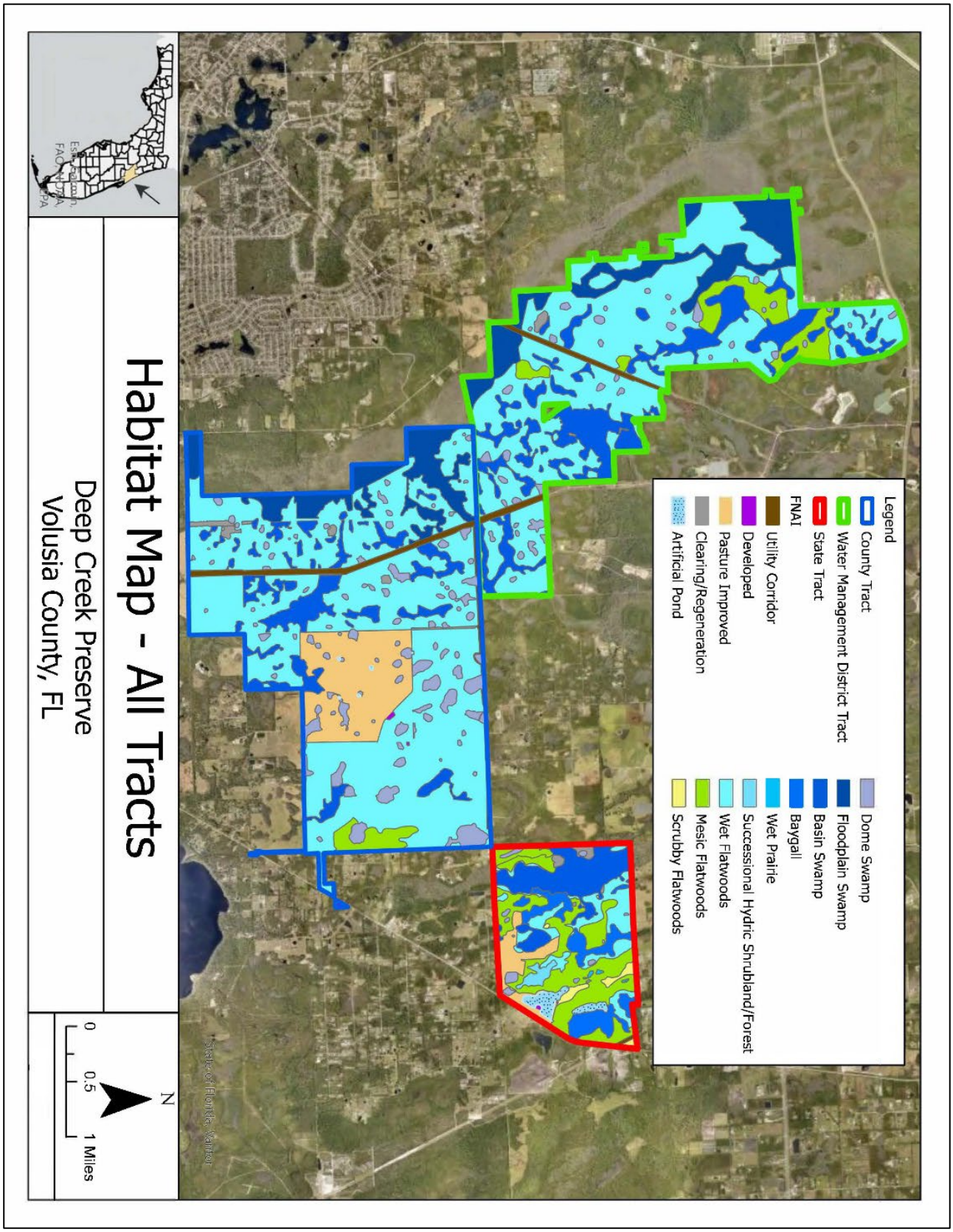


Figure 11. Overall Preserve Habitat Map

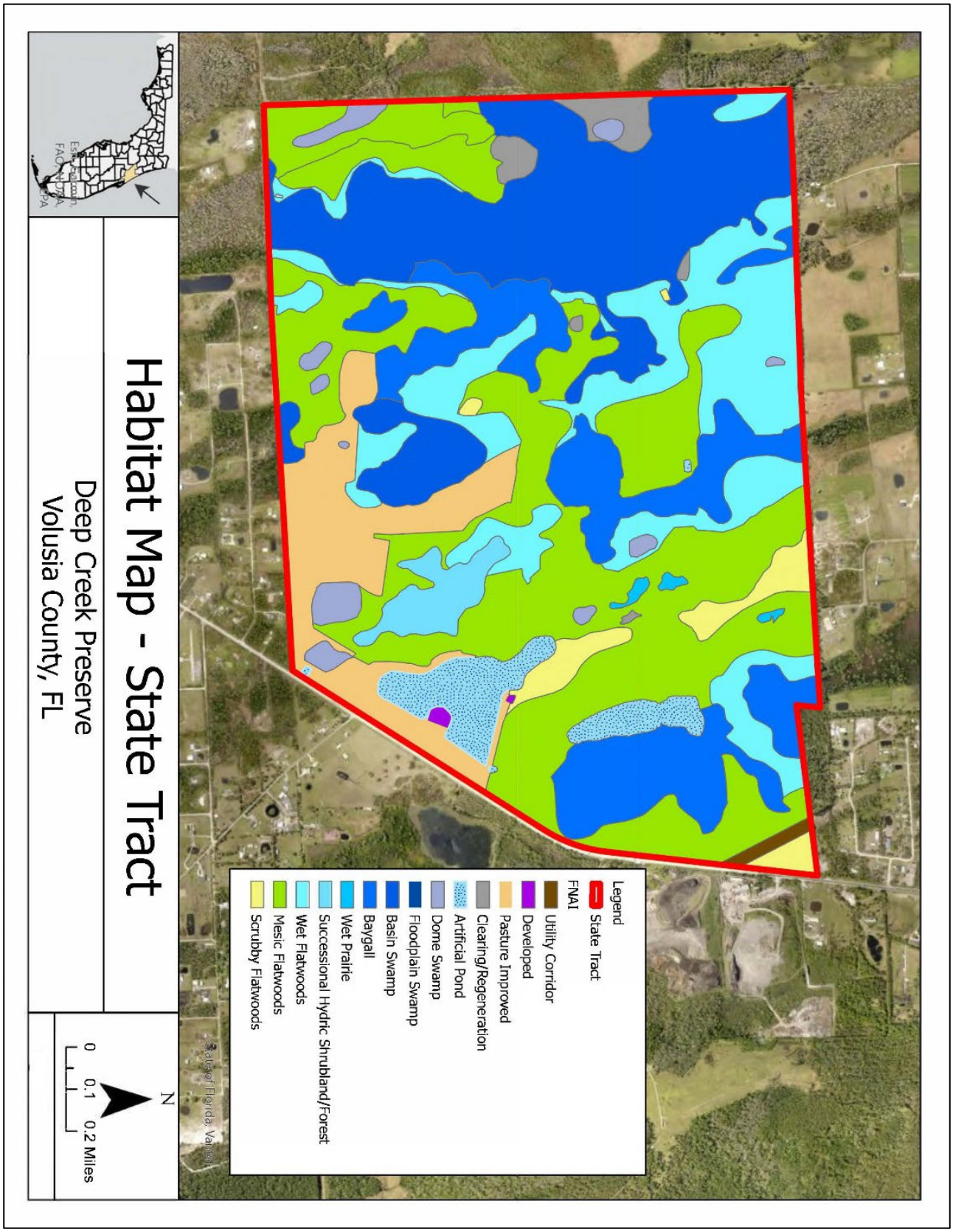


Figure 12. State Tract Habitat Map

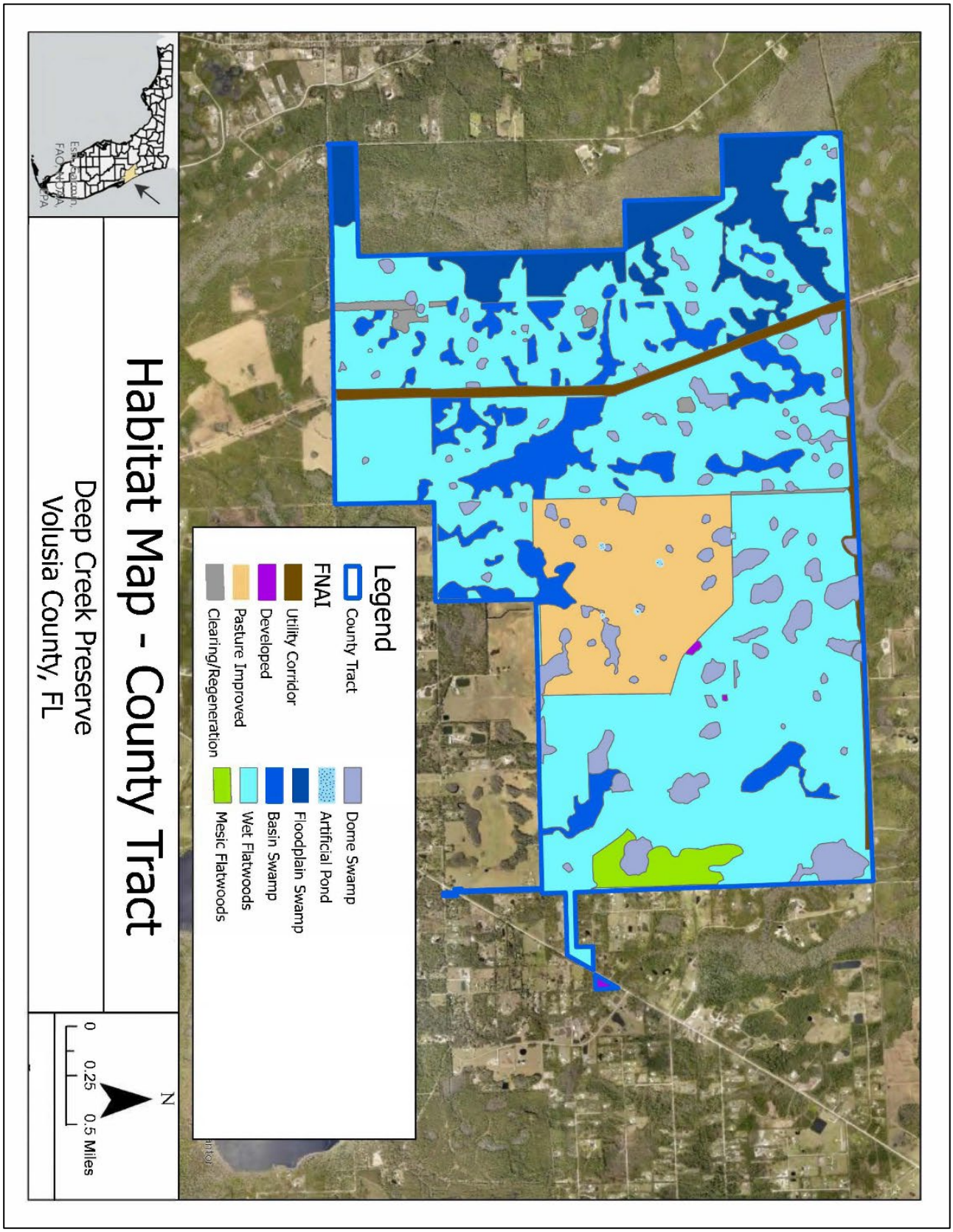


Figure 13. County Tract Habitat Map

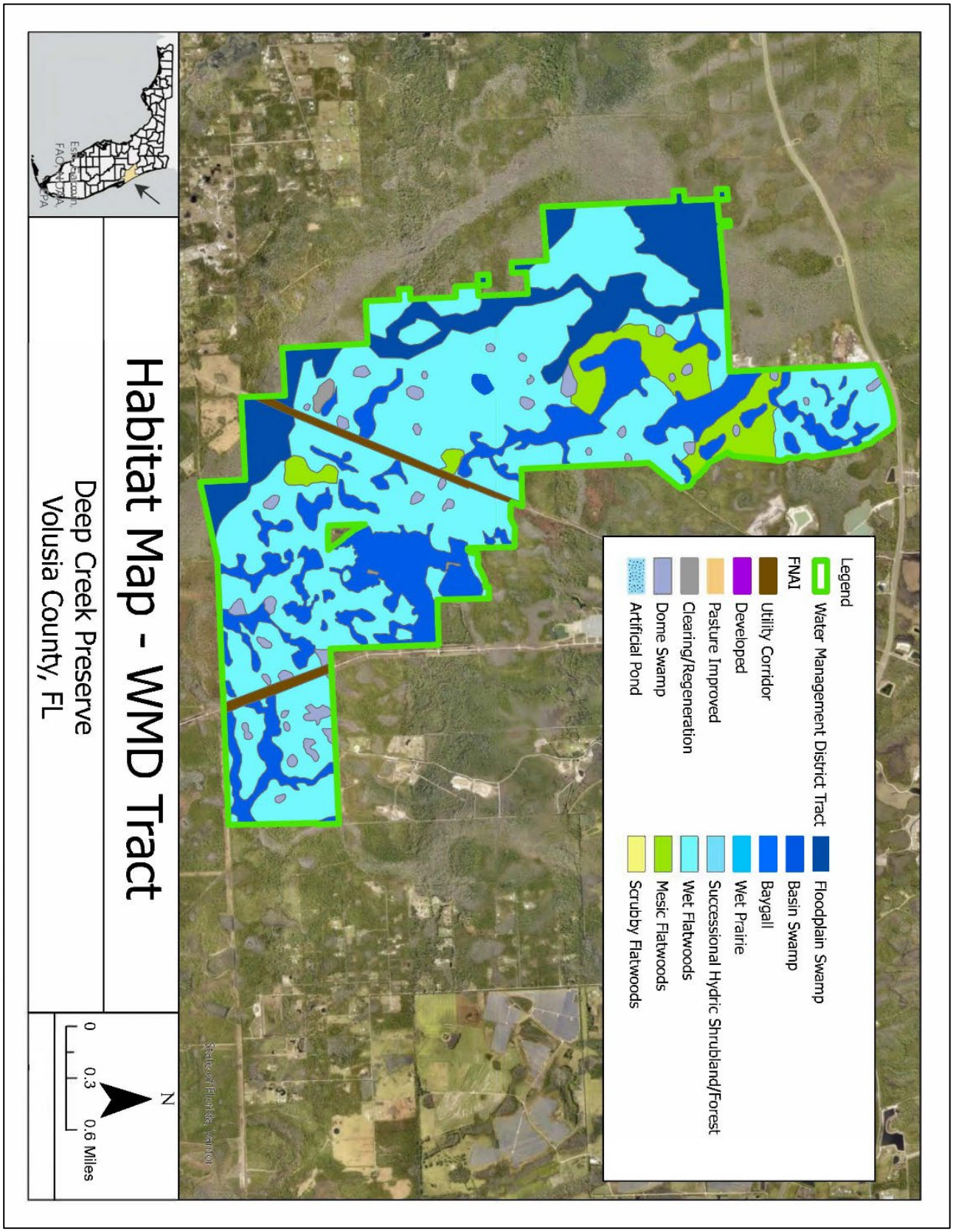


Figure 14. WMD Tract Habitat Map

The overall condition of the natural communities within the Preserve has been significantly influenced by prior management practices, including the planting of extensive areas of slash pine (*Pinus elliottii*), logging within the basin swamps, conversion to pasture, mineral (sand) extraction, fire suppression and various hydrologic alterations including drainage ditches and creek channelization. Pine plantations encompass a large percentage of the total area in flatwoods. The plantations within this portion of the Preserve generally range from 20 to 65 years in age, with the majority of the acreage being planted since 1980.

A significant portion of the Preserve was impacted by the regional wildfires of 1998, one of the most destructive wildfire seasons in Florida history. The fires burned extensively through the northern portion of the Preserve, encompassing what is now the WMD Tract, and resulted in the loss of a substantial amount of the existing timber stand. In the years following the fires, much of the affected acreage was replanted in slash pine plantation, with stands generally established within one to two years of the wildfire event. The legacy of the 1998 wildfires is still evident across the Preserve today in the form of these younger, more even-aged pine stands, and informs the restoration approach and fire management objectives described in this Plan.

Long-term ecological viability of the natural communities of the Preserve will require a combination of initial restoration and long-term land management strategies, including sustainable forestry practices, implementation of a prescribed fire program, invasive species treatments and hydrologic restoration and maintenance. The use of these various techniques and general program of implementation is described in the sections following the communities descriptions.

Wet flatwoods are the most abundant natural community, occupying multiple large areas throughout each tract, punctuated with more poorly drained areas occupied by other natural communities. Wet flatwoods are described in the application as containing mostly slash pine in the canopy, with some longleaf and some pond pine. The shrub and groundcover layers consist of nearly impenetrable thickets of saw palmetto, gallberry, blackberry and greenbrier in the shrub layer due to fire suppression. Flood plain swamps near the west edge of both the County and WMD Tracts extend from the north boundaries to the south boundaries, and smaller areas of basin swamps occur in the center of these tracts. The State Tract has basin swamps along the western border, extending from the northern to southern border, as well in the northeast corner of the Tract. Several relatively large swamps that appear to be baygalls based on aerial photography occur in a discontinuous band in the mesic flatwoods. Wet flatwoods are found at intergrades between mesic flatwoods or more disturbed uplands and adjacent wetlands. A dozen dome swamps less than an acre to 3 acres in size are found scattered throughout the property in flatwoods, pine plantation, and pasture.

Fingers of improved pasture extend between other landcover types from the southeast corner of the State Tract. Two large artificial ponds make up a substantial portion of the eastern third of the State Tract. Two smaller artificial ponds occur as well; these are near roads and may be borrow pits from road construction. One utility corridor crosses the property near the northeastern corner of the State Tract and is surrounded by scrubby flatwoods and disturbed areas that are likely to be successional hardwood forest resulting from fire exclusion of pyrogenic habitats. The other utility corridor on the State Tract runs from east to west along the southern border of the Tract.

Table 2. Preserve Land Cover and Associated Fire Return Interval

Land Cover Classification	State Tract (BOT)		County Tract (non-BOT)		WMD Tract (non-BOT)		Fire Return Interval (yrs) Per FNAI (2010)
	Acres	% Area	Acres	% Area	Acres	% Area	
Artificial Pond	46.9	3.5	2	0.04	--	--	-
Basin Swamp	273.6	20.4	434.6	9.1	753.4	20.1	-
Baygall	176.9	13.2	--	--	--	--	-
Clearing/Regeneration	19.2	1.4	33.8	0.7	10.4	0.3	TBD
Developed	1.5	0.1	5.8	0.1	--	--	-
Dome Swamp	23.4	1.7	313.7	6.6	91.3	2.4	3 - 5*
Floodplain Swamp	--	--	378.8	7.9	514.7	13.8	3 - 5*
Improved Pasture	108.3	8.1	506.8	10.6	--	--	-
Mesic Flatwoods	421.1	31.4	76.6	1.6	231.5	6.2	1 - 3
Scrubby Flatwoods	34.1	2.5	--	--	--	--	5 to 10**
Successional Hydric Forest	24.8	1.9	--	--	--	--	2-7
Utility Corridor	4.2	0.3	126.8	2.6	66.1	1.8	-
Wet Flatwoods	202.6	15.1	2910.3	60.8	2074	55.4	1 - 3
Wet Prairie	3.4	0.3	--	--	--	--	1 - 3
Total***	1,339.6	100	4789.2	100	3741.4	100	

* Along outer edge/ecotone, interior fire cycle may be as long as 100 to 150 years
** Along outer edge may be 3-5 years
*** Acres are GIS derived from parcel data and may not reflect survey acres

The natural communities described below are presented in the following order, the General FNAI Community Description, which describes the habitats according to the FNAI 2010 Guide, including the subsections within which they are described in the Guide, the Existing Site Conditions on the Preserve, which describes the current conditions, restoration needs, as well as restoration activities that have taken place for the habitats existing throughout the Preserve. The species listed in the generalized description of the community are limited to species occurring in the central peninsula.

PINE FLATWOODS AND DRY PRAIRIE

1. Wet Flatwoods



Figure 15. Wet flatwoods existing conditions

General FNAI Community Description:

Wet flatwoods are pine forests with a moderate to open canopy, sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs.

The canopy typically consists of slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*) and/or pond pine (*Pinus serotina*), though the latter is generally a component of a seepage slope forest. Historically, longleaf pine was the most common flatwoods canopy species throughout the southeastern U.S. Other species which may be present include cabbage palm (*Sabal palmetto*), sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), dahoon (*Ilex cassine*), and pond cypress (*Taxodium ascendens*). Common shrub species include gallberry (*Ilex glabra*), wax myrtle (*Myrica cerifera*), and saw palmetto (*Serenoa repens*). Typical groundcover species include wiregrass *(Aristida stricta*), blue maidencane (*Amphicarpum muehlenbergianum*), various witch and panic grasses (*Dichanthelium* spp. and *Panicum* spp.), beaksedges (*Rhynchospora* spp.), various terrestrial orchids (*Calopogon*, *Platanthera, Spiranthes*) and numerous insectivorous species (*Sarracenia minor, Pinguicula* spp.,

Utricularia subulata).

Typically found on relatively poorly-drained, sandy soils lacking an organic surface horizon. They are generally situated in areas of minimal topographic relief, hence the name "flatwoods."

Fire return intervals are generally every 1 to 3 years. If the interval is too long, 7 to 10 years, it can lead to an increase in palmetto and woody species cover in the shrub layer, resulting in a decline in grasses and forb cover and diversity. Fire suppression increases the abundance of bay trees in the canopy and can create an organic surface layer. Many factors other than frequency of fire, such as season of fire, pre- and post-fire soil moistures, groundwater levels, weather, plant size or age at the time of fire, can greatly influence tree mortality and vegetation response to fire. Fire in the growing season can reduce the composition of woody vegetation, particularly hardwoods and prevent increases in shrub densities, as well as promote diversity and flowering of herbaceous groundcover.

Wet flatwoods often occur in the ecotones between mesic flatwoods and shrub bogs, wet prairies, dome swamps, or strand swamps. Wet flatwoods also occur in broad, low flatlands, often in a mosaic with these communities.

Existing Site Conditions on the Preserve

Wet flatwoods are found throughout the Preserve and are the most common habitat by acreage. Prior silvicultural practices, particularly artificial regeneration activities dominated by slash pine, have been conducted across much of the area encompassed by this community.

Under previous ownerships, these plantations were treated as industrial silviculture and highly stocked with offsite slash pine. In addition to the artificially high stocking rate, fire suppression has led to much of these areas consisting of nearly impenetrable thickets of saw palmetto, gallberry, blackberry and greenbrier in the shrub layer. Fire exclusion has also led to an artificially abundant cover of loblolly bay in the canopy, making it difficult to visually distinguish between wet flatwoods and baygalls in the field. Open patches do exist within the community, along with the commencement of restoration in the County Tract. In these areas, species such as wiregrass, redroot, St. John's worts, cinnamon fern, witch and panic grasses and hooded pitcher plants are present.

The need for restoration is significant, and the general exclusion of fire/disturbance has significantly impacted this community's structure and species composition. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and reforestation (which may include species other than slash pine). Examples of these efforts may include removal / harvesting of the loblolly bay, thinning and / or clear cutting of the slash pine (or other) canopy, restoring with longleaf pine where feasible. The prescribed fire practices will include such practices as mechanical fuel reduction, dormant season fires for continued fuel reduction, and eventually growing season prescribed fires. Note that the initial fire/mechanical disturbance interval will likely be 2-5 years until maintenance conditions are met to return to the targeted 1-3 year interval. The implementation of these practices is described in the forestry and prescribed fire operational plans, appended to this Plan.

Significant acreage of wet flatwoods restoration has commenced in the County Tract, including canopy thinning through timber sales, and dormant season fires for fuel reduction.

2. Mesic Flatwoods



Figure 16. Mesic flatwoods existing conditions

General FNAI Community Description:

Mesic flatwoods are generally characterized by an open canopy of tall pines and dense groundcover including shrubs, grasses, and forbs.

Historically this community's canopy was dominated by longleaf pine (*Pinus palustris*). Today the majority of mesic flatwoods found throughout central and northeastern Florida are dominated by dense stands of slash pine due to the pine silviculture industry and furthermore by prolonged periods of fire exclusion. Characteristic shrubs include saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), and many species of Ericaceae such as fetterbush (*Lyonia fruticosa*), shiny lyonia (*Lyonia lucida*), shiny blueberry (*Vaccinium myrsinites*), Darrow's blueberry (*V. darrowii*), and dwarf huckleberry (*Gaylussacia dumosa*). Rhizomatous oaks (dwarf live oak (*Quercus minima*), runner oak (*Q. elliottii*)) are common and have the majority of their biomass underground, a common adaptation to frequent fire. The herbaceous layer is predominantly grasses, including wiregrass (*Aristida stricta*), dropseeds (*Sporobolus floridanus*), witch and panicgrasses (*Dichanthelium* and *Panicum* spp.), and broomsedges *(Andropogon* spp.), plus a large number of showy forbs.

As indicated by the name, mesic flatwoods sit between wet and xeric (scrubby) flatwoods and often

are underlain by a spodic horizon (hardpan). This hardpan is nearly impermeable which occasionally results in short-term ponding following heavy rains. The water is rapidly shed off the landscape so that hydric soils do not develop. In contrast, the soils become excessively dry during periods of drought. The soils in flatwoods are acidic and likely the reason for the abundance of species in the Ericaceae within this habitat.

Mesic flatwoods require frequent fire with fire return intervals of 1 to 3 years. Many of the species in this habitat are fire dependent. Longleaf pines have thick bark to protect them from fire, and their seeds need the mineral soil and open sunlight that fire provides to germinate. Longleaf pine during the grass stage is fire resistant. Several species require fire to reproduce. Wiregrass requires growing (lightning) season fire to produce viable seeds. The need for growing (lightning) season, frequent fire to control hardwoods, stimulate flowering in many flatwoods herbs and increase (or maintain) species richness and abundance. Fire return interval and seasonal variability are an important aspect of returning fire to these systems in the form of prescribed fire. Prescribed burns in mesic flatwoods also indirectly determine the fire frequency and season for all the adjacent natural communities. Statistics from lightning caused fires and numerous other studies show that most areas in Florida naturally burned at the beginning of the lightning season. The exclusion of fire in the twentieth century has significantly impacted this community throughout the southeastern U.S.

Mesic flatwoods is the most common habitat in Florida and lies on the broad, flat, sandy plains with little elevation change.

Existing Site Conditions on the Preserve

The canopy found within the mesic flatwoods within the Preserve is comprised primarily of slash pine; however, longleaf pine does occur throughout this habitat. Prior silvicultural practices, particularly artificial regeneration activities, have been conducted across much of the area encompassed by this community. Pine plantations represent the majority of total acreage of this community. These plantations are generally moderate to highly stocked and are typically characterized by a dense shrub stratum with species including gallberry, wax myrtle and saw palmetto. In openings within the shrub stratum, groundcover species includes wiregrass, bluestem, witch and panic grasses along with some woody species such as pawpaws (*Asimina* spp. *s.l.*) that often get crowded out in heavy shrub layers.

The need for restoration is significant, and the general exclusion of fire has significantly impacted this community's structure and species composition. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include species other than slash pine). Examples of these efforts may include removal / harvesting of the loblolly bay, thinning and / or clear cutting of the slash pine canopy, and re-stocking with longleaf pine where feasible. The prescribed fire practices will include such practices as mechanical fuel reduction, dormant season fires for continued fuel reduction, and eventually growing season prescribed fires. Note that the initial fire/mechanical disturbance interval will likely be 2-5 years until maintenance conditions are met to return to the targeted 1-3 year interval. The implementation of these practices is described in the forestry and prescribed fire operational plans, appended to this Plan.

Significant acreage of mesic flatwoods restoration has commenced in the County and State Tracts, including, Longleaf pine restoration, canopy thinning through timber sales, dormant season fires for fuel reduction and roller chopping to reduce shrub layers and lower fuel heights. Some growing season

fires have occurred on the County Tract. The County will focus on disturbance (fire and mechanical) return intervals, rather than strictly considering fire along as the disturbance regime.



Figure 17. Mesic flatwoods post-restoration activities

Mesic flatwoods on the County and State Tracts, are known to be occupied by the federally endangered, Volusia endemic, Rugel's pawpaw (*Deeringothamnus rugelii*, syn. *Asimina rugelii*). This species is typically found in the Immokalee (29) soil map unit, though it is also found in similar sandy soils.

3. Scrubby Flatwoods



Figure 18. Scrubby flatwoods existing conditions

General FNAI Community Description:

Areas of open canopy of widely spaced pine trees and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand.

Principal canopy species are longleaf pine (*Pinus palustris*) and slash pine (*P. elliottii*) in northern and Central Florida, and South Florida slash pine (*P. elliottii* var. *densa*) south of Lake Okeechobee. The shrub layer consists of one or more of the four scrub oaks, sand live oak (*Quercus geminata*), myrtle oak (*Q. myrtifolia*), Chapman's oak (*Q. chapmanii*), and scrub oak (*Q. inopina*), and typical shrubs of mesic flatwoods including saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), rusty staggerbush (*Lyonia ferruginea*), fetterbush (*L. lucida*), coastalplain staggerbush *(L. fruticosa*), and deerberry (*Vaccinium stamineum*). The shrub layer of scrubby flatwoods is not solely comprised of oaks; grasses and dwarf shrubs make up a substantial portion of the cover. Grasses include wiregrass (*Aristida stricta*), broomsedge bluestem (*Andropogon virginicus*), and little bluestem (*Schizachyrium scoparium*); dwarf shrubs include dwarf live oak (*Quercus minima*), runner oak (*Q. elliottii*), dwarf huckleberry (*Gaylussacia dumosa*), gopher apple (*Licania michauxii*), and shiny blueberry (*Vaccinium myrsinites*). A variety of forbs, many typical of drier types of mesic flatwoods, are present including coastalplain honeycomb-head (*Balduina angustifolia*), narrowleaf silkgrass (*Pityopsis graminifolia*),

October flower (*Polygonella polygama*), and sweet goldenrod (*Solidago odora*).

Soils of scrubby flatwoods are moderately well-drained sands with or without a spodic horizon (hardpan). Examples of soil types include Pomello and Satellite sands.

The fire regime of scrubby flatwoods is intermediate between mesic flatwoods (very frequent) to scrub (less frequent) with a wide-ranging fire return interval. The fire return interval may be as frequent as 1-3 years along an edge bordering mesic flatwoods, and much less frequent across the entire habitat (5-10 years). Fire intensity follows the return interval, with lower, less intense fires along the edge and higher, more intense fires across the entire habitat.

Scrubby flatwoods occur on slight rises within mesic flatwoods and in transitional areas between scrub and mesic flatwoods.

Existing Site Conditions on the Preserve

This habitat occurs only on the State Tract and is limited to relatively small pockets embedded within the mesic flatwoods. Many of these occur on typically mesic flatwoods soil types (e.g., Immokalee). Only one xeric soil type (Daytona sand) occurs on the Preserve and is occupied by scrubby flatwoods on the State Tract. This is an area that should be evaluated for a potential gopher tortoise recipient site.

The canopy is moderate in cover, and consists primarily of slash pine, along with some sand pine and longleaf pine. The sub-canopy/ shrub layer consists of sand live oak, myrtle oak, Chapman's oak, rusty lyonia and saw palmetto. The shrub layer is patchy and dense, interspersed with open sandy patches.

The primary restoration need in the scrubby flatwoods is for fuel reduction in the shrub layer to allow the introduction of prescribed fire. Some areas will require canopy and subcanopy thinning as well. The portion of scrubby flatwoods located adjacent to SR 415 presents challenges for prescribed fire and will likely receive mechanical disturbances more than fire as a disturbance event.

FRESHWATER NON-FORESTED WETLANDS

4. Wet Prairie



Figure 19. Wet prairie existing conditions

General FNAI Community Description:

Wet prairie is an herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps and slightly higher wet or mesic flatwoods, or dry prairie.

It is typically dominated by dense wiregrass (*Aristida stricta*) in the drier portions, along with foxtail club-moss (*Lycopodiella alopecuroides*), cutover muhly (*Muhlenbergia expansa*), yellow butterwort (*Pinguicula lutea*), and savannah meadowbeauty (*Rhexia alifanus*). In the wetter portions, wiregrass may occur with, or be replaced by, species in the sedge family, such as plumed beaksedge (*Rhynchospora plumosa*), featherbristle beaksedge (*R. oligantha*), Baldwin's nutrush (*Scleria baldwinii*), or slenderfruit nutrush (*S. georgiana*), plus longleaved threeawn (*Aristida palustris*). Also common in wetter areas are carnivorous species, such as pitcher plants (*Sarracenia* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and bladderworts (*Utricularia spp*.). Other characteristic species in this community include toothache grass (*Ctenium aromaticum*), pineland rayless goldenrod (*Bigelowia nudata*), flattened pipewort (*Eriocaulon compressum*), water cowbane (*Tiedemannia*

filiformis), and coastalplain yellow-eyed grass (*Xyris ambigua*).

Wet prairie usually occurs on acidic, nutrient-deficient, saturated soils. Soil series associated with wet prairies in the Panhandle include Plummer fine sands, Rutledge sandy loams, and Bladen sandy loams with clay subsoils. In the Florida peninsula, wet prairies, including those dominated by cutthroat grass, are often found on poorly drained Basinger fine sands. Calcareous wet prairies are found in Central and south-central Florida on circum-neutral Felda or Wabasso fine sands with sandy loam subsoil.

Natural fires likely entered wet prairie from surrounding pinelands and burned through them when they were dry enough to carry fire. Estimated natural fire return is an interval of 2-3 years where wet prairie vegetation is adjacent to mesic/wet flatwoods or sandhill in the Apalachicola National Forest. A similar fire interval was also determined for mesic flatwoods near the Panhandle coast from an analysis of fire scars on pine stumps. In the absence of fire, shrubs and trees invade wet prairie and shade out the light-loving herbaceous species. A further indication of their dependence on fire is the requirement for fire to stimulate flowering in many wet prairie herbs, including two of the dominant grasses, wiregrass and cutthroat grass.

Wet prairie occurs throughout Florida except for extreme South Florida where limestone soils predominate. Outside Florida, wet prairies (also known as pitcher plant bogs) are found in the southeastern coastal plain from eastern Texas to North Carolina. Wet prairies in the Panhandle are closest floristically to other areas in the East Gulf Coastal Plain, i.e. pitcher plant bogs in Mississippi, Alabama, and southwestern Georgia.

Existing Site Conditions on the Preserve

This habitat occurs exclusively on the north and central portions of the State Tract and northeast of the out parcel within the WMD Tract and is limited to relatively small pockets embedded within the mesic and wet flatwoods. Many of these occur on typically mesic flatwoods soil types (e.g., Immokalee). These communities may be artificially created but function as wet prairies.

The sub-canopy/ shrub layer consists of some slash pine regeneration. The groundcover layer consists of purple bluestem (*Andropogon glaucopsis*), giant plumegrass (*Saccharum giganteum*), and *Ludwigia repens*.

The wet prairies are in relatively good ecological condition and do not require any specific restoration activities. Application of prescribed fire will be a necessary management tool and will likely increase the biodiversity within the system. The fire return intervals of the wet prairies are a direct factor of the fire return intervals of the community within which the prairie is embedded.

The primary restoration need of the wet prairie community is the reintroduction of fire, which will be accomplished through prescribed burning of the pyrogenic communities within which the prairies are embedded.

FRESHWATER FORESTED WETLANDS

5. Dome Swamp



Figure 20. Dome swamp existing conditions

General FNAI Community Description:

Dome swamp is an isolated, forested, depression wetland occurring within a fire-maintained community such as mesic flatwoods. These swamps are generally small, but may also be large and shallow. The characteristic dome shape is created by smaller trees that grow in the shallower waters of the outer edge, while taller trees grow in the deeper water in the interior of the swamp.

Pond cypress (*Taxodium ascendens*) often dominates, but swamp tupelo (*Nyssa biflora*), may also form pure stands or occur as a co-dominant. Other canopy or subcanopy species include red maple (*Acer rubrum*), dahoon (*Ilex cassine*), swamp bay (*Persea palustris*), slash pine (*Pinus elliottii*), sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), and, in South Florida, coco plum (*Chrysobalanus icaco*) and pond apple (*Annona glabra*). Shrubs are typically sparse to moderate, but often are absent in dome swamps with a high fire frequency or dense in swamps where fire has long been absent. Shrubs common in dome swamps include Virginia willow (*Itea virginica*), fetterbush (*Lyonia lucida*), common buttonbush (*Cephalanthus occidentalis*), coastalplain willow (*Salix caroliniana*), wax myrtle (*Myrica cerifera*), titi (*Cyrilla racemiflora*), and St. John's wort (*Hypericum*

spp.). Herbaceous species can be dense or absent and include a wide variety of ferns, graminoids, and herbs including Virginia chain fern (*Woodwardia virginica*), royal fern (*Osmunda spectabilis*), cinnamon fern (*Osmunda cinnamomea*), toothed midsorus fern (*Blechnum serrulatum*), maidencane (*Panicum hemitomon*), sawgrass (*Cladium jamaicense*), various species of beaksedge (*Rhynchospora* spp.), lizard's tail (*Saururus cernuus*), Carolina redroot (*Lachnanthes caroliana*), taperleaf waterhorehound (*Lycopus rubellus*), false nettle (*Boehmeria cylindrica*), and knotweeds (*Polygonum* spp.). Sphagnum moss (*Sphagnum* spp.) often occurs in patches where the soil is saturated but not flooded. Vines such as eastern poison ivy (*Toxicodendron radicans*), white twinevine (*Sarcostemma clausum*), laurel greenbrier (*Smilax laurifolia*), epiphytes such as Spanish moss (*Tillandsia usneoides*), several species of wild pine (*Tillandsia* spp.), and orchids can be common in dome swamps. The center of the dome swamp contains the largest cypress trees and the understory can be open with deeper water and floating and emergent species such as alligatorflag (*Thalia geniculata*), big floatingheart (*Nymphoides aquatica*), floating water spangles (*Salvinia minima*), duckweeds (*Lemna*, *Spirodela*, and/or *Landoltia*), and bulltongue arrowhead (*Sagittaria lancifolia*).

Dome swamps are most often found on flat terraces, where they develop when the overlying sand has slumped into a depression in the underlying limestone, creating a rounded depression connected to a shallow water table. In uplands with clay subsoils, dome swamps may occupy depressions over a perched water table. Soils in dome swamps are variable but are most often composed of a layer of peat, which may be thin or absent at the periphery, becoming thicker toward the center of the dome. This peat layer is generally underlain with acidic sands or marl and then limestone or a clay lens. In South Florida, dome swamps also occur on peat directly overlying limestone. Common soil types include Bladen, Coxville, and Bayboro.

Fire is essential for maintaining the structure and the species composition of a dome swamp community. Without periodic fires cypress may become less dominant as hardwood or bay canopy species increase and peat accumulates. Cypress have fairly thick, fire-resistant bark and are tolerant of light surface fires, but catastrophic fires burning into the peat can kill cypress trees, especially when fire has long been absent. The consumption of muck fuels from such a catastrophic wildfire can lower the ground surface and transform a dome swamp into a pond, wet prairie, or shrub bog. Fire frequency is generally greatest at the periphery of the dome and least in the interior, where long hydroperiods and deeper peat, and/or water, maintain high moisture levels. The normal fire cycle might be as short as three to five years along the outer edge and as long as 100 to 150 years towards the center. The domed profile of these swamps may be partly attributable to this frequent, peripheral fire regime. Fire in a long-unburned dome swamp may result in higher cypress mortality in the center of the dome where fire burns through a deeper layer of accumulated peat and kills the cypress roots. Emergent marshes can develop in the center of such dome swamps.

Dome swamps are most common in Central Florida but occur throughout the state, except in the Florida Keys. Similar cypress swamps in shallow depressions also occur throughout the southeastern coastal plain.

Existing Site Conditions on the Preserve

This habitat occurs throughout all three tracts and occurs mostly within wet flatwoods and basin swamps. Many of these occur on typically hydric soil types (e.g., Pineda-Pineda, Myakka-St. Johns complex).

The canopy is moderate in cover and consists primarily of pond cypress (*Taxodium ascendens*), loblolly bay (*Gordonia lasianthus*) along with some mixed pine. The sub-canopy/ shrub layer consists of dahoon holly (*Ilex cassine*) and loblolly bay (*Gordonia lasianthus*). The groundcover layer consists of Virginia chain fern (*Woodwardia virginica*), purple bluestem (*Andropogon glaucopsis*), Sphagnum moss (*Sphagnum* spp.).

The primary restoration need in the dome swamps is the recovery of the ecotone that should occur at the interface between the dome swamp and the community within which it is embedded. Fuel reduction, canopy thinning and introduction of prescribed fire are key in restoring these ecotonal edges. Fire breaks should be placed outside of the ecotone to allow fire to enter the edges of the dome swamp and naturally extinguish as it enters the wetter, interior portions.

No restoration activities have occurred within the dome swamps. Some of the dome swamps may have been harvested for cypress, but natural regeneration is apparent and supplemental planting is not necessary.

6. Basin Swamp



Figure 21. Basin swamp existing conditions

General FNAI Community Description:

Basin swamp is a basin wetland vegetated with hydrophytic trees and shrubs that can withstand an extended hydroperiod. Basin swamps are highly variable in size, shape, and species composition.

While mixed species canopies are common, the dominant trees are pond cypress (*Taxodium ascendens*) and swamp tupelo (*Nyssa biflora*). Other typical canopy and subcanopy trees include slash pine (*Pinus elliottii*), red maple (*Acer rubrum*), dahoon (*Ilex cassine*), swamp bay (*Persea palustris*), sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), swamp laurel oak (*Quercus laurifolia*), sweetgum (*Liquidambar styraciflua*), water oak (*Quercus nigra*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), and American elm (*Ulmus americana*). Depending on the hydrology and fire history, shrubs may be found throughout a basin swamp or they may be concentrated around the perimeter. Common species include Virginia willow (*Itea virginica*), swamp dogwood (*Cornus foemina*), swamp doghobble (*Leucothoe racemosa*), coastal sweetpepperbush (*Clethra alnifolia*), myrtle dahoon (*Ilex cassine* var. *myrtifolia*), fetterbush (*Lyonia lucida*), wax myrtle (*Myrica cerifera*), titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), and common buttonbush (*Cephalanthus occidentalis*). The herbaceous layer is also variable and includes a wide array of species including maidencane (*Hymenachne hemitomon*), Virginia chain fern (*Woodwardia virginica*),

arrowheads (*Sagittaria* spp.), lizard's tail (*Saururus cernuus*), false nettle (*Boehmeria cylindrica*), beaksedges (*Rhynchospora* spp.), bladderworts (*Utricularia* spp.), and royal fern (*Osmunda spectabilis*). Sphagnum moss (*Sphagnum* spp.) often occurs in patches where the soil is saturated but not flooded. Vines may be present, particularly coral greenbrier (*Smilax walteri*), laurel greenbrier (*Smilax laurifolia*), and eastern poison ivy (*Toxicodendron radicans*). Epiphytic species such as resurrection fern (*Pleopeltis michauxiana*), Spanish moss (*Tillandsia usneoides*), and Bartram's air-plant (*Tillandsia bartramii*) are common, especially in older, more mature examples of basin swamp.

This natural community typically occurs in any type of large landscape depression such as old lake beds or river basins, or ancient coastal swales and lagoons that existed during higher sea levels. Basin swamps exist around lakes and are sometimes headwater sources for major rivers, such as the Suwannee. Soils are generally acidic, nutrient-poor peats often overlying a clay lens or other impervious layer.

Fire intervals are variable and depend on such factors as dominant vegetation, fire exposure, and drought. The interior of basin swamps may go without fire for decades or even centuries while the exposed outer edges can be more susceptible to frequent fire. Basin swamps that are situated within the matrix of a pyrogenic community, such as mesic flatwoods, will likely burn more frequently than basin swamps positioned within a matrix of mesic or hydric hammock. Without fire, bays and hardwoods increase in density and peat accumulates more rapidly. Cypress and pines are tolerant of light surface fires, but muck fires burning into the peat can kill the trees, lower the ground surface, and transform a swamp into a pond, lake, marsh, or shrub bog.

Basin swamps occur throughout the Florida Panhandle and peninsula south to the Lake Okeechobee area. Similar cypress swamps also occur in large basins throughout the southeastern coastal plain.

Existing Site Conditions on the Preserve

This habitat occurs throughout all three tracts and occurs mostly adjacent to wet flatwoods and dome swamps. Many of these occur on typically hydric soil types (e.g., Samsula muck, Hontoon muck).

The canopy is generally closed and consists primarily of bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and slash pine (*Pinus elliottii*) on hummocks. The sub-canopy/ shrub layer consists of bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). The groundcover layer consists of royal fern (*Osmunda spectabilis*), cinnamon fern (*Osmunda cinnamomea*), and fall panicgrass (*Panicum dichotomum)*.

Limited restoration is required within the basin swamps. The primary adverse effects that result from human disturbances are related to hydrology and non-native, invasive species. The County will be evaluating potential hydrological impacts and restoration. Invasive species management is already employed throughout the Preserve. Prescribed fire is not a management tool to be utilized in the basin swamps, other than within the ecotonal boundary between the swamp and an adjacent pyrogenic community.

No hydrologic restoration projects have occurred within the basin swamps. Invasive species treatments have occurred.

7. Floodplain Swamp

General FNAI Community Description:

Floodplain swamp is a closed-canopy forest of hydrophytic trees occurring on frequently or permanently flooded hydric soils adjacent to stream and river channels and in depressions and oxbows within floodplains. Trees are often buttressed, and the understory and groundcover are sparse.

The canopy is sometimes a pure stand of bald cypress (*Taxodium distichum*), but more commonly bald cypress shares dominance with one or more of the following tupelo species: water tupelo *(Nyssa aquatica*), swamp tupelo (*N. biflora*), or ogeechee tupelo (*N. ogeche*). The "knees" arising from the root systems of both cypress and tupelo are common features in floodplain swamp. Other canopy trees capable of withstanding frequent inundation may be present but rarely dominant, including water hickory (*Carya aquatica*), overcup oak (*Quercus lyrata*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), and swamp laurel oak (*Q. laurifolia*). Pond cypress (*T. ascendens*) is sometimes present in backswamps and depressions of the more hydrologically isolated areas of the floodplain. Floodplain swamp can often occur within a complex mixture of communities including alluvial forest, bottomland forest, and baygall. This produces a variable assemblage of canopy and subcanopy species, with less flood tolerant trees and shrubs found on small hummocks and ridges within the swamp. Shrubs and smaller trees such as Carolina ash (*Fraxinus caroliniana*), planer tree (*Planera aquatica*), black willow (*Salix nigra*), titi (*Cyrilla racemiflora*), Virginia willow (*Itea virginica*), common buttonbush (C*ephalanthus occidentalis*), cabbage palm (*Sabal palmetto*), and dahoon (*Ilex cassine*) may be present. A groundcover of flood tolerant ferns and herbs are found in some floodplain swamps, including lizard's tail (*Saururus cernuus*), false nettle (*Boehmeria cylindrica*), creeping primrosewillow (*Ludwigia repens*), savannah panicum (*Phanopyrum gymnocarpon*), royal fern (*Osmunda spectabilis*), dotted smartweed (*Polygonum punctatum*), climbing aster (*Symphyotrichum carolinianum*), and string lily (*Crinum americanum*). Swamps with stagnant water typically have a mixture of floating aquatics such as duckweeds (*Lemna* spp.) and Florida mudmidget (*Wolffiella gladiata*). Eastern poison ivy (*Toxicodendron radicans*) is a frequent vine.

Soils are variable mixtures of alluvial and organic materials, sometimes with layers of sand in the subsoil. Inundation is seasonal and usually prolonged, restricting the growth of most shrubs and herbs and leaving most of the ground surface open or thinly mantled with leaf litter.

Floodplain swamp is usually too wet to support fire; however, large cypress trees are somewhat fire-resistant, and thus infrequent fires during very dry conditions may contribute to cypress dominance. Fires may greatly damage the understory.

Floodplain swamp is located within floodplains of any permanently moving stream or river. It ranges from narrow strips of cypress along primary and secondary streams to expansive stands along large rivers to tidally influenced freshwater swamps near river mouths. Often, floodplain swamps immediately border the stream or river channel. In many cases, however, floodplain swamps are isolated from the main channel by riverbank levees and restricted to oxbows, overflow channels, old stream beds, and expansive flats commonly called backswamps.

Existing Site Conditions on the Preserve

This habitat type exists along the western borders of the County and the WMD Tracts, following Deep Creek.

The canopy is generally closed and appropriate in cover and consists primarily of bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and slash pine (*Pinus elliottii*) on hummocks. The sub-canopy/ shrub layer consists of bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). The groundcover layer consists of royal fern (*Osmunda spectabilis*), cinnamon fern (*Osmunda cinnamomea*), and fall panicgrass (*Panicum dichotomum*).

Floodplain swamps are managed similar to the basin swamps discussed above and limited restoration is required. The primary adverse effects that result from human disturbances are related to hydrology and non-native, invasive species. The County will be evaluating potential hydrological impacts and restoration. Invasive species management is already employed throughout the Preserve. Prescribed fire is not a management tool to be utilized in the basin swamps, other than within the ecotonal boundary between the swamp and an adjacent pyrogenic community.

No hydrologic restoration projects have occurred within the floodplain swamps. Invasive species treatments have occurred.

HARDWOOD

8. Baygall



Figure 22. Baygall existing conditions

General FNAI Community Description:

Baygall is an evergreen forested wetland of bay species situated at the base of a slope or in a depression.

Loblolly bay (*Gordonia lasianthus*), sweetbay (*Magnolia virginiana*), and/or swamp bay (*Persea palustris*) form an open to dense tree canopy and are also dominant in the understory along with fetterbush (*Lyonia lucida*), large gallberry (*Ilex coriacea*), dahoon (*I. cassine*), myrtle dahoon (*I. cassine* var. *myrtifolia*), titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), wax myrtle (*Myrica cerifera*), coastal doghobble (*Leucothoe axillaris*), swamp doghobble (*L. racemosa*), red maple (*Acer rubrum*), Florida anisetree (*Illicium floridanum*), coco plum (*Chrysobalanus icaco*), and/or Virginia willow (*Itea virginica*). Composition of the understory varies regionally; coco plum is restricted to South Florida, Florida anisetree to the central and western Panhandle. Black titi is a dominant component of baygall in the Florida Panhandle, but uncommon in other areas. Loblolly pine (*Pinus taeda*), slash pine (*P. elliottii*), and/or pond pine (*P. serotina*) are often found in the canopy, as well as sweetgum (*Liquidambar styraciflua*), and in the Panhandle, Atlantic white cedar (*Chamaecyparis thyoides*). Wetter baygalls may also contain swamp tupelo (*Nyssa biflora*) and/or

pond cypress (*Taxodium ascendens*). The canopy and understory do not generally form distinct strata but may appear as a dense, tall thicket (Clewell 1986). Vines, especially laurel greenbrier (*Smilax laurifolia*), coral greenbrier (*S. walteri*), and muscadine (Vitis rotundifolia), may be abundant and contribute to the often impenetrable nature of the understory. Herbs are absent or few, and typically consist of ferns such as cinnamon fern (*Osmunda cinnamomea*), netted chain fern (*Woodwardia areolata*), and Virginia chain fern (*W. virginica*). Sphagnum mosses (*Sphagnum* spp.) are common.

Baygall typically develops on wet soils at the bases of slopes, edges of floodplains, in depressions, and in stagnant drainages. The soils are generally composed of peat with an acidic pH (3.5 - 4.5). Seepage from uplands, rainfall, and/or capillary action from adjacent wetlands maintains a saturated peat substrate. While baygalls are not generally influenced by flowing water, they are often drained by small blackwater streams. Within the slough and glades marsh communities of the Everglades in South Florida, baygall may develop on elevated islands of peat (often called "bayheads"). Although most baygalls are small in acreage, some form large, mature forests, often called "bay swamps."

The dominant baygall species are fire-intolerant, and a mature canopy indicates the lack of destructive fire for many years (Clewell 1986). Although the saturated soils and humid conditions within baygalls typically inhibit fire, droughts may create conditions that allow them to burn catastrophically. These fires not only destroy the canopy, but also may ignite the deep peat layers that can smolder for weeks, or even months. This occurs perhaps only a few times each century in the deepest baygalls.

Baygall occurs throughout mainland Florida and much of the southeastern coastal plain. The largest examples occur near the Georgia border in the Pinhook Swamp area south of Okefenokee Swamp.

Existing Site Conditions on the Preserve

This habitat occurs exclusively and throughout the State Tract. The habitat is found adjacent to wet flatwoods, mesic flatwoods, and basin swamps. Many of these occur on typically hydric soil types (e.g., Samsula muck, Hontoon muck).

The canopy is moderate in cover and consists primarily of loblolly bay (*Gordonia lasianthus*), with some pond cypress (*Taxodium ascendens*) and slash pine (*Pinus elliottii*). The sub-canopy layer consists of loblolly bay (*Gordonia lasianthus*), (*Taxodium ascendens*), and slash pine (*Pinus elliottii*). The shrub layer consists of loblolly bay (*Gordonia lasianthus*), *Smilax* spp., swamp bay (*Tamala palustris*), and blackberry (*Rubus* spp.).

The need for restoration is significant, and the general exclusion of fire and artificial hydrologic modification has significantly impacted this community's structure and species composition. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the parcel. It is unknown if these communities are natural or established due to human interference and/or the 1998 wildfires. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, artificial regeneration, and hydrologic restoration. Examples of these efforts may include removal / harvesting of the loblolly bay, thinning and / or clear cutting of the slash pine canopy, and re-stocking with cypress where feasible. The prescribed fire practices will include such practices as mechanical fuel reduction, dormant season fires for continued fuel reduction, and eventually growing season prescribed fires up to the edges of the community to establish ecotone.

The implementation of these practices is described in the forestry and prescribed fire operational plans, appended to this Plan. It is recommended that these communities are revisited eight years post fire reintroduction and restoration activities.

No restoration activities have been performed.

Draft

ALTERED LANDCOVER TYPES

9. Improved Pasture



Figure 23. Improved pasture existing conditions

General FNAI Community Description:

Improved pasture is defined as an area dominated by planted non-native or domesticated native forage species and evidence of current or recent pasture activity and/or cultural treatments (mowing, grazing, burning, fertilizing).

Improved pastures have been cleared of their native vegetation. Most improved pastures in Florida are planted with bahiagrass (*Paspalum notatum*) and to a lesser extent with Bermudagrass (*Cynodon dactylon*) or pangolagrass (*Digitaria eriantha*). Weedy native species are often common in improved pastures in Florida and include dogfennel (*Eupatorium capillifolium*), many species of flatsedge (*Cyperus* spp.), carpetgrasses (*Axonopus* spp.), crabgrasses (*Digitaria* spp.), and rustweed (*Polypremum procumbens*) among many others.

The hydrology of improved pasture is altered in the conversion process from a natural community to an altered community. These areas hydrology differ but should be generally similar to surrounding natural communities and the communities that they were converted from.

As with the hydrology of these altered communities, the fire interval of these areas is altered. The fire regime of these areas depends on the surrounding communities and species composition of the altered community.

Existing Site Conditions on the Preserve

This habitat occurs on the south and southeastern portions of the State Tract and central portion of the County Tract. The habitat is found adjacent to wet flatwoods, mesic flatwoods, and basin swamps. Many of these occur on typically flatwoods soil types (e.g., Immokalee sand, Daytona sand).

These communities have historically, and continue to be, utilized for cattle grazing.

The canopy layer is very sparse with some live oak (*Quercus virginiana*), slash pine (*Pinus elliottii*), and sabal palm (*Sabal palmetto*). The shrub layer includes very sparse Rugel's false pawpaw (*Deeringothamnus rugelii*). Groundcover includes primarily bahiagrass (*Paspalum notatum*).

There is no immediate need for restoration. If the cattle lease expires, consideration of restoration to dry prairie or mesic flatwoods.

Areas of improved pastures along the eastern edge of the State Tract are known to be occupied by the federally endangered, Volusia endemic, Rugel's pawpaw (*Deeringothamnus rugelii*, syn. *Asimina rugelii*). This species is typically found in the Immokalee (29) soil map unit, though it is also found in similar sandy soils. The occupied areas are near the existing (and proposed future) entrance. Survey and rescue / replanting of Rugel's pawpaws should occur prior to any future development of these areas.

10. Hydric Successional Shrubland/Forest



Figure 24. Hydric successional shrubland/forest existing conditions

General FNAI Community Description:

Hydric successional shrubland/forest is described as shrubland or closed canopied forest occupying disturbed areas and dominated by fast growing hydrophilic hardwoods. These shrubland/forests may invade herbaceous habitats (i.e., wet prairie, wet flatwoods, seepage slope, depression marsh, basin marsh, floodplain marsh) due to lengthy fire suppression and/or hydrological alterations OR forested wetlands (dome swamp, basin swamp, strand swamp) that have been cleared and are not succeeding to swamp but to highly disturbed shrubland or forest dominated by hydrophilic hardwoods. Successional hydric shrubland/forests are often shrub thickets with few of the characteristic herbaceous or canopy (e.g. *Taxodium* spp.) species from the former community remaining. They can resemble naturally occurring shrub bogs and can be distinguished from them by occurring in areas of historically herbaceous communities, where fire suppression and/or hydrological alterations have taken place or in former forested swamps that have been logged or undergone severe hydroperiod disruptions. Although some shifts in community type may be better described with a natural community designation, the use of "successional hydric shrubland/forest" is suitable to label areas that are known to be highly disturbed and altered, and where restoration efforts of hydrology restoration and/or re-introduction of fire would be particularly beneficial.

Hydric successional shrubland/forest in Florida are often consisting of titi (*Cyrilla racemiflora*), black titi (*Cliftonia monophylla*), sweet gallberry (*Ilex coriacea*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), swamp laurel oak (*Quercus laurifolia*), wax myrtle (*Morella cerifera*), blackberry (*Rubus argutus*), and groundsel tree (*Baccharis halimifolia*). Weedy vines such as smilax (*Smilax* spp.) and muscadine (*Vitis rotundifolia*), and non-native invasive plants including Peruvian primrosewillow (*Ludwigia peruviana*) and Brazilian pepper (*Schinus terebinthifolius*) may be common in the subcanopy and shrub layers.

The hydrology of hydric successional shrubland/forest is altered in the conversion process from a natural community to an altered community. These areas hydrology differ but should be generally similar to surrounding natural communities and the communities that they were converted from.

As with the hydrology of these altered communities, the fire interval of these areas is altered. The fire regime of these areas depends on the surrounding communities and species composition of the altered community.

Existing Site Conditions on the Preserve

This habitat occurs on the southeastern corner of the State Tract, west of the southern artificial pond (borrow pit). The habitat is found adjacent to mesic flatwoods. The soils of this community include Myakka fine sand, Myakka-Myakka, and Myakka-St. Johns complex.

This community was logged extensively in 2005.

There is canopy layer containing pond cypress (*Taxodium ascendens)*, slash pine (*Pinus elliottii*), and loblolly bay (*Gordonia lasianthus*). The sub-canopy/shrub layer is fairly open, containing pond cypress (*Taxodium ascendens)*, slash pine (*Pinus elliottii*), and loblolly bay (*Gordonia lasianthus*). Groundcover includes purple bluestem (*Andropogon glaucopsis*), Sphagnum moss (*Sphagnum* spp.) blue maidencane (*Amphicarpum muehlenbergianum*), and *Rhynchospora* spp.

The need for restoration is significant, and the general exclusion of fire and artificial hydrologic modification has significantly impacted this community's structure and species composition. The community has been affected by prior harvesting activities and modification of the natural hydrology resulting from establishment of the network of ditches found across the parcel. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and hydrologic restoration. Examples of these efforts may include removal / harvesting of the loblolly bay, thinning and / or clear cutting of the slash pine canopy, and re-stocking with cypress where feasible. The prescribed fire practices will include such practices as mechanical fuel reduction, dormant season fires for continued fuel reduction, and eventually growing season prescribed fires. In the community's current condition, it is not possible to determine its original state. The area was not logged and / or cleared in the 1967 aerial (Figure 30). This community will be visited after hydrologic and fire restoration activities have been conducted to reevaluate. The implementation of these practices is described in the forestry and prescribed fire operational plans, appended to this Plan.

11. Developed

General FNAI Community Description:

Developed areas can be described in numerous ways but ultimately are defined as parking lots, buildings, maintained lawns (as part of recreational, business, or residential areas), campgrounds, recreational, industrial, and residential areas.

The hydrology of developed land is altered in the conversion process from a natural community to an altered community. These areas hydrology differ but should be generally similar to surrounding natural communities and the communities that they were converted from.

As with the hydrology of these altered communities, the fire interval of these areas is altered.

Existing Site Conditions on the Preserve

There are developed areas on the State Tract and the County Tract. The State Tract has two single family homes on the east side of the Tract next to the borrow pit (reservoir). The County Tract has a storage barn along with another small section with silos in the eastern section of that Tract.

There is no immediate need for restoration.

12. Utility Corridor



Figure 25. Utility corridor existing conditions

General FNAI Community Description:

Utility corridors are electric, gas, or telephone rights-of-way.

The hydrology of utility corridors is altered in the conversion process from a natural community to an altered community. These areas hydrology differ but should be generally similar to surrounding natural communities and the communities that they were converted from.

As with the hydrology of these altered communities, the fire interval of these areas is altered in the conversion process. Fire regime could be same or similar as the adjacent communities and/or the original natural community prior to conversion.

Existing Site Conditions on the Preserve

This habitat occurs only on the State Tract and is limited to a relatively small stretch in the northeast corner. Many of these occur on typically mesic flatwoods soil types (e.g., Immokalee and Satellite). The adjacent community is scrubby flatwoods and this utility corridor should be managed as such.

There is no canopy. The sub-canopy/ shrub layer consists of sand live oak, myrtle oak, Chapman's oak, rusty lyonia and saw palmetto. The shrub layer is patchy and dense, interspersed with open sandy patches.

There is no immediate need for restoration.

Draft

13. Artificial Pond



Figure 26. Artificial pond existing conditions

General FNAI Community Description:

Artificial ponds are water retention ponds, cattle ponds, etc.

Existing Site Conditions on the Preserve

This habitat occurs on both the County Tract within the improved pasture, and on the State Tract in two abandoned borrow areas within the improved pasture.

Groundcover consists of blue maidencane (*Amphicarpum muehlenbergianum*) and *Rhynchospora* spp.

The past and/or current usage for the ponds are for cattle as well as borrow pits.

Restoration opportunities are available for the southern artificial pond within the State Tract. There is a large berm around the bank of this pond that should be evaluated for littoral zone restoration. This restoration could consist of utilizing the berm material to form littoral shelf, pending permitting and cost estimation.

14. Clearing/Regeneration



Figure 27. Clearing/regeneration existing conditions

General FNAI Community Description:

Clearing/regenerations are described as recent or historic clearings that have significantly altered the groundcover and/or overstory of the original natural community (old homesites, etc.); clearings of unknown origin.

The hydrology of clearing/regeneration is altered in the conversion process from a natural community to an altered community. These areas hydrology differ but should be generally similar to surrounding natural communities and the communities that they were converted from.

As with the hydrology of these altered communities, the fire interval of these areas is altered. The fire regime of these areas depends on the surrounding communities and species composition of the altered community.

Existing Site Conditions on the Preserve

This habitat occurs on all three tracts, with one each on the County and WMD Tracts as well as three on the State Tract.

The canopy layer is sparse with some slash pine (*Pinus elliottii*). Groundcover includes primarily bahiagrass (*Paspalum notatum*) with some pockets of cogongrass (*Imperata cylindrica*).

At least some restoration is necessary depending on final land use. The non-native, invasive cogongrass should be treated to limit spread. Fire-return intervals will be based on the adjacent natural communities within which this community is embedded.

DRAFT

C. Wildlife

Wildlife observations, both direct and indirect (indirect observations include remnants, tracks, burrows, calls, scat, etc.), are made by management staff during regular visits. A list of species observed is provided in Appendix L. This list is comprised of observations from iNaturalist, County staff, and user groups. All scientific names are derived from iNaturalist.

3. Endangered, Threatened and Species of Special Concern

A background literature search was conducted to compile a list of state and federally protected animal and plant species that could occur on-site. The four primary sources of literature reviewed include the Florida Fish and Wildlife Conservation Commission's (FWC) Florida's Endangered Species, Threatened Species, And Species of Special Concern, the United States Fish and Wildlife Service's (FWS) database, the Florida Natural Areas Inventory (FNAI), and the Florida Department of Agriculture and Consumer Services (FDACS), Division of Plant Industry's (DPI) Notes on Florida's Endangered and Threatened Plants. During regular maintenance and monitoring activity staff notes occurrences of listed species.

Florida Natural Areas Inventory, FWC's IPaC, and citizen science websites (iNaturalist and eBird) were queried for a list of elemental occurrences on or near the Preserve. FNAI's provided their findings in a letter report which is provided in Appendix E. IPaC and iNaturalist findings are provided in Appendix L.

Table 3. Preserve Observed and Potential Listed Wildlife Species

Species Name	Common Name	Status	Ranking	Likelihood of occurrence
Alligator mississippiensis	American alligator	FT(S/A)	G5/S4	Documented
Antigone canadensis pratensis	Florida sandhill crane	ST	G5T2/S2	Documented
Danaus plexippus	Monarch butterfly	FT-PDL	G4/S4	Potential
Drymarchon couperi	Eastern indigo snake	ST/FT	G4T3/S3	Potential
Egretta caerulea	Little blue heron	ST	G5/S4	Documented
Egretta tricolor	Tricolored heron	ST	G5/S4	Potential
Falco sparverius paulus	Southeastern American kestrel	ST	G5T4/S3	Potential
Gopherus polyphemus	Gopher tortoise	ST	G3/S3	Documented
Haliaeetus leucocephalus	Bald Eagle	BGPA	G5/S3	Documented
Mycteria americana	Wood stork	S-P	G4/S2	Documented
Platalea ajaja	Roseate spoonbill	ST	G5/S2	Potential
Caracara plancus syn. *Polyborus plancus audubonii*	Crested caracara syn. Audubon's crested caracara	FT	G5/S2	Documented
Sciurus niger niger	Southern fox squirrel	-	G5T5/S3	Documented

Abbreviations:
BGPA: Bald and Golden Eagle Protection Act
FE: Federally-designated Endangered
FT: Federally-designated Threatened
FXN: Federally-designated Threatened Nonessential Experimental Population
FT(S/A): Federally-designated Threatened species due to similarity of appearance
FT-PDL: Proposed Federally-designated Threatened species
ST: State-designated Threatened
SSC: State Species of Special Concern
SP: State-pending status. Recently removed from federal listing. State status currently refers to the federal listing.

FNAI Rank Definitions:
G1: Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2: Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3: Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4: Apparently secure globally (may be rare in parts of range).
G5: Demonstrably secure globally
G#T#: Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
S1: Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2: Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
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S5: Demonstrably secure in Florida.

Species that are documented onsite and historical are considered as factors in land management decisions. Species considered likely to occur are to increase awareness of staff and user groups during surveys and inventories.

Based on the results of the database search described above, there were twelve (12) Endangered Species Act (ESA) listed animal species with potential to occur. These listed species as well as some documented species that are listed as imperiled by FNAI discussed below.

The American kestrel (*Falco sparverius*) was observed over the pasture during a site investigation. However, the protected subspecies, the Southeastern American kestrel (*F. s. paulus*) is not discernible from the migratory non-protected subspecies (*F. s. sparverius*). Suitable snags within the Preserve could provide nesting areas for kestrel. No nests or nesting activities were observed. It should be noted that the migratory northern subspecies generally departs Florida by March; however, there are recorded observations of the migrant subspecies beyond that date. Any kestrels observed on the Preserve during the breeding season (April – early September) would be considered to be the protected southern subspecies (*F. sparverius paulus*).

Gopher tortoise (*Gopherus polyphemus*) and their burrows are documented when witnessed in the field. The density of gopher tortoises within the Preserve appears to be minimal. The gopher tortoise requires uplands that have a high enough elevation to allow for the construction of underground burrows that would not be below the groundwater table. Eastern indigo snake (*Drymarchon couperi*), Florida pine snake (*Pituophis melanoleucus mugitus*) and the Florida mouse (*Podomys floridanus*) are considered gopher tortoise commensal species and have potential to occur onsite.

The two species of reptiles that have some likelihood to occur on the Preserve are the American alligator (*Alligator mississippiensis*) and the Eastern indigo snake (*Drymarchon couperi*). The alligator has been observed to utilize the artificial ponds on-site for foraging. Eastern indigo snakes utilize a wide variety of habitats.

Five of the listed bird species (refer to Table 4) that are known to occur consist of long-legged waders or similar species such as storks and cranes. These species are primarily expected to utilize the site for foraging. No long-legged rookeries are known on or near the Preserve. The sandhill crane (*Grus canadensis*) has some limited potential to nest on the Preserve in wetter pockets within the improved pastures.

A crested caracara (*Caracara plancus*) has been observed on the Preserve according to iNaturalist data. Crested caracara are known to utilize improved pastures consisting of open grassland and scattered cabbage palm and cypress.

Monarch butterfly (*Danaus plexippus*) has been observed on the preserve according to iNaturalist data.

The nearest recorded bald eagle (*Haliaeetus leucocephalus*) nest is reported to be located approximately 2.5 miles northeast of the subject property outside the limits of the Preserve. The eagle nest, located west of SR-415, north of SR-44, and has been recorded as active in 2025.

The southern fox squirrel (*Sciurus niger niger*), previously known as Sherman's fox squirrel, has been observed on the Preserve. This species was removed as a Species of Special Concern in 2018.

Listed Plant Species

The listed plant species known to occur on the Preserve are listed in Table 5, below.

Table 4. Listed plant species known to occur on the Preserve

Scientific Name	Common Name	Family	Status	Ranking	Likelihood of Occurrence
Sarracenia minor	HOODED PITCHER PLANT	SARRACENIACEAE	ST	G4T4/S4	Documented
Nolina atopocarpa	FLORIDA BEARGRASS	RUSCACEAE	ST	G3/S3	Documented
Deeringothamnus rugelii	RUGEL'S FALSE PAWPAW; YELLOW SQUIRREL-BANANA	ANNONACEAE	FE	G1/S1	Documented

Abbreviations:
FE: Federally-designated Endangered
FT: Federally-designated Threatened
FXN: Federally-designated Threatened Nonessential Experimental Population
FT(S/A): Federally-designated Threatened species due to similarity of appearance
FT-PDL: Proposed Federally-designated Threatened species
ST: State-designated Threatened
SSC: State Species of Special Concern

FNAI Rank Definitions:
G1: Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
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G3: Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4: Apparently secure globally (may be rare in parts of range).
G5: Demonstrably secure globally
G#T#: Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
S1: Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2: Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3: Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4: Apparently secure in Florida (may be rare in parts of range).
S5: Demonstrably secure in Florida.

Rugel's pawpaw (*Deeringothamnus rugelii*, syn. *Asimina rugelii*) is a federally endangered species endemic to eastern Volusia County. This species occurs primarily in mesic flatwoods and is generally associated with the Immokalee sand (29) soil map unit. The Pawpaw Chapter of the Florida Native Plant Society (FNPS) along with Young Bear Environmental Consulting and Volusia County Land Management staff, have documented this species on the County and State Tracts in several locations. For the protection of the species, specific data locations are not provided within this Plan. More survey work is needed to confirm the extent of occupied habitat. It should be considered to occur in all Immokalee mapped areas, as well as adjacent areas and potentially within Myakka-complex soils (Figure 33). The species is tolerant of some land disturbance (e.g., roller chopping) but generally will be extirpated from a site if repeated pine bedding silviculture practices are employed. The mesic flatwoods in the County and State Tracts should be considered priority for restoration, including mechanical fuel reduction and introduction of fire, eventually leading to growing season burns. Surveys for Rugel's pawpaw will be performed in areas of compatible soils (Figure 29) and in areas within or adjacent to documented occurrence prior to any infrastructure development.

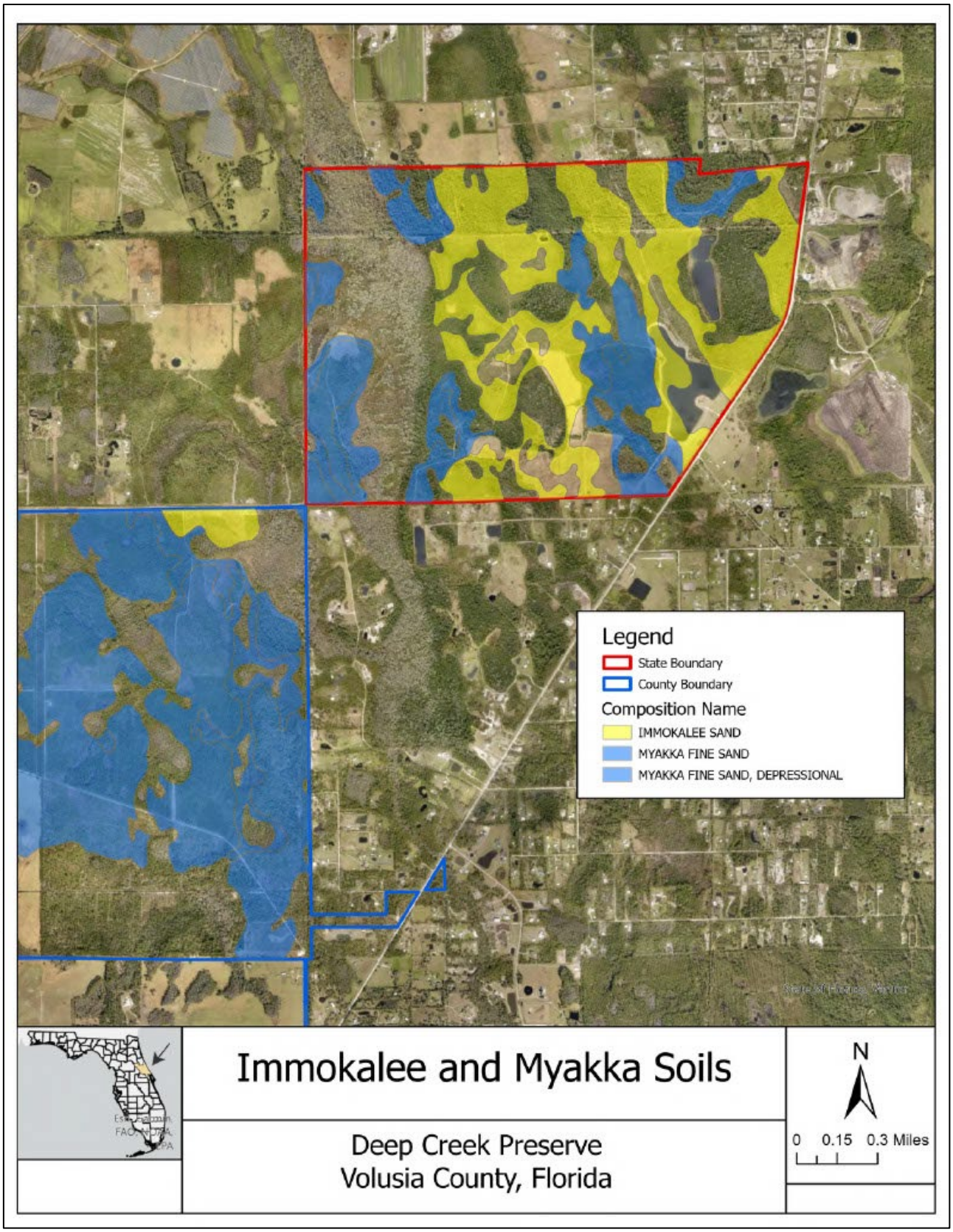


Figure 28. Immokalee and Myakka Soils Map

The xeric uplands that occur in the Preserve make it a potential site for numerous listed plant species. Much of the upland areas on the project site have been fire-suppressed for many years, leading to a closed canopy structure and overgrown conditions. Several listed plant species may occur within the scrubby flatwoods, such as the large-flowered rosemary (*Conradina grandiflora*), garberia (*Garberia heterophylla*), pinweeds (*Lechea cernua* and *L. divaricata*), sand butterfly pea (*Centrosema arenicola*), sand dune spurge (*Chamaesyce cumulicola*), wild coco (giant orchid - *Orthochilus ecristatus*) and shellmound pricklypear (*Opuntia stricta*) are species that are likely to occur in the xeric habitats following disturbance (such as fire or clearing) and along existing breaks such as trails and powerlines. Florida beargrass (*Nolina atopocarpa*) was documented according to the iNaturalist project data.

Several species are common in the county, in high acid wet flatwoods, but will occur along borders of any of the wetlands on the Preserve. These include Catesby's lily *(Lilium catesbaei*), hooded pitcher plant *(Sarracenia minor),* and fall-flowering ixia (*Nemastylis floridana*). Managing the wet flatwoods for open mid-story and shrub layers, including reducing and preventing woody thickets are successful measures in managing for these species.

The occurrence or potential occurrence of listed plant and wildlife species does not directly preclude public use of this site. The presence of listed species provides environmental education opportunities for the general public. However, user group management is an important component of these species continued existence or restoration efforts. Several species occur in habitats in need of restoration efforts. Where and when feasible, surveys for listed species will occur following management activities, including any land clearing or fires (prescribed or otherwise). These surveys may be conducted by County staff or coordinated with local volunteer groups such as the FNPS.

4. Imperiled Natural Communities

One (1) natural community on the Preserve is listed by FNAI as Imperiled Natural Communities. Scrubby flatwoods are considered imperiled (G2/S2) in Florida because of rarity (6 to 20 occurrences or less than 3,000 individuals) or because of vulnerability to extinction due to some natural or manmade factor. The Preserve includes 34.1 acres of scrubby flatwoods, occurring exclusively on the State Tract.

Current conditions of scrubby flatwoods were discussed in the Natural Communities section. This habitat has not been as severely impacted by past land management activities, as compared with the adjacent flatwoods communities. Mechanical fuel reduction may be required for some of the habitat within the Preserve. Some of the scrubby flatwoods occur as small pockets within a flatwoods matrix and it may be possible to introduce fire as part of the fire reintroduction in the adjacent flatwoods without mechanical fuel reduction. This area represents the most likely habitat for gopher tortoises. Gopher tortoise burrow surveys should be conducted before and after restoration activities to show any improvement in habitat to support this species.

Management activities include protection from illegal access related to dumping and off-highway vehicle (OHV) use and prevention of invasion by non-native invasive species.

D. Archaeological and Historic Resources

The sole recorded site (VO7236) within the Florida Master Site File, maintained by the Florida Division of Historical Resources, occurring on the Preserve is a segment of the historic Blue Spring, Orange City and Atlantic Railroad (circa 1880). This route, which was later part of the Florida East Coast Railway system, traverses the central portion of the Preserve generally coinciding with the extension of Ohio Avenue east of Lake Helen. The railway was abandoned in the mid-1900s and all rails and appurtenances have been removed.

Maps from the period and information obtained from local descendants of earlier residents suggests that a small community, designated as the town of Rodgers, associated with the railway and a cemetery, the Deep Creek Cemetery, may be sited in this area. Staff have been unable to verify the presence of either of these features.

This section of abandoned railway is a segment of the proposed "Cross-Volusia Trail." This proposed trail is one component of a planned county-wide network of multi-use trails.

There is an existing cinder block single-family residence that was built in 1960. The home is approximately 470 feet northwest of State Road 415.

The managing agency will consult with the Division of Historical Resources, Department of State before taking any action that may adversely affect archeological or historical resources.

III. USEAGE OF THE PROPERTY

A. Previous Use and Development

Several areas within the Preserve have been converted to pasture for livestock, with evidence of improved pasture dating back to at least 1967 (Figure 30) As noted in the Natural Communities section, nearly all of the pine flatwoods have been actively managed for timber production under traditional silvicultural practices, including site preparation, planting of slash pine plantations, and periodic harvesting. These practices reflect the property's long history of working forest management prior to public acquisition. Timber harvesting has also occurred within portions of the forested wetlands, including basin swamps and baygalls, with harvest activities occurring as recently as 2016 on the State Tract.

State Tract

Prior to purchase by Maury L. Carter and Associates in 2007, the State Tract was owned by the Akers family. Under the Akers' stewardship, the property was managed primarily for quail hunting. Additionally, the property has been managed for silviculture, cattle grazing and hay production.

County Tract

Information regarding activities undertaken by the previous private landowners prior to purchase by the County in 2010 is limited. However, certain assumptions and conclusions may be reasonably drawn based upon existing features and conditions.

As evidenced by the large pasture and significant areas of pine plantation, lands within the County Tract have been actively managed for agricultural and silvicultural purposes. The previous private landowner was awarded Florida Tree Farmer of the year in 2000.

The grazing of cattle has apparently been confined to the southern portion of the County Tract. This activity, which encompassed both the large area of improved pasture and adjacent native rangeland / woodland, has been established through a lease between the user and the prior owner.

As previously discussed, pine plantations have been established across an extensive portion of the County Tract.

The stewardship practices of the prior owners may have also included the limited and probably intermittent use of prescribed fire.

Hunting was also a use undertaken by the prior owners of the County Tract. In the southern portion of the property this is evidenced by the existing camps. The previous owner of the northern portion of the Preserve leased this area to a private hunting club.

The prior owners also sought to control surface hydrology by establishing numerous internal ditches.

Immediately prior to, and part of, transferring ownership of the County Tract to the County, areas of soil contaminated by agricultural chemicals and mechanical fluids were removed from beneath the pole barn and adjacent to a small structure (which was simultaneously demolished and removed from the property) located north of the pasture.

WMD Tract

Prior to purchase by the SJRWMD in 2011 the WMD Tract was used for timber management and hunting. It was heavily impacted by the historic 1998 wildfires, therefore, much of the property was replanted in pine. A hunting lease was in place during the acquisition of the property and has been continued under the County management.

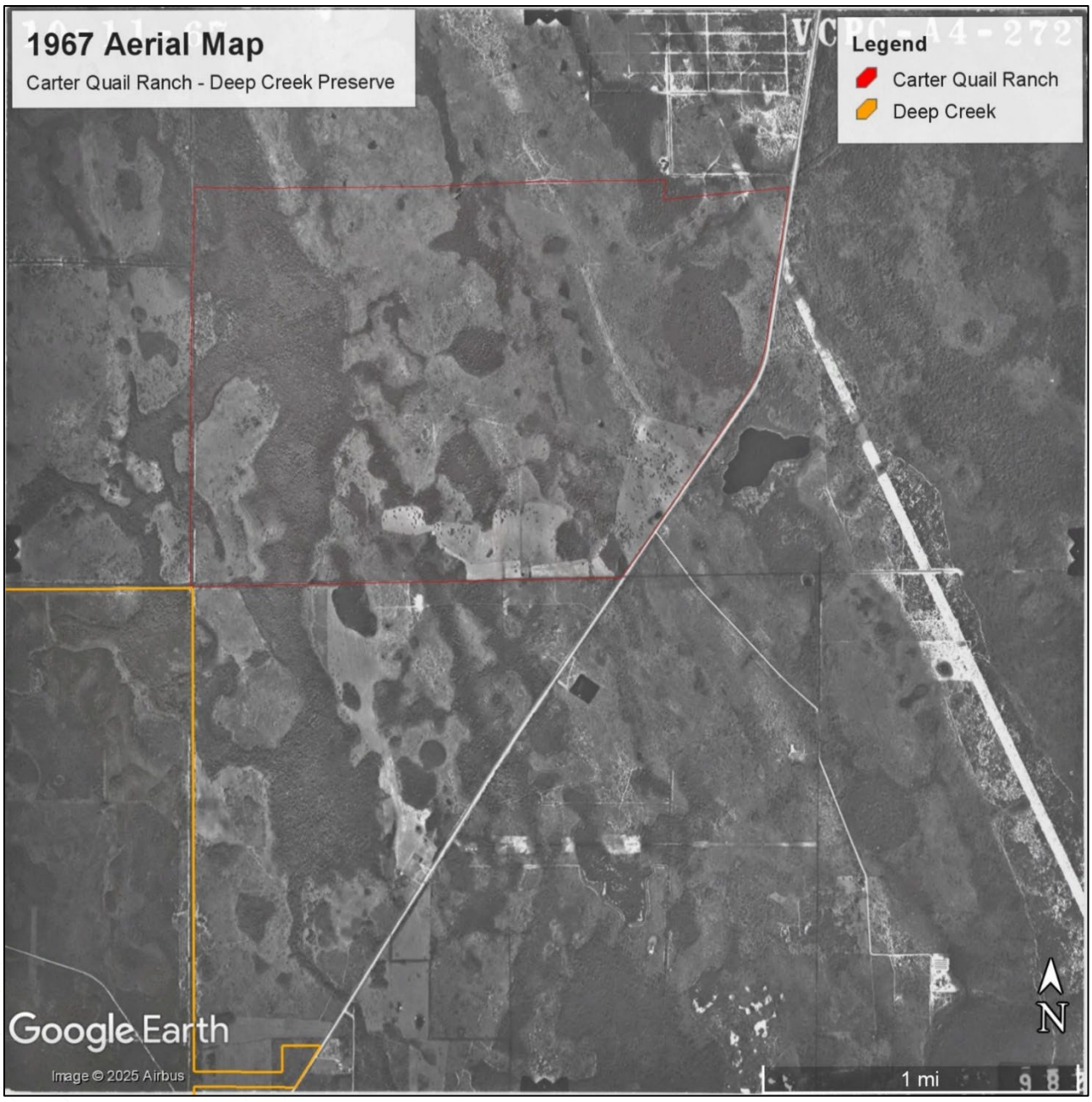


Figure 29. State Tract Historic Aerial

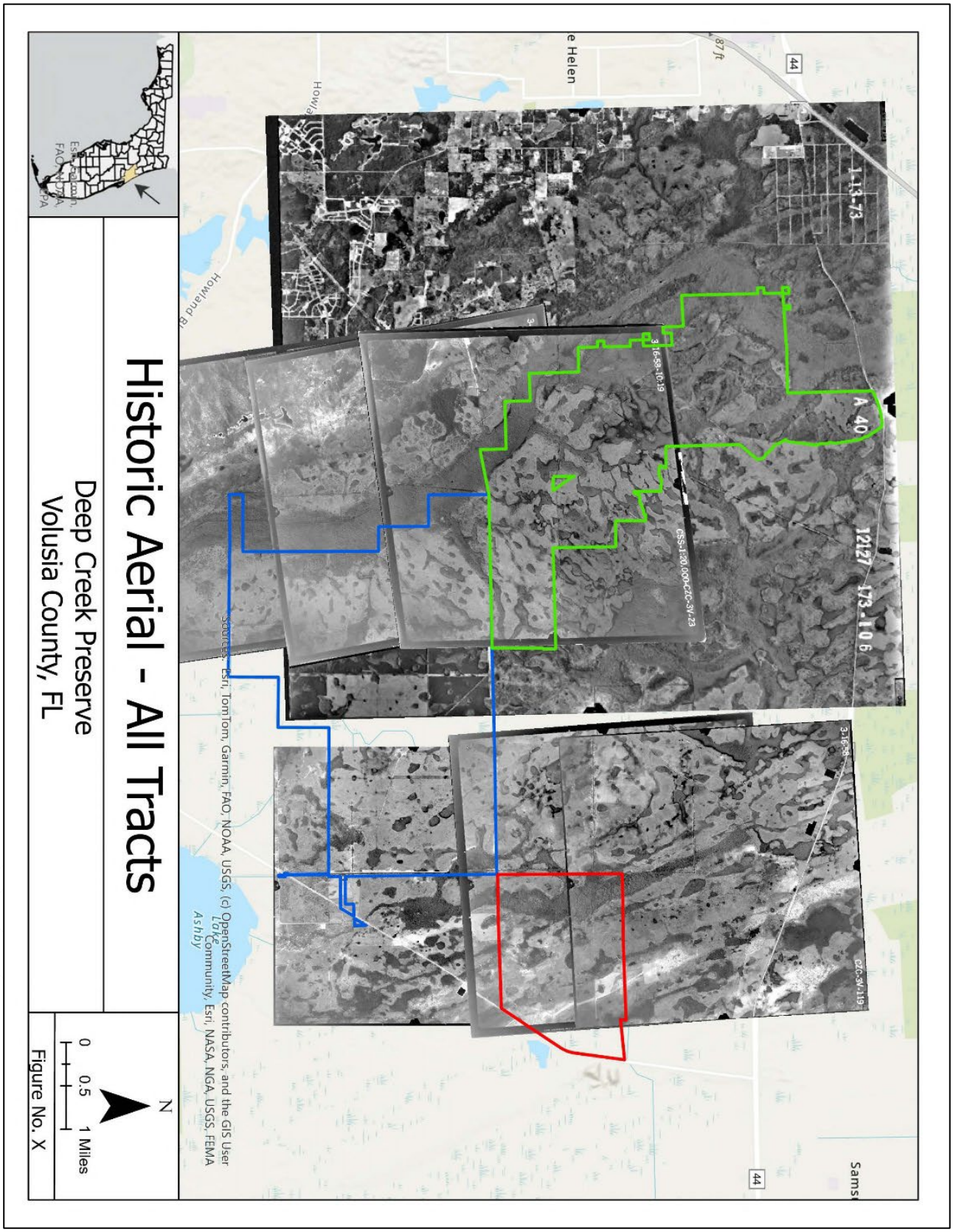


Figure 30. Overall Preserve Historic Aerial

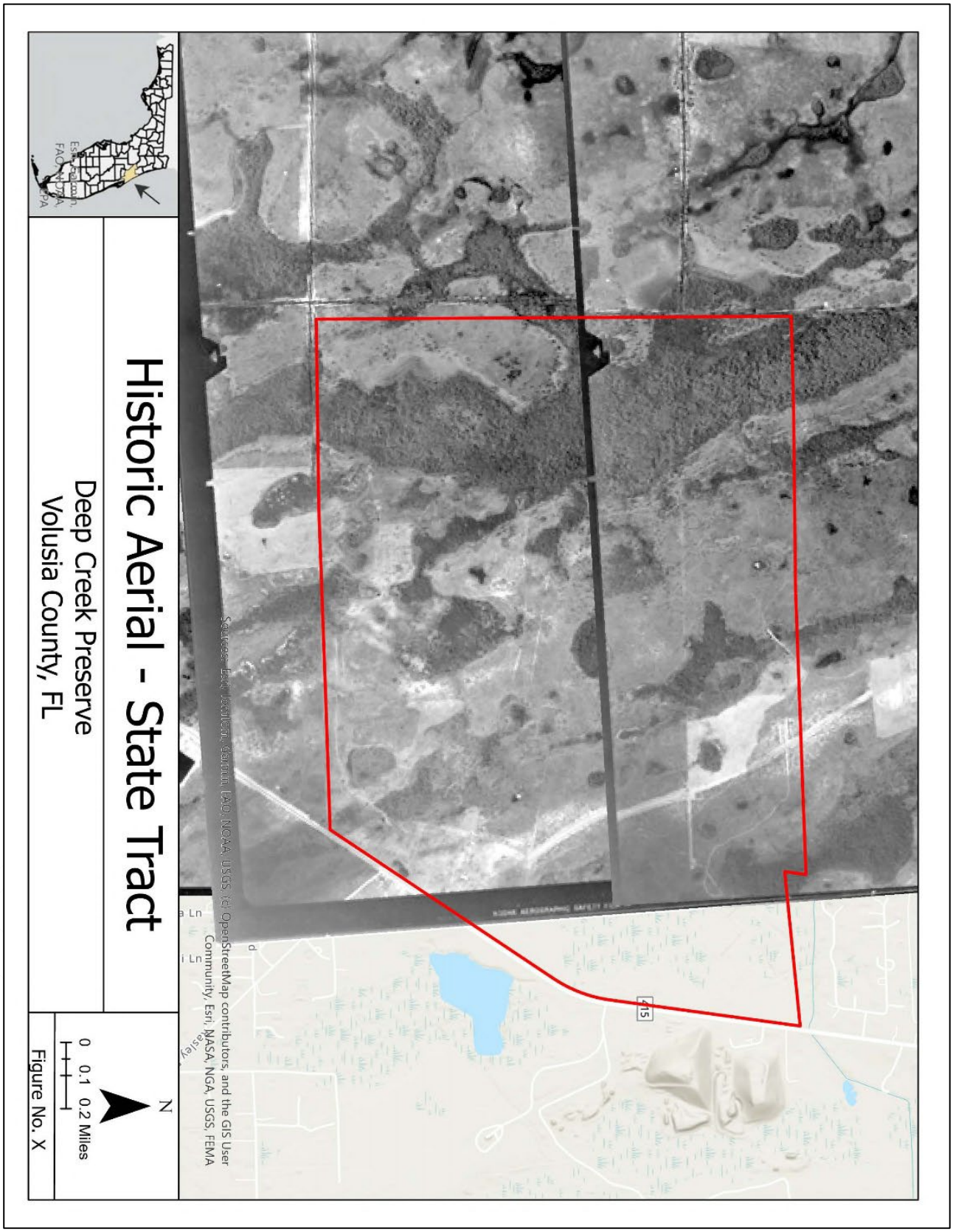


Figure 31. State Tract Historic Aerial

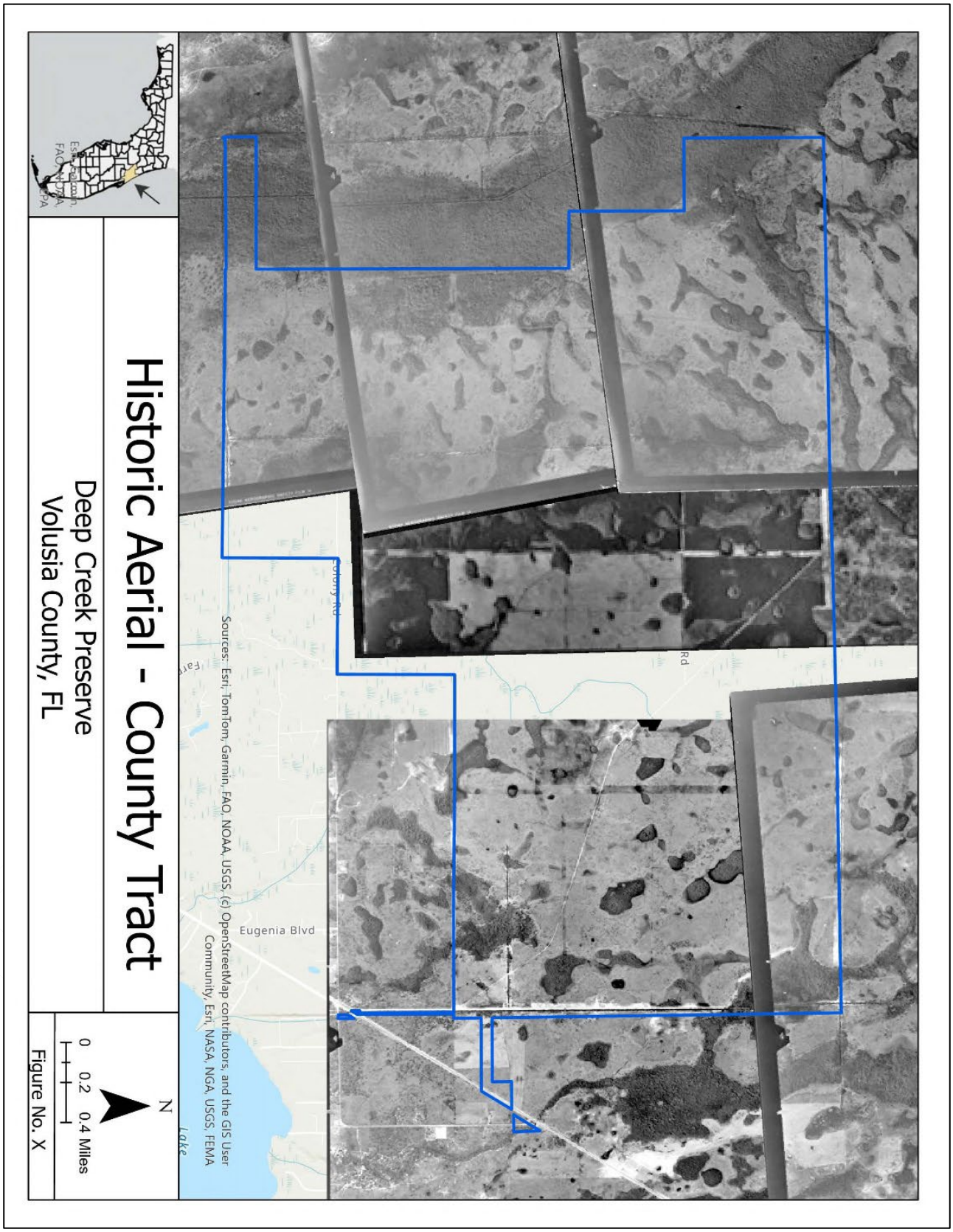


Figure 32. County Tract Historic Aerial

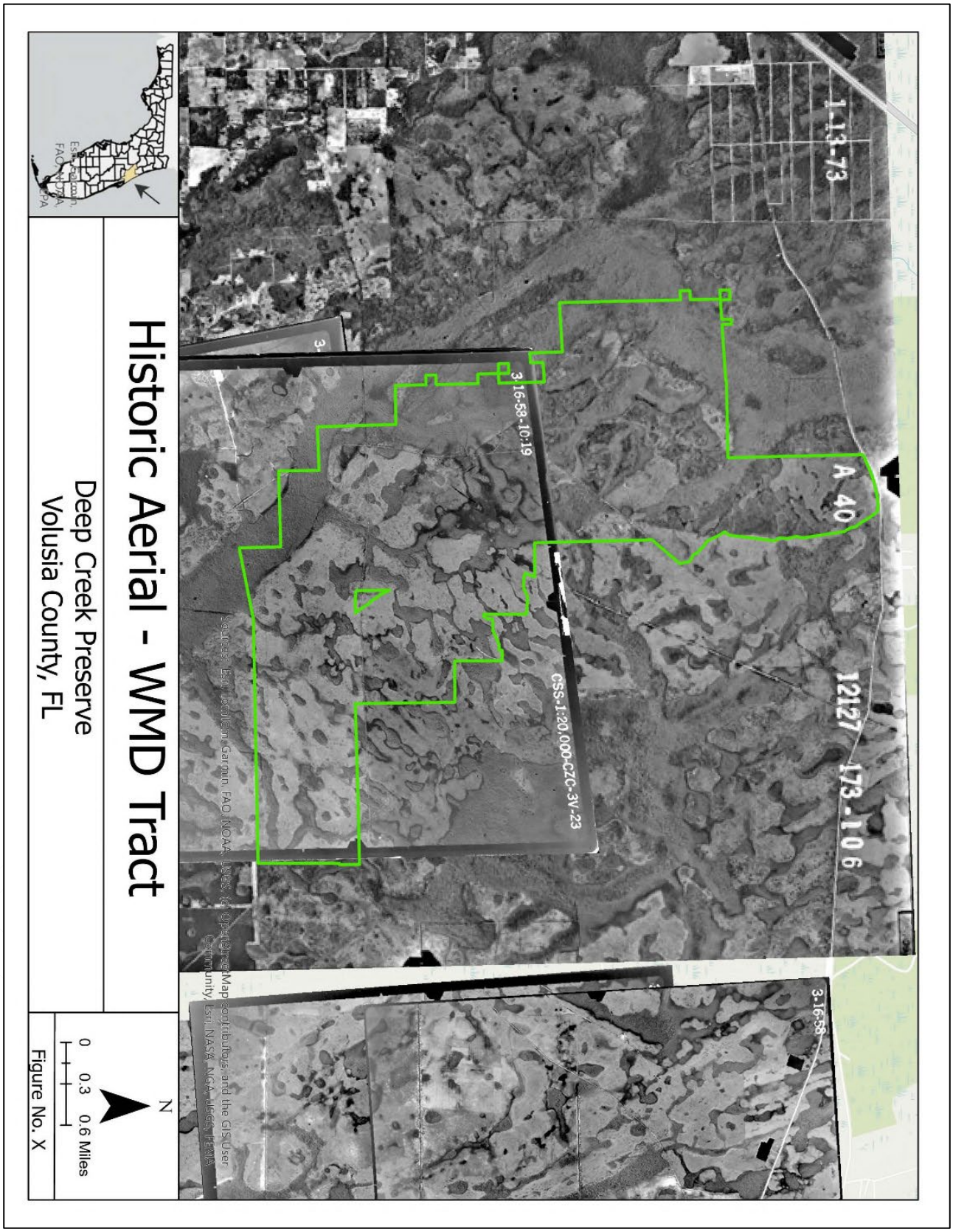


Figure 33. WMD Tract Historic Aerial

B. Current Use and Development

Since the Preserve has been in public ownership by the SJRWMD and Volusia County, it has been used by residents for passive recreation activities. Current uses are related to public access, outdoor recreation, cattle grazing (through leases) and hunting (through leases). Multiple use, unpaved trails and primitive camping sites have been developed on the County Tract. At the time of the State Tract acquisition, public access to the Preserve was provided via the County Tract. The WMD Tract access to the general public is from the connection to the County Tract. Vehicular access to the WMD Tract is limited to land managers and hunt club lessees. Additional uses, access points and infrastructure are proposed for the State Tract. Table 6 below provides a list of existing uses and infrastructure within each tract. Analysis of proposed uses is provided in the following section. A conceptual recreational plan is provided in Appendix F. This table is intended to list existing infrastructure related to uses and development. Additional conceptual uses and related infrastructure that do not yet exist on the Preserve are evaluated in the following sections and shown on the Conceptual Recreation Plan.

Table 5. Inventory of existing recreational and access facilities, at the time of acquisition of the State Tract.

Current Use / Infrastructure	Tract Existing		
	State (BOT)	County	WMD
Public Access Point	0	1	0
Hunting Access Points	0	1	1
Parking Area	0	1	0
Information Kiosk	0	2	0
Trails (H, B, E, OHV, V)*	H, B, E, OHV, V	H B E V	V
Trails (H, B, E, OHV combined) Miles	0	11.5	12
Pavilion/ Picnic Area	0	1	0
Observation Tower	0	0	0
Camp Sites (Special use – permit required) Incl. hike, car, cabin, RV	0	1	0
Canoe/Kayak Landing/ Launch	0	0	0
Restroom/Port-O-Let	0	1	0
Hunting Acres	0	2,617	3,200

*H, B, E, OHV, V = Hiking, Biking, Equestrian, Off highway vehicle, Vehicle.

The public access points are generally open during daylight hours. The parking at the County Tract is not gated, but the entrance to the Preserve beyond the parking area is gated to preclude vehicular access. There is a permanent opening for pedestrian and equestrian access at the gate location. Primitive group

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camping is allowed with a permit from the County. Vehicular parking will be provided at least one location on the State Tract. The Conceptual Recreation Plan in Appendix F provides the various uses and infrastructure conceptually proposed for the State Tract.

C. Purposes for Acquisition of the Property

The Florida Forever Project Evaluation Report for Carter Quail Ranch (FDEP, 2023) provides the purpose for acquisition:

> The Carter Quail Ranch project will contribute to a corridor of conservation lands that will support and provide crucial habitat protection and connectivity for rare and endangered plant and animal species. The project will provide critical water quality and quantity protection for Deep Creek and the St. Johns expanding public access to resource-based recreational opportunities in a rapidly growing region of the state.
>
> Acquisition of this project would serve to:
> - increase the protection of Florida's biodiversity at the species, natural community, and landscape levels.
> - increase natural resource-based public recreation or educational opportunities.
> - provide and enhance wildlife corridors and valuable habitat for rare and imperiled species.
> - provide surface and groundwater protection and protect natural floodplain functions.
> - increase the amount of forestland available for sustainable management of natural resources.
> - protect, restore, and maintain the quality and natural functions of land, water and wetland systems.

<u>The Goals of Volusia Forever</u>
Conserve, maintain and restore the natural environment and provide access for the enjoyment and education of the public; provide resources to ensure that sufficient quantities of water are available to meet current and future needs; meet the need for high-quality resource based outdoor opportunities, greenways, trails, and open space; preserve the habitat and water recharge; ensure that the natural resource values of such lands are protected and that the public has the opportunity to enjoy the lands to their fullest potential.

<u>Water Resource Facilities</u>
A portion of the County Tract was acquired using County Utilities funding, reflecting the Preserve's identified potential to support future regional water supply needs. The SJRWMD has indicated that the County's existing raw water wells are projected to impact the flow of Blue Spring, a first-magnitude spring located adjacent to the St. Johns River. In order to mitigate the potential impacts to Blue Spring, the County has proposed to evaluate the potential for locating several water resource facilities within the County Tract of the Preserve. These water resource facilities, which may be implemented in conjunction with the west Volusia cities of DeBary, DeLand, Deltona, Lake Helen, and Orange City, may provide an opportunity for a regional water supply solution that serves the public's basic daily health and safety needs in an environmentally responsible manner. Any water resource facilities considered would be limited to the County Tract and would not be established on the State or WMD Tracts.
Should water resource development be pursued on the County Tract, the following components have been identified as potential strategies:

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Raw Water Collection

Raw water may be collected through a series of small, low-yield wells distributed across the County Tract. Each well would be housed in a small building designed to blend with the surrounding environment and withstand wildfire and periodic prescribed fire events. Should wells be established, they would be sited within or adjacent to existing internal roads and clearings within the County Tract to minimize disturbance to the surrounding natural environment and would be spaced to minimize potential drawdown impacts to on-site wetlands.

Water Treatment

A water treatment facility, which may encompass twenty or more acres, may be established within an existing disturbed or altered area of the County Tract to treat raw water pumped from on-site wells as well as potential off-site well fields. A paved road and electrical service would be necessary to support such a facility. Should a treatment facility be established, it would be sited within the County Tract only, in an area that minimizes impacts to the surrounding natural communities.

Potable Water Distribution

Should a treatment facility be established, a finished water main may be provided from the facility through the County Tract to service centers in western Volusia County. The main would be sited within or adjacent to existing easements, roadways, and clearings within the County Tract where practicable to minimize potential impacts to the surrounding natural environment.

Stormwater Augmentation

A stormwater augmentation reservoir may be constructed within an existing disturbed area of the County Tract, potentially encompassing 200 or more acres, to offset impacts to natural wetland systems that may be caused by groundwater pumping. Should such a reservoir be constructed, stormwater stored in the reservoir may be used to augment on-site wetland systems within the County Tract in a manner that mimics the natural hydroperiod of each wetland community, and may supplement the reclaimed water supply used by the County and the west Volusia cities of DeBary, DeLand, Deltona, Lake Helen, and Orange City for irrigation. Stormwater may be harvested from Deep Creek and the Lake Ashby Canal and conveyed via pump station to the reservoir for storage. Distribution piping would be located along existing power line corridors and roadways to the extent practicable, with smaller piping systems constructed via horizontal directional drilling where necessary to deliver augmentation water to individual wetland systems while minimizing damage to natural communities.

Any water resource facility development would be limited to the County Tract and would be contingent upon completion of a hydrogeological evaluation of that Tract, which would assess current ground and surface water conditions and determine the number, location, and capacities of raw water wells that may be suitable for siting within the County Tract. Any construction beyond exploratory or test wells would require completion and evaluation of that study and the availability of funding. Development of water resource facilities within the County Tract is a long-term county objective that extends beyond

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the horizon of this management plan, and no water resource facility construction beyond exploratory evaluation is anticipated within the 10-year life of this Plan. This use is acknowledged here given the role of County Utilities funding in the acquisition of the County Tract, and any future development of water resource facilities will be addressed in a subsequent management plan update.

A storm debris collection site may be utilized within the County Tract within an existing disturbed area as needed.

The purpose for acquisition is repeated here as it has direct bearing on the assessment of the impact of planned uses, discussed in the following sections.

D. Proposed Single or Multiple-Use Potential

The Preserve will be managed under the multiple-use concept. The Preserve will allow for natural resource-based recreation and educational opportunities, while keeping protection of the natural and historical resources found in the area as the primary goal and objective.

E. Analysis of Multiple-Use Potential

It is Volusia County's goal to manage the Preserve in such a way as to protect the natural and historical resources, while also providing opportunities for compatible, resource-based recreation and education. During the development of this Plan, likely outdoor recreation uses typical of the region were considered. Those found appropriate are discussed within this plan. Some uses that were rejected are included as the uses may have been requested by the public, local leadership, or are uses provided at other conservation lands in the region.

The potential of generating revenue to fund management was also analyzed. Some revenues may be generated by user and concession fees within the Preserve. Such revenue generation is most compatible within the State Tract. Revenues generated from resource management or other activities conducted on the Preserve are to be dedicated to further management of the Preserve, in accordance with applicable provisions of the management agreement.

Revenue generation may also come from mitigation, resource sales or leases. Mitigation may consist of wetland restoration and recipient sites for listed species. Some wetland restoration through hydrologic improvements is likely to occur. The County will evaluate the potential for use of hydrologic restoration as potential mitigation on a case-by-case basis.

The primary species to consider for recipient site is the state-listed gopher tortoise within the State Tract. The FWC Guidelines provide parameters that must be met to be considered as a long-term recipient site (Permitting Guidelines in Appendix G1).

Revenues may be generated through sale of forest products generated during management. Any revenues generated through the sale of these timber products will be used directly for management of County conservation lands.

There are active hunting lease agreements for the County and the WMD Tracts, as well as a cattle lease for the County Tract (Appendix H).

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The use of private land managers to facilitate restoration and management of the Preserve was also analyzed. Decisions regarding this type of management (such as mitigation projects, removal of timber for resource protection or restoration, implementation of prescribed fire, non-native invasive species treatments, etc.) will be made on case-by-case basis as necessity dictates.

F. Assessment of the Impact of Planned Use

Determination of public uses that are consistent with acquisition purposes follows the parameters outlined below. The parameters are a summary of the objectives and goals for management of the Preserve as they relate to purpose for acquisitions and as outlined in the Florida Statutes.

1. To conserve and protect environmentally unique and irreplaceable lands that contain native, relatively unaltered flora and fauna representing a natural area unique to, or scarce within, a region of Florida or a larger geographic area, including FNAI listed imperiled habitats;

2. To conserve and protect native species' habitats that support or could support with appropriate management techniques state and federally listed species or species considered imperiled by FNAI;

3. To conserve, protect, manage, or restore important ecosystems, landscapes, and forests, if the protection and conservation of such lands are necessary to enhance or protect significant surface water, ground water, coastal, recreational, timber, or fish or wildlife resources which cannot otherwise be accomplished through local and state regulatory programs.

4. To provide areas, including recreational trails, for natural resource-based recreation and other outdoor recreation on any part of any site compatible with conservation purposes.

The primary goal is to provide a diversity of outdoor recreational opportunities that are environmentally, culturally, outdoor or educationally oriented where such activities are compatible with the long-term well-being of the natural and cultural resources for which the property was acquired or for which it is being managed. Public needs and desires, as well as assessment of the impact of planned activities on natural and cultural resources, are considered in the development of recreational opportunities and represent "balanced public utilization." Uses planned for the Preserve are in compliance with the Conceptual State Lands Management Plan.

DRAFT

Table 6. Summary of activities and uses that were analyzed for compliance with the goals and objectives of the Plan.

Activity	Status of Use[1]		
	Approved	**Conditional**	**Rejected**
Protection of listed species	✓		
Preservation of cultural sites	✓		
Preservation of historical sites	✓		
Ecosystem maintenance	✓		
Soil and water conservation	✓		
Hunting		✓	
Fishing		✓	
Wildlife Observation (incl. birding)	✓		
Hiking		✓	
Jogging		✓	
Bicycling		✓	
Equestrian use (Horseback riding)		✓	
Model hobbyist activities		✓	
Mining			✓
Silviculture		✓	
Cattle grazing / range management		✓	
Apiaries		✓	
Bat House Construction		✓	
Observation Tower / Dark Sky Viewing		✓	
Camping		✓	
Cabin Rentals		✓	
RV Camping		✓	
Canoe / kayak landings & use		✓	
Ecotourism		✓	
Vehicular Access and Parking		✓	
New Linear Facilities			✓
Water Resource Facilities		✓	
Off-Highway Vehicle Use		✓	
Survey and Mapping	✓		
Environmental Education (Nature Study)		✓	
Cultivation of native species for seed banks or propagation		✓	
Citriculture or other agriculture / row crops			✓
Swimming / Diving			✓
Boating (power)/ Sailing			✓
Disc Golf[2]		✓	
Water wells		✓	
Utility easements		✓	
Maintenance equipment storage		✓	
Materials stock piling and redistribution		✓	

[1]Status of Use Definition:

DRAFT

Approved = A use considered to be in compliance with goals and objectives with the Plan.
Conditional = A use that is considered in compliance with Plan goals and objectives given certain conditions are met (e.g., timing, location of use, intensity, etc.)
Rejected = A use considered not in compliance with goals and objectives of the Plan.
[2]Disc Golf is conditionally approved on the State and County tracts, rejected on the WMD Tract.

DRAFT

The majority of uses and decisions on acceptability are clear. Those worth further discussions are explained in further detail here. It is important to note that the list is primarily geared towards user groups; however, activities performed by the lead agency may appear contradictory and thus are discussed below.

Ecosystem maintenance includes the eradication of nuisance wildlife species, namely feral hog, through trapping and removal. This activity is not considered hunting and is performed by County staff or licensed trappers contracted by the County. Access to all parts of the Preserve by management equipment, including off-highway vehicles (OHVs), is also a necessary component of ecosystem maintenance and is distinct from recreational OHV use discussed below.

Hunting is an existing, established use on the County and WMD Tracts, currently conducted under active lease agreements consistent with FWC rules and preserve-specific regulations. As additional lands are incorporated into the Preserve, each tract will be evaluated individually for hunting compatibility based on habitat type, proximity to other user groups, listed species considerations, and existing use patterns. Where hunting is determined to be appropriate, it will be designated as a conditional use, regulated pursuant to FWC rules and preserve-specific guidelines, and conducted in a manner consistent with how hunting is managed on comparable publicly owned conservation lands in Florida. Hunting access points and designated hunting areas will be identified in the Conceptual Recreation Plan.

OHV use by the general public is proposed as a conditional recreational use on designated roads and trails within appropriate portions of the State Tract. Unlike the management vehicle access described above, recreational OHV use would be limited to specifically designated routes, mostly existing roads and firelines. The routes are identified in the Conceptual Recreation Plan and would not be permitted in areas containing documented populations of listed species, imperiled natural communities. OHV use would be closely monitored by the County and subject to modification, relocation, or discontinuation if determined to adversely impact natural resources, listed species, or other user groups. It is acknowledged that the 2013 Deep Creek Preserve General Management Plan prohibited public OHV use. The conditional approval of this use in the current Plan reflects the expanded Preserve boundary, the availability of suitable upland areas on the State Tract, and the County's commitment to managing OHV use within defined parameters. Given that the State Tract is managed under a BOT lease subject to ARC oversight, any implementation of recreational OHV use on that Tract will be subject to the conditions and approval of the applicable state agencies prior to establishment.

Silviculture is identified as an approved use solely in support of natural resource restoration, management, and maintenance objectives. This designation enables the lead agency to conduct timber harvests, prescribed burns, and other associated activities that may require silvicultural classification to obtain permits or approvals from local municipalities and regulatory agencies. Revenue generation is not the purpose of this designation; however, incidental revenue derived from these activities is encouraged as a means of offsetting restoration and management costs.

Hiking, equestrian use and biking are limited to use on trails and are currently allowed in designated areas on the Preserve with equestrian use and biking primarily limited to the County Tract. These are on-going and popular activities and result in the greatest daily use of the Preserve. These activities have been designated as a Conditional Use as these are active uses and do result in some impacts to natural resources and historical sites. They are controlled by trail and access management.

DRAFT

Linear facilities, including gas and power lines, already occur within the limits of the Preserve and were in place prior to acquisition. The approval of this use is limited to existing linear projects.

The Conceptual Recreation Plan, provided in Appendix F, discusses the implementation of these uses, and provides for guidance of public use management in the context of the two-prong approach to natural resource protection and public access. The Conceptual Recreational Plan provides a framework for the types, quantities and general locations of recreational uses. It is not a mandate that all such uses and related infrastructure be completed in the span of this 10-year management plan or be sited exactly as shown. It is anticipated that flexibility in layout will be required in development of use infrastructure to avoid impacts to imperiled species and communities, wetlands, etc.

G. Cooperating Agencies Responsibilities

No other agencies are directed by the lease or other agreements as a cooperating partner in the management of the Preserve. This does not preclude the County from partnering with other agencies to accomplish the Plan's goals. This may include other state agencies for wildlife management, prescribed fire, suppression of wildfires, etc. The County may also utilize non-governmental organizations for aiding in citizen science projects to aid in documenting and monitoring organisms within the Preserve.

H. Acreage that Should be Declared Surplus

On State-owned conservation lands where Volusia County is the lead manager, the County is required to assess and identify areas for potential surplus land. This assessment consists of an examination of resource and operational management needs, public access and recreational use, and GIS modeling and analysis. The evaluation of the entire Preserve by the County has determined that all portions of the area are being managed and operated for the original purposes of acquisition, and continue to center on the multiple-use concept, as defined in sections 589.04(3) and 253.034(2)(a) F.S. Implementation of this concept will utilize and conserve state natural resources and provide public outdoor recreational opportunities in a harmonious and coordinated combination that will best serve the people of the state of Florida. Therefore, no portion of the Preserve is recommended for potential surplus.

IV. MANAGEMENT GOALS AND OBJECTIVES

Volusia County has implemented resource and user group management programs for the purpose of preserving the significant natural resources under its directive as the lead agency. The goals and objectives presented in this Plan have been developed for the Preserve to meet the purpose for which the property was acquired. These have been developed cooperatively by County staff with input from professional consultation, an advisory group, a public hearing, and user group and other stakeholder surveys.

The goals presented here provide the ultimate, desired outcomes and the objectives provide specific, measurable actions taken to achieve the stated goals. Target dates for completion of objectives are classified as short-term (0-2 years) or long-term (up to 10 years). Corresponding goal numbers for each objective are listed in parenthesis following the goal. Successful completion of each objective is contingent upon obtaining necessary permits and adequate funding. The goals and objectives will be

reviewed, revised and updated in each subsequent ten-year management plan update.

The Resource Management Goals for the Preserve are identified as the following:

A. Restore and maintain natural communities with a trend towards maintenance conditions as defined by the Desired Future Conditions
B. Continuation and introduction of prescribed fire to pyrogenic natural communities trending towards appropriate return intervals and seasonality
C. Protect water quality and quantity, evaluate hydrologic restoration needs, restore hydrology as needed and where feasible, and maintain optimal hydrologic conditions given existing site constraints
D. Manage timber resources for resource conservation and habitat restoration, enhancement, and maintenance with a trend towards maintenance of Desired Future Conditions
E. Monitor and treat non-native, invasive species to the maximum extent practicable
F. Document and monitor listed and imperiled species and manage, through restoration and maintenance activities, listed and imperiled species habitats
G. Document, protect, restore and maintain imperiled natural communities
H. Identify, protect, preserve, and maintain cultural and historic resources
I. Develop, improve and maintain capital facilities and infrastructure necessary to meet the goals and objectives of this management plan
J. Provide public access, recreational and educational opportunities with a focus on high quality trails, hunting, camping and regionally unique opportunities
K. Enhance resources and management through development of an optimal boundary that identifies important habitats, landscape-scale linkages, wildlife corridors, operational and resource management and access needs; continue to identify acquisition needs, and pursue acquisitions through existing County programs and conservation stewardship partnerships
L. Develop stewardship partners to achieve management objectives

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A. Habitat Restoration and Improvement

Land management and restoration require clear ecological goals with Desired Future Conditions (DFCs) which were determined using FNAI's recommended ranges for each natural community. These goals are essential to successful ecosystem management and restoration. It is essential to provide a clear vision of future conditions that can be communicated to the management staff and the public, establish a guide for conservation and management actions, establish priorities for proposed activities, and integrate proper monitoring criteria that can evaluate resource management.

Within the Preserve, there are several natural communities that require land management activities to maintain their appropriate ecological functions. Land management activities include manipulation of abiotic (e.g., fire, hydrology, infrastructure, etc.) and biotic factors (e.g., invasive species, forestry, supplemental plantings, herbicide application for habitat maintenance, etc.). Goals related to habitat restoration and improvement are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Along with mechanical treatments, herbicide application is another widely used method in habitat management such as pine tree seed release treatments and control of woody vegetation. As a specific example, broadcast herbicide application is often used in various types of flatwoods (from sandhills to hydric pine savannahs) restoration projects when hardwoods such as laurel oaks or sweetgums have become dominant shrub and subcanopy species and preclude the use of fire.

Goal 1: Restore / improve native habitats trending away from optimal conditions

Goal 2: Implement management techniques that result in a trend towards Desired Future Conditions (DFCs) / habitat maintenance condition

Objectives:

1. Quantify the number of
   a. artificial land uses that will remain through the long-term of this plan (G1)
   b. artificial land uses where restoration activities will occur (G1)
   c. natural communities (G1)
2. Map the extent of, and quantify the acreage of each artificial land use and natural community (G1)
3. Identify, map, and quantify the acreage of management units that will be created to implement restoration and maintenance management activities (G1, G2)
4. Update the extent and acreage of natural communities after restoration activities have been implemented (G1, G2)

DRAFT

B. Fire Management

All of the upland natural communities on the Preserve, and many of the successional and natural community wetlands within the Preserve are considered fire dependent or pyrogenic communities. A properly developed and implemented fire management program provides ecological, economical and public safety benefits such as: The following statements summarize the general benefits of:

- Reduction of fuels which reduces wildfire hazards;
- Improves accessibility for fire fighters, public and wildfire mitigation;
- Reduces competition within all vegetative strata, reduces forest disease pathogens and vectors, and generally provides for a more healthy and productive forest;
- Improves forage for wildlife;
- Increases carrying capacity for many wildlife species;
- Increase biodiversity, especially within the plant and insect communities;
- Aids in consumption of dead organic materials and returns nutrients to soils;
- Improves aesthetics by improving habitat structure, generally creating a more open habitat

Fire is a historically important disturbance within several plant communities and can be very important for reproduction and production of species endemic to the vegetation communities found on the project site. Fire return intervals, prior to colonization, may have been as low as 1-2 years in some flatwoods and hyperseasonal wet prairies (the latter does not occur within the Preserve). Historically, fire occurred primarily in the early growing season (Noss 2018). Due to myriad logistical and safety constraints, a modern-day fire program focuses on variability of the fire return intervals, percent of areas burned within a management unit, seasonality, duration and intensity. Variability amongst all of these parameters, with a continual trend towards growing season burns (yet maintenance of variability within that season) are important aspects included in the fire management plan to maintain diversity and promote "patchiness" within habitats.

The ultimate goal in a typical burn program is to allow for growing season burns to occur within the fire-dependent communities and to reach a stage where fire is being utilized as a habitat maintenance tool, rather than a restoration tool.

Not all natural communities within the Preserve are fire-dependent. The floodplain swamps and basin swamps may have rarely experienced fire historically, within extremely long and variable return intervals. The occurrence of some bay swamps may have originated entirely due to fire exclusion. The presence of thick organic layers in these wetland communities require that fire generally continues to be excluded. However, it is imperative that the edges of these systems, the ecotones between them and adjacent pyrogenic communities, experience regular fire. Thus, fire breaks should not be located within the ecotone between wetlands and the pyrogenic communities. In the case of bay swamps, fire can continue to be pushed further into the system as the potentially artificial build up of organics is consumed during cool, wet season fires. Some of the natural communities, such as the wet prairies, are so small that their fire management is based solely on the fire management of the surrounding pyrogenic communities.

Several constraints exist on any given site that influence how and when fire can be introduced. These constraints are discussed in more detail in Section V, below. The constraints surrounding prescribed fire implementation at the Preserve are generally related to fire exclusion by previous landowners and

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land use activities. These constraints typically include a build of fuels and / or organic layers that would result in catastrophic, unsafe fires. Where/when these circumstances occur, other management activities will be implemented. Such management strategies include a combination of roller chopping and forestry mowing that directly reduce fuel loads and heights. Reduction of the canopy, through various forestry practices also reduces fire intensity. These mechanical methods are considered "fire surrogates" as they replace the role of fire in situations where fire is, at least temporally, an unsuitable restoration tool. While several methods are available as fire surrogates, none have proven to be as ecologically effective as fire. However, many of these fire surrogate activities are necessary prior to safe fire implementation. In these cases, mechanical and other fire surrogate activities are crucial in the eventual re-introduction of fire.

There are several listed species whose occurrence and population health are directly related to fire / fire surrogate activities. Where the specifics of a particular species are well known, they are discussed in the imperiled species section below. Goals related to fire management are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Maintain disturbance intervals in appropriate habitats

Goal 2: Develop a Prescribed Burn Plan

Goal 3: Improve site conditions that will foster increased use of prescribed fire

Goal 4: Implement a plan that will result in a trend toward use of prescribed fire in the growing season

Objectives:

1. Identify the artificial and natural communities where fire management may be applied (G1, G2)
2. Create a management unit map, and for each unit, identify the Management Unit (MU) number, total acreage, habitat type, and whether fire, or a fire surrogate is to be implemented (G1, G2, G3, G4)
3. Develop an operational Fire Management Plan (G2)
4. Develop a monitoring program that tracks:
    a. Acres receiving fire surrogate treatments (by habitat, and year) (G1, G3)
    b. Acres burned (incl. wild and prescribed fires) (G1)
    c. Post-burn analysis (G3)
5. Implement Fire Management Plan (incl. fire or surrogate techniques as appropriate) (G1, G4)
6. Utilize fire monitoring program (G1, G2, G3, G4)

DRAFT

C. Hydrological Preservation and Restoration

Existing or historic field road crossings through wetland areas should be evaluated to determine if they should be removed or retrofitted with culverts for use in the trail system of the project to restore natural water movement within impacted wetland areas. In areas that the trail system is proposed to cross over wetland areas, consideration will be given to placing the alignment over the retrofitted road crossings and/or using elevated walkways. Goals related to hydrologic preservation and restoration are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition

Objectives:

1. Locate, quantify the size of, and evaluate condition of all culvert crossings (G1)
2. Replace failing culverts with low-water crossings or new culverts (G1)
3. Evaluate the feasibility and cost of creating an expanded littoral shelf in the largest artificial pond, located on the State Tract (G1)
4. List of acreages of wetland habitats onsite (G1)
5. Evaluate feasibility and cost of canoe / kayak launch, etc. (G1)
6. Research potential hydrological restoration projects where feasible / necessary (G1)
7. Evaluate feasibility and cost of boardwalks or similar for wetland / water crossings (G1)

D. Sustainable Forest Management

The Preserve has multiple forested habitats. The ability to use sustainable forestry management practices to assist in habitat management is an invaluable tool. The timber stands that exist on the Preserve will be assessed in a timber inventory. Goals related to sustainable forest management are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Manage timber resources for resource conservation and habitat restoration, enhancement, and maintenance

Goal 2: Practice a stewardship ethic that embraces sustainable forest management practices

Goal 3: Generate revenue through sustainable forest management

Goal 4: Reestablish longleaf pine as the dominant overstory species in appropriate communities through the use of sustainable forestry and prescribed fire

Objective

1. Conduct a timber inventory (G1, G3, G4)
2. Develop a Forestry Plan (G1, G2, G3, G4)
3. Utilize revenue generation to offset management expenses (G3)
4. Utilize sustainable forestry practices to restore longleaf pine (G1, G2, G4)
5. Implement Forestry Plan (G1, G2, G3, G4)

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E. Non-Native Invasive Species Maintenance and Control

Non-native invasive species are a significant threat to the ecological integrity of conservation lands managed for long-term habitat protection. These species often establish rapidly in disturbed or natural areas because they lack the predators, pathogens, and ecological controls present in their native ranges. This enables non-native invasives to outcompete native vegetation, resulting in reduced plant diversity and altered habitat structure. Non-native invasive plants may form dense monocultures that displace native groundcover and prevent natural regeneration, while non-native animals can prey upon or compete with native wildlife. These changes can disrupt ecosystem processes such as fire regimes, hydrology, and nutrient cycling, ultimately degrading habitat quality for native species, including imperiled species. Effective management of non-native invasive species is essential to maintaining biodiversity and preserving the natural ecological functions of conservation lands.

Several invasive species have been identified throughout the Preserve. Initial acreage estimates of non-native invasive plants that occur on the project site are as follows

- Cogongrass (*Imperata cylindrica*) - approx. one (1) acre
- Brazilian pepper (*Schinus terebinthifolius*) - approx. one (1) acre
- Old world climbing fern (*Lygodium microphyllum*) - approx. one-quarter (1/4) acre
- Chinese tallow (*Triadica sebifera*) - approx. five (5) acres
- Torpedograss (*Panicum repens*) - approx. two (2) acres
- Caesarweed (*Urena lobata*) - approx. ten (10) acres (low density)
- Hog (*Sus scrofa*) – approx. five thousand (5,000) acres (low density)

Because of these species' invasive nature and potential to disrupt natural communities by dominating wetland and upland communities, these plants are targeted for removal using chemical and/or mechanical control methods. As populations of these plants are found, regular maintenance events are scheduled to eliminate or reduce invasive species. Where feasible, volunteer organizations can be used to monitor the preserve for non-native invasive species and could perform some of the control of these species in cooperation with regularly scheduled maintenance events.

Because of the opportunistic nature of invasive species to spread via human use and the known natural history of the invasive species in the area, it is a reality that invasive species will continue to invade all habitats. Those areas easily accessed such as property boundaries marked by clearing or fencing, field roads, trails and natural breaks are the most likely to be invaded by such species and will be regularly monitored for any invasive species. The species of primary importance during monitoring include species listed as Level I or II non-native invasive by the Florida Invasive Species Council (FISC). Monitoring will consist of visual reconnaissance during all other onsite activities. Discovery of new species or locations will be recorded by species, location and size of infestation and regularly monitored. The County utilizes GPS / GIS based software for tracking location and management of invasive species.

Of the non-native invasive animal species, feral hogs (*Sus scrofa*) create the greatest visible impact to the onsite natural communities and create large, disturbed areas that disrupt natural vegetative processes and promote the introduction of invasive / weedy species. In Florida and the Southeast, this may be a problem in regenerating long-leaf pine forests. In addition to the effects of consuming, knocking down and trampling large amounts of native vegetation, the rooting behavior of wild hogs causes significant damage. Rooting, digging for foods below the surface of the ground, destabilizes the

DRAFT

soil surface, uprooting or weakening native vegetation, damaging systems and causing erosion. Wallowing destroys pond and stream banks, which may affect water quality.

The hog population is relatively low at the time of Plan development and impacts from this species are minor. Because hogs are prolific breeders, having up to 3 litters per year and due to the extent of forests, dense vegetation, and abundant water in the area, there is no way to completely eliminate them. Therefore, regular efforts to monitor and trap hogs will be performed, in a manner similar to that of monitoring and removal of non-native invasive plant species. Hunting is another possible method of population control.

Numerous other non-native invasive animals may be present, from terrestrial to aquatic.

Species such as Cuban tree frog (*Osteopilus septentrionalis*) are outcompeting local native treefrogs. However, these smaller, more inconspicuous species are not readily or easily controlled through land management practices. Education of such species, including proper disposal, may be a potential tool to assist in identification and control of less visible species.

The County has developed an Arthropod Control Plan to evaluate the necessity of control. This is provided in Appendix P.

Goals related to non-native invasive species maintenance and control are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Control non-native invasive species utilizing Integrated Pest Management strategies

Objectives:

1. Identify species, locations and extent of invasive species (G1)
2. Utilize ArcGIS for monitoring of invasive species locations and treatments (G1)
3. Track area treated per year and document treatment method (G1)
4. Document number of hogs trapped / removed per year (G1)

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F. Imperiled Species Habitat Management

The Preserve supports numerous listed wildlife and plant species. Where a particular species occurrence has an implication to resource management, it is discussed below. Those that occur due to existence of high-quality habitat, or that are benefited by existing proposed management goals and objectives, are not discussed specifically in this section.

Proper management of the project site for listed wildlife and plant species is based on locations of known populations (extant or otherwise) on the property. Therefore, inventory to determine presence / absence of species with specific management objectives is necessary. Surveys will be focused in areas that have the highest likelihood of occurrence for listed species, based on habitat requirements of the species, and should follow events creating disturbances within the communities, including controlled (roller chopping, prescribed fires) and uncontrolled (wildfires, tornadoes) events.

With the addition of GIS mapping tools, gopher tortoise(s) and their burrows are documented when witnessed in the field. The density of gopher tortoises (*Gopherus polyphemus*) within the Preserve appears to be minimal. It appears that this species is lower than carrying capacities set by the Florida Fish and Wildlife Conservation Commission (FWC) in determining whether a site would be a suitable recipient site for tortoises relocated from to-be-developed lands. The County does operate a gopher tortoise recipient site at Longleaf Pine Preserve. The State Tract is being evaluated by FWC as a potential recipient site. The results are provided in Appendix G.

The use of the Preserve as a tortoise-recipient site can be a source of revenue, and can be utilized by other County development projects that may occur within occupied tortoise habitat. Therefore, tortoise relocation to the Preserve is identified as suitable management tool, but is not a mandated objective by this Plan. As noted elsewhere, vegetation reduction, preferably through prescribed fire is essential to increase suitability of gopher tortoise habitats and therefore increase density and total population, which meets the goal stated above. Those habitats that are too overgrown to successfully carry a safe fire will be thinned mechanically. Any activity promoting thinning of woody vegetation and thereby an increase in open space and herbaceous vegetation in the upland habitats will be critical to the stated goal for this species.

Cox et. al. stated that fire used as a management tool on gopher tortoise habitat is more beneficial than other techniques because it reduces the amount of ground litter, quickly reduces nutrients bound in plant materials, and does not disturb soil conditions and wildlife to the same extent as other management techniques. Furthermore, there is strong evidence to suggest that burning, particularly during the growing season, has several other beneficial effects on gopher tortoise populations. Prescribed burning during this period reduces the growth of deciduous shrubs and trees, thereby reducing canopy cover and stimulating herbaceous groundcover. Fire during this period also removes dead litter and tall standing plant stems at a time when hatchling tortoises are first ready to disperse from their nests and establish their first burrows. Summer burns expose mineral soil which may be necessary for burrow excavation by hatchlings. Since this species is adapted to upland plant communities in which fire is a natural and recurring feature, it is reasonable to assume applying a "natural" fire regime with respect to frequency and season will result in a habitat matrix suited to the needs of this species.

The southeastern American kestrel (*Falco sparverius paulus*) utilizes nest sites that include tall dead trees or utility poles generally with an unobstructed view of surroundings. Although the species has

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not been observed, snags should be left standing where feasible.

Rugel's pawpaw (*Deeringothamnus rugelii*), a federally endangered small woody shrub endemic to Volusia County, has been documented as present onsite of both the State and County Tracts.

Other imperiled species not listed under the ESA that have been documented onsite include the Southeastern fox squirrel (*Sciurus niger niger*), and the Florida black bear (*Ursus americanus floridanus*).

Bat boxes could be utilized by the imperiled species Rafinesque Big-eared Bat (*Corynorhinus rafinesquii*) with potential of occurrence.

Goals related to imperiled species habitat management are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Document listed and imperiled species occurring on the preserve
Goal 2: Provide optimal site conditions to aid in the recovery of listed and imperiled species
Goal 3: Provide opportunities to receive listed and imperiled species that would increase the health of the population
Goal 4: Partner with institutions / agencies / conservation groups to accomplish inventories for imperiled / listed species
Goal 5: Educate visitors and public of presence and importance of listed species

Objectives:

1. Estimate gopher tortoise populations (G1)
2. Determine feasibility of creating a gopher tortoise recipient site (G2, G3, G4)
3. Conduct survey for *Deeringothamnus rugelii* through partnership with the Pawpaw Chapter, FNPS and USFWS (G1, G4)
4. Document all listed and imperiled species occurrences. To include:
    a. Species, location and approximate population size, where feasible (G1)
    b. Date and type of land management activities conducted in the MU containing the species (G1, G2)
5. Utilize game cameras, or similar, to document imperiled wildlife species (G1)
6. Set up photo stations for monitoring (G1)
7. Conduct inventories as needed for listed species (G1)
8. Confirm presence / absence of species documented in citizen science projects, i.e. iNaturalist, that have not been documented by the County staff or FNAI (G1, G4)
9. Report new, confirmed findings to Florida Natural Areas Inventory (G1, G4, G5)
10. Install two (2) kiosks with educational information regarding listed and imperiled species onsite and their habitat management needs (G5)

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G. Imperiled Natural Communities

One (1) natural community, scrubby flatwoods, is located on the Preserve. Scrubby flatwoods are considered G2/S2 by FNAI. This community was not included in the FNAI report but has been documented by the County. This community occurs entirely within the State Tract, which contains 34.1 acres of scrubby flatwoods. Management activities include protection from illegal access related to dumping, unauthorized off-highway vehicle (OHV) use and prevention and maintenance of invasion by non-native invasive species. Goals related to imperiled natural communities are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Restore, protect and maintain imperiled natural communities

Objectives:

1. Determine current natural community conditions (G1)
2. Determine restoration / management needs to trend the community towards DFCs (G1)
3. Introduce prescribed fire to the scrubby flatwoods within the Preserve (G1)
4. Document the extent of scrubby flatwoods after restoration activities (G1)
5. Conduct surveys in the scrubby flatwoods for listed imperiled species (G1)

H. Cultural and Historical Resources

There are no documented historic buildings located within the boundaries of the Preserve. Cultural resource management activities focus on archaeological resources in accordance with *Best Management Practices: An Owners Guide to Protecting Archaeological Sites and Management Procedures for Archaeological and Historical Sites and Properties on State-owned or Controlled Lands (revised August, 1995)*. Historical, cultural and archaeological sites are limited in scope within the Preserve and do not face threats of destruction by any proposed uses or activities in this Plan. County staff will continue to make opportunistic observations of any undocumented, unknown such resources. Goals related to cultural and historic resources are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Identify, protect, preserve, and maintain the cultural resources of the Preserve

Objectives:

1. Continue to monitor, and protect and preserve resources (G1)
2. Submit new finds to SHPO for inclusion on the Florida Master Site File (G1)

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I. Facilities and Infrastructure

For the purpose of the Preserve's facility and infrastructure management, the County considers the entire managed area, regardless of ownership, as one complete unit. Goals related to facilities and infrastructure are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Maintain, improve and develop capital facilities and infrastructure necessary to meet the goals and objectives of this management plan

Goal 2: Generate revenue through recreational opportunities

Objectives:

1. Track infrastructure
    a. Quantify each type and summarize by Tract (G1)
    b. Annual revenue / expenditures directly related to facilities / infrastructure (G1, G2)
    c. Date of construction completion of new projects; dates of maintenance events (G1)
2. Create two (2) new access points, one with public parking and one for specific user group access (G1)
3. Determine if existing gates are sufficient to control public access (G1)
4. Identify infrastructure needs, estimate costs for implementation and create priority list for implementation (G1, G2)
5. Evaluate revenue generation through development of recreational facilities (G2)
6. Evaluate the following specific infrastructure items:
    a. Water resource development projects, water supply development projects, storm-water management projects (G1)
    b. Linear activities (G1)
    c. Forestry (G1, G2)
7. Construct educational kiosks (G1)
8. Maintain hunting leases for wildlife management and revenue generation (G1, G2)

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J. Public Access, Recreational and Educational Opportunities

Much of the infrastructure and facilities discussed above are provided to support the goal established in this subsection. Public access, recreational and educational facilities and uses will be developed in a manner that is consistent with the purpose of acquisition.

The County intends to provide an improved experience for users by creating specific trails for user groups, developing regionally unique opportunities and maximizing types of use available within the Preserve. The County has developed a Conceptual Recreational Plan that has determined myriad uses and the carrying capacity of each. This Plan will guide construction and implementation of facilities to support the intended uses. Several new uses will be developed on the State Tract that are not feasible on the existing County and WMD Tracts. All objectives are dependent on sufficient funding. Goals related to public access, recreational and educational opportunities are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Provide public access, recreational and educational opportunities.

Objectives:

1. Develop a Recreation Plan (G1)
2. Develop a day use / picnic area
3. Develop new trails for hiking, biking, equestrian and OHV use (G1)
4. Designate a Wildlife Management Area or Public Small Game Hunting Area (G1)
5. Develop camping facilities (G1)
6. Construct a fishing pier with canoe / kayak launch (G1)
7. Provide road access for conditionally approved recreational uses (G1)
8. Maintain existing trails for hiking, biking, off highway vehicle (OHV; on State Tract) and equestrian use (G1)
9. Utilize a web-based platform for camping reservations (G1)
10. Conduct bio-blitzes (G1)
11. Provide eco-buggy tours (G1)

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K. Conservation Acquisition and Stewardship Partnerships

Beginning with the initial land acquisition program from the mid-2000's, the County, in conjunction with its partners, has been successful in identifying and acquiring additional lands to protect critical habitats and to increase the availability of resources. These partnerships have included municipalities, state agencies, and the SJRWMD.

The County's current program, *Volusia Forever*, provides for the acquisition and management of environmentally sensitive and outdoor recreation lands. The program, created in 2000 reinstated in 2020. *Volusia Forever* is funded through annual ad valorem assessment for a period of twenty years. A portion of this annual revenue is set aside for the management of conservation lands located across the county.

Where feasible, volunteer organizations are utilized to conduct and/or assist the County in the above stated objectives. Objectives that are being accomplished include volunteer efforts by the local Pawpaw Chapter of the Florida Native Plant Society to inventory the plant species occurring on the Preserve. Goals related to conservation acquisition and stewardship partnerships are listed below. Objectives to achieve one or more specific goal are provided under the goals.

Goal 1: Enhance resources and management through development of an optimal boundary that identifies potential important habitats, landscape-scale linkages, wildlife corridors, operational/resource management and access needs by continuing to identify and pursue acquisition needs and conservation stewardship partnerships.

Goal 2: Develop stewardship partners to achieve management objectives

Objectives:

1. Create an Optimal Boundary (G1)
2. Acquire essential parcels within the Optimal Boundary, as funding allows (G1)
3. Identify potential non-governmental organization partnerships and grant program opportunities (G2)
4. Develop partnerships with other agencies, municipalities, institutions and conservation organizations to achieve stated goals and objectives (G2)

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Table 7. Summarizing Goals and Objectives for the Preserve

Goals / Objectives		**Term***	**Priority**
No.	**Description**		
A	**Habitat Restoration and Improvement**		
G1	**Restore / improve native habitats trending away from optimal conditions**		
G2	**Implement management techniques that result in a trend towards Desired Future Conditions (DFCs) / habitat maintenance condition**		
O1	Quantify the number of		
O1.a	artificial land uses that will remain through the long-term of this plan	Short	High
O1.b	artificial land uses where restoration activities will occur	Short	High
O1.c	natural communities	Short	High
O2	Map the extent of, and quantify the acreage of each artificial land use and natural community	Short	High
O3	Identify, map, and quantify the acreage of management units that will be created to implement restoration and maintenance management activities	Short	Low
O4	Update the extent and acreage of natural communities after restoration activities have been implemented	Long	Low
B	**Fire Management**		
G1	**Maintain disturbance intervals in appropriate habitats**		
G2	**Develop a Prescribed Burn Plan**		
G3	**Improve site conditions that will foster increased use of prescribed fire**		
G4	**Implement a plan that will result in a trend toward use of prescribed fire in the growing season**		
O1	Identify the artificial and natural communities where fire management will be applied	Short	High
O2	Create a management unit map, and for each unit, identify the Management Unit (MU) number, total acreage, habitat type, and whether fire, or a fire surrogate is to be implemented	Short	High
O3	Develop an operational Fire Management Plan	Short	Low
O4	Develop a fire monitoring program that tracks:		
O4.a	Acres receiving fire surrogate treatments (by habitat, and year)	Short	Low
O4.b	Acres burned (incl. wild and prescribed fires)	Short	Low
O4.c	Post-burn analysis	Short	Low
O5	Implement Fire Management Plan (incl. fire or surrogate techniques as appropriate)	Long	Low
O6	Utilize fire monitoring program	Long	Low

DRAFT

C	**Hydrological Preservation and Restoration**		
G1	**Protect water quality and quantity, restore hydrology to the extent feasible, and maintain the restored condition**		
O1	Locate, quantify the size of, and evaluate condition of all culvert crossings	Short	High
O2	Replace failing culverts with low-water crossings or new culverts	Short	High
O3	Evaluate the feasibility and cost of creating an expanded littoral shelf in the largest artificial pond, located on the State Tract	Short	High
O4	List of acreages of wetland habitats onsite	Short	Low
O5	Evaluate the feasibility and cost of canoe/ kayak launch, etc.	Short	Low
O6	Research potential hydrological restoration projects where feasible / necessary	Long	Low
O7	Evaluate the feasibility and cost of boardwalks or similar for wetland / water crossings	Long	Low
D	**Sustainable Forest Management**		
G1	**Manage timber resources for resource conservation and habitat restoration, enhancement, and maintenance**		
G2	**Practice a stewardship ethic that embraces sustainable forest management practices**		
G3	**Generate revenue through sustainable forest management**		
G4	**Reestablish longleaf pine as the dominant overstory species in appropriate communities through the use of sustainable forestry and prescribed fire**		
O1	Conduct a timber inventory	Short	High
O2	Develop a Forestry Plan	Short	Low
O3	Utilize revenue generation to offset management expenses	Long	Low
O4	Utilize sustainable forestry practices to restore longleaf pine	Long	Low
O5	Implement Forestry Plan	Long	Low
E	**Non-Native Invasive Species Maintenance and Control**		
G1	**Control non-native species**		

DRAFT

G2	**Implement an Integrated Pest Management program**		
O1	Identify species, locations, and extent of invasive species	Long	High
O2	Utilize ArcGIS for monitoring of invasive species locations and treatments	Long	High
O3	Track area treated per year and document treatment method	Long	High
O4	Document number of hogs trapped / removed per year	Long	High
F	**Imperiled Species Habitat Management**		
G1	**Document listed and imperiled species occurring on the preserve**		
G2	**Provide optimal site conditions to aid in the recovery of listed and imperiled species**		
G3	**Provide opportunities to receive listed and imperiled species that would increase the health of the population**		
G4	**Partner with institutions / agencies / conservation groups to accomplish inventories for imperiled / listed species**		
G5	**Educate visitors and public of presence and importance of listed species**		
O1	Estimate gopher tortoise populations	Short	High
O2	Determine feasibility of creating a gopher tortoise recipient site	Short	High
O3	Conduct survey for *Deeringothamnus rugelii* through partnership with the Pawpaw Chapter, FNPS and USFWS	Short	Low
O4	Document all listed and imperiled species occurrences. To include:		
O4.a	Species, location and approximate population size, where feasible	Long	Low
O4.b	Date and type of land management activities conducted in the MU containing the species	Long	Low
O5	Utilize game cameras to document imperiled wildlife species	Long	Low
O6	Set up photo stations for monitoring	Long	Low
O7	Conduct inventories as needed for listed species	Long	Low
O8	Confirm presence / absence of species documented in citizen science projects, i.e. iNaturalist, that have not been documented by	Long	Low

DRAFT

	the County staff or FNAI		
O9	Report new, confirmed findings to Florida Natural Areas Inventory	Long	Low
O10	Install two (2) kiosks with educational information regarding listed and imperiled species onsite and their habitat management needs	Long	Low
G	**Imperiled Natural Communities**		
G1	**Restore, protect and maintain imperiled natural communities**		
O1	Determine current natural community condition	Short	Low
O2	Determine restoration / management needs to trend the community towards DFCs	Short	Low
O3	Introduce prescribed fire to the scrubby flatwoods within the Preserve	Long	High
O4	Document the extent of scrubby flatwoods after restoration activities	Long	Low
O5	Conduct surveys for listed imperiled species in the scrubby flatwoods	Long	Low
H	**Cultural and Historical Resources**		
G1	**Identify, protect, preserve, and maintain the cultural resources of the Preserve**		
O1	Continue to monitor, and protect and preserve resources	Long	Low
O2	Submit new finds to SHPO for inclusion on the Florida Master Site File	Long	Low
I	**Facilities and Infrastructure**		
G1	**Develop and Maintain/Improve the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan**		
G2	**Generate revenue through recreational opportunities**		
O1	Track infrastructure		
O1.a	Quantify each type and summarize by Tract	Short	High
O1.b	Annual revenue / expenditures directly related to facilities / infrastructure	Long	Low
O1.c	Date of construction completion of new projects; dates of maintenance events	Long	Low
O2	Create two (2) new access points, one with public parking and one for specific user group	Short	High

DRAFT

	access		
O3	Determine if existing gates are sufficient to control public access	Short	High
O4	Identify infrastructure needs, estimate costs for implementation and create priority list for implementation	Long	Low
O5	Evaluate revenue generation through development of recreational facilities	Long	Low
O6.a	Water resource development projects, water supply development projects, storm-water management projects	Long	Low
O6.b	Linear activities	Long	Low
O6.c	Forestry	Long	Low
O7	Construct educational kiosks	Long	Low
O8	Maintain hunting leases for wildlife management and revenue generation	Long	Low
J	**Public Access, Recreational and Educational Opportunities**		
G1	**Provide public access, recreational and educational opportunities**		
O1	Develop a Recreation Plan	Short	High
O2	Develop a day use / picnic area	Short	High
O3	Develop new trails for hiking, biking, equestrian and OHV use	Long	High
O4	Designate a Wildlife Management Area or Public Small Game Hunting Area	Long	High
O5	Develop camping facilities	Long	High
O6	Construct a fishing pier with canoe / kayak launch	Long	High
O7	Provide road access for conditionally approved recreational uses	Long	High
O8	Maintain trails for hiking, biking, off highway vehicle (OHV; on State Tract), and equestrian use	Long	Low
O9	Utilize a web-based platform for camping reservations	Long	Low
O10	Conduct bio-blitzes	Long	Low
O11	Provide eco-buggy tours	Long	Low
K	**Conservation Acquisition and Stewardship Partnerships**		

DRAFT

G1	**Enhance resources and management through development of an optimal boundary that identifies potential important habitats, landscape-scale linkages, wildlife corridors, operational / resource management and access needs by continuing to identify and pursue acquisition needs and conservation stewardship partnerships.**		
G2	**Develop stewardship partners to achieve management objectives**		
O1	Create an Optimal Boundary	Short	High
O2	Acquire essential parcels within the Optimal Boundary, as funding allows	Long	High
O3	Identify potential non-governmental organization partnerships and grant program opportunities	Long	High
O4	Develop partnerships with other agencies, municipalities, institutions and conservation organizations to achieve stated goals and objectives of this plan	Long	High

***Short-term = 0-2 years; Long-term = 3-10 years**

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V. MANAGEMENT CHALLENGES AND STRATEGIES

A. Law Enforcement / Historic Resources

Challenge: Potential for adverse impacts to resources due to public use.

Situated amid a rural area, there presently exists a significant demand for access and use by the public to the Preserve. As the adjacent region continues to grow, it is anticipated that the demand by the public for access to the Preserve will dramatically increase. Addressing this demand in a responsible manner that ensures proper stewardship of the Preserves' resources will be a continuing challenge. The County intends to provide the public with appropriate opportunities to use and enjoy the Preserve. However, these activities are to be offered in a way that is compatible with and furthers the over-arching strategy of providing proper protection of the Preserves' natural resources.

Strategy:

1) Construct / maintain gates, parking, trails at appropriate locations
2) Monitor for potential impacts related to specific uses

B. Habitat Management

Challenge: Many years of fire suppression has altered the strata of the fire dependent communities and reduced the potential suitability of the site for upland listed wildlife species.
Challenge: Non-native invasive species occur on the Preserve and will continue to invade and disrupt natural communities
Challenge: Recreational uses have the potential to result in unanticipated adverse impacts to natural resources

Management issues related to natural communities create a challenge. The mosaic of natural communities within the Preserve is comprised of a wide variety of habitats, including several that are rare. These communities are of varying quality and stages of maturity/succession. Several of the communities also present challenging management opportunities, especially given the location of the Preserve. For example, several communities are dependent upon a comparably frequent fire interval.

Given concerns for ecological values and mitigation of hazard to adjacent developments, a prescribed fire plan will be implemented subsequent to final approval. Due to smoke sensitive areas, such as State Road 44 and State Road 415 the plan will address challenges such as the substantial difficulty in sustaining a sufficient fire frequency to maintain healthy ecosystems and the protection of historical and / or archaeological resources, and possible solutions such as mechanical alternatives to prescribed fire. The Preserve is situated amid a rural / residential area. Aside from adjacent residential land use, the Preserve is also bounded or traversed by the regional thoroughfares of State Road 44 and State Road 415. In addition to being adjacent to the aforementioned "smoke-sensitive areas", the wind pattern of this region also complicates the use of prescribed fire. Wind conditions will be considered for burn prescriptions to avoid smoke issues.

As discussed in detail in the Goals and Objectives section, non-native invasive species are a significant threat to the ecological integrity of conservation lands managed for long-term habitat protection. These species often establish rapidly in disturbed or natural areas because they lack the predators, pathogens,

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and ecological controls present in their native ranges. These species require a wide array of treatment types and careful monitoring.

Recreational uses proposed for the Preserve have been evaluated and determined to be in concert with the restoration and protection of natural resources for which the properties have been acquired. However, if not monitored, such uses may extend beyond the conditional parameters and result in adverse impacts, such as unauthorized trails, uses occurring in areas not designated for such use, etc.

Strategy:

1) Implement the Prescribed Fire Plan
2) Conduct mechanical and other fire surrogate activities where necessary
3) Utilize the principals of Integrated Pest Management (IPM) and Early Detection, Rapid Response (EDRR) in the management of non-native, invasive species
4) Monitor recreational uses for potential adverse impacts and limit, revise or remove such uses as deemed necessary

C. Prescribed Fire

Challenge: The use of prescribed fire as a management tool at the Preserve is hindered by several outside variables.

Several constraints exist that influence how and when prescribed fire can be implemented at the Preserve. These constraints include residential housing to the north, west, and south, State Road 415 to the east and State Road 44 to the north. These surrounding land uses have implications for smoke management in association with prescribed burning. Smoke management must be considered for the major highway areas to maintain safe driving conditions for these thoroughfares. Attention to weather conditions, proper management techniques, and education of surrounding residents can reduce some of these conflicts.

Other management issues related to prescribed fire is the establishment of fire lines and reducing fuel loads. The fire lines must be built to allow fire to enter ecotones between pyrogenic communities and adjacent wetland areas while preventing potential muck fires that could arise from fire reaching the interior of these communities. In some areas, fuel loads have built up due to fire exclusion and will need to be mechanically reduced prior to conducting prescribed fire.

Strategy:

1) In association with the prescribed burn plan, awareness and education may be provided to the public and users of the project site. This is accomplished by public announcements and targeted programming. This could include elements such as smoke management, the scheduling of prescribed fires, aesthetic value of the burn, the long-term protection of adjacent properties, and the importance of fire for wildlife and plants.
2) Map existing firelines, identify those that occur within ecotones and alter their location. This shall be accomplished over a number of years and will become easier to identify and rectify as fire is applied throughout the Preserve
3) Implement fuel reduction techniques (forestry mowing, roller chopping, canopy thinning)

DRAFT

throughout the pyrogenic communities

D. Management Costs

Challenge: Securing adequate funding for habitat management planning and the implementation of land management activities.

Strategy:

1) Utilize dedicated revenue from Volusia Forever and revenue generated from the Preserve
2) Seek cost sharing opportunities

VI. PRIORITY SCHEDULING, COST ESTIMATES AND FUNDING SOURCES FOR CONDUCTING MANAGEMENT ACTIVITIES

A. Priority Scheduling

The short and long term goals established in Section IV above, along with their designated priority levels were used to develop a Priority Schedule. The schedule is divided into two chronological sections; 1-2 years, 3-10 years. The schedule will be used to develop cost estimates for land management activities.

DRAFT

Table 8. Schedule of Events

Years 1 -2:

Section / Objectives		Status
A	**Habitat Restoration and Improvement**	
O1.a	Quantify the number of artificial land uses that will remain through the long-term of this plan	Completed with development of the Plan
O1.b	Quantify the number of artificial land uses where restoration activities will occur	Completed with development of the Plan
O1.c	Quantify the number of natural communities	Completed with development of the Plan
O2	Map the extent of, and quantify the acreage of each artificial land use and natural community	Completed with development of the Plan; update after implementation of restoration activities for the subsequent 10-year management plan
O3	Identify, map, and quantify the acreage of management units that will be created to implement restoration and maintenance management activities	In development
B	**Fire Management**	
O1	Identify the artificial and natural communities where fire management will be applied	Completed with development of the Plan
O2	Create a management unit map, and for each unit, identify the Management Unit (MU) number, total acreage, habitat type, and whether fire, or a fire surrogate is to be implemented	In development
O3	Develop an operational Fire Management Plan	In development
O4.a	Develop a fire monitoring program that tracks acres receiving fire surrogate treatments (by habitat, and year)	In development
O4.b	Develop a fire monitoring program that tracks acres burned (incl. wild and prescribed fires)	In development
O4.c	Develop a fire monitoring program that tracks post-burn analysis	In development
C	**Hydrological Preservation and Restoration**	
O1	Locate, quantify the size of, and evaluate condition of all culvert crossings	In progress
O2	Replace failing culverts with low-water crossings or new culverts	In progress
O3	Evaluate the feasibility and cost of creating an expanded littoral shelf in the largest artificial pond, located on the State Tract	Pending
O4	List of acreages of wetland habitats onsite	Completed with development of the Plan
O5	Evaluate the feasibility and cost of canoe/ kayak launch, etc.	Pending

DRAFT

D	**Sustainable Forest Management**	
O1	Conduct a timber inventory	Pending
O2	Develop a Forestry Plan	Pending
F	**Imperiled Species Habitat Management**	
O1	Estimate gopher tortoise populations	In development
O2	Determine feasibility of creating a gopher tortoise recipient site	Completed with development of the Plan (Pending as of MPAG meeting)
O3	Conduct survey for *Deeringothamnus rugelii* through partnership with the Pawpaw Chapter, FNPS and USFWS	Ongoing task
G	**Imperiled Natural Communities**	
O1	Determine current natural community condition	Completed with development of the Plan
O2	Determine restoration / management needs to trend the community towards DFCs	Completed with development of the Plan
I	**Facilities and Infrastructure**	
O1.a	Quantify each infrastructure type and summarize by Tract	Ongoing task
O2	Create two (2) new access points, one with public parking and one for specific user group access	Pending
O3	Determine if existing gates are sufficient to control public access	Pending
J	**Public Access, Recreational and Educational Opportunities**	
O1	Develop a Recreation Plan	Completed with development of the Plan
O2	Develop a day use / picnic area	Pending
K	**Conservation Acquisition and Stewardship Partnerships**	
O1	Create an Optimal Boundary	Completed with development of the Plan

DRAFT

Years 3-10

Goals / Objectives		Status
A	**Habitat Restoration and Improvement**	
O4	Update the extent and acreage of natural communities after restoration activities have been implemented	
B	**Fire Management**	
O5	Implement Fire Management Plan (incl. fire or surrogate techniques as appropriate)	Ongoing
O6	Utilize fire monitoring program	Ongoing
C	**Hydrological Preservation and Restoration**	
O6	Research potential hydrological restoration projects where feasible / necessary	Pending
O7	Evaluate the feasibility and cost of boardwalks or similar for wetland / water crossings	Pending
D	**Sustainable Forest Management**	
O3	Utilize revenue generation to offset management expenses	Ongoing
O4	Utilize sustainable forestry practices to restore longleaf pine	Ongoing
O5	Implement Forestry Plan	Ongoing County, WMD Tracts; Pending on State Tract
E	**Non-Native Invasive Species Maintenance and Control**	
O1	Identify species, locations, and extent of invasive species	Ongoing
O2	Utilize ArcGIS for monitoring of invasive species locations and treatments	Ongoing
O3	Track area treated per year and document treatment method	Ongoing
O4	Document number of hogs trapped / removed per year	Ongoing
F	**Imperiled Species Habitat Management**	
O4.a	Document imperiled species, location and approximate population size, where feasible	Ongoing
O4.b	Document date and type of land management activities conducted in the MU containing imperiled species	Ongoing
O5	Utilize game cameras to document imperiled wildlife species	Pending

DRAFT

O6	Set up photo stations for monitoring	Pending
O7	Conduct inventories as needed for listed species	Ongoing
O8	Confirm presence / absence of species documented in citizen science projects, i.e. iNaturalist, that have not been documented by the County staff or FNAI	Completed with development of the Plan
O9	Report new, confirmed findings to Florida Natural Areas Inventory	Ongoing
O10	Install two (2) kiosks with educational information regarding listed and imperiled species onsite and their habitat management needs	Pending
G	**Imperiled Natural Communities**	
O3	Introduce prescribed fire to the scrubby flatwoods within the Preserve	Pending mechanical fuel reduction
O4	Document the extent of scrubby flatwoods after restoration activities	Completed with development of the Plan; to be updated with next 10-year management plan
O5	Conduct surveys for listed imperiled species in the scrubby flatwoods	Ongoing
H	**Cultural and Historical Resources**	
O1	Continue to monitor, protect, and preserve resources	Ongoing
O2	Submit new finds to SHPO for inclusion on the Florida Master Site File	Ongoing
I	**Facilities and Infrastructure**	
O1.b	Track annual revenue / expenditures directly related to facilities / infrastructure	Ongoing
O1.c	Track date of construction completion of new projects; dates of maintenance events	Ongoing
O4	Identify infrastructure needs, estimate costs for implementation and create priority list for implementation	Ongoing
O5	Evaluate revenue generation through development of recreational facilities	Ongoing
O6.a	Evaluate water resource development projects, water supply development projects, storm-water management projects	Pending
O6.b	Linear activities	Ongoing
O6.c	Forestry	Ongoing
O7	Construct educational kiosks	Pending
O8	Maintain hunting leases for wildlife management and revenue generation	Ongoing

DRAFT

J	**Public Access, Recreational and Educational Opportunities**	
O3	Develop trails for hiking, biking, and equestrian use	Pending for State Tract
O4	Designate a Wildlife Management Area or Small Game Hunting Area	In development
O5	Develop camping facilities	Pending
O6	Construct a fishing pier with canoe / kayak launch	Pending
O7	Provide road access for conditionally approved recreational uses	Pending
O8	Maintain trails for hiking, biking, off highway vehicle (OHV; on State Tract), and equestrian use	Ongoing
O9	Utilize a web-based platform for camping reservations	Ongoing
O10	Conduct bio-blitzes	Ongoing
O11	Provide eco-buggy tours	Ongoing
K	**Conservation Acquisition and Stewardship Partnerships**	
O2	Acquire additional land within the Optimal Boundary as funding allows	As funding allows
O3	Identify potential non-governmental organization partnerships and grant program opportunities	Ongoing
O4	Develop partnerships with other agencies, municipalities, institutions and conservation organizations to achieve stated goals and objectives	Ongoing

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B. Cost Estimates

The cost estimates provided here reflect the costs necessary to achieve the goals stated above and organized in a manner consistent with the Land Management Uniform Accounting Council, Chapter 259.037(3)(a) as provided below. Specific management activities and costs must initially be grouped, at a minimum, within the following categories: 1) Resource management, 2) administration, 3) support, 4) capital improvements, 5) recreation and visitor services, 6) law enforcement activities.

Table 9. Short Term Annual Expenditure Estimate (Years 1 - 2):

1. Resource management	**Annual Cost**
Habitat restoration	
Prescribed burning	
Non-native invasive species control	
Listed species survey and protection	
Cultural resource management	
Timber Management	
Hydrological Management	
Other	
Subtotal	$85,500
2. Administration	
General Administration	$8,000
3. Support	
Resource Management Planning	
Land Management Review	
Training / Staff Development	
Vehicle / Equipment Operation & Maintenance	
Other	
Subtotal	$16,000
4. Capital improvements	
New construction	
Facility/ infrastructure maintenance	
Subtotal	$50,000
5. Recreation visitor services	
Signage; operations; programs	
Public meetings	
Subtotal	$25,000
6. Law enforcement activities	
Resource protection	$3,000
TOTAL	**$187,500**

DRAFT

Table 10. Long Term Annual Expenditure Estimate (Years 3 - 10):

1. Resource management	**Annual Cost**
Habitat restoration	
Prescribed burning	
Non-native invasive species control	
Listed species survey and protection	
Cultural resource management	
Timber Management	
Hydrological Management	
Other	
Subtotal	$20,500
2. Administration	
General Administration	$5,000
3. Support	
Resource Management Planning	
Land Management Review	
Training / Staff Development	
Vehicle / Equipment Operation & Maintenance	
Other	
Subtotal	$14,500
4. Capital improvements	
New construction	
Facility/ infrastructure maintenance	
Subtotal	$90,000
5. Recreation visitor services	
Signage; operations; programs	
Public meetings	
Subtotal	$3,000
6. Law enforcement activities	
Resource protection	$2,000
TOTAL	**$135,000**

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C. Estimated Revenue Sources

Revenue resources for accomplishing the above goals come from user group fees, sustainable forestry revenue, and land leases, and represents only a small fraction of the costs associated with management of the property. The majority of the management objectives are primarily funded through Volusia Forever funds and cost share opportunities grants.

Additional funding sources may come from the development of a gopher tortoise recipient site located on the State Tract.

VII. ANALYSIS FOR CONTRACTING PRIVATE VENDORS FOR RESTORATION AND MANAGEMENT

The following management and restoration activities have been considered for outsourcing to private entities. It has been determined that items selected as "approved" below are those that Volusia County either does not have in-house expertise to accomplish or which can be done at less cost by an outside provider of services. Those items selected as "rejected" represent those for which Volusia County has in-house expertise and/or which the agency has found it can accomplish at less expense than through contracting with outside sources. "Conditional" items are those that could be done either by an outside provider or by the agency at virtually the same cost or with the same level of competence:

Table 11. Analysis for contracting private vendors for restoration and management

Activity	Approved	Conditional	Rejected
Road/Trail Development and Maintenance		**X**	
Herbicide Application for Habitat Maintenance		**X**	
Prescribed Burning		X	
Vegetation Inventories		**X**	
Timber Harvest Activities		**X**	
Mechanical Restoration Activities		**X**	
Public Contact and Educational Facilities Development		**X**	
Non-Native Invasive Species Control		**X**	
Management Plan Development		**X**	
Imperiled Species Survey / Monitoring		**X**	
Habitat Restoration Plan Development		**X**	

VIII. LAND MANAGEMENT REVIEW

In compliance with Section 259.036, F. S. the Florida Department of Environmental Protection (FDEP) Division of State Lands (DSL) will conduct reviews of the Preserve to determine whether conservation, preservation, and recreation lands owned by the state Board of Trustees of the Internal Improvement Trust Fund (Board) are being managed properly. These reviews are conducted on a five-year cycle. The first land management review should occur in 2031.

SJRWMD conducted a public review of the 2013 Deep Creek Preserve General Management Plan in 2023 (Appendix R).

IX. COMPLIANCE WITH STATE, FEDERAL AND LOCAL GOVERNMENT REQUIREMENTS

The proposed activities within this Plan are in accordance with state, federal and local government requirements and regulations. Some activities proposed may require permits from these agencies prior to implementation. This is primarily related to infrastructure and facility construction. Any such proposed construction activities will be reviewed with the appropriate agencies. This will include, but not necessarily limited to, FDEP, SJRWMD, Army Corps of Engineers, Volusia County, Florida Department of Transportation, etc.

Where practicable, all facilities are designed and constructed to comply with the American Disabilities Act (Public Law 101-336). The universal access requirements of this law are followed in all cases except where the law allows for reasonable exceptions, such as when handicap access is structurally impractical or when providing access fundamentally changes the purpose / character of the facility.

Uses planned for the Preserve are in compliance with the Conceptual State Lands Management Plan and its requirement for "balanced public utilization," and are in compliance with the eight Florida Forever goals, as well as the guidance and directives of Chapters 372, 253, 259, 327, 370, 403, 870, 373, 375, 378, 487, and 597 FS. This plan is also in conformance with the Local Government Comprehensive Plan for Volusia County, Florida, as approved and adopted. The letter confirming compliance is contained in Appendix Q.

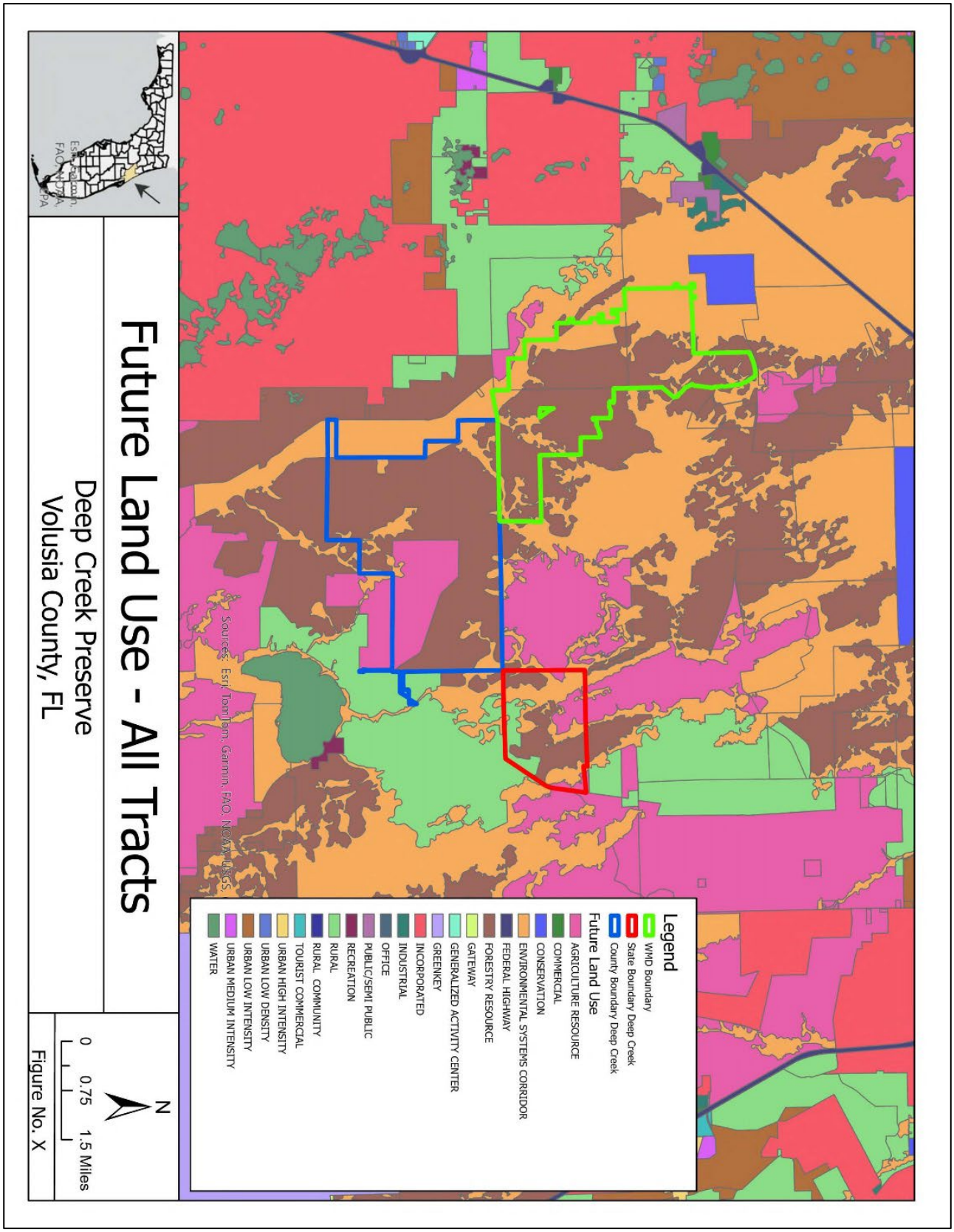


Figure 34. Future Land Use Map

X. SOIL AND WATER RESOURCE CONSERVATION

The County will continue to employ best management practices for activities and projects which potentially impact soil and water in order to minimize soil erosion and protect water quality. Soil disturbing activities will be conducted only in areas that present the least likelihood of causing erosion problems, avoiding the steepest slopes, streamside management units and impacts to cultural resources. Soil disturbing activities will follow landform contours to the extent practicable and will not occur without assessment against potential impacts to cultural resources and supervision during such activities by trained staff (ARM training). On areas that have been discovered that may prevent erosion problems, an assessment will be made to determine if soil erosion is occurring, and if so, appropriate measures will be implemented to stop or control the effects of this erosion.

XI. TECHNICAL LITERATURE REFERENCES

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APPENDIX A

FLORIDA DEPARTMENT OF Environmental Protection

Marjory and Archie Carr Building
3800 Commonwealth Boulevard
Tallahassee, FL 32399

Ron DeSantis
Governor

Jay Collins
Lt. Governor

Alexis A. Lambert
Secretary

12/19/2025

VOLUSIA COUNTY / Parks, Recreation, and Culture
Attn: Nick Dunnam
123 W Indiana Ave.
Deland, FL, 32720

Re: New Lease Agreement No. 4890

Dear Nick,

Enclosed is a fully executed original of the above referenced Lease Agreement No. 4890, New for your records.

Thank you for your assistance and cooperation in this matter. Should you have any questions, please contact me at (850) 245-2844 or Shanna.Smith@FloridaDEP.gov.

Sincerely,

Shanna Smith

Shanna Smith
Government Operations Consultant I
Bureau of Public Land Administration
Division of State Lands
State of Florida Department of Environmental Protection

This Lease was prepared by:
Shanna Smith
Bureau of Public Land Administration
Division of State Lands
Department of Environmental Protection, MS 130
3900 Commonwealth Boulevard,
Tallahassee, Florida 32399-3000
Action No. 50702

OAL2
[+/- 1,339.66 acres]

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

LEASE AGREEMENT

Lease Number 4890

THIS LEASE AGREEMENT is made and entered into this 19th day of December, 2025, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA** hereinafter referred to as "LESSOR," and **VOLUSIA COUNTY, FLORIDA,** a political subdivision of the State of Florida, hereinafter referred to as "LESSEE."

LESSOR, for and in consideration of mutual covenants and agreements hereinafter contained, does hereby lease to said LESSEE, the lands described in paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. **DELEGATIONS OF AUTHORITY**: LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, State of Florida Department of Environmental Protection.

2. **DESCRIPTION OF PREMISES**: The property subject to this lease contains approximately **1,339.66** acres, is situated in the County of **Volusia,** State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".

3. **TERM**: The term of this lease shall be for a period of 25 years commencing on December 19, 2025, and ending on December 18, 2050, unless sooner terminated pursuant to the provisions of this lease.

4. **PURPOSE**: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and for resource based public outdoor activities and education which are compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(7), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 8 of this lease.

5. **QUIET ENJOYMENT AND RIGHT OF USE**: LESSEE shall have the right of ingress and egress to, from and upon the leased premises for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

6. **UNAUTHORIZED USE**: LESSEE shall, through its agents and employees, prevent the unauthorized use of the leased premises or any use thereof not in conformity with this lease.

7. **ASSIGNMENT**: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR, which consent shall not be unreasonably withheld. Any assignment made either in whole or in part without the prior written consent of LESSOR shall be void and without legal effect.

8. **MANAGEMENT PLAN**: LESSEE shall prepare and submit a Management Plan for the leased premises in accordance with Section 253.034, Florida Statutes and subsection 18-2.021(4), Florida Administrative Code. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands, State of Florida Department of Environmental Protection. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. LESSEE shall provide LESSOR with an opportunity to participate in all phases of preparing and developing the Management Plan for the leased premises. The Management Plan shall be submitted to LESSOR in draft form for review and comments within ten months of the effective date of this lease. LESSEE shall give LESSOR reasonable notice of the application for and receipt of any state, federal or local permits as well as any public hearings or meetings relating to the development or use of the leased premises. LESSEE shall not proceed with development of said leased premises including, but not limited to, funding, permit applications, design or building contracts until the Management Plan required herein has been submitted and approved. Any financial commitments made by LESSEE which are not in compliance with the terms of this lease shall be done at LESSEE'S own risk. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

9. **EASEMENTS**: All easements of any nature including, but not limited to, utility easements are required to be granted by LESSOR. LESSEE is not authorized to grant any easements of any nature and any easement granted by LESSEE shall be void and without legal effect.

10. **SUBLEASES:** This lease is for the purposes specified herein and subleases of any nature are prohibited, without the prior written approval of LESSOR. Any sublease not approved in writing by LESSOR shall be void and without legal effect.

11. **RIGHT OF INSPECTION**: LESSOR or its duly authorized agents, representatives or employees shall have the right to reasonably inspect the leased premises and the works and operations of LESSEE in any matter pertaining to this lease.

12. **PLACEMENT AND REMOVAL OF IMPROVEMENTS**: All buildings, structures and improvements shall be constructed at the expense of LESSEE in accordance with plans prepared by professional designers and shall require the prior written approval of LESSOR as to purpose, location and design. Further, no trees, other than non-native species, shall be removed or major land alterations done br LESSEE without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE before or upon termination of this lease.

13. **INSURANCE REQUIREMENTS:** During the term of this lease LESSEE shall procure and maintain policies of fire, extended risk, and liability insurance coverage. The extended risk and fire insurance coverage shall be in an amount equal to the full insurable replacement value of any improvements or fixtures located on the leased premises. The liability insurance coverage shall be in amounts not less than $200,000 per person and $300,000 per incident or occurrence for personal injury, death, and property damage on the leased premises. During the term of this lease, if Section 768.28, Florida Statutes, or its successor statute is subsequently amended to increase the amount of the liability coverages specified herein, LESSEE shall immediately obtain liability coverage for the increased amounts. Such policies of insurance shall name LESSOR and the State of Florida as additional insureds. LESSEE shall submit written evidence of having procured all insurance policies required herein prior to the effective date of this lease and shall submit annually thereafter, written evidence of maintaining such insurance policies to the Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, Mail Station 130, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. LESSEE shall purchase all policies of insurance from a financially-responsible insurer duly authorized to do business in the State of Florida. In lieu of

purchasing insurance, LESSEE may elect to self-insure these coverages. Any certificate of self-insurance shall be issued or approved by the Chief Financial Officer, State of Florida. The certificate of self-insurance shall provide for casualty and liability coverage. LESSEE shall immediately notify LESSOR and the insurer of any erection or removal of any building or other improvement on the leased premises and any changes affecting the value of any improvements and shall request the insurer to make adequate changes in the coverage to reflect the changes in value. LESSEE shall be financially responsible for any loss due to failure to obtain adequate insurance coverage and the failure to maintain such policies or certificate in the amounts set forth shall constitute a breach of this lease.

14. **LIABILITY:** LESSEE shall assist in the investigation of injury or damage claims either for or against LESSOR or the State of Florida pertaining to LESSEE'S respective areas of responsibility under this lease or arising out of LESSEE'S respective management programs or activities and shall contact LESSOR regarding the legal action deemed appropriate to remedy such damage or claims. LESSEE is responsible for, and, to the extent allowed by law, shall indemnify, protect, defend, save and hold harmless LESSOR and the State of Florida, its officers, agents and employees from any and all damages, claims, costs, expense, including attorney's fees, demands, lawsuits, causes of action or liability of any kind or nature arising out of all personal injury and property damage attributable to the negligent acts or omissions of LESSEE, and its officers, employees, and agents. Nothing herein shall be construed as a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims. In the event LESSEE subcontracts any part or all of the work performed in the leased premises, the LESSEE shall require each and every subcontractor to identify the LESSOR as an additional insured on all insurance policies required by the LESSEE. Any contract awarded by LESSEE for work in the leased premises shall include a provision whereby the LESSEE'S subcontractor agrees to indemnify, pay on behalf, and hold the LESSOR harmless for all injuries and damages arising in connection with the LESSEE'S subcontract.

15. **PAYMENT OF TAXES AND ASSESSMENTS:** LESSEE shall assume full responsibility for and shall pay all taxes, assessments, liens or other similar liabilities that accrue to the leased premises or to the improvements thereon arising after this lease commences including any and all ad valorem taxes and drainage and special assessments or personal property taxes of every kind and all construction or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises subsequent to the effective date of this lease. In no event shall the LESSEE be held liable for such liabilities which arose prior to the effective date of this lease.

16. **NO WAIVER OF BREACH:** The failure of LESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease shall not be construed as a waiver of such covenants, terms or conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by LESSOR.

17. **TIME:** Time is expressly declared to be of the essence of this lease.

18. **NON-DISCRIMINATION:** LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

19. **UTILITY FEES:** LESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased premises and for having the utilities turned off when the leased premises are surrendered.

20. **MINERAL RIGHTS:** This lease does not cover petroleum or petroleum products or minerals and does not give the right to LESSEE to drill for or develop the same.

21. **RIGHT OF AUDIT:** LESSEE shall make available to LESSOR all financial and other records relating to this lease, and LESSOR shall have the right to audit such records at any reasonable time during the term of this lease. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to the provisions of Chapter 119, Florida Statutes.

22. **CONDITION OF PREMISES:** LESSOR assumes no liability or obligation to LESSEE with reference to the condition of the leased premises. The leased premises herein are leased by LESSOR to LESSEE in an "as is" condition, with LESSOR assuming no responsibility for the care, repair, maintenance or improvement of the leased premises for the benefit of LESSEE.

23. **COMPLIANCE WITH LAWS:** LESSEE agrees that this lease is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

24. **NOTICE:** All notices given under this lease shall be in writing and shall be served by certified mail including, but not limited to, notice of any violation served pursuant to Section 253.04, Florida Statutes, to the last address of the party to whom notice is to be given, as designated by such party in writing. LESSOR and LESSEE hereby designate their address as follows:

LESSOR: State of Florida Department of Environmental Protection
Division of State Lands
Bureau of Public Land Administration, MS 130
3800 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

LESSEE: Volusia County
County of Volusia Resource Stewardship Division
123 W. Indiana Ave, Room 200
Deland, Florida 32720

25. **BREACH OF COVENANTS, TERMS, OR CONDITIONS:** Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

26. **DAMAGE TO THE PREMISES:** (a) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (b) LESSEE shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants, or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required

closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE'S obligations set forth in this paragraph shall survive the termination or expiration of this lease. This paragraph shall not be construed as a limitation upon LESSEE'S obligations as set forth in paragraph 14 of this lease, nor upon any other obligations or responsibilities of LESSEE as set forth herein. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE'S activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production, placement, treatment, release or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting periods of the applicable governmental agencies. This paragraph shall not be deemed to apply to any conditions existing prior to the effective date of this lease.

27. **ENVIRONMENTAL AUDIT:** At LESSOR'S discretion, LESSEE shall provide LESSOR with a current Phase I environmental site assessment conducted in accordance with the State of Florida Department of Environmental Protection, Division of State Lands' standards prior to termination of this lease, and if necessary a Phase II environmental site assessment.

28. **SURRENDER OF PREMISES:** Upon termination or expiration of this lease, LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, LESSEE shall give written notification to the Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection ("Division"), Mail Station 130, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, at least six months prior to the release of any or all of the leased premises. Notification shall include a legal description, this lease number, and an explanation of the release. The release shall only be valid if approved by LESSOR through the execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon termination or expiration of this lease, all improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any improvements upon termination or expiration of this lease shall be at

LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises a representative of the Division shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division.

29. **BEST MANAGEMENT PRACTICES:** LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.018(2)(h), Florida Administrative Code, which have been selected, developed, or approved by LESSOR, LESSEE or other land managing agencies for the protection and enhancement of the leased premises.

30. **PUBLIC LANDS ARTHROPOD CONTROL PLAN:** LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

31. **PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES:** Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the leased premises or against any interest of LESSOR therein.

32. **PARTIAL INVALIDITY:** If any term, covenant, condition or provision of this lease shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

33. **ARCHAEOLOGICAL AND HISTORIC SITES:** Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the State of Florida Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Chapter 18-2 Florida Administrative Code, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

34. **SOVEREIGNTY SUBMERGED LANDS:** This lease does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

35. **ENTIRE UNDERSTANDING:** This lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of LESSOR.

36. **MAINTENANCE OF IMPROVEMENTS:** LESSEE shall maintain the real property contained within the leased premises and the improvements located thereon, in a state of good condition, working order and repair including, but not limited to, removing all trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, and meeting all building and safety codes. LESSEE shall maintain any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease.

37. **GOVERNING LAW:** This lease shall be governed by and interpreted according to the laws of the State of Florida.

38. **SIGNS:** LESSEE shall ensure that the area is identified as being publicly owned and operated as a public facility in all signs, literature and advertising. If federal grants or funds are used by LESSEE for any project on the leased premises LESSEE shall erect signs identifying the leased premises as a federally assisted project.

39. **SECTION CAPTIONS:** Articles, subsections and other captions contained in this lease are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease or any provisions thereof.

40. **ADMINISTRATIVE FEE:** LESSEE shall pay LESSOR an annual administrative fee of $300 pursuant to subsection 18-2.021(8), Florida Administrative Code. The initial annual administrative fee shall be payable within thirty days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from July 1 to June 30. Each annual payment thereafter shall be due and payable on July 1 of each subsequent year.

41. **RIGHT OF TERMINATION:** Anything contained in this lease to the contrary notwithstanding, LESSOR shall have the right and option to terminate this lease, at will, for any reason whatsoever, by giving the LESSEE written notice of such election to terminate at least six (6) months prior to the effective date of such termination. LESSEE shall continue to honor its obligations under the lease until the effective date of the termination, including LESSEE's obligations concerning surrender of the leased premises.

[*Remainder of page intentionally left blank; Signature page follows*]

IN WITNESS WHEREOF, the parties have caused this lease to be executed on the day and year first above written.

WITNESSES:

Signature: Shannadsmith

Printed Name: Shanna Smith

Address: 3800 Commonwealth Blvd

Tallahassee, FL 32399

Signature: Jay Sircy

Printed Name: Jay Sircy

Address: 3800 Commonwealth Blvd

Tallahassee, FL 32399

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

(SEAL)

BY: _____

Brad Richardson, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me, by ✓ physical presence or ___ online notarization this 19th day of December, 2025 by Brad Richardson, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

Approved Subject to Proper Execution:

BY: _____ 10-07-2025
DEP Attorney Date

_____
Notary Public, State of Florida

Tanja Hall
Printed, Typed or Stamped Name

My Commission Expires: _____

Commission/Serial No. _____

TANJA HALL
Commission # HH 702904
Expires July 27, 2029

WITNESSES:

Signature: Hope Swindler

Printed Name: Hope Swindler

Address: 123 W. Indiana Ave.

Deland, FL 32720

Signature:

Printed Name: MIRIAM RICHARDSON

Address: 123 W. INDIANA AVENUE.

DELAND, FL 32720

VOLUISA COUNTY, FLORIDA, a political subdivision of the State of Florida
By its Board of County Commissioners

(SEAL)

BY: _____
Jeff Brower, County Chair

ATTEST: _____
George Recktenwald, County Manager

"LESSEE"

STATE OF Florida
COUNTY OF Volusia

The foregoing instrument was acknowledged before me by means of __ physical presence or __ online notarization, this 17 day of December, 2025, by Jeff Brower, as County Chair, for and on behalf of Volusia County, Florida. He is personally known to me or who has produced _____, as identification.

_____
Notary Public, State of Florida

Jenna Misurale
Printed, Typed or Stamped Name

My Commission Expires: February 25, 2029

Commission/Serial No. HH 644351

JENNA MISURALE
Commission # HH 644351
Expires February 25, 2029

EXHIBIT "A"

3/25/2025 3:26:10 PM Instrument #2025054697 #1 Book:8681 Page:251
Doc Stamps $129,500.00 Transfer Amt $18,500,000.00

This Instrument Prepared By and Please Return To:
Warren Hess
Owen Title Company
2865 Remington Green Circle
Tallahassee, FL 32308
File No 24-17039

WARRANTY DEED

(STATUTORY FORM – SECTION 689.02, F.S.)

This indenture made this 11th day of March, 2025 between **M.L. Carter Services Inc., a Florida Corporation as Successor Trustee of Carter-Volusia 1339 Highway 415 Land Trust dated March 20, 2007**, whose post office address(es) is: 3333 South Orange Avenue, Suite 200, Orlando, FL 32806, ("Grantor"), and the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, whose post office address is 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399 ("Grantee").

(Wherever used herein the terms "Grantor" and "Grantee" include all the parties to this instrument and their heirs, legal representatives, successors and assigns. "Grantor" and "Grantee" are used for singular and plural, as the context requires, and the use of any gender shall include all genders.)

WITNESSETH: that said Grantor, for and in consideration of the sum of TEN DOLLARS (U.S. $10.00) and other good and valuable considerations to said Grantor in hand paid by said Grantee, the receipt whereof is hereby acknowledged, has granted, bargained, and sold to the said Grantee, and Grantee's successors and assigns forever, the following described land situate, lying and being in Volusia County, Florida, to-wit:

See Exhibit "A" attached hereto and by reference made a part hereof.

Property Appraiser's Parcel Identification Number:
722601030070, 722701030070, 722701030071, 722800000060, 723300000010, 723400000030, 723501020050

This conveyance is subject to easements, restrictions, limitations and conditions of record, if any, but any such interests that may have been terminated are not hereby re-imposed.

This property is not the homestead property of the Grantor, nor contiguous to homestead property, as such homestead is defined under Florida law.

AND the said Grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor have hereunto set Grantor's hand and seal the day and year first above written.

Signed, sealed and delivered in the presence of:

Emily Brown
(Signature of 1st Witness)

Emily Brown
(Printed, Typed, or Stamped Name of 1st Witness)
3333 S. orange ave. Ste 200
Orlando, FL 32806
(Address of 1st Witness)

By: Carter-Volusia 1339 Highway 415 Land Trust dated March 20, 2007

By: Daryl M. Carter as President of M.L. Carter Services Inc. the Successor Trustee

SEE EXHIBIT "B" ATTACHED

Filomena C. McCown
(Signature of 2nd Witness)

Filomena C. McCown
(Printed, Typed, or Stamped Name of 2nd Witness)
3333 S. Orange Ave Ste. 201
Orlando, FL 32806
(Address of 2nd Witness)

STATE OF Florida
COUNTY OF Orange

The foregoing instrument was acknowledged before me by means of [✓] physical presence or [ ] online notarization this 11th day of March, 2025, by Daryl M. Carter as President of M.L. Carter Services Inc. a Florida Corporation as Successor Trustee of Carter-Volusia 1339 Highway 415 Land Trust dated March 20, 2007. Such person (Notary Public must check applicable box):

[✓] Is personally known to me.
[ ] Produced their current driver's license.
[ ] Produced _____ as Identification.

(NOTARY PUBLIC SEAL)

PAMELA LEE WRAY
Notary Public · State of Florida
Commission # HH 246610
My Comm. Expires Jul 22, 2026
Bonded through National Notary Assn.

Pamela Lee Wray
Notary Public

Pamela Lee Wray
Printed, typed or Stamped Name of Notary Public

Commission No.: HH 246610

My Commission expires: 07/22/2026

Exhibit "A"

The Land referred to herein below is situated in the County of Volusia, State of Florida, and is described as follows:

Parcel 1:

The South Half of the following described property:

All of Section 34, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415; all of Section 35, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415, except Tract 7, Block 2; all of Section 33, Township 17 South, Range 32 East, Volusia County, Florida, lying East of drainage canal; all as shown on Map of Howe And Curriers Allotment, as per Map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

The North Half of the following described property:

All of Section 34, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415; all of Section 35, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415, except Tract 7, Block 2; all of Section 33, Township 17 South, Range 32 East, Volusia County, Florida, lying East of drainage canal, all as shown on Map Of Howe and Curriers Allotment, as per Map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

That portion of Howe And Currier Allotment in Sections 26, 27 and 28, Township 17 South, Range 32 East, Volusia County, Florida, being that part of Tracts 7 and 8, Block 3, Section 26, Township 17 South, Range 32 East, Volusia County, Florida, lying Westerly of the Westerly right of way line of State Road 415; all Tracts 7, 8, 9, 10, 11 and 12, Block 4, and all of Tracts 7, 8, 9, 10, 11 and 12, Block 3, Section 27, Township 17 South, Range 32, East and all of Tracts 7, 8, 9, 10, 11 and 12, Block 4, Section 28, Township 17 South, Range 32 East, according to Map in Map Book 4, Page 44 (Map Book 22, Page 147), Public Records of Volusia County, Florida, and to include that portion of the Southeast Quarter of the Southwest Quarter of Section 28, Township 17 South, Range 32 East, lying Easterly of a County drainage canal.

LESS AND EXCEPT:

A portion of Howe And Curriers Allotment in Tract 7, Block 3, Section 26, Township 17 South, Range 32 East, lying Westerly of the Westerly right of way line, State Road 415; and a portion of Tracts 9, 10 and 12, Block 4, Section 27, Township 17 South, Range 32 East, according to Map in Map Book 4, Page 44 (re-filed in Map Book 22, Page 147), Public Records of Volusia County, Florida, being more particularly described as follows:

Commence at a concrete monument stamped "R.L.S. 2546" marking the Southeast corner of said Section 27; thence North 01 degrees 11 minutes 04 seconds East, along the East line of Section 27, 1153.89 feet to the POINT OF BEGINNING of this description; thence departing said East line of Section 27, South 87 degrees 14 minutes 53 seconds West, 1462.18 feet; thence North 10 degrees 49 minutes 36 seconds East and parallel to said State Road 415, 300.00 feet to a point on the Northerly line of Tract(s) 9, 10 and 12, Block 4, Section 27; thence South 89 degrees 04 minutes 49 seconds East along said Northerly line of Tract(s) 9, 10 and 12, Block 4, Section 27, 1408.50 feet; thence South 88 degrees 19 minutes 59 seconds East along the Northerly line of Tract 7, Block 3, Section 26, 721.83 feet to a point on the Westerly right of way of State Road 415; thence South 10 degrees 49 minutes 36 seconds West along Westerly right of way of State Road 415, 150.00 feet; thence South 87 degrees 14 minutes 53 seconds West, 698.33 feet to the POINT OF BEGINNING.

BSM APPROVED

By: J.A. Date: 05/01/2024

Volusia Conservation Corridor
PM.L. Carter Services, Inc. et al.
Volusia County
Page 1 of 2

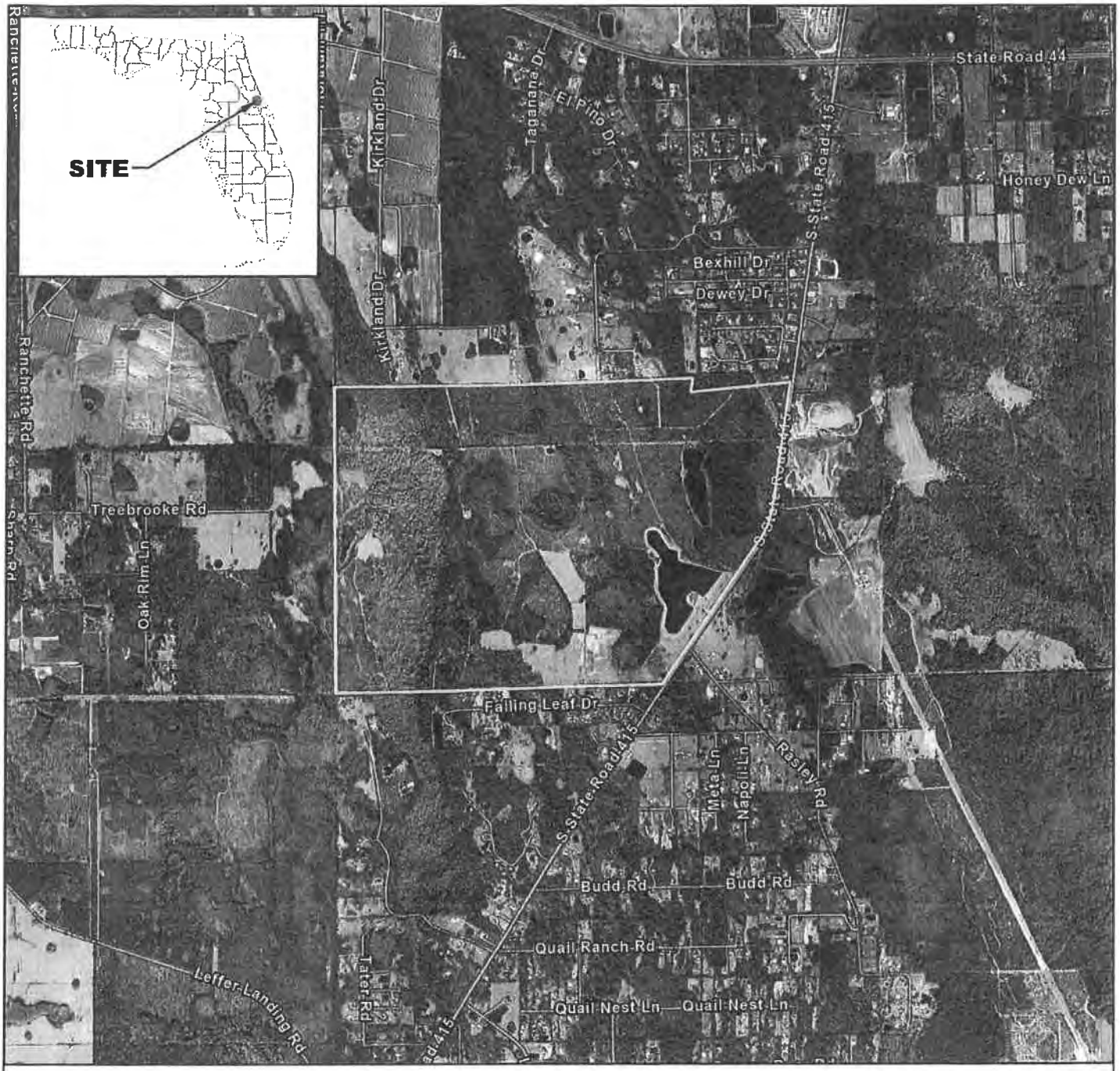
Parcel 2:

Tract 7, Block 2, Howe And Curriers Allotment, lying West of State Road 415 in Section 35, Township 17 South, Range 32 East, according to the Map or Plat thereof, as recorded in Map Book 4, Page 44, Public Records of Volusia County, Florida.

BSM APPROVED

By: J.A. Date: 05/01/2024

THIS PAGE AND ANY FOLLOWING PAGES ARE ATTACHED ONLY FOR STATE OF FLORIDA TRACKING PURPOSES AND FORM NO PART OF THE INSTRUMENT AND ARE NOT TO BE RELIED ON BY ANY PARTY.



Lease 4890

Volusia County, Florida

File Location: \\FLDEP\X:\Counties_GIS\Volusia\Leases\Lease_4890\Amendment 1
Date Saved: 6/30/2025 1:48 PM
Map Created By: B Smith

Date: 12/02/2025	**AGENDA ITEM**		**Item:** L
[] Ordinance	[] Resolution	[] Budget Resolution	[X] Other

County Goals

[]	Efficient Regulatory Framework	[]	Efficient and Effective Government Operations	[X]	Expand Recreation and Sports Tourism
[]	Enhance Fiscal Stewardship	[]	Support a Solution-Oriented Culture	[]	Leadership in Resiliency Practices
[]	Promote Economic Prosperity	[]	N/A		

Department: Community Services
Division: Resource Stewardship

Subject: Request to approve and execute a land lease and management agreement (#4890) for the Florida Forever acquired Carter Quail Ranch (1,339 acres) adjacent to Deep Creek Preserve.

Brad Burbaugh Director Community Services Approved By: Brad Burbaugh Department Approval		Legal Sebrina Slack Assistant County Attorney Approved By: Sebrina Slack Approved as to Form and Legality	County Manager's Office Ryan Ossowski Chief Financial Officer Approved By: Ryan Ossowski
Nick Dunnam Director Resource Stewardship Approved By: Nick Dunnam Division Approval			

Council Action:

Modification:

Account Number(s): NA
Total Item Budget: NA

Staff Contact(s):	**Phone:**	**Ext.**
Brad Burbaugh	386 943 7039	13455
Nick Dunnam	386 943 7081	13459
Hunter Folmar	386 943 7081	21264

Summary/Highlights:
The Volusia Forever (VF) program partnered with the Florida Department of Environmental Protection (FDEP) to facilitate the purchase of the 1,339.6 acres Carter Quail Ranch. Volusia Forever submitted the application for the Carter Quail Ranch property December 8, 2022. On

January 9th, 2025, the Governor and Florida Cabinet approved the purchase through the Florida Forever Program.
Volusia County has been the interim manager of the property since the acquisition closed on March 18th, 2025.

The lease agreement (4890) was received by staff on October 8, 2025, with the request to enter into a management agreement between the Board of Trustees of the Internal Improvement Fund of the State of Florida (TIITF) and the County of Volusia. This lease defines management responsibilities and other terms.

The execution of this lease would formally begin the management plan process in accordance with Section 253.034, Florida Statutes and Rule 18-2.021(4), Florida Administrative Code. Any state-owned property over 160 acres in size is required to complete a management plan utilizing the Division of State Land's compliance checklist.

A local management plan advisory group must be established to oversee the management plan. At a public meeting, staff will gather input from a variety of stakeholders and summarize their comments for consideration in the management plan. An additional public hearing must be held in the county to alert the public of the contents of the management plan when the draft is complete. Once the public meeting and draft are completed, it is sent to the Acquisition and Restoration Council (ARC) for final review and approval. The County of Volusia will have one (1) year after lease execution to have an approved management plan.

The subject property is directly adjacent to Deep Creek Preserve, an 8,525 acre conservation area currently managed by the County of Volusia. Staff anticipate adding this property to the existing preserve upon completion of the management plan, increasing the size of Deep Creek Preserve to approximately 9,865 acres. Potential amenities include hiking, biking, equestrian activities, camping, kayaking, hunting, and fishing.

Attached for review are a cover letter, lease agreement, management letter of intent, and map of the subject property.

This meets the Council's goal of expanding recreation and sports opportunities.

Recommended Motion: Approval.

FLORIDA DEPARTMENT OF Environmental Protection

Marjory and Archie Carr Building
3800 Commonwealth Boulevard
Tallahassee, FL 32303

Ron DeSantis
Governor

Jay Collins
Lt. Governor

Alexis A. Lambert
Secretary

10/08/2025

VOLUSIA COUNTY / Parks, Recreation, and Culture
Attn: Nick Dunnam
123 W. Indiana Ave
Deland, FL 32720

Re: **New Lease Agreement #4890**

Dear Nick,

Attached is a **New Lease Agreement #4890**, which requires signature on behalf of VOLUSIA COUNTY. Please note, the instrument allows for electronic signatures which constitutes an original.

Please execute and return the attached instrument within 30 days after receipt of this email. Please email a copy of the original signed instrument to the address listed below for final execution.

Upon receipt and acceptance of the signed instrument, we will transmit the instrument for final department execution. A fully executed instrument will be provided to you at that time.

If you have any questions about the attached Lease Agreement, please contact **Shanna Smith** at **(850) 245-2844** or **Shanna.Smith@FloridaDEP.gov**. Thank you in advance for your cooperation in this matter.

Sincerely,
Shanna Smith
Shanna Smith
Bureau of Public Land Administration
Division of State Lands

Action # 50702

This Lease was prepared by:
Shanna Smith
Bureau of Public Land Administration
Division of State Lands
Department of Environmental Protection, MS 130
3900 Commonwealth Boulevard,
Tallahassee, Florida 32399-3000
Action No. 50702

OAL2
[+/- 1,339.66 acres]

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

LEASE AGREEMENT

Lease Number 4890

THIS LEASE AGREEMENT is made and entered into this _____ day of _____, 20___, by and between the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA** hereinafter referred to as "LESSOR," and **VOLUSIA COUNTY, FLORIDA,** a political subdivision of the State of Florida, hereinafter referred to as "LESSEE."

LESSOR, for and in consideration of mutual covenants and agreements hereinafter contained, does hereby lease to said LESSEE, the lands described in paragraph 2 below, together with the improvements thereon, and subject to the following terms and conditions:

1. **DELEGATIONS OF AUTHORITY**: LESSOR'S responsibilities and obligations herein shall be exercised by the Division of State Lands, State of Florida Department of Environmental Protection.

2. **DESCRIPTION OF PREMISES**: The property subject to this lease contains approximately **1,339.66** acres, is situated in the County of **Volusia,** State of Florida and is more particularly described in Exhibit "A" attached hereto and hereinafter called the "leased premises".

3. **TERM**: The term of this lease shall be for a period of 25 years commencing on _____, and ending on _____, unless sooner terminated pursuant to the provisions of this lease.

4. **PURPOSE**: LESSEE shall manage the leased premises only for the conservation and protection of natural and historical resources and for resource based public outdoor activities and education which are compatible with the conservation and protection of these public lands, as set forth in subsection 259.032(7), Florida Statutes, along with other related uses necessary for the accomplishment of this purpose as designated in the Management Plan required by paragraph 8 of this lease.

5. **QUIET ENJOYMENT AND RIGHT OF USE**: LESSEE shall have the right of ingress and egress to, from and upon the leased premises for all purposes necessary to the full quiet enjoyment by said LESSEE of the rights conveyed herein.

6. **UNAUTHORIZED USE**: LESSEE shall, through its agents and employees, prevent the unauthorized use of the leased premises or any use thereof not in conformity with this lease.

7. **ASSIGNMENT**: This lease shall not be assigned in whole or in part without the prior written consent of LESSOR, which consent shall not be unreasonably withheld. Any assignment made either in whole or in part without the prior written consent of LESSOR shall be void and without legal effect.

8. **MANAGEMENT PLAN**: LESSEE shall prepare and submit a Management Plan for the leased premises in accordance with Section 253.034, Florida Statutes and subsection 18-2.021(4), Florida Administrative Code. The Management Plan shall be submitted to LESSOR for approval through the Division of State Lands, State of Florida Department of Environmental Protection. The leased premises shall not be developed or physically altered in any way other than what is necessary for security and maintenance of the leased premises without the prior written approval of LESSOR until the Management Plan is approved. LESSEE shall provide LESSOR with an opportunity to participate in all phases of preparing and developing the Management Plan for the leased premises. The Management Plan shall be submitted to LESSOR in draft form for review and comments within ten months of the effective date of this lease. LESSEE shall give LESSOR reasonable notice of the application for and receipt of any state, federal or local permits as well as any public hearings or meetings relating to the development or use of the leased premises. LESSEE shall not proceed with development of said leased premises including, but not limited to, funding, permit applications, design or building contracts until the Management Plan required herein has been submitted and approved. Any financial commitments made by LESSEE which are not in compliance with the terms of this lease shall be done at LESSEE'S own risk. The Management Plan shall emphasize the original management concept as approved by LESSOR at the time of acquisition which established the primary public purpose for which the leased premises were acquired. The approved Management Plan shall provide the basic guidance for all management activities and shall be reviewed jointly by LESSEE and LESSOR. LESSEE shall not use or alter the leased premises except as provided for in the approved Management Plan without the prior written approval of LESSOR. The Management Plan prepared under this lease shall identify management strategies for exotic species, if present. The introduction of exotic species is prohibited, except when specifically authorized by the approved Management Plan.

9. **EASEMENTS**: All easements of any nature including, but not limited to, utility easements are required to be granted by LESSOR. LESSEE is not authorized to grant any easements of any nature and any easement granted by LESSEE shall be void and without legal effect.

10. **SUBLEASES**: This lease is for the purposes specified herein and subleases of any nature are prohibited, without the prior written approval of LESSOR. Any sublease not approved in writing by LESSOR shall be void and without legal effect.

11. **RIGHT OF INSPECTION**: LESSOR or its duly authorized agents, representatives or employees shall have the right to reasonably inspect the leased premises and the works and operations of LESSEE in any matter pertaining to this lease.

12. **PLACEMENT AND REMOVAL OF IMPROVEMENTS**: All buildings, structures and improvements shall be constructed at the expense of LESSEE in accordance with plans prepared by professional designers and shall require the prior written approval of LESSOR as to purpose, location and design. Further, no trees, other than non-native species, shall be removed or major land alterations done br LESSEE without the prior written approval of LESSOR. Removable equipment and removable improvements placed on the leased premises by LESSEE which do not become a permanent part of the leased premises will remain the property of LESSEE and may be removed by LESSEE before or upon termination of this lease.

13. **INSURANCE REQUIREMENTS**: During the term of this lease LESSEE shall procure and maintain policies of fire, extended risk, and liability insurance coverage. The extended risk and fire insurance coverage shall be in an amount equal to the full insurable replacement value of any improvements or fixtures located on the leased premises. The liability insurance coverage shall be in amounts not less than $200,000 per person and $300,000 per incident or occurrence for personal injury, death, and property damage on the leased premises. During the term of this lease, if Section 768.28, Florida Statutes, or its successor statute is subsequently amended to increase the amount of the liability coverages specified herein, LESSEE shall immediately obtain liability coverage for the increased amounts. Such policies of insurance shall name LESSOR and the State of Florida as additional insureds. LESSEE shall submit written evidence of having procured all insurance policies required herein prior to the effective date of this lease and shall submit annually thereafter, written evidence of maintaining such insurance policies to the Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, Mail Station 130, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000. LESSEE shall purchase all policies of insurance from a financially-responsible insurer duly authorized to do business in the State of Florida. In lieu of

purchasing insurance, LESSEE may elect to self-insure these coverages. Any certificate of self-insurance shall be issued or approved by the Chief Financial Officer, State of Florida. The certificate of self-insurance shall provide for casualty and liability coverage. LESSEE shall immediately notify LESSOR and the insurer of any erection or removal of any building or other improvement on the leased premises and any changes affecting the value of any improvements and shall request the insurer to make adequate changes in the coverage to reflect the changes in value. LESSEE shall be financially responsible for any loss due to failure to obtain adequate insurance coverage and the failure to maintain such policies or certificate in the amounts set forth shall constitute a breach of this lease.

14. **LIABILITY**: LESSEE shall assist in the investigation of injury or damage claims either for or against LESSOR or the State of Florida pertaining to LESSEE'S respective areas of responsibility under this lease or arising out of LESSEE'S respective management programs or activities and shall contact LESSOR regarding the legal action deemed appropriate to remedy such damage or claims. LESSEE is responsible for, and, to the extent allowed by law, shall indemnify, protect, defend, save and hold harmless LESSOR and the State of Florida, its officers, agents and employees from any and all damages, claims, costs, expense, including attorney's fees, demands, lawsuits, causes of action or liability of any kind or nature arising out of all personal injury and property damage attributable to the negligent acts or omissions of LESSEE, and its officers, employees, and agents. Nothing herein shall be construed as a waiver of sovereign immunity enjoyed by any party hereto, as provided in Section 768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims. In the event LESSEE subcontracts any part or all of the work performed in the leased premises, the LESSEE shall require each and every subcontractor to identify the LESSOR as an additional insured on all insurance policies required by the LESSEE. Any contract awarded by LESSEE for work in the leased premises shall include a provision whereby the LESSEE'S subcontractor agrees to indemnify, pay on behalf, and hold the LESSOR harmless for all injuries and damages arising in connection with the LESSEE'S subcontract.

15. **PAYMENT OF TAXES AND ASSESSMENTS**: LESSEE shall assume full responsibility for and shall pay all taxes, assessments, liens or other similar liabilities that accrue to the leased premises or to the improvements thereon arising after this lease commences including any and all ad valorem taxes and drainage and special assessments or personal property taxes of every kind and all construction or materialman's liens which may be hereafter lawfully assessed and levied against the leased premises subsequent to the effective date of this lease. In no event shall the LESSEE be held liable for such liabilities which arose prior to the effective date of this lease.

16. **NO WAIVER OF BREACH**: The failure of LESSOR to insist in any one or more instances upon strict performance of any one or more of the covenants, terms and conditions of this lease shall not be construed as a waiver of such covenants, terms or conditions, but the same shall continue in full force and effect, and no waiver of LESSOR of any of the provisions hereof shall in any event be deemed to have been made unless the waiver is set forth in writing, signed by LESSOR.

17. **TIME**: Time is expressly declared to be of the essence of this lease.

18. **NON-DISCRIMINATION**: LESSEE shall not discriminate against any individual because of that individual's race, color, religion, sex, national origin, age, handicap, or marital status with respect to any activity occurring within the leased premises or upon lands adjacent to and used as an adjunct of the leased premises.

19. **UTILITY FEES**: LESSEE shall be responsible for the payment of all charges for the furnishing of gas, electricity, water and other public utilities to the leased premises and for having the utilities turned off when the leased premises are surrendered.

20. **MINERAL RIGHTS**: This lease does not cover petroleum or petroleum products or minerals and does not give the right to LESSEE to drill for or develop the same.

21. **RIGHT OF AUDIT**: LESSEE shall make available to LESSOR all financial and other records relating to this lease, and LESSOR shall have the right to audit such records at any reasonable time during the term of this lease. This right shall be continuous until this lease expires or is terminated. This lease may be terminated by LESSOR should LESSEE fail to allow public access to all documents, papers, letters or other materials made or received in conjunction with this lease, pursuant to the provisions of Chapter 119, Florida Statutes.

22. **CONDITION OF PREMISES**: LESSOR assumes no liability or obligation to LESSEE with reference to the condition of the leased premises. The leased premises herein are leased by LESSOR to LESSEE in an "as is" condition, with LESSOR assuming no responsibility for the care, repair, maintenance or improvement of the leased premises for the benefit of LESSEE.

23. **COMPLIANCE WITH LAWS**: LESSEE agrees that this lease is contingent upon and subject to LESSEE obtaining all applicable permits and complying with all applicable permits, regulations, ordinances, rules, and laws of the State of Florida or the United States or of any political subdivision or agency of either.

24. **NOTICE**: All notices given under this lease shall be in writing and shall be served by certified mail including, but not limited to, notice of any violation served pursuant to Section 253.04, Florida Statutes, to the last address of the party to whom notice is to be given, as designated by such party in writing. LESSOR and LESSEE hereby designate their address as follows:

LESSOR: State of Florida Department of Environmental Protection
Division of State Lands
Bureau of Public Land Administration, MS 130
3800 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

LESSEE: Volusia County
County of Volusia Resource Stewardship Division
123 W. Indiana Ave, Room 200
Deland, Florida 32720

25. **BREACH OF COVENANTS, TERMS, OR CONDITIONS**: Should LESSEE breach any of the covenants, terms, or conditions of this lease, LESSOR shall give written notice to LESSEE to remedy such breach within sixty days of such notice. In the event LESSEE fails to remedy the breach to the satisfaction of LESSOR within sixty days of receipt of written notice, LESSOR may either terminate this lease and recover from LESSEE all damages LESSOR may incur by reason of the breach including, but not limited to, the cost of recovering the leased premises or maintain this lease in full force and effect and exercise all rights and remedies herein conferred upon LESSOR.

26. **DAMAGE TO THE PREMISES**: (a) LESSEE shall not do, or suffer to be done, in, on or upon the leased premises or as affecting said leased premises or adjacent properties, any act which may result in damage or depreciation of value to the leased premises or adjacent properties, or any part thereof. (b) LESSEE shall not generate, store, produce, place, treat, release or discharge any contaminants, pollutants, or pollution, including, but not limited to, hazardous or toxic substances, chemicals or other agents on, into, or from the leased premises or any adjacent lands or waters in any manner not permitted by law. For the purposes of this lease, "hazardous substances" shall mean and include those elements or compounds defined in 42 USC Section 9601 or which are contained in the list of hazardous substances adopted by the United States Environmental Protection Agency (EPA) and the list of toxic pollutants designated by the United States Congress or the EPA or defined by any other federal, state or local statute, law, ordinance, code, rule, regulation, order or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic or dangerous waste, substance, material, pollutant or contaminant. "Pollutants" and "pollution" shall mean those products or substances defined in Chapters 376 and 403, Florida Statutes, and the rules promulgated thereunder, all as amended or updated from time to time. In the event of LESSEE's failure to comply with this paragraph, LESSEE shall, at its sole cost and expense, promptly commence and diligently pursue any legally required

closure, investigation, assessment, cleanup, decontamination, remediation, restoration and monitoring of (1) the leased premises, and (2) all off-site ground and surface waters and lands affected by LESSEE's such failure to comply, as may be necessary to bring the leased premises and affected off-site waters and lands into full compliance with all applicable federal, state or local statutes, laws, ordinances, codes, rules, regulations, orders and decrees, and to restore the damaged property to the condition existing immediately prior to the occurrence which caused the damage. LESSEE'S obligations set forth in this paragraph shall survive the termination or expiration of this lease. This paragraph shall not be construed as a limitation upon LESSEE'S obligations as set forth in paragraph 14 of this lease, nor upon any other obligations or responsibilities of LESSEE as set forth herein. Nothing herein shall relieve LESSEE of any responsibility or liability prescribed by law for fines, penalties and damages levied by governmental agencies, and the cost of cleaning up any contamination caused directly or indirectly by LESSEE'S activities or facilities. Upon discovery of a release of a hazardous substance or pollutant, or any other violation of local, state or federal law, ordinance, code, rule, regulation, order or decree relating to the generation, storage, production, placement, treatment, release or discharge of any contaminant, LESSEE shall report such violation to all applicable governmental agencies having jurisdiction, and to LESSOR, all within the reporting periods of the applicable governmental agencies. This paragraph shall not be deemed to apply to any conditions existing prior to the effective date of this lease.

27. **ENVIRONMENTAL AUDIT**: At LESSOR'S discretion, LESSEE shall provide LESSOR with a current Phase I environmental site assessment conducted in accordance with the State of Florida Department of Environmental Protection, Division of State Lands' standards prior to termination of this lease, and if necessary a Phase II environmental site assessment.

28. **SURRENDER OF PREMISES**: Upon termination or expiration of this lease, LESSEE shall surrender the leased premises to LESSOR. In the event no further use of the leased premises or any part thereof is needed, LESSEE shall give written notification to the Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection ("Division"), Mail Station 130, 3800 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, at least six months prior to the release of any or all of the leased premises. Notification shall include a legal description, this lease number, and an explanation of the release. The release shall only be valid if approved by LESSOR through the execution of a release of lease instrument with the same formality as this lease. Upon release of all or any part of the leased premises or upon termination or expiration of this lease, all improvements, including both physical structures and modifications to the leased premises, shall become the property of LESSOR, unless LESSOR gives written notice to LESSEE to remove any or all such improvements at the expense of LESSEE. The decision to retain any improvements upon termination or expiration of this lease shall be at

LESSOR'S sole discretion. Prior to surrender of all or any part of the leased premises a representative of the Division shall perform an on-site inspection and the keys to any building on the leased premises shall be turned over to the Division.

29. **BEST MANAGEMENT PRACTICES**: LESSEE shall implement applicable Best Management Practices for all activities conducted under this lease in compliance with paragraph 18-2.018(2)(h), Florida Administrative Code, which have been selected, developed, or approved by LESSOR, LESSEE or other land managing agencies for the protection and enhancement of the leased premises.

30. **PUBLIC LANDS ARTHROPOD CONTROL PLAN**: LESSEE shall identify and subsequently designate to the respective arthropod control district or districts within one year of the effective date of this lease all of the environmentally sensitive and biologically highly productive lands contained within the leased premises, in accordance with Section 388.4111, Florida Statutes and Chapter 5E-13, Florida Administrative Code, for the purpose of obtaining a public lands arthropod control plan for such lands.

31. **PROHIBITIONS AGAINST LIENS OR OTHER ENCUMBRANCES**: Fee title to the leased premises is held by LESSOR. LESSEE shall not do or permit anything to be done which purports to create a lien or encumbrance of any nature against the real property contained in the leased premises including, but not limited to, mortgages or construction liens against the leased premises or against any interest of LESSOR therein.

32. **PARTIAL INVALIDITY**: If any term, covenant, condition or provision of this lease shall be ruled by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

33. **ARCHAEOLOGICAL AND HISTORIC SITES**: Execution of this lease in no way affects any of the parties' obligations pursuant to Chapter 267, Florida Statutes. The collection of artifacts or the disturbance of archaeological and historic sites on state-owned lands is prohibited unless prior authorization has been obtained from the State of Florida Department of State, Division of Historical Resources. The Management Plan prepared pursuant to Chapter 18-2 Florida Administrative Code, shall be reviewed by the Division of Historical Resources to insure that adequate measures have been planned to locate, identify, protect and preserve the archaeological and historic sites and properties on the leased premises.

34. **SOVEREIGNTY SUBMERGED LANDS**: This lease does not authorize the use of any lands located waterward of the mean or ordinary high water line of any lake, river, stream, creek, bay, estuary, or other water body or the waters or the air space thereabove.

35. **ENTIRE UNDERSTANDING**: This lease sets forth the entire understanding between the parties and shall only be amended with the prior written approval of LESSOR.

36. **MAINTENANCE OF IMPROVEMENTS**: LESSEE shall maintain the real property contained within the leased premises and the improvements located thereon, in a state of good condition, working order and repair including, but not limited to, removing all trash or litter, maintaining all planned improvements as set forth in the approved Management Plan, and meeting all building and safety codes. LESSEE shall maintain any and all existing roads, canals, ditches, culverts, risers and the like in as good condition as the same may be on the effective date of this lease.

37. **GOVERNING LAW**: This lease shall be governed by and interpreted according to the laws of the State of Florida.

38. **SIGNS**: LESSEE shall ensure that the area is identified as being publicly owned and operated as a public facility in all signs, literature and advertising. If federal grants or funds are used by LESSEE for any project on the leased premises LESSEE shall erect signs identifying the leased premises as a federally assisted project.

39. **SECTION CAPTIONS**: Articles, subsections and other captions contained in this lease are for reference purposes only and are in no way intended to describe, interpret, define or limit the scope, extent or intent of this lease or any provisions thereof.

40. **ADMINISTRATIVE FEE**: LESSEE shall pay LESSOR an annual administrative fee of $300 pursuant to subsection 18-2.021(8), Florida Administrative Code. The initial annual administrative fee shall be payable within thirty days from the date of execution of this lease agreement and shall be prorated based on the number of months or fraction thereof remaining in the fiscal year of execution. For purposes of this lease agreement, the fiscal year shall be the period extending from July l to June 30. Each annual payment thereafter shall be due and payable on July l of each subsequent year.

41. **RIGHT OF TERMINATION**: Anything contained in this lease to the contrary notwithstanding, LESSOR shall have the right and option to terminate this lease, at will, for any reason whatsoever, by giving the LESSEE written notice of such election to terminate at least six (6) months prior to the effective date of such termination. LESSEE shall continue to honor its obligations under the lease until the effective date of the termination, including LESSEE's obligations concerning surrender of the leased premises.

[*Remainder of page intentionally left blank; Signature page follows*]

IN WITNESS WHEREOF, the parties have caused this lease to be executed on the day and year first above written.

WITNESSES:

Signature:_____

Printed Name:_____

Address: 3800 Commonwealth Blvd

Tallahassee, FL 32399

Signature:_____

Printed Name:_____

Address: 3800 Commonwealth Blvd

Tallahassee, FL 32399

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA

(SEAL)

BY: _____

Brad Richardson, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida

"LESSOR"

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me, by ___ physical presence or ___ online notarization this _____ day of _____, 20___, by Brad Richardson, Chief, Bureau of Public Land Administration, Division of State Lands, State of Florida Department of Environmental Protection, as agent for and on behalf of the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida. He is personally known to me.

Approved Subject to Proper Execution:

BY: _____ 10-07-2025
DEP Attorney Date

_____
Notary Public, State of Florida

_____
Printed, Typed or Stamped Name

My Commission Expires:_____

Commission/Serial No._____

WITNESSES:

Signature:_____

Printed Name:_____

Address: _____

_____

Signature:_____

Printed Name:_____

Address:_____

_____

VOLUISA COUNTY, FLORIDA, a political subdivision of the State of Florida
By its Board of County Commissioners

(SEAL)

BY: _____
Jeff Brower, County Chair

ATTEST:

_____
George Recktenwald, County Manager

"LESSEE"

STATE OF_____
COUNTY OF_____

The foregoing instrument was acknowledged before me by means of __ physical presence or __ online notarization, this _____ day of _____, 20_____, by Jeff Brower, as County Chair, for and on behalf of Volusia County, Florida. He is personally known to me or who has produced _____, as identification.

_____
Notary Public, State of Florida

_____
Printed, Typed or Stamped Name

My Commission Expires:_____

Commission/Serial No._____

EXHIBIT "A"

3/25/2025 3:26:10 PM Instrument #2025054697 #1 Book:8681 Page:251
Doc Stamps $129,500.00 Transfer Amt $18,500,000.00

This Instrument Prepared By and Please Return To:
Warren Hess
Owen Title Company
2865 Remington Green Circle
Tallahassee, FL 32308
File No 24-17039

WARRANTY DEED

(STATUTORY FORM – SECTION 689.02, F.S.)

This indenture made this 11th day of March, 2025 between **M.L. Carter Services Inc., a Florida Corporation as Successor Trustee of Carter-Volusia 1339 Highway 415 Land Trust dated March 20, 2007**, whose post office address(es) is: 3333 South Orange Avenue, Suite 200, Orlando, FL 32806, ("Grantor"), and the **BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OF THE STATE OF FLORIDA**, whose post office address is 3900 Commonwealth Boulevard, Mail Station 115, Tallahassee, FL 32399 ("Grantee").

(Wherever used herein the terms "Grantor" and "Grantee" include all the parties to this instrument and their heirs, legal representatives, successors and assigns. "Grantor" and "Grantee" are used for singular and plural, as the context requires, and the use of any gender shall include all genders.)

WITNESSETH: that said Grantor, for and in consideration of the sum of TEN DOLLARS (U.S. $10.00) and other good and valuable considerations to said Grantor in hand paid by said Grantee, the receipt whereof is hereby acknowledged, has granted, bargained, and sold to the said Grantee, and Grantee's successors and assigns forever, the following described land situate, lying and being in Volusia County, Florida, to-wit:

See Exhibit "A" attached hereto and by reference made a part hereof.

Property Appraiser's Parcel Identification Number:
722601030070, 722701030070, 722701030071, 722800000060, 723300000010, 723400000030, 723501020050

This conveyance is subject to easements, restrictions, limitations and conditions of record, if any, but any such interests that may have been terminated are not hereby re-imposed.

This property is not the homestead property of the Grantor, nor contiguous to homestead property, as such homestead is defined under Florida law.

AND the said Grantor does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, Grantor have hereunto set Grantor's hand and seal the day and year first above written.

Signed, sealed and delivered in the presence of:

Emily Brown
(Signature of 1st Witness)

Emily Brown
(Printed, Typed, or Stamped Name of 1st Witness)

3333 S. orange ave. Ste 200
Orlando, FL 32806
(Address of 1st Witness)

By: Carter-Volusia 1339 Highway 415 Land Trust dated March 20, 2007

By: _____
Daryl M. Carter as ~~President of M.L.~~
Carter Services Inc. the Successor Trustee

SEE EXHIBIT "B" ATTACHED

Filomena C. McCown
(Signature of 2nd Witness)

Filomena C. McCown
(Printed, Typed, or Stamped Name of 2nd Witness)

3333 S. Orange Ave Ste. 201
Orlando, FL 32806
(Address of 2nd Witness)

STATE OF Florida
COUNTY OF Orange

The foregoing instrument was acknowledged before me by means of [✓] physical presence or [ ] online notarization this 11th day of March, 2025, by Daryl M. Carter as President of M.L. Carter Services Inc. a Florida Corporation as Successor Trustee of Carter-Volusia 1339 Highway 415 Land Trust dated March 20, 2007. Such person (Notary Public must check applicable box):

[✓] Is personally known to me.
[ ] Produced their current driver's license.
[ ] Produced _____ as Identification.

(NOTARY PUBLIC SEAL)

PAMELA LEE WRAY
Notary Public - State of Florida
Commission # HH 246610
My Comm. Expires Jul 22, 2026
Bonded through National Notary Assn.

Pamela Lee Wray
Notary Public

Pamela Lee Wray
Printed, typed or Stamped Name of Notary Public

Commission No.: HH 246610

My Commission expires: 07/22/2026

Exhibit "A"

The Land referred to herein below is situated in the County of Volusia, State of Florida, and is described as follows:

Parcel 1:

The South Half of the following described property:

All of Section 34, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415; all of Section 35, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415, except Tract 7, Block 2; all of Section 33, Township 17 South, Range 32 East, Volusia County, Florida, lying East of drainage canal; all as shown on Map of Howe And Curriers Allotment, as per Map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

The North Half of the following described property:

All of Section 34, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415; all of Section 35, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415, except Tract 7, Block 2; all of Section 33, Township 17 South, Range 32 East, Volusia County, Florida, lying East of drainage canal, all as shown on Map Of Howe and Curriers Allotment, as per Map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

That portion of Howe And Currier Allotment in Sections 26, 27 and 28, Township 17 South, Range 32 East, Volusia County, Florida, being that part of Tracts 7 and 8, Block 3, Section 26, Township 17 South, Range 32 East, Volusia County, Florida, lying Westerly of the Westerly right of way line of State Road 415; all Tracts 7, 8, 9, 10, 11 and 12, Block 4, and all of Tracts 7, 8, 9, 10, 11 and 12, Block 3, Section 27, Township 17 South, Range 32, East and all of Tracts 7, 8, 9, 10, 11 and 12, Block 4, Section 28, Township 17 South, Range 32 East, according to Map in Map Book 4, Page 44 (Map Book 22, Page 147), Public Records of Volusia County, Florida, and to include that portion of the Southeast Quarter of the Southwest Quarter of Section 28, Township 17 South, Range 32 East, lying Easterly of a County drainage canal.

LESS AND EXCEPT:

A portion of Howe And Curriers Allotment in Tract 7, Block 3, Section 26, Township 17 South, Range 32 East, lying Westerly of the Westerly right of way line, State Road 415; and a portion of Tracts 9, 10 and 12, Block 4, Section 27, Township 17 South, Range 32 East, according to Map in Map Book 4, Page 44 (re-filed in Map Book 22, Page 147), Public Records of Volusia County, Florida, being more particularly described as follows:

Commence at a concrete monument stamped "R.L.S. 2546" marking the Southeast corner of said Section 27; thence North 01 degrees 11 minutes 04 seconds East, along the East line of Section 27, 1153.89 feet to the POINT OF BEGINNING of this description; thence departing said East line of Section 27, South 87 degrees 14 minutes 53 seconds West, 1462.18 feet; thence North 10 degrees 49 minutes 36 seconds East and parallel to said State Road 415, 300.00 feet to a point on the Northerly line of Tract(s) 9, 10 and 12, Block 4, Section 27; thence South 89 degrees 04 minutes 49 seconds East along said Northerly line of Tract(s) 9, 10 and 12, Block 4, Section 27, 1408.50 feet; thence South 88 degrees 19 minutes 59 seconds East along the Northerly line of Tract 7, Block 3, Section 26, 721.83 feet to a point on the Westerly right of way of State Road 415; thence South 10 degrees 49 minutes 36 seconds West along Westerly right of way of State Road 415, 150.00 feet; thence South 87 degrees 14 minutes 53 seconds West, 698.33 feet to the POINT OF BEGINNING.

BSM APPROVED

By: J.A. Date: 05/01/2024

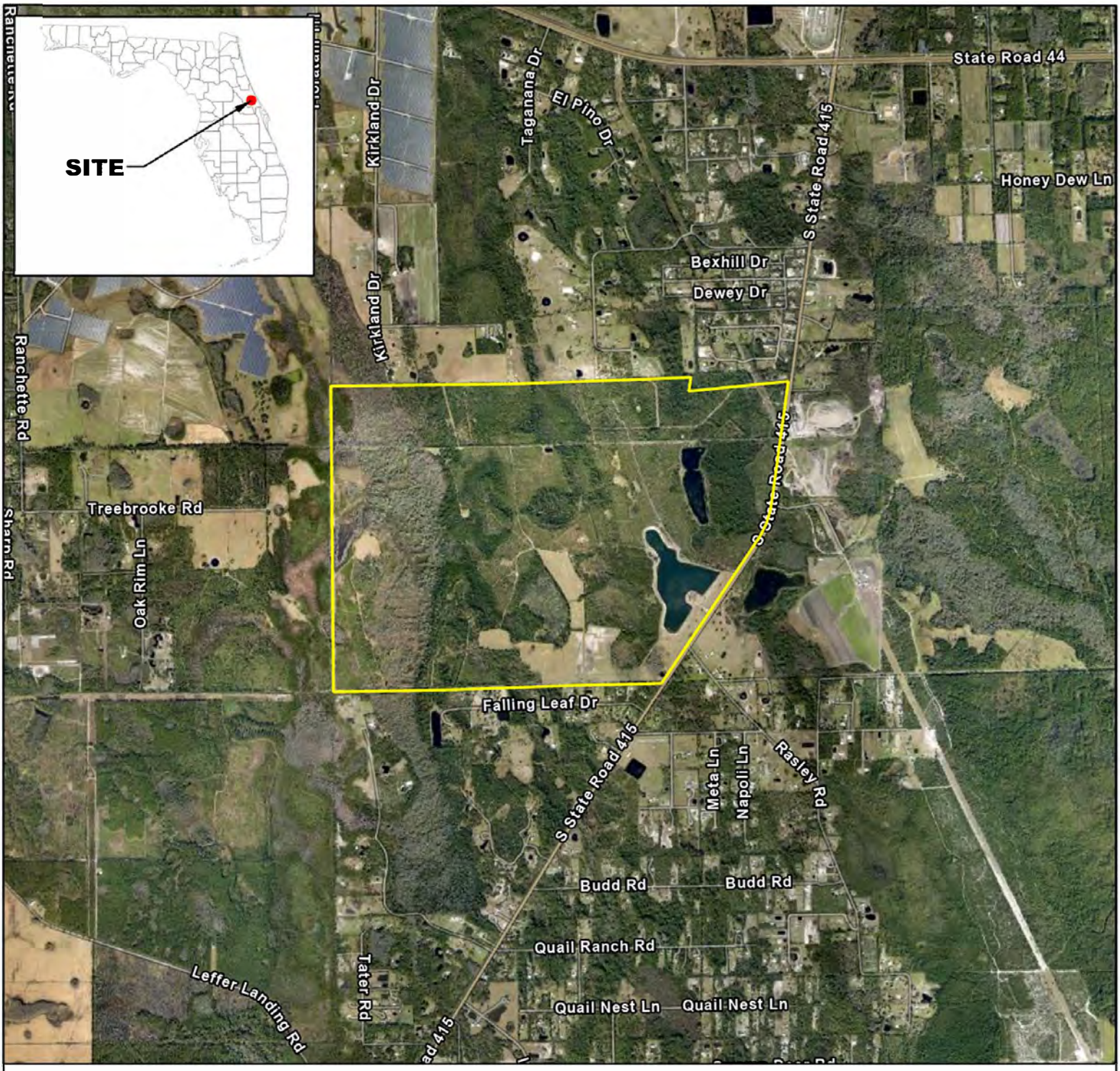
Parcel 2:

Tract 7, Block 2, Howe And Curriers Allotment, lying West of State Road 415 in Section 35, Township 17 South, Range 32 East, according to the Map or Plat thereof, as recorded in Map Book 4, Page 44, Public Records of Volusia County, Florida.

BSM APPROVED

By: J.A. Date: 05/01/2024

THIS PAGE AND ANY FOLLOWING PAGES ARE ATTACHED ONLY FOR STATE OF FLORIDA TRACKING PURPOSES AND FORM NO PART OF THE INSTRUMENT AND ARE NOT TO BE RELIED ON BY ANY PARTY.



Subject Parcel

0 2,500 5,000 10,000

Feet

N

Lease 4890

Volusia County, Florida

File Location: \\FLDEP1\X:\Counties_GIS\Volusia\Leases\Lease_4890\Amendment 1
Date Saved: 6/30/2025 1:46 PM
Map Created By: B. Smith

Volusia County
FLORIDA

June 27, 2024

Department of Environmental Protection
Division of State Lands
ATTN: Callie DaHaven, Director
3900 Commonwealth Blvd Mail Station 140
Tallahassee, FL 323999-3000

RE: Florida Forever Application from Volusia County for Quail Ranch Project Management Agreement

Dear Ms. DeHaven:

This letter is to express the County of Volusia's Resource Stewardship Division's (RSD) willingness, pending Governing Board approval of an intergovernmental agreement, to manage the approximately 1,399 acres adjacent to the Volusia's Deep Creek Preserve. St. Johns Water Management District owns approximately half of the preserve and RSD is the steward of the entire property. The County of Volusia proposes to manage the Carter parcels in coordination with the Deep Creek Management Plan. This acquisition would increase the protection of our natural resources within the Volusia Conservation Corridor.

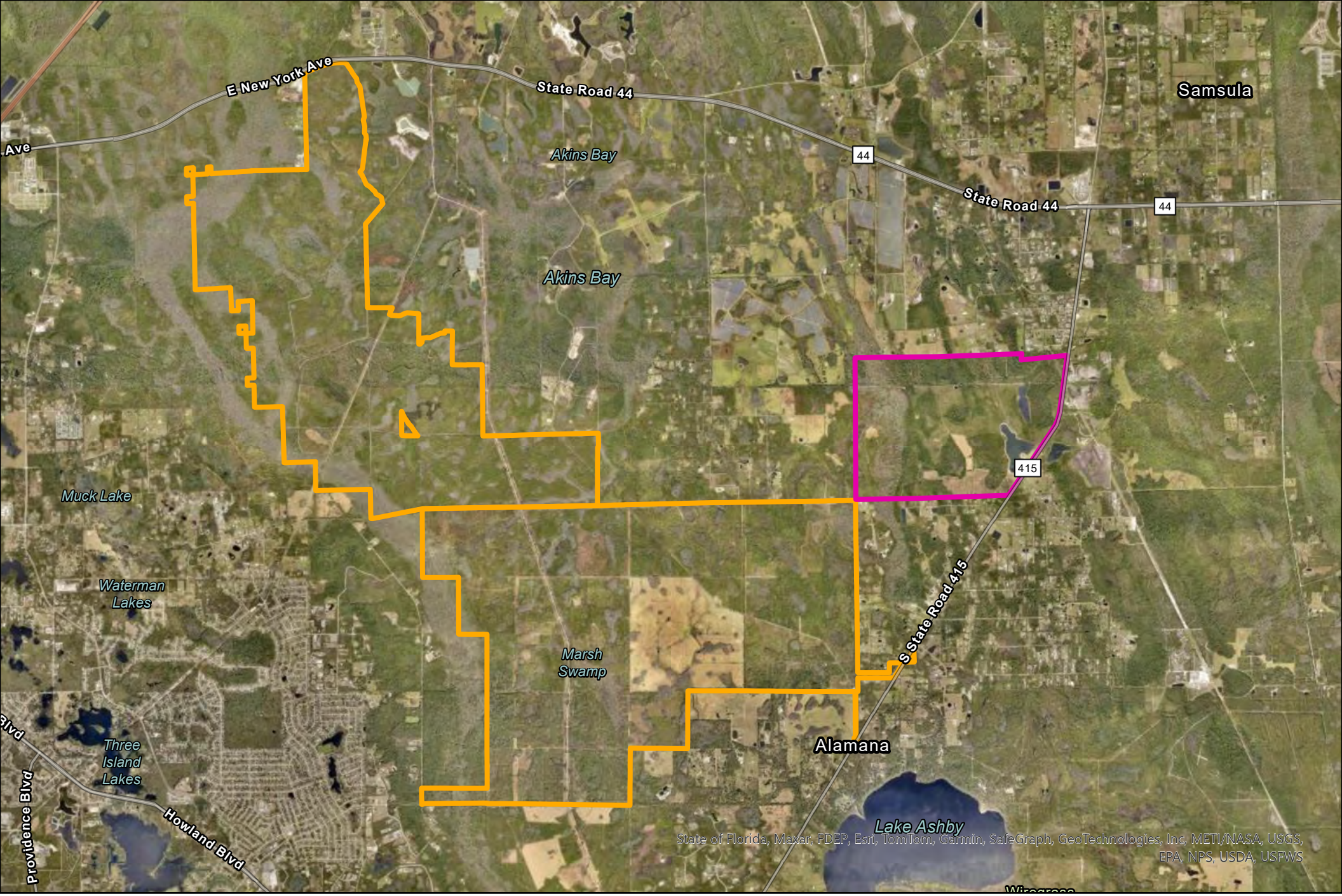
When the state purchases the property, the details of the management arrangement for the County's property and the Florida Department of Environmental Protection property (Quail Ranch) would be included in the intergovernmental agreement, which would require approval by Volusia County Council.

The Florida Department of Environmental Protection has been a wonderful partner in conservation with the County of Volusia, and we look forward to another successful collaboration.

If you have any questions, please feel free to contact my office.

Sincerely,

Brad Burbaugh
Community Services Director



Deep Creek Preserve
Carter Quail Ranch

Subject Parcel
Deep Creek Preserve

0 0.75 1.5 3 Miles

APPENDIX B

Volusia Conservation Corridor

Partnerships and Regional Incentives
Flagler and Volusia Counties

Year Added to Priority List	*2001*
Project Acres	*86,002*
Acquired Acres	*63,312*
Remaining Project Acres	*22,690*
2024 Assessed Value of Remaining Acres	*$106,979,486*

Purpose for State Acquisition

The Volusia Conservation Corridor project will provide a continuous corridor of environmentally significant land from Tiger Bay State Forest, through the central wetlands and flatwoods of Volusia County, to the marshes of the St. Johns River. This project will also increase natural resource-based public recreation and education opportunities. This project will help ensure that enough water is available to meet the current and future needs of natural systems and the citizens of the state.

General Description

The project is in central Volusia County, stretching from north of State Road 44 south to the St. Johns River. It is generally low and wet, consisting of alternating flatwoods and swamp; these habitats occupy the northwest/southeast-trending ridge and swale topography on the eastern edge of the DeLand Ridge. Natural communities within the project boundary include basin swamp, hydric hammock, mesic flatwoods, scrub and dome swamp. The project also includes the drainages of Deep Creek and Lake Ashby canal, which both empty into the St. Johns River. Some areas contain moderate to good recharge to the Florida aquifer, mainly occurring through rainfall.

FNAI Element Occurrence Summary

FNAI Elements	Score
Florida black bear	G5T4/S4
Gopher tortoise	G3/S3
Rugel's pawpaw	G1/S1
lake-side sunflower	G1G2/S1S2
Florida sandhill crane	G5T2/S2
large-flowered rosemary	G3/S3
Wood stork	G4/S2
Bachman's sparrow	G3/S3
Bald eagle	G5/S3
Southeastern fox squirrel	G5T5/S3
Glossy ibis	G5/S3
Little blue heron	G5/S4

Public Use

Fee acquisition areas have the potential of providing a variety of resource-based outdoor recreation opportunities such as, but not necessarily limited to, hiking, nature study, horseback riding, bicycling, camping, picnicking, freshwater fishing and hunting. Further review may reflect cabins to be suitable, particularly if a combination of lands is acquired that would allow for a more complete park or environmental education center atmosphere.

Acquisition Planning

2000

On November 28, 2000, the St. Johns River Water Management District (SJRWMD) acquired the Fourth Volusia tract (417.4 acres) of the Longleaf Pine Preserve, all of which would be in the project boundary when it was created.

2001

On January 25, 2001, the Acquisition and Restoration Council (ARC) added the Volusia Conservation Corridor project to Group B of the 2001 Florida Forever Priority List. This fee-simple and less-than-fee acquisition, sponsored by SJRWMD, consisted of approximately 33,503 acres and multiple owners. Essential parcels were defined as Leffler Co., Le Fils Corp. (easement acquired), Julia Menard (acquired), GJPS Lukas Inc., Jonathan S. Lukas, Gertrude G. Lukas, Donald Ray Fore (acquired), Norman N. Fore (acquired), Marvin Kelley Fore (acquired), Mark Fore et al., Lynda Russell Schroeder, and JAS Properties LTD ownerships.

2002

On June 6, 2002, ARC moved the project to Group A of the 2002 Florida Forever Priority list.

On June 14, 2002, SJRWMD and Volusia County split the acquisition of the Menard parcels (1,347.03 acres) in the Wiregrass Prairie Preserve.

On July 30, 2002, SJRWMD established the Plum Creek Rayonier/Hutton (4,780.44 acres) and Plum Creek Volusia/Pineland (6,947.09 acres) conservation easements.

On August 15, 2002, ARC approved a less-than-fee 11,723-acre and fee-simple 7,654-acre addition to the project boundary. The 19,377-acre addition, sponsored by SJRWMD, consisted of two owners, Plum Creek and Rayonier.

2003

On February 28, 2003, SJRWMD established three conservation easements in the project boundary: Hartford Ranch (461.89 acres; all in the project), Marvin K. Fore (741.92 acres total; 687.8 acres in the project) and W. T. Ranch (349.35 acres total; 346.35 acres in the project). The latter two conservation easements were secured with Florida Forever funding.

On March 12, 2003, Volusia County joined SJRWMD as a co-owner of the Plum Creek Rayonier/Hutton and Plum Creek Volusia/Pineland conservation easements.

On June 6, 2003, ARC approved a less-than-fee addition to the project boundary in Flagler and Volusia counties. The 26,740-acre addition, sponsored by SJRWMD, consisted of one owner, Plum Creek Timberlands LP.

On October 31, 2003, the Fore Children (124.57 acres) and Norman M. Fore (691.5 acres) conservation easements were established using Florida Forever and Volusia Forever funds.

2004

On May 20, 2004, the first two Le Files (1,722.8 acres) conservation easements were established by SJRWMD and Volusia County, of which 1,645.09 acres are within the project boundary. SJRWMD used Florida Forever funds for their part of the acquisition.

In December 2004, Volusia County, with assistance from SJRWMD and the U.S. Department of Agriculture (USDA), acquired a 1,711-acre conservation easement over the Le Files Corporation property.

2005

On September 27, 2005, ARC approved the removal of 686 acres from the project at the request of the landowner, E.C. Lunsford.

In November 2005, Volusia County acquired the Lunsford Tract (1,644 acres) of the Longleaf Pine Preserve.

2007

In April 2007, SJRWMD and Volusia County acquired 2,272 acres as a joint acquisition. Each partner owns an undivided 50 percent interest in the property acquired from State Road 44 Properties, LLC.

On May 23, 2007, Volusia County acquired the Amy Brooks parcel of Wiregrass Prairie Preserve. The total acreage for the Wiregrass Prairie Preserve grew to 1,423.23 acres, with 911.92 acres in the project boundary.

2008
On May 8, 2008, Volusia County established the Marvin Fore conservation easement (152.42 acres), with 9.9 acres inside the project boundary.

2009
On December 29, 2009, SJRWMD purchased 324.35 acres fee-simple, leaving 25 acres in the W. T. Ranch conservation easement. SJRWMD also purchased 2,996 acres adjacent to the W. T. Ranch purchase. These acres were combined to create the Palm Bluff Conservation Area. Approximately 2,466 acres of the total 3,321 acres in the Palm Bluff Conservation area are within the project boundary.

2010
On July 23, 2010, SJRWMD established another Le Files conservation easement (9.73 acres).

On December 15, 2010, Volusia County closed on the 4,806-acre Leffler Ranch. Volusia County will manage this property.

2011
On May 27, 2011, SJRWMD acquired the Kemcho Tract (3,200 acres) of Deep Creek Preserve with Florida Forever funding.

On October 18, 2011, SJRWMD established another Le Files conservation easement (2.28 acres).

On November 22, 2011, SJRWMD purchased the Lukas Ranch Conservation Easement (1,093 acres) from Jonathan S. Lukas, as Trustee of the Jonathan S. Lukas Trust Agreement for $1,912,697.50; this acquisition was comprised of a donation valued at $478,174.37 from the seller, $956,348.75 from a USDA Natural Resources Conservation Service Farm and Ranch Lands Protection Program grant, and $478,174.38 from SJRWMD.

On December 9, 2011, ARC placed this project in the Partnerships and Regional Incentives category.

2012
In April 2012, Volusia County and SJRWMD signed a management agreement for Volusia County to manage the Kemcho Tract of Deep Creek Preserve.

2022
On July 12, 2022, Volusia County and SJRWMD purchased 857 acres in the Palm Bluff Conservation Area with Volusia Forever funds.

In 2022, Volusia County and SJRWMD established a 425-acre conservation easement in the Palm Bluff Conservation Area with Volusia Forever funds.

2023
On April 14, 2023, ARC approved the addition of the Carter Quail Ranch project proposal (1,344 acres) in Volusia County to the project boundary.

2024
On April 12, 2024, ARC approved the addition of the Lake Harney project proposal (5,424 acres) in Volusia County to the project boundary.

Coordination

SJRWMD, Florida Forest Service (FFS), Volusia County and USDA are acquisition partners. Volusia County passed two bond measures in 2000 that will generate approximately $80 million for open space land acquisition, historic preservation and improvements over 20 years.

Management Policy Statement

The primary goals of management of the project are to conserve and protect significant water resources in a priority water resource caution area, as well as important ecosystems that benefit significant natural resources.

Manager(s)

SJRWMD and Volusia County are the recommended managers.

Management Prospectus

Qualifications for State Designation

The need to protect water resources within the caution area, combined with the restorable pine plantations, makes it desirable for management by SJRWMD.

Conditions Affecting Intensity of Management

The wildfires of 1998 impacted properties within the project, but most of the affected areas have been salvaged and replanted. Consequently, there are no known major disturbances that will require extraordinary attention, so management intensity is expected to be typical for water management district lands.

Management Implementation, Public Access, Site Security and Protection of Infrastructure

Once the core area is acquired, SJRWMD will provide public access for low intensity, non-facilities related to outdoor recreation. Initial activities will include securing the site, providing public and fire management access, inventorying resources and removing trash. SJRWMD will provide access to the public while protecting sensitive resources. The site's natural resources and threatened and endangered plants and animals will be inventoried to provide the basis for a management plan. Long-range plans for this project will be directed toward restoring disturbed areas to their original conditions, as well as protecting threatened and endangered species. Some of the pinelands have been degraded by timbering and wildfire and will require restoration. An all-season burning program will use existing roads, black lines, foam lines and natural breaks to contain fires.

Timber management will mostly involve improvement thinning and regeneration harvests. Plantations will be thinned and, where appropriate, reforested with native species. Stands will not have a targeted rotation age. Infrastructure will primarily be in disturbed areas and will be the minimum required for management and public access.

Revenue-generating Potential

SJRWMD will sell timber as needed to improve or maintain desirable ecosystem conditions. These sales will provide a variable source of revenue, but the revenue-generating potential for this project is expected to be low.

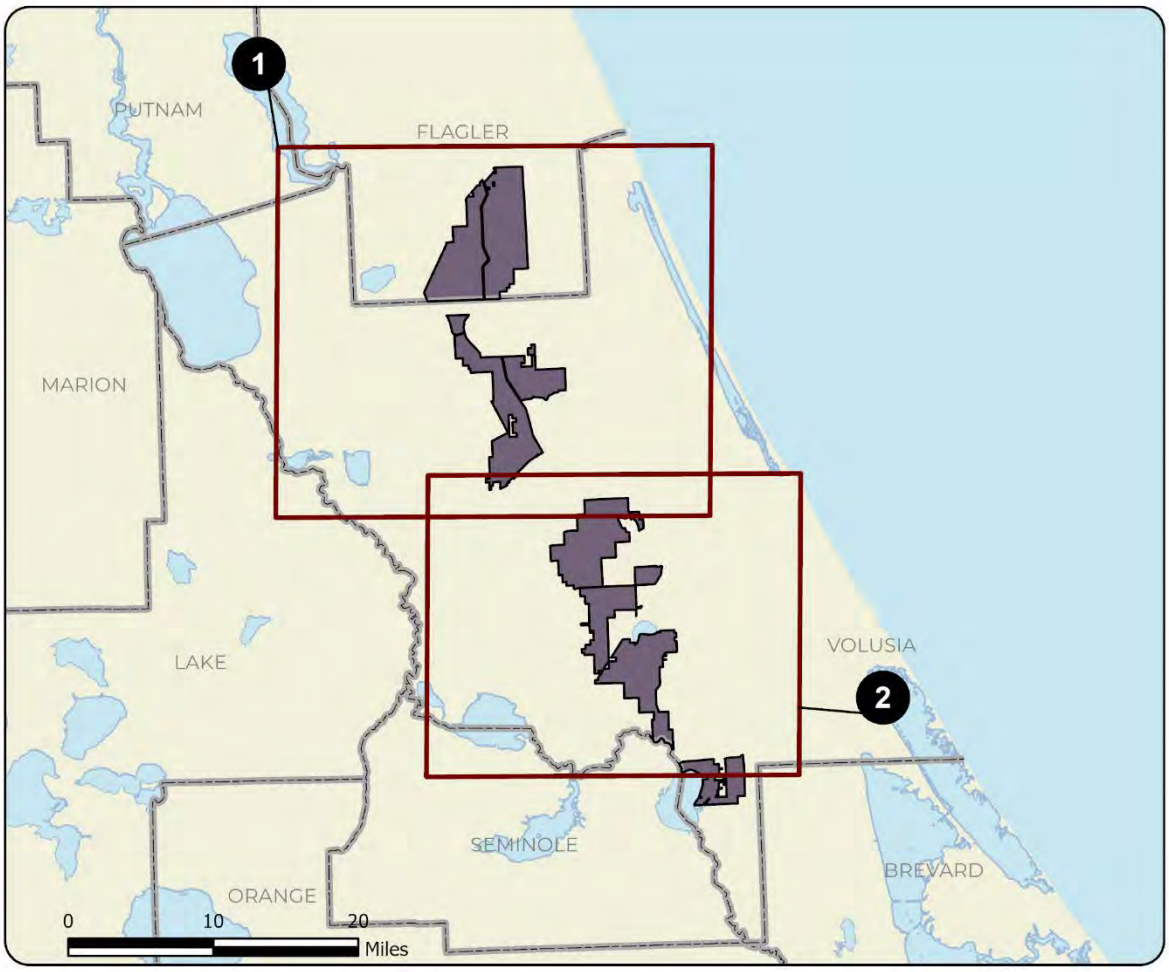
Cooperators in Management Activities

SJRWMD will cooperate with Volusia County and seek the assistance of other state agencies, local government entities and interested parties as appropriate.

Management Cost Summary

SJRWMD	Startup	Recurring
Source of Funds	WMLTF	WMLTF
Salary	$45,000	$45,000
OPS	$0	$0
Expense	$80,000	$80,000
OCO	$20,000	$60,000
FCO	$100,000	$0
TOTAL	$245,000	$185,000

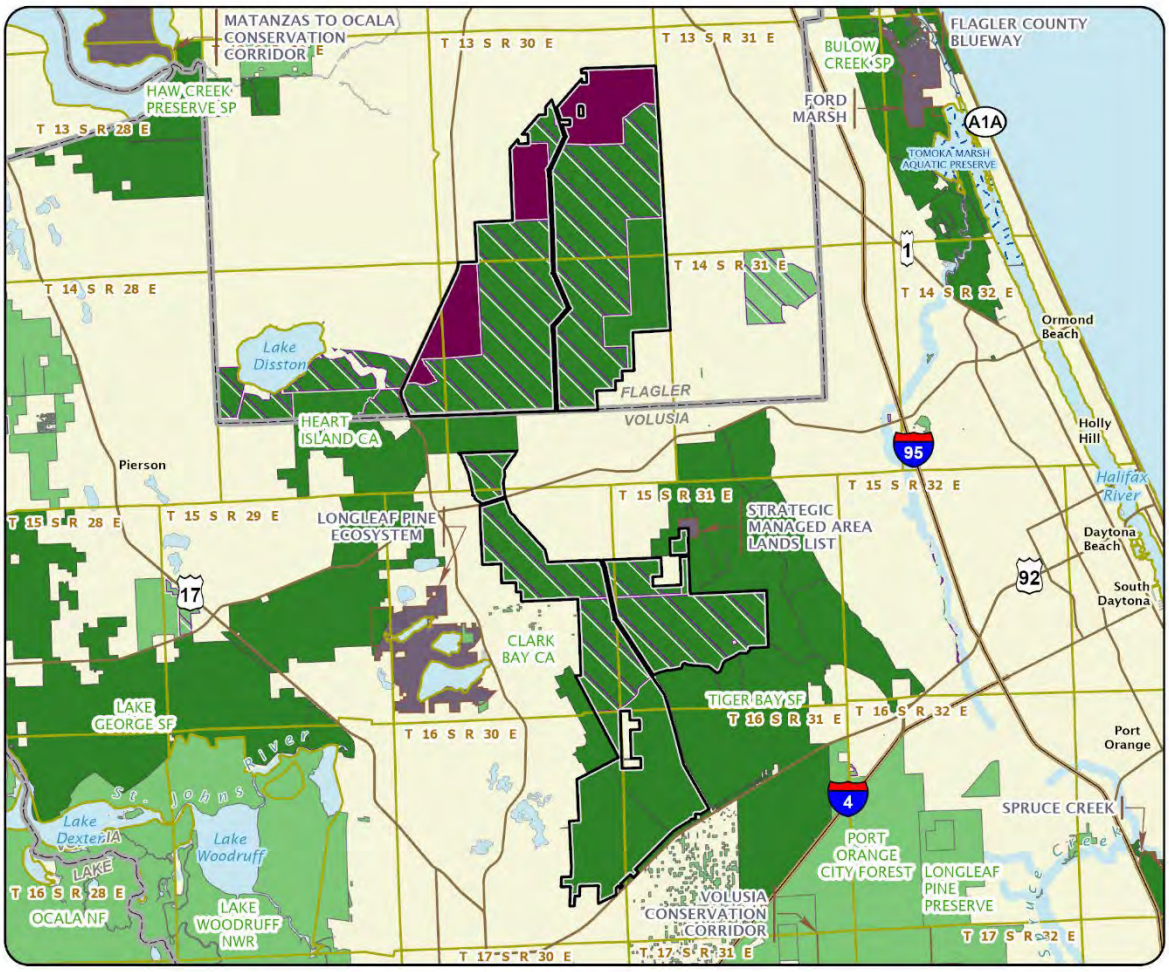
Source: Management Prospectus as originally submitted



VOLUSIA CONSERVATION CORRIDOR: OVERVIEW

FLAGLER AND VOLUSIA COUNTIES





VOLUSIA CONSERVATION CORRIDOR: MAP 1

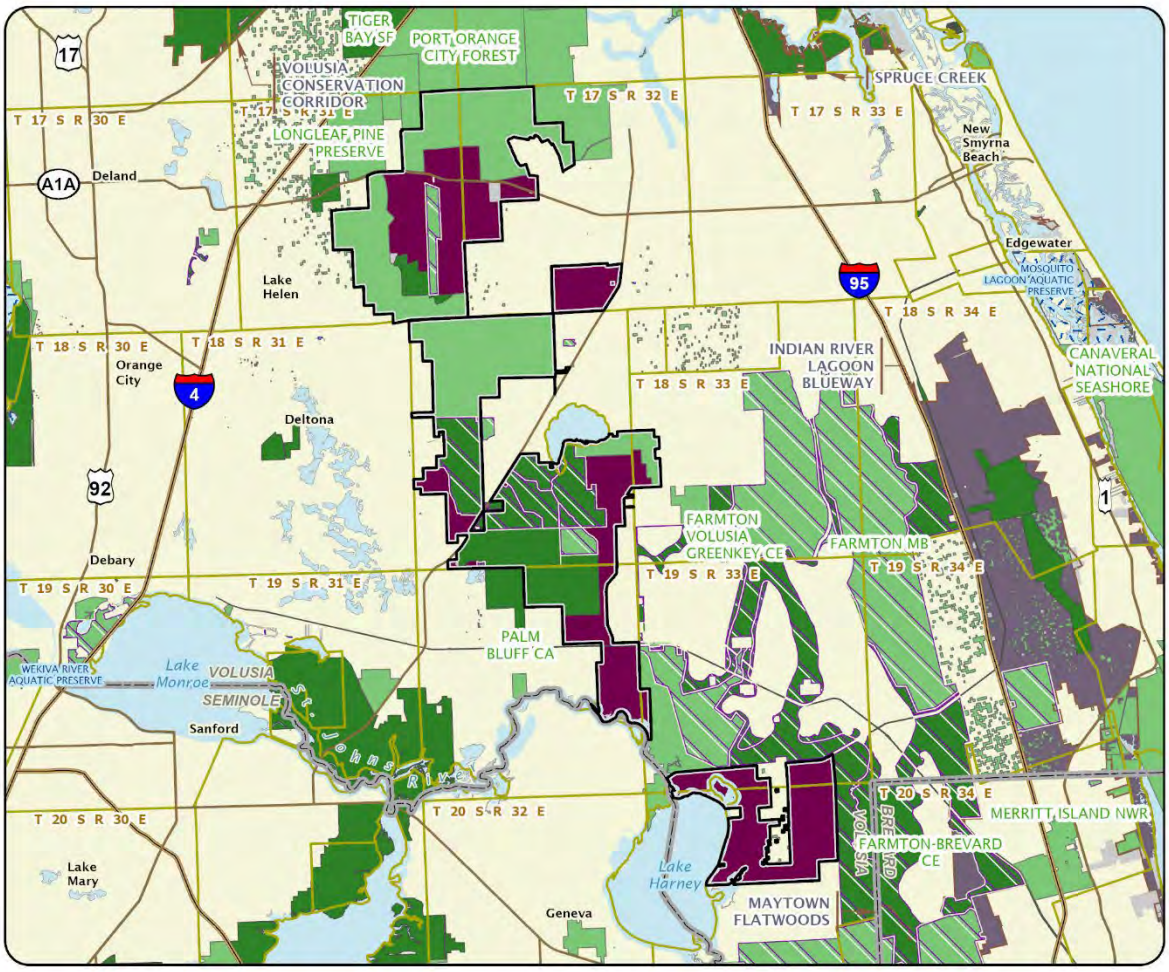
FLAGLER AND VOLUSIA COUNTIES

- Florida Forever Project Boundary
- Essential Parcels Remaining
- Other Florida Forever Projects
- State Conservation Lands
- Other Conservation Lands
- Other Public Lands
- Less-Than-Fee Acquisition
- State Aquatic Preserve

0 6 12 Miles

N





VOLUSIA CONSERVATION CORRIDOR: MAP 2

VOLUSIA COUNTY

- Florida Forever Project Boundary
- Essential Parcels Remaining
- Other Florida Forever Projects
- State Conservation Lands
- Other Conservation Lands
- Other Public Lands
- Less-Than-Fee Acquisition
- State Aquatic Preserve

0 6 12 Miles

N



APPENDIX C

Florida Forever Project Evaluation Report

Carter Quail Ranch

Volusia County



Acquisition Type: Fee Simple
Acres: 1,344
Just Value: $3,765,018
Application Date: October 31, 2022
Project Sponsors: Volusia County

Prepared By:
Division of State Lands
Office of Environmental Services

FLORIDA FOREVER
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Submitted to the Acquisition and Restoration Council
April 14, 2023

Executive Summary

The proposed Carter Quail Ranch Florida Forever project contains 7 parcels, owned by Daryl M. Carter TR, totaling 1,344 acres in Volusia County. This property is located approximately eight miles west of New Smyrna Beach between Interstate 4 (I-4) and Interstate 95 (I-95) on State Highway 415. The project connects to the northeast corner of the Deep Creek Preserve and the existing Volusia Conservation Corridor Florida Forever project. The Carter Quail Ranch project is proposed as a fee simple acquisition and has a total tax assessed value of $3,765,018. The property would be managed by Volusia County as an addition to Deep Creek Preserve.

The property is used for low intensity silviculture and recreational hunting. Portions of the property are currently leased for cattle grazing. The property contains, two large artificial ponds near State Highway 415 that originated as permitted borrow areas associated with road projects. According to the Division of Historical Resources (DHR), the project contains no cultural resources listed in the Florida Master Site File or National Register of Historic Places. There is potential for unrecorded sites to exist on Carter Quail Ranch, however no professional surveys have been conducted within the project boundaries.

Past silvicultural activities have allowed the diversity of the natural communities to persist in relatively natural condition. Mesic flatwoods that supports native groundcover occurs in large areas interspersed with wet flatwoods, baygall, and dome swamp. The project contains two significant basin swamps that generally run from north to south in the western portion of the property. These swamps show evidence of past disturbance and in some areas much of the cypress has been logged. The property is situated in the Deep Creek/St. Johns River watershed. Portions of the property drain into two named waterbodies, Lake Ashby and Spruce Creek Swamp.

The project would provide an eastern extension of what is known as the “Volusia Conservation Corridor;” a continuous landscape corridor of conservation lands that extends for 100 miles between the Ocala National Forest and Fort Drum Marsh to the south. Rare species documented on the property include gopher tortoise (*Gopherus polyphemus*), wood stork (*Mycteria americana*), Florida black bear (*Ursus americanus floridanus*) and southeastern fox squirrel (*Sciurus niger niger*). Due to the quality of the site, future survey may reveal the presence of the federally-listed plant species, Rugels pawpaw (*Asimina rugelii*) that is endemic to Volusia County. Nearly the entire project area is located within Priority 1 of the Florida Ecological Greenways Network (FEGN).

If approved for addition to the 2024 Florida Forever Priority List, the project should be considered as an amendment to the Volusia Conservation Corridor Florida Forever project boundary in the Partnerships and Regional Incentives category. All 1,344 acres proposed for acquisition are considered essential due to the resources documented on the property (see Appendix C). An interagency team conducted a site visit to the project site on January 19, 2023. Information included in this project evaluation report is a result of this site visit.

PURPOSE FOR ACQUISITION

The Carter Quail Ranch project will contribute to a corridor of conservation lands that will support and provide crucial habitat protection and connectivity for rare and endangered plant and animal species. The project will provide critical water quality and quantity protection for Deep Creek and the St. Johns River while expanding public access to resource-based recreational opportunities in a rapidly growing region of the state.

Acquisition of this project would serve to:

- increase the protection of Florida's biodiversity at the species, natural community, and landscape levels.
- increase natural resource-based public recreation or educational opportunities.
- provide and enhance wildlife corridors and valuable habitat for rare and imperiled species.
- provide surface and groundwater protection and protect natural floodplain functions.
- increase the amount of forestland available for sustainable management of natural resources.
- protect, restore, and maintain the quality and natural functions of land, water and wetland systems.

LOCATION AND PROXIMITY TO OTHER MANAGED AREAS

The Carter Quail Ranch proposal includes 1,344 acres (per proposal; 1,349 as determined in GIS) in central Volusia County, about 8 miles west of New Smyrna Beach, midway between I-4 and I-95. The property consists of a single block of land fronting State Highway 415, approximately 1.3 miles south of State Highway 44. The southwestern corner of the property meets the northeastern corner of the Deep Creek Preserve (Volusia County), providing a connection to Ocala National Forest to the north and west as well as a continuous network of conservation lands extending nearly 100 miles south as far as Fort Drum Marsh.

RESOURCE DESCRIPTION

Florida Natural Areas Inventory (FNAI)

This evaluation is based on information gathered from the proposal, 1999, 2004, and 2010 aerial photography, US Geological Survey (USGS) 7.5' topographic maps, Florida Cooperative Landcover Data (FL FWCC and FNAI, Florida Cooperative Land Cover Map, version 3.4), and information in the FNAI database. A field survey was conducted on January 19, 2023, by the Acquisition and Restoration Council liaison staff, including FNAI biologists Geoffrey Parks and Geena Hill.

The Carter Quail Ranch property lies near the southern edge of the Volusia Ridge Sets region, a series of ridges and terraces resulting from ancient sea level fluctuations. Topography varies only slightly on the property, with a north-south ridge at 45 feet elevation rising only slightly above the wetlands on the western and eastern edges, which both lie at about 35 feet. The property is situated in the Deep Creek/St. Johns River watershed, where surface drainage generally flows south into tributaries of the St. Johns River; drainage from the western parts of the property flows into Lake Ashby to the south, while surface flows from the northeast corner are directed via a ditch system east and south into the Spruce Creek Swamp. The southwest corner of the site meets the northeast corner of the Deep Creek Preserve; via this connection, this property would be an eastern extension of what is known as the "Volusia Conservation Corridor" which provides wildlife connectivity to Ocala National Forest to the north and west, and connects via a discontinuous network of conservation lands extending south as far as Fort Drum Marsh.

Much of the vegetation on the site (75%) is in relatively natural condition. Mesic and wet flatwoods are estimated to occupy 31% and 18% of the site, respectively. A lack of fire and some past disturbance from logging results in the species composition of these communities overlapping and intergrading somewhat; some areas of mesic flatwoods are likely included in the areas mapped as wet flatwoods and vice versa.

Mesic flatwoods on the site occur in large irregular areas on the slightly better-drained soils and higher elevations in the eastern portion of the property. The relatively open canopy generally consists of slash pine (*Pinus elliottii*), although at least one area has a canopy of mature longleaf pine (*Pinus palustris*).

A midstory is mostly lacking. Shrubs include abundant saw palmetto (*Serenoa repens*) and gallberry (*Ilex glabra*), with other shrub species varying depending on location. Loblolly bay (*Gordonia lasianthus*), myrtle oak (*Quercus myrtifolia*), southern bayberry (*Morella cerifera*), coastalplain staggerbush (*Lyonia fruticosa*), dwarf live oak (*Quercus minima*), and cabbage palm (*Sabal palmetto)* were recorded in the shrub layer. Herbaceous species were mostly lacking in some areas, but others had bluestem (*Andropogon sp.*), witchgrass (*Dichanthelium sp.*), bottlebrush threeawn (*Aristida spiciformis*), wiregrass (*Aristida stricta*), blackroot (*Pterocaulon pycnostachyum)* and beaksedge (*Rhynchospora sp.*).

Wet flatwoods are found in broad zones throughout the site, generally occurring between mesic flatwoods and swamps. These mostly have a canopy of slash pine, although pond pine (*Pinus serotina*) and longleaf pine sometimes are codominant or dominant. A sparse to moderately dense midstory of loblolly bay is common, above tall shrubs such as fetterbush (*Lyonia lucida*), swamp bay (*Persea palustris*), and regenerating slash pine. A well-developed lower shrub layer is made up of gallberry, saw palmetto, fetterbush, young loblolly bay, and cabbage palm. Herbaceous plants present include bluestem, sedge (*Carex sp.*), vanillaleaf (*Carphephorus odoratissimus*), cypress witchgrass (*Dichanthelium ensifolium*), and fourpetal St. John's wort (*Hypericum tetrapetalum*).

Significant areas of basin swamp occur in 2 distinct areas in the western half of the property, the largest of which is a band swamp near the western boundary that crosses the property from north to south. A second large area of swamp lies just south of the center of the property. These forested wetlands generally have a canopy of cypress (*Taxodium sp.*) along with red maple (*Acer rubrum*), slash pine, swamp tupelo (*Nyssa biflora*), and cabbage palm, and a subcanopy and shrub layer consisting of those species as well as sweetbay (*Magnolia virginiana*), dahoon (*Ilex cassine*), loblolly bay, and sweetgum (*Liquidambar styraciflua*). In some areas, much of the cypress has been logged, leaving a discontinuous canopy of hardwood species. Logged swamps observed during the site visit had a dense, marsh-like herbaceous layer dominated by native wetland species. Herbaceous plants seen in basin swamp on the property included cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis var. spectabilis*), pickerelweed (*Pontederia cordata*), sedge, threeway sedge (*Dulichium arundinaceum*), soft rush (*Juncus effusus ssp. solutus*), maidencane (*Panicum hemitomon*), smartweed (*Persicaria sp.*), beaksedge, and toothed midsorus fern (*Telmatoblechnum serrulatum*). In areas with a tree canopy, vines are common, consisting mainly of coral greenbrier (*Smilax walteri*) and laurel greenbrier (*Smilax laurifolia*).

Baygall also occurs commonly on the site, interspersed with the mesic and wet flatwoods. These swamps have a canopy dominated by loblolly bay, often with emergent slash pine. Loblolly bay was also abundant in the mid- and understory, with other shrub species including saw palmetto, gallberry, highbush blueberry (*Vaccinium corymbosum*), and occasional cabbage palm. Laurel greenbrier was found climbing throughout the shrub and canopy layers. Occasional herbaceous plants included bluestem, cinnamon fern, witchgrass, and St. John's wort (*Hypericum sp.*)

A handful of dome swamps are found in various locations within the flatwoods. These have a canopy dominated by swamp tupelo and/or cypress, with varying amounts of slash pine and loblolly bay below. Shrubs are generally uncommon in the interior of these wetlands, although cabbage palm and swamp bay were found. Herbs are sparse to dense, including cinnamon fern, royal fern, flatsedge (*Cyperus sp.*), pipewort (*Eriocaulon sp.*), manyflower marshpennywort (*Hydrocotyle umbellata*), Virginia chain fern (*Woodwardia virginica*), and purple bluestem (*Andropogon glomeratus var. glaucopsis*). Eastern poison ivy (*Toxicodendron radicans*) climbs the trunks of trees and Spanish moss (*Tillandsia usneoides*) commonly grows epiphytically. Dome swamps seen in the southern part of the property appear relatively healthy, while one in the northern part of the property has some evidence of historic topographic alterations related to an adjacent ranch road. In this swamp, soil subsidence and exposed roots are evidence that that the hydroperiod has been altered. Two other dome swamps straddling the same interior road may have similar issues.

Areas identified as scrubby flatwoods in the proposal area have a canopy of planted slash pine, but were generally indistinguishable from natural scrubby flatwoods; and silvicultural activities here have allowed much of the diversity of the natural community to persist. These stands have a relatively low density of canopy pines, as would be typical of a healthy site. A low, diverse shrub layer consisting of sand live oak (*Quercus geminata*), myrtle oak, rusty staggerbush (*Lyonia ferruginea*), saw palmetto, fetterbush, Chapman's oak (*Quercus chapmanii*) and occasional cabbage palm is punctuated by frequent openings with a moderate diversity of herbaceous plants. Herbs seen in the scrubby flatwoods included wiregrass, slender flattop goldenrod (*Euthamia caroliniana*), pinweeds (*Lechea sp.*), and wild pennyroyal (*Piloblephis rigida*).

A small amount of xeric hammock is present at the northeast corner of the site. This area has a canopy of sand live oak and abundant saw palmetto but was not viewed closely during the site visit.

Improved pasture makes up about 6% of the site. These were observed to be dominated by Bermuda grass (*Cynodon dactylon*) and centipede grass (*Eremochloa ophiuroides*) with few other species.

Some former swamps that have been recently logged could now be considered clearings; depending on the degree of disturbance that took place and the extent to which native tree species are regenerating. Some of these areas could possibly be undergoing recovery towards basin swamp.

Two large artificial ponds near State Highway 415 originated as permitted borrow areas associated with road projects. These appeared to be open water systems with upland species growing near to the edge, and a narrow fringe of soft rush and other rushes, torpedo grass (*Panicum repens,* FISC-I), cattail (*Typha* sp.), and a few other herbs, with sporadic southern bayberry and young red maple near the banks.

One area was apparently improved pasture at one point, and is now better described as abandoned pasture. Although bahiagrass (*Paspalum notatum*) is present, other herbaceous plants are dominant. Species present include bluestem, spadeleaf (*Centella asiatica*), turkey tangle fogfruit (*Phyla nodiflora*), smutgrass (*Sporobolus indicus*), rush (*Juncus sp.*), cutgrass (*Leersia sp.*), beaksedge, and yellow-eyed grass (*Xyris sp.*).

Planted slash pine occupies about 2% of the proposal in the southeastern quadrant of the site. This is a rather dense stand with unthinned pines with midstory of loblolly bay, dahoon, and gallberry. Herbaceous species observed included cinnamon fern, royal fern, sawtooth blackberry, and purple bluestem.

Canals/ditches occur in various locations on the property. During the site visit, loblolly bay was noted to form the tree canopy above the drainage way, with a shrub stratum of southern bayberry. Graminoids such as torpedo grass and soft rush grow on the banks. The ditches were filled with water at the time of the site visit, with duckweed (*Lemna sp.*) observed sporadically on the water’s surface.

Two other altered landcover types are found on the property, each occupying less than 1% of the site. A utility corridor runs through the property’s northeastern corner; this treeless zone is dominated by low-growing native species including saw palmetto, dwarf live oak, sand blackberry (*Rubus cuneifolius*), bluestem, and lovegrass (*Eragrostis* sp.). In addition, there are two small developed areas, each surrounding a house.

Invasive plants appear to be infrequent on the site. One patch of cogon grass (*Imperata cylindrica*; FISC Category I) was noted during the field visit, but this species did not appear to be widespread. A handful of other FISC-listed species were found in various habitats, but none were common.

Table 1. Natural communities and landcover types within Florida Forever proposal

Community or Landcover	Acres	Percent of Proposal
mesic flatwoods	415	31
wet flatwoods	244	18
basin swamp	233	17
baygall	135	10
dome swamp	23	2
scrubby flatwoods	13	<1
xeric hammock	6	<1
improved pasture	82	6
clearing	61	5
artificial pond	46	3
successional hardwood forest	34	3
abandoned field/pasture	26	2
pine plantation	25	2
utility corridor	4	<1
developed	2	<1

Florida Fish and Wildlife Conservation Commission (FWC)

This resource assessment of the Carter Quail Ranch Florida Forever project proposal is based on field observations during the site visit, GIS analysis results, and follow-up discussions with the landowner representative and other tour participants.

A majority of the property appears to be in natural condition, split between flatwood and swamp ecosystems, of which the freshwater forested wetlands (23%, 302 acres) is the most abundant community type. The rest of the property consists of mesic flatwoods (21%, 282 acres), tree plantations (18%, 235 acres), and improved pasture (10%, 128 acres), wet flatwoods (8%, 106 acres), and dome swamp (2%, 23 acres). A large portion of the eastern side of the property consist of two large and two smaller artificial ponds that may have been borrow pits from road construction. The rest of the property contains clearings, successional hardwood forest, a utility corridor, and is developed. Structures include two houses near the artificial ponds on the eastern side of the property and some fencing was observed throughout. There were cattle present, grazing in the old field pastures. The Volusia County representative who led the tour stated there were no notable signs of prescribed fire used on the site; however, most of the natural communities appeared to be in relatively good condition.

Despite the presence of disturbance, no nonnative invasive plants were noted nor observed during the site visit, though the utility corridor appeared to be surrounded by successional hardwood forest due to the exclusion of prescribed fire. The majority of canopy consisted of slash pine and some longleaf pine, but some areas had scrub oaks in areas of higher elevation, while cedar and cypress were found in the scattered dome and baygall swamps. The groundcover consisted mostly of saw palmetto and gallberry (*Ilex glabra*) thickets interspersed with grassy areas that contained broomsedges (*Andropogon spp.*), wiregrasses *(Aristida spp.)*, and/or blackberry (*Rubus spp.*). The representative from Volusia County discussed the presence of Myakka soils on the property; a specific soil type required for Rugels pawpaw (*Asimina rugelii*) a federally endangered plant species endemic to Volusia County.

Wildlife species observed during the tour include wild turkey (*Meleagris gallopavo*), cattle egrets (*Bubulcus ibis*), common merganser (*Mergus merganser*), great blue heron (*Ardea herodias*), wood

stork , and gray catbirds (*Dumetella carolinensis*). Signs of white-tailed deer (*Odocoileus virginianus*), feral hog (*Sus scrofa*), North American river otter (*Lontra canadensis*), and gopher tortoise burrows were present, as well as calls from the red-winged blackbird (*Agelaius phoeniceus*) and brown-headed nuthatch (*Sitta pusilla*).

The application lists Florida black bear and southeastern fox squirrel as being present and based on documented occurrences within the vicinity, other listed or rare species could be expected on the property as well. The FNAI Element Occurrence database does show the occurrence of the Florida black bear and 100% of the property is listed as being within their frequent range. Carter Quail Ranch has also been identified as suitable habitat for various species including 97% for the Florida long-tailed weasel (*Mustela frenata peninsulae*), 21% for the eastern indigo snake (*Drymarchon couperi*), 20% of the property for the wood stork (*Mycteria americana*), and 10% for the Florida sandhill crane (*Antigone canadensis pratensis*).

Approximately 85% of the property lies within a designated FWC Strategic Habitat Conservation Area (SHCA) for species including Cooper's hawk (*Accipiter cooperii*), Florida black bear, American swallow-tailed kite (*Elanoides forficatus*), striped newt (*Notophthalmus perstriatus*), and the Florida scrub-jay (*Aphelocoma coerulescens*). The entire property provides water protection for several streams including Lake Ashby Creek, Lake Ashby Drain, and the Samsula Canal, which are all classified as 3F surface waters. Additionally, 77% of the property is listed as imperiled waters for the snail bullhead (*Ameiurus brunneus*). A majority of the property, 76%, is identified as Priorities 1 and 2 for the Critical Lands and Waters Identification Project.

The FWC Florida Landscape Assessment Model (FLAM) is a GIS-based assessment tool that incorporates a wide variety of land cover and wildlife species data in identifying important wildlife habitats. The FLAM model has a ranking of 0-10; a rank of 10 being of greatest value. The mean FLAM score for this property is 6.8. The Carter Quail Ranch also has approximately 89% of the total area showing a species richness for 5-7 imperiled species. The National Wetlands Inventory identifies approximately 39% of the area as wetland. In conclusion, the current natural communities are in good condition and would contribute largely to the overall conservation of Florida's wildlife, plants, and habitats. The habitats that aren't in good condition would require little work and be very feasible to convert them back to historical natural communities. This property would provide continuity of a corridor of established conservation areas within the vicinity and protect critical habitat from development that's needed for endemic and imperiled species.

GOALS, MEASURES AND CRITERIA

GOAL A:

ENHANCE THE COORDINATION AND COMPLETION OF LAND ACQUISITION PROJECTS

Measure A1:

The number of acres acquired through the state's land acquisition programs that contribute to the enhancement of essential natural resources, ecosystem service parcels, and connecting linkage corridors as identified and developed by the best available scientific data.

If acquired, all 1,344 acres would contribute to the enhancement of essential natural resources, ecosystem service parcels and connecting linkage corridors. The Carter Quail Ranch proposal connects to existing conservation lands and would contribute to a contiguous landscape-sized protection area of >1,109,000 acres.

Measure A3:

The number of shared acquisition projects among Florida Forever funding partners and partners with other funding sources, including local governments and the federal government.

Additional support for this acquisition will be provided by Volusia County through the Volusia Forever program.

GOAL B:

INCREASE THE PROTECTION OF FLORIDA'S BIODIVERSITY AT THE SPECIES, NATURAL COMMUNITY, AND LANDSCAPE LEVELS

Measure B1:

The number of acres acquired of significant Strategic Habitat Conservation Areas.

The SHCA Florida Forever Conservation Needs layer identifies important remaining habitat conservation needs for 62 terrestrial vertebrates on private lands. Priority 1 and 2 represent habitat for species considered imperiled or critically imperiled in Florida. The Florida Forever Measure Evaluation (FFME) table (Appendix B) reports the site contains approximately 1,138 acres (84% of site) of SHCAs. This is primarily within Priority 3 (56% of site) with the remainder in Priority 5 (28%).

Measure B2:

The number of acres acquired of highest priority conservation areas for Florida's rarest species.

Habitat conservation priorities for 634 of Florida's rarest species were mapped and divided into six priority classes. The FFME reports the proposed project contains approximately 1,317 acres (98% of site) of rare species habitat. The habitat is mostly divided between Priority 6 (68% of site) and Priority 5 (24%), with the remainder in Priorities 3 and 4 (3%, each).

The following table lists the acres of habitat for each species that may be found on the site, based on the FNAI Habitat Conservation Priorities. Please note that habitats for these species overlap, so that the sum total of habitat for all species is more than the total acreage of the priority conservation areas. Acreage for aquatic species includes a terrestrial buffer.

Table 2. Rare species habitat based on FNAI Habitat Conservation Priorities

Scientific Name	Common Name	Global Rank	Acres
Melanoplus indicifer	east coast scrub grasshopper	G1	58
Drymarchon couperi	eastern indigo snake	G3	278
Mycteria americana	wood stork	G4	271
Mustela frenata peninsulae	Florida long-tailed weasel	G5T3?	1,295

Measure B3:

The number of acres acquired of significant landscapes, landscape linkages, and conservation corridors, giving priority to completing linkages

The FFME reports approximately 1,349 acres (100%) of the proposed project contributes to protection of ecological greenways with nearly all of the site falling within Priority 1 areas, and < 1% in Priority 2. Prioritization is based on such factors as importance for wide-ranging species like Florida panther and Florida black bear, importance for maintaining a connected reserve network, and riparian corridors.

Measure B4:

The number of acres acquired of under-represented native ecosystems.

The Florida Forever natural community analysis includes only those communities that are under-represented on existing conservation lands. This analysis provides a conservative estimate of the extent of these communities, because it identifies only relatively undisturbed portions of these communities that occur within their historic range. The Florida Forever Measures table lists the acreages of under-represented natural communities found on the site. Based on this analysis, the Carter Quail Ranch proposal contains 659 acres of mesic/wet flatwoods (49% of site) and 13 acres of scrub and scrubby flatwoods (1% of site).

Measure B5:

The number of landscape-sized protection areas of at least 50,000 acres that exhibit a mosaic of predominantly intact or restorable natural communities established through new acquisition projects, or augmentations to previous projects.

The Carter Quail Ranch proposal, along with nearby conservation lands that include Ocala National Forest, Lake George State Forest, Deep Creek Preserve, and Lower Wekiva River Preserve State Park, would contribute to a contiguous landscape-sized protection area of >1,109,000 acres.

Measure B6:

The percentage increase in the number of occurrences of imperiled species on publicly managed conservation areas.

This site supports potential habitat for many rare species of conservation concern. A wood stork was observed foraging onsite during the site visit, and the proposal lies within an area of the state where Florida black bear is classified as frequent.

No rare plants have been reported from the site, and none were recorded during the site visit. However, more extensive surveys or surveys in other seasons could document rare plants on the site. In particular, the site is within the range of the federally-endangered and globally imperiled, Rugel's pawpaw and appropriate habitat for this species is likely to occur onsite.

The FFME lists the number of Element Occurrences by Global Rank (G-rank) that are found on the proposal. Note that the number of occurrences does not necessarily match the number of species in the following table because a) some species may have more than one occurrence on the proposal site, or b) some species observed on site do not meet the criteria for addition to the FNAI database at this time. Table 3 contains species falling into any of these observational categories, as well as species gleaned from other sources (e.g., Florida Breeding Bird Atlas) with different degrees of locational precision.

Table 3. Rare plants and animals documented or reported to occur within the proposed project

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Rare animals documented on site					
Mycteria americana	wood stork	G4*	S2	T	FT
Ursus americanus floridanus	Florida black bear	G5T4	S4	N	N
Additional rare animals reported on site by applicant					
Sciurus niger niger	southeastern fox squirrel	G5T5	S3	N	N

GOAL C:

PROTECT, RESTORE AND MAINTAIN THE QUALITY OF NATURAL FUNCTIONS OF LAND, WATER, AND WETLAND SYSTEMS OF THE STATE

Measure C1:

The number of acres of publicly-owned land identified as needing restoration; enhancement, and management, acres undergoing restoration or enhancement; acres with restoration activities completed, and acres managed to maintain such restored or enhanced conditions; the number of acres which represent actual or potential imperiled species habitat; the number of acres which are available pursuant to a management plan to restore, enhance, repopulate, and manage imperiled species habitat; and the number of acres of imperiled species habitat managed, restored, and enhanced, repopulated, or acquired.

Volusia County has resources to implement restoration and management of the natural communities on the property. Over much of the site, prescribed fire would be the main management technique needed to improve and maintain habitat for imperiled and other native species. Much of the proposal area's wet, scrubby, and mesic flatwoods have fairly natural composition and structure that would allow for a controlled burn program to be initiated. In some areas, midstory encroachment may make controlled burns difficult, and mechanical midstory reduction may be needed prior to resuming a burn regime. The proposed managing agency already undertakes both prescribed fire and mechanical fuels management on other properties in the region, and has the trained staff and resources to actively manage and restore this property.

The pasture and old fields were likely formerly flatwoods, and would benefit from restoration of native overstory and groundcover species. This type of restoration would be consistent with the intended uses of the property should it be acquired.

There was a relatively low degree of infestation by invasive plants seen during the site visit, and the need for invasive plant control appear to be relatively minor. One patch of cogon grass was the only significant invasive infestation seen. Small amounts of caesarweed (FISC-II), torpedograss (FISC-I), and golden bamboo (Phyllostachys aurea, FISC-II) were also noted, but were localized. Cogon grass should be a priority to be treated aggressively, as this species can spread rapidly and could threaten the integrity of the good quality natural communities on the site. Caesarweed should be monitored closely as well. Other invasive species may be present that were not detected during the site visit; a baseline assessment to determine the full extent of invasive species is warranted if the property is to be acquired.

Measure C4:

The number of acres acquired that protect natural floodplain functions.

The FFME reports approximately 657 acres (49%) of the proposed project may contribute to the protection of natural floodplain function. This area is mostly divided between Priority 2 (22% of site) and Priority 3 (20%), with the remainder in Priority 4 (7%). Priority 1 areas are the most natural with the lowest intensity land uses.

Measure C5:

The number of acres acquired that protect surface waters of the State.

The FFME reports approximately 1,349 acres (100%) of the proposed project could provide protection for those surface waters of the State that currently remain in good condition. The majority of this area is in Priority 6 (81% of site), with the remainder in Priority 5 (19%). These areas represent acreage that contributes to the protection of state-designated Outstanding Florida Waters, springs, rare fish habitat, or other surface waters.

Measure C8:

The number of acres of functional wetland systems protected.

The FFME reports approximately 524 acres (39%) of the proposed project would provide protection for functional wetland systems. This area is mostly divided between Priority 2 (19% of site) and Priority 3 (17%), with the remainder in Priority 4 (2%). Priority 1 areas are the most natural with the lowest intensity land uses.

GOAL D:

ENSURE THAT SUFFICIENT QUANTITIES OF WATER ARE AVAILABLE TO MEET THE CURRENT AND FUTURE NEEDS OF NATURAL SYSTEMS AND THE CITIZENS OF THE STATE

Measure D1:

The number of acres acquired which provide retention and storage of surface water in naturally occurring storage areas, such as lakes and wetlands, consistent with the maintenance of water resources or water supplies and consistent with district water supply plans.

Wetland systems in the project area appear relatively intact with minimal disturbance aside from some artificial drainage by farm ditches and the Lake Ashby canal. Approximately 400 acres of the project could provide retention and storage of surface water within natural waterbodies and wetlands. Artificial lakes already present could be improved for water storage/water supply projects, if needed.

Measure D2:

The quantity of water made available through the water resource development component of a district water supply plan for which a water management district is responsible.

The property is not contained within a current water resource development project, though past plans involved the nearby Palm Bluff Conservation Area to create a treatment wetland system for the impaired Deep Creek MSJR 303(d) list site.

Measure D3:

The number of acres acquired of groundwater recharge areas critical to springs, sinks, aquifers, other natural systems, or water supply.

The FFME reports approximately 1,349 acres (100%) of the proposed project would provide protection for groundwater recharge areas. This area is divided between Priority 6 (82% of site) and Priority 5 (18%). Prioritization is based on features that contribute to aquifer vulnerability such as swallets, thickness of the intermediate aquifer confining unit and closed topographical depressions, as well as areas within springshed protection zones and in proximity to public water supply wells.

Table 4. Spatial Analysis for Potential Water Quality Benefits of Carter Quail Ranch

Categories	Scoring Criteria	Project Score
DEP High Profile Springs (In 1,2,3 or > spring sheds)	12, 24, 36	0
DEP Select Agricultural Land Use (0-30%, >30-65%, >65%)	4,8,12	4
DEP Florida Aquifer Vulnerability (FAVA)	4,7,10	10
DEP Special Nutrient Impaired WBIDs	9	0
DEP Distance to Major Lakes (100, 500, 1000 meters)	8,7,6	0
DEP Springsheds or within 5 miles	10, 7	0
DEP BMAPs	10	10
DEP Distance to Major Rivers (100, 500, 1000 meters)	6,5,4	0
Total Possible	101	24

GIS Evaluation score is converted to a 1 to 5 value (low to high),

FINAL DEAR SCORE = 2 medium/low water quality protection benefits

GOAL E:

INCREASE NATURAL RESOURCE-BASED PUBLIC RECREATIONAL AND EDUCATIONAL OPPORTUNITIES

Measure E1:

The number of acres acquired that are available for natural resource-based public recreation or education.

There are approximately 1,344 acres in this acquisition that would be available for natural resource-based public recreation or education as managed by Volusia County. Details on potential recreational activities can be found in Appendix D. However, the resources found on the property would be compatible with camping, horseback riding, biking, hiking, picnicking, paddling, and fishing.

Measure E3:

The number of new resource-based recreation facilities, by type, made available on public land.

The property does not contain any existing facilities that could be repurposed for public recreation. There is one former residence that could be used for administrative purposes.

GOAL F:

PRESERVE SIGNIFICANT ARCHAEOLOGICAL OR HISTORIC SITES

Measure F1:

The increase in the number of and percentage of historic and archaeological properties listed in the Florida Master Site File or National Register of Historic Places which are protected or preserved for public use.

The Carter Quail Ranch Florida Forever project would not meet Measure F1 as the project contains no cultural resources listed in the Florida Master Site File or National Register of Historic Places.

Measure F2:

The increase in the number and percentage of historic and archaeological properties that are in state ownership.

As a fee simple project, the Carter Quail Ranch would meet Measure F2. Although there are currently no recorded sites in the Florida Master Site File or National Register of Historic Places, the high potential for yet-to-be-recorded sites would likely result in an increase in the number of historic and archaeological sites that are in state ownership.

CULTURAL RESOURCES:

There are no cultural resources recorded or known to exist on this Florida Forever project. To date, this property has not been professionally surveyed for archaeological and/or historical sites. It is therefore highly likely that undocumented cultural resources exist on the property, but this cannot be determined without formal survey.

FIELD OBSERVATIONS:

During the Field Review of the Carter Quail Ranch Florida Forever project, staff did not observe any unrecorded cultural resources within the project area. However, based on an evaluation of the location and distribution of cultural resources in the surrounding area, there is potential for numerous unrecorded sites to exist on the Carter Quail Ranch property. Should any artifacts or other cultural resources be discovered on the project in the future, DHR recommends leaving them in place and contacting DHR's Public Lands Archaeology Program for further evaluation.

GOAL G:

INCREASE THE AMOUNT OF FORESTLAND AVAILABLE FOR SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

Measure G1:

The number of acres acquired that are available for sustainable forest management.

The acquisition of this property would increase the amount of forest land available for sustainable forest management. This site would also be highly suitable for longleaf pine restoration and ecological restoration. The property has a great "foundation" for ecological restoration in the areas where timber stand thinning has occurred. The areas where thinning has occurred have a mature slash pine overstory. The application of prescribed fire to the property would bring back the "old Florida" environment.

The FFME reports approximately 856 acres (63% of site) could be available for sustainable forest management, divided between Priority 3 (504 acres) and Priority 5 (353 acres). Prioritization is based on criteria set by the Florida Forest Service: whether trees are natural or planted, size of tract, distance to market, and hydrology. Priority 5 areas are considered "potential" pinelands; agricultural areas that could be restored to pineland

Measure G2:

The number of acres of state owned forestland managed for economic return in accordance with current best management practices.

Depending on management goals and objectives, approximately 750 acres are available for economic return (timber sales), thi sincludes mesic flatwoods, wet flatwoods, and pine plantation communities. Most of the pine planation and mesic flatwoods have been heavily thinned but could be harvested, however due to thinning, the remaining trees per acre is very low in these areas and there would not be much of an economic return. These areas should be replanted if they are harvested to provide for future timber resources and economic return. Approximately 23 acres of un-thinned pine plantation would qualify for timber sales, but due to its small size it would not have much value.

The pastures and clearings which total approximately 125 acres, would be suitable to plant longleaf pine (depending on site index and soils) or alternatively, for cattle leasing to provide some economic return.

Measure G4:

The percentage and number of acres identified for restoration actually restored by reforestation.

Depending on management goals and objectives, the pastures and clearings (approximately 125 acres) could support longleaf pine restoration. The areas that have been thinned could be restored to longleaf pine if the remaining slash pine are harvested. The pastures, clearings, pine plantations (minus the 23-acre un-thinned slash pine planation), mesic flatwoods, and wet flatwoods, total approximately 868 acres or 64% of the property. To restore all 868 acres the remaining slash pine should be harvested and the area replanted with longleaf pine. There were very few longleaf pines seen on the site visit so natural regeneration is not a viable option.

FLORIDA FOREVER CRITERIA

The proposed project meets the following Florida Forever criteria (§ 259.105, F.S.):

- The project meets multiple goals.
- The project enhances or facilitates management of properties already under public ownership.
- The project has funding sources that are identified and assured through at least the first 2 years of the project.
- The project is a joint acquisition, either among public agencies, nonprofit organizations, or private entities, or by a public-private partnership.

The Acquisition and Restoration Council shall give increased priority to:

- Projects for which matching funds are available.

MANAGEMENT

The Carter Quail Ranch project is proposed to be managed by Volusia County as part of Depp Creek Preserve. Please see Appendix D for the Management Prospectus.

FUNDING SOURCES

Florida Forever and Volusia Forever

OWNERSHIP PATTERN AND ACQUISITION PLANNING

Title and Legal Access Issues, Jurisdictional and Sovereignty Lands, Legal Issues

Record of title, a designation of jurisdictional and sovereignty lands and any other legal Issues will be determined at the time of acquisition and are not known at this time.

Known Encumbrances (easement, long-term leases, restrictive covenants, etc.)

The easements and encumbrances of record would be determined during the appraisal mapping. A current title insurance commitment would be obtained, or the owner's title insurance policy would be reviewed if the policy is available. The easements and encumbrances would be depicted or noted on the appraisal map. There is an existing Duke Energy utility corridor that crosses the northeastern corner of the property.

Description and location of hazardous waste sites, dumps, borrow pits

There are no apparent contamination sites within the project based on the application form. However, two active landfills are located across from the site on the eastern side of State Highway 415.

Estimated Cost of Appraisal and Mapping

DEP Bureau of Appraisal estimates $10,000 to $20,000 in appraisal fees.

Acquisition Phases

Subject to funding, the Carter Quail Ranch Florida Forever project will be phased based upon price.

GOVERNMENT PLANNING and DEVELOPMENT

Contribution to Recreation and Open Space Needs

The proposal has low to moderate potential for contributing to recreation and open space needs. The property could function as a wildlife corridor, and various recreational activities could include environmental education and interpretation, fishing, hiking/jogging, horseback riding, and wildlife observation and photography.

Potential for Losing Significant Natural Attributes or Recreational Open Spaces

Much of the subject property is low intensity silviculture. There is some pastureland, wetlands, and forested natural areas. The property's adjacency to the existing Florida Forever Volusia Conservation Corridor project area makes it an important acquisition. The acquisition would serve to create a buffer between urban areas and the corridor which could be lost if the property were to be developed.

Potential for Being Subdivided

Low Potential - As currently designated, the subject property has low potential for subdivision. Density is very low and urban services are not available or nearby.

Existing Land Uses and Future Land Use Designations

Existing Land Uses: The subject property has Forestry Resource and Rural Agricultural zoning designations. The Forestry Resource zoning designation is to preserve land that is suited for multiple use forest management. The Rural Agriculture zoning designation is to preserve and protect rural areas of the county that have some agricultural value, but which are also suitable for rural estate living.

Future Land Uses: Based on the Volusia County Comprehensive Plan future land use designation of Environmental System Corridor (1 unit per 25 acres}, Agriculture (1 unit per 10 acres) and Forestry Resource (1 unit per 20 acres).

Development Potential

Current development potential is low and there are no urban services in proximity. There is a large, antiquated subdivision platted to the east of the project. The subdivision was platted without an internal road/access network and would interrupt any development pressures from the City of New Smyrna Beach.

Transportation Planning Issues

This project falls within Florida Department of Transportation (FDOT) District 5, along State Highway 415. The site is located within a 2-mile radius of two designated evacuation routes- State Highway 44 and State Highway 415. Two projects fall within the vicinity of the site, one being a resurfacing along interstate I-4 from west of Cassadaga Road to east of State Road 44. The second project is a Corridor Management Plan being conducted along State Road 44 from Samsula Drive to Myrtle Avenue. A significant amount of development is planned along this corridor, and this study is evaluating future needs and potential improvements related to access management, facility and multimodal operations, and corridor safety. There should be coordination with the appropriate FDOT District staff during the acquisition process to ensure that any issues related to the transportation facilities are addressed and incorporated into the management plan as appropriate.

ACKNOWLEDGEMENTS

Staff in DEP's Division of State Lands (DSL) and the Florida Natural Areas Inventory determined the final project recommendations. Sine Murray in DSL's Office of Environmental Services was responsible for the overall coordination of this report, with contributions from the following:

- Division of Historical Resources – Brandon Ackerman, Jason O'Donoughue
- Florida Forest Service – Cat Ingram, Samuel Kergel
- Department of Economic Opportunity – Barbara Powell
- Florida Fish and Wildlife Conservation Commission – Susie Nuttall, Justin Ellenberger, Caitlyn Crawford
- Florida Natural Areas Inventory – Geoffrey Parks, Geena Davis, Nathan Pasco
- DEP Division of Environmental Assessment and Restoration – Ken Weaver
- Florida Department of Transportation – Ben Naselius
- St. Johns River Water Management District – Christopher Winslow

APPENDICES

Appendix A:

Final FF measures table: Report requirement 259.105 (15)d, prepared by Florida Natural Areas Inventory

Carter Quail Ranch: Florida Forever Measures Evaluation 20230322

GIS ACRES = 1,349

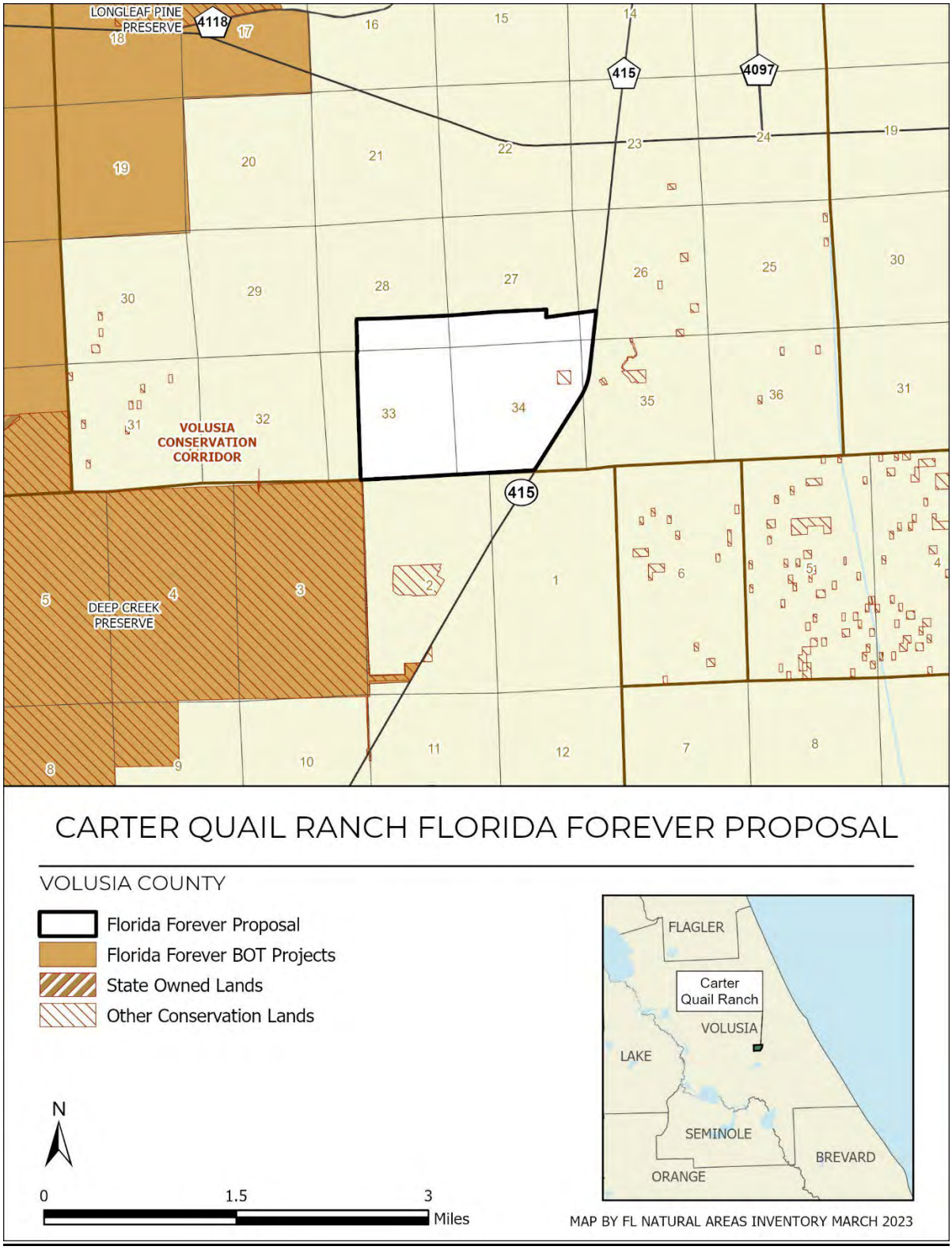
MEASURES	Resource Acres[a]	% of project
B1: Strategic Habitat Conservation Areas		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	757	56%
Priority 4	0	0%
Priority 5	381	28%
Total Acres	1,138	84%
B2: FNAI Habitat Conservation Priorities		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	37	3%
Priority 4	44	3%
Priority 5	318	24%
Priority 6	918	68%
Total Acres	1,317	98%
B3: Ecological Greenways		
Priority 1	1,347	100%
Priority 2	1	< 1%
Priority 3	0	0%
Priority 4	0	0%
Priority 5	0	0%
Total Acres	1,348	100%
B4: Under-represented Natural Communities		
Upland Glade (G1)	0	0%
Pine Rockland (G1)	0	0%
Scrub and Scrubby Flatwoods (G2)	13	< 1%
Rockland Hammock (G2)	0	0%
Dry Prairie (G2)	0	0%
Seepage Slope (G2)	0	0%
Sandhill (G3)	0	0%
Sandhill Upland Lake (G3)	0	0%
Upland Pine (G3)	0	0%
Mesic/Wet Flatwoods (G4)	659	49%
Upland Hardwood Forest (G5)	0	0%
Total Acres	672	50%
B6: Occurrences of FNAI Tracked Species		
G1	0	
G2	0	
G3	0	
G4	2	
G5	0	
Total	2	
C4: Natural Floodplain Function		
Priority 1	0	0%
Priority 2	297	22%
Priority 3	268	20%
Priority 4	92	7%
Priority 5	0	0%
Priority 6	0	0%
Total Acres	657	49%

MEASURES (continued)	Resource Acres[a]	% of project
C5: Surface Water Protection		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	0	0%
Priority 4	0	0%
Priority 5	253	19%
Priority 6	1,093	81%
Priority 7	0	0%
Total Acres	1,345	100%
C7: Fragile Coastal Resources		
Fragile Coastal Uplands	0	0%
Imperiled Coastal Lakes	0	0%
Coastal Wetlands	0	0%
Total Acres	0	0%
C8: Functional Wetlands		
Priority 1	0	0%
Priority 2	258	19%
Priority 3	234	17%
Priority 4	32	2%
Priority 5	0	0%
Priority 6	0	0%
Total Acres	524	39%
D3: Aquifer Recharge		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	0	0%
Priority 4	0	0%
Priority 5	246	18%
Priority 6	1,103	82%
Total Acres	1,349	100%
E2: Recreational Trails (miles)		
(prioritized trail opportunities from Office of Greenways and Trails & Univ. Florida)		
Land Trail Priorities	0.0	
Land Trail Opportunities	0.0	
Total Miles	0.0	
F2: Arch. & Historical Sites (number)	0 sites	
G1: Sustainable Forestry		
Priority 1	0	0%
Priority 2	0	0%
Priority 3	504	37%
Priority 4	0	0%
Priority 5 - Potential Pinelands	353	26%
Total Acres	856	63%
G3: Forestland for Recharge	0	0%

[a]Acres of each resource in the project and percentage of project represented by each resource are listed except where noted. This analysis converts site boundary into pixels, which causes slight differences from GIS acres; this effect is most noticeable on small sites.

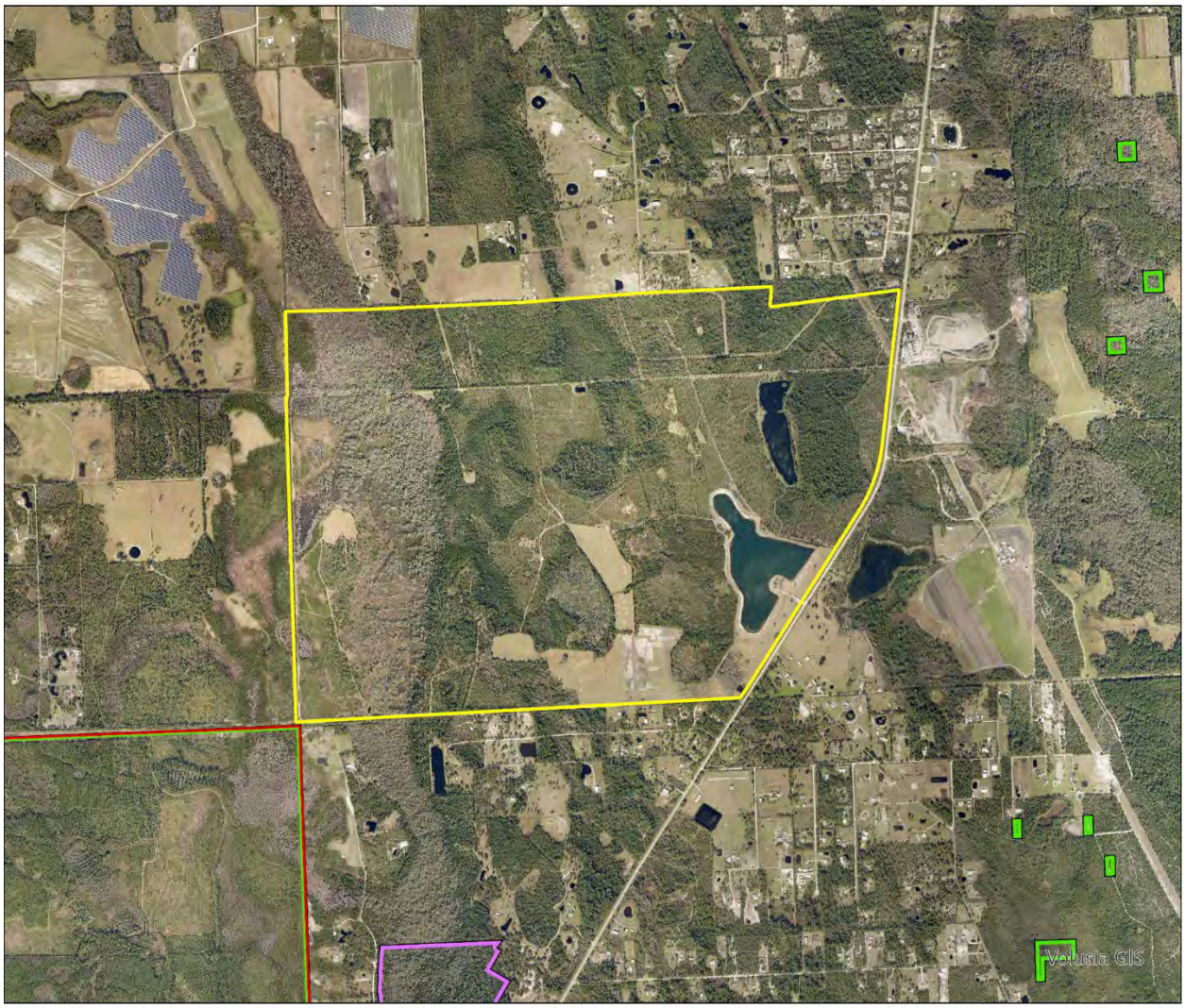
Appendix B:

Final FF proposal boundary maps: Report requirement 259.105 (15)k, prepared by Florida Natural Areas Inventory



Carter Quail Ranch Florida Forever Proposal

FLORIDA FOREVER BOARD OF TRUSTEES PROJECT PROPOSAL BOUNDARY AS OF MARCH 2023



Map Produced by: FL Natural Areas Inventory, N. Pasco, March 2023 Background: Volusia County Aerial Imagery 2021 Resolution = 0.217 feet

FNAI

- Florida Forever Proposal Boundary
- Florida Forever BOT Projects
- Existing Local Conservation Lands
- Existing Private Conservation Lands

N

0 0.5 1 2 Miles

Appendix C:

PROPERTY ID #'S FOR FINAL RECOMMENDED BOUNDARY

COUNTY	PARCEL ID	OWNER	ACRES PER TAX CARD	JUST VALUE	ASSESSED VALUE	PARCEL DESIGNATION
Volusia	7233-00-00-0010	Carter Daryl M TR	480.00	$1,109,375.00	$68,100.00	Essential
Volusia	7234-00-00-0030	Carter Daryl M TR	560.00	$1,734,152.00	$625,297.00	Essential
Volusia	7226-01-03-0070	Carter Daryl M TR	14.00	$78,030.00	$19,405.00	Essential
Volusia	7228-00-00-0060	Carter Daryl M TR	120.00	$234,888.00	$15,300.00	Essential
Volusia	7235-01-02-0050	Carter Daryl M TR	10.03	$157,973.00	$2,006.00	Essential
Volusia	7227-01-03-0070	Carter Daryl M TR	142.00	$317,100.00	$19,480.00	Essential
Volusia	7227-01-03-0071	Carter Daryl M TR	18.30	$133,500	$3,210	Essential
			1,344.33	**$3,765,018.00**	**$752,798.00**	

Appendix D:

Management Prospectus for Carter Quail Ranch, a fee simple proposal.

Concurrent with its adoption of the annual Conservation and Recreation Lands list of acquisition projects pursuant to s. 259.035, the board of trustees shall adopt a management prospectus for each project. The management prospectus shall delineate:

1. *The management goals for the property;*
2. *The conditions that will affect the intensity of management;*
3. *An estimate of the revenue-generating potential of the property, if appropriate;*
4. *A timetable for implementing the various stages of management and for providing access to the public, if applicable;*
5. *A description of potential multiple-use activities as described in this section and s. 253.034;*
6. *Provisions for protecting existing infrastructure and for ensuring the security of the project upon acquisition;*
7. *The anticipated costs of management and projected sources of revenue, including legislative appropriations, to fund management needs; and*
8. *Recommendations as to how many employees will be needed to manage the property, and recommendations as to whether local governments, volunteer groups, the former landowner, or other interested parties can be involved in the management.*

FLORIDA FOREVER MANAGEMENT PROSPECTUS for

Carter–Quail Ranch Potential Acquisition; County of Volusia

Office of Environmental Services - Division of State Lands

Introduction

The Carter-Quail Ranch Property lies within eastern Volusia County, in the unincorporated area of New Smyrna Beach. Located on State Road 415, approximately 2 miles south of the intersection of State Road 44 and 415. There are 7 contiguous parcels that make up the project area, which is approximately 1,339 acres. This is a fee-simple proposal and Volusia County is requesting to be named manager of the Quail Ranch Property. The southwest corner of the Carter property abuts the northeast corner of the 8,000-acre Deep Creek Preserve (DCP), which is managed by Volusia County. DCP is within Florida Forever's Volusia Conservation Corridor project area.

Existing uses of the property include improved pasture for grazing, sod production and silviculture.

This management prospectus serves as a framework for the management plan that will be created after acquisition.

Management Goals and Objectives

The land will be managed as holistic system under the same guidelines as the County of Volusia's DCP Management Plan. This is due to the adjacency/proximity to the Carter-Quail Ranch and the similar types of habitats.

Management goals include:

- implementation of an "Objective-based Management" program in furtherance of the "Desired Future Conditions"
- reintroduce prescribed burning
- harvesting and other silvicultural activities
- maintenance and restoration of surface hydrology
- protection and enhancement of listed species
- control of non- native invasive species

Fire Management Strategies

- Prescribed fire, or an appropriate alternative, shall be used as a primary management technique. Volusia County will develop and implement a comprehensive prescribed burning plan/program on the Property
- Where appropriate, mechanical methods intended to mimic some of the beneficial effects of fire may be used in lieu of prescribed burning or to improve the effectiveness of a subsequent prescribed fire

- The timing and use of fire, or use of alternative methods, should be evaluated in the context of the overall forest management program as applied to attain and maintain the Desired Future Conditions
- Existing internal roads or other features (e.g., trails) should be used where appropriate, as fire breaks
- To the extent practical, allow prescribed fire to enter fire dependent wetland communities
- As practical, use prescribed fire to facilitate the continued health and promote regeneration of listed plant species present on the property
- Evaluate existing firelines for retention and future use
- Consider establishing, where necessary, firelines adjacent to property boundaries

Forest Management/Silviculture Strategies

- Implement appropriate silvicultural and restorative practices (such as, but not limited to, roller chopping, mulching, harvesting and artificial regeneration) as may be necessary to attain and maintain the applicable Desired Future Conditions for the communities within the property.
- Monitor for disease or insect infestations and, if necessary, implement appropriate control practices,
- Follow the applicable “Best Management Practices” (BMPs) when conducting management activities
- Implement activities to restore the pine plantations to natural conditions, consistent with the applicable Desired Future Conditions
- Where appropriate, implement procedures and practices favorable to longleaf pine, in lieu of slash pine
- Restore existing plantations to coincide with historical/natural conditions of the affected community more closely

Maintain and Restore Surface Hydrology

- Ensure that culverts are structurally sound and of functional utility
- Where appropriate, “low water crossings” or other innovative alternatives should be used in lieu of installing new or replacement culverts
- Evaluate the impact of existing internal roads and, where appropriate, remove or reconstruct in a manner which would further restoration of the natural surface water pattern
- Ditch restoration to be undertaken where applicable to restore or maintain the natural surface water pattern

Protection and Enhancement of Listed Species

- The protection of all listed flora and fauna will be done per state and/or federal guidelines and policies
- All protections and enhancements will be afforded these species

Non-Native Invasive Species

- Prevention will be the focus of non-native invasive species management. When such species are discovered, an eradication plan will be developed and implemented based upon the severity of the infestation and the availability of personnel and funding
- Currently, there is an area of bamboo on the northern border that will need treatment

Brief Description of Natural Habitat\Resources, Existing Conditions

The Ranch currently has borrow pits, ditches, screened gazebo, established interior trails, single-family residence and cattle.

Pine flatwoods, including mesic, wet and scrubby are the dominant communities on this property. Other natural communities that were identified on site include strand, basin and dome swamps. A small portion, less than 20%, of the natural habitats have been converted to pasture and borrow pit.

Low intensity silviculture operations have been practiced within the pine flatwoods. While most of the flatwoods have been replanted with slash pine, older longleaf, pond and some minor amounts of sand pine are relatively common. These older trees are good indicators as to past flatwoods conditions. The understory of the flatwoods is generally comprised of gallberry, various oaks, palmetto, fetterbush, wiregrass and numerous herbaceous species. Ecologically, the flatwoods within the property is in fair to good condition. Palmetto dominates the understory, but grasses and herbs are common.

The property contains 450 +/- acres of wetlands along the western portion that is dominated by bald and pond cypress as part of the wetland system which extends off the property. Other dominant groundcover species, which commonly occur, include maidencane, St. John's wort and yellow-eyed grass. Less abundant species include red maple, swamp laurel oak, cabbage palm, wax myrtle, royal fern and cinnamon fern.

The western property boundary is a drainage canal named "Lake Ashby Canal". This Canal, when viewing the Property Appraisers webpage, appears to be within the property boundary. The water quality of the borrow pit on the northern edge of the property appears to be good. Some small patches of cattails and maidencane are found along the shoreline. An extensive internal network of roads are found on this property. These roads

are in good condition and some of them have received an application of asphalt millings to improve the road's durability.

Conditions Affecting Intensity of Management

The conditions which may affect the intensity of management will be directly related to the goals for the site. These goals will be assessed further upon acquisition and will be incorporated into the ten-year management plan. Potential concerns include:

- Ensuring surface hydrology is not impacted by management techniques.
- Protection of wetland resources
- Maintenance of the existing internal road/trail system to ensure access throughout the Property
- Ensure management activities do not cause negative impacts to the Property's existing population of the endemic Rugel's Pawpaw

Public Access

This project will have public access. There will be a designated parking area. The recreation allowed on site will be passive and consist of the following rec types: hiking, fishing, camping, wildlife viewing, bird watching, and other compatible passive recreation. Uses and structures shall be designed and constructed to avoid or minimize impact upon natural resources, listed species and identify cultural/historical resources.

Volusia County's Environmental, Cultural, Historic, and Outdoor Recreation (ECHO) Program is another local ballot measure approved in concert with Volusia Forever in 2000 and again in 2020. If this property is acquired, ECHO could serve as the funding source to provide resource-compatible recreation opportunities, interpret the archeological or historic significance of the area, and environmental education enhancements. Recently, the Volusia County Council approved $1.8 million to fund "Environmental Education and Recreation Plans" at selected conservation properties/Preserves in an effort to improve amenities and enhance visitor experiences. Learn more about ECHO here: https://www.volusia.org/echo

Provisions for Security and Infrastructure

The security provisions would mirror that of Deep Creek Preserve (DCP) which is standard operating procedure of Volusia County Land Management.

- Boundaries would be clearly marked,
- Fences and gates maintained and installed,
- Volusia County Sherriff's office will monitor the property.

Cooperators in Management Activities

Due to the proximity of both the Carter Property and Deep Creek Preserve, which the county currently manages, the County is best positioned to manage this property. Land Management in Volusia County is funded from a 15% set-aside of proceeds from the Volusia Forever ad valorem assessment. The land management team are experienced professional who currently manage 37,111 acres across the county.

Proposed Management Timeline

Year 1

- Mark boundaries and secure property to County standards.
- Develop management plan including a five-year prescribed fire, forest management/silviculture and recreation plans.
- Develop a management plan to treat/eradicate previously mentioned bamboo.
- Develop and establish recreation amenities (parking, trails, interpretive signs).
- Open to public.

Year 2

- Install and maintain firelines as needed.
- Conduct mechanical fuel reduction treatments as appropriate.
- Begin gradual reintroduction of prescribed fire.
- Monitor known cultural, historical and archeological resources.

Year 3

- Continue fuel reduction and prescribed fire as appropriate.
- Initiate upland ecological restoration through silvicultural practices.
- Maintain recreation amenities.
- Continue to monitor known cultural, historical and archeological resources.

Year 4

- Continue fuel reduction and prescribed fire as appropriate.
- Continue upland ecological restoration through silvicultural practices.
- Initiate hydrological restoration as appropriate.
- Maintain recreation amenities.

Year 5

- Continue fuel reduction and prescribed fire as appropriate.
- Continue upland ecological restoration through silvicultural practices.
- Continue hydrological restoration as appropriate.
- Maintain recreation amenities.

Management Costs and Sources of Revenue:

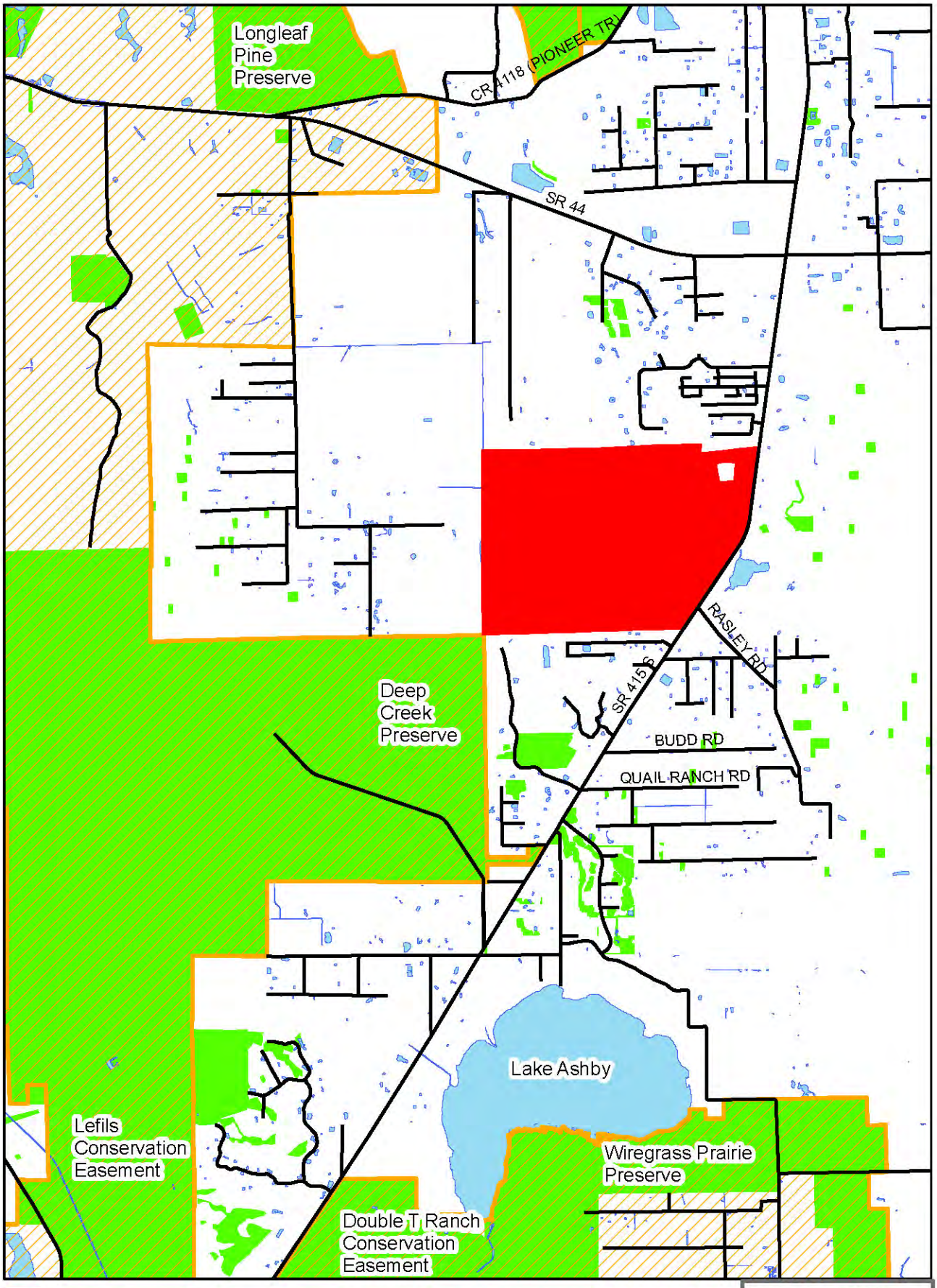
Initial costs are as follows:

Site security (boundary maintenance, signage, fencing/gates)	**$15,000**
Management plan development	**$50,000**
Capital (amenities establishment and development)	**$300,000**
Prescribed fire	**$65,000**
Mechanical fuel reduction	**$60,000**
Upland ecological restoration (430 acres Longleaf Pine restoration, invasive species control)	**$200,000**
Hydrological restoration (culverts and/or low water crossing installation	**$15,000**

Sources of Revenue:

- Volusia Forever 15% set aside
- Volusia ECHO
- Timber
- Allowable lease opportunities
- Vendor agreements for the rental of canoes/kayaks/fishing equipment.
- Facility rentals for special events.
- Primitive camping.

Existing Conservation Lands



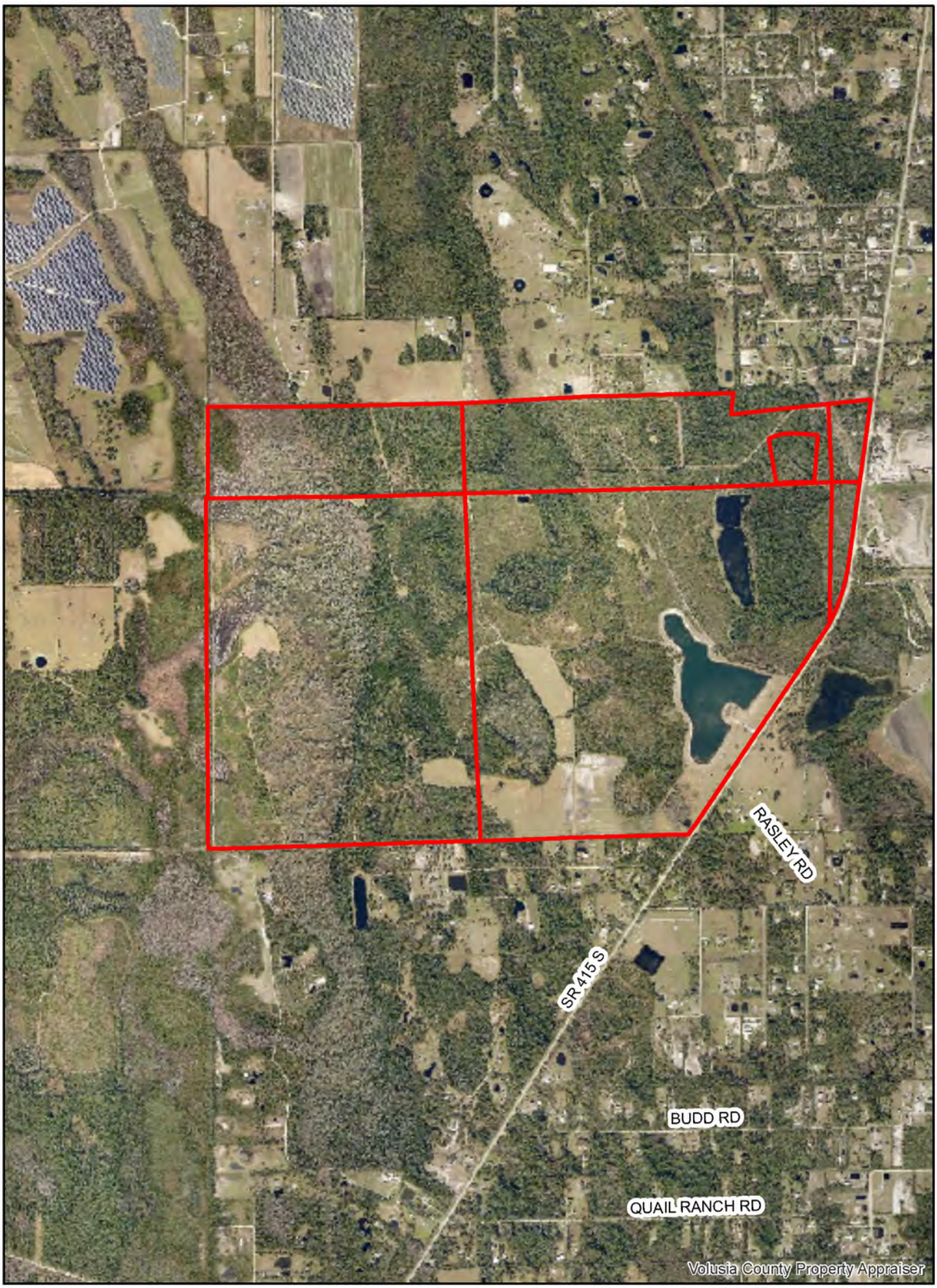
VF Applicant Property-1338.08 Acres

Volusia Conservation Corridor

Existing Public Conservation Lands and Conservation Easements

Deep Creek Preserve: 8,041 Acres
Longleaf Pine Preserve: 11,808 Acres
Wiregrass Prairie Preserve: 1,423 Acres

Conservation Easements: 4,543 Acres
Small Lots: 60 Acres


RASLEY RD
SR 415 S
BUDD RD
QUAIL RANCH RD
Volusia County Property Appraiser
N
VF Applicant Property

Appendix E:

Imperiled Species FNAI Ranking Definitions

FNAI
Definitions of imperiled species ranks and conservation status

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Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4 = Apparently secure globally (may be rare in parts of range).
G5 = Demonstrably secure globally.
GH = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
GX = Believed to be extinct throughout range.
GXC = Extirpated from the wild but still known from captivity or cultivation.
G#? = Tentative rank (e.g., G2?).
G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
G#Q = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
G#T#Q = Same as above, but validity as subspecies or variety is questioned.
GU = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
GNR = Element not yet ranked (temporary).
GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4 = Apparently secure in Florida (may be rare in parts of range).
S5 = Demonstrably secure in Florida.
SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
SX = Believed to be extirpated throughout Florida.
SU = Unrankable; due to a lack of information no rank or range can be assigned.
SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida

FNAI
Definitions of imperiled species ranks and conservation status

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populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
E, PDL = Species currently listed endangered but has been proposed for delisting.
E, PT = Species currently listed endangered but has been proposed for listing as threatened.
E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
PE = Species proposed for listing as endangered
PS = Partial status: some but not all of the species' infraspecific taxa have federal
PT = Species proposed for listing as threatened
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service
FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
FXN = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for Pandion haliaetus (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: <http://www.doacs.state.fl.us/pi/>.

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
N = Not currently listed, nor currently being considered for listing.

Appendix F:

Site Visit Photos



Planted Pine



Abandoned Pasture



Road along ecotone between mesic and wet flatwoods



Flatwoods dominate the site



Basin Swamp



Evidence of past logging within basin swamp



Scrubby flatwoods



Artificial Pond (former burrow pit)



Utility corridor

APPENDIX D

COOPERATIVE MANAGEMENT AGREEMENT
KEMCHO PARCEL
VOLUSIA COUNTY

THIS COOPERATIVE AGREEMENT ("Agreement") between THE GOVERNING BOARD OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, a public body existing under Chapter 373 of the Florida Statures, whose mailing address is P.O. Box 1429, Palatka, Fl 32178-1429 (the "District") and VOLUSIA COUNTY, a political subdivision of the State of Florida, whose mailing address is 123 W. Indiana Avenue, Deland, Florida 32720 (the "County") is effective March 27, 2012.

The District is owner in fee simple of approximately 3,200 acres of land (known as the Kemcho Parcel), located in Volusia County, south of State Road (SR) 44, east of Interstate 4, just east of the town of Lake Helen, as described in the attached Exhibit "A" and depicted in the attached Exhibit "B", (the "Property").

The County is owner in fee simple of approximately 4,806 acres of land (known as Deep Creek Preserve), located adjacent to the Property in Volusia County, west of County Road 415, as depicted in Exhibit "B."

The District purchased the Property for the conservation and protection of water resources, consistent with section 373.139, Florida Statutes, and for the conservation of wildlife habitats and natural areas suitable for resource-based recreation.

The District and the County desire to manage the Property as an addition to the Deep Creek Preserve for conservation, water resource protection, and recreation.

In consideration of the premises above and the terms and conditions below, the District and County agree as follows:

1. The purpose of this Agreement is to designate the County as the lead management entity for the conservation, protection, management, and enhancement of natural and cultural resources within the Property, as well as the development and management of resource-based outdoor recreation and other uses as provided herein.

2. The term of the Agreement commences on the effective date of the Agreement and continues for a period of twenty years, unless terminated earlier pursuant to the provisions of this Agreement. This Agreement will automatically renew, in twenty-year increments.

3. Either party may terminate this Agreement with or without cause by giving 90 days written notice of its intent to do so.

4. The County will develop a Management Plan (the "Plan") for the Property within twelve (12) months of the effective date of this Agreement. The Plan may encompass both the County and District properties as depicted in Exhibit "B." The Plan and all future revisions of the Plan shall include strategies for forest, ecological and fire management, long-term management, public recreation uses, access and use of existing roads, and establishment of environmental education programs and shall also include a maintenance/control plan for invasive/exotic species. Either party to this Agreement at any time may propose amendments to the Plan, however, both parties must agree in writing to Plan amendments affecting the Property.

5. If additional parcels adjacent to either the Property or the Deep Creek Preserve are acquired by either the District or the County, each parcel may be incorporated within the Plan and managed as a whole upon written request by the owner of the additional parcel and the written consent of the other Party. If the acquired parcel is a District parcel, the District request or consent must specifically reference this Agreement and the County or District consent must then be attached to this Agreement.

6. Use or development of Property shall be subject to the minimum conditions and guidelines:

   a. The function and condition of the Property with respect to the management of water and other natural resources, water supply and the conservation and protection of water resources will be maintained in their present condition or enhanced.

   b. The Property shall be managed for multiple uses, including forest and fire management, and for public resource-based (i.e., dependent on existing elements of the natural environment) educational and recreational purposes, which may include hiking, hunting, wildlife viewing, picnicking, nature study, jogging, equestrian activities, camping and other related passive outdoor activities as set forth in the Plan.

   c. All educational and recreational uses and activities on the Property shall be consistent with the water management purposes of the District as provided in Chapter 373, Florida Statutes, and all uses are subordinate to District responsibility under Chapter 373 to manage the water resources.

   d. The development of recreational facilities shall be restricted to trails, boardwalks, or other alterations, as set forth in the approved Plan which facilitate access for recreational users. It is understood by both parties that there shall be no facilities on the Property except those directly related to the operation and maintenance of the Property for conservation, public recreational and environmental educational purposes as set forth in the Plan.

7. Except for a District hunt agreement that is scheduled to expire April 29, 2013, the County shall coordinate and oversee all public recreation activities on the Property, including trail

construction and maintenance, trail brochure development and other passive recreation activities that are consistent with the Plan.

8. The District will assist the County as requested for purposes of natural resource management, including fire management and exotic and nuisance species control.

9. The County may enter into leases of the Property for the purposes of cattle grazing. Responsibility of the County for cattle grazing leases lease(s) include the following:

   a. Develop a lease, interview and select a lessee(s) for the Property in a manner substantially consistent with Section 373.093, Florida Statutes;

   b. Monitor the cattle grazing operation for compliance with the cattle lease provisions;

   c. Maintain an inspection schedule for the identification of tropical soda apple (*Solanum viarum*) ("TSA");

   d. Coordinate with the lessee(s) the proper procedures for the quarantine of cattle for TSA;

   e. Ensure implementation of Best Management Practices ("BMPs") for cattle operation by the lessee(s); and

   f. Monitor cattle stocking rates and grazing impacts to natural communities, ranges, and improved pastures.

10. The District and County may harvest wiregrass and other seed for restoration planting.

11. The District agrees to plant pine on 500 acres as depicted in Exhibit "C". The composition, density and species will be determined, upon mutual agreement, between the District and the County land managers.

12. The District reserves the right to engage in construction or other activities necessary for water management purposes on the Property. Such activities include scientific investigation, surveying, the taking of soil borings, and the drilling, operation, and maintenance of monitoring wells

13. In the event of a boundary discrepancy or dispute with respect to the Property, the District is solely responsible for resolution of said discrepancy or dispute.

14. The County may enter into agreements with third parties to develop and implement the Plan or to subcontract day-to-day management responsibilities upon the Property consistent with the approved Plan; provided however, that any such third party agreements entered into by the County shall be subject to the prior written approval of the District, and such third parties shall agree to comply with the terms and conditions of this Agreement. The District shall not

unreasonably withhold approval of such third party agreements. Any such third party agreements necessary for routine maintenance or previously agreed upon minor improvement of the Property shall not require the District's written approval.

15. Revenues generated on the Property by the County or the District or third parties hired by the County or the District through compatible secondary-use management, such as the sale of timber, shall be utilized for the benefit of the Property to implement approved activities on the Property to the extent allowable under existing laws and consistent with the Plan.

16. Any structures, improvements and facilities placed upon or moved in or upon the Property by the County or the District shall be at the sole cost, expense and liability of the initiating party, and shall be identified in the approved Plan.

17. Each party shall pay all lawful debts incurred by that party with respect to the Property and shall satisfy and properly established liens of contractors, subcontractors, mechanics, laborers, and materialmen in respect to any construction, alteration and repair in and on the Property, and any improvements thereon authorized by that party, its agents or employees, and shall be responsible for its own legal costs and charges, including reasonable attorney fees on appeal, in any suit involving claims, liens, judgments or encumbrances suffered by that party as a result of the use or occupancy of the Property or any part thereof by such party, its agents or employees.

18. The County will pay all special assessments and fees that are imposed as a result of the County's management or use of the Property. Third party management agreements must include a provision passing on the responsibility for payment of any and all taxes to third party managers or lessees, for any tax imposed as a result of the third party's or lessees' actions on the Property.

19. Neither the District nor the County shall use or permit the Property to be used in violation of any valid present or future laws, ordinances, rules, or regulations of any public or governmental authority at any time applicable thereto relating to sanitation or the public health, safety or welfare, relating to listed species, either state or federal; or related to archeological and historical sites.

20. The District authorizes and consents to the County amending the Property's future land use designation to Conservation (C) and to the County rezoning the Property to the Conservation Classification (C).

21. The District, the County, and other governmental agencies or organizations involved in managing the Property shall, throughout the term of this Agreement, provide, maintain, and keep in force a program of insurance or self-insurance covering that agency's or organization's liabilities as prescribed by Section 768.28, Florida Statutes. The District's liability is limited by the provisions of Section 373.1395, Florida Statutes. The County shall not impair that immunity by charging for admission or use of the Property or acting in any

other statutorily inconsistent manner. Nothing in this Agreement shall be construed as a waiver of the District's or the County's sovereign immunity under Section 768.28, Florida Statutes or any other provision of law.

22. Nothing contained in this Agreement or in the Plan prepared pursuant to this Agreement shall be construed as a waiver of or contract with respect to the regulatory or permitting authority of the District or County as it now or hereafter exists under applicable laws, rules and regulations.

23. Nothing contained herein affects any of the Parties' obligations pursuant to Chapter 267, Florida Statutes, regarding archaeological and historical sites. The collection of artifacts or the disturbance of archaeological and historical sites on state-owned lands is prohibited unless prior authorization has been obtained from the State of Florida Department of State, Division of Historical Resources.

24. All notices, consents, approvals, waivers and elections which any party makes under this Agreement shall be in writing and shall be sufficiently made or given (i) when mailed by Certified Mail, postage prepaid, return receipt requested, or (ii) by hand delivery to the named individuals below, or (iii) by private parcel delivery services or (iv) facsimile transmission for which a receipt is provided; and shall be made to the parties at the addresses listed below or to such other address designated by like notice.

DISTRICT: ST. JOHNS RIVER WATER MANAGEMENT DISTIRCT
P.O. Box 1429
Palatka, FL 32178-1429
Attention: Director, Bureau of Operations South
Fax: (386) 329-4848

COUNTY: COUNTY OF VOLUSIA
123 W. Indiana Avenue
Deland, FL 32720
Attention: Land Management Manager,
Growth and Resource Management
Fax (386) 740-5277

Notices, consents, approvals, waivers and elections given or made as aforesaid shall be deemed to have been given and received on the date of the mailing, delivery or transmission.

25. The Parties shall allow public access to all project documents and materials in accordance with the provisions of Chapter 119, Florida Statutes. Should either Party assert an exemption to the requirements of Chapter 119 and related statutes, the burden of establishing such exemption, by way of injunctive or other relief as provided by law, shall be upon that Party.

26. The County shall not assign, delegate, or otherwise transfer its rights and obligations as set forth in this Agreement without the District's prior written consent. Any attempted assignment in violation of this provision shall be void.

27. This Agreement constitutes the entire agreement of the parties, and there are no understandings dealing with the subject matter of this Agreement other than those contained herein. This Agreement may not be modified, changed or amended, except in writing signed by the parties hereto or their authorized representatives. This Agreement shall be construed and interpreted according to the laws of the State of Florida.

28. As part of the consideration for this Agreement, the Parties hereby waive trial by jury in any action or proceeding brought by any Party against any other Party pertaining to any matter whatsoever arising out of or in any way connected with this Agreement, or with the products or services provided under this Agreement; including but not limited to any claim of quantum meruit.

The parties are signing this Agreement on the dates next to each signature, the last of which shall be inserted in the first paragraph.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

By: _____
Hans G. Tanzler III, Executive Director

Date: 3-27-12

Attest:

_____
Name: W. H. Crayton
Title: General Counsel

Approved as to form and content

By: _____
Office of General Counsel, SJRWMD

Witnessed by:

(Print/Type Witness Name)

(Print/type Witness Name)

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

By: _____

Frank T. Bruno, Jr,, County Chair

Attest: _____

James T. Dinneen, County Manager/Clerk

Executed on 3/13 2012

(SEAL)

Approved as to form and content

By: _____

Daniel E. Eckman, Deputy

Volusia County Attorney

Instrument# 2011-089029 # 3
Book: 6596
Page: 3961

EXHIBIT "A"

A PARCEL OF LAND LYING IN SECTIONS 14, 15, 21, 22, 23, 26, 27, 34, 35 & 36, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THE NORTHEAST QUARTER OF SECTION 15, TOWNSHIP 17 SOUTH, RANGE 31 EAST, THENCE RUN SOUTH 89°10'39" WEST ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 15, A DISTANCE OF 2625.83 FEET TO THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID SECTION 15; THENCE DEPARTING SAID NORTH LINE RUN SOUTH 01°23'30" EAST ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 15, A DISTANCE OF 838.89 FEET TO A POINT LYING ON THE SOUTHERLY RIGHT-OF-WAY LINE OF STATE ROAD 44, POINT ALSO BEING THE POINT OF BEGINNING; THENCE RUN THE FOLLOWING (6) COURSES ALONG THE SOUTHERLY RIGHT-OF-WAY LINE; (1) NORTH 52°00'50" EAST, A DISTANCE OF 32.02 FEET; (2) NORTH 01°09'55" EAST, A DISTANCE OF 51.14 FEET; (3) NORTH 60°56'56" EAST, A DISTANCE OF 111.31 FEET; (4) NORTH 65°44'01" EAST, A DISTANCE OF 292.02 FEET; (5) TO A POINT OF CURVATURE OF A CURVE CONCAVE SOUTHERLY HAVING A RADIUS OF 3543.30 FEET AND CHORD BEARING OF NORTH 77°00'59" EAST; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 22°33'56" FOR AN ARC DISTANCE OF 1395.50 FEET TO A POINT OF TANGENCY; (6) NORTH 88°17'57" EAST, A DISTANCE OF 50.70 FEET; THENCE DEPARTING SAID SOUTHERLY RIGHT-OF-WAY LINE RUN SOUTH 59°15'21" EAST, A DISTANCE OF 165.67 FEET; THENCE RUN SOUTH 33°35'52" EAST, A DISTANCE OF 437.97 FEET; THENCE RUN SOUTH 32°31'46" EAST, A DISTANCE OF 276.13 FEET; THENCE RUN SOUTH 13°12'04" EAST, A DISTANCE OF 226.84 FEET; THENCE RUN SOUTH 36°05'05" EAST, A DISTANCE OF 245.67 FEET; THENCE RUN SOUTH 12°12'17" EAST, A DISTANCE OF 277.33 FEET; THENCE RUN SOUTH 08°51'41" EAST, A DISTANCE OF 446.26 FEET; THENCE RUN SOUTH 09°02'32" EAST, A DISTANCE OF 438.27 FEET; THENCE RUN SOUTH 06°52'12" EAST, A DISTANCE OF 269.83 FEET; THENCE RUN SOUTH 19°58'45" WEST, A DISTANCE OF 148.19 FEET; THENCE RUN SOUTH 04°42'26" EAST, A DISTANCE OF 290.91 FEET; THENCE RUN SOUTH 07°54'53" EAST, A DISTANCE OF 169.19 FEET; THENCE RUN SOUTH 00°22'41" WEST, A DISTANCE OF 168.53 FEET; THENCE RUN SOUTH 29°13'44" EAST, A DISTANCE OF 159.43 FEET; THENCE RUN SOUTH 06°40'44" EAST, A DISTANCE OF 136.88 FEET; THENCE RUN SOUTH 07°32'54" WEST, A DISTANCE OF 305.17 FEET; THENCE RUN SOUTH 07°24'54" WEST, A DISTANCE OF 555.67 FEET; THENCE RUN SOUTH 06°28'16" WEST, A DISTANCE OF 441.08 FEET; THENCE RUN SOUTH 07°22'22" WEST, A DISTANCE OF 398.43 FEET; THENCE RUN SOUTH 25°26'16" EAST, A DISTANCE OF 235.17 FEET; THENCE RUN SOUTH 25°27'59" EAST, A DISTANCE OF 264.88 FEET; THENCE RUN SOUTH 54°42'47" EAST, A DISTANCE OF 208.79

FEET; THENCE RUN SOUTH 44°24'30" EAST, A DISTANCE OF 160.88 FEET; THENCE RUN SOUTH 51°16'00" EAST, A DISTANCE OF 140.73 FEET; THENCE RUN SOUTH 27°09'53" EAST, A DISTANCE OF 151.29 FEET; THENCE RUN SOUTH 44°00'44" EAST, A DISTANCE OF 217.03 FEET; THENCE RUN SOUTH 21°03'56" EAST, A DISTANCE OF 295.71 FEET; THENCE RUN SOUTH 43°01'09" WEST, A DISTANCE OF 524.13 FEET; THENCE RUN SOUTH 37°01'19" WEST, A DISTANCE OF 242.85 FEET; THENCE RUN SOUTH 40°15'17" WEST, A DISTANCE OF 407.37 FEET; THENCE RUN SOUTH 05°14'39" EAST, A DISTANCE OF 372.54 FEET; THENCE RUN SOUTH 00°31'58" EAST, A DISTANCE OF 463.14 FEET; THENCE RUN SOUTH 01°19'44" EAST, A DISTANCE OF 716.08 FEET; THENCE RUN SOUTH 01°19'33" EAST, A DISTANCE OF 585.30 FEET; THENCE RUN SOUTH 01°03'55" EAST, A DISTANCE OF 1005.63 FEET; THENCE RUN SOUTH 01°22'15" EAST, A DISTANCE OF 812.13 FEET; THENCE RUN SOUTH 01°27'05" EAST, A DISTANCE OF 717.25 FEET; THENCE RUN SOUTH 00°49'32" EAST, A DISTANCE OF 656.97 FEET; THENCE RUN SOUTH 64°24'46" EAST, A DISTANCE OF 731.84 FEET; THENCE RUN SOUTH 67°20'21" EAST, A DISTANCE OF 660.70 FEET; THENCE RUN SOUTH 23°10'15" EAST, A DISTANCE OF 330.95 FEET; THENCE RUN SOUTH 27°46'27" EAST, A DISTANCE OF 341.29 FEET; THENCE RUN SOUTH 09°49'52" EAST, A DISTANCE OF 321.80 FEET; THENCE RUN SOUTH 01°01'34" WEST, A DISTANCE OF 457.78 FEET; THENCE RUN SOUTH 01°45'35" EAST, A DISTANCE OF 522.88 FEET; THENCE RUN SOUTH 01°30'26" EAST, A DISTANCE OF 481.97 FEET; THENCE RUN SOUTH 13°59'10" WEST, A DISTANCE OF 463.92 FEET; THENCE RUN SOUTH 00°48'42" EAST, A DISTANCE OF 1142.27 FEET; THENCE RUN SOUTH 85°45'25" EAST, A DISTANCE OF 344.59 FEET; THENCE RUN NORTH 89°29'44" EAST, A DISTANCE OF 511.67 FEET; THENCE RUN NORTH 89°29'45" EAST, A DISTANCE OF 617.12 FEET; THENCE RUN NORTH 89°20'46" EAST, A DISTANCE OF 538.54 FEET; THENCE RUN NORTH 88°49'40" EAST, A DISTANCE 464.54 FEET; THENCE RUN NORTH 89°32'09" EAST, A DISTANCE OF 449.60 FEET; THENCE RUN NORTH 89°12'24" EAST, A DISTANCE OF 930.61 FEET; THENCE RUN SOUTH 02°28'58" WEST, A DISTANCE OF 579.96 FEET; THENCE RUN NORTH 60°04'31" EAST, A DISTANCE OF 364.61 FEET; THENCE RUN NORTH 75°31'39" EAST, A DISTANCE OF 297.54 FEET; THENCE RUN SOUTH 19°35'49" EAST, A DISTANCE OF 1190.97 FEET; THENCE RUN NORTH 78°08'21" EAST, A DISTANCE OF 682.99 FEET; THENCE RUN NORTH 66°40'10" EAST, A DISTANCE OF 309.97 FEET; THENCE RUN NORTH 62°25'43" EAST, A DISTANCE OF 246.21 FEET; THENCE RUN NORTH 55°29'01" EAST, A DISTANCE OF 233.55 FEET; THENCE RUN NORTH 54°05'31" EAST, A DISTANCE OF 227.51 FEET; THENCE RUN NORTH 56°16'18" EAST, A DISTANCE OF 1111.75 FEET; THENCE RUN NORTH 00°00'09" EAST, A DISTANCE OF 161.31 FEET; THENCE RUN NORTH 87°55'10" EAST, A DISTANCE OF 1902.19 FEET TO THE EAST LINE OF THE NORTHEAST QUARTER OF SECTION 36, TOWNSHIP 17 SOUTH, RANGE 31 EAST; THENCE RUN SOUTH 00°55'26" EAST, ALONG SAID EAST LINE A DISTANCE OF 656.31 FEET TO THE EAST QUARTER CORNER OF SAID SECTION 36; THENCE SOUTH 00°56'11" EAST ALONG THE EAST LINE OF THE SOUTHEAST

QUARTER OF SAID SECTION 36, A DISTANCE OF 2696.96 FEET TO A CONCRETE MONUMENT BEING THE SOUTHEAST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 36; THENCE RUN SOUTH 88°47'35" WEST ALONG THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 36, A DISTANCE OF 1263.67 FEET TO A CONCRETE MONUMENT; THENCE RUN SOUTH 88°47'59" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 1407.76 FEET TO A CONCRETE MONUMENT BEING THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 36; THENCE RUN SOUTH 88°47'19" WEST ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 36, A DISTANCE OF 1219.06 FEET TO A CONCRETE MONUMENT; THENCE RUN SOUTH 88°53'23" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 1454.99 FEET TO AN IRON ROD AND CAP BEING THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 36; THENCE RUN SOUTH 88°42'30" WEST ALONG THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 17 SOUTH, RANGE 31 EAST, A DISTANCE OF 2627.57 FEET TO AN IRON ROD AND CAP BEING THE SOUTH QUARTER CORNER OF SAID SECTION 35; THENCE RUN SOUTH 88°40'49" WEST ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 35, A DISTANCE OF 278.67 FEET TO A CONCRETE MONUMENT; THENCE RUN SOUTH 79°06'15" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 2350.79 FEET TO A ROUND CONCRETE MONUMENT BEING THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 35; THENCE RUN NORTH 01°17'43" WEST ALONG THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 35, A DISTANCE OF 1379.81 FEET; THENCE DEPARTING SAID WEST LINE RUN SOUTH 88°31'12" WEST ALONG THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 31 EAST, A DISTANCE OF 2634.59 FEET TO A IRON ROD AND CAP LYING ON THE EAST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 34; THENCE RUN NORTH 00°38'28" WEST ALONG SAID EAST LINE, A DISTANCE OF 1345.50 FEET TO AN IRON ROD AND CAP BEING THE CENTER SECTION CORNER OF SAID SECTION 34; THENCE RUN SOUTH 87°47'45" WEST ALONG THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 34, A DISTANCE OF 1355.72 FEET TO AN IRON ROD AND CAP BEING THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 34; THENCE RUN NORTH 00°27'50" WEST ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHWEST QUARTER OF SAID SECTION 34, A DISTANCE OF 2671.71 FEET TO AN IRON ROD AND CAP LYING ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 34; THENCE RUN SOUTH 86°19'09" WEST ALONG SAID NORTH LINE, A DISTANCE OF 1349.09 FEET TO A ROUND CONCRETE MONUMENT BEING THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 34; THENCE RUN NORTH 01°21'04" WEST ALONG THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 27, TOWNSHIP 17 SOUTH, RANGE 31 EAST, A DISTANCE OF 2654.43 FEET TO AN IRON ROD AND CAP BEING THE WEST QUARTER CORNER OF SAID SECTION 27; THENCE RUN

Instrument# 2011-089029 # 6
Book: 6596
Page: 3964
Diane M. Matousek
Volusia County, Clerk of Court

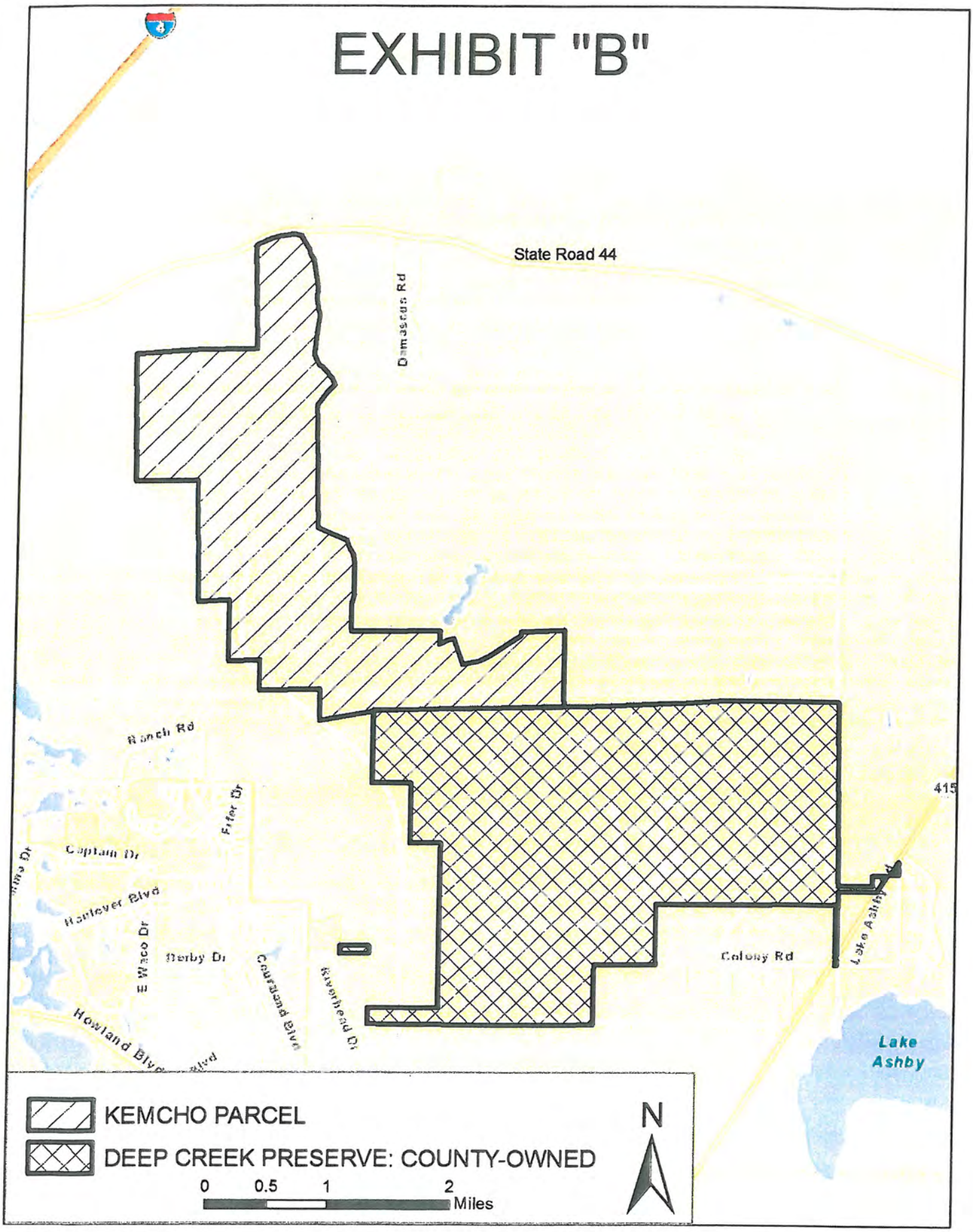
NORTH 01°22'35" WEST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 27, A DISTANCE OF 2654.05 FEET TO A LIGHTWOOD POST BEING THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 17 SOUTH, RANGE 31 EAST; THENCE RUN SOUTH 89°42'42" WEST ALONG THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 21, TOWNSHIP 17 SOUTH, RANGE 31 EAST, A DISTANCE OF 2666.77 FEET TO AN IRON ROD AND CAP BEING THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 21; THENCE RUN NORTH 01°10'24" WEST ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 21, A DISTANCE OF 2766.67 FEET TO AN IRON ROD AND CAP BEING THE CENTER SECTION CORNER OF SAID SECTION 21; THENCE RUN NORTH 01°05'27" WEST ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 21, A DISTANCE OF 2774.75 FEET TO A LIGHTWOOD POST BEING THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF SAID SECTION 21; THENCE RUN NORTH 85°55'48" EAST ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 21, A DISTANCE OF 2670.71 FEET TO AN IRON ROD AND CAP BEING THE NORTHEAST CORNER OF THE NORTHEAST QUARTER OF SAID SECTION 21; THENCE RUN NORTH 89°04'45" EAST ALONG THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 17 SOUTH, RANGE 31 EAST, A DISTANCE OF 2579.67 FEET TO A LIGHTWOOD POST BEING THE NORTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 22; THENCE RUN NORTH 01°23'30" WEST ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF SECTION 15, TOWNSHIP 17 SOUTH, RANGE 31 EAST, A DISTANCE OF 2642.41 FEET TO AN IRON ROD AND CAP BEING THE CENTER SECTION CORNER OF SAID SECTION 15; THENCE RUN NORTH 01°23'30" WEST ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 15, A DISTANCE OF 1803.53 FEET TO A POINT LYING ON THE SOUTH RIGHT-OF-WAY LINE OF STATE ROAD 44, SAID POINT ALSO BEING THE POINT OF BEGINNING.

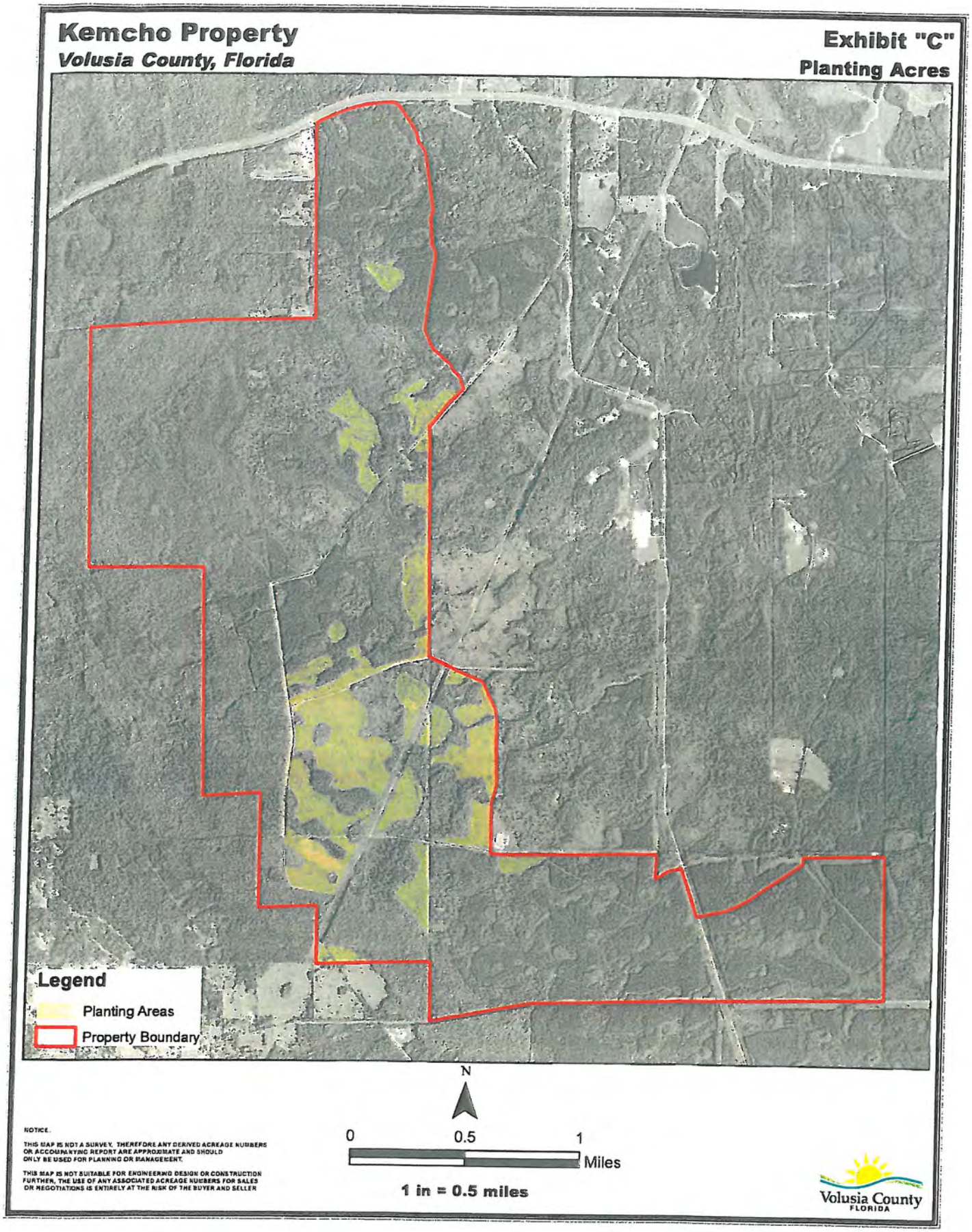
CONTAINING 139,392,026 SQUARE FEET OR 3,200.00 ACRES MORE OR LESS.

Approved SJRWMD 5/25/2011



EXHIBIT "B"


State Road 44
Damascus Rd
Ranch Rd
Fifer Dr
Captain Dr
Harlever Blvd
E Waco Dr
Derby Dr
Courtland Blvd
Ravenhead Dr
Howland Blvd
Colony Rd
Lake Ashby
Lake Ashby
KEMCHO PARCEL
DEEP CREEK PRESERVE: COUNTY-OWNED
0 0.5 1 2
Miles
N


Kemcho Property
Volusia County, Florida
Exhibit "C"
Planting Acres
Legend
Planting Areas
Property Boundary
N
0
0.5
1
Miles
1 in = 0.5 miles
NOTICE.
THIS MAP IS NOT A SURVEY. THEREFORE ANY DERIVED ACREAGE NUMBERS OR ACCOMPANYING REPORT ARE APPROXIMATE AND SHOULD ONLY BE USED FOR PLANNING OR MANAGEMENT.
THIS MAP IS NOT SUITABLE FOR ENGINEERING DESIGN OR CONSTRUCTION FURTHER, THE USE OF ANY ASSOCIATED ACREAGE NUMBERS FOR SALES OR NEGOTIATIONS IS ENTIRELY AT THE RISK OF THE BUYER AND SELLER
Volusia County
FLORIDA

St. Johns River
Water Management District
Michael A. Register, P.E., Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • 386-329-4500 • www.sjrwmd.com

April 4, 2025

Brad Burbaugh, Director
County of Volusia
Community Services
123 W. Indiana A venue
Deland, FL 32720
bburbaugh@volusia.org

RE: Additions to the Cooperative Management Agreement – Kemcho Parcel dated March 27, 2012

Dear Mr. Burbaugh,

In accordance with paragraph 5 of the Cooperative Management Agreement dated March 27, 2012, the St. Johns River Water Management District is requesting the additional parcels listed in the table below and depicted on the enclosed map be incorporated within the current land management plan and managed by the County as part of Deep Creek Preserve.

SJRWMD Reference #	Volusia County Parcel Id	Acres
2000-006-P2	713500000050 713500000040 713500000030 713500000020 711401001080 711401001160 711401001170 711401001180	115.54
2000-006-P3	712600000030 712600000020 711401000560 711401000550 711401000820 711401000870 712600000040 712600000050 711401000880 711401000830 711401000840	300.25

GOVERNING BOARD

Rob Bradley, CHAIR FLEMING ISLAND
Maryam H. Ghyabi-White, VICE CHAIR ORMOND BEACH
J. Chris Peterson, SECRETARY WINTER PARK
Cole Oliver, TREASURER MERRITT ISLAND
Ryan Atwood MOUNT DORA
Doug Bournique VERO BEACH
Douglas Burnett ST. AUGUSTINE
Ron Howse COCOA
Janet Price FERNANDINA BEACH

	711401000890 711401000900 711401000910 711401000920	
2000-006-P4	712600000090	27.37
2000-005-P5	712600000080	18.28
2022-003-P3	711401000350	27.86
2023-011-P1	723100002860 723100002880	2.24

Additionally, it is our understanding the County wishes to amend the notice provision in the Cooperative Management Agreement to read as follows:

COUNTY: Brad Burbaugh, Director
County of Volusia
Community Services
123 W. Indiana A venue
Deland, FL 32720
bburbaugh@volusia.org
Phone: 386-943-7039, Ext. 13455

The District requests the County's acknowledgment, agreement and consent to incorporate the listed parcels within the Deep Creek Preserve land management plan and amendment to paragraph 24 of the Cooperative Management Agreement by signing in the space provided on the following page and returning a scanned copy of the fully executed letter to my attention at stheus@sjrwmd.com. Thank you for your consideration. Please let me know if you have any questions.

Sincerely,

Sheila Theus

Sheila Theus, Director
Real Estate Services

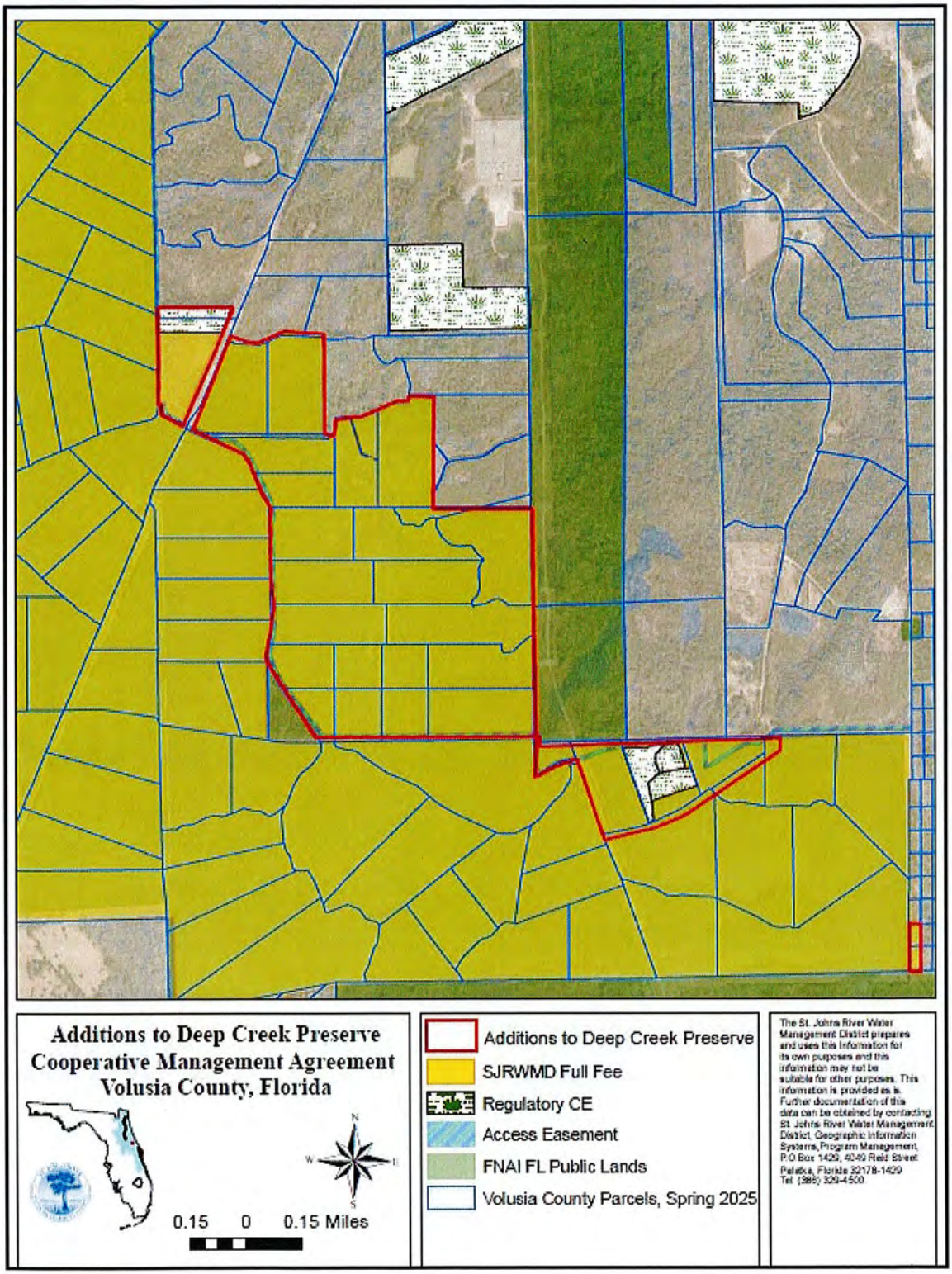
Enclosure: Map of Additions to Deep Creek Preserve

cc: Russ Brown, Assistant County Attorney (rbrown@volusia.org)
Nick Dunnam, Director Resources Services (ndunnam@volusia.org)
Brain Emanuel, Bureau Chief, Bureau of Land Resources (bemanuel@sjrwmd.com)
Peter Henn, Land Management Program Manager (phenn@sjrwmd.com)
Chris Kinslow, Land Resource Specialist (ckinslow@sjrwmd.com)

By: Bradley Burbaugh

Brad Burbaugh
Volusia County Community
Services Director

Date: 6/6/24


Additions to Deep Creek Preserve
Cooperative Management Agreement
Volusia County, Florida
0.15 0 0.15 Miles
Additions to Deep Creek Preserve
SJRWMD Full Fee
Regulatory CE
Access Easement
FNAI FL Public Lands
Volusia County Parcels, Spring 2025
The St. Johns River Water Management District prepares and uses this information for its own purposes and this information may not be suitable for other purposes. This information is provided as is. Further documentation of this data can be obtained by contacting St. Johns River Water Management District, Geographic Information Systems, Program Management, P.O Box 1429, 4049 Reid Street, Palatka, Florida 32178-1429 Tel: (386) 329-4500

APPENDIX E

PRELIMINARY EVALUATION OF THE CARTER QUAIL RANCH FLORIDA FOREVER PROPOSAL

Prepared by

Florida Natural Areas Inventory

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303

Florida
Natural Areas
Inventory

The Florida Natural Areas Inventory (FNAI) is dedicated to gathering, interpreting, and disseminating information critical to the conservation of Florida's biological resources. The Inventory was founded in 1981 as a member of The Nature Conservancy's international network of natural heritage programs, and it is now part of Florida State University's Institute of Science and Public Affairs. Funding for FNAI is provided through contracts, which currently include work for the Florida Department of Environmental Protection (DEP), the U. S. Fish and Wildlife Service, Florida Forest Service, Florida Fish and Wildlife Conservation Commission, and Florida's Water Management Districts.

FNAI staff builds and maintains a comprehensive statewide database that now includes more than 35,000 occurrences of rare plant and animal species and high-quality natural communities. The database also contains information on more than 2,000 lands managed wholly or in part for conservation. This database includes national forests, parks and wildlife refuges; state parks, forests, aquatic preserves, and wildlife management areas; water management district lands; county and municipal parks; private preserves; and military installations with substantial natural areas. Boundaries of state land acquisition projects are also represented.

As part of an agreement with DEP, FNAI provides data and expertise to assist with the multi-step process of evaluating lands proposed for acquisition through the Florida Forever Program. This document presents our preliminary review of the Carter Quail Ranch proposal submitted for the cycle beginning November 2022. This review includes the following: Natural Resource Description, Rare Species on the site, a tabular evaluation of selected Florida Forever Measures, and maps of the proposed site. Recreational and archeological values are not considered in this evaluation.

Biological Conservation Priority: In previous years FNAI has summarized our overall preliminary assessment of the proposals as a "Biological Conservation Priority" for each site. This rank represented our initial assessment of a proposal's contribution to the protection of significant ecological resources from a statewide perspective. These ranks reflected the FNAI scientific staff's best judgment based on information available at the time of the evaluation. **Because further assessment is generally needed to fully determine the biological importance of a site, and because many conservation factors cannot be simply summarized, we no longer provide this subjective rank.**

Natural Resource Description: The description of the natural resources presented for the proposal is developed from information provided in the proposal application, the FNAI database, FNAI staff comments, and aerial photographs. The natural communities listed in this evaluation and the percentage of the total area that each comprises were derived principally from aerial photographs as interpreted by FNAI staff and by landcover information from the Water Management Districts. These data were supplemented by FNAI natural community occurrence data where available. These sources were also used to determine the extent of disturbed lands that no longer support natural communities (agriculture areas, developed areas, mines, etc.). Acreages of communities and disturbances are approximate, but provide a reasonable estimate for this stage of the evaluation process. More precise landcover information is gathered during the project assessment phase for those proposals selected for further evaluation.

Acreages of natural communities, particularly mesic and wet flatwoods, may differ from acreages given in the Florida Forever Measures Evaluation (FFME) evaluation table (described below). The FFME relies on statewide remotely sensed data where on the ground information is lacking. Using current high resolution aerial photography, FNAI scientists sometimes identify different acreage of certain landcover types, for example, pine plantation or flatwoods, than is identified through remotely sensed data.

Rare species on the proposed area are listed in the evaluation. Species recorded in the FNAI database and those reported in the application are listed separately in the table. Potential rare species may be discussed in the evaluation text. FNAI Global and State ranks and Federal and State legal statuses are given for each species in the table. Rank and statuses provided in the text are listed in the same order after the scientific species name. A rank/status explanation sheet is included at the end of this document.

Florida Forever Measures Evaluation: Accompanying the evaluation is a table illustrating to what extent the proposed site meets 15 Florida Forever performance measures. These 15 measures were selected because they are resource-based criteria that can be used to set acquisition priorities. For each measure, we report the acres of the resource found on the proposed site and the percentage of the site containing the resource. The data in this assessment represent a highly standardized, statewide perspective of natural resource distributions. More detailed information may be gathered during the Project Assessment phase for those proposals voted upon for further evaluation. The data used in this evaluation are described in detail in the Florida Forever Conservation Needs Assessment Summary Report and Technical Report, available at www.fnai.org.

Maps: This report provides two maps of the proposed site. The first is a small-scale map showing the proposed site in the context of surrounding conservation lands and land protection projects. The second map is of larger scale and uses recent aerial imagery that provides a view of the overall landcover of the site.

CARTER QUAIL RANCH (VOLUSIA COUNTY)

Fee simple

Preliminary Evaluation

Natural Resources Description: The Carter Quail Ranch proposal includes 1,339 acres (per proposal; 1,338 as determined in GIS) in central Volusia County, about 8 miles west of New Smyrna Beach, midway between Interstate 4 and Interstate 95. The property consists of a single block of land fronting Florida Highway 415, approximately 1.3 miles south of Florida Highway 44. The property is proposed for fee simple acquisition as an addition to Deep Creek Preserve managed by Volusia County.

This evaluation is based on information gathered from the proposal, aerial photography, U.S. Geological Survey (USGS) 7.5' topographic maps, Cooperative Land Cover data (Florida Natural Areas Inventory, Florida Cooperative Land Cover Map, version 3.4), and the FNAI database. The property lies near the southern edge of the Volusia Ridge Sets region, a series of ridges and terraces resulting from ancient sea level fluctuations. Topography varies only slightly on the property, with a north-south ridge at 45 feet elevation rising only slightly above the wetlands on the western and eastern edges, which both lie at about 35 feet. The property is situated in the Deep Creek/St Johns River watershed, where surface drainage generally flows south into tributaries of the St. Johns River; drainage from the western parts of the property flows into Lake Ashby to the south, while surface flows from the northeast corner are directed via a ditch system east and south into the Spruce Creek Swamp. The southwest corner of the site meets the northeast corner of the Deep Creek Preserve, which provides a continuous conservation corridor to Ocala National Forest to the north and west, and a discontinuous network of conservation lands extending south as far as Fort Drum Marsh.

About 67% of the property (899 Acres) appears to be in generally natural condition, split nearly evenly between flatwoods and swamps. Mesic flatwoods are the most abundant natural community, occupying a large area in the central part of the property, punctuated with more poorly drained areas occupied by other natural communities. Mesic flatwoods are described in the application as containing mostly slash pine in the canopy, with some longleaf and some pond pine. The shrub and groundcover layers consist of saw palmetto and other shrubs interspersed with grassy areas including wiregrass. A basin swamp near the west edge of the property extends from the north boundary to the south boundary, and a smaller area of basin swamp is in the center of the tract. Several fairly large swamps that appear to be baygalls based on aerial photography occur in a discontinuous band in the mesic flatwoods. Wet flatwoods are found at intergrades between mesic flatwoods or more disturbed uplands and adjacent wetlands. A dozen dome swamps less than an acre to 3 acres in size are found scattered throughout the property in flatwoods, pine plantation, and pasture.

About 1/3 of the property appears to have been converted from natural communities to other landcover types in the past. Pine plantation makes up about 16% of the site, with one large contiguous area in the eastern portion of the property and two smaller plantations along the western boundary.

Fingers of improved pasture extend between other landcover types from the southeast corner. Two large artificial ponds make up a substantial portion of the eastern third of the site. Two smaller artificial ponds occur as well; these are near roads and may be borrow pits from road construction. A utility corridor crosses the property near the northeastern corner and is surrounded by disturbed areas that are likely to be successional hardwood forest resulting from fire exclusion of pyrogenic habitats.

Table 1. Natural communities and landcover types within the Carter Quail Ranch Florida Forever proposal.

Community or Landcover	**Acres**	**Percent of Proposal**
mesic flatwoods	418	31
basin swamp	229	17
baygall	123	9
wet flatwoods	106	8
dome swamp	23	2
pine plantation	219	16
improved pasture	109	8
artificial pond	46	3
successional hydric forest	34	3
clearing	16	1
successional hardwood forest	10	<1
utility corridor	4	<1
developed	2	<1
Total	**1,338**	**100**

There are currently no imperiled or rare species documented from this site in the FNAI database, although this could be a result of a lack of biotic surveys. The application lists southeastern fox squirrel as present on the property and based on documented occurrences of other species in the vicinity, additional listed or rare species could be expected to use the property as well.

Table 2. Rare plants and animals documented or reported to occur within the Carter Quail Ranch Florida Forever proposal.

Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
Rare plants documented on site					
none					
Additional rare plants reported on site by applicant					
none					
Rare animals documented on site					
Ursus americanus floridanus	Florida black bear	G5T4*	S4	N	N
Additional rare animals reported on site by applicant					
Sciurus niger niger	southeastern fox squirrel	G5T5	S3	N	N

*Rank explanations attached.

The Florida Forever Measures Evaluation (FFME) at the end of this memo is based on the Florida Forever Conservation Needs Assessment developed by FNAI. The data used in that analysis represents a standardized, statewide perspective of natural community distributions based primarily on the Cooperative Land Cover data (Florida Natural Areas Inventory, Florida Cooperative Land Cover Map, version 2.3), which explains differences in natural community acreages between Table 1 and the FFME. Based on the FFME analysis, the entirety of the proposal property would contribute to protection of ecological greenways, surface water protection, and aquifer recharge, while substantial portions would also contribute to strategic habitat conservation areas, FNAI habitat conservation priorities, and sustainable forestry. To a lesser extent, the proposal would also contribute to protecting underrepresented natural communities, natural floodplain function, and functional wetlands.

Elements and Element Occurrences

An **element** is any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature.

An **element occurrence (EO)** is an area of land and/or water in which a species or natural community is, or was, present. An EO should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location.

Element Ranking and Legal Status

Using a ranking system developed by NatureServe and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks for each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element Occurrences (EOs), estimated abundance (number of individuals for species; area for natural communities), geographic range, estimated number of adequately protected EOs, relative threat of destruction, and ecological fragility.

FNAI GLOBAL ELEMENT RANK

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
G2 = Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
G3 = Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
G4 = Apparently secure globally (may be rare in parts of range).
G5 = Demonstrably secure globally.
GH = Of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker).
GX = Believed to be extinct throughout range.
GXC = Extirpated from the wild but still known from captivity or cultivation.
G#? = Tentative rank (e.g., G2?).
G#G# = Range of rank; insufficient data to assign specific global rank (e.g., G2G3).
G#T# = Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1).
G#Q = Rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q).
G#T#Q = Same as above, but validity as subspecies or variety is questioned.
GU = Unrankable; due to a lack of information no rank or range can be assigned (e.g., GUT2).
GNA = Ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
GNR = Element not yet ranked (temporary).
GNRTNR = Neither the element nor the taxonomic subgroup has yet been ranked.

FNAI STATE ELEMENT RANK

S1 = Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
S2 = Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
S3 = Either very rare and local in Florida (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
S4 = Apparently secure in Florida (may be rare in parts of range).
S5 = Demonstrably secure in Florida.
SH = Of historical occurrence in Florida, possibly extirpated, but may be rediscovered (e.g., ivory-billed woodpecker).
SX = Believed to be extirpated throughout Florida.
SU = Unrankable; due to a lack of information no rank or range can be assigned.
SNA = State ranking is not applicable because the element is not a suitable target for conservation (e.g. a hybrid species).
SNR = Element not yet ranked (temporary).

FEDERAL LEGAL STATUS

Legal status information provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant federal agency.

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

C = Candidate species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened.
E = Endangered: species in danger of extinction throughout all or a significant portion of its range.
E, T = Species currently listed endangered in a portion of its range but only listed as threatened in other areas
E, PDL = Species currently listed endangered but has been proposed for delisting.
E, PT = Species currently listed endangered but has been proposed for listing as threatened.
E, XN = Species currently listed endangered but tracked population is a non-essential experimental population.
T = Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.
PE = Species proposed for listing as endangered
PS = Partial status: some but not all of the species' infraspecific taxa have federal
PT = Species proposed for listing as threatened
SAT = Treated as threatened due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
SC = Not currently listed, but considered a "species of concern" to USFWS.

STATE LEGAL STATUS

Provided by FNAI for information only. For official definitions and lists of protected species, consult the relevant state agency.

Animals: Definitions derived from "Florida's Endangered Species and Species of Special Concern, Official Lists" published by Florida Fish and Wildlife Conservation Commission, 1 August 1997, and subsequent updates.

C = Candidate for listing at the Federal level by the U. S. Fish and Wildlife Service
FE = Listed as Endangered Species at the Federal level by the U. S. Fish and Wildlife Service
FT = Listed as Threatened Species at the Federal level by the U. S. Fish and Wildlife Service
FXN = Federal listed as an experimental population in Florida
FT(S/A) = Federal Threatened due to similarity of appearance
ST = State population listed as Threatened by the FFWCC. Defined as a species, subspecies, or isolated population which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat is decreasing in area at a rapid rate and as a consequence is destined or very likely to become an endangered species within the foreseeable future.
SSC = Listed as Species of Special Concern by the FFWCC. Defined as a population which warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation which, in the foreseeable future, may result in its becoming a threatened species. (SSC* for Pandion haliaetus (Osprey) indicates that this status applies in Monroe county only.)
N = Not currently listed, nor currently being considered for listing.

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505 or see: http://www.doacs.state.fl.us/pi/.

E = Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.
T = Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.
N = Not currently listed, nor currently being considered for listing.

Element Occurrence Ranking

FNAI ranks of quality of the element occurrence in terms of its viability (EORANK). Viability is estimated using a combination of factors that contribute to continued survival of the element at the location. Among these are the size of the EO, general condition of the EO at the site, and the conditions of the landscape surrounding the EO (e.g. an immediate threat to an EO by local development pressure could lower an EO rank).

A = Excellent estimated viability
A? = Possibly excellent estimated viability
AB = Excellent or good estimated viability
AC = Excellent, good, or fair estimated viability
B = Good estimated viability
B? = Possibly good estimated viability
BC = Good or fair estimated viability
BD = Good, fair, or poor estimated viability
C = Fair estimated viability
C? = Possibly fair estimated viability
CD = Fair or poor estimated viability
D = Poor estimated viability
D? = Possibly poor estimated viability
E = Verified extant (viability not assessed)
F = Failed to find
H = Historical
NR = Not ranked, a placeholder when an EO is not (yet) ranked.
U = Unrankable
X = Extirpated

*For additional detail on the above ranks see: http://www.natureserve.org/explorer/eorankguide.htm

FNAI also uses the following EO ranks:

H? = Possibly historical
F? = Possibly failed to find
X? = Possibly extirpated

The following offers further explanation of the H and X ranks as they are used by FNAI:

The rank of H is used when there is a lack of recent field information verifying the continued existence of an EO, such as (a) when an EO is based only on historical collections data; or (b) when an EO was ranked A, B, C, D, or E at one time and is later, without field survey work, considered to be possibly extirpated due to general habitat loss or degradation of the environment in the area. This definition of the H rank is dependent on an interpretation of what constitutes "recent" field information. Generally, if there is no known survey of an EO within the last 20 to 40 years, it should be assigned an H rank. While these time frames represent suggested maximum limits, the actual time period for historical EOs may vary according to the biology of the element and the specific landscape context of each occurrence (including anthropogenic alteration of the environment). Thus, an H rank may be assigned to an EO before the maximum time frames have lapsed. Occurrences that have not been surveyed for periods exceeding these time frames should not be ranked A, B, C, or D. The higher maximum limit for plants and communities (i.e., ranging from 20 to 40 years) is based upon the assumption that occurrences of these elements generally have the potential to persist at a given location for longer periods of time. This greater potential is a reflection of plant biology and community dynamics. However, landscape factors must also be considered. Thus, areas with more anthropogenic impacts on the environment (e.g., development) will be at the lower end of the range, and less-impacted areas will be at the higher end.

The rank of X is assigned to EOs for which there is documented destruction of habitat or environment, or persuasive evidence of eradication based on adequate survey (i.e., thorough or repeated survey efforts by one or more experienced observers at times and under conditions appropriate for the Element at that location).

APPENDIX F

Activity & Amenity Legend

February - 2026

1. Park Entrance & Primary Parking
2. Limited-Access Parking (Hunting / OHV)
3. Existing Service Building
4. Fishing Pier with Kayak / Canoe Launch
5. Picnic & Day-Use Area
6. Pavilion / Ed. Kiosk (with Restrooms)
7. Equestrian Parking & Trailhead
8. Cabin Rentals (6) & Restrooms
9. Cabin Parking
10. RV Camping (10)
11. RV Camping Expansion - Phase II (+12)
12. Drive-to Camping (7)
13. Hike-to Camping (12)
14. Bat House
15. Observation Tower / Dark-Sky Viewing
16. Cypress Head Boardwalk

- **Cattle Lease Area** - 150 acres
- **Small Game Hunting Area** - 850 acres
- **Hunting Access Road** - 3.7 miles
- **OHV Trail (One-Way)** - 3.8 miles
- **Service Road** - 1.4 miles
- **Pond Loop Walking Trail** - 1.25 miles
- **Hiking Trails** - 4.25 miles
  (solid = existing, dashed = proposed)
- **Hike-to Trails** (Campers Only)
- **Equestrian Trail** - 4+ miles
  (solid = existing, dashed = proposed)
- **Total Area** - 1,348 acres

Small Game Hunting Area

Access Point

Passive Recreation Area

Enlargement Area

Quail Ranch Entrance

Cattle Lease Area

(Improved Pasture)

(Natural Forage Area)

415

Rasley Rd.

Quail Ranch
@DEEP CREEK PRESERVE

CONCEPTUAL USE PLAN
PREPARED BY:

Volusia County FLORIDA | CASTLE BAY DESIGN STUDIO | YOUNG BEAR ENVIRONMENTAL


Hike-to Camp Sites (6)
& Observation Tower /
Dark Sky
Hiking
Trail
Cabin
Restrooms
Cabin
Rentals (6)
Pier
Pond
Loop
Bat
House
Hiking
Trail
Hike-to
Camp Sites (3)
Pond
Loop
Hike-to Camp
Sites (3)
Fishing Pier /
Kayak & Canoe
Launch
Cabin
Parking
Cypress Dome
Boardwalk
Pavilion / Ed. Kiosk
with Restrooms
Existing Service
Building
Equestrian
Trail
Drop-off
Drive-to
Camp Sites (5)
RV Camping (10)
Primary Parking
RV Camping Expansion /
Phase II (+12)
Equestrian
Parking &
Trailhead
Quail Ranch Entrance
415
50'
150'
Quail Ranch
@DEEP CREEK PRESERVE
CONCEPTUAL USE PLAN
PREPARED BY:
Volusia County
FLORIDA
CASTLE BAY
DESIGN STUDIO
YOUNG
YEAR
ENVIRONMENTAL

Facility & Use Descriptions

1. Park Entrance & Primary Parking

The primary site entry provides clear access from SR 415 and establishes the overall arrival experience through coordinated signage, orientation, and organized parking. This area functions as the central access point to the park, helping visitors quickly understand available amenities while supporting efficient circulation to key destinations.

2. Limited-Access Parking (Hunting / OHV)

A secondary parking area designed to provide controlled and purpose-specific access for hunting and off-highway vehicle (OHV) users. By separating these activities from general visitor areas, this facility improves safety, reduces user conflicts, and supports the long-term management of specialized recreational uses.

3. Existing Service Building

An existing on-site structure that supports maintenance and operational functions essential to park management. The building also presents opportunities for adaptive reuse, allowing flexibility for future needs such as equipment storage, staff support, or expanded operational capacity as the park evolves.

4. Fishing Pier with Kayak / Canoe Launch

A combined fishing and paddling access point that enhances recreational interaction with the site's water features. The facility supports shoreline angling and non-motorized boating, providing a versatile, low-impact recreational amenity that appeals to a wide range of users.

5. Picnic & Day-Use Area

A centrally located gathering space featuring small pavilions, tables, and grills designed to support picnicking, informal recreation, and short-term visits. This area serves as a key daytime destination within the park, accommodating both individual users and small groups in a comfortable, accessible setting.

6. Pavilion / Education Kiosk (with Restrooms)

A primary visitor node combining covered seating, interpretive features, and restroom facilities. This space supports educational programming, group activities, and general visitor comfort, while providing opportunities to communicate the site's history, ecology, and management approach.

7. Equestrian Parking & Trailhead

A dedicated staging area designed to accommodate equestrian users, including trailer parking, access to water, and direct connectivity to the trail system. The facility supports safe and efficient access while helping to organize equestrian use and reduce conflicts with other recreational activities.

8. Cabin Rentals (6) & Restrooms

Rustic cabin accommodations designed to provide comfortable overnight lodging within a natural setting. Supported by nearby restroom facilities, these units expand the park's range of overnight options and attract visitors seeking a more structured alternative to traditional camping.

9. Cabin Parking

Designated parking areas serving the cabin units, strategically located to provide convenient access while preserving the character, privacy, and visual quality of the surrounding environment.

10. RV Camping (10)

A designated RV camping area featuring pads with utility hookups to support extended stays. This facility provides a higher level of service and convenience, accommodating a broader range of visitors and supporting longer-duration recreational use.

11. RV Camping Expansion – Phase II (+12)

A planned expansion area allowing for additional RV capacity as demand increases. This phased approach supports long-term flexibility in park development while minimizing initial site disturbance and allowing infrastructure to scale appropriately over time.

12. Drive-to Camping (7)

Vehicle-accessible campsites designed for tent or small-scale camping setups. These sites offer a balance between convenience and immersion in the natural environment, making them accessible to a wide range of users while maintaining a low-impact footprint.

13. Hike-to Camping (12)

Remote campsites accessed by foot, providing a more secluded and immersive outdoor experience. These sites are intended for users seeking a quieter, low-impact camping experience and help diversify the range of overnight opportunities within the park.

14. Bat House

An installed habitat structure designed to support native bat populations. In addition to its ecological function, the feature contributes to the park's educational and interpretive opportunities by highlighting the role of wildlife in the local ecosystem.

15. Observation Tower / Dark-Sky Viewing

An elevated structure providing panoramic views of the surrounding landscape and serving as a focal point for passive recreation. The tower also supports nighttime use as a dark-sky viewing location, taking advantage of the site's low ambient light conditions.

16. Cypress Head Boardwalk

An elevated boardwalk providing access through sensitive cypress and wetland environments. This facility allows visitors to experience unique ecological areas up close while minimizing impacts to soils, vegetation, and hydrologic systems.

Land Use Areas

Cattle Lease Area – 150 acres
An active grazing area that maintains the site's working landscape character. The lease supports ongoing land management while preserving open space and rural heritage.

Small Game Hunting Area – 850 acres
Designated areas for managed hunting of small game species. This use supports traditional recreational activities while contributing to wildlife population management.

Roads & Trails

Hunting Access Road – 3.7 miles
Limited-access route supporting hunting activities and site management functions.

OHV Trail (One-Way) – 3.8 miles
Designated one-way trail system for off-highway vehicle use, improving safety and circulation.

Service Road – 1.4 miles
Internal access road supporting maintenance and operational needs.

Pond Loop Walking Trail – 1.25 miles
Short, accessible loop providing scenic walking opportunities around the pond.

Hiking Trails – 4.25 miles
Network of general-use hiking trails, including both existing and proposed segments.

Hike-to Trails (Campers Only)
Restricted-access trails providing connectivity to remote camping areas.

Equestrian Trail – 4+ miles
Dedicated equestrian trail system designed to accommodate horseback riding with minimal user conflict.

APPENDIX G

alternative mitigation activities are also implemented. Examples of alternative mitigation activities that may be considered include: temporarily enclosing tortoises (soft release) for 12 months instead of the minimum of 6 months; permanent fencing or wildlife underpasses that prevent tortoises from entering roadways to reduce the risk of mortality; reduced speed limits adjacent to recipient sites and installation of wildlife crossing signs; or, a combination of these examples or other proposed alternatives that are consistent with and support the intent of these guidelines.

Note: Other options for on-site relocation (e.g., long-term protected, short-term protected, or unprotected recipient sites/areas) are available if a property does not meet the criteria outlined above for this "contiguous public conservation lands" option.

FWC will review this permit option from time to time and determine if it is still needed and is helping to achieve the management plan goals for the gopher tortoise.

Offsite Public Lands Option (Public Conservation Lands Restocking)

For public conservation lands to accept tortoises from projects where the donor site is not contiguous or the linear right-of-way project is located more than one mile from the recipient site, refer to Appendix 12 for the conservation lands restocking guidelines.

Recipient Site Permits

The overall conservation goal of the *Gopher Tortoise Management Plan* is "to restore and maintain secure, viable populations throughout the species' current range in Florida." Property owners play a significant role in helping Florida achieve this goal by providing the highest level of security for the gopher tortoise and its habitat on permitted recipient sites. Elements that are integral to meeting this objective include appropriate habitat management, population monitoring, legal protection, and long-term financial assurance provided by the landowner. Not all recipient sites afford relocated gopher tortoises with the same level of protection, however some sites do provide conservation value by restocking tortoises to managed lands where populations have been depleted, furthering research efforts, preventing the loss of tortoises on development sites, helping to retain local or regional tortoise resources and potentially contributing to the habitat preservation objective if such sites receive long-term protection in the future.

The *Gopher Tortoise Management Plan* contains a series of measurable objectives and conservation actions which include restocking gopher tortoises to protected, managed, suitable habitats where they no longer occur or where densities are low. A team of public conservation land managers has developed guidance regarding the restocking of gopher tortoises on public conservation lands (see Appendix 12). This team includes representatives from the Florida Department of Environmental Protection Florida Park Service, Florida Department of Agriculture and Consumer Services Florida Forest Service, the five Water Management Districts, Florida Communities Trust, and Florida Fish and Wildlife Conservation Commission. Likewise, some of the future research goals outlined in the Gopher Tortoise Management Plan may require the use of sites that receive displaced tortoises to carry out research projects and consequently be designated as research recipient sites. The criteria for research recipient sites are outlined in Appendix 13 and are intended to provide further clarity as to how the agency will

implement conservation actions specified in the Plan.

To receive a FWC recipient site permit, candidate properties must meet site suitability criteria for size, soil, and habitat. Site suitability criteria vary according to the level of conservation value provided by the recipient site. Protected recipient sites are also categorized using a tiered classification system that accounts for the level of conservation value provided by the recipient site. The tier assigned to a recipient site affects the mitigation contribution required to relocate tortoises from a donor site to the property. Long-term protected recipient sites are classified as either Tier 1 or Tier 2 recipient sites, depending on the duration of protections afforded the recipient site through conservation easement. Short-term protected recipient sites are classified as either Tier 1, Tier 2, or Tier 3 recipient sites, based on habitat quality and monitoring commitment. See Table 4 for details.

Landowners who meet the basic criteria in these guidelines are encouraged to contact the FWC Gopher Tortoise Permit Office to schedule a pre-application site visit. A preliminary site visit allows FWC staff to evaluate the suitability of the habitat on proposed site. Staff may provide information on habitat management assistance or other measures that may be undertaken prior to completing an application for a FWC recipient site permit. The pre-application site visit can help identify and address potential issues in advance, so the permit application (once submitted) can be processed more efficiently.

Table 4. Permit Type, Tier, Requirements, and Corresponding Mitigation Contribution (adjusted for 2022 CPI. For current mitigation amounts, refer to MyFWC.com/GopherTortoise).

Permit Type	Tier	Requirements*	Mitigation
Long-term Protected	1	Perpetual conservation easement granted to FWC	$351/tortoise***
Long-term Protected	2	100-year easement granted to FWC	$702/tortoise***
Short-term Protected	1**	Monitoring commitment (see Appendix 7) and minimum of 40 acres contiguous suitable habitat	$1,053/tortoise***
Short-term Protected	2**	*Desirable* habitat criteria are met in the majority of the acres permitted as gopher tortoise habitat (see Table 5)	$2,106/tortoise***
Short-term Protected	3	Meet minimum criteria of a Short-term Protected Recipient Site	$3,511/tortoise***

*Requirements listed in table are specific to mitigation tier classification and do not reflect all site suitability criteria.
**Tiers are cumulative, i.e., a Tier 1 site must meet the requirements of Tier 2 and Tier 3 sites.
***Mitigation contribution per tortoise after the first 10 burrows (5 tortoises).

Criteria for Relocation of Gopher Tortoises to Recipient Sites

A. **Conservation Easements or Other Protection:** The conservation value of a permitted project and the required mitigation contribution is determined by the level of protection

afforded to the relocated gopher tortoise at the recipient site. Four levels of conservation have been defined:

a. **Long-term Protected Recipient Sites**: These privately or publicly owned recipient sites must be protected by a conservation easement that conforms to the standard format available from FWC (see Appendix 8). The duration of protection afforded to the property by the conservation easement determines the tier assigned to the recipient site. Tier 1 long-term protected recipient sites must be protected by a perpetual conservation easement. Tier 2 long-term protected sites must be protected by a 100-year conservation easement. Conservation easements that were previously granted by landowners to other regulatory, governmental, or conservation entities may be acceptable to FWC if their conditions and restrictions provide habitat protection and management requirements for gopher tortoises and their habitats that are comparable to those contained within FWC's standard easement. However, those easements would need to be modified to designate FWC as a co-grantee.
b. **Recipient Sites for Restocking Public Conservation Lands**: These recipient sites consist of publicly owned lands that are currently managed for conservation and are either designated as conservation lands by Chapter 253.034, Florida Statutes; purchased for conservation purposes using funds from bonds or other monies dedicated specifically for conservation lands acquisition (*e.g.,* Florida Forever, Preservation 2000, local bond initiatives, etc.); or afforded protection under federal law. These publicly owned lands must provide suitable gopher tortoise habitat and must be actively managed under an approved habitat management plan. The land managing agency and FWC will establish either a Memorandum of Understanding (MOU) or an easement that conforms to the standard format available from FWC. Additionally, existing land leases, covenants, and management plans may need to be amended to provide adequate assurance of management. See Appendix 12 for specific details and requirements for restocking public lands.
c. **Short-term Protected Recipient Sites:** These recipient sites have some enforceable protection commitment, but those commitments do not meet the definition of"long-term." Specifically, the enforceable protection commitment must provide at least a 50 year FWC easement that prohibits development-related activities from occurring within the permitted recipient site, or a perpetual easement recorded with a governmental entity or accredited land trust that prohibits development-related activities from occurring within the permitted recipient site.
d. **Unprotected Recipient Sites**: These recipient sites provide relocated gopher tortoises protection for at least two years.

B. **Size**: Perimeter boundaries of recipient sites should ideally be configured in the form of a block, circle, or similar shape. Uplands are considered contiguous if two or more upland communities occur within a distance of 1,000 feet, and there is no physical obstacle (e.g., road greater than 2 lanes, curb and gutter or other physical barriers or a speed limit of > 30 mph,, railroad bed, impenetrable fence, river, lake) to prevent tortoise movement to other upland areas within the recipient site. Due to the time and resources required to

evaluate the habitat suitability of potential recipient sites with greater than 1,000 acres, interested landowners are strongly encouraged to contact FWC and participate in a pre-application meeting and site review prior to submitting a permit application. This pre-application meeting will help ensure that the habitat is suitable and other requirements have been or can be met once the permit application is submitted, and it can be processed within the statutory application processing time requirements outlined in Chapter 120 Florida Statute. Applicants submitting more than 1,000 acres of gopher tortoise habitat proposed for a unit or site may be requested to submit a waiver of the statutory application processing time requirements outlined in Chapter 120 Florida Statute as part of a request for additional information (RAI). If a recipient site application is submitted and the applicant/landowner does not meet the FWC application requirements, or the habitat is not currently suitable for gopher tortoises, the permit application may be considered incomplete and may be denied by FWC without prejudice.

a. **Long-term Protected Recipient Sites:** Recipient sites must contain a minimum of 40 acres of contiguous suitable upland tortoise habitat that meet the criteria for soil and vegetation. Smaller sites in highly developed counties, particularly in southern Florida, will be evaluated on a case-by-case basis, and will be allowed if they are instrumental in retaining the local tortoise resource and can be appropriately managed to perpetuate the relocated population. Sites containing greater than 250 acres of contiguous suitable upland habitat will satisfy the size threshold for *Desirable* criteria and may be eligible for an additional 0.5 tortoise per acre increase in the site evaluation maximum allowable tortoise density (see below).
b. **Recipient Sites for Restocking Public Conservation Lands and** Contiguous Public Conservation Land recipient sites**:** Recipient sites must contain a minimum of 40 acres of contiguous suitable upland tortoise habitat that meet the criteria for soil and vegetation. Smaller sites in highly developed counties, particularly in southern Florida, will be evaluated on a case-by-case basis, and will be allowed if they are instrumental in retaining the local tortoise resource and can be appropriately managed to perpetuate the relocated population. Sites containing greater than 250 acres of contiguous suitable upland habitat will satisfy the size threshold for *Desirable* criteria and may be eligible for a 0.5 tortoise per acre increase in the site evaluation maximum allowable tortoise density.
c. **Short-term Protected Recipient Sites:** Sites must contain a minimum of 25 acres of contiguous suitable upland tortoise habitat that meet the criteria for soil and vegetation. Tier 1 short-term protected sites must contain a minimum of 40 acres of contiguous suitable upland tortoise habitat that meet the criteria for soil and vegetation.
d. **Unprotected Recipient Sites:** Sites must contain a minimum of 25 acres of contiguous suitable upland tortoise habitat that meet the criteria for soil and vegetation.

C. **Soils**: Soils that meet *acceptable* criteria are moderately well-drained to excessively drained, with a midpoint of the upper limit of the water table (see Depth to Water Table (hereafter DWT) in the Glossary) value of 45 centimeters (18 inches) or greater (see Appendix 3, page 47 for how to find this DWT value). For sites in flatwoods, land cover

shapefiles should be overlain on soils shapefiles to help differentiate hydric areas from more mesic or xeric areas; site visits by FWC may also be required. Poorly drained soils with a midpoint of the upper limit of the water table (DWT) greater than or equal to 31 centimeters (12 inches) may meet the *Acceptable* criteria, provided that the proposed site contains augmentation features or is drained by ditches, etc. Augmentation features should be provided as a shapefile. In these select cases, there must be evidence of past or current use by tortoises with no frequency of ponding. Additionally, stocking densities cannot exceed two per acre on these soil types. Long-term protected recipient sites, Contiguous Public Conservation Land recipient sites, and public conservation lands recipient sites for restocking with a midpoint of the upper limit of the water table (DWT) of 130 centimeters (51.6 inches) or greater meet the *Desirable* criteria threshold and may be eligible for a 0.5 tortoise per acre increase in the site evaluation maximum allowable tortoise density. Site-specific soil information can be obtained by referring to the Natural Resources Conservation Service (NRCS) Web Soil Survey (www.soils.usda.gov) for the appropriate county.

D. **Vegetation Features**: Sites with *Acceptable* habitat features are those that contain both of the following: average herbaceous cover of at least 30% and average canopy cover of 60% or less. Woody vegetation should not comprise more than an average of 20% of the ground cover. Within FWC-approved areas of gopher tortoise habitat in the permitted recipient site, improved pasture cannot exceed 40% of the total recipient site unit and must include a minimum of 10% patchy shrub cover (*e.g.,* saw palmetto, fennel, pines, oaks, blackberry, blueberry, pawpaw, etc.) to provide shade and refuge from predators. Long-term protected recipient sites and public conservation lands recipient sites for restocking with average herbaceous cover greater than 50% and average canopy cover less than 40% meet the *Desirable* criteria threshold and may be eligible for a 0.5 tortoise per acre increase in the site evaluation maximum allowable tortoise density. Short-term protected sites that meet the *Desirable* criteria threshold (Tier 1 and Tier 2) do not qualify for the 0.5 tortoise per acre density bonus. Herbaceous cover (low-growing, soft-stemmed plants) should include broadleaf grasses and, preferably, grass-like asters (sunflower family) and legumes (bean family). Vegetation survey methods are outlined in Appendix 7.

E. **Enhanced Conservation Value**: Proposed long-term protected recipient sites, Contiguous Public Conservation Land recipient sites, and recipient sites for restocking public conservation lands may be awarded a 0.5 tortoise per acre increase in the site evaluation maximum allowable tortoise density if FWC determines that the site has enhanced conservation value by any of the following: 1) adjacency to existing public or private conservation lands that together provide >250 acres of contiguous suitable upland gopher tortoise habitat that satisfy the threshold for *Desirable* criteria; 2) the site boundaries are 100% within a designated Strategic Habitat Conservation Area according to the most recent year's designation; or 3) at least 75% of the recipient site is vegetated with one or more of the following native upland plant communities: sandhill, scrubby flatwoods, or dry prairie (Table 5) as described in the Guide to the Natural Communities of Florida by FNAI. Native upland plant communities are not modified by human influence to such a degree that the physical conformation of the substrate, or the

biological composition of the resident community, or the natural processes that are essential in maintaining the substrate and biological composition is substantially different from what is described for the native upland plant community in the Guide. The presence of pasture grasses (e.g., Bahiagrass) or other grass species not included in the FNAI natural community description indicate absence of that native upland plant community type in the given acreage for which those grasses are present.

F. **Baseline Densities**: Survey techniques to determine the existing (baseline) tortoise population density are provided in Appendices 4 and 7. Supporting information should include potential reasons for low tortoise densities (e.g., past harvest; previous, but now rectified, inadequate habitat management). The burrow survey used to generate this estimate must be performed no more than 90 days before the date the permit application is submitted. A shapefile showing the site boundaries, transect locations, locations of all documented tortoise burrows, and corresponding tortoise densities will serve as the baseline for future monitoring efforts.

G. **Site Evaluation Stocking Rate**: The site evaluation stocking rate is defined as the maximum allowable gopher tortoise density as determined by the scoring process depicted in Table 5, *Acceptable and Desirable Criteria Thresholds for Recipient Site Characteristics*. A site that meets all three *Acceptable* criteria will be assigned an evaluation stocking rate of two tortoises per acre. Evaluation stocking rates for long-term protected recipient sites and recipient sites for restocking public conservation lands may increase in increments of 0.5 individual per acre for each *Desirable* criterion that is met, up to a maximum of two additional individuals (four per acre total). However, long-term protected recipient sites located in highly developed counties that contain less than 40 acres of contiguous gopher tortoise habitat are not eligible for stocking bonuses. Vegetation communities defined as improved pasture are not eligible for stocking bonuses for long-term protected recipient sites.

H. **Determination of Final Stocking Rate**: The final stocking rate for a recipient site equals the site evaluation stocking rate minus the baseline density, i.e., final stocking rate = (site evaluation maximum allowable density) - (baseline density). For all calculations involving stocking rate, consider only tortoises greater than or equal to 130 mm (5 inches) in carapace length. Eggs and juvenile tortoises less than 130 mm are not considered in these calculations because of their low survivorship and minimal effect on the recipient site forage base. Recipient sites for restocking public conservation lands shall be stocked at no more than 50% of the site evaluation stocking rate.

   When assigning the baseline density and calculating the final stocking rates, applicants submitting permit requests for sites that have been previously approved by FWC and used as a recipient site for tortoise standard relocation and/or incidental take permits shall include the number of resident tortoises reported for the site when it was originally approved and all tortoises released at the site under previously issued FWC permits (or authorized for release when no post-relocation reports have been sent to FWC).

I. **Enclosure Methods**: Restraint of tortoises inside an enclosure at the recipient site is required for all relocations as a condition of the relocation permit. This process is called

"soft release." Studies have indicated that site fidelity is enhanced by temporarily enclosing tortoises. As additional studies are completed and information becomes available, these guidelines may be modified to ensure that they achieve the management plan objectives. The following requirements and recommendations include enclosure methods and procedures proven to be effective.

a. **Soft release requirements**:
    i. All tortoises relocated to any recipient site (including unprotected recipient sites) shall be released into a temporary enclosure as described below and retained within the enclosure for a period of not less than six months and no more than twelve months from the time the first tortoise is placed in the enclosure. This means stocking of a soft release enclosure must cease six months after the date that the first tortoise was stocked so that the tortoise(s) released before the six-month mark have at least six months before the enclosure comes down.
    ii. Tortoises shall be released into temporary fenced enclosures such that the maximum number of gopher tortoises approved by FWC for release into the entire recipient site parcel shall not be exceeded. Enclosures within recipient sites with varying approved stocking rates may be stocked at 1.5 times the approved density for the area in which the enclosure is located. If an enclosure encompasses an area with varying approved stocking rates, then the enclosure's approved gopher tortoise density will be proportional to the number of acres in each approved stocking rate area. For example, if a 40-acre recipient site initially containing no gopher tortoises includes a 15-acre enclosure encompassing five acres that are approved for a final density of two gopher tortoises per acre and ten acres that are approved for a final density of three gopher tortoises per acre, then the enclosure can receive up to 60 gopher tortoises 1.5 [(5 x 2) + (10 x 3)].
    iii. Upon approval, temporary enclosures may be of any material that prevents the passage of tortoises of all sizes released to the site. Recommended and cost-effective materials include Belton Industries #1935 pre-assembled silt fence (a more durable type of silt fence; see *Glossary* for purchasing information) Natural or artificial boundaries may be used to restrain tortoises (e.g., coastlines, major rivers or large lakes, existing fencing that prevents the passage of all tortoises released at the site).
    iv. After the soft release period of 6-12 months, the soft release boundary must allow for emigration and immigration of tortoises as approved in the recipient site's Gopher Tortoise Management Plan; a recipient site must not permanently be surrounded by natural or artificial barriers on all sides.
    v. Temporary fencing must be buried at least eight inches into the ground to prevent tortoises pushing beneath the enclosure and must be at least two feet high and of sufficient robustness to prevent tortoises pushing or climbing over.
    vi. Temporary enclosures shall provide gopher tortoises adequate shade and cover from predators (minimum 10% patchy shrub cover).The same area must not be included in a soft release enclosure more than once unless the

area is surveyed for an estimate of gopher tortoises present prior to enclosure reinstallation to inform enclosure stocking rates.

vii. Prior to accepting tortoises for release, the named authorized agents must first confirm that management commitments are met and temporary enclosures are maintained.

viii. Named agents shall notify gtpermits@myfwc.comif the proposed temporary enclosure locations provided in the application change after permit issuance and provide shapefiles of the new locations.

ix. Temporary enclosures must be regularly monitored (at least once monthly) by the named authorized agent and/or assistants. The monthly monitoring event shall include walking the inside perimeter of the enclosure, as well as a North-South transect and an East-West transect that each span the enclosure and intersect at the enclosure centroid. GPS tracks must be recorded for each monitoring event and provided to the FWC and permittee upon request.

x. The named authorized agent and/or assistants that are responsible for release must ensure that damage is repaired and the integrity of the temporary enclosure is maintained. Additional temporary enclosure monitoring is required after natural disaster events (e.g., wildfires, hurricanes, tornados) that threaten the structural integrity so that damage can be repaired as soon as possible.

xi. Recipient sites with active livestock grazing should exclude livestock from the area where the temporary enclosure(s) are installed for the duration of the enclosure timeframe; or if livestock cannot be excluded, an electric fence (or other excluding barrier) shall be installed at least 5-10 ft around the perimeter of the temporary enclosure.

xii. Tortoises observed above ground within the temporary enclosures shall be monitored weekly for the first month and monthly thereafter to document any problems (*e.g.,* illness, mortality, evidence of human poaching, emigration).

xiii. The gtpermits@myfwc.com must be contacted if decreases in tortoise numbers are documented.

xiv. After the soft release period, the artificial temporary enclosure materials must be removed out of the recipient site.

b. **Soft release recommendations**:

i. Prior to releasing relocated tortoises, survey the temporary enclosure for an estimate of resident tortoises present and stock accordingly.

ii. Encourage tortoises to burrow within the temporary enclosure interior by digging starter burrows with tunnels angled towards the enclosure interior and/or installing structural guides (e.g., haybales, stretches of silt fence) that lead away from the enclosure boundary towards the enclosure interior to deflect movement.

iii. Make enclosure sizes as small as is feasible or subdivide enclosures to minimize disease transmission risk and social stress.

iv. Space out enclosure locations to reduce the risk of stressful social

interactions and concentrated dispersal after pen removal.

v. Minimize the timeframe during which new tortoises are released to an enclosure and keep tortoises from the same origin population together.
vi. Install enclosures within the highest quality habitat on your property to encourage tortoises to settle in an area with enough food, shade, and cover; avoid soft releasing in improved pasture.
vii. Avoid releasing in the evening when tortoises are less active and more susceptible to predation.
viii. Install an enclosure without corners, as corners attract tortoises and are prone to tear.

J. **Management Plan:** Gopher tortoise habitat requires active management. A detailed management plan mirroring the length of protection is a vital part of gopher tortoise conservation efforts on all FWC-permitted recipient sites. Management plan requirements are outlined in Appendix 3.

K. Unprotected and Short-term Recipient Site renewal criteria based on 2-year permit duration:

a. Resurvey vegetation to confirm permitting thresholds still met
b. No documentation of noncompliance
c. No documentation of mass mortality
d. Renewal does not allow for additional authorizations to receive tortoises within the same acreage (i.e., an increase in the original number of tortoises authorized for the same area)

L. Amendment criteria to add acreage to a permitted recipient site unit

Permitted capacity for an existing recipient site unit may be amended to increase the total number of tortoises authorized for receipt within the unit under the following conditions:

a. The amendment involves adding at least 25 contiguous acres to the existing recipient site unit that meet at least the acceptable habitat criteria (see Table 5), and
b. the proposed additional habitat falls adjacent or disjunct but contiguous (i.e., a traversable distance of less than 1000 feet between uplands) to the existing permitted boundary, and
c. a shapefile delineating existing permitted acreage and proposed additional acreage is provided, and
d. at least a 15% population survey with vegetation stations is conducted according to Appendix 7 specifications on the acreage requested in the amendment to be added as gopher tortoise habitat to the permitted unit, and
e. a new 15% population survey design with vegetation stations shall be established in consultation with the Gopher Tortoise Program to monitor the entire area within the amended permit boundary (when monitoring commitment is required by the permit), and
f. the permittee accepts that the permit will be brought up to the current guidelines.

Under these conditions, the increase in permitted capacity is attributable to the additional acreage of gopher tortoise habitat. Stocking bonuses can apply to the new acres requested under the amendment if stocking bonus criteria are met within the new acres, but

previously permitted acreage does not count towards the 250-acre requirement to meet the "size" stocking bonus and must not be considered when evaluating stocking bonus eligibility of the new acres. Under no conditions shall a permit amendment increase permitted capacity specific to acres already included within the permitted unit.

Table 5. Acceptable and Desirable Criteria Thresholds for Gopher Tortoise Habitat Within Recipient Sites.

SITE CHARACTERISTIC	ACCEPTABLE CRITERIA	DESIRABLE CRITERIA
Size	> 40 acres	> 250 acres
Soil	> 45 cm (18 in) DWT, with land cover verification for flatwoods sites > 31 cm (12 in) (select cases)	> 130 cm (51.6 in) DWT
Habitat	> 30% herb cover < 60% canopy cover < 40% improved pasture (minimum 10% shrub cover for improved pasture)	> 50% herb cover < 40% canopy cover No improved pasture
Enhanced Conservation Value	Not applicable	Adjacent to protected land, or in Strategic Habitat Conservation Area, or ≥ 75% native upland community (maximum of 0.5 per acre)
Maximum Allowable Gopher Tortoise Density	Two per acre (requires all above criteria be satisfied)	0.5 per acre for each site characteristic that is satisfied, up to a maximum of two additional (four per acre maximum)

Temporary Exclusion Permit for Major Linear Utility Corridors

This type of on-site relocation Conservation Permit is specifically reserved for the installation or maintenance of major linear utility transmission lines (e.g., major natural gas or electric transmission lines). This permit applies to situations that require the temporary exclusion of tortoises from the utility construction corridor for up to 6 months, and where habitats within the corridor will be restored to provide suitable habitat for tortoises following completion of the utility installation. These permits require the temporary installation of filter fabric (silt fencing) or other comparable fencing (buried at least eight inches into the ground) along the outer edge of the construction right-of-way to block tortoise re-entry into the corridor during construction activities. Such fencing is only required along those portions of the construction corridor where tortoises are documented and are to be relocated from the construction area. The FWC will also consider other proposed options of keeping gopher tortoises out of harm's way in the immediate area of construction on these types of projects.

Temporary exclusion permits authorize the capture of tortoises from within the utility corridor

APPENDIX 3. INFORMATION NEEDED FOR RELOCATION PERMIT APPLICATIONS AND RECIPIENT SITE PERMIT APPLICATIONS

Although each permit type has additional specific information that will be required on application forms either online or in hard copy, this appendix outlines the primary information that FWC staff will need to process applications for relocation permits and recipient site permits.

General Information Needed for Relocation Permits and Recipient Site Permits

1. Name and contact information of the authorized agent that will be performing the gopher tortoise activities. Mailing and physical addresses are needed, as well as phone and e-mail addresses.

2. Certification: Applicant must certify by signature that the information and supporting documents submitted are complete and accurate.

3. Name and all contact information for the property owner (for development sites, also provide the developer's name and contact information if different from that of the property owner).

4. Location map and directions to the site**:** Must provide sufficient detail (e.g., identify all adjacent roads, water bodies, and other major physical landmarks) to allow vehicular access for FWC inspection. All maps submitted during the application process should be in a shapefile, with an image file (jpg) or in a Portable Document File (PDF) 8.5x11-inch or 8.5x14- inch in format.

5. Most current digital orthoquad or equivalent one-meter resolution aerial photograph of the site**:** Scale of 1 inch = 800 feet or less.

6. Parcel identification**:** Provide latitude/longitude coordinates; parcel identification number (PID), which can be obtained from the county property appraiser's office; and deed showing proof of ownership if applicant information differs from county property appraiser records. For development sites, also provide the name of the project; for recipient sites, provide the name of the property (if applicable). For temporary exclusion permit applications for major utility corridors, PIDs are not required, and latitude/longitude coordinates must be provided for only the beginning and end points of the utility corridor.

7. Habitat types**:** Provide a table listing existing land uses (i.e., vegetation community types) by acres (along with corresponding land cover maps) for the entire project and for all potential tortoise habitats to be impacted. For temporary exclusion permit applications, completion of the land use table is optional, but the land cover map must be provided. For recipient site applications, provide this habitat information (and maps/corresponding shapefiles) for the entire property and for the specific phase or parcel within the property proposed for relocation/restocking. For each community type on recipient sites, describe

the condition, characteristics, land use history, and other factors that may influence tortoise habitat quality and/or manageability. The Cooperative Land Cover Map (CLC) is the accepted source for land use classifications. The CLC dataset can be downloaded from the FWC GIS and mapping site: https://myfwc.com/research/gis/applications/articles/cooperative-land-cover/. The associated Florida Land Use Classification System document used by the CLC is also accessible on this site.

8. Soils**:** In tabular form, provide a list of soil types, midpoint of the upper limit of the water table (DWT), and acreage for each soil found within the entire project and potential tortoise habitat to be impacted (development sites) and within the specific phase or parcel of the property proposed as a recipient site; also provide corresponding soils maps. The accepted source for soil type classification is the Natural Resources Conservation Service (NRCS) Web Soil Survey database that can be accessed at: http://www.soils.usda.gov/ The upper limit of the water table can be found on this site under the water features section of Soil Reports tab of Soil Data Explorer tab (do not check "include minor soils?" option). For soil types with the upper limit range varying between month groups, use the most limiting water table (highest) for any given month. Data for the upper limit of the water table is not displayed when the soil does not have a seasonal high water table or the map unit is a miscellaneous area (e.g., pits) or Taxon Above Class (Udorthents, etc.). In these cases, the depth to water table data should be entered as "not available". For temporary exclusion permit applications, completion of the soils table is optional, but soils maps must be provided.

9. Current gopher tortoise population size and density (tortoises per acre)**:** Provide a map (or shapefile for recipient site permits) depicting current locations of tortoise burrows and indicate burrow activity (potentially occupied vs. abandoned, see Glossary and Appendix 4). Burrow survey methods are outlined in Appendices 4 and 7. Show all transects, as well as observed burrows and their activity status, overlain on the shapefile of potential tortoise habitat. The full legal name of the surveyor(s) must be included in the application.

Additional Information Required for Relocation Permits

1. Provide the proposed start date for the development.

2. Indicate whether tortoises are proposed to be located on-site or off-site and provide the necessary location and contact information for the designated off-site recipient area, if known. You may use the online recipient site locator mapping tool (MyFWC.com/GopherTortoise) to find available recipient sites or contact FWC. All applicants must provide proof of reserved capacity at a recipient site(s) to accommodate all gopher tortoises to be relocated from the entire permitted donor site, with the reservations maintained for the duration of the issued permit. Recipient site capacity reservations for more than 10 burrows must not exceed a 75% burrow occupancy rate for the donor site.

3. If the relocation is to occur on-site, provide all the necessary information needed for recipient sites (size of on-site preserve, location within the project, habitat types, soils,

proposed stocking density, etc.). On-site recipient areas may have site-specific requirements imposed as part of the permit to reduce potential harm to tortoises. For temporary exclusion permit applications, completion of the habitat types/land use table and the soils table are not required, but the land use and soils maps must be provided.

4. If the burrow survey is to be partially or fully conducted via ATV instead of on foot, provide data on survey implementation, including survey method implemented (i.e., pedestrian, ATV, both); date survey method conducted; survey coverage (acreage) per method; number of potentially occupied burrows found per survey method; and soil and habitat types within survey boundaries (per method).

5. Submit a development plan or proof of local government approval (in the form of preliminary or final subdivision plat, or master planned unit development approval; Development of Regional Impact [DRI] development order; or authorization to commence clearing, grading, or construction activities) for the proposed development activity.

6. For temporary exclusion permits (major utility corridors), indicate the location of the exclusion fencing on the habitat map.

Additional Information Required for Recipient Site Permits

1. Calculated stocking rate: As described in the criteria for recipient sites, provide both the number of additional tortoises requested for release on the site and the final, post-relocation tortoise density results. To calculate current tortoise population size, baseline density, and stocking rate, consider only tortoises greater than or equal to 130 mm (5 inches) in carapace length. Eggs and juvenile tortoises are not considered in these calculations because of their low survivorship and minimal effect on the recipient site forage base.

2. Vegetation survey data: Provide vegetation data including transect line/belt shapefiles, and sampling station locations; intervals between sampling stations; measurements at each sampling station; cover classes at each ground cover sampling station; total measurements for canopy, shrub, and herbaceous cover; and percent canopy, shrub, and herbaceous cover (see Appendix 7.). The full legal name of the surveyor(s) must be included in the application.

3. Perimeter: After the recipient site's perimeter boundaries have been permanently established (and approved by FWC), the perimeter must either be clearly marked with boundary posts or have boundary points recorded on a GPS unit, at no less than 500 linear-foot intervals and at boundary turning points, to facilitate boundary identification by FWC.

4. Enclosures: Requirements for using enclosures to temporarily contain the tortoises within the recipient area are described in the guidelines under recipient site permits. The applicant must provide information on enclosure(s) size, location, enclosure materials, and proposed tortoise density within enclosures. The location of the proposed enclosures

must be included on a map of the site and in a shapefile.

5. Draft conservation easement: The conservation easement should conform to the standard format available from FWC (see Appendix 8) and any changes to the standard must be provided in track changes with all proposed additions underlined, all proposed deletions indicated by a strike-through. Explanations for each addition or deletion made must also be included. The easement must also include a survey and legal description, title commitment (not older than 180 days), and draft habitat management plan (described below).

6. Boundary shapefiles: GIS shapefiles of the easement boundary (if applicable) and permitted site boundary are required for all recipient sites to assist FWC with tracking recipient site location data. FWC staff will provide assistance to applicants unable to access the appropriate technology needed to meet this requirement.

7. Habitat management plan: Site management plans shall contain the following: both qualitative and quantitative baseline information that describes existing conditions; goals of future management actions; description of invasive infestations and proposed control program; list and timeline for implementing management activities; quantifiable desired future conditions for canopy cover and herbaceous ground cover; schedule and methods for conducting tortoise population monitoring and habitat monitoring; remedial actions if proposed activities do not achieve desired results; estimate of annual management budget for the site. Below is a list of the major habitat management elements that are required as part of the application package.

    - *Base map***:** Indicate property boundaries, land use cover types, management units, and baseline density transect locations with corresponding density values.
    - *Tree canopy management activities/timelines:* Describe practices and treatment intervals that will be used to maintain canopy cover at 60% or less.
    - *Ground cover management activities/timelines:* Describe practices and treatment intervals that will be used to maintain herbaceous ground cover at 30% or more; if applicable, include treatment practices for problematic invasive nonnative plants. Refer to Florida Invasive Species Council for a list of species.
    - *Compatibility of proposed land uses:* Describe what types of land uses are proposed for the site and how activities related to these land uses would be conducted to foster the open canopy and herbaceous ground cover noted above, while not adversely affecting the ability of gopher tortoises to excavate and maintain their burrows or to otherwise inhabit and utilize the site.
    - *Livestock grazing plan:* If cattle are present within the FWC-approved, suitable gopher tortoise habitat portion of the recipient site, the habitat management plan must include the following grazing parameters or reference a grazing plan that incorporates comparable practices that are compatible with gopher tortoises and minimize any potential adverse effects of some practices normally implemented within cattle grazing operations. Refer to the Florida Department of Agriculture (FDACS) Cow/Calf Manual for more information on the practices.
        i. Areas of FWC-approved, suitable gopher tortoise habitat where cattle will

also be grazed must maintain adequate forage for tortoises, generally maintaining vegetation height between 4" – 12".

ii. To minimize impacts caused by cattle trampling on gopher tortoise burrows and nests, the cattle grazing stocking rate cannot exceed one cow/animal unit per 6 acres within the FWC-approved, suitable gopher tortoise habitat portion of the recipient site.

iii. High intensity areas (i.e., watering or feeding stations) will not be considered as providing suitable gopher tortoise habitat, and therefore not be included within the acreage used to calculate tortoise stocking densities. Following consultation with and approval by FWC, these high intensity areas may be relocated by the landowner within the recipient site if it does not result in a reduction of the total acres of FWC-approved gopher tortoise habitat, and cause impact to burrows on the permitted recipient site.

iv. Activities including flash grazing, pesticide use (other than herbicide use to improve habitat), row cropping, sod production, and upland pond construction shall not be permitted within the FWC-approved, suitable gopher tortoise habitat.

- To demonstrate the foregoing, a grazing plan or its equivalent (i.e., FDACS Notice of Intent with BMP Checklist), or acknowledgement of intent to follow the above grazing parameters for the property should be incorporated by reference or included as an appendix to the recipient site habitat management plan.
- *Other habitat enhancement proposed:* Describe proactive measures that could enhance tortoise site fidelity*, e.g.,* forage plantings, fencing.
- *Tortoise population and habitat monitoring***:** Recipient site permittees and named agents are required to submit a summary of the habitat management conducted and the results of habitat monitoring and tortoise density surveys in a report to FWC every five years in a monitoring report; the monitoring timeline is based on the number of gopher tortoises approved for release at the site and the population survey methodology selected (see Appendix 7); post- baseline survey methodology to be used shall be identified in the management plan, including number of survey observers; guidelines regarding survey methods, and a template for the report, are included upon permit issuance.
- *Tortoise mortality/contingency plan:* The habitat management plan must include a landowner commitment statement to notify the FWC within 48 hours of any observed mortality, injury or sign of disease and if needed, coordinate with them to develop a contingency and/or adaptive management plan to address mortality on the recipient site should evidence of multiple adult tortoise shells and carcasses be observed beyond infrequent mortality (i.e., >3% of the adult tortoise population in any one year, or if more than a few adults are found dead in any small area) seen under natural circumstances (i.e., wildlife predation or disease).

  Information to be provided to FWC upon initial notification of mortality should include the following (as available):
  - date(s) of observation;
  - number of shells or carcasses observed;

- resident or relocated tortoises, if determinable (include marked number of relocated tortoise);
- sex, size, and age class of shells/carcasses, if determinable;
- GPS location of observed shells/carcasses or approximate location;
- photographs of shells/carcasses;
- cause of mortality (if known);
- person(s) who reported/documented the mortality event(s);
- the date of when and who at FWC is notified; and
- the date of any FWC site visit.

Recommended soft release practices and mitigation steps for linear sources of high-risk mortality (e.g., road, train track, etc.) can help minimize risk of mass mortality events and should be incorporated into a recipient site's Gopher Tortoise Management Plan. Soft release recommendations are included under I. Enclosure Methods.

Mitigation steps for linear sources of high risk mortality include:

- Setting a recipient site boundary 1,000 feet back from the source (i.e., noncontiguous), or
- Installing entrenched permanent fencing the length of the permitted boundary that is adjacent to the source, and
  - Entrenched fencing should be at least 8 inches deep and 24 inches tall
  - Entrenched fencing should include fence guides on either end that direct tortoise movement back towards the permitted recipient site for as far as is practical per site conditions
  - Entrenched fencing should impede movement of all gopher tortoises, including hatchlings, across the source
  - Access roads or breaks within the entrenched fencing should have gates with fencing attached that extends to the ground and graveled substrate underneath to discourage burrowing under the gate
- Installing tortoise crossing signs at either end of the entrenched fence regardless of access points, and
- Installing soft release enclosures beyond a 500-foot buffer from the source

Permittees and named agents must fill out a Mortality Report Form when requested by the Gopher Tortoise Program to help inform next steps to determine if a contingency plan is necessary. The contingency plan will be developed in consultation with FWC and/or another technical professional after the initial notification of mortality occurs and should outline the initial steps the landowner took or will take to investigate the possible causes of the mortality, results of the investigation, a brief summary or copy of FWC recommendations, possible solutions to the problem(s), and adaptive management actions that have been or will be taken by the landowner to prevent risk of additional mortality (temporary and/or permanent actions). FWC reserves the right to undertake its own investigation into mortalities.

Additional information that may be useful for landowners on recognizing potential health problems is included in the Handbook on Gopher Tortoise; Health Evaluation Procedures for Use by Land Manager and Researchers (Wendland et al., 2009).

8. Costs estimates: Include a table (see example Table A1 below) that lists the estimated costs of one-time and ongoing long-term habitat and site management.

Table A1. Categories of long-term, ongoing land management costs (If $0.00, indicate so.)

Upland Activities	Cost/Acre	Cost/Acre/Year	Assumptions/Frequency
Burning	$	$	
Fencing (temporary or permanent)	$	$	
Fire lines	$	$	
Security	$	$	
Vegetation management	$	$	
Administrative/Trustee fee	$	$	
Invasive Plant & Animal Management	$	$	
Monitoring and reporting	$	$	
Vegetation monitoring	$	$	
Equipment (if not already included in other costs above)	$	$	
Other (add additional categories as needed)	$	$	
Total		$	

9. Financial assurance: The purpose of the financial assurance instrument is to ensure that adequate funds will be generated and provided for the long-term management of gopher tortoise habitat within the recipient site. When FWC issues a permit for activities that impact species, the permittee may be required, as part of the mitigation, to protect property and habitat. Typically, the permit will require permittees or their successors to actively manage the property in a way that will enhance or maintain the property. In so doing, the applicant must demonstrate sufficient financial assurance to ensure that funding will be available in the timing and amounts necessary to appropriately manage the property for the duration specified in the permit. The applicant must provide supporting documentation to FWC to demonstrate such financial assurances. The FWC will accept the following forms of financial assurance from a recipient site applicant:

    - trust fund
    - performance bond
    - irrevocable letter of credit
    - general appropriation or allocation approved by a public governing body (*e.g.,* Florida Legislature) for habitat management (public conservation lands only)

The above options are designed to balance the levels of financial assurance to FWC and the relative burden on the permittee. Appendix 3-1 sets forth guidelines for the financial assurance underpinning the above-listed financial mechanisms.

In addition to the standard financial assurance guidelines set forth in Appendix 3-1, when a recipient site applicant uses a Trust Fund to satisfy the financial assurance requirement, either of the options described below may be considered by FWC.

- Establish a Habitat Management Trust Fund that is fully funded when the recipient site is established. The per-acre endowment required for recipient sites would be determined on a case-by-case basis and based on the annual cost per-acre required to manage the site (e.g., a 250-acre site requiring $20/acre per year for management would require an endowment of $500/acre, or $125,000 total). In addition to the standard financial assurance guidelines set forth in Appendix 3-1, when a recipient site applicant uses a Trust Fund to satisfy the financial assurance requirement, either of the options described below may be considered by FWC. The investment objective of the Trust Fund is to ensure sufficient investment returns such that the principal endowment is not eroded.
- Establish a Habitat Management Trust Fund that is incrementally funded, such that additional funds are added to the Trust Fund as each relocated gopher tortoise is received at the recipient site. The initial endowment should at least be equal to the amount of money required to implement one complete cycle of habitat management within the permitted phase(s) of the recipient site (e.g., burn or roller chop the permitted recipient site). The applicant is responsible for adding additional funds to the Trust Fund as each relocated gopher tortoise is received at the recipient site, such that the Trust Fund is fully funded by the time all gopher tortoises that are authorized for relocation to the recipient site have been received. The per-acre endowment required for recipient sites would be determined on a case-by-case basis and based on the annual cost per-acre required to manage the site.

As discussed in Section II of Appendix 3-1, the cost estimate supporting the face value of the financial assurance mechanism is contingent on a number of factors, including:

- The dollar amount needed to fund the total habitat management;
- The number of gopher tortoises authorized for relocation to the recipient site; and
- The investment performance of the Trust Fund.

Other forms of financial assurance may be appropriate, e.g., general appropriation or allocation approval by a public governing body (e.g., Florida Legislature) for habitat management as it relates to public conservation lands. This and other forms of financial assurances are acceptable at the sole discretion of FWC, pursuant to the financial assurance guidelines set forth in Appendix 3-1.

APPENDIX 12. GOPHER TORTOISE RESTOCKING GUIDELINES FOR PUBLICLY OWNED CONSERVATION LANDS (CREATED NOVEMBER 2011)

I. Purpose

The original version of the Gopher Tortoise Permitting Guidelines approved in April 2008 did not specifically address restocking public conservation lands. The purpose of the following restocking guidelines is to help bring consistency to the restocking and augmentation of gopher tortoise *(Gopherus polyphemus)* populations on public conservation lands owned, purchased, or managed with funding provided by the State of Florida (including the Water Management Districts and local governments). A team of public conservation land managers representing the Florida Department of Environmental Protection Florida Park Service, Florida Department of Agriculture and Consumer Services Florida Forest Service, the five Water Management Districts, Florida Communities Trust, and Florida Fish and Wildlife Conservation Commission developed these guidelines, in partnership with the Gopher Tortoise Technical Assistance Group, to further the public trust of conserving, restoring, and managing Florida's public lands.

The participants who drafted these guidelines, recognize that the success of gopher tortoise conservation depends both on public and private lands participation. These guidelines do not intend to create unfair competition with privately-owned long-term protected recipient sites but serve as designated restocking sites to further the third goal of the *Gopher Tortoise Management Plan*, to restore and maintain secure viable populations of gopher tortoises throughout Florida. Long-term Protected Restocking Sites will be stocked at a lower density (≤2/acre) than Long-term Protected Recipient Sites (≤4/acre) so that tortoises can expand naturally over time. Public conservation lands established as Long-term Protected Recipient Sites under a perpetual conservation easement qualify for the full site evaluation stocking rate.

Lands under local government ownership and those owned by the State of Florida may choose to become a Long-term Protected Recipient Site for receiving relocated tortoises from development sites. These lands may meet the criteria for a long-term protected recipient site (see Permitting Guidelines) and be eligible for a final site evaluation rate of four tortoises per acre. Lands that are designated by the managing entity for restocking (i.e., where tortoises are depleted or no longer exist) must meet the criteria for restocking public conservation lands outlined in these guidelines. For purposes of the *Gopher Tortoise Management Plan* and Permitting Guidelines, restocking is defined as deliberately moving wild gopher tortoises into protected, managed, suitable habitat where resident densities are extremely low and where the restocked tortoises' future survival and long-term population viability are very likely. We refer to a designated site that meets the criteria for restocking as a recipient or restocking site and is an area of protected, managed, suitable habitat where gopher tortoise populations have been severely depleted or eliminated.

Restocking gopher tortoises to restore severely depleted populations is the preferred population management tool identified in the *Gopher Tortoise Management Plan*, just as prescribed fire is the premier habitat management tool. Restocking allows for the relocated tortoises to naturally

expand into well-managed habitat. Restocking of other imperiled species is generally undertaken with surplus individuals from protected populations. Restocking is a form of responsible relocation; however, tortoises may also be responsibly relocated to sites with resident tortoises where the carrying capacity has been increased through habitat management to provide sufficient forage for additional tortoises. The restocking strategy outlined in the *Gopher Tortoise Management Plan* is to relocate gopher tortoises to sites that can benefit from the restoration of this keystone species. The focus will be on establishing viable populations on protected, well-managed lands.

The intent of these Restocking Guidelines is to ensure that restocking of public lands is consistent with the goals and objectives for which the land was acquired and to provide a high conservation value for gopher tortoises in Florida. Furthermore, restocking efforts should be compatible with the uses described in the agency-approved land management plan (e.g., Acquisition and Restoration Council [ARC] approved management plans).

Florida Forever Act

Section 259.105, Florida Statutes, The Florida Forever Act ("Act") as amended by Chapter 2008-229, Laws of Florida, Section 13, directs that "public lands, both existing and to be acquired, identified by the lead land managing agency, in consultation with the Florida Fish and Wildlife Conservation Commission for animals or the Department of Agriculture and Consumer Services for plants, as habitat or potentially restorable habitat for imperiled species, be restored, enhanced, managed, and repopulated as habitat for such species to advance the goals and objectives of imperiled species management consistent with the purposes for which such lands are acquired without restricting other uses identified in the management plan."

Further, Section 259.105, Florida Statutes, the Act states: "As part of the state's role, all state lands that have imperiled species habitat shall include as a consideration in management plan development the restoration, enhancement, management, and repopulation of such habitats. In addition, the lead land managing agency of such state lands may use fees received from public or private entities for projects to offset adverse impacts to imperiled species or their habitat in order to restore, enhance, manage, repopulate, or acquire land and to implement land management plans developed under s. 253.034 or a land management prospectus developed and implemented under this chapter. Such fees shall be deposited into a foundation or fund created by each land management agency under 1s. 372.0215, s. 589.012, or s. 259.032(11) (d), to be used solely to restore, manage, enhance, repopulate, or acquire imperiled species habitat."

II. Criteria for Recipient Site Selection

Site Specific Restocking and Augmentation Plan

Each gopher tortoise restocking or augmentation project on public conservation lands must have a site-specific plan including the duration of the restocking activity ("restocking plan") that will be followed while conducting the project. The FWC will assess this restocking plan during the permit process to determine if restocking is appropriate for the specified site. The restocking plan shall document what caused the lack of gopher tortoises on the site; what has been done to overcome the threat that caused the lack of gopher tortoises; site selection analysis (see below); the restocking process; and post-restocking management, monitoring and reporting. These site-

specific restocking plans must be kept on file by the managing agency and should be used as a tool to communicate the details of a project to future managers of the land.

Site Selection Analysis

Specific criteria to consider for selecting potential recipient sites are in the Permitting Guidelines (*Recipient Site Permits*). Additional protocol and considerations for selecting a site for restocking are included in *Protocol for Assessing Gopher Tortoise Densities on FWC Lands Identified as Potential Restocking Sites* (Appendix 7) of the 2007 *Gopher Tortoise Management Plan*.

Management Considerations

Maintain Natural Communities

The primary means to maintain or restore robust tortoise populations on public conservation lands is to restore or maintain natural communities that provide suitable gopher tortoise habitat in optimal condition. This requires the maintenance or restoration of natural processes including frequent fire, natural hydrology, and control of invasive nonnative species (plant and animal). The best sites for restocking are those where natural communities are in the maintenance phase of management. Tortoises use a number of ruderal communities (e.g., abandoned agricultural fields, farm field borders, utility rights-of-way, roadsides, canopy gaps, and bare ground created in forests or pine plantations following thinning or harvest with ongoing or past disturbances). These ruderal communities may be suitable for restocking under certain circumstances; however, it is preferred that tortoises be relocated to appropriate natural communities.

Use Frequent Prescribed Fire

Natural tortoise populations occur in habitat that is fire- maintained. Fire return intervals vary based on natural community and site conditions and must be addressed in the site-specific restocking plan. It is generally accepted that sandhill, pine flatwoods, and dry prairie should be burned on one-year to three-year rotations while scrub, scrubby flatwoods, and coastal strand burn on longer fire return intervals. Fire at recipient sites needs to occur at appropriate intervals to maintain a diverse groundcover, and the restocking plan must address how this will be accomplished. Fire improves the condition of these natural communities by killing non fire-adapted plants, recycling nutrients, clearing out dead and diseased vegetation, promoting plant flowering and fruit production, and fostering new plant growth. The optimal benefits of fire for gopher tortoises are realized when applying prescribed burns in a manner that mimics the natural lightning fire season in early spring.

Natural Systems Management/Other Imperiled Species Considerations

Appropriate management of natural communities will generally benefit most imperiled species populations, including gopher tortoises. Natural systems management across the landscape often negates the need for single species management. In rare cases, conflicting management strategies between imperiled species can exist. For example, management of Florida scrub-jay habitat may require longer fire return intervals or less complete (mosaic) burns than would be desired to produce ideal habitat for gopher tortoises. Appropriate management activities should take into account all imperiled species that may be present.

Ruderal or Disturbed Lands Restoration

Desired Future Condition
To the extent feasible (and excepting infrastructure improvements such as limited roads, buildings, hiking and equestrian trails, camp sites, etc.), the desired future condition for the majority of ruderal and disturbed lands on public conservation lands is restoration to the natural communities that historically occurred on each site. Gopher tortoise restocking and augmentation can be an important part of community restoration since gopher tortoises are a keystone species that provide refuge and nesting habitat for a large number of other species.

Protect Tortoises During Restoration
If tortoises are restocked on ruderal lands that will be restored to their natural condition, all due care must be taken to ensure that tortoises and their burrows are protected, per the Permitting Guidelines. Plans to address this must be in the restocking plan.

Ensure Adequate Forage During Restoration
Tortoises should not be deprived of adequate forage during habitat restoration. If tortoises reside on pastures being restored to native groundcover, restoration must be done in a manner that ensures tortoises have adequate forage.

Compatibility of Uses
Restocking tortoises is not allowed within developed public use areas of management units, or within approved or proposed sites for facilities development (e.g., campgrounds, structures, parking lots).

Habitat Condition
Restocking of tortoises may be undertaken on public conservation lands if the habitat is in suitable condition to support them. During the recipient site permitting process, FWC evaluates proposed recipient sites to determine their suitability and the maximum number of tortoises that can be relocated to each site. Site suitability criteria are divided into two classes, *Acceptable* (minimum acceptable standards) and *Desirable* (highly desirable features).

Desirable conditions for tortoises in most suitable natural communities in Florida include canopy cover of no more than 40% and native herbaceous groundcover at 50% cover or greater. Acceptable conditions for tortoises in most suitable natural communities in Florida include canopy cover of no more than 60% and native herbaceous groundcover at 30% cover or greater. Refer to the Permitting Guidelines, Table 5. *Acceptable and Desirable Criteria Thresholds for Recipient Site Characteristics* for additional criteria used to evaluate recipient sites.

Gopher tortoise recipient sites should be of the same or similar habitat type as the donor site (e.g., tortoises should be relocated from a Sandhill site to a Sandhill site). In general, tortoises should not be introduced onto ruderal lands that did not originally support tortoise habitat (e.g., Hydric Hammock converted to pasture).

Recipient Site Surveys
Tortoise populations in potential recipient sites on public conservation lands must be surveyed to

determine whether or not restocking or augmentation is warranted. Public land agencies may utilize their own staff if they have the appropriate training and experience to conduct surveys and are authorized agents, or they may contract with Authorized Gopher Tortoise Agents from the private sector. The required survey protocol is outlined in Gopher Tortoise Permitting Guidelines (Appendix 4). Staff of public conservation lands may decide that surveying more than the required minimum (15% of the potential recipient site) is warranted based on the goals and objectives of the restocking effort.

Population Densities

Tortoise population densities vary considerably between various habitat types and over time. The goal on public conservation lands is to maintain tortoise populations within natural habitat-specific ranges and to allow natural population fluctuation within those ranges.

Restocking must not be used to attempt to create or maintain population levels at a constant maximum or super-abundance. For this purpose, restocking shall occur at only 50% of the site specific maximum allowable density.

Typically, only areas with suitable habitat conditions and low tortoise densities for designated habitat types shall be considered as potential restocking sites on public conservation lands. Additionally, tortoises should not be stocked into a patch of habitat that is adjacent to or contiguous with a patch that has a moderate to high tortoise density. Exceptions are allowable in special circumstances such as when a donor site is immediately adjacent to a management unit recipient site.

Stocking Rates for Restocked Areas

The section, *Types of Permits, Recipient Site Permits* of the Permitting Guidelines, include stocking rates for recipient sites. The Permitting Guidelines Table 5 establishes maximum allowable tortoise restocking rates (Site Evaluation Stocking Rate) for recipient sites having site characteristics that meet "acceptable" or "desirable" criteria. The formula for determining an allowable stocking rate for restocking public conservation lands is different from that outlined for other recipient site permits in Appendix 4. The final stocking rate = (site evaluation stocking rate x 50%) – baseline density for a maximum site density of two tortoises per acre (see Guidelines, Appendix 4). This will allow the population to expand naturally.

The FWC will base the final stocking rate assigned to a management unit on local conditions and objectives. Decisions should be guided by a strategy of establishing stocking rates well below maximum carrying capacity or site evaluation stocking rate and allowing tortoise populations to expand naturally over time. The maximum allowed site evaluation stocking rate in the Permitting Guidelines is two tortoises per acre for *Acceptable* criteria and four tortoises per acre for *Desirable* criteria. However, for restocking public conservation lands, the number of tortoises per acre shall not exceed 50% of the site evaluation stocking rate. One potential strategy for restocking public conservation lands may be to establish a relatively small recipient area within a larger block of suitable habitat that contains a low density of gopher tortoises. This strategy will allow the maximum allowable gopher tortoise density of the recipient block to be clustered in the smaller recipient area as a means to restock the entire block. Agencies may employ different strategies that are more efficient with their management purposes; however, FWC will always

consider the larger block of suitable habitat as the restocking unit to be permitted.

Stocking rates for ruderal lands (e.g., pasture) should be assigned conservatively and should not exceed the final stocking density of the current habitat or of the natural habitat to which it may be restored. Stocking rates for ruderal lands slated for restoration should consider all necessary restoration treatments and the final community composition and structure. At no time should tortoise densities exceed the capacity of the limiting factors of the habitat community.

III. Standard Procedures During Restocking and Handling Within a Restocking Site

Restocking Within a Management Unit
Relocation of tortoises within a public conservation management unit during construction of facilities or for other reasons requires a permit and must be in accordance with the Gopher Tortoise Permitting Guidelines (see *Executive Summary*, *Activities Which Require a Permit*). Permitting requirements depend on the number of burrows to be impacted. A permit for "10 or Fewer Burrows" is required if 10 or fewer burrows are to be impacted. A "Conservation Permit" is required if more than 10 gopher tortoise burrows are to be impacted (Permitting Guidelines, Section IV, *Types of Permits*). Mitigation requirements per gopher tortoise are summarized in Table 2 in the Permitting Guidelines.

"Routine" Handling
For the most part, tortoises should be left alone and not handled on public conservation lands unless these actions are associated with a permitted monitoring or development-related relocation project. This does not mean that staff should avoid taking common sense actions to save tortoises under imminent threat, such as moving a tortoise a few feet to remove it from a busy section of road within a management unit. Gopher tortoises should *not* be relocated to other sections of a management unit without an FWC permit.

Minimizing Disease Spread
Animals showing clinical signs of disease are not permitted to be relocated except to FWC-permitted recipient sites and shall not be accepted onto public conservation lands. Health screening for tortoise relocation (or rejection for relocation) onto a management unit will be guided by these Permitting Guidelines (see Appendix 6) and the managing agency's policy.

Decisions on how stringent the public land managing agencies should be in efforts to limit introduction of novel diseases or strains of diseases (such as requiring blood samples for URTD testing) should be made on a case-by-case basis by the recipient site manager, using existing knowledge of disease strains within a management unit's (or adjacent conservation land's) existing population.

Maintaining Donor Site Demographic Conditions
If warranted by the approved stocking rate, it is required that entire colonies (juvenile through adults) be relocated together into the same management unit or recipient site. When donor populations are too large and require more than one recipient site, a representative subsample that reflects the demographic condition, including sex and age ratio, of the donor site should be

selected for relocation to each recipient site. Benefits of this approach include less stress on the animals and increased site fidelity.

Relocation Distances
To minimize stress to animals and conserve local genetic stock, it is preferred that relocated tortoises be moved from a donor site that is in close proximity to the recipient site (e.g., less than 100 miles). To the degree feasible, select suitable donor sites to conserve known genetic assemblages of tortoises in the state (using the best available data).

Commensal Species
Many other species depend on gopher tortoises and their burrows. Therefore, consideration should be given to relocating commensal species from donor populations, especially if tortoises have been extirpated (or nearly so) from the recipient site. Decisions to relocate commensals along with "their" tortoises will be made on a case-by-case basis, with recommendations and justifications discussed in the associated site-specific restocking plan. Federal and state law protects various commensal species and provides species-specific guidelines that should be followed when relocating these species to public conservation lands. Commensal species must not be relocated outside their known natural historic ranges or into management units where the species in question is already abundant. Additional information can be found in Appendix 9 of the Permitting Guidelines. Indigo snakes and other federally-listed species may not be relocated without obtaining federal authorization.

IV. Considerations for Recipient and Restocking Site Management

Permitting Requirements
A permit from FWC is required to move or receive gopher tortoises for purposes of restocking. Long-term Protected Restocking Sites must meet the criteria outlined in the Gopher Tortoise Permitting Guidelines (April 2008, as amended). Sites proposed as restocking sites must apply for and obtain a Long-term Protected Restocking Site Permit. Requirements for this permit are similar to a Long-term Protected Recipient Site Permit; but may contain slight differences that are specific to publicly-owned land. Long-term Protected Restocking Sites shall be stocked at no more than 50% of the site evaluation stocking rate. Public conservation lands established as regular recipient sites and under a perpetual conservation easement qualify for the full site evaluation stocking rate. See the Permitting Guidelines for additional requirements and criteria.

Protection of Land
Public conservation lands designated as restocking sites must be designated as public conservation lands *or* public lands protected by at least a 50-year conservation easement (with FWC included as a grantee). For lands where DEP is the managing agent on behalf of the Board of Trustees of the Internal Improvement Trust Fund ("BOT") for all State-owned lands, the following is required:

1. A letter requesting the acceptance of gopher tortoises from other public lands must be received from the lead conservation land manager.
2. The land lease will be modified to include a condition recognizing a new lease would be entered into at the time of the current lease expiration, according to 18-2 Florida Administrative Code, as long as all lease terms and conditions were in compliance at the

time of expiration.

3. A letter of request from the lead conservation land manager to add the additional gopher tortoise recipient site to the current Land Management Plan through the Acquisition and Restoration Council negative response process must be received. The Land Management Plan should reference the FWC permit. This process must be complete prior to the execution of a modified lease.
4. A MOU must be executed between the FWC and the lead land management agency to provide a specified timeframe from date of permit issuance when the above requirements will be submitted to DEP and ARC as applicable.

These details, including the specific requirements for financial assurances (below), will be outlined in a Memorandum of Understanding (MOU) between the lead managing agency and FWC. The revisions to the plan and lease shall be completed within a timeframe mutually agreed upon by FWC and the applicant. Approved MOU template language will be provided by FWC.

Financial Assurances

Financial assurance requirements for public conservation lands are consistent with those requirements outlined in the Gopher Tortoise Permitting Guidelines (April 2008, as amended). The purpose of creating a financial assurance is to establish a fund that helps to ensure that the property to which the gopher tortoises are moved to for restocking are managed appropriately into the future, should other funding sources no longer be available. Interest generated from a Trust Fund, once fully established, can be used to conduct site management activities; however, the principle may not be spent. The face value of the financial assurance mechanism should be based on the present value of the future expected cost of conducting the required habitat management activities as identified in the Habitat Management Plan and based on the guidelines set forth in Appendix 3-1, as well as supporting worksheets below. Drawdowns from a financial assurance mechanism shall be limited to conduct habitat management within the properties that generated the management costs. Public agencies may establish a Trust Fund held by a 3rd party such as a Citizens Support Organization (CSO) or other non-profit organization.

Gopher Tortoise Cost Accounting

For public conservation lands, Gopher Tortoise Cost Accounting (See Gopher Tortoise Cost Accounting template below) must be used and submitted as part of the restocking plan. This accounting method will be used to determine any fee amount the land managing agency may charge to receive tortoises from donor site projects.

Mitigation Contributions

Mitigation amounts commensurate with those outlined in Table 2 of the Gopher Tortoise Permitting Guidelines.

Site Evaluation Stocking Rate

Long-term Protected Restocking Sites shall be stocked at no more than 50% of the site evaluation stocking rate. Public conservation lands established as regular Long-term Protected Recipient Sites and under a perpetual conservation easement qualify for the full site evaluation stocking rate.

Guidance on Ground Disturbing Activities

Permits are not required for bona fide agricultural, silvicultural, and wildlife management activities. For more information about these and other activities that do not require a permit, see Section II., Executive Summary, of the Gopher Tortoise Permitting Guidelines. However, the goal on public conservation lands should be that negative impacts to tortoises and their burrows are minimized during restoration and management. If management activities are found to create negative impacts to tortoises or burrows, the activity should be stopped and reassessed to determine how to reduce or eliminate the impacts.

Protect Tortoises When Using Heavy Equipment

When mechanically treating vegetation or harvesting timber with heavy equipment in occupied tortoise habitat, the tortoises and their burrows must be protected to the extent feasible (e.g., by flagging and avoiding burrow entrances). Ideally, heavy equipment use should be scheduled during cooler months (November through March) to minimize direct impacts to tortoises that are active above ground, but these activities may be performed in other months as necessary.

Avoid Using Heavy Equipment in Tortoise Concentrations

Gopher tortoises are not randomly distributed on the landscape. Many gopher tortoise populations tend to have clumps of higher densities. Avoid or minimize roller-chopping or use of heavy equipment in areas with high burrow concentrations. An exception would be when no other reasonable alternative is available to achieve vegetation management goals (e.g., reduction of unnaturally dominant saw palmetto).

Protect Tortoises When Mowing

In general, when mowing vegetation in natural areas occupied by tortoises, blades or cutters should be set no lower than 18 inches above the ground to avoid injury to tortoises. Mowing of turf grass on road shoulders in tortoise habitat should be kept to a minimum width, and close attention is required to avoid injuring tortoises or damaging their burrows.

Monitoring and Reporting

Recipient site managers are required to submit a summary to FWC of habitat management conducted, and the results of habitat monitoring and tortoise population surveys (see Appendix 7). Monitoring techniques will be outlined in the site-specific restocking plan and should follow guidelines and recommendations in the Gopher Tortoise Permitting Guidelines and the *Gopher Tortoise Management Plan*.

Gopher Tortoise Cost Accounting

WORKSHEET 1. Categories of long-term, ongoing land management costs

Upland Activities	Cost/Acre	Cost/Acre/Year	Assumptions/Frequency
Burning	$	$	
Fencing	$	$	
Firelines	$	$	
Security	$	$	
Vegetation management	$	$	
Roads	$	$	
Administrative	$	$	
Invasive Plant & Animal Management	$	$	
Monitoring and reporting	$	$	
Vegetation monitoring	$	$	
Equipment (If not already included in other costs above)	$	$	
Payment in Lieu of Taxes ("PILT" as applicable)	$	$	
Other (as specified by the land managing agency)	$	$	
Total		$	

Annual Cost Figuring a % split uplands to wetlands $
Endowment required figuring a 4% return on investment $

WORKSHEET 2. Long-term *and* one-time costs compiled (example)

Acres		Total
Land management endowment/acre (*long-term/ongoing costs carried over from Worksheet 1*)	$	$
Easement value/acre	$	$
Temporary enclosures	$	$
Other fencing	$	$
Authorized agent permit	$	$
Recipient/restocking site permit (incl. permit app prep)	$	$
Mark, transport, release or GTs (either by consultant or agency)	$	$
Loss of opportunity (silvicultural, recreation, etc.)	$	$
Administrative	$	$
Per acre total cost	$	$
Total	$	$
Land managing agency fee per tortoise considering 2 gopher tortoises per acre	$	$

BUSINESS SERVICES DEPARTMENT
Purchasing and Contracts Division
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
E-mail: purchasing@volusia.org • www.volusia.org

March 25, 2026

Subject: Letter of Authorization/Letter of Proxy

Deep Creek Preserve / PIDs: 723400000030; 722701030070; 722701030071; 722601030070; 723501020050; 722800000060; 723300000010; 820201000010

To Whom it May Concern:

I, Danielle Dangleman, hereby designate and authorize Daniel Young, to act on behalf of the Authorized Lead Management Agency, as the authorized agent and representative in the processing and supplementation of information in support of the potential gopher tortoise recipient site permit associated with the above-referenced site. Authorization is also hereby granted to access the subject site. Daniel Young is authorized to work with the Florida Fish & Wildlife Conservation Commission (FWC) on behalf of the Authorized Lead Management Agency during this process.

Authorized Lead Management Agency and
FWC Permittee: Danielle Dangleman

Danielle Dangleman

Date
4/6/2026

Deep Creek Preserve Pre-application Map

Volusia County
+/- 6127.6 Total acres

Created by: Mac Barrett
FWC-HSC
04/17/2026

Legend

- Unit 2 Points To Photograph
- Unit 1 Points To Photograph
- Not Contiguous
- Deep Creek Preserve Boundary
- Unit 1 Boundary
- Unit 2 Boundary
- Excluded Landcover 305.49 ac
- DWT = 12in

Landcover (CLC)

- Coniferous Plantations 1040.25 ac
- Fallow Cropland 19.7 ac
- Improved Pasture 316.51 ac; 16.94%
- Mesic Flatwoods 302.62 ac
- Mixed Hardwood-Coniferous 11.66 ac
- Rural Open 108.22 ac
- Scrubby Flatwoods 13.24 ac
- Shrub and Brushland 43.1 ac
- Successional Hardwood Forest 2.56 ac
- Unimproved/Woodland Pasture 4.68 ac
- Xeric Hammock 6.25 ac

Potentially Permittable Habitat (Total)

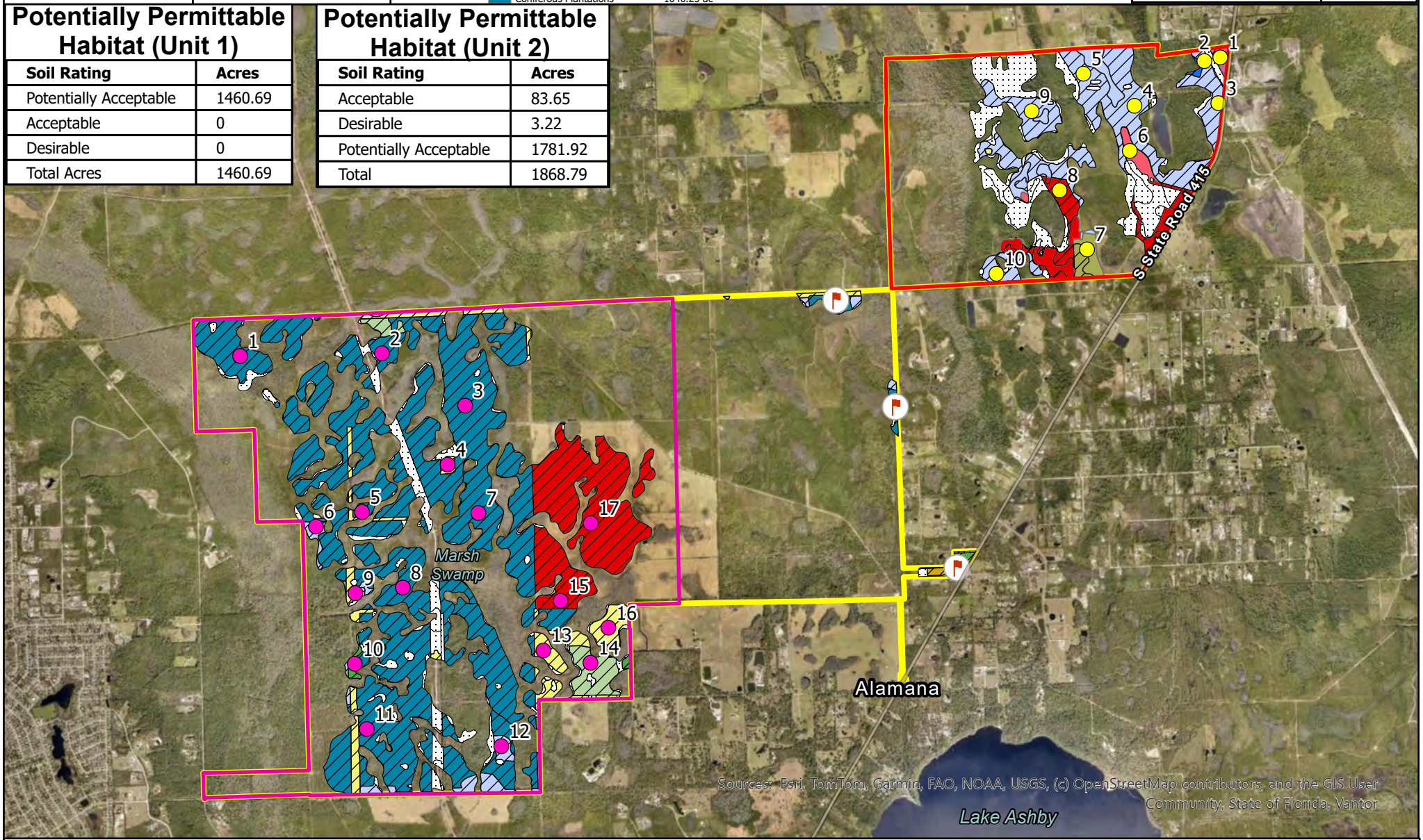
Soil Rating	Acres
Acceptable	83.65
Desirable	3.22
Potentially Acceptable	1781.92
Total	1868.79

Potentially Permittable Habitat (Unit 1)

Soil Rating	Acres
Potentially Acceptable	1460.69
Acceptable	0
Desirable	0
Total Acres	1460.69

Potentially Permittable Habitat (Unit 2)

Soil Rating	Acres
Acceptable	83.65
Desirable	3.22
Potentially Acceptable	1781.92
Total	1868.79



0 0.5 1 2 Miles

The boundaries depicted on this map document are approximate. This map document is intended for use only at the published scale. These data are intended for informational use only and should not be considered authoritative for navigation, engineering, legal, or other site-specific purpose. FWC does not assume any legal liability or responsibility arising from the use of this product in a manner not intended by the author.

APPENDIX H

Date: 08/22/2013	**AGENDA ITEM**		**Item:** 20
[] Ordinance	[] Resolution	[] Budget Resolution	[X] Other

Department: Growth And Resource Management
Division: Environmental Management

Subject: Leases for cattle grazing on Deep Creek and Beck Ranch properties with Deep Creek Cattle, LLC, 13-P-23JD and 13-P-24JD.

Kelli McGee Director Growth and Resource Management	Jeaniene Jennings Director Purchasing Approved in Accordance with Purchasing Policies and Procedures	Legal Charles Hargrove County Attorney	County Manager's Office Charlene Weaver, CPA, CFO Deputy County Manager
Ginger Adair Director Environmental Services	Phyllis Schwarz Proxy for Tammy Bong Director Management and Budget Approved as to Budget Requirements	Approved as to Form and Legality	

Council Action: Approved As Recommended

Modification:

Fund Number(s)::	**Description:**	**Amount:**
161 Volusia Forever	Volusia Forever Fund Revenues- Land Rentals 161-000-0000-6230	$6,900.00
001 General Fund	General Fund Revenues - Parks - Land Rentals 001-680-0100-6230	$3,240.00

Total Item Budget: $10,140.00

Staff Contact(s):	**Phone:**	**Ext.**
Kelli McGee	386 822 5013	12000
Ginger Adair	386 736 5927	12059

Summary/Highlights:
In 1997, the county acquired the 250 acre Beck Ranch property from the St. Johns Water Management District. Shortly thereafter, the county solicited bids for a cattle grazing lease. Deep Creek Cattle, LLC, obtained the cattle lease for grazing which it has continued since that time.

In 2010, the county purchased approximately 4700 acres within the Volusia Forever Conservation Corridor, which currently comprise the southern portion of Deep Creek Preserve. The prior owners of the property entered into a 5 year cattle lease in 2006 on approximately 3200 acres of this property. Approximately 500 acres has been converted to pasture. The remaining acreage remains in a semi-natural condition. This existing cattle lease was assumed by the county at the time of purchase.

Staff recommends that the best use for both properties for the next 5 to 10 years is to continue cattle grazing operations. Staff therfore has sought grazing proposals for both properties; and updated the lease agreements to ensure that good cattle husbandry and cattle grazing operations are maintained at all times. The county received one proposal in response to the solicitation, which was from the current lessee, Deep Creek Cattle, LLC. An evaluation committee comprised of Tim Baylie, parks, recreation and culture director; Danny Clifton, sheriff's range officer; David Griffis, agricultural center director; Randall Sleister, environmental management project director; and Mike Ulrich, water resources and utilities director, reviewed the proposal.

The committee recommends award to Deep Creek Cattle, LLC of Osteen, Florida, for an initial five year term with a five year renewal and annual renewals thereafter, exercisable at the option of the county. Annual compensation to the county will vary based on a per animal unit rate as documented in a site inspection. Revenue from the Deep Creek Preserve property will be deposited into the Volusia Forever Fund, and revenue from the Beck Ranch property will be deposited into the general fund. The lease agreements are attached without exhibits. The exhibits are available for review in the purchasing and contracts division.

Recommended Motion: Approval.

GRAZING LEASE BETWEEN
THE COUNTY OF VOLUSIA
AND
DEEP CREEK CATTLE, LLC
DEEP CREEK PRESERVE PROPERTY
964 S. SR 415, OSTEEN, FLORIDA

"ORIGINAL - DO NOT REMOVE FROM PROJECT FILE"

THIS GRAZING LEASE is made as of the date of the last signature on this Lease by and between **COUNTY OF VOLUSIA**, herein called "Landlord," and Deep Creek Cattle, LLC, herein called "Tenant".

W I T N E S S E T H:

SECTION 1. PREMISES. Landlord, in consideration of the performance by Tenant of those duties and obligations imposed upon Tenant under this Lease and Tenant's compliance with the terms and conditions of this Lease, has leased and let, and hereby leases and lets, to Tenant, for an initial term of five (5) year with one, five (5) year renewal and annual renewals thereafter exercisable at the option of the County and tenant. Unless sooner terminated as provided for in this Lease, beginning on , September 01, 2013, for the purposes and subject to the provisions set forth in this Lease, all that certain real property comprised of approximately 3200 acres, more or less, of land (the "Demised Premises"), together with all appurtenances thereto and such improvements owned by Landlord, if any, as presently exist thereon situated in the County of Volusia, Florida, which Demised Premises is more particularly described in Exhibit A, attached hereto and made a part hereof for all purposes, subject to all matters of record or visible on the ground affecting the Demised Premises.

SECTION 2. RENT. The Tenant shall pay at the time and place herein provided, as follows:

A. ***Annual Payments***. Tenant agrees to pay to Landlord as rental for the use and occupancy of the Demised Premises the sum of $6900.00, payable annually based on the optimal stock rates proposed. Tenant agrees to pay all compensation to the County at the time and in the manner provided in this Lease in lawful money of the United States of America, without demand, deduction or set off.

B. ***Place For Payments And Statements***. All payments shall be made by the Tenant to the Landlord hereunder and shall be made at the office of the Landlord located at 123 West Indiana Avenue, Room 201, DeLand, Florida, made payable to the Division of Environmental Management

SECTION 3. PURPOSES; RESERVED RIGHTS.

A. ***Permitted Purposes***. This Lease is only for the purposes of grazing, pasturing, feeding and raising cattle on the Demised Premises. Tenant shall, during the term of this Lease

and raising cattle on the Demised Premises. Tenant shall, during the term of this Lease provide services as described in Exhibit B, Scope of Services and Exhibit C, the Florida Department of Agriculture and Consumer Services, Office of Agricultural and Water Policy, Water Quality Best Management Practices for Florida Cow/Calf Operations.

B. ***Reservations***. Landlord reserves the full use and enjoyment, including the right of ingress and egress, to all of the Demised Premises for any and all purposes other than for the purposes stated above, including but not limited to:

(i) all rights of every kind and character (directly, through agents, lessees or otherwise) reasonably incident to any oil, gas and mineral estate in the Demised Premises, including, but not limited to, all rights to such use of the surface estate in the Demised Premises as may be reasonably necessary or appropriate for purposes of exploring (specifically including but not limited to every character of geophysical exploration), mining, drilling, and developing and operating the Demised Premises for oil, gas and other minerals, and producing, storing, treating, transporting and marketing them;

(ii) the right to grant other surface leases or contracts for purposes other than those stated above, including but not limited to exploitation of sand, gravel, shell deposits, and timber;

(iii) the right enter—and the right to grant prospective purchasers of the Demised Premises the right to enter—the Demised Premises at all reasonable times to take groundwater and core samples, install monitoring wells, make soil tests, test borings, geophysical borings, topographical and fault studies and all other surveys, studies, tests and analyses that Landlord or any such prospective purchaser may deem necessary; and

(iv) the right to grant rights-of-way and permits for canals roads, pipelines, telephone and telegraph lines, and electric transmission lines.

C. ***Prohibited Uses***. All uses by Tenant of the Demised Premises not expressly permitted by this Lease are prohibited, including, but not limited to:

(i) operation of feedlot;

(ii) committing, or suffering to be committed, any nuisance or other act that might disturb the quiet enjoyment of any person or business located within a reasonable distance of the Demised Premises;

(iii) harvesting timber;

(iv) mining or removing any topsoil, gravel, shell deposits or other substances from the soil;

(v) conducting, or permitting the conduct of, any dangerous activities on the Demised Premises, including, but not limited to, the setting of any open fires or the use of any explosive devices;

(vi) bringing any firearm on the Demised Premises; or

(vii) fishing or hunting.

D. ***Environmental and Other Laws***. Tenant, at his sole expense, will comply, and will cause Tenant's Agents (hereinafter defined) to comply, with any and all applicable laws, statutes, ordinances, permits, orders, decrees, guidelines, rules and regulations in any way applicable to Tenant, Tenant's property or the Demised Premises ("*Legal Requirements*"), including any Legal Requirement pertaining to health or the environment ("*Applicable Environmental Laws*"), including, without limitation, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the Resource Conservation and Recovery Act, Toxic Substances Control Act (TSCA) and Title III, and the regulations promulgated pursuant thereto, and in all other Environmental Regulations applicable to Tenant, any of the Leased Premises or the business operations conducted by Tenant thereon, as each of the foregoing may be amended from time to time. Tenant will not keep, store, generate or dispose of or permit to be kept, stored, generated or disposed of, any substance in or conduct, or permit to be conducted, any operation from the Demised Premises which might emit offensive or hazardous odors or conditions onto or into the Demised Premises or the property located outside the Demised Premises, including, without limitation, any "hazardous materials," "hazardous substances," or "solid waste" (as such terms are defined under the Applicable Environmental Laws) or otherwise take any actions which could impose liability on Landlord or any of Landlord's Related Parties (defined below) under any Applicable Environmental Law.

SECTION 4. CONDITIONS; MAINTENANCE.

A. ***Condition***. Tenant has inspected and examined the Demised Premises, is fully familiar with the present condition of the Demised Premises, has determined that the Demised Premises is fully suitable to Tenant for Tenant's intended uses, and accepts the Demised Premises in its present condition, "AS IS," "WHERE IS," and "WITH ALL FAULTS" without recourse to Landlord.

B. ***Repairs and Improvements—Landlord***. Landlord shall not be required to make any repairs or improvements of any kind or nature whatsoever on or to the Demised Premises during the term of this Lease.

C. ***Repairs and Improvements—Tenant***. Tenant shall, promptly after this Lease becomes effective and with reasonable diligence thereafter, repair all fences on the Demised Premises which are subject to the terms of this Lease. Tenant may construct and/or install, after first obtaining written consent of Landlord, such like or other improvements on the Demised Premises as are reasonably required to effectively use the Demised Premises for the purposes permitted by this Lease. Furthermore, except for plowing the land or digging post holes, Tenant shall never materially disturb the soil of the Land (for example, by constructing a ditch, levee, pond, terrace or elevated road, or pouring any concrete, or installing any culverts) without first obtaining the written consent of Landlord.

D. ***Tenant's General Obligations to Maintain the Demised Premises***. Tenant shall at all times during the term of this Lease maintain the Demised Premises in a condition equal

to the condition in which a reasonably prudent cattle operator interested in the long-term profitability of his operations and value of his property would maintain his own lands under the same or similar circumstances. For example, Tenant shall maintain all existing fences, and fences required to be built by Tenant, in good condition, normal wear and tear excepted, and repair and replace all broken or deteriorated wires, posts, stays, gates and cattle guards, so that cattle shall be prevented from straying off the Demised Premises or between separately fenced pastures. Tenant shall also mow and clear all existing pastures as reasonably necessary to maintain them in a condition capable of being further maintained by normal tractor-powered mowers and brush hogs. As a further example, Tenant shall also avoid depleting the fertility of the soil, overgrazing the pastures, or causing the existing native and improved dryland grasses to be killed or replaced by brush, weeds, vines or other less desirable vegetation. Tenant shall abide to the conditions set forth in Exhibit B, Scope of Services.

SECTION 5. SERVICES OF NOTICES. All notice required under this Agreement shall be in writing and shall be sent by certified United States Mail or national parcel service, postage prepaid, return receipt requested, or by hand-delivery with a written receipt of delivery, addressed to the party for whom it is intended at the place last specified. The place for giving notice shall remain the same as set forth herein until changed in writing in the manner provided in this section. For the present, the parties designate the following:

In the case of Tenant:	**with a copies of legal notices to:**
County of Volusia Attn: County Attorney Address: 123 W. Indiana Ave., Rm. 301 DeLand, Florida 32720 Phone: 386-736-5950	**County of Volusia** Attn: County Attorney Address: 123 W. Indiana Ave., Rm. 301 DeLand, Florida 32720 Phone: 386-736-5950
In the case of Landlord:	**with a copy of legal notices to:**
Attn: Mr. James LeFils Address: 1750 S. SR 415 New Smyrna Beach, Florida 32168 Phone: 386-804-4030	Attn: Mr. James LeFils Address: 1750 S. SR 415 New Smyrna Beach, Florida 32168 Phone: 386-804-4030

SECTION 6. ALTERATIONS AND COVENANT AGAINST LIENS. Tenant shall submit to Landlord any request for alterations, changes or improvements to the Demised Premises, in writing, with plans and specifications therefore. Landlord, at its reasonable discretion, shall have the right to approve or disapprove such alterations, changes or improvements. If permitted by the Landlord, all improvements shall be done at the sole cost of the Tenant, and no liens of any kind shall be permitted ever to attach to Landlord's property. Tenant shall have no power or authority to create any lien or permit any lien to be attached against the property of Landlord; all parties contracting with Tenant are hereby charged with notice that they must look solely to the Tenant to secure payment for work done or materials furnished. Landlord shall have the right to record a Memorandum of Lease which prohibits the attachment of any kind of lien to Landlord's property on account of activities by Tenant. If a lien is nevertheless filed against the Landlord's property based

on alterations, improvements or other activities by Tenant, Tenant shall remove such a lien at Tenant's sole expense within five (5) business days after demand for such removal from Landlord.

Any additions, alterations, improvements, repairs or replacements, and any fixtures attached to the premises, shall become and be a part of the Demised Premises and shall belong to the Landlord as Landlord's property

SECTION 7. UTILITIES. The Tenant shall pay promptly all charges for meters installed and all charges for water, sewage disposal, electricity, gas, garbage collection and other utilities supplying the Demised Premises. In the event the Tenant should fail to make any of the utility payments when due, the Landlord may require the amounts due to be paid by Tenant as additional Rent on the date the next Rent payment is due or thereafter.

SECTION 8. INSURANCE.

Insurance

A. Required Types of Insurance
The Tenant shall purchase and maintain at its own expense, during the term of this Contract the following types and amounts of insurance with limits no less than those shown below, in the form and from companies satisfactory to the County:

SCHEDULE	LIMITS
Workers' Compensation	Florida Statutory Coverage
Commercial General Liability	$2,000,000. General Aggregate
Premises-Operations	$2,000,000. Products/CompOps Aggregate
~~Products-Completed Operation~~	~~$1,000,000. Personal/Advertising Injury~~
~~Contractual Liability~~	~~$1,000,000. Each Occurrence~~

(The County of Volusia shall be named as an additional insured under all of the above Commercial General Liability coverage.)

Auto Liability ..... $500,000. CSL
All autos-owned, hired or no-owned
(Symbol 1 Coverage)

1. Minimum underlying coverages shall include Commercial General Liability, Automobile Liability and Workers' Compensation/Employer's Liability.

2. Umbrella or Excess Liability policies may be used to obtain the total limits of liability required to meet the required limits of coverage stated above. Evidence of such coverage should clearly demonstrate the underlying coverages/policies that are included.

3. Workers' Compensation Insurance. Per Section 3.23, A, Workers' Compensation insurance is required for all employees of the Tenant, employed or hired to perform or provide Work or Services under this Contract or that is in any way connected with Work or Services performed under this Contract, without exclusion for any class of employee, and shall comply fully with the Florida Workers' Compensation Law (Chapter 440, Florida Statutes, Workers' Compensation Insurance) and include Employers' Liability Insurance with limits no less than the statutory amount shown above per occurrence.

   a. Tenant and its Subcontractors, or any associated or subsidiary company doing Work on County property or under this Contract must be named in the Workers' Compensation coverage or provide proof of their own Workers' Compensation coverage, without exclusion of any class of employee, and with a minimum of the statutory limits per occurrence for Employer's liability coverage. Further, if the Tenant's Subcontractors fail to obtain Workers' Compensation insurance and a claim is made against the County by the uncovered employee of said Subcontractor of the Tenant, the Tenant shall indemnify, defend, and hold harmless the County from all claims for all costs including attorney's fees and costs arising under said employee(s) Workers' Compensation insurance claim(s).

4. Commercial General Liability Insurance. Per Section 3.23, A, Commercial General Liability insurance, with a limit of not less than the amounts shown above with an aggregate limit and per occurrence basis, including coverage for the Tenant's operations, independent Contractors, Subcontractors and "broad form" property damage coverages protecting itself, its employees, agents, Contractors or subsidiaries, and their employees or agents for claims for damages caused by bodily injury, property damage, or personal or advertising injury, products liability/completed operations including what is commonly known as groups A, B, and C (libel, false arrest, slander). Such policies shall include coverage for claims by any person as a result of actions directly or indirectly related to the employment of such person or entity by the Tenant or by any of its Subcontractors arising from Work or Services performed under this Contract. Public liability coverage shall include either blanket contractual insurance or a designated contract contractual liability coverage endorsement, indicating expressly the Tenant's contract to indemnify and hold harmless the County as provided in this Contract. The commercial general liability policy shall be endorsed to include the County as an additional insured. The commercial general liability policy shall provide exclusive coverage for the location or project site where the Work or Services are to be performed under this Contract. In the alternative, the commercial general liability policy shall be endorsed to provide the designated aggregate per location endorsement or equivalent on a form approved or requested by the County Risk Manager.

5. Motor Vehicle Liability. The Tenant shall secure and maintain during the term of this Contract, motor vehicle coverage in the split limit amounts of no less than the amounts shown above per person, per occurrence for bodily injury and for property damage or a combined single limit of the amount shown above with "Any Auto", Coverage Symbol 1, providing coverage for all autos operated regardless of ownership, and protecting itself, its employees, agents or lessees, or subsidiaries and their employees or agents against claims arising from the ownership, maintenance, or use of a motor vehicle.

6. Primary and Excess Coverage. Any insurance required may be provided by primary and excess insurance policies.

B. Insurance Requirements

1. General Insurance Requirements:

a. All insurance policies shall be issued by insurers licensed and/or duly authorized under Florida Law to do business in the State of Florida and all insuring companies are required to have a minimum rating of A- in the "Best Key Rating Guide" published by A.M. Best & Company, Inc.

b. Approval by County of any policy of insurance shall not relieve Tenant from its responsibility to maintain the insurance coverage required herein for the performance of Work or Services by the Tenant or its Subcontractors for the entire term of this Contract and for such longer periods of time as may be required under other clauses of this Contract.

c. Waiver of Subrogation. The Tenant hereby waives all rights against the County and its Subcontractors to the extent of the risk coverage by any insurance policy required hereunder for damages by reason of any claim, demand, suit, or settlement (including workers' compensation) for any claim for injuries or illness of anyone, or perils arising out of this Contract. The Tenant shall require similar waivers from all its Subcontractors. This provision applies to all policies of insurance required under this Contract (including Workers' Compensation, and general liability).

d. County Not Liable for Paying Deductibles. For all insurance required by Tenant, the County shall not be responsible or liable for paying deductibles for any claim arising out of or related to the Tenant's business or any Subcontractor performing Work or Services on behalf of the Tenant or for the Tenant's benefit under this Contract.

e. Cancellation Notices. During the term of this Contract, Tenant shall be responsible for promptly advising and providing County of Volusia's Risk Management Division and the Purchasing and Contracts Division

with copies of notices of cancellation or any other changes in the terms and conditions of the original insurance policies approved by the County under this Contract within two (2) business days of receipt of such notice or change.

f. For any on-site Work performed by or on behalf of Tenant on County property, the County shall be named as an additional insured or additional named insured subject to review and determination by County's Risk Manager on all policies required under this Contract except professional liability and workers compensation.

g. Deductibles. Tenants that maintain and administer a self-insured retention or a large deductible program exceeding the insurance requirements listed in this solicitation using a formal program to fund either program may submit an exception in accordance with Section 3.8 Questions/Exceptions re: RFP #13-P-23JD to be considered for this solicitation.

The request must include a summary of the program's design, funding method, and the program's supporting financial information. If additional information is necessary, the County will request more specific information, which must be provided by the Tenant. The County's Risk Manager will review the information submitted and determine whether the program is acceptable to the County.

Tenant with no formal risk management program in place to manage and fund deductibles or self-insured retentions may not be considered. Subject to County approval, Tenant may obtain a letter of credit in the amount equivalent to the deductible, which shall remain in effect during the term of the Agreement at no additional cost to the County.

C. Proof of Insurance

1. The Tenant shall be required to furnish evidence of all required insurance in the form of certificates of insurance which shall clearly outline all hazards covered as itemized herein, the amounts of insurance applicable to each hazard, and the expiration dates.

2. The Tenant shall furnish proof of insurance acceptable to the County prior to or at the time of execution of this Contract and the Tenant shall not commence Work or provide any Service until the Tenant has obtained all the insurance required under this Contract and such insurance has been filed with and approved by the County. Upon request from the County, the Tenant shall furnish copies of the following types of insurance policies and any changes or amendments thereto, immediately, to the County and County's Risk Management and Purchasing and Contracts Divisions prior to the commencement of any contractual obligations. This Contract may be terminated by the County, without penalty or expense to County if at

any time during the term of this Contract proof of any insurance required hereunder is not provided to the County.

3. All certificates of insurance shall clearly indicate that the Tenant has obtained insurance of the type, amount and classification required by this Article. No Work or Services by Tenant or its Subcontractors shall be commenced until County has approved these policies or certificates of insurance. Further, the Tenant agrees that the County shall make no payments pursuant to the terms of this Contract until all required proof or evidence of insurance has been provided to the County. This Tenant may be terminated by the County, without penalty or expense, if proof of any insurance required hereunder is not provided to the County.

4. The Tenant shall file replacement certificates with the County at the time of expiration or termination of the required insurance occurring during the term of this Contract. In the event such insurance lapses, the County expressly reserves the right to renew the insurance policies at the Tenant's expense or terminate this Contract but County has no obligation to renew any policies.

D. The provisions of this Article shall survive the cancellation or termination of this Contract.

SECTION 9. ASSIGNMENT. The Tenant shall not assign this Lease or any estate or interest herein, whether by sublease, underlease, license, concession or otherwise which would permit the occupancy or possession of the Demised Premises or any part thereof by anyone other than tenant. In addition, the Landlord, shall not assign the property without prior notice to the Tenant.

SECTION 10. TENANT'S ADDITIONAL COVENANTS. Tenant shall comply with all reasonable rules and regulations which may be imposed by Landlord concerning the care and use of the Demised Premises and the common areas including those attached to this Lease. Tenant shall comply with all laws, rules, regulations and ordinances of all governmental authorities having jurisdiction over the Demised Premises. Tenant shall not perform or allow to be performed any acts or practices, or sell any goods or merchandise or render any services in violation of any law or which may be a nuisance or menace to the public or other tenants, or commit waste or permit waste to be committed on the premises, or engage in or permit any illegal activities to take place on the premises.

Tenant shall not allow any loud noises to emanate from its premises which are objectionable to Landlord or other tenants.

SECTION 11. INDEMNITY AND LIABILITY.

Limitation of Liability and Indemnification of County

A. The Tenant shall indemnify, defend, and hold harmless the County and its agents, officers, and employees, from and against all claims, damages, losses, and expenses, including, but not limited to, attorney's fees arising out of or resulting from the performance of this Contract provided that the claim, damage, loss, and expense is caused in whole or in part by any negligent act or omission of the Tenant, the County, any Tenant, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable hereunder, except the Tenant will not be required to indemnify and hold the County harmless if such claim, damage, loss, and expense is the result of the sole negligence of the County or of anyone directly or indirectly employed by the County or anyone for whose acts the County may be liable.

B. In all claims against the County, or any of its public officials (elected and appointed), successors and successors in interest, officers, agents, attorneys, and employees by any employee of Tenant, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, no indemnification obligation shall be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Tenant, or any Subcontractor or Sub-subcontractor under Florida's Workers' Compensation acts, disability benefit acts, or other employee benefit acts.

C. Tenant's indemnification obligations under this Section, Limitation of Liability and Indemnification of County, are subject to County or the indemnified party giving Tenant (a) prompt written notice of any indemnifiable claim; (b) reasonable assistance in Tenant's defense of the indemnifiable claim; and (c) sole authority to defend or settle the indemnifiable claim, provided that County or the indemnified party shall have the right to approve any settlement of an indemnifiable claim to the extent such settlement imposes any obligations on County or the indemnified party. County, or the indemnified party, may retain its own legal counsel at its own expense to monitor such litigation.

D. Sovereign Immunity. County expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes (as amended). Notwithstanding anything set forth in any Article of this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity of limits of liability of County beyond any statutory limited waiver of immunity of limits of liability which may have been adopted by the Florida Legislature or may be adopted by the Florida Legislature and the cap on the amount and liability of County for damages regardless of the number or nature of claims in tort, equity, or contract shall not exceed the dollar amount set by the legislature for tort. Nothing in this Agreement shall inure to the benefit on any third party for the purpose of allowing any claim against County which would otherwise be barred under the Doctrine of Sovereign Immunity or operation of law.

E. In no event shall either party be liable to the other for any incidental, indirect, special, punitive, or consequential damages even if the party knew or should have known about the possibility of such damages for any provision of the Agreement.

C. No Third Party Beneficiaries.

Nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim against Landlord, which would otherwise be barred under the Doctrine of Sovereign Immunity or by operation of law.

SECTION 12. WAIVER. One or more waivers of any covenant or condition by either party shall not be construed as a waiver of a subsequent breach of the same covenant or condition, and a consent or approval to or of any act requiring consent or approval shall not be deemed to waive or render unnecessary such consent to or approval of any subsequent similar act.

SECTION 13. QUIET ENJOYMENT. The Tenant, performing all the other covenants and conditions aforesaid on Tenant's part to be observed and performed, shall and may peaceably and quietly have, hold and enjoy the premises hereby demised for the term aforesaid, free from disturbance by the Landlord, or by anyone claiming by, through or under the Landlord.

SECTION 14. SURRENDER. Tenant shall yield and deliver possession of the Leased Premises to Landlord at the termination of this Agreement, by expiration of time or otherwise, or the expiration of any renewal or extension hereof, in good condition, excepting only reasonable wear and tear, fire or other casualty, and Tenant shall have the right at any time during said term, or any renewal or extension hereof, and for thirty (30) days after the termination thereof, to remove its property therefrom, excluding any buildings or fixtures.

SECTION 15. MISCELLANEOUS. This Lease and the Exhibits, Rules, Regulations Rider and/or Addenda, if any, attached hereto, set forth the entire agreement between the parties. Any prior conversations or writings have been merged herein and are extinguished. No subsequent amendment to this Lease shall be binding upon Landlord or Tenant unless reduced to writing and signed by all parties. Submission of this Lease for examination does not constitute an option for the Demised Premises and the Lease shall become effective as a Lease only upon execution by the parties and delivery thereof by Landlord to Tenant. If any provision contained in a rider or addenda is inconsistent with the printed provision of the Lease, the provision contained in said rider or addenda shall supersede said printed provision in the Lease.

The captions, numbers and index appearing herein are inserted only as a matter of convenience and are not intended to define, limit, construe or describe the scope or intent of any paragraph, nor in any way affect this Lease.

This Commercial Lease Agreement shall be construed in accordance with the laws of the State of Florida. All litigation arising out of this Lease or in connection therewith shall be commenced in the County where the Demised Premises is located.

THE LANDLORD AND TENANT HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE THE RIGHT EITHER OF THEM MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY

LITIGATION BASED UPON THIS LEASE OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS LEASE AND ANY AGREEMENT CONTEMPLATED TO BE EXECUTED IN CONJUNCTION HEREWITH, OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. THIS PROVISION IS A MATERIAL INDUCEMENT FOR THE LANDLORD ENTERING INTO A LEASE WITH TENANT.

This Commercial Lease Agreement shall be binding upon and the benefits hereunder shall inure to the heirs, personal representatives, estates, successors and assigns of the parties hereto.
Tenant shall not record this Lease or any of its Exhibits or any Memorandum relating thereto, without the prior written consent of the Landlord.

SECTION 16. COMPLIANCE WITH LAW. Tenant, at Tenant's expense, shall comply with all laws, rules, orders, ordinances, dictions, regulations and requirements of federal, state, county and municipal authorities pertaining to Tenant's use of the Premises and with the recorded covenants, conditions and restrictions, regardless of when they become effective, including, without limitation, all applicable federal, state, and local laws, regulations or ordinances pertaining to air and water quality, waste disposal, air emissions and other environmental matters, all zoning and other land use matters, and utility availability, and with any direction of any public officer or officers, pursuant to law, which shall impose any duty upon Landlord or Tenant with respect to the use or occupation of the Premises

SECTION 17. Termination

A. The resulting Agreement may be terminated by (a) either party upon the material breach by the other party if such breach is not cured within thirty (30) days written notice from the non-breaching party, or (b) by County upon at least 30 (thirty) calendar days, prior written notice to tenant whenever the County shall determine that such termination is in the best interest of the County.

B. County may terminate the resulting Agreement for convenience or non-appropriation upon at least thirty (30) calendar days' prior written notice to Tenant.

C. The Respondent may cancel the resulting contract with one-hundred eighty (180) days written notice to the Director of Purchasing and Contracts. Failure to provide proper notice to the County may result in the Bidder being barred from future business with the County.

D. After Tenant's receipt of a notice of termination pursuant to Paragraph A above (or to the extent Tenant has not cured a material breach within 30 (thirty) days notice from County), and except as otherwise directed by the County, the Tenant shall:

1. Stop work under the Agreement or applicable statement of work on the date specified in the notice of termination.

2. Place no further orders or subcontracts for materials, services or facilities.

3. Terminate all orders and subcontracts to the extent that they relate to the performance of work or Services terminated by the Notice of Termination.

4. With the approval of the County and to the extent required by the County, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts. County's approval of such settlements shall be final for all the purposes of Section, Termination.

E. After receipt of a notice of termination, the Tenant shall submit to the County its termination claim for amounts owed by County (which shall included without limitation all amounts due for work or Services performed through the date of termination), in the form and with a certification as prescribed by the County. Such claim shall be submitted promptly but in no event later than thirty (30) days from the effective date of termination, unless one or more extensions in writing are granted by the County, upon request of the Tenant made in writing within such thirty (30) days period or authorized extension thereof. Upon failure of the Tenant to submit its termination claim within the time allowed, the County may determine on the basis of information available to it, the amount, if any, due to the Tenant by reason of the termination and shall thereupon pay to the Tenant the amount so determined. In the event County terminates for convenience or non-appropriation, Tenant shall not be obligated to refund to County any prepaid fees.

IN WITNESS WHEREOF the parties have set their hands and seals the day and year first above written.

ATTEST

James T. Dineen, County Manager

LANDLORD:

COUNTY OF VOLUSIA

By: _____
Jason P. Davis, County Chair

Dated: 8/22/2013

ATTEST

Name: Kim James Conaway

TENANT: DEEP CREEK CATTLE, LLC

By: James C Lyles

Name: James C Lyles

Exhibit A-Deep Creek Preserve Boundary
Exhibit B-Scope of Services
Exhibit C, The Florida Department of Agriculture and Consumer Services, Office of Agricultural and Water Policy, Water Quality Best Management Practices for Florida Cow/Calf Operations

Figure ___. Aerial Photograph

EXHIBIT B-SCOPE OF SERVICES

-Cattle grazing operation with the total number of cattle units maintained at a rate that is optimal to the site;

-Treat and eradicate invasive species, including but not limited to soda apple;

-Assist in the protection of the property against trespassers, poachers, and vandals to the best of his ability and report all acts of trespass and vandalism to the County and to the proper authorities;

-Maintain property utilizing the UF BMP - Best Quality Management Practice for Water Quality for Beef Cattle operations as developed by the Natural Resource Conservation Services and the Institute of Food and Agriculture Sciences (IFAS), Best Management Practices;

-Maintain fencing and gates in a manner that is suitable to contain cattle;

The awarded lessee shall be able to meet the following conditions:

-Maintain optimal stock rates per the Stock Assessment Report

-Utilize good animal husbandry practices;

-Construct and/or maintain all structures (i.e. cattle pens, buildings, fencing, roadways, etc.) at Lessee's expense with no reimbursement from the County;

-Quarantine of all new cattle for seven (7) days prior to releasing them on the property;

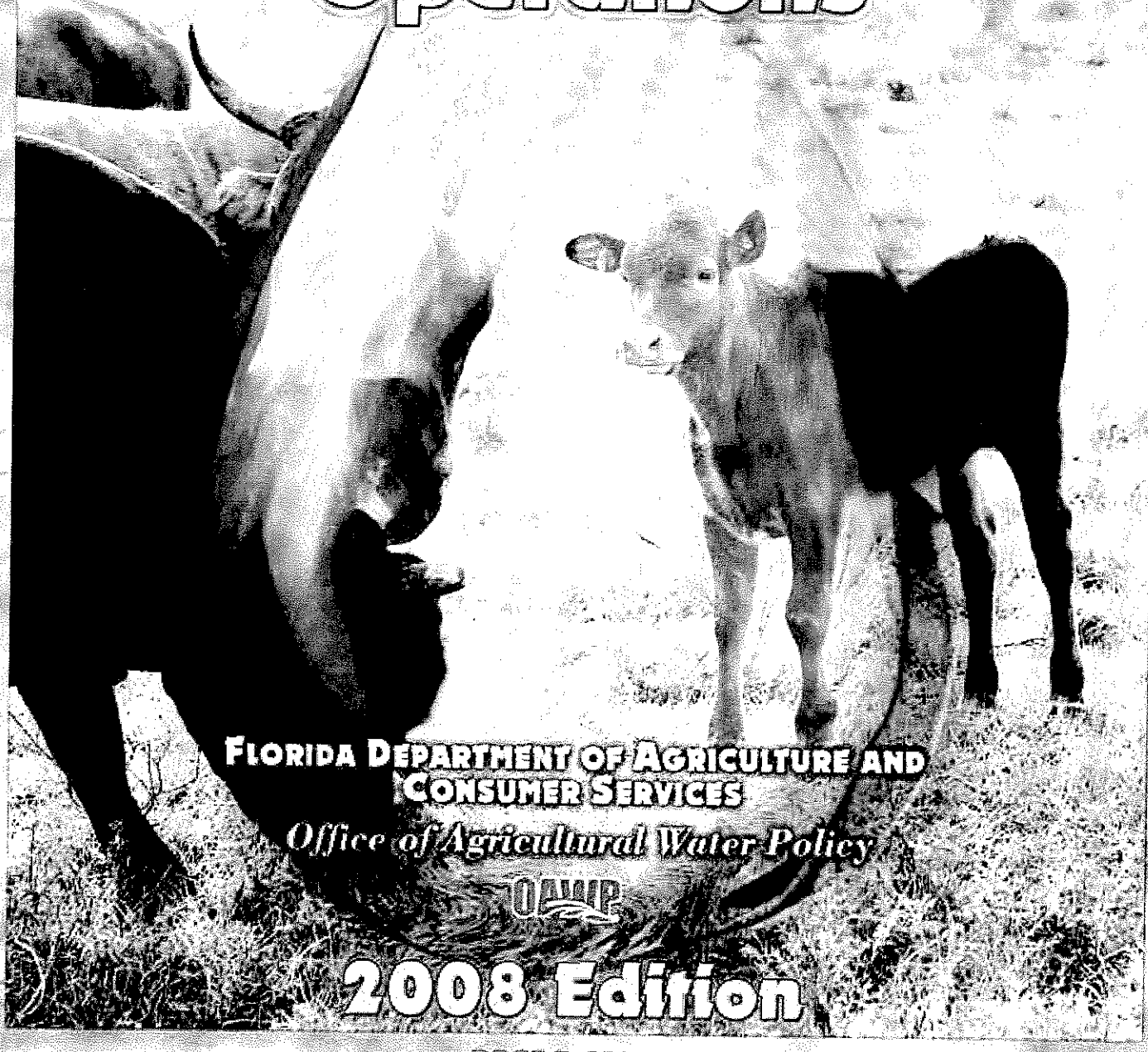
-Abide by all applicable governmental rules, regulations, ordinances and laws with respect to Lessee's use of the property, and shall be responsible for obtaining and paying costs for any and all permits necessary for Lessee's cattle grazing operation, including but not limited to those of the United States Army Corps of Engineers, the Environmental Protection Agency, the Florida Department of Environmental Protection, and the St. Johns River Water Management District;

-No hunting, illegal, unlawful, offensive or immoral activities shall take place on the property;

-There shall be no dumping or placing of any garbage or refuse on the property. Lessee shall implement and carry on a program of stewardship to promote and maintain the land, and upon expiration or termination hereof, surrender the property in "better than found" condition;

EXHIBIT C

Water Quality Best Management Practices for Florida Cow/Calf Operations



FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

Office of Agricultural Water Policy

OAWP

2008 Edition

DACS-P-01380

EXHIBIT C

EXHIBIT C

TABLE OF CONTENTS

COMMISSIONER'S COMMENTS ii

ACKNOWLEDGEMENTS iii

INTRODUCTION 1

BMP ENROLLMENT AND IMPLEMENTATION 3

Level I BMPs 3

Advanced-Level BMPs 3

Conservation Plans 3

User's Guide to BMP Enrollment and Implementation 3

BMP Implementation Follow-Up 5

KEYS TO POLLUTION PREVENTION 7

GENERAL INFORMATION FOR ENVIRONMENTAL PROTECTION ON COW/CALF OPERATIONS 9

Specific Water Quality Impacts Associated with Ranching 11

Nutrient Management on Ranches 13

Forage Production 15

Pest Management and Pharmaceuticals 17

Ranch Waste Management 19

Associated Land Issues 21

ADVANCED-LEVEL BMP NEEDS ASSESSMENT 23

BEST MANAGEMENT PRACTICES 27

1.0 Nutrient Management 29

2.0 Alternative Cattle Water Saurces 31

3.0 Prescribed Grazing 33

4.0 Sediment and Erosion Contral Measures 35

5.0 Water Resources Management 37

6.0 Conservation Buffers 41

7.0 Fence Installation 43

8.0 High-Intensity Areas 45

9.0 Animal Mortality 47

10.0 Wellhead Protection 49

11.0 Wetlands and Springs Protection 51

12.0 Prescribed Burning 53

13.0 Integrated Pest Management and Pharmaceuticals 55

APPENDICES 57

Appendix 1. General BMP References 58

Appendix 2. Setbacks Table 60

Appendix 3. Contact Information 61

Appendix 4. Acronym List and Glossary 62

Appendix 5. Nutrient Budget Worksheet and Samples 65

Appendix 6. Soil and Tissue Testing Information 69

Appendix 7. Incentive Programs for Qualifying Farms 73

Appendix 8. Example Record Keeping Forms 75

Appendix 9. Employee Training Points 77

Appendix 10. Guidance for Developing a Stormwater Management Plan 79

Appendix 11. Notice of Intent to Implement Form and BMP Checklist 81

EXHIBIT C

Office of the Commissioner
(850) 488-3022

The Capitol
400 South Monroe Street
Tallahassee, Florida 32399-0800

Florida Department of Agriculture and Consumer Services

Commissioner Adam H. Putnam

COMMENTS BY COMMISSIONER ADAM H. PUTNAM

Dear Agricultural Producers:

This manual, *Water Quality Best Management Practices for Florida Cow/Calf Operations*, reflects the hard work of representatives of the industry; federal, state, and local government; and other stakeholders. In general, agricultural lands maintain valuable water recharge areas and preserve open spaces. The BMPs in this manual address water quality and quantity impacts from production activities and help maintain the environmental advantages of keeping the land in agriculture.

While best management practices have been in place for many years in our state, their role in environmental protection was formally established in 1999 with the passage of the Florida Watershed Restoration Act. This legislation provides the framework for implementing Florida's Total Maximum Daily Load program, which sets water quality targets for impaired waters. It also identifies best management practices implementation as the means for agriculture to help meet those targets.

As Florida's population continues to increase, there are more impacts to and competition for Florida's limited water resources. All Floridians must take part in conserving and protecting these resources. This manual represents the industry's commitment to do just that.

As a native Floridian whose family has long been involved in agriculture, I want to thank all who participated with the Department in the development of this important manual. With the active support and participation of so many dedicated people, I am optimistic about the future of Florida's agricultural industry. I trust that you will join me in supporting this valuable water resource protection effort.

Sincerely,

Adam H. Putnam
Commissioner of Agriculture

EXHIBIT C

ACKNOWLEDGEMENTS

A Steering Committee was established in 2007 to update and revise the 1999 cow/calf BMP manual. A technical working group was formed to support the efforts of the Steering Committee, and was charged with developing and reviewing specific BMPs contained in the manual. An effort of this magnitude could not have been accomplished without the tireless dedication of all participants. The following is a list of individuals who participated in the development of this manual. Each of these individuals and their organizations made important contributions to the process, and their work is sincerely appreciated.

Steering Committee

Mike Adams – Adams Ranch

Bill Bartnick – Florida Department of Agriculture and Consumer Services

Pete Deal – USDA/Natural Resources Conservation Service

Wade Grigsby – Private Consultant

Rick Hacht – H & H Liquid Sludge Disposal, Inc.

Jim Handley – Florida Cattlemen's Association

Matt Harrison – Private Rancher

Pat Hogue – University of Florida/IFAS

Clegg Hooks – Florida Department of Agriculture and Consumer Services

Flint Johns – Lykes Bros., Inc.

Billy Kempfer – Kempfer Ranch

Jim Lefils – Lefils Cattle Company

Mike Milicevic – Lykes Bros., Inc.

James Payne – Deseret Ranches of Florida

Wes Williamson – Williamson Cattle Co.

Technical Working Group

Brian Boman – University of Florida/IFAS

Benita Whalen – South Florida Water Management District

Lance Laird – Northwest Florida Water Management District

Mark Luchte – Southwest Florida Water Management District

Vince Singleton – St. Johns River Water Management District

Mike Thomas – Florida Department of Environmental Protection

Glenn Horvath – Suwannee River Water Management District

Additional Contributors

Linda Crane – Florida Department of Agriculture and Consumer Services

Greg Hendricks – USDA/Natural Resources Conservation Service

Terry Pride – Florida Department of Agriculture and Consumer Services

EXHIBIT C

INTRODUCTION

Opening Notes

Best Management Practices (BMPs) are practices or combinations of practices that, based on research, field-testing, and expert review, are determined to be the most effective and practicable means for improving water quality. BMPs are typically implemented as a *treatment train*. This normally includes a combination of nonstructural and structural practices that are effective in reducing or preventing pollutant discharges. BMPs must be: based on sound science, technically feasible, and economically viable for landowners.

The practices outlined in this manual are intended for use statewide on beef cow/calf operations, and other cattle operations. This manual does not apply to concentrated animal feeding operations, which generally require a permit. The manual can be downloaded at www.floridaagwaterpolicy.com. If ranchers are involved in farming ventures other than cow/calf operations (row crops, sod, and silviculture, they should use the related BMP manuals, which are available at the same website.

Things to keep in mind as you use this manual are:

- Italicized words that appear in *red* are defined in the glossary.
- Specific record keeping requirements are noted using a "pencil mark" icon.
- Remember to fill out the BMP Manual Registration Form inside the front cover and return it to the Florida Department of Agriculture and Consumer Services in order to receive future updates to this manual.

Overview of the Industry

There are more than 11 million acres of total pasture and rangeland in Florida, of which 5 million acres are improved pasture. Florida's grazing lands provide significant benefits to society and the environment. Grazing lands release oxygen to the atmosphere, help to significantly cool surrounding surface temperatures, naturally filter pollutants from runoff water, reduce soil erosion, replenish our water supply, and provide aesthetic and recreational values. One thing to remember is that animals do not produce nutrients, but assimilate and distribute them.

Because of the large amount of pasture acreage, improperly managed pasture runoff may adversely affect the quality of our lakes and streams. The industry remains committed to fostering water resource protection through the implementation of BMPs. This manual, which has been endorsed by the Florida Cattlemen's Association, has been developed to promote BMPs for beef cow/calf operations in Florida. Although these practices are designed primarily to protect water quality, the implementation of certain BMPs will also have water conservation benefits. In addition, the manual addresses other activities that normally occur in conjunction with beef cattle production. Examples include intermittent row cropping and silviculture.

BMP History and Purpose

The 1972 Federal Clean Water Act (FCWA) required states to assess the impacts of nonpoint sources of pollution on surface and ground waters, and establish programs to minimize these impacts. In 1978, Florida established a Nonpoint Source Management Program, which includes the use of structural and nonstructural BMPs to minimize nonpoint source pollution, through both regulatory and non-regulatory means.

Section 303(d) of the FCWA requires states to identify impaired waters and establish total maximum daily loads (TMDLs) for pollutants entering these waters. TMDLs establish the maximum amount of pollutants that can be discharged to a waterbody and still meet designated uses such as swimming, fishing, or as a potable water source. The 1999 Florida Watershed Restoration Act (FWRA) provided the framework for Florida's TMDL program. Under the FWRA, once the Florida Department of Environmental Protection (FDEP) establishes a TMDL, the agency may develop and adopt a Basin Management Action Plan (BMAP), which specifies the activities that watershed stakeholders will undertake to reduce point and nonpoint source pollutant loadings. In watersheds with adopted BMAPs and in some other areas, agricultural producers are statutorily required either to implement FDACS-adopted BMPs or conduct water quality monitoring prescribed by FDEP or the water management district.

The FWRA gives the Florida Department of Agriculture and Consumer Services (FDACS) the authority to develop interim measures, BMPs, cost-share incentives, and technical assistance programs to assist agriculture in reducing pollutant loads in TMDL watersheds and other areas. The law also stipulates that the FDEP must verify that these BMPs are effective in reducing pollutant loading to waters.

Many of Florida's ranchers who produce food, fiber, and livestock on approximately 11 million acres will be required to help meet agricultural pollutant load allocations through BMP implementation.

Pursuant to sections 403.067(7)(c), and 570.085, F.S., implementation, in accordance with FDACS rule, of FDEP-verified and FDACS-adopted BMPs gives ranchers the following advantages:

- A presumption of compliance with state water quality standards
- A release from the provisions of s.376.307(5), F.S., for those pallutants addressed by the BMPs
- Assistance with BMP implementatian

However, nothing in this manual shall be canstrued as restricting the authority of the FDEP or the water management districts (WMD) under Chapters 403 and 373, F.S.

Statutory Exemptions for Agricultural Activities

Under subsection 373.406(2), F.S., any person engaged in the occupation of agriculture may alter the topography of any tract of land for purposes consistent with the practice of agriculture. These activities may not be for the sole or predominant purpose of impounding or obstructing surface waters. Agricultural activities that meet these criteria may qualify for a statutory exemption from an Environmental Resource Permit (ERP).

Pursuant to 373.406(9), F.S., environmental restoration activities on agricultural lands that have minimal or insignificant impacts to water resources may also be exempt from an ERP, upon written request by the producer and written notification from FDEP or the water management district that the proposed activity qualifies for the exemption.

Even if the two exemptions above apply, they do not relieve agricultural producers located within a watershed with an adopted BMAP from either implementing BMPs or conducting monitoring.

Also, persans engaged in the occupation af agriculture have protections under the Florida Right to Farm Act (section 823.14, F.S.). The Act states, with certain exceptions, that no farm which has been in operation for one year or more and was not a nuisance at the time of its established date of operation sholl be a public or private nuisance, if the farm operation conforms to generally accepted agricultural and management practices.

BMP ENROLLMENT AND IMPLEMENTATION

This manual contains Level I BMPs that are largely applicable to all ranchers, and Level II and III BMPs that will apply under specific circumstances. The manual includes a self-assessment tool to help ranchers determine which Level II and III BMPs are applicable to their operation. The self-assessment tool also guides ranchers in determining whether they need a formal Conservation Plan, which would be based on conservation practices contained in Section IV of the USDA-NRCS Field Office Technical Guide (FOTG), and would incorporate all the applicable BMPs in this manual.

Level I BMPs

All ranchers must implement the applicable **Level I BMPs** to establish a foundation for environmental protection. Depending on the site-specific conditions or geographical location of the ranch, not all of the Level I BMPs may be applicable to every site.

Advanced-Level BMPs

Ranchers may have to implement additional BMPs, based on their "score" after completing the *Advanced-Level BMP Needs Assessment*. The assessment identifies water quality risk features that require special attention or protection, and also identifies specific groups of BMPs that address these issues. These **Level II and III BMPs** focus on high-intensity areas, livestock use exclusion, address the need for grade stabilization structures for sediment control, and list situations that require comprehensive prescribed grazing management practices.

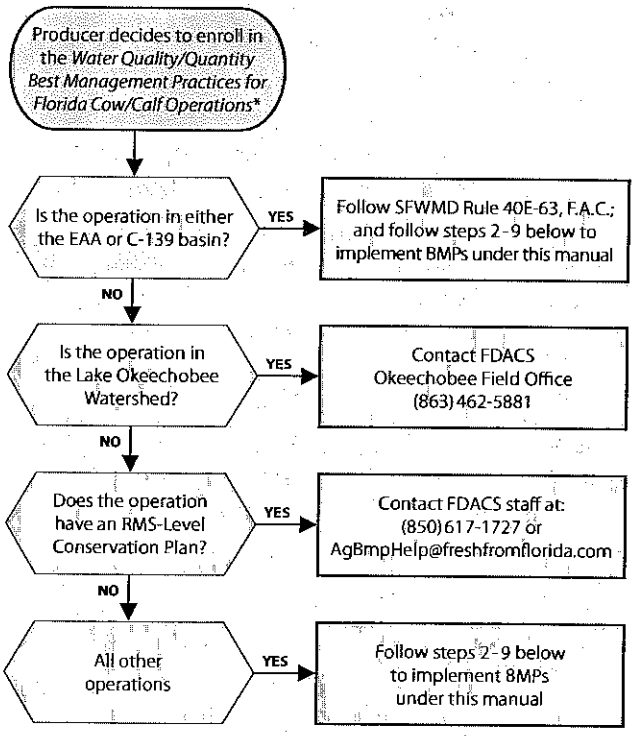
Conservation Plans

Conservation planning is a natural resource problem-solving and management process, with the goal of sustaining natural resources for future generations. A Conservation Plan may be developed for a single operation or for an area that crosses land ownership boundaries. A well-written Conservation Plan addresses landowner goals and objectives, and natural resource concerns. The plan includes strategies to maintain or improve yields, while also protecting soil, water, air, plant, animal, and human resources. Usually, Conservation Plans address all of the major activities on the ranch, but can be developed to target specific challenges. Conservation Plans are particularly well-suited to cow/calf operations and farming operations that produce multiple commodities.

Conservation Plans are developed in accordance with the USDA-NRCS FOTG. Because not all the specific BMPs in this manual may be contained in the FOTG, Conservation Plans must also include the applicable Level I, II, and III BMPs. Assistance in developing a plan can be obtained through the local SWCD, the USDA-NRCS, the Cooperative Extension Service, and private consultants who function as technical service providers. However, the decisions included in the Conservation Plan are the responsibility of the owner or manager of the ranch.

User's Guide to BMP Enrollment and Implementation

1. **Choose the Pathway Applicable to You:** In the flowchart below, identify the circumstances that best apply to you.



* **Note:** *If operation is in an area where a BMAP has been adopted, the producer must implement BMPs for all applicable commodities or monitor water quality. Contact FDACS Field Office for more information.*

2. **Consult the manual:** If you are proceeding with enrollment under this manual, begin by reading the following sections: *Introduction; Keys to Pollution Prevention;* and *General Information for Environmental Protection on Cow/Calf Operations*

3. **Conduct an inventory:** The selection of BMPs begins with a basic inventory of the farm's

natural features, which will help you determine how the operation of your farm may affect environmentally sensitive areas. When developing the inventory, sketch your farm/facility, noting buildings, pastures, cowpens, electrical and plumbing lines, and water sources. Identify areas of particular concern that need to be addressed. These include streams, wetlands, springs, sinkholes, and poorly drained ponded areas, to name a few. You can use this list of concerns in selecting which BMPs are applicable to your farm.

To help you conduct your inventory effectively, the following tools are available:

- √ Aerial photographs (http://earth.google.com/index.html, or other providers)
- √ USDA-NRCS soil survey maps (http://websoilsurvey.nrcs.usda.gov/app/)
- √ USGS topographic maps (http://www.topozone.com/)
- √ National Wetlands Inventory (http://www.fws.gov/wetlands/data/index.html)
- √ Historic rainfall records (http://www.ncdc.noaa.gov/oa/ncdc.html)
- √ Local tax maps from property appraiser (http://www.propertyappraiser.com/)

4. **Take the Needs Assessment:** Complete the *Advanced-Level BMP Needs Assessment* that begins on page 23, to determine whether any Level II and III BMPs are applicable to your operation, or whether you need or would like to develop a Conservation Plan.

5. **Select the applicable BMPs:** Read BMP sections 1.0 through 13.0 and select all of the applicable Level I, II, and III BMPs, based on your farm inventory and on the *Advanced-Level BMP Needs Assessment*. Record the BMPs on the checklist in Appendix 11 of this manual, as described in step 6 below.

6. **File a Notice of Intent to Implement (NOI) BMPs:** Complete and submit to FDACS an NOI, contained in Appendix 11 of this manual. The NOI includes a checklist on which you must identify all the BMPs in the manual that are applicable to your operation and are technologically and economically feasible for you to implement. The checklist includes a column for you to schedule BMP implementation. If you have a Conservation Plan, there is space provided at the end of the checklist for you to list any additional BMPs not covered in the checklist. You must submit a copy of the Conservation Plan with the NOI and checklist. Once received by FDACS, the Notice of Intent formally enrolls your operation under the BMP program. Implementation of the BMPs according to the NOI schedule provides a presumption of compliance with state water quality standards for the pollutants the BMPs address. Implementation includes ongoing record keeping and maintenance of the BMPs

7. **Implement the BMPs:** Implement all applicable Level I BMPs as soon as practicable, but no later than 18 months after submittal of the Notice of Intent to Implement. If you need additional time to implement the following Level I BMPs, you must justify the time needed in the space provided at the end of the checklist: **2.2** *Upland Pond Construction Criteria*; **2.3** *Other Watering Sources*; **5.3** *Installation of Water Control Structures*; **6.3** *Riparian Buffers*. Implement all other BMPs according to the schedule (month/year) you have indicated on the BMP checklist.

8. **Request on-farm technical assistance, as needed:** FDACS, UF-IFAS BMP Implementation Teams, Soil and Water Conservation Districts (SWCD), USDA-NRCS and/or UF-IFAS Extension staff are available to assist ranchers with the mechanics of BMP identification and selection. Contact information for these entities is in Appendix 3 of this manual.

9. **Keep records on BMP implementation:** FDACS rule requires record keeping to document BMP implementation. Fertilizer applications and rainfall amounts are two types of record keeping. Other record-keeping requirements in the manual are highlighted using this figure: . All BMP records should be accurate, clear, and well-organized. You may develop your own record-keeping form or use the one provided in Appendix 8. You must retain the records for at least 5 years. However, it is desirable to retain records for as long as possible, to address any potential future legal issues. All documentation is subject to inspection.

It is advisable to consolidate your inventory and all your BMP decision-making, including the BMP Checklist, into a simple implementation plan. This plan will serve as a record of scheduled and completed BMPs, including operation and maintenance activities. A well thought-out, written plan enables managers and owners to schedule their activities and accomplish their objectives.

EXHIBIT C

BMP Implementation Follow-Up

FDACS is developing a BMP "implementation assurance" program to help ensure that BMPs are being properly implemented, operated, and maintained. On a staggered schedule by commodity, FDACS will mail surveys to all BMP program participants, and will conduct site visits on selected operations. The benefits of this effort include:

- Demonstrating the level of producer participation in implementing BMPs.
- Identifying needs for additional education and implementation assistance for producers.
- Reinforcing to producers the importance of BMP implementation.
- Evaluating the effectiveness of FDACS BMP programs.
- Updating FDACS NOI records.

EXHIBIT C

KEYS TO POLLUTION PREVENTION

Over the years, the "common-sense" recommendations summarized below have been embraced by many cattle operations in order to help prevent pollution problems. However, these descriptions are provided as an overview, and the formal BMPs appear later in this manual.



Maintain adequate vegetative cover

Vegetative cover helps to filter pollutants from runoff, reduces runoff velocity, and controls soil erosion. Management practices that help maintain vegetative cover usually involve distributing cattle to prevent overgrazing and allow vegetation to recover following a grazing period.

- Use prescribed grazing systems to minimize the impact of grazing on water quality.
- Adjust the stocking rate in sensitive *watersheds*.



Carefully plan your watering and feeding sites

Most nonpoint source pollution problems occur in the vicinity of watering, supplemental feeding, or loafing areas where animals tend to congregate most often. This concentration of livestock can denude vegetation and affect soil conditions so that erosion is more likely and water percolation is diminished.

- Place *supplemental feeding* and mineral stations a reasonable distance away (approximately 100 feet) from streams, drainage canals, lakes, *wetlands*, wells, and sinkholes.
- Develop alternative water sources to attract animals away from streams, drainage canals, and lakes as much as possible.
- Plan your shading facilities to keep cattle away from streams, drainage canals, and lakes as much as possible. Leaving or planting small, scattered clusters of trees in upland areas of pastures can provide shade structures.
- When feasible, move feeding stations, alternative water supplies, or shade structures periodically to prevent areas of concentrated waste accumulation and denuded vegetation.



Carefully plan your temporary holding areas

Concentrated animal areas such as *cowpens* and other temporary holding areas have the potential to produce large pollutant loads.

- Locate new cowpens more than 200 feet away from a canal, stream, or lake, or include a berm to prevent runoff into the *watercourse*.
- For existing concentrated animal areas that are located near a watercourse and can't be relocated, use filter strips, grassed waterways, berms/diversions, or waste management systems to minimize the transport of pollutants.



Use structural techniques to abate pollution

Sometimes it may be impossible to locate supplemental feeding or shade facilities outside of sensitive water quality areas. In such cases, other techniques can be used to help keep sediment, nutrients, and organic matter out of the water.

- When feasible, re-establish natural flow patterns, plug drainage canals, and restore water through internal marshes, cypress ponds, or other natural wetlands that can assimilate nutrients. The plugging of canals and/or some diversion of natural surface flows may require permits under Chapter 373, F.S. Contact your water management district prior to making structural modifications and/or changes. In addition, if you are a USDA program participant, contact them before conducting any clearing, land leveling, excavation, ditches, or similar activity, to ensure that you retain your eligibility for USDA program benefits.
- Use practices such as grassed waterways, filter strips, diversions, sediment traps, swales, and retention and detention ponds.



Minimize offsite discharge

Pollutants are carried offsite by water. By reducing the amount of water leaving your property, you can reduce the offsite water quality impacts.

- Carefully control seepage irrigation to minimize tailwater.
- Use *water control structures*, such as a flashboard riser on culverts, to retard water flow.
- Heavy vegetative cover in ditches should be mechanically removed instead of using herbicides, due to high nutrient releases when the vegetation decomposes.
- When cleaning ditches:

- Pile vegetation and sediment away from the ditch so nutrients don't wash back into the water.
- Use turbidity screens in the water at discharge points so turbid water does not leave your property.

- Plug unnecessary drainage conveyances.
- Use grassed waterways and vegetated areas to clean water before discharging offsite.
- Use man-made ponds or other watering facilities in upland areas to reduce cattle use of natural wetland systems.



Manage nutrients carefully

You can minimize pollutants leaving your property by carefully controlling imported materials that you use and apply on your ranch. Pollutants can come from fertilizers, sludge application, pesticides, chemicals, and fuels. If these materials are properly stored, applied, and disposed of, there is less chance they will be carried offsite in runoff.

- As appropriate, use soil and plant tissue tests to determine fertilization rates.
- Follow University of Florida, Institute of Food and Agricultural Sciences (UF-IFAS) fertilizer recommendations.
- Apply biosolids at agronomic rates, consistent with your FDEP Agricultural Use Plan.
- Do not apply fertilizer, organic fertilizer, or biosolids directly to wetlands or watercourses, or prior to forecasted heavy rainfall.
- Grass clippings from "sod mowing" should be stored away from wetlands and other watercourses.



Waste reduction strategies

You can also minimize pollutants leaving your property by carefully controlling pesticides, chemicals, and fuels. If these materials are properly stored, applied, ond disposed of, there is less chance they will be carried offsite in runoff.

- Use pesticides in accordance with the label.
- Use cleaning agents and other chemicals carefully.
- Keep petroleum storage tanks in good working order.
- In the event of a spill, have a spill response plan.



Minimize the potential for erosion

Cows aren't the only ones contributing to soil erosion. Human activities, such as land clearing, culvert installation, road building, ditch and canal maintenance, pasture renovation activities, and production of certain short-term crops (watermelons, sod) can lead to erosion that can increase pollutant loading.

- When land is cleared, quickly plant a vegetative cover.
- Leave vegetated buffer strips during land clearing along drain areas, wetlands, and watercourses.
- During construction, follow erosion and sedimentation control practices.
- Minimize the number of vehicle crossings through streams and canals. If stream crossing cannot be avoided, locate the crossing in the area of least impact, considering habitat, soil types, slopes, streambed characteristics, and bank stability.
- Use stabilized culverts or hard surface crossings. Hard surface crossings can be concrete or geo-textile fabric with rock on top.
- Don't mow canal banks too closely; leave enough leaf area to maintain a healthy vegetative cover.



Develop a ranch Conservation Plan

Results of the Advanced-Level BMP Needs Assessment may indicate that you need to develop a ranch Conservation Plan; however you may wish to do so in any case. Such a plan, developed with help through USDA-NRCS or other technical service providers, can help guide management decisions for improved water quality.



Employee training

Employees whose job duties relate to BMPs should be properly trained prior to implementing the BMPs. Training sessions should be documented in the Employee Training Log in Appendix 9 of this manual.

- Provide annual training on BMPs and record keeping to appropriate employees.
- Keep records to document training activities.
- Review the Conservation Plan with employees, so its goals and priorities are clear.

EXHIBIT C

General Information for Environmental Protection on Cow/Calf Operations

EXHIBIT C

SPECIFIC WATER QUALITY IMPACTS ASSOCIATED WITH RANCHING

Waste from animals grazing on native pastures generally does not increase the nutrient levels in an area, as long as sufficient space is provided for each animal. However, intense grazing on improved pastures with the addition of supplemental feed can increase the risk of dissolved nutrients entering surface waters. This can elevate nutrient levels and disrupt the natural balance, adversely affecting water quality and aquatic flora and fauna. This section discusses some of the typical water quality impacts associated with ranching.

Pollutants and Pollutant Sources

Nutrients

Excess nitrogen and phosphorus are the most common sources of water quality impairments in Florida. These nutrients usually enter waterbodies through stormwater runoff. However, they can be introduced directly into the water from animal waste if livestock are allowed to loaf in wetlands or waterbodies. High levels of nutrients in surface waters result in abnormal plant growth, or ***eutrophication***. The nitrogen form most abundant in natural waters is nitrate. Due to its high mobility, nitrate can also leach into groundwater. Ammonia is an inorganic source of nitrogen and originates primarily from urine. Phosphorus is one of the key elements necessary for growth of plants and animals. In terms of freshwater lake ecology, it tends to be the (growth) limiting nutrient. Unlike nitrogen, phosphorus is generally retained in the soil by a complex system of biological uptake, absorption, and mineralization. Phosphorus enters waterbodies as particulate matter via sediment transport, or can be dissolved in water.

Sedimentation

Sedimentation occurs when eroded soils are washed into surface waters, creating a buildup of solids on the bottom and suspended solids in the water column. Sedimentation most commonly associated with cattle grazing comes from the erosion of denuded areas and streambanks. Suspended solids from sediments reduce the amount of sunlight available to aquatic plants, cover fish spawning areas and food supplies, clog and harm the gills of fish, and can adversely affect shellfish. These effects combine to reduce fish, shellfish and plant populations, and decrease the overall productivity of lakes, streams, estuaries, and coastal waters. Recreation may also be limited because of decreased fish populations and reduced desirability of downstream swimming areas. Deposited sediment also reduces the flow capacity of roadside ditches, streams, rivers, and navigation channels, which can result in more frequent maintenance dredging or flooding. Chemicals, such as some pesticides, phosphorus, and ammonium, may be transported in sediment. Over time, the aquatic environment can cause these chemicals to be released from the sediment into the water column.

Fecal Coliforms

Fecal coliforms are bacteria that can cause disease, and are another source of water quality impairment. While high numbers do not result in eutrophic conditions, they can pose a health hazard to animals and humans. Furthermore, the decomposition of fecal and other organic matter in water can lead to increased biological oxygen demand and lower dissolved oxygen levels. Health impacts to humans and livestock include dysentery, gastrointestinal infections, ear infections, and skin infections, especially in open wounds. Fecal coliforms are an indication of recent contamination, since they have a relatively short survival period in water. The risk of fecal coliform contamination by animals that are allowed direct access to a waterbody is higher, although runoff from high-intensity areas may compound the problem. Spreading uncomposted manure, residuals, or septage as fertilizer may also lead to increased fecal coliform numbers in nearby waterbodies. The likelihood of pollution is increased if these materials are applied in excess of agronomic rates or when wet weather conditions prevail.

Water Quality Degradation Indicators

Algae

Algae are essential to aquatic systems. As a vital part of the food chain, algae provide the nutrition necessary to support all aquatic animal life. Certain types of algae also provide habitat for aquatic organisms. Blue-green algae (which are actually a photosynthetic bacteria known as cyanobacteria) are usually found in freshwater systems, most commonly in calm, warm waters with high levels of nutrients. While cyanobacteria are naturally present in low numbers, increased algal production can cause many problems in a waterbody.

Cyanobacteria can become so abundant that they will cause a scum layer to form on the surface, shading the sunlight-dependent life below and disturbing the food chain. Cyanobacteria produce a small amount of toxin, which is generally harmless to animals and humans when algal populations are under control; however, livestock and pet deaths have been attributed to consumption of water with an abundance of cyanobacteria. The toxin is known to cause liver and nervous system effects in humans as well. Cyanobacteria toxin cannot be eradicated by boiling or ultraviolet irradiation, so untreated surface water (any water not obtained through a public water system) with increased cyanobacteria poses a risk. Potential risks from recreational contact include skin, respiratory, and mucous membrane irritation. Other algal blooms can significantly alter the natural balance of the flora and fauna by causing a waterbody to become anaerobic. This results in a failing or impaired ecosystem. Certain types of noxious weeds or a monoculture of one or two species of plants can indicate an imbalance of nutrients in a waterbody, which can also lead to further problems in the ecosystem.

Dissolved Oxygen

Water systems both produce and consume oxygen. Oxygen is obtained from the atmosphere and from plants through photosynthesis. The presence of algal blooms, noxious weeds, and too many floating aquatic plants can reduce the amount of oxygen available in a waterbody by blocking sunlight necessary for photosynthesis to occur. Respiration by aquatic animals, decomposition of organic material, and various natural chemical reactions consume oxygen. The amount of oxygen consumed by microorganisms in breaking down manure and other wastes is known as the biochemical oxygen demand or BOD. If BOD exceeds the amount of dissolved oxygen in a waterbody, widespread fish kills can occur. If dissolved oxygen levels are already lower due to algal blooms or other flora, the likelihood of a fish kill increases.

Turbidity

Turbid water as a result of excessive sedimentation is another water quality degradation indicator. Great care must be used to prevent livestock-induced erosion of stream banks and the loss of sediments to waterbodies. Soil and sediment can fill in water bodies, clog waterways and affect water clarity. Suspended sediment can have numerous effects on fish; decreased penetration of sunlight can affect the feeding and breeding behaviors of fish, and the sediments themselves can clog gills and cause irritation to the mucous membranes covering the eyes and scales. As the sediment settles, fish eggs are susceptible to suffocation due to burial. Nutrients and toxins can also attach to sediments, which can contribute to downstream eutrophication and pollution.

Strategy to Minimize Water Quality Impacts

Using BMPs to achieve water quality protection while maintaining, or even improving, agricultural productivity is not a new process. However, doing this most effectively requires a business model that includes the following steps:

- Evaluate the existing situation
- Plan what to do, incorporating the applicable BMPs in this manual*
- Implement the plan
- Check to make sure everything is working correctly, and if not
- Go back to the first bullet

As a critical part of this process, ranch operators should conduct an inventory of the farm's natural resource features, as noted in the *BMP Selection and Implementation* chapter. The outcome of this exercise will be a plan – remember to keep it available and update it regularly. The plan will also help you communicate with your employees and your county agent, USDA-NRCS staff, or others.

* Many of the BMPs in this manual will address more than one environmental issue. Therefore, by implementing the BMPs, you usually solve more than one problem.

The sections below describe managing plant nutrients to achieve optimum forage yields while minimizing the movement of nutrients to surface and ground water. Nutrient management considers the amount, source, form, placement, and timing of nutrient applications. All sources of plant nutrients, such as organic and inorganic fertilizers and nutrient reserves within the soil, must be considered when developing a nutrient management program for a field or a ranch.

Source Reduction

Perhaps the first thing to remember when developing plans for nutrient management on grazing land is that animals do not produce nutrients. Animals consume, excrete, move, and retain nutrients. However, they are not the source of the nutrients. All of the nutrients excreted by grazing animals on Florida's ranches come from natural or human sources.

Natural nutrient sources generally include soil mineralization, atmospheric deposition, and nitrogen cycle processes. If the field is not fertilized and no supplemental feeds are given, the cattle will be totally dependent upon naturally occurring sources of nutrients. Fertilizer, supplemental feed, and irrigation water are the major sources of human-imported nutrients. The kind and amount of nutrients imported into a particular field will depend upon feed and pasture management. Nutrients imported into fields can be controlled to a great degree through management decisions.

Although grazing animals do not produce nutrients, they do affect nutrient distribution. Research indicates that grazing animals excrete nutrients in proportion to the amount of time they spend in an area. Research also shows that grazing cattle will spend their day doing three tasks: eating, sleeping, and loafing. When forage is available, cattle spend about eight hours each day on each of these tasks. However, if forage is limited, they may spend as much as ten hours per day grazing. Because cattle in Florida typically loaf and sleep in areas other than those in which they graze, they will transfer nutrients from the grazed area to the loafing and sleeping areas. If the sleeping or loafing area is in or near an environmentally sensitive area, the transfer of nutrients can cause or contribute to water quality problems.

There are four simple steps that can be taken to improve nutrient management and minimize the potential for water quality problems:

- The best method to prevent nutrient contamination of ground or surface water is to reduce the amount of nutrients imported onto a ranch. Therefore, the reduction of feed brought onto the ranch can play a big part in managing nutrients. If supplemental feed is needed, it is best to use feed in areas away from wetlands and other watercourses. This will reduce the potential for manure or unused feed to be washed into surface waters.
- Reduce fertilizer applications in areas where grazing animals congregate. The soil in these areas often contains adequate nutrients for plant growth, so fertilizer applications are unnecessary.
- Avoid applying fertilizer within 50 feet of wetlands and streams. This will reduce the potential for nutrients to be transported offsite during heavy rainfall.
- In order to reduce the potential for nutrients to be transported offsite, do not apply fertilizer to pasture swales and v-ditches that have standing water.
- Ensure that the pH is in the proper range for nutrient uptake by the plants because the acid nature of much of Florida's soils prevents optimum forage growth and limits the effectiveness of the fertilizer.

Nutrient Budget

A nutrient budget should be developed that considers all nutrient sources (soil residual, crop residues, organic and inorganic fertilizer, and irrigation water) and compares them to the forage crop nutrient requirements. Use the Nutrient Budget Worksheet in Appendix 5 to determine whether additional plant nutrients are needed. In general, ranchers can use a combination of soil and tissue testing, and UF-IFAS recommendations, to guide fertilization decisions. The UF-IFAS fertilizer recommendations for forage crops can be found in Fact Sheet SL-129, *Standardized Fertilization Recommendations for Agronomic Crops*, which can be found online at http://edis.ifas.ufl.edu/SS163

Ranchers should consult SL-129 before applying supplemental nutrients. On established bahiagrass pastures, nitrogen should be applied based on the intensity of grazing. Other perennial grasses may need nitrogen in late winter and at other times

throughout the year. Application rates should be based on UF-IFAS recommendations, with an emphasis on phosphorus (P) using three criteria: soil pH levels; available P content as determined by soil test results; and plant tissue testing results.

The nutrient analysis of non-farm organic fertilizer (e.g. municipal sewage sludge) can be obtained from the sludge hauler or waste treatment plant. The nutrient analysis of other organic materials, such as poultry litter and dairy wastes, may be obtained from labs.

Timing of Nutrient Application

To avoid nutrient losses through runoff, apply fertilizers during times when soils are not saturated. When irrigating, refer to the water budget provided by USDA-NRCS for your county to determine the times for the lowest potential for nutrient loss from rainfall. Timing of nutrient applications should coincide as closely as possible with periods of plant growth and nutrient uptake. Remember to maintain proper soil pH, to optimize utilization of applied nutrients and prevent toxic effects from other accumulated elements, such as copper. The pH recommendations are listed by crop in SL-129, and generally range from 5.5 to 6.5.

Preventing Nutrient Movement Offsite

Ranchers should practice erosion control to minimize soil loss and runoff that can carry dissolved and attached (particulate) nutrients to surface waters. Filter strips and other conservation buffers along streams are very effective in reducing the levels of suspended solids and some nutrients. Also, avoid spreading fertilizers in or near ditches and canals. Strategically locate fertilizer loading sites away from watercourses, where spills can contaminate the water.

Manure Management

Manure management for cow/calf operations is a concern due to the possible release of coliform bacteria, phosphorous, or nitrogen to ground and surface waters through seepage and runaff. Ground water may become contaminated by leaching of nitrate or dissolved phosphorus. Phosphorus and nitrogen (N) can be transported in runoff to surface waters in dissolved form, or they may be attached to sediment particles. Both N and P can contribute to the eutrophication of waterbodies.

Common-sense manure management involves simple techniques such as managing manure in concentrated areas, dragging pastures, and excluding cattle from waterbodies near critical discharge points adjacent to waters of the state. These BMPs are addressed later in this manual.

FORAGE PRODUCTION

The sections below describe forage resources, pasture, and grazing management to aid in the overall management of forage production for cow/calf operations in Florida. A productive forage stand is imperative to the success of a cow/calf operation and the protection of water quality. Well-established and managed forage stands effectively reduce soil erosion, absorb nutrients, and provide essential nutrition for livestock.

Forage Resources

In Florida, selection of forage species depends primarily on three major factors: temperature, soil moisture, and soil fertility. The differences in climate, soils, and length of growing season affect not only the types of forage that can be grown, but also affect the overall management system as well. Florida's relatively mild climate, coupled with an average 50 inches of annual rainfall, allows most South Florida ranchers year-round grazing opportunities. However, in most years, some supplemental feed or forage is required statewide during the winter months or dry spring months.

Florida forages are selected primarily based on temperature, due to the wide-ranging climate. South Florida has a climate similar to subtropical regions, while North Florida has subtropical summers but temperate winters. Warm season perennial grasses are the basis for permanent pastures in Florida. Possible perennial grass choices include bahiagrasses and improved hybrid bermudagrasses for North Florida; bahiagrasses, improved hybrid bermudagrasses, and limpograsses for Central Florida; and bahiagrasses, stargrasses, improved hybrid bermudagrasses, limpograss, and rhodesgrass in South Florida.

The table below lists general guidelines for rotational stocking of selected forages:

	Average Height (inches)	
Forage	Begin Grazing	End Grazing
Bahiagrass	6	1-2
Bermudagrass	6	2-4
Bluestem	10-20	8-12
Clovers	6	3
Indiangrass	14	6-10
Limpograss	24	10
Maidencane	24	10
Pearl Millet	14	6
Rhodesgrass	18	8
Ryegrass, annual	6	3-4
Stargrass	12-18	6-8
Small Grains (oats, wheat, rye)	6	4
Switchgrass	18-22	8-12

Ranchers may also want to consider annual species as possible forage alternatives, depending on their objectives. Annual species provide grazing for temporary pastures. Certain annual grasses are used throughout the state in both cool and warm seasons. Rye, oats, wheat, and ryegrass can all be used for winter grazing, while pearl millet and sorghum X sudangrass hybrids can provide summer grazing. Additionally, annual species may be used as a transition crop when renovating pasture.

Florida also has considerable variability in soils. In North Florida, there are clay-loam soils that are quite productive and have good moisture-holding capacity. In peninsular Florida, there are the upland sandy ridges and adjacent flatwoods. In general, flatwoods soils have greater moisture-holding capacity and are more productive than the deep, well-drained sands characteristic of the ridge. Ranchers should identify the intended planting sites' soil characteristics and select forage species compatible with those characteristics.

For more information, see *Florida Forage Handbook* at http://edis.ifas.ufl.edu/AG170 or the *Florida Crop/Pest Management Profile: Beef Cattle* at: http://edis.ifas.ufl.edu/PI043.

Pasture Management

Establishment of new forage is an expensive process that requires detailed planning. The planning process should consider resource concerns such as soil erosion, as well as the increase in management costs to maintain soil fertility and prevent impacts to water quality. A rancher can establish pasture on new ground, following a row crop, or by renovation and replanting of old pasture to new species. Switching from one forage type to a new one can require a renovation program using annual cultivated crops for one to two years before planting new forage. For more information on pasture establishment, see *Florida Cow/Calf Management: Forages* at: http://edis.ifas.ufl.edu/AN118.

Once a pasture has been established, ranchers should manage soil fertility, weed control, insect control, and grazing schedules. Proper management will assist ranchers in maintaining a strong stand of forages regardless of the forage variety or grazing system. Pastures with poor forage stands are more susceptible to erosion, livestock damage, or weed invasion. A thick, healthy pasture is aesthetically pleasing, allows livestock to efficiently graze the forage, and enhances water quality.

Grazing Land Management

Cattle have different nutritional requirements, depending upon the class of animal and general age of the herd. Nutritional considerations include the age and sex of the animal, desired weaning weight, production potential, and the stage of pregnancy. High-quality forage should be available at peak lactation and before breeding season. Production goals must be balanced alongside forage growth to achieve optimum nutrient value from the pasture. Nutritional value is also dependent on maintaining a variety of forages to increase the potential for year round grazing. The intensity and frequency of grazing affects the competition between plant species and affects the diversity of forage plants, forage quality, and the longevity of a forage stand. Desirable forage species can be replaced by weeds or shrubby plants because of poor grazing management, particularly in fenced exclusion areas. To counter these effects, a prescribed grazing system should be implemented to maintain the desired forages and enhance productivity.

An effective grazing-management system ensures that forage use does not exceed the production limitations of the forage. Prescribed grazing systems are used to accomplish this goal and may be used to control the forage, the animals, or both. Successful implementation of any grazing system requires periodic monitoring and adjustments of grazing periods to ensure that goals are met. Grazing systems range from ***continuous grazing*** to ***rotational grazing***.

Continuous grazing is the unrestricted access to a pasture by livestock throughout a year or grazing season. Continuous grazing has advantages such as lower input costs and fewer management decisions. However, over time, improper continuous grazing can be a detriment to all forage resources (tame/improved or native) and can lead to natural resource concerns such as soil erosion, degraded water quality, loss of forage stands, and/or increased weed competition.

Rotational grazing systems are fundamental in managing forage production. Rotational grazing is the grazing of two or more subdivisions of pasture in sequence, followed by a rest period for recovery and re-growth. Rotational grazing has advantages such as improved pasture longevity, more timely utilization of forage, conservation of surplus forage, and increased stocking rates. One particularly useful type of rotational grazing is ***flash-grazing***. A well-designed and properly managed flash-grazing system can be an effective tool for controlling woody and noxious plants, decreasing fuel buildups and facilitating nutrient uptake in exclusion areas along watercourse banks or around wetlands.

The sections below address more common issues associated with pesticides. It is important to note that pesticide application events should target designated pest species, follow the label recommendations, and use only the amount necessary to protect forage and livestock. Where feasible, pesticide application may be eliminated completely if adequate biological controls are available.

Integrated Pest Management

Integrated pest management (IPM) is a method of combining proper plant selection, correct cultural practices, the monitoring of pest and environmental conditions, the use of biological controls, and the judicious use of pesticides to manage pest problems. The goal of IPM is to eliminate or largely reduce the amount of pesticide use through beneficial parasites, predators, and pest-resistant plant varieties. Under Florida law (Chapter 482, F.S.), IPM is defined as the following: *...the selection, integration, and implementation of multiple pest control techniques based on predictable economic, ecological, and sociological consequences, making maximum use of naturally occurring pest controls, such as weather, disease agents, and parasitoids, using various biological, physical, chemical, and habitat modification methods of control, and using artificial controls only as required to keep particular pests from surpassing intolerable population levels predetermined from an accurate assessment of the pest damage potential and the ecological, sociological, and economic cost of other control measures.*

The basic steps of an IPM program are as follows:

- Identify key pests.
- Determine each pest's life cycle, and know which life stage to target (for an insect pest, whether it is an egg, larva/nymph, pupa, or adult).
- Use cultural, mechanical, or physical methods to prevent problems from occurring; reduce pest habitat; or promote biological control.
- Decide which pest management practice is appropriate, and carry out corrective actions. Direct the control where the pest lives or feeds. Use properly timed preventive chemical applications only when they are likely to control the target pest effectively, while minimizing the economic and environmental costs.
- Determine whether the corrective actions actually reduced or prevented pest populations, were economical, and minimized risks. Record and use this information when making similar decisions in the future.

Pesticide Selection

Pesticides in cow/calf operations should be used only when necessary. Along with problems resulting from normal pesticide use, wastes can be produced from spills at mixing areas, in the field, or from the washing of application equipment.

Pesticide recommendations change frequently. Registrations may be canceled or added at any time. Recommended rates or products that were valid at the start of the growing season may change. Check with your local extension agent for the most recent recommendations, or access the UF-IFAS computer-based Electronic Data Information Source (EDIS) at: http://edis.ifas.ufl.edu/. Base pesticide selection on characteristics such as solubility, toxicity, degradation, and adsorption, considering site-specific characteristics such as soil, geology, depth to water table, proximity to surface water, topography, and climate, so that the potential for pollution of surface and ground water is minimized. Consider whether the proposed pesticide application will have an effect on any beneficial organism(s) that may be present. If so, consider using pesticides that have the least effect on beneficial organisms, as this may allow longer periods between treatments or eliminate the need for re-treatment.

Pesticide Calibration

Waste reduction starts with applying the precise amount of pesticide to targeted pests. To do this, pesticide application equipment must be properly calibrated. Applying too low a rate may be ineffective and promote resistance. Applying too high a rate may harm the forage or the animals, in addition to costing more money for materials. Application rates must be in accordance with the label in order to prevent contamination to the environment. Controlling application rates and calibrating pesticide equipment reduces the potential for pollutant loading to ground and surface waters.

Calibrating should be done with clean water and take place away from wells, sinkholes, or waterbodies. Remember also to calibrate sprayers every time a nozzle is replaced, and to compensate periodically for wear in pumps, nozzles, and metering systems. Proper calibration of equipment will aid in making applications more efficient and save money

on chemical and labor costs.

Application rates are related to the formulation of the pesticide and to the type of equipment used. Pesticides can be applied with hydraulic, tractor-mounted, pull-type, pick-up mounted, or self-propelled sprayers, or spot applied by back-pack or hand-spraying. It is important to follow the manufacturer's recommendations to determine the correct application rate.

Pesticide Mixing and Application

If applying restricted-use pesticides, the applicator must be fully trained and licensed in accordance with Chapter 5E-9.024, Florida Administrative Code, or must hire someone who is appropriately certified. Applicators must read and follow all label directions and the directions on the Material Safety Data Sheets.

Avoid mixing pesticides and loading or rinsing sprayers immediately adjacent to wells or waterbodies, since spills in these areas can easily contaminate water supplies. If the ranch does not have a permanent or temporary mixing and loading facility, use nurse tanks and mix at random sites to prevent a buildup of contamination. If this is not possible, run a long hose (100-200 feet) away and preferably downhill from the supply well to the mix-and-load area and protect the soil from accidental spills. Install anti-siphon devices or ensure that there is an air gap between the hose and the tank when sprayers are filled.

Other pesticide application strategies include:

- Using erosion control practices that minimize soil loss and runoff, thereby reducing the movement of *adsorbed* pesticides to surface waters.
- Minimizing field applications of pesticides just prior to periods of anticipated heavy or sustained rainfall to prevent surface water contamination or accelerated leaching to ground water and ineffective control of target organisms.
- Using IPM practices, including cultural, mechanical, biological, and chemical methods.
- Evaluating the effects of the seasonal water budget on potential pesticide loss to surface or ground water and selecting an application method that reduces the potential for runoff or leaching.

Other Important Pesticide Information

There are many other important issues that involve pesticide use. For additional information, refer to *Best Management Practices for Agrichemicals and Farm Equipment Maintenance* which can be accessed online at: http://www.floridaagwater-policy.com/BestManagementPractices.html

Pharmaceuticals

The use and misuse of pharmaceuticals, such as antibiotics and hormones, can have a negative impact on water quality. A recent study found sulfathiazole in a high percentage of samples downstream of cattle and swine sites; however, these were concentrated animal operations and not pasture-based operations. This is an emerging issue of national importance as sampling has revealed detectable amounts of antibiotics, hormones, sterols and other substances in surface waters from various sources. Because of this, it is very important to use these products responsibly. Follow all state and federal regulations and properly dispose of spent needles, expired or unused pharmaceuticals, and pharmaceutical containers.

Proper disposal of spent needles, referred to as "sharps," is regulated by EPA. These regulations require that needles are disposed of in a biomedical container designed for collection of sharps. Spent needles should be collected in these containers to avoid accidental needle sticks of farm workers or animals. Local veterinary offices should be able to provide these containers. Many county solid waste departments will take the sharps containers and properly dispose of them for a small fee, and some counties provide this service for free. Contact the local solid waste office for more information. Operators should check with their county extension office in the event that local ordinances may apply.

The proper disposal of unused pharmaceuticals is necessary for environmental, livestock, and human health. Expired medications can often be returned to the supplier/manufacturer or some veterinary offices. Check with your local municipality to see if they will accept pharmaceuticals during household hazardous waste disposal events.

RANCH WASTE MANAGEMENT

Ranch waste management includes the proper storage and disposal of products and by-products from cow/calf operations. These products generally include pesticide, petroleum, and other synthetic materials. Source control, including careful monitoring of all imported materials, helps to minimize pollutants in the waste stream. Waste management is very important because it reduces wastes, lowers the risk of an accidental discharge of pollutants, and saves money. This section is an introduction to managing a typical ranch waste stream.

Pesticide Waste

Reduce pesticide waste by minimizing the generation of wastewater from cleaning application equipment after use. Rinsing the sprayer is necessary only when changing from one pesticide to another, when moving to a new application site and the pesticide last used in the sprayer is not registered for the new site, or when cleaning the sprayer for storage. This practice will reduce the amount of *rinsate*.

Rinsate can be collected and used in accordance with the label during the next application. Rinsate should be sprayed on fields where the pesticide was originally applied, as long as the maximum application rate for that pesticide is not exceeded. Another option is to store the rinsate and use it to dilute the same pesticide for the next application. Do not dump rinsate on the ground or discharge it to surface waters or septic systems.

Pesticide spills should be cleaned up immediately following an incident. Barriers and absorbent materials are generally used to contain spills. Soil affected by a spill should be collected and stored in a special container, and reused at or below label rates during subsequent applications. Spill clean-up equipment and trained emergency responders should be readily available to handle spill incidents. The quick containment and clean-up of pesticide spills will minimize impacts to the environment and reduce liability should the land be sold.

Synthetic Products Waste

Most of the waste reduction principles described above can be applied when using other synthetic materials, which can include solvents, degreasers, lubricants, paints, and antifreeze. Unnecessary use of synthetic chemicals can result in pollution of the surrounding environment. These products should never be directly poured onto concrete surfaces or soil. Select solvents and degreasers that are non-hazardous to the environment. Compressed air is often a viable alternative to using solvents for cleaning farm equipment.

Most solvents can be reused many times without losing their cleaning properties. If the operation has a shop, consider using a water-based (solvent) reuse system. Used petroleum-based products must be stored in properly marked containers to be recycled or disposed of properly. Properly recycle all waste oil and antifreeze, and let all empty paint cans air dry before disposal.

Keep an inventory of all solvents used and have the Material Safety Data Sheets available nearby should an emergency arise. Remember to reduce, reuse, and recycle all products, as appropriate. This is your best defense against accidentally generating a hazardous waste stream on your ranch.

Gasoline and Diesel Fuel Waste

Ranch waste management must also include the proper management of all petroleum products located onsite, to ensure that ground or surface water is not contaminated. These products typically include unleaded fuel, diesel, motor oil, and heating oil. Very small amounts of these compounds in drinking water may not produce noticeable tastes or smells, but can have serious human health effects. This is why it is important to properly store, contain, and dispense these products.

Proper design and management of fuel-dispensing areas is essential to prevent soil and water contamination. Fuel-dispensing tanks and pumps should be located as far as possible from surface water and drinking water wells. Petroleum storage tanks installed above ground are regulated by FDEP (Rule 62-762, F.A.C.), and must be on an impervious pad with secondary containment to contain accidental spills or leaks. These facilities should be roofed to keep out rainfall and reduce stormwater runoff. All structures over fuel tanks should be designed to meet local building and fire codes. Build the containment structure so that it is tall rather than wide, in order to reduce rainfall accumulation. Never discharge water from the containment area without first checking for and treating an oil sheen.

Underground petroleum storage tanks are also regulated by FDEP (Rule 62-761, F.A.C.), and must have leak-detection and monitoring devices, cor-

rosion protection, and spill or over-fill prevention devices. These devices will limit the contamination of soil and ground water. Above or underground fuel storage tanks may be subject to a Spill Prevention Control and Countermeasure Plan or an alternative plan that specifies the measures that will be taken to mitigate spills.

Used motor oil and oil filters can be disposed of legally by recycling them. Local auto shops may take recycled oil and oil filters. Drain, puncture, and crush used oil filters and store them in a separate container. For large amounts of used oil, contact a permitted used-oil recycling facility.

Ranchers generally deal with a number of other land uses besides cattle production. In terms of environmental protection, it is important to understand how these land and management practices may affect water quality.

Fire Lines

Construction of fire lines is an essential practice for fire prevention, fire suppression and prescribed burning. However, improperly designed and constructed fire lines can result in excessive erosion and water quality degradation. Extra precautions are necessary when constructing fire lines near wetlands.

Fire lines should be plowed only where necessary. When possible, use existing barriers such as roads, watercourses, and other features, or alternatives to plowed lines, such as harrowing, grass strips, or wet lines. Wet lines are fire lines that are maintained and kept wet to prevent fire from spreading. Fire lines should not be plowed through sensitive areas such as wetlands, unless no other options exist and it can be done without adversely impacting the wetland. Always maintain a minimum plow depth during construction of the fire line. Raise the plow when crossing watercourses to prevent plowing through them. Design and construct fire lines so they do not function as drainage systems. This is particularly important for fire lines that might connect to isolated wetlands. A turnout is a useful feature to stabilize fire lines when erosion and sedimentation are likely. Whenever possible, orient fire lines along natural contours to prevent erosion and gully formation.

Construction of Access Roads

Access roads are a potential source of long-term erosion and sedimentation because of the bare soil associated with the road surface and the need for periodic maintenance. Carefully plan the location and desired drainage features prior to road construction, using soil survey maps, topographic maps, and aerial photographs. Place emphasis on minimizing stream and wetland crossings, and avoid construction during wet conditions. Also, focus on balancing cuts and fills to maximize use of local material and enhance roadbed stability.

To reduce road costs and disturbed surface area, minimize the road width consistent with the anticipated use. For fill road construction, keep shoulders at a gentle slope to minimize erosion and accelerate re-vegetation. Stabilize road banks and critical road segments by using mulch, seed, or other methods to keep the road from washing away and to keep sediment out of streams. Avoid directing ditch flow or road runoff into streams, lakes, or other watercourses to prevent soil erosion and turbidity problems.

Some roads will cross ditches, streams, and other watercourses. These roads will require special consideration and proper planning to prevent culverts from washing out, over-drainage of the site, flooding, or other undesirable effects. The local USDA-NRCS office can assist in the proper design and construction to eliminate or minimize undesirable effects.

Culvert crossings, rock crossings, or *turnouts* can be used to enhance long-term stability, reduce maintenance and associated costs, and protect water quality. For example, turnouts, vegetation, or ditch plugs can reduce the volume and velocity of flow. Where practical, all road drainage practices that divert ditch flow or road surface runoff should direct the flow onto vegetated areas where it can be dispersed adequately. Water turnouts can be installed periodically to divert flow away from the road, and onto an adjacent vegetated area for treatment. These areas should be adequate in size and have sufficient ground cover to assimilate runoff. Also, install culverts on roads where there is a need to direct ditch flow from one side to the other, underneath the road surface. Base the size of the culvert on the road ditch size and size of the watershed above the culvert. ***(Note: Activities in wetlands or streams may require a permit, so check with the county, water management district, and USDA-NRCS before proceeding).*** Alternatively, a low-water crossing using filter fabric, rock, or concrete to stabilize the road base may be an alternative to installing cross-drain culverts.

Proper maintenance of access roads is very important. All drainage structures should be checked and maintained periodically, especially following excessive rain events. If signs of sediment or turbid discharges are present, take immediate corrective actions as necessary. Ditches and culverts should be kept free of major obstructions, and ditches should be allowed to re-vegetate as much as possible. Also, stabilize critical segments of roads with seeding or mulching to minimize erosion and sediment movement.

Elevated access roads should not be located within 25 feet of wetlands. Avoid directing ditch flow or road runoff into streams, lakes or other watercourses due to possible erosion and turbidity problems.

Silviculture

Many Florida ranchers have diversified their operations by growing trees as a complementary agricultural land use. Ranchers engaged in forest management should follow the most recent version of the *Silviculture Best Management Practices* manual, which can be obtained online at: http://www.floridaagwaterpolicy.com.

Intermittent Row Cropping

Intermittent row crops, such as watermelons, are periodically grown to renovate pastures or supplement income. To reduce the potential for water quality impacts, select pastures with adequate existing drainage features and minimize alterations of the drainage system. Remember to account for the row crop activities in your nutrient management practices. All permits or exemption determination letters must be acquired prior to constructing new ditches or altering existing ditches and/or drainage features, so consult with the proper authorities before proceeding. Ranchers engaged in growing seasonal row crops should follow the most recent version of the *Water Quality/Quantity Best Management Practices for Florida Vegetable and Agronomic Crops*, which can be obtained online at: http://www.floridaagwaterpolicy.com.

Seasonal Sod Production

Much of the agricultural land in Florida is managed for cattle grazing. Sod production on bahiagrass pasture is generally recognized as a low-intensity agricultural use. When properly managed, this use provides vegetative cover and soil and water benefits. Some ranchers include the harvest of bahiagrass as part of their pasture renovation program. Ranchers engaged in seasonal sod production should follow the most recent version of the *Water Quality/Quantity Best Management Practices for Florida Sod*, which can be obtained online at: http://www.floridaagwaterpolicy.com.

EXHIBIT C

Advanced-Level BMP Needs Assessment

You must complete the Advanced-Level BMP Needs Assessment on the next page to determine which Advanced-Level BMPs are applicable to your operation.

Note: Some of these BMPs may require financial assistance.

EXHIBIT C

ADVANCED-LEVEL BMP NEEDS ASSESSMENT

This tool is to be used in addition to identifying the applicable Level I BMPs for your operation. After answering the questions below, ranchers may be required to address problem areas that require more protection. Your response will determine whether it is necessary to implement additional BMPs (Level II and/or Level III BMPs), and may indicate the need to develop a Conservation Plan for your operation. Based on your score and other onsite risk factors, you may not need to implement the Level II BMPs immediately. The BMP Checklist in Appendix 11 allows ranchers to indicate when they will implement practices.

Scheduling Options for Advanced-Level BMPs: If the Level I BMPs address the resource issues identified by the Needs Assessment, the related Advanced-Level BMPs may not need to be implemented. Therefore, for those Advanced-Level BMPs that you have determined may not be needed because the level one BMPs may adequately address the problem, you may schedule implementation to occur one year after the implementation date for the associated Level I BMPs. If, at the time the Advanced-Level BMPs are scheduled, the Level I BMPs have adequately addressed the resource issue(s) and you decide not to implement the Advanced-Level BMPs, you must notify FDACS which Advanced-Level BMPs are no longer applicable. However, where it is clear that the severity of the problem warrants it, implement the Advanced-Level BMPs as soon as practicable.

Scoring

- Circle the number next to each statement that applies to your operation. Add the numbers within each lettered subsection and place that number in the space labeled "Score." Add the scores together and place that number in the space labeled "Total Score." Divide the total score by the number of sectians to get your average score for the section and place that number in the space labeled "Average Score."
- For the Level II BMP assessment questions, if your average score in a section is 2 or greater, implement the corresponding Level II BMPs.
- If your average score is greater than 4 in two or more sections, seek technical assistance to develop a *Resource Management System-Level* Conservation Plan* for the entire ranch.
- If your average score for the section on Grade-Stabilization Structures (Level III) is 3 or greater, seek technical assistance to develop a Conservation Plan* specific to grade stabilization, regardless of your scores in the Level II Needs Assessment.

* *Note: A Conservation Plan must contain all BMPs in this manual that are applicable to your operation. Depending upon which BMPs are required, it may be in your best economic interest to develop a Resource Management System-Level Conservation Plan for your ranch in order to be eligible for government cost-share, even if your scores do not dictate that you must have a Conservation Plan.*

Level II Needs Assessment

Comprehensive Prescribed Grazing

A. Describe your operatian's stocking rates:
- 0 Stocking rates are at or below the forage availability levels or Conservation Plan recommendations.
- 1 Stocking rates are above forage availability or Conservation Plan levels only during the growing season and forage is adequate.
- 4 Stocking rates are above forage availability or Conservation Plan recommended levels for the entire year and forage is short.

Score: _____

B. Describe your operation's grazing system:
- 0 Rotational or prescribed grazing is practiced on 100% of pastures.
- 1 Rotational or prescribed grazing is practiced on 50% of pastures.
- 1 Continuous grazing is practiced and forage is maintained at appropriate heights.
- 2 Continuous grazing is practiced and forage is below minimum heights only during the dry season.
- 4 Continuous grazing is practiced and forage is constantly short.
- 5 Continuous grazing is practiced and several areas in the pasture are denuded of vegetation.

Score: _____

Total Score: _____
(Score A + Score B)

Average Score: _____
(Total Divided by 2)

If your Average Score is 2 or greater, implement the Level II BMPs located in Section 3.2 on page 34.

EXHIBIT C

Check Dams and Sediment Traps

A. Under average hydrologic conditions, have you observed a sand bar at the confluence of your drainage ditches/canals, or at a downstream lake or stream?

- **0** Never
- 1 There is a small sandbar(s) that I can see at really low water.
- 2 There is a small sandbar(s) that I can usually see.
- 4 There is a large sandbar(s) that causes some flow diversion.
- 5 There is a sandbar(s) that I have to clean out regularly.

Score:_____

B. Have you observed *turbid* water from high-intensity areas following a storm event?

- **0** Never
- 1 Only following very large storms (more than 2 inches of rain)
- 3 Usually some turbidity following minor storms (more than 1 inch of rain)
- 4 Usually some turbidity (plume of sediment) every time it rains
- 5 Water is always turbid, even when it does not rain.

Score: _____

Total Score: _____
(Score A + Score B)

Average Score: _____
(Total Divided by 2)

If your Average Score is 2 or greater, implement the Level II BMPs located in Sections 4.3 or 4.4 on page 36.

Livestock Use Exclusion

A. Is there soil erosion or denuded areas, due to livestock access, along watercourses that are within 500 feet of waters of the state?

- **0** There is no soil erosion resulting from denuded areas along the banks of these areas.
- 1 Less than 10% of the banks have erosion resulting from denuded areas.
- 3 10% to 20% of the banks have erosion or denuded areas.
- 4 More than 20% of the banks have erosion resulting from denuded areas.
- 5 Almost all banks have erosion resulting from denuded areas.

Score: _____

B. Describe the condition of the perennial stream or watercourse banks that livestock have access to:

- **0** Livestock do not have access to them.
- 1 Banks have a constant vegetative cover year round.
- 2 There are a few areas on banks denuded of vegetation for less than 30 days with no *rill erosion*.
- 3 There are a few areas on banks that are constantly denuded of vegetation with some rill erosion.
- 5 The majority of banks are constantly denuded of vegetation and substantial rill erosion is present.

Score: _____

Total Score: _____
(Score A + Score B)

Average Score: _____
(Total Divided by 2)

If your Average Score is 2 or greater, implement the Level II BMPs located in Section 7.3 on page 44.

High-intensity Area Design Retrofits

A. Describe the location of cowpens and their proximity to perennial streams or watercourses:

- **0** Cowpens are greater than 200 feet from perennial streams or watercourses and appropriate measures are taken to control runoff.
- 1 Cowpens are located within 200 feet of perennial streams or watercourses and appropriate measures are taken to control runoff.
- 5 Cowpens are located within 200 feet of perennial streams or watercourses and minimal or no measures are taken to control runoff.

Score: _____

B. If you periodically keep cattle in concentrated, denuded areas within 500 feet of perennial streams or watercourses, do you:

- **0** Prevent all runoff from the area from reaching perennial streams or watercourses
- 1 Route all runoff through filter strips or equivalent treatment areas before it reaches perennial streams or watercourses

2 Route 75% of runoff through filter strips or equivalent treatment areas before it reaches perennial streams or watercourses
3 Route 50% of runoff through filter strips or equivalent treatment areas before it reaches perennial streams or watercourses
4 Route 25% of runoff through filter strips or equivalent treatment areas before it reaches perennial streams or watercourses
5 Allow uncontrolled runoff from the concentrated area directly to perennial streams or watercourses

Score: _____

Total Score: _____
(Score A + Score B)

Average Score: ____
(Total Divided by 2)

If your Average Score is 2 or greater, implement the Level II BMPs located in Section 8.2 on page 45.

Reminder: If your average score is greater than 4 in two or more sections (Level II BMPs), seek technical assistance to develop a Resource Management System-Level Conservation Plan for the entire ranch.

Level III Needs Assessment

Grade Stabilization Structures

A. Is there soil erosion around culverts or other water control structures in canals or ditches?
0 There is no erosion around any water control structures.
1 Less than 10% of culverts have visible erosion around them.
2 20% to 30% of culverts have visible erosion around them.
4 30% to 50% of culverts have visible erosion around them.
5 More than 50% of culverts have visible erosion around them.

Score: _____

B. Under normal wet-season weather conditions, have you ever had a road or culvert "blow out" due to high water levels?
0 Never
1 Once every 5 years
2 Once every 3 years
4 About once every year
5 A few culverts each year

Score: _____

C. Have you observed turbid water leaving your property following a storm event?
0 Never
1 Only following very large storms (more than 2 inches of rain)
3 Usually some turbidity following minor storms (less than 1 inch of rain)
4 Usually some turbidity (plume of sediment) every time it rains
5 Water is always turbid, even when it does not rain

Score: _____

D. Under average weather conditions, have you observed a sand bar at the confluence of your drainage ditches/canals, or at a downstream lake or stream?
0 Never
1 There is a small sandbar(s) that I can see at really low water
3 There is a small sandbar(s) that I can usually see
4 There is a large sandbar(s) that causes some flow diversion
5 There is a sandbar(s) that I have to clean out regularly

Score: _____

Total Score: _____
(Scores A+B+C+D)

Average Score: ____
(Total Divided by 4)

Reminder: If your Average Score for the Level III Needs Assessment *(Grade Stabilization Structures)* is 3 or greater, seek technical assistance to develop a Conservation Plan for this practice (Grade Stabilization Structure, NRCS Code 410), regardless of your scores in the other sections. The plan must contain the BMPs listed in section 4.5 of this manual.

EXHIBIT C

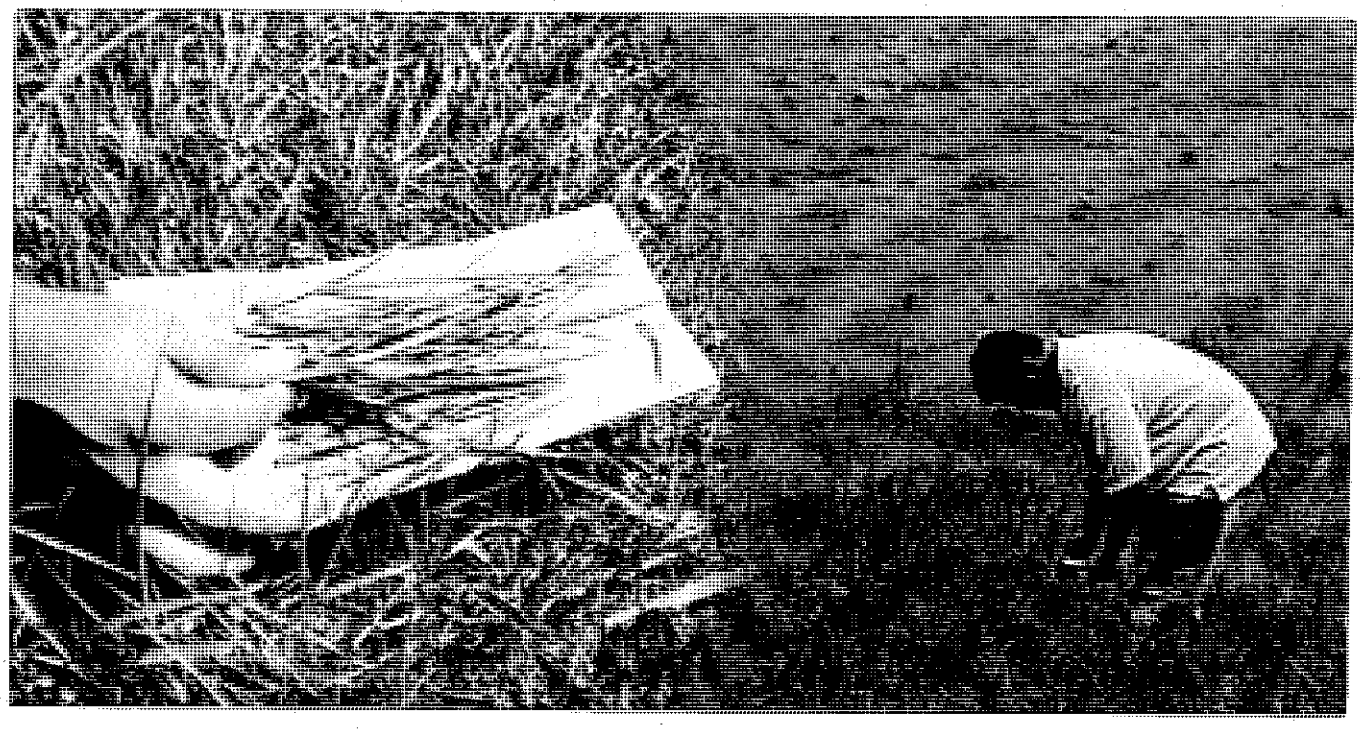
Best Management Practices

Note: All BMPs that follow are Level I, Level II and Level III BMPs.

Reminder: You must complete the Advanced-Level BMP Needs Assessment on page 24 to determine which Advanced-Level BMPs are applicable to your operation.

EXHIBIT C

EXHIBIT C



1.0 NUTRIENT MANAGEMENT

Nutrient management for livestock operations requires a systematic management approach that includes several different, yet related, practices. It is arguably the most important category of BMPs in this manual. It includes managing plant nutrients for optimum forage yields and managing feeding practices to deliver proper nutrition for the animal. It also includes proper animal waste management to protect waterbodies. Nutrient management considers the amount, source, form, placement, and timing of fertilizer application materials. All potential sources of plant nutrients, such as organic and synthetic fertilizer inputs, as well as nutrient reserves within the soil, are identified, inventoried, and addressed.

One of the first steps in developing a sound fertilization management program involves a basic knowledge of soils. Many of Florida's soils naturally contain the required amount of phosphorus, assuming the pH levels are within the range to make this nutrient available. As such, soil testing and analysis is considered to be a cornerstone of any nutrient management program. For most ranches, soil testing should be conducted at a minimum of once every three to five years, or whenever phosphorous fertilizer is used. Nitrogen, which is not analyzed as part of a routine soil test, is a critically important macronutrient for vegetative growth. Plant tissue testing, which can detect plant nitrogen levels, can be used in conjunction with soil testing to diagnose the overall effectiveness of a fertilization program. Tissue testing is especially useful to help a grower fine-tune their fertilizer application program.

Proper animal nutrition and feedstock management for environmental protection must consider the type, blend, and amount of feed to obtain maximum nutrition and animal health. Moreover, supplemental feed, its content and proximity to a waterbody, must also be considered, as it can secondarily affect nonpoint source pollution. In addition, animal waste management is a final consideration in developing an overall nutrient management budget. The principle goal of this BMP is to minimize nutrient loss to the environment because the offsite transport of nutrients to surface waters from various sources has caused most of the water quality impairment issues in Florida's watersheds.

Working Definition:

Nutrient management consists of fertilizer management, animal nutrition, feedstock management, and animal waste management.

1.1 Fertilizer Management

✓ 1. Use a soil test from a lab using the Mehlich-1 or another method approved by the UF-IFAS Extension Soils Testing Laboratory to deter-

mine P fertilization rate. Analyze the need for tissue testing based on the soil test results.

√ 2. If planting legumes or fertilizing with manure or wastewater residuals, use the Nutrient Budget Worksheet in Appendix 5 to determine whether supplemental fertilizer is needed.

√ 3. Follow UF-IFAS-recommended rates in SL-129 for the particular forage. The criteria to determine phosphorus application on established bahiagrass pastures are: a tissue analysis < 0.15 percent phosphorus, soil pH ≥ 5.5, and soil analysis is ***very low (less than 10 ppm)*** or ***low (10 to 15 ppm)*** for phosphorus. If using organic materials or manure, adjust the rate of supplemental fertilizer materials based on the product's nutrient content analysis.

√ 4. Time fertilizer applications with plant growth to maximize nutrient uptake and to minimize leaching and runoff.

√ 5. Prevent spreading fertilizer material in streams, sinkholes, or wetlands by maintaining at least a 50 foot setback from these features.

■ Maintain records of fertilizer application. Records should include soil test analysis, date of application, fertilizer formulation, application rate, location and acreage, and worksheet results.

1.2 Residuals or Biosolids Application

√ 1. Abide by all applicable regulations in FDEP Rule 62-640, F.A.C., for residuals application, and/or Florida Department of Health (FDOH) Rule 64E-6, F.A.C., for *septage* application.

√ 2. Request the calcium carbonate equivalency and nutrient analysis of the product, expressed as a dry weight, for residuals or septage treated by lime stabilization. Use this analysis to determine what amount to apply without adversely affecting soil pH. This is especially important when applying the product to bahia grass, since it is an "acid loving" plant.

√ 3. Obtain a copy of the FDEP Agricultural Use Plan from the hauler/applicator when applying residuals or septage, and abide by all grazing restriction and setback requirements.

1.3 Animal Nutrition and Feedstock

√ 1. If using a high amount of supplemental feed, manage your operation so that nutrients in feed will not lead to high rates of nutrient loads from waste. Keep in mind that livestock generally excrete 60 to 85% of the phosphorus fed to them.

√ 2. Locate any confined feeding areas away from watercourses, wetlands, sinkholes or excessively sloped terrain. Ensure that filter strips or other conservation buffers are maintained between feeding areas and adjacent features.

√ 3. Locate supplemental feeding and mineral stations at least 100 feet away from watercourses, streams, wetlands, wells or sinkholes.

1.4 Animal Waste Management

√ 1. Manage livestock distribution to reduce any concentrated accumulation of wastes that could lead to nutrients contaminating ground water or surface waters.

√ 2. Use onsite concentrated manure sources, if available, as a fertilizer supplement in accordance with soil test results. This will recycle nutrients and reduce the need for inorganic fertilizers.

Operation and Maintenance:

- Maintain and calibrate fertilizer application equipment properly.
- Do not mix or load fertilizers near environmentally sensitive areas.
- Store fertilizers properly and in a safe location.

References:

(1) USDA-NRCS Nutrient Management, Code 590, FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg/

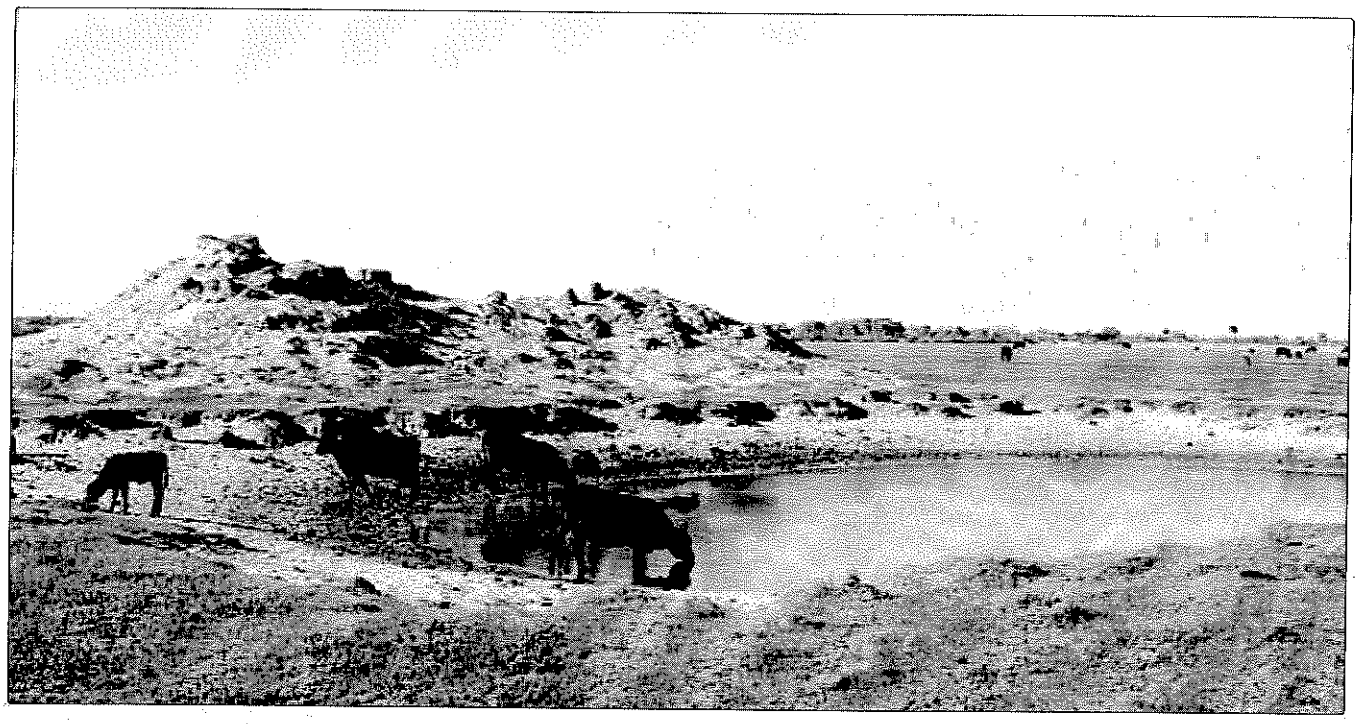
(2) Beef Cattle Production Best Management Practices, LSU Ag Center, http://www.lsuagcenter.com/en/crops_livestock/livestock/beef_cattle/production_management/Beef+Cattle+Production+Best+Management+Practices.htm

(3) Standardized Fertilization Recommendations for Agronomic Crops, UF-IFAS Fact Sheet SL-129, http://edis.ifas.ufl.edu/SS163

(4) USDA-NRCS Waste Utilization, Code 633, FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg/

(5) USDA-NRCS Feed Management, Code 592, FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg/

EXHIBIT C



2.0 ALTERNATIVE CATTLE WATER SOURCES

Beef cattle, like humans, need a reliable source of freshwater in order to survive. Water requirements are influenced by several factors, including rate of gain, pregnancy, lactation, activity, type of diet, feed intake, and air temperature. These requirements are generally met by water originating from wells, surface waters, upland ponds, and natural isolated wetlands, as well as moisture found in feed. Limiting water intake can depress animal performance more quickly than any other nutrient-related deficiency. Domesticated animals can live about 60 days without food, but only seven days without water.

On average, a beef cow's estimated daily intake of freshwater is between 11 and 15 gallons per day, depending upon the time of year and whether lactating cows are present. Hot weather can nearly double the daily water intake requirements, compared to winter months. Lactation can also increase the water intake needs significantly, since water intake during the latter stages of pregnancy can be 30% to 50% higher than normal.

Nonpoint source pollution problems on cattle operations can occur in the vicinity of watering sites and supplemental feed and/or loafing areas, where animals tend to congregate most often. Using stagnant sources of surface water alone can also pose health hazards to livestock. Cattle liver fluke and Leptospirosis are waterborne diseases that can infect other members of the herd. Therefore, providing fresh water and strategically locating supplemental feed facilities away from perennial streams and major discharge canals will help keep livestock out of critical watercourses. Artificial shade structures may also be used to encourage the use of upland sites for shading and loafing. These planning considerations are essential components to avert water quality problems related to livestock distribution. This is especially important when stocking rates are increased and pasture rest periods are minimized. Ultimately, careful planning and site-specific decisions involving alternative cattle water sources can have a significant role in protecting water quality and can preclude the need to install costly exclusion fencing adjacent to natural watercourses.

Working Definition:

Alternative cattle water sources are strategically located freshwater sources such as upland excavated ponds, artesian wells, watering troughs, and/or other surface water sources that provide adequate drinking water away from sensitive water resources.

2.1 Water Needs Inventory

✓ 1. Inventory existing water sources and average herd size to ascertain the estimated water use (daily intake of water), to ensure that a 7-day supply of water is always available in herd management areas.

√ 2. Review water management district records on regional well water quality data, particularly with regard to total dissolved solids and sulfates, as this may affect animal health.

2.2 Upland Pond Construction Criteria

√ 1. Construct new ponds by embankment or excavation, keeping the pond size between ¼ and 2 acres, and locating it at least 50 feet away from wetlands, or further based on water management district requirements. Keep side slopes no steeper than a one-to-one horizontal to vertical ratio.

√ 2. Construct cattle access areas with a minimum slope of three-to-one horizontal to vertical ratio.

2.3 Other Watering Sources

√ 1. Locate watering troughs and associated shade facilities to keep cattle away from perennial streams or watercourses as much as possible.

√ 2. Construct troughs or tanks with a stable base to reduce health hazards to livestock.

√ 3. For piped withdrawals of non-regulated surface water sources, extend pipe at least 100 feet landward from the waterbody.

Operation and Maintenance:

- Maintain all wells, troughs, and other associated structures in good working order.
- If you suspect the animals are affected by a waterborne illness, carefully monitor animal health and conduct water quality sampling and analysis.
- Clean watering troughs frequently with dilute bleach.

References:

(1) USDA-NRCS Pond, Code 378; Watering Facility, Code 614; Pipeline Code, 516; and Livestock Shade Structure, Code 717, FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

(2) Beef Cattle Production Best Management Practices, LSU Ag Center, http://www.lsuagcenter.com/en/crops_livestock/livestock/beef_cattle/production_management/Beef+Cattle+Production+Best+Management+Practices.htm

(3) Livestock and Water, North Dakota State University, AS-954, http://www.ag.ndsu.edu/pubs/ansci/livestoc/as954w.htm

(4) Water for Livestock Using Solar Generated Electricity, UF-IFAS Fact Sheet EES-97, http://www.p2pays.org/ref%5C08/07682.pdf

EXHIBIT C



3.0 PRESCRIBED GRAZING

Before land was deeded to private ownership, historical ranching in Florida consisted of native range grazing practices. The knowledge and wisdom gained by early cowboys driving cattle over a vast expanse is still evident today. Some operations still practice the age-old art of native range grazing, whereby natural grasslands, scrublands, and savannas provide adequate forage for low-density stocking rates. In these operations, livestock are normally grazed at a rate of one ***animal unit*** to more than six acres, depending on the condition of the range site. Given today's financial constraints, grazing systems generally fall under the ***prescribed grazing*** category. All grazing systems have advantages and disadvantages. The requirements of a grazing system and the goals of the ranch manager should be matched to provide environmentally and economically sound options.

The potential for non-point source pollution from rangeland livestock depends primarily on stocking rate, length of grazing period, season of use, manure deposition sites and location. Normally, well-managed pastures and rangeland present little to no water quality problems from cattle excrement alone. In this scenario, most of the available phosphorus from excrement decomposition is re-used in the system via the phosphorus cycle. Problems may occur in cases where animals congregate for feeding, watering, and resting in close proximity to surface waters; however, most of the problems associated with high phosphorus discharge are generally linked to soil erosion and sediment transport stemming from these activities. To counter this, pasture and rangeland water quality can be effectively managed by proper distribution of cattle, along with the strategic placement of supplemental feeding, mineral stations, and alternative water sources away from surface waters. Installing fences and subdividing large pastures to exert more control over the frequency and timing of grazing can also improve grazing distribution. Poor grazing management will lead to nutrient losses and invasion of undesirable plant species. Good planning and management on pastures, using rotational grazing principles, can effectively sustain the herd and prevent pollution problems.

Working Definition:

Prescribed grazing is managing the harvest of vegetation with grazing and/or browsing animals.

3.1 Prescribed Grazing Guidelines

√ 1. Manage forage grazing of pastures or *paddocks* based on established stubble heights to maintain plant vigor, prevent soil erosion, and maintain soil moisture levels. Base prescribed grazing schedules on the rate of plant growth, available forage and

utilization, not on calendar dates. Carefully monitor available forage to ensure it is adequate to meet animal demand.

√ 2. Use rotational grazing or other measures to give concentrated areas time for re-growth between grazing periods, and to achieve a more even manure distribution across the pasture.

√ 3. Incorporate a flash grazing system in established wetland exclusion areas to manage the existing vegetation without degrading the resource.

Maintain grazing records by pasture, and develop a contingency plan for floods and droughts in order to adjust the required grazing demands.

Note: *Do the Advanced-Level BMP Needs Assessment to determine whether to implement the BMPs below.*

3.2 Level II - Comprehensive Prescribed Grazing

√ 1. Initiate grazing only after the predominant forages have reached acceptable plant height(s), and rotate or remove livestock when grazing results in minimum leaf length(s) per NRCS recommendations in Code 528. Plan the rest periods for predominant forages based on the season of the year.

√ 2. Incorporate cross-fencing to subdivide larger pastures so that rotational grazing is more effective.

Keep records on stocking numbers, grazing days, and length of rest periods for each pasture or field.

Operation and Maintenance:

- Maintain all fences, wells, troughs and other associated structures in good working order.
- Review and revise grazing management plans as needed, or at least annually.

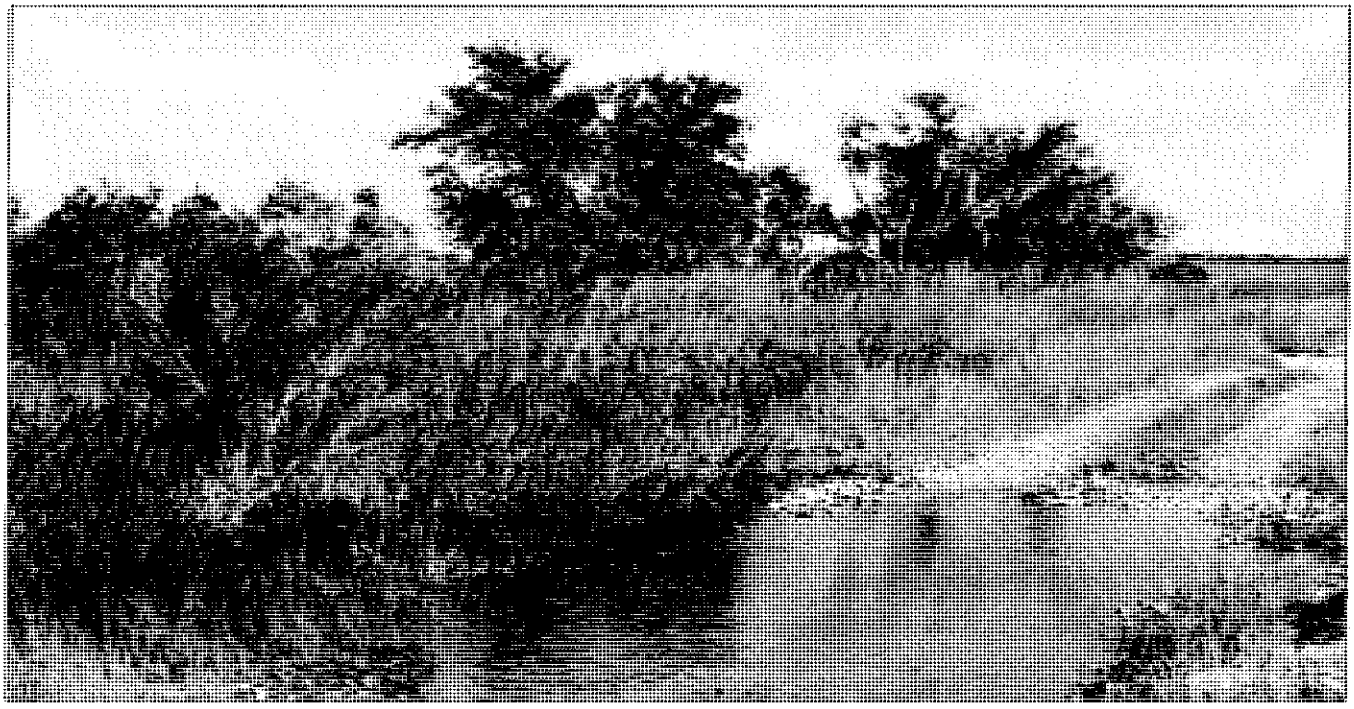
References:

(1) USDA-NRCS Prescribed Grazing, Code 528; Pasture and Hayland Planting, Code 512; Range Planting, Code 550; FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

(2) Beef Cattle Production Best Management Practices, LSU Ag Center, www.lsuagcenter.com/en/crops_livestock/livestock/beef_cattle/production_management/Beef+Cattle+Production+Best+Management+Practices.htm

(3) National Management Measures for the Control of Nonpoint Pollution from Agriculture, EPA Document No. 841B03004, http://www.epa.gov/nps/agmm/

EXHIBIT C



4.0 SEDIMENT AND EROSION CONTROL MEASURES

Some farm practices may inadvertently affect the quality of water discharged offsite. Removal of natural vegetation and topsoil increases the potential for soil erosion, which can change runoff characteristics and result in loss of soil and increased turbidity and sedimentation in waterbodies. Sediments along with *sorbed* nutrients and pesticides may be carried in runoff, and can negatively affect adjacent surface waters.

The first step in preventing erosion and sediment transport is to limit the amount of land that is cleared of vegetation. When clearing vegetation to develop new pastures, re-vegetation should occur as quickly as possible to limit erosion. Whenever possible, land clearing activities should be planned and conducted during the dry season. The second step in preventing erosion and sediment transport involves the use of BMPs, as discussed below. However, keep in mind that installing some of these may require technical assistance.

Whenever ranchers are conducting activities that create a significant risk to water resources, they should use the most appropriate BMPs based on site-specific conditions. The use of more common erosion-control practices (e.g., vegetation, mulch, land leveling) and sediment control devices (e.g., silt fences, check dams, sediment traps) should be employed in progression. Consider using the more passive erosion control measures first, in order to prevent sediment transport. If more protection is needed, sediment control devices can be used next to capture sediment-laden water and allow enough time for larger particles to settle out. By following these practices, ranchers can prevent erosion and sedimentation impacts, which will not only protect the water resources, but also will ensure long-term productivity of agricultural farmland.

Working Definition:

Sediment and erosion control measures are permanent or temporary practices to prevent sediment loss from fields, *attenuate* water flow, and/or trap and collect debris and sediments in runoff water.

4.1 General Erosion and Sediment Control Measures

- ✓ 1. Minimize the amount of vegetation that is cleared when doing construction work.
- ✓ 2. Perform land clearing during the dry season.
- ✓ 3. Vegetate new road banks and other disturbed areas within 14 days of construction. As an alternative to seeding, consider using bermudagrass plugs, sprigs, or sod.
- ✓ 4. Use rock crossings when constructing roads across streams and creeks that have low-flow conditions.
- ✓ 5. Manage livestock to prevent significant erosive trails from developing.

If more protection is needed to control particulate matter, use the two BMP groups below to enhance the level of protection for your operation. They are listed and used progressively (least to most protective) to provide an increasing level of protection.

4.2 Silt Fences

√ 1. Use silt fences when protection is needed for 3 months or less. They can intercept and detain small amounts of sediment and can decrease the velocity of water under sheet-flow conditions. Use them during construction activities and install them at property boundary lines when a discrete point of discharge exists. Silt fences must be properly trenched in, backfilled and compacted in accordance with the Florida Stormwater, Erosion, and Sediment Control Inspector's Manual referenced below.

Note: *Do the Advanced-Level BMP Needs Assessment to determine whether to implement the BMPs below.*

4.3 LEVEL II - Check Dams

√ 1. Install check dams in drainage ditches that have defined flow and experience recurring sedimentation problems. Install them downstream from the disturbed area, perpendicular to the direction of flow. These devices can be created using a variety of materials such as rock, rip rap, or sand bags. Space check dams so that the bottom of the uphill dam is the same height as the top of the downstream dam, or implement BMP 4.4 below.

4.4 LEVEL II - Sediment Traps

√ 1. Install sediment traps within canals or near cowpens when conditions warrant. Clean out traps periodically, as sediment will accumulate.

√ 2. Maintain or replace associated flashboard riser water control structure(s) when a drainage outlet exists, and you have experienced significant recurring erosion problems.

4.5 LEVEL III – Grade Stabilization Structures

√ 1. Remove all vegetative debris and other objectionable material so that it will not interfere with the construction or proper functioning of the grade stabilization structure.

√ 2. Vegetate disturbed areas within 14 days of construction. As an alternative to seeding, use plugs or sprigs for quick cover.

√ 3. Fence the area around the structure to exclude livestock, which can cause erosion and sedimentation problems at the structure.

√ 4. Install structures during dry conditions, and properly de-water the site beforehand.

√ 5. Place fill in horizontal layers, not to exceed four inches in thickness, and compact the fill. Spread or dispose excess fill material in a manner not to interfere with the functioning of the structure.

√ 6. Make provisions to prevent damage from overtopping the structure, and to divert excess flows away from the structure. On structures with drainage areas of 3 acres or less, overtopping of the structure is permitted only if damage will be minor.

√ 7. On pipe island-type or side-inlet drainage structures where the effective height is less than 10 feet and the vertical drop is less than 10 feet from natural ground to normal water level, ensure that earth embankments at or around the structures have side slopes no steeper than 2 horizontal to 1 vertical.

√ 8. Contact USDA-NRCS or FDACS for technical assistance and/or structure design guidance.

Operation and Maintenance:

- Remove any sediment deposits on screens when they reach one half the height of the barrier.
- Keep heavy equipment off of newly vegetated areas until they are established.
- Consider reusing sediment basin water for routine irrigation needs, so long as water volumes and quality warrant.

References:

(1) USDA-NRCS Sediment Basin, Code 350; Fence, Code 382; Grade Stabilization Structure, Code 410; Animal Trails and Walkways, Code 575; Water and Sediment Control Basin, Code 638; Structure for Water Control, Code 587; FOTG-Section IV, http://www.nrcs.usda.gov/technicol/efotg

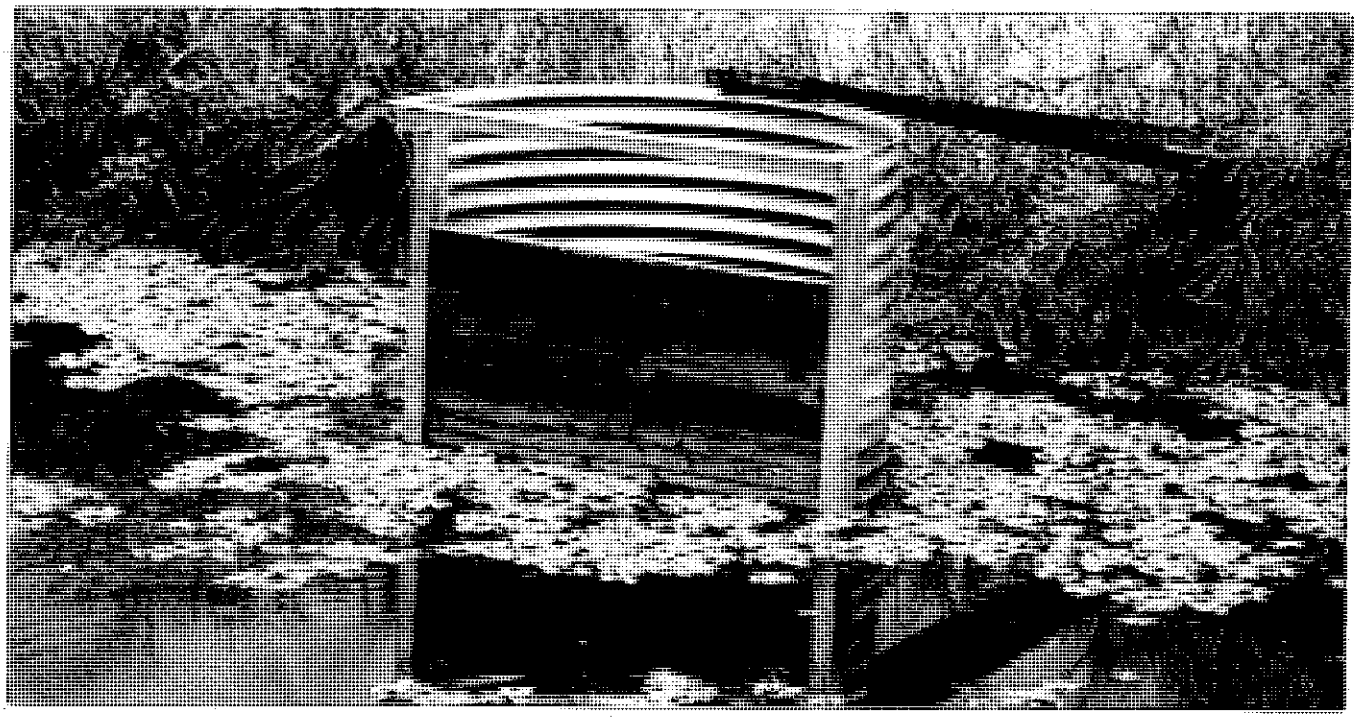
(2) Farming for Clean Water in South Carolina: A Handbook of Conservation Practices, http://www.epa.gov/owow/nps/bestnpsdocs.html#agriculture

(3) The Florida Stormwater, Erosion, and Sediment Control Inspector's Manual, FDEP, http://www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf

(4) USDA Planning and Design Manual for the Control of Erosion, Sediment, and Stormwater, http://www.abe.msstate.edu/csd/p-dm/index.php

(5) National Management Measures for the Control of Nonpoint Pollution from Agriculture, EPA Document No. 841803004, http://www.epa.gov/nps/agmm/

EXHIBIT C



5.0 WATER RESOURCES MANAGEMENT

Florida receives an average of 53 inches of rain per year. However, rainfall amount varies across the state by region, season, and year. Average rainfall tends to decrease as you move toward the central and southeastern parts of the state, and increase as you move toward the northwestern part of the state. In general, rainfall tends to occur more frequently during the summer months in Florida, especially in the central and southern areas of the state.

Water management and nutrient loading to surface waters are linked. For most cattle operations in Florida, key water resources management issues involve:

1. Properly planning for water supply needs for irrigation of forage and/or supplemental cattle watering.
2. Following good construction practices if using swales, ditches and/or canals for drainage in improved pastures.
3. Evaluating the potential to install or manage existing water control structures to hold water onsite, as much as possible.

All three of the above items affect the hydrologic conditions and runoff potential of pastures. Ranches typically have lower nutrient concentrations, but may experience higher volume discharges, due to large land areas. Leaving boards in water control structures will reduce the volume of discharge and sediments, and improve water quality.

Alteration of the land, which may include construction of impervious surfaces such as roads, driveways, parking lots and agricultural structures increases stormwater runoff during rainfall events. Soil compaction in high-traffic areas can reduce soil permeability and increase stormwater runoff. Improper stormwater management leads to onsite and offsite flooding, increased pollutant loading to surface and ground waters, erosion and sedimentation, and the loss of valuable fresh water resources. The need to address these stormwater impacts has led to the implementation of a comprehensive stormwater management program that is implemented cooperatively by FDEP and the water management districts to minimize flooding and stormwater pollution. All new development activities, and some agricultural activities, especially those that alter onsite hydrology, are required to obtain an Environmental Resource Permit (ERP). Some farms may already have an ERP or other WMD surface water management permit that incorporates onsite stormwater management requirements.

While cow/calf operations generally do not lead to stormwater problems, there may be individual farm circumstances that create the need for specific stormwater management practices. Appendix 10 contains guidance and planning considerations to

address these circumstances. The construction of a stormwater management system (e.g., retention or detention pond) may require an ERP or other WMD surface water management permit. Therefare, please check with your WMD before beginning construction of any stormwater management system.

Working Definition:

Water resources management includes good planning and water use practices, and strategic placement of water control structures to manage surface water resources effectively.

5.1 Water Supply

√ 1. Know the quantity and quality of the irrigation water source.

√ 2. Determine the general water requirements for primary forage grasses in improved pastures. Crop water requirements refer to the actual water needs for *evapotranspiration* (ET) and plant growth, and generally depend on crop-specific and climatic factors. Adjust irrigation amounts to forage plant needs.

5.2 Ditch Construction And Maintenance

√ 1. Follow appropriate grades and plans during ditch excavation. Deposit ***spoil*** material in a manner so it cannot be reintroduced into the ditch or canal. Keep in mind that ditches have an engineered limit or ***conveyance capacity*** that governs how much water the ditch can store or convey.

√ 2. Use appropriate setback distances when constructing drainage ditches close to wetlands to avoid *hydraulic drawdown* impacts.

√ 3. Protect canal or ditch banks from erosion in areas subject to high water velocities, using *rip-rap*, concrete, headwalls, or other buffering materials. Take the appropriate steps to prevent livestock from damaging ditch banks.

√ 4. Selectively control broadleaf vegetation on ditch banks to maintain a vegetative cover that is compatible with existing pasture vegetation.

√ 5. Maintain all main ditch features regularly by removing unconsolidated sediments to retain the designed, cross-sectional area.

Keep records of all ditch maintenance activities, and keep any records that relate to ditch design cross-sectional area.

5.3 Installation of Water Control Structures

√ 1. If economically feasible, install water control structures at ranch outfalls, and/or the outfall of historically drained isolated or contiguous wetlands. Doing this will rehydrate these wetlands and provide onsite water quality treatment opportunities. A fixed weir is one device that may be used to help maintain *normal pool* water levels within these wetlands.

√ 2. Maintain boards in all structures to reduce discharge volume, and especially use boards at the end of the dry season to keep the first flush of nutrients onsite.

Before installing new (non-replacement) water control structures, contact FDACS, USDA-NRCS, the applicable water control district and/or your water management district to see if technical assistance or permitting may be required.

5.4 Grassed Waterways

√ 1. Install a grassed waterway to divert runoff from upland pasture areas around any concentrated areas such as cowpens that are near watercourses, streams, wetlands, or sinkholes. Design the grassed waterway in accordance with USDA-NRCS specifications.

Operation and Maintenance:

- Replace dilapidated water control structures with structures matching original specifications and use good sediment control measures.
- Routinely remove any accumulated aquatic weeds at the control structure(s) to maintain proper drainage and prevent secondary environmental impacts. Use a combination of physical control (e.g. floating barriers, screens, etc.), biological control (e.g. herbivorous fish), and chemical control (e.g. selective herbicides labeled for aquatic applications) to suppress and reduce aquatic weed problems.

References:

(1) USDA-NRCS Irrigation Field Ditch, Code 388; Grassed Waterway, Code 412; Structure for Water Control, Code 587; Surface Drainage (Field Ditch), Code 607; and Surface Drainage (Main or Lateral), Code 608; FOTG-Section IV http://www.nrcs.usda.gov/technical/efotg

(2) Design and Construction of Surface Drainage Systems on Agricultural Lands in Humid Areas, American Society of Agricultural and Biological Engineers, Standard EP 302.4,

(3) American Society of Agronomy: Drainage for Agriculture, http://www.agronomy.org

(4) The Florida Stormwater, Erosion, and Sedimentation Control Inspectors' Manual, FDEP, http://www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf

(5) National Management Measures for the Control of Nonpoint Pollution from Agriculture, EPA Document No. 841B03004, http://www.epa.gov/nps/agmm/

EXHIBIT C

EXHIBIT C



6.0 CONSERVATION BUFFERS

For the purposes of this manual, conservation buffers include field borders, filter strips and *riparian* buffers. They are generally non-tilled areas and can be selectively used in cow/calf operations to provide an additional level of water quality treatment, especially near sensitive discharge areas. Field borders are strips of permanent vegetation, either natural or planted, at the edge or perimeter of fields. They function primarily to help reduce erosion from wind and water, protect soil and water quality, and provide wildlife habitat. Filter strips are areas of permanent vegetation between farm fields and adjacent to environmentally sensitive areas. Their main purpose is to decrease the velocity of runoff water and remove sediment particles before they reach surface waters. Riparian buffers are areas of trees, shrubs and/or grasses located adjacent to natural streams, which help reduce excessive amounts of sediment, organic material, nutrients, and pesticides in surface water sheetflow. Riparian buffers are most effective on highly sloped lands when positioned next to perennial or intermittent streams with high ground water recharge potential.

Working Definition:

Conservation buffers are permanently vegetated, non-cultivated areas that function to retain water and soil onsite to help reduce pollutants in surface water runoff.

6.1 Field Borders

√ 1. When creating new improved pastures on previously idle land adjacent to urban areas, install or maintain field borders around the perimeter or, at a minimum, in areas where runoff enters or leaves the pasture.

√ 2. Plant borders during the time of year that will assure the most success for survival, and consider using native species and/or overseeding the border with legumes for plant diversity and wildlife benefits.

6.2 Filter Strips

√ 1. Install a filter strip to treat runoff from concentrated livestock areas, such as feed areas or cowpens that are directly adjacent to wetlands and sinkholes.

√ 2. Design the filter strip based on peak discharge from the concentrated waste area, and generally base this calculation on a 2-year, 24-hour rainfall event. Construct the treatment area wide enough to convey the flow at a depth of 0.5 feet or less, with the length sufficient to provide at least 15 minutes of flow-through time.

6.3 Riparian Buffers

√ 1. Install or maintain a riparian buffer or filter strip

on pasture areas that exceed 1% slope and discharge directly to streams. Specifically:

- Maintain an existing riparian buffer as an alternative to fencing when conditions warrant. Refer to the Fence Installation BMP in this manual for more information.
- Locate and size any stream crossings to minimize impacts to riparian buffer vegetation and function. Refer to USDA-NRCS Stream Crossing, Code 578 for design criteria.
- Select shrub and tree species based on their compatibility in growth, water, and shade tolerance.

Contact FDACS, USDA-NRCS or a Technical Service Provider approved by the USDA-NRCS for assistance in praperly designing the riparian buffer in accordance with USDA-NRCS Codes 390 and/or 391 in the Key References section below.

Operation and Maintenance:

- Inspect conservation buffers periodically, and restore as needed in order to maintain their intended purpose.
- Do not overuse fertilizers, pesticides, and other chemicals in maintaining buffers.
- Repair rills and small channels that may develop across the buffers, and reseed as necessary.
- Use proper grazing or haying management practices to maintain the integrity of grassed waterways, if applicable.
- If rollerchopping, conduct these activities in accordance with USDA-NRCS guidelines and use prescribed burns as necessary to maintain the native vegetation within the buffer and to discourage the establishment of nuisance exotic vegetation.

References:

(1) USDA-NRCS Field Border, Code 386; Riparian Herbaceous Cover, Code 390; Riparian Forest Buffer, Code 391; Filter Strip, Code 393; and Grassed Waterway, Code 412; FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

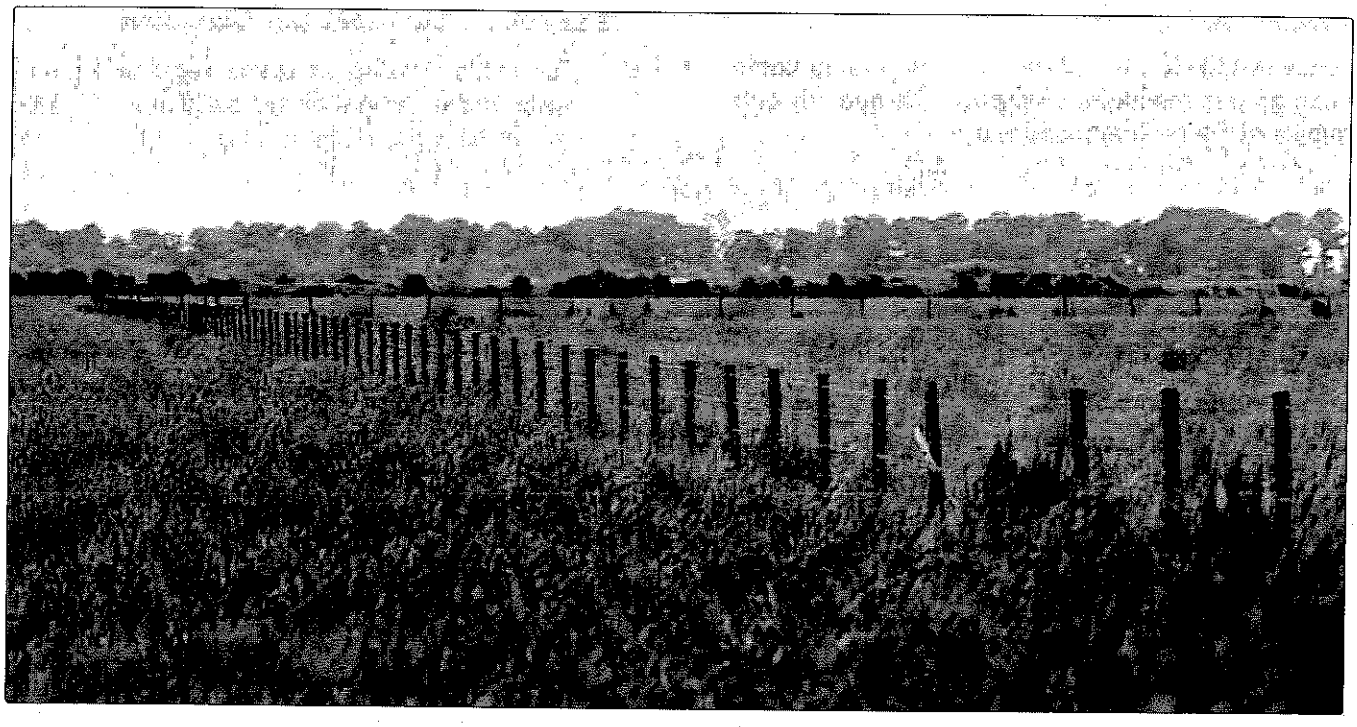
(2) National Management Measures for the Control of Nonpoint Pollution from Agriculture, EPA Document No. 841B03004, http://www.epa.gov/nps/agmm/

(3) General Specifications for Establishing Riparian Forest Buffers, USDA-NRCS FL Technical Note Forestry FL-17, http://www.usda.nrcs.gov/

(4) Farming for Clean Water in South Carolina: A Handbook of Conservation Practices, http://www.epa.gov/owow/nps/bestnpsdocs.html#agriculture

(5) Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Universal Soil Loss Equation, USDA Agricultural Research Service, Agricultural Handbook No. 703, http://www.ars.usda.gov/Research/docs.htm?docid=5974

EXHIBIT C



7.0 FENCE INSTALLATION

Fences are usually installed across pasture lands and around the perimeter to allow for rotation, deferment, and resting of grazing lands. Exclusion fencing is sometimes required adjacent to *perennial streams* to prevent cattle from entering these waters. This helps reduce the occurrence of animals standing in water, streambank erosion problems, and water quality degradation.

Nonpoint source pollution from rangeland livestock depends primarily on stocking rate, length of grazing period, season of use, concentrated manure deposition sites, and proximity of livestock to the nearest watercourse. Receiving waters, particularly areas that may be defined as *waters of the state* should be reasonably protected from point source discharges (via structures) resulting from livestock. This is especially true in summer time when livestock have a tendency to congregate in natural waterbodies or artificially dug watering areas to cool off. If the number of animals and frequency of occurrence are high, this may result in adverse stream bank damage, erosion, and/or nutrient and bacterial loadings. Livestock may also gravitate towards deep-water wetland habitats that have standing water during most of the year, such as swamps and marshes. Some of these wetlands may be hydrologically connected to downstream watercourses. Consequently, it is important to calculate your livestock's water needs and assess whether the available water resources are adequate to provide a year-round freshwater supply for the herd without the resources being adversely affected.

Large-scale exclusion fencing may be logistically impractical or cost-prohibitive. Before installing exclusion fencing, ranchers should consider all alternative approaches. In many cases, exclusion of livestock from watercourses and associated riparian areas can be accomplished using riparian buffers and proper grazing management, and/or placing feed, water, and shade structures in upland areas. Ranchers dealing with this issue should first use all reasonable methods in the **Alternative Cattle Water Sources** and **Conservation Buffer** (Riparian Buffer) BMPs as an option to installing exclusion fencing.

Once fences are installed, it is very important to maintain them. Regular inspection of fences should be part of an ongoing management program. Inspection of fences after major storm events and wildfires is recommended to maintain their intended use. The location and construction of all fences and storage of fence materials should comply with local, state, and federal laws. Landowners are encouraged to consult with water management district staff and USDA-NRCS prior to conducting land clearing activities and associated fencing projects in surface waters or wetlands, to ensure that proper authorization is obtained, if needed.

Working Definition:

Fence installation is a method of managing cattle in an area to maintain, or improve the quantity and quality of the natural resources.

7.1 General Fence Installation

√ 1. Perform land clearing before fence installation. Minimize vegetation removal and soil disturbance.

√ 2. Use compatible fencing material based on the site's soil and water properties, and construct fences or barriers so they are structurally adequate for their intended purpose.

√ 3. Adjust stocking rates to ensure uniform grazing, or subdivide larger pastures using fencing.

√ 4. Stabilize stream banks, then either: provide adequate alternative cattle water sources, such as watering troughs or upland excavated ponds; or install and maintain exclusion fencing to control cattle access when cattle graze in predominately improved pastures that contribute runoff to perennial streams.

√ 5. As an alternative to fence installation, provide or maintain a riparian buffer to create a natural barrier landward of the stream when cattle graze in predominately native or semi-improved pastures that contribute runoff to perennial streams.

7.2 Fence Installation In Wetlands

√ 1. When installing fences in wetlands, minimize the use of mechanical equipment, and keep the cleared area no wider than 12 feet on average on either side of the fence. Do not dredge or fill within the wetland.

√ 2. Perform all work during the dry season, when there is no standing water in the wetland.

Note: *Do the Advanced-Level BMP Needs Assessment to determine whether to implement the BMPs below.*

7.3 LEVEL II - Livestock Use Exclusion

√ 1. For cattle grazing in areas regulated by a water management district surface water permit, install and maintain exclusion fencing on each side of and across the ranch drainage canal at a minimum distance of 300 feet (or greater if required by permit) from outfall(s) that connect offsite to waters of the state. This distance only applies to the measurement taken from the outfall to a point upstream 300 feet.

√ 2. For cattle grazing in areas <u>not</u> regulated by a water management district surface water permit, install and maintain exclusion fencing on each side of and across the ranch drainage canal at a minimum distance of 500 feet from outfall(s) that connect offsite to waters of the state. This distance only applies to the measurement taken from the outfall to a point upstream 500 feet.

√ 3. Install and maintain permanent or temporary exclusion fencing along areas directly adjacent to perennial streams when these areas have significant rill or ***gully erosion.***

Operation and Maintenance:

- Maintain all fences, watering troughs, and shade structures in good working order to prevent animals from congregating in waterbodies.
- Repair rill and gully erosion when installing an exclusion fence.

References:

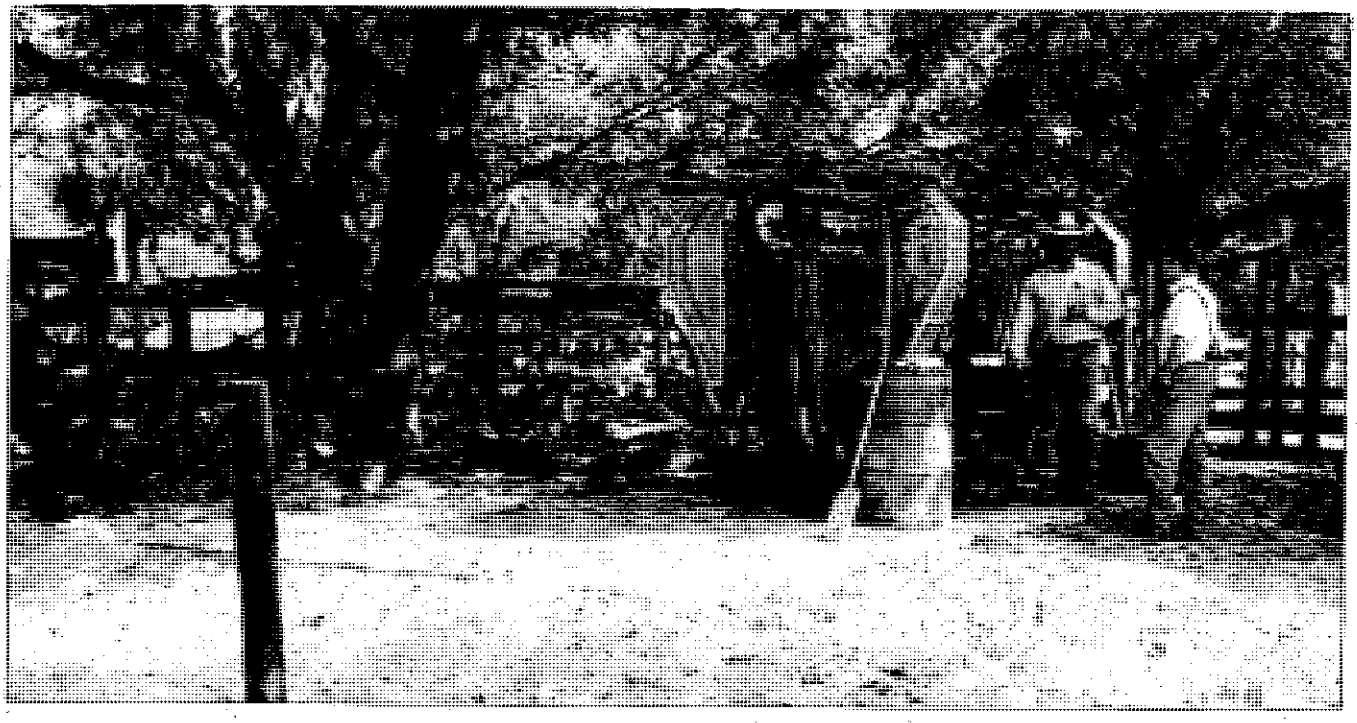
(1) USDA-NRCS Fence, Code 382; and Use Exclusion, Code 472; FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

(2) Beef Cattle Production Best Management Practices, LSU Ag Center http://www.lsuagcenter.com/en/crops_livestock/livestock/beef_cattle/production_management/Beef+Cattle+Production+Best+Management+Practices.htm

(3) National Management Measures for the Control of Nonpoint Pollution from Agriculture, EPA Document No. 841B03004, http://www.epa.gov/nps/agmm/

(4) Streamside Livestock Exclusion, Virginia Tech Cooperative Extension, Publication No. 442-766, http://www.ext.vt.edu/pubs/bse/442-766/442-766.html

EXHIBIT C



8.0 HIGH-INTENSITY AREAS

High-intensity areas, where livestock are confined or congregate for extended periods of time, can adversely impact both the environment and the animal's health. Feeding areas, holding or cow pens, watering troughs, and shaded or covered shelter areas may create high-intensity areas. Proper management of these areas will alleviate environmental concerns, support livestock health, and improve the overall aesthetics of the cow/calf operation.

Working Definition:

High-intensity areas are parts of a cow/calf operation used intensively by livestock for short periods of time, resulting in denuded ground cover.

8.1 High-Intensity Area Management

√ 1. Locate new cowpens a minimum 200 feet away from watercourses, streams, wetlands, wells or sinkholes, and construct a berm to prevent runoff.

√ 2. Direct runoff from high-intensity areas away from watercourses, streams, wetlands, wells or sinkholes using grassed waterways or swales. This can be used as part of a treatment train in conjunction with sediment traps.

Note: *Do the Advanced-Level BMP Needs Assessment to determine whether to implement the BMPs below.*

8.2 LEVEL II – Design Retrofits

√ 1. Apply aggregate surfaces such as crushed rock or gravel in and around these areas to prevent erosion.

√ 2. Install filter strips, conservation buffers, or berms/diversions to treat discharges into watercourses, streams, wetlands, wells or sinkholes.

Operation and Maintenance:

- Inspect fencing and structures regularly and make necessary repairs.
- Periodically clean or remove excess manure from these areas.
- Inspect these areas after severe weather events to ensure runoff has been properly contained or diverted.
- Use agronomic practices to re-vegetate denuded areas.

References:

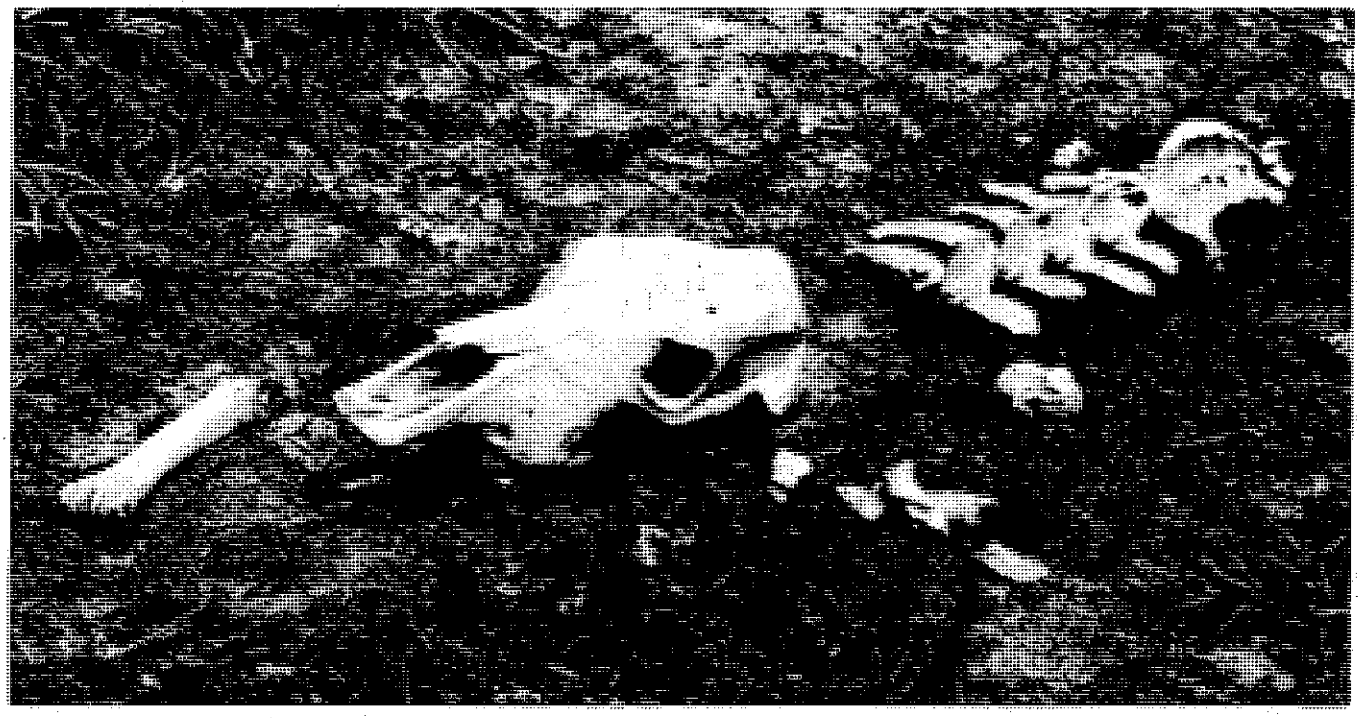
(1) USDA-NRCS Heavy Use Area Protection, Code 561; FOTG-Section IV http://www.nrcs.usda.gov/technical/efotg

(2) Effect of Stocking Rate on Measures of Cow-Calf Productivity and Nutrient Loads in Surface Water Runoff, UF-IFAS AN-14, http://edis.ifas.ufl.edu/

(3) National Management Measures for the Control of Nonpoint Pollution from Agriculture, EPA Document No. 841B03004, http://www.epa.gov/nps/agmm/

EXHIBIT C

EXHIBIT C



9.0 ANIMAL MORTALITY

Animal carcasses contain microorganisms. Some of these organisms may be pathogenic (disease causing), either to animals of the same species or to different animal species. Proper management of animal carcasses will prevent the movement of pathogenic organisms to surface or ground water and therefore reduce the risk of transmitting diseases to healthy livestock. Proper management of carcasses will also protect surface waters from unwanted organic loads that can lower dissolved oxygen levels and kill fish. In addition, odor and nutrient enrichment problems can be prevented.

Carcass management will vary around the state, but viable alternatives include rendering, burning, burial, or hauling the carcass to an upland site away from other animals and water sources. Keep in mind that FDEP Rule, 62-701, F.A.C., for *Solid Waste Management Facilities* may apply if operators are faced with a catastrophic die-off of livestock, and have to dispose of these animals in accordance with state rule.

Working Definition:

Animal mortality BMPs involve the judicious management and disposal of dead animals to protect water quality and to provide increased protection to livestock and humans.

9.1 Sanitation And Disease Control Measures

✓ 1. Transport carcasses in a sanitary manner to prevent spreading infection.

✓ 2. Clean and disinfect any mechanical equipment surfaces that were in contact with the carcasses, especially if you suspect a more virulent disease organism to be the cause of death.

✓ 3. Report any of the dangerous diseases listed below to the State Veterinarian per the requirements in section 585.18, F.S.

Anthrax	Heartwater
Bont Tick infestation (Amblyomma)	Lumpy skin Disease
Bovine Piroplasmosis (Cattle Tick Fever)	Peste des Petits Ruminants
Bovine Spongiform Encephalopathy	Pseudorabies (Aujeszky's Disease)
Brucellosis (B. abortus, B. suis)	Rabies
Southern Cattle Tick infestation (Boophilus)	Rift Valley Fever
Contagious Bovine or Caprine Pleuropneumonia	Rinderpest
Foot and Mouth Disease	Salmonella Enteritidis
	Scabies
	Screwworm infestation
	Tuberculosis
	Vesicular Stomatitis

H1-70

9.2 Disposal

√ 1. Move carcasses to an upland area away from watercourses, streams, wetlonds, wells, or sinkholes.

√ 2. If a suitable site is available, locate any burial site at least 50 feet away from adjacent property owners, and at least 200 feet away from watercourses, streams, wetlands, wells or sinkholes. Identify this area on a map and keep the map handy for future reference.

9.3 Rendering And Incineration

√ 1. Use a licensed rendering or incineration facility, if one exists locally.

Operation and Maintenance:

- Maintain soil stabilization practices until vegetation is re-established on top of burial sites.
- If composting, remember that animal carcasses are very high in nitrogen and have an average C:N ratio of 5:1. Because of this, they will likely require a supplemental carbon source to decompose properly.

References:

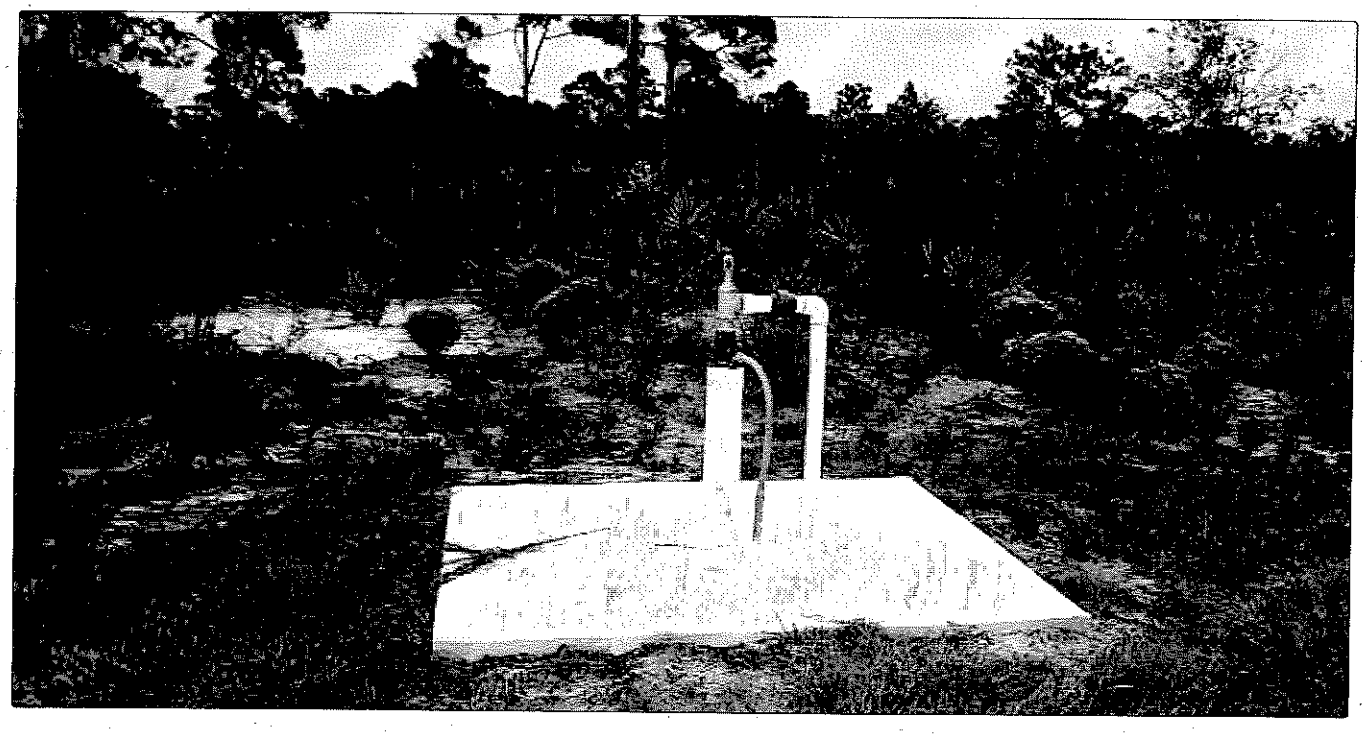
(1) Beef Cattle Production Best Management Practices, LSU, http://www.lsuagcenter.com/en/crops_livestock/livestock/beef_cattle/production_management/Beef+Cattle+Production+Best+Management+Practices.htm

(2) USDA-NRCS Animal Mortality Facility, Code 316; Composting Facility, Code 317; FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

(3) Composting Animal Mortality, Minnesota Department of Agriculture, http://www.mda.state.mn.us/animals/animals/composting.htm

(4) Chapter 585, Florida Statutes

EXHIBIT C



10.0 WELLHEAD PROTECTION

With the majority of Florida's water supply originating from underground sources, or *aquifers*, it is extremely important that ranchers make every effort to protect source waters. Successful wellhead protection ultimately involves the use of regulations and common-sense measures that address well placement and agricultural practices near wells. For new well construction, the initial focus should be on appropriate well location and sound well-construction practices. For all wells, it is important to conduct management activities near the wellhead that are aimed at reducing the potential for contamination. Wellhead protection is one of the most effective ways of protecting ground water quality and preventing human exposure to accidental contamination.

Working Definition:

Wellhead protection is the establishment of protection zones and safe land use practices around wells to protect source waters from accidental contamination.

10.1 Well Planning and Protection

√ 1. Construct new wells up-gradient as far as possible from likely pollutant sources such as petroleum storage tanks, septic tanks, chemical mixing areas, and livestock confinement facilities.

√ 2. Contact your regional water management district to see if the well requires a consumptive use or water use permit. Wells that serve public water systems must also meet the rule requirements of Chapter 62-521, F.A.C.

√ 3. Cap or valve any existing *artesian* (flowing) wells, in accordance with water management district requirements.

√ 4. For potable wells, exclude livestock within a 75-foot radius of the wellhead. This radius can be reduced if well construction records demonstrate well casing depths that extend through confining layers.

10.2 Well Construction and Operation

√ 1. Use a licensed Florida water well contractor and drill new wells according to local government code and water management district well construction permit requirements.

√ 2. At a minimum, surround new wells with a concrete slab approximately four (4) inches thick with a two (2) foot radius. Extend the casing above the ground surface a minimum of 12".

√ 3. Retrofit existing functional wells with a concrete collar with a one (1) foot radius or fence to protect them from damage.

✓ 4. Use backflow prevention devices at the wellhead to prevent contamination.

■ Maintain records of new well construction or modifications to existing wells. Proper records are important for future reference, in case problems arise with the well.

Operation and Maintenance:

- Try to maintain permanent vegetation within a 75-foot radius around wells.
- Inspect wellheads and pads regularly for leaks or cracks, and make any necessary repairs.
- Consider testing drinking water wells annually for coliform bacteria contamination to protect public health.

References:

(1) USDA-NRCS Water Well, Code 642; and Diversion, Code 362; FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

(2) Farm-A-Syst Program, http://www.uwex.edu/farmasyst

(3) Aquifer Protection Program, SJRWMD, http://www.sjrwmd.com/technicalreports/pdfs/SP/SJ91-SP9_vol1.pdf

(4) Water Well Permitting and Construction Requirements, FDEP Rule 62-532, F.A.C., http://www.dep.state.fl.us/legal/Rules/rulelistnum.htm

EXHIBIT C



11.0 WETLANDS AND SPRINGS PROTECTION

Wetlands and springs are important components of Florida's water resources. They often serve as spawning areas and nurseries for many species of fish and wildlife, perform important flood-storage roles, cycle nutrients in runoff water, contribute moisture to the hydrologic cycle, add plant and animal diversity, provide flash grazing opportunities, and offer valuable recreational opportunities for the public.

Wetlands are complex transitional ecosystems that provide a link between aquatic and terrestrial environments. Under Florida Law, "wetlands" are defined as areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. They generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.

Chapter 62-340, F.A.C., entitled "Delineation of the Landward Extent of Wetlands and Surface Waters" contains the methodology that must be used by all state and local governments in Florida to determine the boundary between wetlands and uplands and other surface waters. The federal government (U.S. Army Corps of Engineers and USDA-NRCS) uses the "1987 Manual" to determine the boundary between uplands and waters of the United States, which includes wetlands in natural areas. The Food Security Act manual is used by USDA-NRCS to determine wetlands on agricultural lands. In most cases, the boundaries determined by both methodologies are the same or very close. Unauthorized impacts to wetlands may jeopardize USDA-NRCS cost-share benefits pursuant to the Food Security Act's Swampbuster provisions.

Springs, spring runs, and associated sinks are unique freshwater systems that emerge from the underlying limestone that is at or near the land surface. Springs are unique natural resource features and deserve special protection. Prior to substantial development in Florida, wetlands and spring systems once covered about half of the state's surface. That area has been greatly reduced, primarily because early water management efforts in Florida focused on draining wetlands to facilitate urban and agricultural lands development.

Working Definition:

Wetlands (defined in the glossary of this manual) are typically low landform areas with seasonal or permanent standing water that provide wildlife habitat and natural filtration. *Springs* are mostly

clear surface waters that are naturally low in nutrients and originate from ground water that emerges to the land surface.

11.1 Wetlands Protection and Impact Avoidance

√ 1. Use a county soil survey map to help identify "wetland" or hydric soil types and/or other depressional or frequently flooded areas.

√ 2. Use preservation, practical design alternatives, or modifications to eliminate or reduce adverse impacts to wetlands and springs

√ 3. Maintain a minimum 25-foot vegetative buffer exterior to the landward extent of all wetlands that meet the state's delineation methodology. If you have a water management district permit (ERP, MSSW), you must follow the buffer requirements in the permit.

√ 4. Obtain a USDA-NRCS wetland determination prior to conducting activities in a wetland. Failure to do so may jeopardize your federal cost-share eligibility.

11.2 Water Quality Treatment and Field Discharges

√ 1. Minimize adverse water quality impacts to receiving wetlands by using pretreatment practices such as filter strips, conservation buffers, swales, or holding water onsite. This can substantially reduce pollutants, especially suspended solids, and allow the wetland to more naturally assimilate nutrients.

√ 2. Rotate livestock through the wetland grazing system at an accelerated pace when excessive rainfall or mud becomes a persistent problem.

√ 3. Use spreader swales or other means to encourage sheetflow through the wetland buffer prior to discharging water from existing pasture ditches.

11.3 Special Criteria for First and Second Magnitude Springs

√ 1. Maintain a 100-foot vegetative buffer from springs, spring runs, and wet sinks.

√ 2. Use split-applications for fertilizers on pasture areas that contribute surface water directly to springs, spring runs, and wet sinks.

Operation and Maintenance:

- Limit the use of pesticides and fertilizers in and around wetlands and springs, and be careful to avoid spray drift impacts.

References:

(1) USDA-NRCS Wetland Enhancement, Code 659; Prescribed Grazing, Code 528; Nutrient Management, Code 590; Filter Strip, Code 393; and Diversion, Code 362; FOTG-Section IV, 659, http://www.nrcs.usda.gov/technical/efotg

(2) Water Management District's Environmental Resource Permitting Rule and Basis of Review, http://www.dep.state.fl.us/water/waterpolicy/districts.htm

(3) Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices, Department of Community Affairs, www.dca.state.fl.us/fdcp/DCP/publications

EXHIBIT C



12.0 PRESCRIBED BURNING

Burning is a natural phenomenon in the flatwoods, marshes, and sloughs that make up the major rangeland areas in the state. Controlled use of fire is a valuable management tool, and is a natural component in forming plant communities and their structure. Prescribed burning suppresses many undesirable plant species to maintain their natural balance, and enhances the palatability and nutritional value of edible plants for wildlife and livestock. Reducing overpopulated brush and woody components in pastures and rangeland increases herbaceous vegetation, resulting in better forage and water-filtering capability. Furthermore, when prescribed burning is used to recycle accumulated litter and excessive brush in a beneficial way, the threat of wildfire is reduced.

Rangeland plant communities that depend upon periodic fires will quickly shift into transitional plant communities dominated by woody species when burning is suppressed. This shift will often reduce the usable area for wildlife and livestock. This is compounded as shading from woody plants inhibits the growth of grasses and other herbaceous plants. In addition, increased soil moisture uptake as a result of the woody plant overstory limits the available water needed for production of forage and ground water recharge.

Working Definition:

Prescribed burning is a cost-effective tool to reduce fuel buildup that can cause dangerous wildfire conditions, thus providing improved habitat for range management and increased protection ta people, their homes, and the forest.

12.1 Burn Preparation

√ 1. Develop and implement a burn prescription plan that includes emergency contingencies, or enlist the help of a Certified Prescribed Burn Manager to conduct prescribed burns. Courses are available for training in the basics and regulations of burning.

√ 2. Ensure no burning bans are in effect, and that the proper permits, certification, and landowner permission are obtained prior to burning. Prescribed burns must be conducted in accordance with Florida Forest Service rules and section 590.125, Florida Statutes.

√ 3. Use burning in conjunction with roller chopping when developing pastures in native areas that have an abundance of palmettos.

√ 4. Burn only when weather conditions are favorable. Check wind conditions to ensure smoke from the burn will not adversely impact roadways or neighboring properties. Never leave a burn unattended.

12.2 Construction Of Fire Lines

√ 1. Carefully select fireline locations and avoid constructing them in wetlands. For firelines that are constructed with fencing through wetlands, follow the criteria in the "Fence Installation" BMPs.

√ 2. Use alternatives to plowed firelines, such as harrowed strips, wet lines, or grass strips. Existing barriers such as roads, ditches or canals can also be used as firelines.

√ 3. Construct firelines with the contour to minimize soil erosion.

12.3 Fire Safety And Control

√ 1. Ensure that adequate fire equipment is on hand and that the fire does not burn too hot. An intense burn can overexpose the ground floor, leading to erosion and destruction of valuable habitat.

√ 2. Ensure the fire is completely out before leaving the site.

Operation and Maintenance:

- Maintain soil stabilization practices until vegetation is re-established.
- Check fence posts and other infrastructure for integrity after intense burns.
- Grazing should be deferred for 30-90 days after a burn during the growing season. This will help ensure that new growth is able to re-establish.

References:

(1) USDA-NRCS Prescribed Burning Code 338, FOTG-Section IV, http://www.nrcs.usda.gov/technical/efotg

(2) Prescribed Burning Fact Sheet, USDA-NRCS

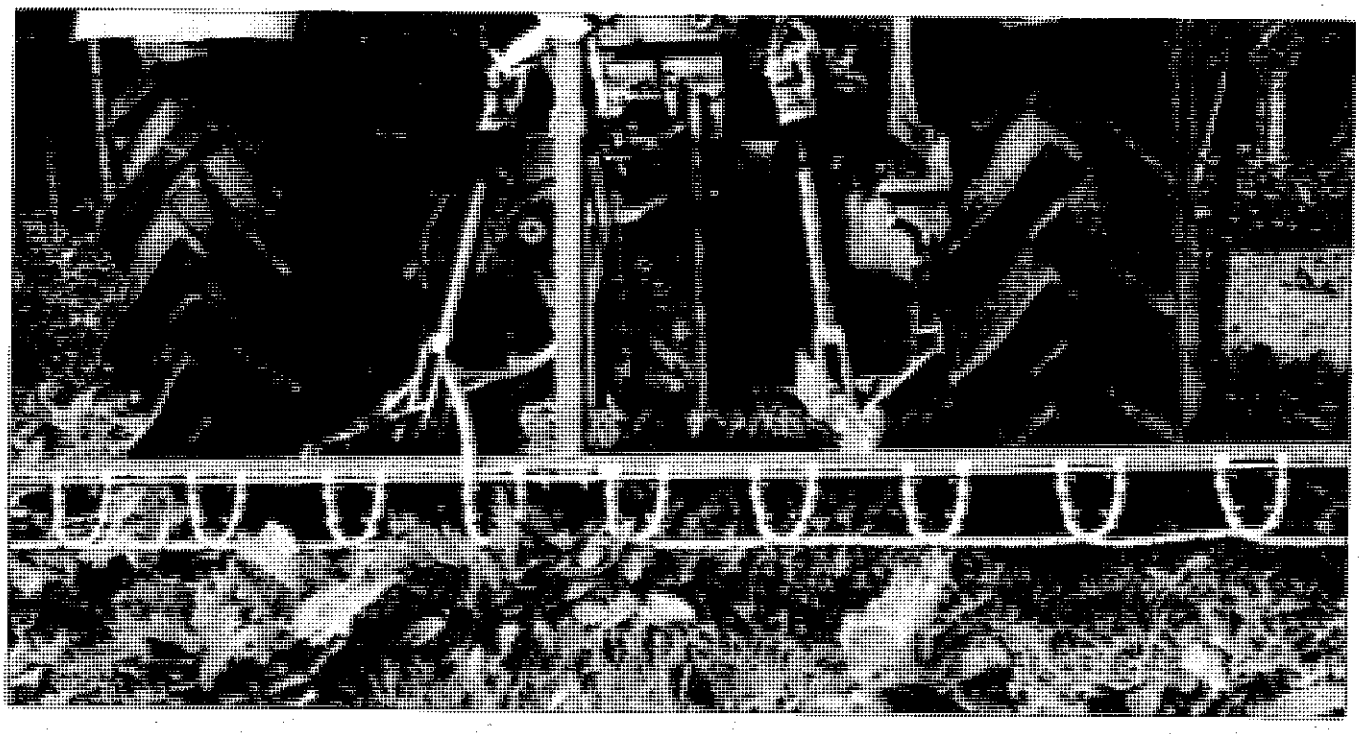
(3) BMPs for Prescribed Burning, South Carolina Forestry Commission, http://www.state.sc.us/forest/rbpb.htm

(4) Wisconsin DNR Water Quality BMP Field Manual http://www.wi.gov/forestry/usesof/bmp/bmptoc.htm

(5) Prescribed Burning Regulations in Florida, UF-IFAS FOR-67, http://edis.ifas.ufl.edu/FR055

(6) Section 590.125, Florida Statutes

EXHIBIT C



13.0 INTEGRATED PEST MANAGEMENT AND PHARMACEUTICALS

Integrated pest management (IPM) is the approach of using scientific principles to manage problem pests. IPM does not mean that pesticides will be excluded. Instead, it means that pesticides are just one of many tools used to manage pests; however, pesticides should be used judiciously and only when needed. The goals of an IPM program are improved control of pests, more efficient pesticide management, more economical forage production, and reduction of potential hazards to humans and the environment through reduced pesticide exposure. IPM accomplishes these goals through the use of resistant plant species, improved cultural practices, biological control agents (parasitoids, predators), and selective use of pesticides. Although detailed IPM programs have not been developed for all types of cropping systems, IPM principles can be applied in many cases using applied science and logic. It is also important to predict economic losses and risks so the cost of various treatments can be compared to the potential losses.

Pharmaceutical misuse and waste handling, involving antibiotics and hormones, can have a negative impact on water quality and is an issue of increasing national concern. It is very important to use these products responsibly; therefore, follow all state and federal regulations and properly dispose of spent needles, expired or unused pharmaceuticals, and pharmaceutical containers.

Working Definition:

IPM is a broad, interdisciplinary approach to pest management using a variety of methods to systematically control pests.

13.1 General IPM Practices

√ 1. Store pesticides in a roofed structure with a lockable door, at least 100 feet from surface waters.

√ 2. When practical, construct a permanent mix/load facility with an impermeable surface, and locate it away from wells and/or surface waters. Where permanent facilities are not practical, use portable mix/load stations. When field mixing is necessary, loading activities should be conducted at random locations in the field with the aid of nurse tanks, if applicable. Use a check valve or air gap separation to prevent backflow into the tank when filling a sprayer.

√ 3. Practice IPM and use all pesticides in accordance with the label. When applying a pesticide close to a stream, canal, pond or other sensitive waterbody, choose a pesticide with an active ingredient that has a lower toxicity to aquatic organisms.

√ 4. Rinse, recycle, or dispose of empty pesticide containers following federal, state, and/or local regulations.

13.2 Pharmaceutical Use and Disposal

√ 1. Use FDA-approved products and only mix enough product to administer to affected cattle, which will result in little to no waste product.

√ 2. Follow label and dosing instructions to ensure that the proper dose is administered.

√ 3. Dispose of spent needles and unused pharmaceutical products in a responsible manner. Contact a veterinarian to obtain a puncture-proof container that is labeled "Biohazard". Dispose of spent needles in accordance with EPA guidelines and follow local solid waste regulations.

References:

(1) Best Management Practices for Agrichemical Handling and Farm Equipment Maintenance, FDACS and FDEP. http://www.floridaagwaterpolicy.com/BestManagementPractices.html

(2) Integrated Pest Management Program at the University of Florida. http://ipm.ifas.ufl.edu/

(3) Use Management Practices to Protect Groundwater from Agricultural Pesticides, UF-IFAS, PI 1. http://edis.ifas.ufl.edu/PI001

(4) Arsenic Contamination from Cattle-Dipping Vats, UF-IFAS, SL152. http://edis.ifas.ufl.edu/SS205

(5) Management Practices to Protect Surface Water from Agricultural Pesticides, UF-IFAS, PI 22. http://edis.ifas.ufl.edu/PI014

(6) Florida Cow-Calf and Stocker Beef Safety and Quality Assurance Handbook: Quality Control Points, UF-IFAS, Publication AN173. http://edis.ifas.ufl.edu/AN173

(7) Disposal of Medical Sharps, EPA, www.epa.gov/osw/nonhaz/industrial/medical/disposal.htm

EXHIBIT C

APPENDICES

APPENDIX 1. GENERAL BMP REFERENCES

The documents listed below are very good sources of information for producers to consult on agricultural and environmental issues.

General BMP References

(1) *National Management Measures for the Control of Nonpoint Pollution from Agriculture*, U.S. Environmental Protection Agency, July 2003.

This manual provides guidance to States and the public regarding management measures that may be used to reduce nonpoint source pollution from agricultural activities. Chapter 4 deals with animal feeding operations and grazing management.

http://www.epa.gov/nps/agmm/

(2) *Best Management Practices for Agrichemical and Farm Equipment Maintenance*, Florida Department of Agriculture and Consumer Services, Florida Department of Environmental Protection, February 2000.

This manual lists responsible handling and use of pest control products, and pollution prevention actions that can be implemented at farm maintenance areas that protect the environment.

http://www.floridaagwaterpolicy.com/BestManagementPractices.html

(3) *Protecting Louisiana's Waters Using Best Management Practices*, Louisiana State University Agricultural Center, 2001.

This publication includes information on five main areas: nutrient management, pesticide management, soil and water management, pasture management and general farm BMPs.

http://www.lsuagcenter.com/en/environment/conservation/bmps/Protecting+Louisianas+Waters+Using+Best+Management+Practices.htm

(4) *Protecting Florida's Springs: Land Use Planning Strategies and Best Management Practices*, Florida Department of Community Affairs and Florida Department of Environmental Protection, November 2002.

This guide provides an introduction on the hydrologic importance of springs, comprehensive planning strategies, other information to manage development impacts, and specific criteria for other industries.

http://www.dca.state.fl.us/fdcp/DCP/publications

(5) *Beneficial Management Practices: Environmental Manual for Alberta Cow/Calf Producers*, Alberta Agriculture, Food and Rural Development, June 2004.

This manual was developed to inform and educate producers on beneficial management practices that can enhance soil, water, air and biodiversity. These BMPs protect the environment while keeping production practical and within the law.

http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/epw8724

University of Florida – Institute of Food and Agricultural Sciences References

Standardized Fertilization Recommendations for Agronomic Crops, UF-IFAS, Fact Sheet SL-129

This publication presents in abbreviated form the fertilization recommendations for agronomic crops based on soil tests performed by the UF/IFAS Extension Soil Testing Laboratory (ESTL). It contains the basic information from which ESTL soil-test reports and fertilization recommendations are generated.
http://edis.ifas.ufl.edu/SS163

Integrated Pest Management Strategies, UF-IFAS, Circular 1149

This circular describes the principles of integrated pest management (IPM) and advises strategies for implementation.

http://edis.ifas.ufl.edu/LH080

Florida Crop/Pest Management Profile: Beef Cattle, UF-IFAS, Circular 1259

This circular gives an overview of Florida's beef cattle industry and contains good information about pest control practices.

http://edis.ifas.ufl.edu/PI043

EXHIBIT C

USDA – Natural Resources Conservation Service References

All references below accessed at:
http://www.nrcs.usda.gov/technical/efotg

(1) Conservation Practice Standard No. 314 (Brush Management)

(2) Conservation Practice Standard No. 338 (Prescribed Burning)

(3) Conservation Practice Standard No. 342 (Critical Area Planting)

(4) Conservation Practice Standard No. 382 (Fence)

(5) Conservation Practice Standard No. 393 (Filter Strip)

(6) Conservation Practice Standard No. 412 (Grassed Waterway)

(7) Conservation Practice Standard No. 472 (Use Exclusion)

(8) Conservation Practice Standard No. 528 (Prescribed Grazing)

APPENDIX 2. SETBACKS TABLE

Reference Table for Recommended Setbacks			
BMP #	**Practice**	**Setback (Feet)**	**Hydrologic Feature Type**
1.1.5	Fertilizer spreading	50	Wetlands, streams or sinkholes
1.3.3	Supplemental feeding and mineral stations	100	Watercourses, streams, wetlands, wells or sinkholes
2.2.1	Watering ponds	50*	Wetlands
2.3.3	Piped withdrawal of watercourses	100	Waterbody
8.1.1	New cowpens	200	Watercourses, streams, wetlands, wells or sinkholes
10.1.4	Livestock exclusion	75	Wellhead (potable wells)
11.1.3	Vegetative buffer	25	Wetlands
11.3.1	Vegetative buffer	100	Springs, spring runs, and wet sinks

** Check with the water management district to see if a greater setback is required.*

EXHIBIT C

APPENDIX 3. CONTACT INFORMATION

EMERGENCY INFORMATION

Emergency Reporting Numbers

State Warning Point *Division of Emergency Management - contact in case of oil or hazardous substance spill*	24 hours/ Toll-Free	1-800-320-0519

Emergency Information and Follow-Up Numbers

State Emergency Response Commission *For follow-up reporting only.* *For an emergency, call the State Warning Point.*	Toll-Free	1-800-635-7179
State Warning Point Information Line	Monday - Friday, 8:00 AM - 5:00 PM	(850) 413-9900
DEP Emergency Response	Monday - Friday, 8:00 AM - 5:00 PM	(850) 245-2010

NON-EMERGENCY INFORMATION

Florida State Agency Numbers		Toll Free
Department of Agriculture and Consumer Services		
Office of Agricultural Water Policy	(850) 617-1727	
Division of Agricultural and Environmental Services	(850) 488-3731	
Bureau of Pesticides	(850) 487-0532	
Bureau of Compliance Monitoring	(850) 488-8731	
Division of Animal Industry	(850) 410-0900	
Department of Environmental Protection		
Nonpoint Source Management Section	(850) 245-7508	
Hazardous Waste Management Section	(850) 245-8707	
Northwest District Office (Pensacola)	(850) 595-8300	
Northeast District Office (Jacksonville)	(904) 807-3300	
Central District Office (Orlando)	(407) 894-7555	
Southeast District Office (West Palm)	(561) 681-6600	
Southwest District Office (Tampa)	(813) 632-7600	
South District Office (Ft. Myers)	(941) 332-6975	
Water Management Districts		
Northwest Florida (Tallahassee)	(850) 539-5999	
Suwannee River (Live Oak)	(386) 362-1001	1-800-226-1066
St. John's River (Palatka)	(904) 329-4500	1-800-451-7106
Southwest Florida (Brooksville)	(352) 796-7211	1-800-423-1476
South Florida (West Palm)	(561) 686-8800	1-800-432-2045

Other Helpful Numbers - Main offices, call to obtain local contact information

USDA-NRCS - Florida Main Office (Gainesville)	(352) 338-9500
UF/IFAS Extension Administration	(352) 392-1761
Association of Florida Conservation Districts *Soil and Water Conservation Districts*	(407) 321-8212

H1-84

APPENDIX 4. ACRONYM LIST AND GLOSSARY

Adsorbed – Adhesion to a surface in a thin layer.

Animal Unit (AU) – Considered to be one mature cow of approximate 1000 pounds, either dry or with calf up to 6 months of age, or their equivalent, based on a standardized amount of forage consumed.

Aquifers – Soil or rock formations that contains ground water and serves as a source of water that can be pumped to the surface.

Artesian Well – A well from which water is forced out naturally under pressure. Artesian wells are bored where water in a layer of porous rock is sandwiched between two layers of impervious rock. Water flows up to the surface because distant parts of the aquifer are higher than the well-head.

Attenuate – To weaken or reduce in force, intensity, effect, quantity, or value.

Best Management Practice (BMP) – A practice or combination of practices determined by the coordinating agencies, based on research, field-testing, and expert review, to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality in agricultural and urban discharges. Best management practices for agricultural discharges shall reflect a balance between water quality improvements and agricultural productivity.

BMAP – Basin Management Action Plan.

BOD – Biochemical Oxygen Demand.

C:N – Carbon to Nitrogen ratio.

Continuous Grazing – The grazing of a specific unit by livestock throughout the year or for that part of the year during which grazing is feasible.

Conveyance Capacity – The amount of flow (generally expressed in cubic feet per second) that a canal/ditch can carry based on the size, shape, slope, and condition of the canal/ditch.

Cowpens – Fenced structure used to temporarily confine cattle for examination, medication, vaccination, administering parasite control, weighing, sorting, and /or identification. Confinement is commonly less than 12 hours, but occasionally cattle may be retained for up to one week. Pens are denuded of vegetation if heavily used, but contain vegetation when lightly used.

C-139 Basin – A SFWMD regulatory sub-basin wholly contained within Hendry County.

EAA – Everglades Agricultural Area

EDIS – Electronic Document Information System.

EPA – Environmental Protection Agency.

ERP – Environmental Resource Permit.

Eutrophication – A process whereby watercourse, such as lakes, estuaries, or slow-moving streams receive excess nutrients that stimulate excessive plant growth.

Evapotranspiration (ET) – The water lost to the atmosphere by evaporation and transpiration. Evaporation is the loss from open bodies of water and transpiration is the loss from living-plant surfaces.

FCWA – Federal Clean Water Act.

FDACS – Florida Department of Agriculture and Consumer Services.

FDEP – Florida Department of Environmental Protection.

FDOH – Florida Department of Health.

Flash-Grazing – The concept of grazing a normally excluded area with a large number of cattle for a short period of time, generally not exceeding three days.

FOTG – Field Office Technical Guide.

F.S. – Florida Statutes.

FWRA – Florida Watershed Restoration Act.

EXHIBIT C

Gully Erosion – The erosion process whereby water accumulates in narrow channels and, over a short period time, removes the soil from this narrow area to considerable depths, ranging from one to two feet deep.

Hydraulic Drawdown – The amount by which the water level in an aquifer or water table is further lowered, when the water from that aquifer or water table is continually removed by man-made means (pumps, canals/ditches).

IPM – Integrated Pest Management.

MSSW – Management and Storage of Surface Waters.

N – Nitrogen.

NOI – Notice of Intent.

Normal Pool – A water level elevation based on consideration of biological indicators of sustained inundation, using reasonable scientific judgment used to standardize measurements of water levels and facilitate comparison among wetlands.

P – Phosphorus.

Paddocks – A subdivision of a pasture designed to provide short-duration grazing followed by an appropriate (related to species, soil type and weather conditions) rest period for regrowth and stand maintenance.

Perennial Streams – Streams or rivers that flow in a well-defined channel throughout most of the year under typical climatic conditions.

PPM – Parts per Million.

Prescribed Grazing – The controlled harvest of vegetation with grazing or browsing animals managed with the intent to achieve a planned objective(s).

Resource Management System-Level Conservation Plan – is a record of the decisions and supporting information for treatment of a unit of land or water consistent with the NRCS Field Office Technical Guide (FOTG) quality criteria for soil, water, air, plants, and animals, and takes into account economic and social considerations. The plan must be consistent with the NRCS National Planning Procedures Handbook, as amended, be approved by NRCS or an authorized technical service provider, and specify the schedule of operations and activities needed to address identified natural resource issues. For purposes of this definition, the plan must be updated at least every five years.

Rill Erosion – An erosion process in which numerous small channels only several inches deep are formed, occurs mainly on recently cultivated fields, cuts and fills and canal banks. Rills are smaller than gullies and can be driven across.

Rinsate – The solution remaining after rinsing something.

Riparian – Vegetated ecosystems along a watercourse through which energy, materials, and water pass. Riparian areas characteristically have a high water table and are subject to periodic flooding and influence from the adjacent watercourse.

Rip-rap – Large, loose angular stones that serve as a permanent erosion-resistant ground cover.

Rotational Grazing – Rotational grazing is the grazing of two or more subdivisions of pasture in sequence, followed by a rest period for recovery and re-growth.

Septage – A mixture of sludge, fatty materials, human feces, and wastewater removed during the pumping of an onsite sewage treatment and disposal system.

Sorbed – The action of a substance which is either adsorbed or absorbed onto another substance.

Spoil – The soil material obtained from excavating an area to construct such works as canals/ ditches and /or ponds. This material is typically used to build berms and/or dikes along or in the vicinity of the excavation site.

Supplemental Feeding – Supplying feed to range

animals when available forage is too limited to meet their minimum daily requirement.

SWCD – Soil and Water Conservation District.

TMDL – Total Maximum Daily Load.

Treatment Train – A combination of nonstructural and structural practices which have been determined to be effective for reducing or preventing pollution.

Turbid – In relation to water, it is described by having an opaque and cloudy appearance and containing suspended solids or other pollutants that may limit light penetration.

Turnout – The extension of a road ditch into a vegetated area to provide for the dispersion and filtration of stormwater runoff.

UF-IFAS – University of Florida, Institute of Food and Agricultural Sciences.

USDA-NRCS – United States Department of Agriculture, Natural Resources Conservation Service.

USGS – United States Geological Survey.

Water Control Structures – Any structure used to regulate surface or subsurface water levels.

Watercourse(s) – Any natural or man-made (ditch or canal) water feature that flows continuously or intermittently. For the purposes of this manual, watercourses do not include wetlands as part of their definition.

Watersheds – Described as drainage basins or regions of land where surface water drains downhill into a specified body of water.

Waters of the State – Defined in section 403.031(13), Florida Statutes, to include, but not limited to, rivers, lakes, streams, springs, impoundments, wetlands, and all other waters or bodies of water, including fresh, brackish, saline, tidal, surface, or underground waters. Waters owned entirely by one person other than the state are included only in regard to possible discharge on other property or water. Underground waters include, but are not limited to, all underground waters passing through pores of rock or soils or flowing through in channels, whether manmade or natural. Solely for purposes of s. 403.0885, waters of the state also include navigable waters or waters of the contiguous zone as used in s. 502 of the Clean Water Act, as amended, 33 U.S.C. ss. 1251 et seq., as in existence on January 1, 1993, except for those navigable waters seaward of the boundaries of the state set forth in s. 1, Art. II of the State Constitution.

Wetlands – As defined in section 373.019(25), Florida Statutes, wetlands means those areas that are inundated or saturated by surface water or groundwater at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce, or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.

WMD – Water Management District.

EXHIBIT C

APPENDIX 5. NUTRIENT BUDGET WORKSHEET

Land User:	County:	Date:
Prepared By:	Field #(s):	

Table 1 – Field Conditions and Recommendations

Crop sequence/rotation (circle current crop)	Expected yield

Current soil test levels (ppm)			
P	K	pH	

Recommended nutrients/amendments to meet expected yield			
N	P_2O_5	K_2O	Lime

Table 2 – Nutrient Sources

	Pounds per acre		
Credits	N	P_2O_5	K_2O
1. Nitrogen credits from previous legume crop			
2. Residual from long-term manure application			
3. Irrigation water			
4. Other *(e.g., atmospheric deposition)*			
5. Total credits			
Plant available nutrients applied to field	N	P_2O_5	K_2O
6. Credits *(from row 5, above)*			
7. Fertilizer			
8. Manure/organic material			
9. Subtotal *(sum of lines 6, 7, and 8)*			
10. Nutrients recommended *(from table 1)*			
11. Nutrient status *(subtract line 10 from line 9)*			
If line 11 is a negative number, this is the amount of additional nutrients needed to meet the crop recommendation.			
If line 11 is a positive number, this is the amount by which the available nutrients exceed the crop requirements.			

Nutrient Management Specifications						
Amount to be applied (lb/ac)	N		P_2O_5		K_2O	
Method, form, and timing of application:						

EXHIBIT C

Instructions to Complete the Nutrient Budget Worksheet

1. Table 1 – Field Conditions and Recommendations

- Enter the crop rotation and circle the current crop (Ex: Bermudagrass, hay or bahiagrass, grazed).
- Enter expected yield (Ex: 5 tons/ac if the crop was bermudagrass, hay or 20 animal unit month (AUM) if the crop was bahiagrass, grazed).
- Enter current soil test levels (ppm). These test levels should be from a Mehlich 1 test, which is what the UF/IFAS soil testing lab uses. A current soil test for phosphorus application should be one that is no more than 1 year old. If applying nutrients at maintenance levels on pasture and hayland, then a soil test should be no older than 5 years.
- Enter recommended nutrients/amendments to meet expected yield. If applying commercial fertilizers the recommendations will come from the UF/IFAS Circular SL-129 – Standardized Fertilization Recommendations for Agronomic Crops dated June 2007. If applying manures or organic by-products (i.e., municipal or sewage sludge), the recommendations will come from crop uptake rates from UF/IFAS research or from book values in the USDA-NRCS Agricultural Waste Management Handbook, Chapter 6. The lime value will come from the soil test results sheet.

2. Table 2 – Nutrient Sources

- Line 1 – Enter credits from previous legume crop. This credit is the amount of estimated nitrogen in pounds per acres that a legume (i.e., clovers, perennial peanut, soybeans) will add to the soil, so the preceding crop can use it. Amounts of nitrogen can be obtained from UF/IFAS research publications such as: Nitrogen Fixation and Inoculation of Forage Legumes, SS-AGR-56.
- Line 2 – Enter residual from long-term manure application. This credit is the amount of nitrogen in pounds per acre from manure application. The amount of nitrogen that becomes available depends on the rate of mineralization or decay and this decay depends on the type of manure and the length of time that it is on the field. For example fresh cow manure that is incorporated into the soil daily has a decay rate of 0.75; 0.15; 0.10; 0.05. This means that 75 percent of the incorporated nitrogen becomes available the first year, 15 percent of the remaining nitrogen becomes available in the second year, 10 percent of the remainder in the third year, and so on. So, with enough time 100 percent will become available for the plant to use. Book values for the mineralization can be found in the NRCS Agricultural Waste Management Handbook, Chapter 11 or from UF/IFAS research.
- Line 3 – Enter nutrient amounts from irrigation water. The irrigation water will need to be tested to determine what nutrient levels are present.
- Line 4 – Enter other credits. These can come from items such as atmospheric deposition, which only accounts for about 3 lbs of N, .35 lbs of P_2O_5, and .48 lbs of K_2O.
- Line 7 – Enter the nutrient amounts for commercial fertilizer.
- Line 8 – Enter the nutrient amounts for manure/organic material. These amounts will come from the analysis of the manure or organic material.
- Line 9 – Enter the sum of the credits, commerciol fertilizer, and the manure/organic materiol.
- Line 10 – Enter the nutrients that were recommended to meet the expected yield from Table 1.
- Line 11 – Subtract the nutrients recommended from the sum of the credits, fertilizer, and manure. If this number is negative then additional nutrients need to be applied to meet the crop recommendation. If this number is positive then the available nutrients exceed the crop requirements and adjustments need to be made to limit overloading of nutrients.

3. Nutrient Management Specifications

- Enter the amount of the nutrients to be applied, which will come from the calculations in Table 2.
- Enter a description of the application method (i.e., broadcast with a spreader, applied through an irrigation system), form of the fertilizer (i.e. liquid, granular, or manure), and the timing of the application (i.e. date of application, growth stage of the crop).

(Adapted from USDA-NRCS literature)

EXHIBIT C

EXAMPLE (BAHIAGRASS) WORKSHEET

Land User:	County:	Date:
Prepared By:	Field #(s):	

Table 1 – Field Conditions and Recommendations

Crop sequence/rotation (circle current crop)	Expected yield
Bahiagrass, graze	100 AUM

Current soil test levels (ppm)			
P	K	pH	
20 ppm	30 ppm	5.5	

Recommended nutrients/amendments to meet expected yield			
N	P_2O_5	K_2O	Lime
50 (Low – N option)	0	0	0

Table 2 – Nutrient Sources

	Pounds per acre		
Credits	N	P_2O_5	K_2O
1. Nitrogen credits from previous legume crop	0		
2. Residual from long-term manure application	0		
3. Irrigation water	0	0	0
4. Other *(e.g., atmospheric deposition)*	0	0	0
5. Total credits	0	0	0
Plant available nutrients applied to field	N	P_2O_5	K_2O
6. Credits *(from row 5, above)*	0	0	0
7. Fertilizer	50	0	0
8. Manure/organic material	0	0	0
9. Subtotal *(sum of lines 6, 7, and 8)*	50	0	0
10. Nutrients recommended *(from table 1)*	50	0	0
11. Nutrient status *(subtract line 10 from line 9)*	0	0	0
If line 11 is a negative number, this is the amount of additionol nutrients needed to meet the crop recommendation.			
If line 11 is a positive number, this is the amount by which the available nutrients exceed the crop requirements.			

Nutrient Management Specifications						
Amount to be applied (lb/ac)	N	50	P_2O_5	0	K_2O	0
Method, form, and timing of application: Broadcast 147 lbs/ac of ammonium nitrate (34-0-0) granules.						
Apply in the early spring and incorporate into the soil immediately after application.						

EXHIBIT C

APPENDIX 6. SOIL AND TISSUE TESTING INFORMATION

Soil Testing

The soil testing process comprises four major steps, and understanding each one clearly will increase the reliability of the process tremendously. The steps in the soil testing process are:

- soil sampling
- sample analysis
- interpretation of test results
- nutrient recommendations

Soil Sampling: Soil samples need to be representative of the field and soil types and the soil analysis results will be only as good as the submitted sample is. Samples collected from areas that differ from typical characteristics of the farm should be submitted separately and should not be consolidated with the primary samples. Using a management zone (area on the farm that is managed similarly) as a guiding factor to collect and consolidate samples is strongly recommended to optimize resources. Consult the IFAS Extension Fact Sheet SL181 for further information on soil sampling strategies. Ranchers can use the soil test sheet on page 71 when they have bahia grass in a phosphorus. For other forages and bahia grass in areas that are not phosphorus-limited, use the soil test sheet which can be found at: http://edis.ifas.ufl.edu/pdffiles/SS/SS18600.pdf.

Sample Analysis: The soil samples that are submitted to the testing laboratories undergo a series of physical and chemical processes that are specific to the soil types, crops, and management regimes. Once the soil samples are homogenized through grinding and/or sieving, a precise volume of the sample will be extracted for plant nutrient through an extraction procedure. The following standard methods are approved by the IFAS Soil Testing Laboratories for different soils in Florida:

a) Mehlich-1 extraction - this method is performed on all acid-mineral soils up to a soil pH of 7.3.

b) AB-DTPA extraction - this method is performed on alkaline (calcareous) soils with a pH of 7.4 and above.

c) Water extraction - this method is used for extraction of P in all organic soils.

d) Acetic acid extraction - this method is performed on all organic soils for extraction of K, Mg, Ca, Si, and Na.

It is extremely important that procedures used at the laboratories are well understood before submitting the samples since most BMPs are tied to the standardized procedures used by the labs at the land-grant universities in the state such as UF/IFAS. Similarly, it is also very important to note that the IFAS laboratory does not offer any test for N since there is no reliable test for plant available N under Florida conditions. N recommendations are based on crop nutrient requirements found in the research literature. More information regarding the procedures used at the IFAS Extension Soil Testing Laboratory in Gainesville can be found in the extension publication, Circular 1248.

Interpretation of Test Results: The primary goal of state laboratories in offering the soil testing service is to provide interpretation of the soil test results based on soil test-crop response trials and field calibration of the test results with the optimum economic yields of the various plant species. Economic yield increases resulting from added nutrients cannot be obtained once the test results are interpreted as 'High' resulting in no recommendation for that particular nutrient. The interpretations provided are specific to the soil and plant species.

Current interpretation tables can be obtained from SL 189 - IFAS extension fact sheet.

Tissue Testing

Tissue testing is the analysis and diagnosis of the plant's nutritional status based on its chemical composition. It is commonly performed as analyses on dried blades, leaves or dried *petioles* or on sap from fresh petioles, with results compared to recommended nutrient ranges.

Efficient fertilizer management is important to reduce costs, conserve natural resources, and to minimize potential impacts on the environment. These goals can be achieved through optimum management of the fertilizer component. Timely tissue testing is an important tool used in fertilizer management through monitoring the plant's nutritional status, and such testing is also used in diagnosing suspected problems like nutritional deficiency, toxicity or imbalance. As a management tool, tissue testing can increase a rancher's return by preventing deficiencies that can reduce yield(s), market quality, and profitability.

Methodology: Begin sampling soon after the crop is established and continue at regular intervals (weekly or biweekly). Individual plants, even side-by-side, may have different nutritional status.

Therefore, by sampling a sufficiently large number of plants, the effect of this error due to inherent variability should be minimized. It is preferable to include a soil sample together with a tissue sample when submitting samples to a diagnostic lab, since the soil sample may indicate other factors - such as pH - that may influence crop growth, nutrient availability, and uptake. Avoid plant tissue testing if the field has received foliar nutrient sprays containing micronutrients or nutrient-containing pesticides. Also, avoid sampling plants damaged by pests, diseases, or other chemicals when trying to monitor the nutritional status of the sod.

Whole-leaf sampling will be most useful early in the season, while later in the season, it can help to point to changes in fertilization practices that are needed for the next season. Fresh petiole sap testing for N and K, practiced regularly throughout the season, can help manage the current crop as well as provide guidance for the next crop. Sample a recently matured leaf blade. Collect enough leaf material so that the sample is representative of the crop stand, and that the sample is large enough to perform the required analyses.

If a deficiency is suspected, collect one *composite sample* from the area exhibiting the disorder and a second sample from an otherwise "normal" section for comparison when trying to diagnose a nutrient deficiency. Separate and properly label the "disorder" sample and the "normal" sample in order to make a valid comparison after analyses. Keep notes on condition of the sod and stage of growth, weather, and other variables for future reference.

Be careful not to crush or damage samples during cleansing. Avoid using tap water to rinse blade samples, since it can be high in nutrients such as calcium, iron, magnesium, or sulfate sulfur. Use distilled water instead. In most situations, cleansing is not needed. Blot the samples dry with absorbent paper after rinsing, and air-dry the samples several hours before shipment. Wrap the samples in absorbent paper and place them in a large envelope if a plant analysis kit is not available, and mail immediately.

Select a reputable laboratory that provides interpretations and recommendations based upon test results appropriate for your growing region. Interpretation guidelines should be based on actual field research, not on "typically observed" or historical lab databases. The laboratory should be reliable and certified and also offer a routine turnaround of less than 48 hours.

For more information please see SL 131, Plant Tissue Information Sheet, Soil and Water Science Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Last revised July 2005. http://edis.ifas.ufl.edu/SS182.

References:

Sartain, J.B. 2001. Soil Testing and Interpretation for Florida Turfgrasses. SL181. Soil and Water Science, Cooperative Extension Service. IFAS, p. 2. http://edis.ifas.ufl.edu/SS317.

Mylavarapu, R.S. and E.D. Kennelley. 2002. UF/IFAS Extension Soil Testing Laboratory Analytical Procedures and Training Manual. Soil and Water Science, Circular 1248, Cooperative Extension Service, IFAS, http://edis.ifas.ufl.edu/SS312.

Mylavarapu, R.S. 2002. The Process of Standardized Nutrient Recommendation Development for Successful Crop Production and Environmental Protection. SL 189, Soil and Water Science, Cooperative Extension Service, IFAS. http://edis.ifas.ufl.edu/SS401.

EXHIBIT C

UF UNIVERSITY of FLORIDA
IFAS Extension

IFAS Analytical Services Laboratories
Extension Soil Testing Laboratory

PO Box 110740 / Wallace Building 631, UF / Gainesville, FL 32611-0740
EMAIL: SOILSLAB@IFAS.UFL.EDU WEBSITE: SOILSLAB.IFAS.UFL.EDU

Producer Bahia Test Information Sheet

Note: This Lab only tests samples from the State of Florida.

Mailing Address (please print)

Name _____ **Phone** _____

Address _____

City _____ **FL Zip** _____

Date _____ **E-Mail *** _____

*** In order to expedite reporting of results; please provide an e-mail address if possible.**

- **This form can be downloaded from our website.**
- **Detailed information on this test can be obtained from SL129 accessed at edis.ifas.ufl.edu**
- **For further information contact your local county Extension Agent**

Fill in all requested information, using one line per sample and additional sheets for more than 5 samples.

Lab Use only	County	Test(s) Requested (see Page 2 or back)	Acreage	Sample ID For Soil	Sample ID For Leaf Tissue	Cost

Check _____ **Money Order** _____ **Cash** _____ **Total** _____

Important Information for Soil Sample Collection and Submission

Before Sampling:

1. Develop a soil sampling plan of your field. Samples should represent the area being tested, so collect samples from areas that are of the same soil type, appearance, or cropping history. Sample problem areas separately, if needed. From this plan, count the number of samples you will collect.
2. Soil sample bags, addressed shipping boxes, and information sheets are available free from your county Cooperative Extension office. Obtain the materials you need to complete your sampling plan.

Collecting Samples:

1. Collect soil from 20 or more spots within each area, mixing these samples in a clean plastic bucket.
2. Sample from soil surface to depth of tillage, usually 0 to 6 inches. For pastures, sample from 0 to 4 inch depth.
3. Spread the composited material on clean paper or other suitable material to air dry. Do not send wet samples.
4. Mix the dry soil, and place about one pint of soil in a labeled sample bag.

Sending samples to the Extension Soil Testing Laboratory:

1. Enter each sample's identification on its sample bag and in the Soil Sample Identification column. List each sample separately.
2. Lime and fertilizer recommendations are provided only if the crop code(s) is listed.
3. Include the analysis code for each desired test.
4. Enter costs from the Analysis Cost list found on page 2 of this form.
5. Sum the costs of all samples and analyses. Make check or money order payable to: **University of Florida.**
6. Include the completed Producer Bahia Test Information Sheet and the check or money order in the shipping box with the sample(s).

Test results:

A soil test report will be emailed / mailed to you within 5 to 10 days after your sample arrives at the Extension Soil Testing Laboratory. Contact your county Extension office if you have questions concerning the Bahia Test Report.

Revised February 2009

EXHIBIT C

How To Take, Prepare, and Submit Plant Tissue Samples (for Analysis B1)

1. Ensure that each sample contains at least a generous handful of plant material (around half a gallon).
2. Do not sample leaves contaminated with soil or sprays. If all tissue is dusty or spray contaminated, wash leaves gently with flowing distilled water.
3. Do not sample disease-, insect-, or mechanically damaged plant tissue.
4. Place tissue samples directly into a clean paper or cloth bag or envelope. Do not use plastic containers. If the plant tissue is wet or succulent, allow plant material to air dry for at least one day, before mailing.
5. When sampling suspected nutrient-deficient plants, two samples are recommended; one sample from normal plants, and another sample from abnormal plants.
6. When sampling, the plant part and plant maturity are important factors. Be sure to collect the proper plant part at the recommended time. A general rule of thumb is to sample the youngest, fully mature leaves during the growth cycle, or just prior to fruit set.
7. Please do not provide any roots along with the sample.

Important Information

There are three types of tests available for Bahiagrass pastures in Florida (see Table below for details)

Phosphorus Testing and Recommendation for Bahiagrass

- Soil tests alone are not adequate for determining P fertilization needs of Bahiagrass.
- A tissue and soil test must be submitted together to determine P fertilization needs.
- Phosphorus should not be applied if tissue P is at or above 0.15% even if soil tests Very Low or Low for P.
- If P recommendations are not desired and the producer only is interested in K, Mg, Ca levels and pH then a Standard Producer Soil Test will apply. This WILL NOT include P fertilizer recommendations.

Analysis Test Code	Analysis Name	Determinations Made	Analysis Cost
B1	Standard Soil and Tissue Test	pH, lime requirement, P, K, Ca, Mg	$15.00
1	Standard Soil Test	pH, lime requirement, K, Ca, Mg and P test value only	$7.00
2	pH and Lime Requirement	pH and lime requirement	$3.00
3	Micronutrient Test	Cu, Mn, Zn	$5.00

EXHIBIT C

APPENDIX 7. INCENTIVE PROGRAMS FOR QUALIFYING FARMS

The implementation of Best Management Practices can reduce non-point sources of pollution, conserve valuable soil and water resources, and improve water quality. The implementation of these management practices can also be expensive and, in some cases, may not be economically feasible for agricultural producers. To reduce the financial burden associated with the implementation of selected practices, several voluntary cost-share programs have been established. These programs are designed to conserve soil and water resources and improve water quality in receiving watercourses. The narrative below is intended to provide basic information regarding the primary federal, state, and regional cost-share programs. Sources of additional information have also been included, and ranchers are encouraged to contact the identified agencies or organizations for current information about each program.

I. Programs Administered by USDA - Farm Services Agency (FSA):

Conservation Reserve Program (CRP): This program encourages farmers to convert highly erodible cropland or other environmentally sensitive lands to vegetative cover including grasses and/or trees. This land use conversion is designed to improve sediment control and provide additional wildlife habitat. Program participants receive annual rental payments for the term of the contract in addition to cost share payments for the establishment of vegetative cover. CRP generally applies to highly erodible lands and is more applicable to North Florida.

Conservation Reserve Enhancement Program (CREP): CREP uses a combination of federal and state resources to address agricultural resource problems in specific geographic regions. This program (which is not limited to highly erodible lands) is designed to improve water quality, minimize erosion, and improve wildlife habitat in geographic regions that have been adversely impacted by agricultural activities.

Emergency Conservation Program (ECP): The ECP provides financial assistance to farmers and ranchers for the restoration of farmlands on which normal farming operations have been impeded by natural disasters. More specifically, ECP funds are available for restoring permanent fences, terraces, diversions, irrigation systems, and other conservation installations. The program also provides funds for emergency water conservation measures during periods of severe drought.

For further information on CRP and CREP, including eligibility criteria, please contact your local USDA Service Center. Information is also available on the Internet at www.fsa.usda.gov.

II. Programs Administered by USDA - NRCS:

Environmental Quality Incentives Program (EQIP): EQIP provides financial assistance for the implementation of selected management practices. Eligibility for the program requires that the farm have a USDA-NRCS approved Conservation Plan. Practices eligible for EQIP cost share are designed to improve and maintain the health of natural resources and include cross-fences, water contral structures, brush management, prescribed burning, prescribed grazing, nutrient management and other erosion control measures.

Conservation Security Program (CSP): CSP is a voluntary conservation program that supports ongoing stewardship on private lands. It rewards farmers and ranchers who are meeting the highest standards of conservation and environmental management. Its mission is to promote the conservation and improvement of soil, water, air, energy, plant and animal life.

Wetlands Reserve Program (WRP): WRP is a voluntary program designed to restore wetlands. Program participants can establish easements (30-year or perpetual) or enter into restoration cost-share agreements. In exchange for establishing a permanent easement, the landowner usually receives payment up to the agricultural value of the land and 100 percent of the wetland restoration cost. Under the 30-year easement, land and restoration payments are generally reduced to 75 percent of the perpetual easement amounts. In exchange for the payments received, landowners agree to land use limitations and agree to provide wetland restoration and protection.

Wildlife Habit Incentives Program (WHIP): The Wildlife Habitat Incentives Program provides financial incentives for the development of fish and wildlife habitat on private lands. Program eligibility requires that landowners develop and implement

a Wildlife Habitat Development Plan. Participants enter multiyear (5 to10 year) agreements with USDA-NRCS.

For further information on these programs, including eligibility criteria, please contact your local USDA Service Center. Information is also available on the Internet at the following web site: www.nrcs.usda.gov

III. Programs Administered by State and Regional Entities:

Soil and Water Conservation Districts: In order to assist agricultural producers in the implementation of BMPs, the Florida Department of Agriculture and Consumer Services has executed a number of cost-share contracts with several of the state's Soil and Water Conservation Districts and Resource Conservation and Development Councils, Inc. Many of these cost-share contractors administer cost-share programs using *Applicant's Handbooks* which include reimbursement rates and rancher selection criteria.

Water Management District Cost Share Memoranda: The Department of Agriculture and Consumer Services has executed Memoranda of Agreement (MOA) with certain Water Management Districts to provide coordination for BMP cost-share programs. Each MOA will identify the primary program areas within the District's geographical boundaries, and designates the agency responsible for program administration.

For further information on these programs, including eligibility criteria, please contact your regional Water Management District, local Soil and Water Conservation District or the Florida Department of Agriculture and Consumer Services. Information and links to other sites are also available on the Internet at the following web site: www.floridaagwaterpolicy.com

APPENDIX 8. EXAMPLE RECORD KEEPING FORMS

Ranchers are required to keep accurate records to document BMP implementation. Record keeping also aids ranchers in operating and maintaining BMPs, and is required for the following BMP Groups:

1.1 **Fertilizer Management** - Maintain records of fertilizer application. Records should include soil test analysis, date of application, fertilizer formulation, application rate, location and acreage, and worksheet results

3.1 **Prescribed Grazing** - Maintain grazing records by pasture, and develop a contingency plan for floods and droughts in order to adjust the required grazing demands.

3.2 **Comprehensive Prescribed Grazing** - Keep records on stocking numbers, grazing days, and length of rest periods for each pasture or field.

5.2 **Ditch Construction and Maintenance** - Keep records of all ditch maintenance activities, and keep any records that relate to ditch design cross-sectional area.

10.2 **Well Construction and Operation** - Maintain records of new well construction or modifications to existing wells. Proper records are important for future reference, in case problems arise with the well.

The tables below correspond to of all the record-keeping requirements contained in this manual. They serve as a set of templates to develop your own record-keeping system. You may maintain your records as hard copies or in an electronic format, depending on your preference. You may use these tables, develop your own, or choose commercially available record-keeping software suited to your commodity.

Soil Sample Records

Date	Field Location	# of Samples	Name of Lab	Records Location

Tissue Sample Records

Date	Field Location	# of Samples	Name of Lab	Records Location

EXHIBIT C

Fertilization/Nutrient Records

Date	Location	Acreage Covered	Type[1]	Formulation[2]	Analysis[3]	Rate (Lbs/Acre)

Rainfall (in.)

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.

Well Records

Location	Year Constructed	Constructed By	Last Modified	Modified By	Records Location

Ditch/Waterway Records

Location	Design Cross-Section[4]	Current Cross-Section[7]	Date of Last Cross-Section Inspection	Records Location

Grazing Rotations

Pasture Location	Pasture Size	Stocking Rate (Head/Acre)	Forage Type	# of Days Grazed	Date Last Grazed

[1] Organic, Inorganic, Chemical [2] Granular, Water Soluble, etc. [3] e.g. 10-10-10 [4] Ditch Invert and side slopes

EXHIBIT C

APPENDIX 9. EMPLOYEE TRAINING POINTS

Good Housekeeping and Pollution Prevention

- Stress the importance of protecting water quality and the environment, as stewards of the land
- Stress the importance of ranch and facility appearance
- Have a schedule or plan for mowing or grazing grassed waterways and filter strips
- Plan for maintenance activities on access roads
- Have a schedule or plan to remove mineral or feeding areas
- Properly maintain cowpen runoff management areas
- Properly store potential pollutants in a designated area
- Secondary containment for above ground storage tanks (fuel, oil, etc.)
- Discuss proper storage, use and disposal of solvents and degreasers, as well as paints, used oil, anti-freeze and batteries
- Discuss ways to handle potential pollutants to reduce the chance of a spill

Animal Mortality Management

- Movement of dead animals away from waterbodies
- Proper disposal methods for your operation
- Reduction of third party inquiries due to improper management

Nutrient Management and Spreading

- Proper forage tissue and soil analysis (apply only what the plant needs)
- Discuss timing of fertilizer application
- Discuss locations to avoid when spreading fertilizer materials
- Discuss proper storage, loading and calibration of equipment

Proper Operation and Maintenance of Facilities

- Inform employees about filter strips, grassed waterways, and waste storage ponds
- Discuss the preventive maintenance schedule for all control facilities (dams, dike, terraces, diversions, berms)
- Discuss facility inspections
- Discuss proper procedures for reporting and repairing problems with control facilities
- Record rainfall using rain gauges
- Have a measuring device in retention ponds
- Have a wastewater discharge plan

Documentation and Records Retention

- Stress importance of record keeping
- Have a schedule for retaining records
- List activities and events that should be documented

For example:

- ➢ Fertilizer rate/location/date
- ➢ Irrigation amounts applied and rainfall
- ➢ Well construction
- ➢ Pesticide spraying
- ➢ Hazardous waste disposal
- ➢ Ditch maintenance activities
- ➢ Grazing days and rest periods

EXHIBIT C

EMPLOYEE TRAINING RECORD

Date: _____

Topic(s) Discussed:

_____

_____

_____

_____

Employee(s)	Present Responsibility

Trainer: _____

Signature: _____

- Contact your local NRCS District Conservationist to obtain information about the soil types for the proposed location. The District Conservationist can identify soil types that are historically prone to flooding or standing water. Evaluate the storage capacity, size, and elevations of existing ditches, ponds, creeks, rivers, and wetlands, and the size, layout, and elevations of the fields. You should also contact your county or water management district to obtain maps (FEMA, FIRM) or other information related to flooding issues at the proposed or existing location. You can access this information via the web at http://www.fema.gov/hazard/map/firm.shtm.
- Determine the maximum storm size for which you want to provide flood protection. The flood control design storm addressed by WMD ERP regulations varies from a 25-year, 24-hour storm to a 100-year, 3-day storm. For example, a 25-year, 24-hour storm produces from 8 to 10 inches of rainfall in a 24-hour period. Generally, the larger the design storm event used, the more extensive the stormwater management system needs to be. Factors that will affect this decision include land availability, the existence of internal natural features such as creeks, rivers, ponds, or wetlands, the potential to flood downstream property owners, and costs.
- Consult with a public or private agricultural engineer to discuss your stormwater management needs and considerations, especially if you are farming on poorly drained lands. Find an engineer qualified to provide an appropriate stormwater runoff analysis for your site.
- Include both nonstructural pollution prevention BMPs and structural BMPs, as needed and feasible to meet desired stormwater management objectives. If structural BMPs are needed, determine what is appropriate for your farm characteristics and stormwater management objectives. Each of the WMD ERP regulations and handbooks include specific design guidelines for various structural stormwater BMPs. The construction of a stormwater management system (e.g., retention or detention pond) may require an ERP or other WMD surface water management permit. Therefore, please check with your water management district before beginning construction of any stormwater management system. Typical structural BMPs include:
  - Retention basins that capture stormwater and allow it to percolate into the soil, evaporate, or transpire. These infiltration BMPs are used in areas with sandy soils and a wet-season water table that is at least two feet beneath the bottom of the retention basin. Special designs are needed in Karst areas or springsheds to minimize movement of pollutants, especially nutrients, into the ground water.
  - Wet detention ponds that capture stormwater, detain it, and slowly release the runoff to downstream waters or stormwater systems. Wet ponds are used in areas with a high water table.
  - Grassed waterways used to convey stormwater to structural BMPs. Grassed waterways also help filter runoff and, in many cases, allow stormwater to infiltrate.
  - Typical nonstructural BMPs include field buffers, riparian buffers, nutrient management, minimizing soil compaction and impervious areas.

EXHIBIT C

EXHIBIT C

APPENDIX 11

Notice of Intent and BMP Checklist

EXHIBIT C

EXHIBIT C

ADAM H. PUTNAM
COMMISSIONER

Florida Department of Agriculture and Consumer Services
Office of Agricultural Water Policy

FDACS-OAWP
1203 Governor's Sq. Blvd.
Suite 200
Tallahassee, FL 32301

NOTICE OF INTENT TO IMPLEMENT
WATER QUALITY BMPs FOR FLORIDA COW/CALF OPERATIONS (2008)

Rule 5M-11.004, F.A.C.

- **Complete all sections of the Notice of Intent** (NOI). Each NOI may list only properties that are within the same county and are owned or leased by the same person or entity, and on which applicable BMPs will be identified and implemented under this manual.
- Submit the **NOI**, along with the **BMP Checklist**, to the Florida Department of Agriculture and Consumer Services (FDACS), at the address below.
- **Keep a copy of the NOI and the BMP checklist in your files** as part of your BMP record keeping.

You can visit http://www.freshfromflorida.com/onestop/forms/01520.pdf to obtain an electronic version of this Notice of Intent to Implement (NOI) form.

If you would like assistance in completing this NOI form or the BMP Checklist, or with implementing BMPs, contact FDACS staff at (850) 617-1727 or AgBmpHelp@freshfromflorida.com.

Mail this completed form and the BMP Checklist to: FDACS Office of Agricultural Water Policy
1203 Governor's Square Boulevard, Suite 200
Tallahassee, Florida 32301

Person To Contact

Name: _____

Business Relationship to Landowner/Leaseholder: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ FAX: _____

Email: _____

☐ **Landowner** or ☐ **Leaseholder Information** *(check all that apply)*

NOTE: If the Landowner/Leaseholder information is the same as the Contact Information listed above, please check: ☐ **Same as above.** If not, complete the information below.

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ FAX: _____

Email: _____

EXHIBIT C

Complete the following information for the property on which BMPs will be implemented under this NOI. You may list multiple parcels if they are located within the same county and are owned or leased by the same person or entity.

Operation Name: _____

County: _____

Tax Parcel Identification Number(s) from County Property Appraiser

Please submit a copy of your county tax bill(s) for all enrolled property, with owner name, address, and the tax parcel ID number(s) clearly visible. If you cannot provide a copy of the tax bill(s), please write the parcel owner's name and tax parcel ID number(s) below in the format the county uses. Attach a separate sheet if necessary *(see form provided)*.

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

☐ Additional parcels are listed on separate sheet. *(check if applicable)*

Total # of acres of all parcels listed *(as shown property tax records)*: _____

Total # of acres on which BMPs will be implemented under this NOI: _____

In accordance with section 403.067(7)(c)2, Florida Statutes, I submit the foregoing information and the BMP Checklist as proof of my intent to implement the BMPs applicable to the parcel(s) enrolled under this Notice of Intent.

Print Name: _____

(check all that apply) ☐ Landowner ☐ Leaseholder ☐ Authorized Agent *(see below)**

*Relationship to Landowner or Leaseholder: _____

Signature: _____ Date: _____

Name of Staff Assisting with NOI:

NOTES:

1. You must keep records of BMP implementation, as specified in the BMP manual. All BMP records are subject to inspection.
2. You must notify FDACS if there is a full or partial change in ownership with regard to the parcel(s) enrolled under this NOI.
3. Please remember that it is your responsibility to stay current with future updates of this manual. Visit the following website periodically to check for manual updates: www.floridaagwaterpolicy.com

EXHIBIT C

Additional Tax Parcel Listings

Operation Name: _____

County: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel Na.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

Parcel No.: _____ Parcel Owner: _____

EXHIBIT C

EXHIBIT C

FLORIDA COW/CALF WATER QUALITY BMP CHECKLIST

Checklist Instructions:

Note: Before you fill out this checklist, follow the section on BMP Enrollment and Implementation, which begins on page 3 of this manual. You must read the BMPs in Sections 1.0 - 13.0 before filling out the checklist, in order to know what the practices entail. The checklist summaries are for identification purposes only.

1. Check "In Use" for each BMP that you are currently practicing and will continue to practice. If you have a Conservation Plan, enter the FOTG code number in the "In Use" column for all currently implemented practices contained in the plan that are covered in the checklist, and place a check mark in the column for currently implemented practices not contained in the plan.
2. For the applicable BMPs you do not implement currently but will implement, enter the month and year you plan to implement them in the "Planned" column. Where relevant, enter the FOTG code number and month/year of planned implementation in the "Planned" column. Schedule BMPs to be implemented as soon as practicable. FDACS rule requires that applicable Level I BMPs in the manual be implemented as soon as practicable, but not later than 18 months after submittal of the Notice of Intent (NOI) to Implement. This timeline applies to all practices in a Conservation Plan that are identified under the Level I BMPs in the checklist. If you need additional time to implement the following Level I BMPs, you must justify the time needed in the space provided at the end of the checklist: 2.2 Upland Pond Construction Criteria; 2.3 Other Watering Sources; 5.3 Installation of Water Control Structures; 6.3 Riparian Buffer.
3. If you have a Conservation Plan, make sure you identify in the checklist all applicable BMPs that are in the plan and those that are not in the plan. If the plan contains practices that are not covered in the BMP checklist, list the FOTG code number and the names of those practices in the space provided at the end of the checklist.
4. For BMPs you will not implement, check all of the following that apply under "Will Not Implement":
   - NA = Not Applicable (you do not have a resource concern that requires use of the BMP)
   - TNF = Technically Not Feasible
   - ENF = Economically Not Feasible
   - Other – If you select "Other," please explain your reason in the comments section at the end of the form.
5. Make sure you are aware of and follow the record-keeping requirements. BMP groups that include record keeping are marked by the following pencil icon: ✎
6. Mail this BMP checklist with your NOI form to FDACS, and keep a copy of both documents in your files. If you have developed a Conservation Plan, submit a copy of the plan along with the NOI and checklist.

BMP #	BMP Group (See body of manual for full description)	In Use/CP#	Planned	Will not implement (check reason below)			
		Check below/ Enter FOTG#	Enter month/ year	NA	TNF	ENF	Other
1.0 Nutrient Management							
1.1. Level I - Fertilizer Management ✎							
1.	Use Mehlich-1 soil test results or equivalent to determine P application rate						
2.	Determine supplemental fertilizer needs using appendix 5 worksheet						
3.	Use IFAS publication SL-129 to determine fertilization rates						
4.	Time fertilizer applications for maximum nutrient uptake						
5.	Prevent spreading fertilizer material within 50′ of streams, sinkholes, or wetlands						

EXHIBIT C

BMP #	BMP Group (See body of manual for full description)	In Use/CP# Check below/ Enter FOTG #	Planned Enter month/ year	Will not implement (check reason below) NA	TNF	ENF	Other
1.2. Level I - Residuals or Biosolids Application							
1.	Follow FDEP/FDOH regulations for residuals/septage application						
2.	Request the Calcium Carbonate Equivalency and nutrient analysis of treated biosolids						
3.	Obtain copy of FDEP "Agricultural Use Plan"						
1.3. Level I - Animal Nutrition and Feedstock							
1.	Manage supplemental feed to avoid high nutrient loads						
2.	Locate confined feeding areas away from sensitive features						
3.	Locate mineral and supplemental feed 100' from sensitive features						
1.4. Level I - Animal Waste Management							
1.	Manage livestock distribution to reduce waste accumulation						
2.	Use concentrated on-site manure sources for fertilizer						
2.0 Alternative Cattle Water Sources							
2.1. Level I - Water Needs Inventory							
1.	Inventory existing water sources and compare to livestock demand						
2.	Review water management district records on regional well water quality data						
2.2. Level I - Upland Pond Construction Criteria							
1.	Construct ponds less than 2 acres and locate at least 50' from wetlands, or further based on water management district requirements						
2.	Construct cattle access areas with minimum 3:1 slope						
2.3. Level I - Other Watering Sources							
1.	Locate troughs/shade to keep cattle from streams or watercourses						
2.	Construct troughs/tanks with stable base						
3.	Extend pipe at least 100' from waterbody						
3.0 Prescribed Grazing							
3.1. Level I - Prescribed grazing guidelines							
1.	Manage forages/pastures to promote plant vigor, prevent erosion and maintain soil moisture						
2.	Use rotational grazing or other measures for regrowth						
3.	Manage wetlands through flash grazing or exclusion						
3.2. Level II - Comprehensive Prescribed Grazing							
1.	Develop grazing schedules based on NRCS Code 528						
2.	Incorporate cross-fencing in larger pastures						

EXHIBIT C

BMP #	BMP Group (See body of manual for full description)	In Use/CP# Check below/ Enter FOTG#	Planned Enter month/ year	Will not implement (check reason below) NA	TNF	ENF	Other
4.0 Sediment and Erosion Control Measures							
4.1. Level I - General Erosion and Sediment Control Measures							
1.	Minimize vegetation clearing during construction						
2.	Clear land during dry season						
3.	Vegetate road banks and disturbed areas within 14 days of construction						
4.	Use rock crossings for low flow streams						
5.	Manage livestock to prevent erosive trails						
4.2. Level I - Silt Fences							
1.	Use silt screens (less than 3 months) for sheet flow						
4.3. Level II - Check Dams							
1.	Install check dams perpendicular to flow						
4.4. Level II - Sediment Traps							
1.	Install sediment traps within conveyance system or near cowpens						
2.	Retrofit associated sediment trap structures with flashboard risers						
4.5. Level III - Grade Stabilization Structures							
1.	Clear construction area of debris						
2.	Vegetate disturbed areas within 14 days of construction						
3.	Fence around structure to exclude livestock						
4.	Install structures during the dry season						
5.	Follow criteria for fill placement and spreading per this BMP						
6.	Prevent damage from overtopping the structure, and divert excess flows						
7.	Follow earth embankment side slope specifications per this BMP						
8.	Obtain technical assistance as needed						
5.0 Water Resources Management							
5.1. Level I - Water Supply							
1.	Know quantity/quality of irrigation source						
2.	Determine water requirements for forage grasses						
5.2. Level I - Ditch Construction and Maintenance							
1.	Follow appropriate grades and plans during ditch excavation						
2.	Use appropriate setbacks to avoid hydraulic drawdown impacts to wetlands						
3.	Use structural control measures in areas with high water velocity						
4.	Control broadleafs to maintain permanent vegetative cover						
5.	Remove unconsolidated sediments from ditches						

EXHIBIT C

BMP #	BMP Group (See body of manual for full description)	In Use/CP# Check below/ Enter FOTG#	Planned Enter month/ year	Will not implement (check reason below) NA	TNF	ENF	Other
5.3. Level I - Installation of Water Control Structures							
1.	If economically feasible, install water control structures to rehydrate wetlands that have offsite flows						
2.	Maintain boards in all structures to reduce discharge volume						
5.4. Level I - Grassed Waterways							
1.	Install grassed waterways per USDA-NRCS specifications						
6.0 Conservation Buffers							
6.1. Level I - Field Borders							
1.	Install and maintain field borders at perimeter on new improved pastures						
2.	Time planting borders for plant survival and consider using native species						
6.2. Level I - Filter Strips							
1.	Install filter strip to treat runoff from concentrated livestock areas						
2.	Follow filter strip construction criteria in this BMP						
6.3. Level I - Riparian Buffers							
1.	Install and maintain riparian buffer if > 1% slope, and follow NRCS criteria						
7.0 Fence Installation							
7.1. Level I - General Fence Installation							
1.	Minimize soil and vegetative disturbances while clearing land						
2.	Select materials based on purpose and site conditions						
3.	Adjust stocking rates or subdivide larger pastures						
4.	Stabilize streambanks and provide alternative water sources in improved pastures, or install exclusion fencing						
5.	Provide riparian buffer in native or semi-improved pastures that runoff to perennial streams						
7.2. Level I - Fence Installation in Wetlands							
1.	Minimize use of mechanical equipment, and limit clearing to 12′ on either side of fence						
2.	Perform work during the dry season						
7.3. Level II - Livestock Use Exclusion							
1.	In area regulated by water management district, install exclusion fencing 300′ from discharge point						
2.	In area not regulated by water management district, install exclusion fencing 500′ from discharge point						
3.	Install exclusion fencing adjacent to perennial streams where significant erosion occurs						

EXHIBIT C

BMP #	BMP Group (See body of manual for full description)	In Use/CP# Check below/ Enter FOTG #	Planned Enter month/ year	Will not implement (check reason below) NA	TNF	ENF	Other
	8.0 High-Intensity Areas						
	8.1. Level I - High-Intensity Area Management						
	1. Locate new cowpens 200′ from sensitive features; use berm						
	2. Direct runoff from high-intensity areas away from sensitive features						
	8.2. Level II - Design Retrofits						
	1. Use aggregate materials to prevent erosion						
	2. Treat discharges occurring into sensitive features						
	9.0 Animal Mortality						
	9.1. Level I - Sanitation and Disease Control Measures						
	1. Transport carcasses in a sanitary manner						
	2. Clean equipment that comes into contact with corcasses						
	3. Report dangerous diseases to the state veterinarian (refer to list in this BMP)						
	9.2. Level I - Disposal						
	1. Move carcasses to upland areas						
	2. Locate burial sites at least 200′ from sensitive features and 50′ from adjacent property						
	9.3. Level I - Rendering and Incineration						
	1. Use a licensed rendering/incinerating facility						
	10.0 Wellhead Protection for Drinking Water Wells						
	10.1. Level I - Well Planning and Protection						
	1. Construct new wells upgradient from likely pollutant sources						
	2. Research well permit requirements						
	3. Cap or valve free-flowing wells						
	4. Keep livestock 75′ from potable wells						
	10.2. Level I - Well Construction and Operation						
	1. Use a Florida-licensed water well contractor						
	2. Follow pad and casing specifications in this BMP						
	3. Retrofit existing wells with concrete collar and fence						
	4. Use backflow prevention devices at the wellhead						
	11.0 Wetlands and Springs Protection						
	11.1. Level I - Wetland Protection and Impact Avoidance						
	1. Identify wetland or hydric soil types using soil survey						
	2. Eliminate or reduce adverse impacts to wetlands						
	3. Maintain a 25′ vegetative buffer from wetlands, or follow buffers prescribed in your WMD permit						
	4. Obtain a USDA-NRCS wetland determination prior to conducting activities in a wetland						

EXHIBIT C

BMP #	BMP Group (See body of manual for full description)	In Use/CP# Check below/ Enter FOTG#	Planned Enter month/ year	Will not implement (check reason below) NA	TNF	ENF	Other
11.2.	**Level I - Water Quality Treatment and Field Discharges**						
1.	Use pretreatment practices to protect wetlands						
2.	Rotate livestock through wetlands at accelerated pace						
3.	Use spreader swales or other means to encourage sheetflow						
11.3.	**Level I - Special Criteria for First and Second Magnitude Springs**						
1.	Maintain a 100' vegetative buffer around spring features						
2.	Use split applications of fertilizers on pasture areas that discharge to spring features						
	12.0 Prescribed Burning						
12.1.	**Level I - Burn Preparation**						
1.	Develop and implement a burn prescription plan, or use a Certified Prescribed Burn Manager						
2.	Obtain burn permit from DOF and heed burning bans						
3.	Use burning in conjunction with roller chopping in areas with an abundance of palmettos						
4.	Burn only when weather conditions are favorable						
12.2.	**Level I - Construction of Firelines**						
1.	Carefully select fireline locations and avoid constructing them in wetlands						
2.	Use alternatives to plowed firelines						
3.	Construct firelines with the contour to minimize soil erosion						
12.3.	**Level I - Fire Safety and Control**						
1.	Have adequate fire equipment and control burn temperature						
2.	Ensure fire is completely out before leaving the site						
	13.0 Integrated Pest Management and Pharmaceuticals						
13.1.	**Level I - General IPM Practices**						
1.	Store pesticides in roofed structure with lockable door, at least 100' from surface water						
2.	Use appropriate mix/load sites and measures, per this BMP						
3.	Practice IPM and use all pesticides in accordance with label						
4.	Rinse, recycle, or dispose of empty pesticide containers following all applicable regulations						
13.2.	**Level I - Pharmaceutical Use and Disposal**						
1.	Use FDA-approved products, and mix only the amount needed						
2.	Follow label and dosing instructions						
3.	Dispose of spent needles and unused pharmaceutical products responsibly						

EXHIBIT C

List additional BMPs you are implementing per your conservation plan that are not listed in the above checklist.

FOTG #	Practice Name/Description	In Use/CP # *Check Below*	Planned *Enter mo./yr.*

BMP #	Comments: Please enter "other" reasons below for not implementing BMPs.

BMP Group	Justification for additional time to implement specified Level I BMPs
2.2	
2.3	
5.3	
6.3	

EXHIBIT C

HUNTING LEASE BETWEEN
THE COUNTY OF VOLUSIA
AND
CDS INITIATIVES, LLC

THIS HUNTING LEASE ("Lease") is made and entered into by and between COUNTY OF VOLUSIA, a political subdivision of the State of Florida, 123 W. Indiana Avenue, DeLand, Florida 32720 (“Lessor"), and CDS INITIATIVES, LLC, PO Box 956, New Smyrna Beach, Florida, 32170 (the "Lessee").

1. LEASE DESCRIPTION

Lessor hereby leases to Lessee, in accordance with the terms, provisions and conditions of this Lease, the following generally described demised premises: 2,617 acres of land described as the Hunt Lease Area of Deep Creek Preserve depicted in Exhibit A hereinafter referred to as “Demised Premises” or “Leased Premises.”

2. TERM OF LEASE

The term of this Lease shall begin on October 16, 2023, and shall continue through April 30, 2029, with an option to renew for one additional five (5) year period upon mutual written agreement and approval of County Council, as required. Lessee or Lessor may exercise the option to terminate the Lease by giving the other party to this Lease 30 days written notice of its intent to terminate. All notices shall be in accordance with section 10.13 of this Lease.

3. RENT

Rental Obligations. All payments of rent to Lessor shall be made at Lessor's mailing address or by Electronic Funds Transfer. All payments of rent shall be made without any set-off or deduction whatsoever. Lessee covenants and agrees to pay to Lessor, as Basic Rent, as indicated below per year (the "Basic Rent"). Initial rent shall be prorated for the period of October 16, 2023,

through April 30, 2024. Subsequent payments to the County will be due and payable on May 1st of each year beginning on May 1, 2024. The annual lease payment will increase by three percent (3%) each year beginning on May 1, 2025. Schedule of payments shall be as follows:

10/16/2023 – 04/30/2024	$17,194.78 due 10/16/2023
05/01/2024 – 04/30/2025	$31,744.21 due 05/01/2024
05/01/2025 – 04/30/2026	$32,696.54 due 05/01/2025
05/01/2026 – 04/30/2027	$33,677.44 due 05/01/2026
05/01/2027 – 04/30/2028	$35,717.76 due 05/01/2027
05/01/2028 – 04/30/2029	$36,789.29 due 05/01/2028

4. USE OF PREMISES

4.1 The purpose of this lease agreement is for Lessee to have exclusive hunting lease rights on the Demised Premises as further described in Exhibit A.

Lessee agrees to lease the Demised Premises "as is." At the conclusion of the lease agreement, Lessee shall restore the Demised Premises within thirty (30) days to equal or better condition than it was at the commencement of the lease term.

4.2 General Use Requirements.

Lessee shall not commit or suffer any waste and will not make any use of the Leased Premises which would constitute a nuisance, or which would violate any municipal, county, state or federal statute, ordinance, rule, or regulation.

Lessee shall keep the Demised Premises neat, clean and free from rubbish, insects, and pests at all times, and shall store all trash and garbage outside the Demised Premises.

4.3 Prohibited Uses.

All uses by Tenant of the Demised Premises not expressly permitted by this Lease are

prohibited, including, but not limited to, the following prohibited uses:

a) Operation of feedlot;

b) Committing, or suffering to be committed, any nuisance or other act that might disturb the quiet enjoyment of any person or business located within a reasonable distance of the Demised Premises;

c) Harvesting timber;

d) Mining or removing any topsoil, gravel, shell deposits or other substances from the soil;

e) Conducting, or permitting the conduct of, any dangerous activities on the Demised Premises, including, but not limited to, the setting of any open fires or the use of any explosive devices; or

f) Any other prohibited items or uses as identified in **Exhibit B, Scope of Work/Restrictions**.

5. INDEMNITY AND INSURANCE

5.1 Lessee's Indemnity. Lessee shall indemnify, defend, and hold harmless Lessor, its districts, authorities, separate units of government established by law (constitutional), ordinance or resolution, partners and its agents, officers, volunteers, elected and non-elected officials, employees, and any party whom Lessor has agreed by contract to provide additional insured status, from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees, arising or growing out of or in any way connected with the use, occupancy, management and control of the Leased Premises, or the use or occupation thereof by Lessee, or its agents, servants, subtenants, employees, customers, patrons or invitees, provided that the claim, damage, loss and expense is caused in whole or in part by a negligent act or omission of Lessee, any officer, employee, agent, or contractor of Lessee, or anyone directly employed by any one of them or anyone for whose acts any of them may be liable, except Lessee shall not indemnify and hold harmless Lessor if such claim, damage, loss or expense is the result of the sole negligence of Lessor. Lessee shall execute **Exhibit D** simultaneously with the execution of this lease agreement. Additionally,

Lessee shall cause and ensure that each member of Lessee's hunt club and any invitee by Lessee onto the Demised Premises shall execute **Exhibit E** prior to any club member or invitee's use of the premises.

Lessor expressly retains all rights, benefits, and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes. Notwithstanding anything set forth in this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity of limits of liability of Lessor beyond any statutory limited waiver of immunity or limits of liability which may have been adopted by the Florida Legislature or may be adopted by the Florida Legislature, and the cap on the amount and liability of Lessor for damages, regardless of the number or nature of claims, whether in tort, equity or contract, shall not exceed the dollar amounts set by the legislature for tort claims.

5.2 Lessee's Risk. Lessor shall have no responsibility or liability for any loss of or damage to fixtures or other personal or commercial property of Lessee, or for any loss or damage resulting to Lessee or those claiming by, through or under Lessee, or its or their property, from the theft or damage of any stored property on the Demised Premises.

5.3 Insurance. Lessee will maintain liability insurance coverage for itself, and on behalf of the Lessor for the coverage requirements contained in **Exhibit C**, incorporated, and made a part of this Agreement.

6. ASSIGNMENT

6.1 Prohibition. Lessee covenants and agrees that Lessee will not assign this Lease or sublet the whole or any part of the Leased Premises without, in each instance, having first received the express written consent of Lessor.

7. LESSOR'S ACCESS TO DEMISED PREMISES

7.1 Right of Access. Lessor and members of the public shall have the right to enter the Demised Premises.

8. DEFAULT

8.1 Lessee's Default. Upon the happening of any one or more of the following events, Lessee shall be in default under the terms of this Lease:

(a) Lessee's failure to pay any installment of Basic Rental or any other sum to be paid by Lessee under this Lease within ten (10) days after the same becomes due and payable under this Lease;

(b) Lessee's failure to perform or observe any term or condition contained in this Lease, other than payment of the Basic Rental or any other sum to be paid by Lessee, and Lessee's failure to commence to cure the same within ten (10) days after notice from Lessor to Lessee thereof and to promptly and diligently complete the curing of same;

(c) Lessee's interest under this Lease being assigned by operation of law; or

9.2 Lessor's Remedies. Upon default by Lessee, Lessor, at its discretion, may then exercise any one or more of the following options, which are cumulative in nature:

(a) Terminate this Lease, remove all persons and property from the Demised Premises by summary proceedings or otherwise, and take possession of the Demised Premises, all without prejudice to Lessor's right to collect from Lessee any rent or other sum which became payable to Lessor prior to such termination, together with all damages suffered by Lessor resulting from Lessee's default hereunder;

(b) Re-enter and take possession of the Leased Premises by any lawful means;

(c) Declare the entire remaining accrued unpaid rent and other charges due hereunder to

be immediately due and payable, and take such action available to Lessor to recover and collect same; or

(d) Exercise any and all rights and privileges and pursue any remedy that Lessor may have under the laws of the State of Florida.

8.3 Lessor's Default. Lessor shall in no event be in default in the performance of any of Lessor's obligations hereunder unless and until Lessor shall have failed to perform such obligations within ninety (90) days, or such additional time as is reasonably required to correct any such default, after written notice by Lessee to Lessor properly specifying the manner in which Lessor has failed to perform any such obligation.

9. HAZARDOUS SUBSTANCES

9.1 Hazardous Substances. The term "Hazardous Substances," as used in this Lease shall include, without limitation, all substances declared to be hazardous or toxic under any law or regulation now or hereafter enacted or promulgated by any governmental authority.

(a) Lessee's Restrictions. Lessee shall not cause or permit to occur any violation of any federal, state, or local law, ordinance, or regulation now or hereafter enacted, related to environmental conditions on, under or about the Demised Premises or arising from Lessee's use or occupancy of the Leased Premises.

(b) Lessee's Indemnity. Lessee shall indemnify, defend, and hold harmless Lessor, its respective officers, directors, agents, and employees from all fines, suits, procedures, claims, and actions of every kind and all costs associated therewith including attorneys' and consultants' fees arising out of, or in any way connected with, any deposit, spill, discharge occurring after the Commencement of this Lease caused by Lessee on the Demised Premises.

10. MISCELLANEOUS PROVISIONS

10.1 Brokerage Commission. Lessee represents and warrants that it has had no dealing with any broker or leasing agent in connection with the negotiation or execution of this Lease.

10.2 Covenant of Quiet Enjoyment. Lessee, subject to the terms and provisions of this Lease on payment of rent and observing, keeping, and performing all of the terms and provisions of this Lease on the part of the Lessee to be observed, kept, and performed, shall lawfully, peaceably and quietly have, hold, occupy and enjoy the Demised Premises during the term of this Lease.

10.3 Surrender of Premises. On the expiration or earlier termination of the term of this Lease, Lessee shall quit and surrender the Demised Premises in neat and clean condition and in good order, condition, and repair, together with all work, alterations, and additions. Lessee agrees to promptly repair any and all damage to the Demised Premises resulting from such removal.

10.4 Holding Over. Should Lessee continue in occupancy of the Demised Premises after the termination or expiration of this Lease, Lessee shall become a lessee from month-to-month only upon each and all of the terms herein provided as may be applicable to such month-to-month tenancy.

10.5 Interest on Sums Due. Any sum of money due Lessor according to the terms of this Lease after default by the Lessee shall bear interest from the time due at the highest rate provided under Florida law.

10.6 Waiver of Jury. Lessee and Lessor waive all rights to a trial by jury on any and all matters in any civil action commenced by or against Lessee concerning this Lease or the Leased Premises, and agree to venue in Volusia County.

10.7 Entire Agreement and Amendment. This Lease contains the entire agreement of the parties with respect to the Leased Premises. The terms of this Lease may be amended by mutual

written consent and executed addendum to the Lease by the Lessor and Lessee.

10.8 Time of Essence. Time is of the essence of this Lease and every provision hereof.

10.9 Severability. If any term or provision of this Lease, or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Lease shall not be affected thereby.

10.10 Binding Effect. Except as herein otherwise expressly provided, the terms hereof shall be binding upon and shall inure to the benefit of the heirs, personal representatives, successors and assigns, respectively, of Lessor and Lessee.

10.11 Governing Law. This Lease shall be governed exclusively by the provisions hereof and by the laws of the State of Florida, as the same may from time to time exist. Any litigation arising under this Lease shall be venued in Volusia County, Florida.

10.12 Section Titles; Interpretation. The titles to the sections contained in this Lease are for convenience and reference only. The use of the singular herein shall be deemed to include the plural, and conversely, the plural shall be deemed to include the singular.

10.13 Notices. Any notice, statement, demand, or other communication required or permitted to be delivered, served or given by either Party to the other shall be deemed delivered, served or given, if mailed in any general or branch United States Post Office (USPS) enclosed in a registered or certified envelope addressed to the respective Party, as follows:

TO LESSOR: VOLUSIA COUNTY
PURCHASING AND CONTRACTS
123 WEST INDIANA AVENUE – ROOM 302
DELAND, FL 32720

COPY TO: COUNTY ATTORNEY
COUNTY OF VOLUSIA
123 W. INDIANA AVENUE, 3RD FLOOR LEGAL
DELAND, FL 32114

TO LESSEE: CDS INIATIVES, LLC
CHARLES DAVID SHELTON
PO BOX 956
NEW SMYRNA BEACH, FL 32170

THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, this Hunting Lease has been executed as of the date stated above.

LESSOR: COUNTY OF VOLUSIA

ATTEST:

By: _____
George Recktenwald
County Manager

Date: 10/13/2023

By: _____
Jeffrey S. Brower
County Chair

Date: 10/03/2023

LESSEE: CDS INITIATIVES

ATTEST:

By: _____

By: _____
Charles David Shelton
Owner

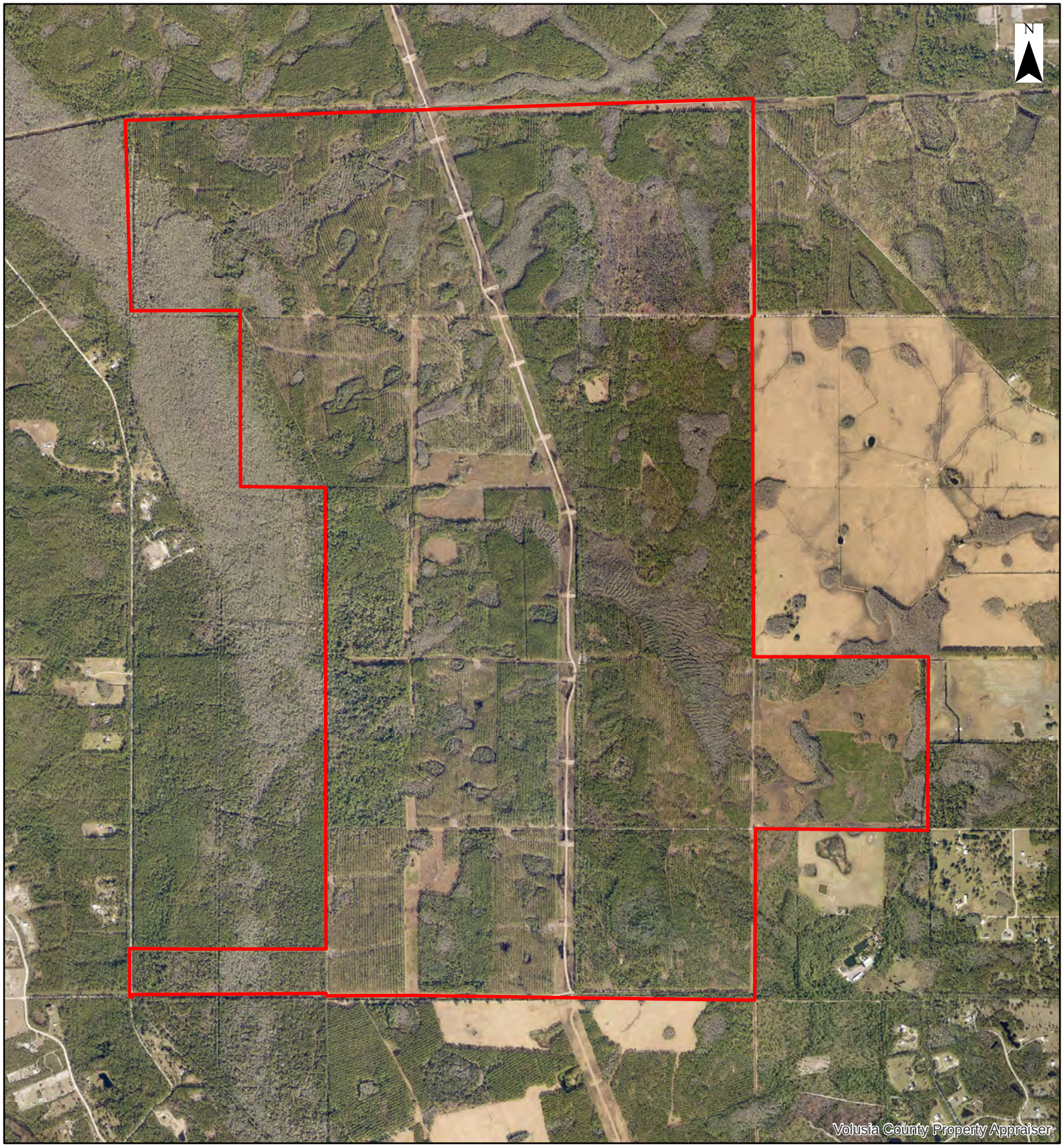
Date: 9/12/23

Date: 9/12/23

CC Date: 10/03/2023

Deep Creek Preserve- Leffler Tract
Volusia County, Florida

Exhibit A
Hunt Lease Area



Legend

Boundary 2617 acres

0 0.125 0.25 0.5
Miles

1 in = 2,000 feet

Volusia County
FLORIDA
Resource Stewardship Division
123 W. Indiana Ave
Room 200
Deland, FL 32720

EXHIBIT B

Lease Information and Land Restrictions of Lessee

This Lease shall convey exclusive hunting lease rights on approximately 2,617 acres of land described as the Hunt Lease Area depicted in Exhibit A. No hunting shall be allowed outside the area indicated on Exhibit A.

This property was purchased for conservation and water resource protection. The property is open for public use. In addition to normal land management activities, including, but not limited to, timber management, prescribed fire and public educational tours, Lessee may expect hikers, equestrians, and bicyclists as well as County staff and contracted vehicles within the hunt area.

The County of Volusia is not responsible for protection of Lessee's property and will not be liable for theft of or damage to Lessee's property due to land management activities.

This Lease shall be for still hunting only.

A. There shall be hunting only in the areas of Deep Creek Preserve as indicated on Exhibit A – Hunt Lease Area**.** No hunting shall be allowed outside the indicated area.

B. Access to the hunt area shall be from the gate at the end of Colony Road. All vehicles are limited to the existing approved roads and fire lines in the hunting area. (Exhibit F)

C. Lessee shall be limited to a maximum of one member for every one hundred seventy-five (175) acres of the leased premises. Lessee shall provide a complete list and contact information (name, phone, and email address) of all authorized users (Hunt club members) of the leased land to County Project Manager prior to any hunting activities occurring. Lessee's rules may be more restrictive in which case members shall comply with Lessee's rules.

D. Lessee shall develop a set of rules and regulations for all authorized users and guests. The rules shall include, but not limited to, rules regarding vehicle usage and guests. Lessee's rules shall be submitted to the County Project Manager prior to any hunting activities occurring.

E. Lessee shall develop a method of identifying members (decals, placards, etc.) and shall submit it to the County Project Manager for approval prior to any hunting activities occurring.

F. The hunt season shall follow the Florida Fish and Wildlife Commission (FWC) season dates and bag limits for Zone C as noted on: http://myfwc.com/hunting/season-dates

G. Lessee shall comply with FWC hunting regulations and rules as noted on: http://myfwc.com/hunting/regulations. Lessee shall comply with any updates to regulations or rule changes made by the FWC.

H. No permanent tree stands shall be installed within the hunt lease and no stands are permitted within one hundred (100) yards of the property boundary.

I. Lessee must notify the County Project Manager of any FWC or other law violations that occur on the property within fifteen (15) days. Violations of FWC game laws may result in termination of the lease.

J. No timber, plants, non-game animals, minerals, sand, or forest products shall be removed from said premises by the Lessee (excluding legal game) without the express written consent of County Project Manager. Excavation, chopping, or any clearing are prohibited without the express written consent of the County Project Manager.

K. Food plots are permitted at the discretion of the County Project Manager. Food plot size, location and seed content must be pre-approved by the County Project Manager. Feeding stations shall comply with FWC hunting regulations.

L. Camping, the establishment of a hunt camp, or a camping area is prohibited.

M. Portable restrooms shall be prohibited.

N. All vehicles used by Lessee are limited to the existing roads and fire lines in the hunt area. All-Terrain Vehicles (ATVs) shall be permitted per issuance of a special use authorization Per Volusia County Code of Ordinances, Sec. 82-49, Motor vehicles, "(a) An organized activity involving the use of unlicensed motor vehicles through the use of a special use authorization. (b) Motor vehicles licensed for highway use are allowed on conservation lands provided that:

1. Said vehicles shall be operated by licensed drivers only on roads designated as open for motor vehicles; and
2. Said vehicles shall not exceed the ten (10) miles per hour speed limit on conservation lands.

O. County staff shall close roads due to unfavorable conditions as needed.

P. County staff may revoke the special use authorization for ATV's for violations of rules such as operating in areas outside the approved motor vehicle use map.

Q. Grading and road repair and other property improvements shall be allowed with approval and coordination between the Lessee and County Project Manager. However, Lessee improvements will not result in any reduction to the lease payment due.

R. Lessee shall meet with the County Project Manager during the month of February to discuss plans to restore roads to the original condition.

S. A harvest report shall be provided to the County Project Manager within thirty (30) days of the end of turkey hunting season to include all game taken during the hunting season. All harvest reporting shall be done on an approved harvest report form.

T. Hunting with dogs is prohibited, except bird dogs and retrievers may be used to hunt doves, ducks, geese, and coots during their respective statewide seasons and any dog may be used to hunt small game (gray squirrel, migratory birds, quail, and rabbits,) during small game season.

U. Unless hunting, dogs shall remain leashed or kenneled while on the property. Authorized users shall, at all times while on the property, maintain in their possession a current certificate of rabies vaccination for each dog. Authorized users shall ensure that the dog(s) are licensed pursuant to any applicable Volusia County ordinance and shall comply with FWC statewide dog registration program.

V. Trapping is prohibited in the hunt lease area except for the purposes of removing feral hog and pursuant to the rules and regulations of the FWC. Conservation lands staff may also remove feral hog in the hunt lease area.

W. Lessee shall not sell hunts or other concessions. Hunting shall be for members and guests only.

X. Lessee shall be required to complete and submit Exhibit D to the County Project Manager prior to any hunting activities occurring.

Y. All members and guests of the awarded Lessee's club shall be required to complete Exhibit E prior to entering the lease area. Copies of each member/guest's waiver shall be provided to the County Project Manager.

1. Insurance Requirements

Required Types of Insurance

The Contractor shall purchase and maintain at its own expense, during the term of this Agreement, the types and amounts of insurance with limits no less than those shown in Section 5 below, in the form and from companies satisfactory to the County. The Required Types and Limits of Insurance Chart is a listing and general summary of insurance policies required and is not intended to be comprehensive as to the requirements of each specific policy. Contractors shall review the additional requirements in this section and ensure that the insurance policies comply with the specific terms and conditions therein.

For the purposes of indemnification of the County or an endorsement or insurance coverage under this Agreement/Contract under which the County is a “named insured”, “additional named insured”, or “additional insured”, the term “County” includes the County of Volusia (a body corporate and politic and a subdivision of the State of Florida), including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status.

2. Subcontractors and Independent Contractors

All subcontractors & independent contractors utilized by Contractor to provide services to County and its employees under this Agreement/Contract shall be required to maintain all insurance policies with the same terms, conditions, and requirements required of the Contractor in the Required Types and Limits of Insurance Chart and described below in this Exhibit.

3. Claims Made Basis Insurance Policies

All insurance policies written on a Claims Made Form shall maintain a retroactive date prior to or equal to the effective date of the Agreement. The Contractor shall purchase a Supplemental Extended Reporting Period (“SERP”) with a minimum reporting period of not less than three (3) years in the event the policy is canceled, not renewed, switched to occurrence form, or any other event which requires the purchase of a SERP to cover a gap in insurance for claims which may arise under or related to the Agreement. The Contractor’s purchase of the SERP shall not relieve the Contractor of the obligation to provide replacement coverage. In addition, the Contractor shall require the carrier immediately inform the Contractor, the County Risk Manager, and the Purchasing

and Contracts Division of any contractual obligations that may alter its professional liability coverage under the Agreement.

4. Risk Retention Groups and Pools

Contractor shall not obtain an insurance policy required under this Agreement from a Risk Retention Group or Pool.

5. Minimum Required Policies and Limits

Minimum underlying policies, coverages, and limits shall include all policies listed in below:

TYPE OF INSURANCE		
COMMERCIAL GENERAL LIABILITY ☒ Occurrence Basis ☒ Contractual Liability ☒ Endorsement: County Additional Insured ☒ Endorsement: Waiver of Subrogation	EACH OCCURRENCE	$ 1,000,000
	GENERAL AGGREGATE	$ 2,000,000
	Premises-Operations	$ 1,000,000
	Products & Completed Ops	$0
	Personal & Adv Inj.	$ 1,000,000
	Fire Damage	$
		$
CANCELLATION: Thirty (30) days written notice of cancellation is required to the Certificate Holder:		
Certificate Holder: County of Volusia Purchasing & Contracts Division 123 W. Indiana Avenue, Room 302 DeLand, FL 32720 ATTN: Kathy Williams		

6. Additional Insured, Policies, Coverages, Limits, Primary and Non-Contributory Basis

Under all insurance policies where the County is required to be an additional insured, the coverage and limits provided to the County under Contractor's insurance policies shall be that listed in the Required Types and Limits of Insurance Chart or the Contractor's actual limits, whichever is higher.

All coverage provided to the County as an additional insured by said policies shall be primary and shall not be additional to or contributing with any other insurance carried by or for the benefit of the County with any other insurance available to the County. The Contractor shall utilize ISO Form CG 20 38 04 13 and CG 20 37 04 13 or equivalent to provide additional insured status to the County and any party to whom the County is contractually bound to provide additional insured status under a commercial general liability policy.

7. Commercial General Liability Insurance

The Lessee shall acquire and maintain Commercial General Liability insurance, with limits of not less than the amounts shown in the Required Types and Limits of Insurance Chart. Lessee shall not obtain an insurance policy wherein the policy limits are reduced by defense and claim expenses. Such insurance shall be issued on an occurrence basis and include coverage for the Lessee's operations, independent Contractors, Subcontractors and "broad form" property damage coverages protecting itself, its members, employees, agents, Contractors or subsidiaries, and their employees or agents for claims for damages caused by bodily injury, property damage, or personal or advertising injury, and products liability/completed operations including what is commonly known as groups A, B, and C. Such policies shall include coverage for claims by any person as a result of actions directly or indirectly related to the employment of such person or entity by the Lessee or by any of its members arising from work or services performed under the Agreement. Public liability coverage shall include either blanket contractual insurance or a designated contract contractual liability coverage endorsement, indicating expressly the Lessee's Agreement to indemnify, defend and hold harmless the County as provided in the Agreement. The commercial general liability policy shall provide coverage to County when it is required to be named as an additional insured either by endorsement or pursuant to a blanket additional insured endorsement, for those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of any endorsements excluding or limiting coverage for Bodily Injury, Property Damage, Products/Completed Operations, Independent Contractors, Property of County in Contractor's Care, Custody or Control or Property of County on which contracted operations are being performed, Explosion, Collapse or Underground hazards (XCU Coverage, Contractual Liability or Separation of Insureds. When County is added as additional insured by endorsement, ISO Endorsements CG 20 38 and CG 20 37 or their equivalent shall be used and shall provide such additional insured status that is at least as broad as ISO form CG 20 10 11 85. If County has agreed

by separate contract to require Lessee to name another party as an additional insured, Lessee shall add said party as an additional insured to the commercial general liability policy by ISO Endorsement CG 20 38. Lessee shall require its subcontractors performing work under this Lease to add the County and any other party that the County has agreed by separate contract to require Lessee to name as an additional insured to their Commercial General Liability policy as an additional insured by ISO Endorsement CG 20 38. All commercial general liability policies shall provide a waiver of subrogation in favor of the County and any other party required by this Agreement to be named as an additional insured. **The commercial general liability policy shall be provided on a project or location specific basis for the location or project site where the work or services are to be performed under the Agreement.**

8. Primary and Excess Coverage

Any insurance required may be provided by primary and excess insurance policies.

9. Insurance Requirements

A. General Insurance Requirements:

(1) All insurance policies shall be issued by insurers licensed and/or duly authorized under Florida Law to do business in the State of Florida and all insuring companies are required to have a minimum rating of A- and a Financial category size of VIII or greater in the "Best Key Rating Guide" published by A.M. Best & Company, Inc.

(2) Approval by County of any policy of insurance shall not relieve Contractor from its responsibility to maintain the insurance coverage required herein for the performance of work or services by the Contractor or its Subcontractors for the entire term of the Agreement and for such longer periods of time as may be required under other clauses of the Agreement.

(3) Waiver of Subrogation. The Contractor hereby waives all rights against the County and its Subcontractors for damages by reason of any claim, demand, suit or settlement (including workers' compensation) for any claim for injuries or illness of anyone, or perils arising out of the Agreement. The Contractor shall require similar waivers from all its Subcontractors. Contractor's insurance policies shall include a waiver of subrogation in favor of the County. This provision applies to all policies of insurance required under the Agreement (including Workers' Compensation, and general liability).

(4) County Not Liable for Paying Deductibles. For all insurance required by Contractor, the County shall not be responsible or liable for paying deductibles for any claim arising out of or related to the Contractor's business or any Subcontractor performing work or services on behalf of the Contractor or for the Contractor's benefit under the Agreement.

(5) Cancellation Notices. During the term of the Agreement, Contractor shall be responsible for promptly advising and providing the County Risk Manager and the Purchasing and Contracts divisions with copies of notices of cancellation or any other changes in the terms and conditions of the original insurance policies approved by the County under the Agreement within two (2) business days of receipt of such notice or change.

(6) Deductibles. Contractors that maintain and administer a self-insured retention or a large deductible program exceeding the insurance requirements listed in this solicitation using a formal program to fund either program may submit an exception in accordance with the solicitation section detailing Questions, Exceptions, and Addenda, to be considered for this solicitation.

The request must include a summary of the program's design, funding method, and the program's supporting financial information. If additional information is necessary, the County will request more specific information, which must be provided by the Contractor. The County Risk Manager will review the information submitted and determine whether the program is acceptable to the County.

Contractors with no formal risk management program in place to manage and fund deductibles or self-insured retentions may not be considered. Subject to County approval, Contractor may obtain a letter of credit in the amount equivalent to the deductible, which shall remain in effect during the term of the Agreement at no additional cost to the County.

(7) Contractor's obligations or services shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity or insurance defense of additional or named insureds which would otherwise exhaust or be unavailable as to a party or person described in this Contract.

Proof of Insurance

A. The Lessee shall be required to furnish evidence of all required insurance in the form of certificates of insurance, which shall clearly outline all hazards covered as itemized herein, the amounts of insurance applicable to each hazard and the expiration dates.

B. The Lessee shall furnish proof of insurance acceptable to the County prior to or at the time of execution of the Lease and the Lessee shall not commence any hunting activities until the Lessee

has obtained all the insurance required under the Lease and such insurance has been filed with and approved by the County. Upon request from the County, the Lessee shall furnish copies of all requested policies and any changes or amendments thereto, immediately, to the County, the County Risk Manager, and Purchasing and Contracts Divisions, prior to the commencement of any contractual obligations. The Lease may be terminated by the County, without penalty or expense to County, if at any time during the term of the Lease term proof of any insurance required hereunder is not provided to the County.

C. All certificates of insurance shall clearly indicate that the Lessee has obtained insurance of the type, amount and classification required by this Section. No hunting activities by Lessee or its members shall be commenced until County has approved these policies or certificates of insurance. The Lease may be terminated by the County, without penalty or expense, if proof of any insurance required hereunder is not provided to the County.

D. The Lessee shall file replacement certificates with the County at the time of expiration or termination of the required insurance occurring during the term of the Lease. In the event such insurance lapses, the County expressly reserves the right to renew the insurance policies at the Lessee’s expense or terminate the Lease but County has no obligation to renew any policies.

E. The provisions of these sections, Required Types of Insurance; Insurance Requirements; and Proof of Insurance, shall survive the cancellation or termination of the Lease.

Waiver, Release of Liability, and Indemnity

In consideration of the hunting lease entered into on October 15, 2023, by CDS Initiatives, with the County of Volusia, a body corporate and politic and a subdivision of the State of Florida, including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status or its assignee or agent, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, CDS Initiatives (lessee name), expressly agrees and contracts, including on behalf of successors and assigns, including its members of its hunt club and any invitees to hunt invited onto the County land by CDS Initiatives (lessee name) or conduct recreational activities on the County land subject to the hunting lease with the County, that the County and its insurers, employees, officers, directors, elected officials, assignees, agents, and associates (collectively, "County"), shall not be liable for any damages, arising from the use of the hunting lands by CDS Initiatives (lessee name). CDS Initiatives (lessee name), agrees to waive any and all claims even in the event they arise directly from the County's, actions, omissions, or negligence.

By the execution of this agreement, CDS Initiatives (lessee name) accepts and assumes full responsibility for any and all damages (both economic and non-economic) or losses of any type, which may occur to CDS Initiatives (lessee name), does hereby fully and forever releases and discharges the County, its insurers, employees, officers, directors, and associates, from any and all claims, demands, damages, rights of action, or causes of action, present or future, whether the same be known or unknown, anticipated, or unanticipated (collectively, "Claims"), arising from the use of the County land per the hunting lease entered into between CDS Initiatives (lessee name) and the County. CDS Initiatives (lessee name), expressly agrees to indemnify, defend, and hold the County harmless against any and all claims CDS Initiatives (lessee name) may have or come to have against the County related to the use of the County land per the hunting lease, CDS Initiatives (lessee name), also agrees to indemnify, defend, and hold harmless the County against any loss, damage, claim, liability, cost and/or expense it incurs (including attorney's fees and court costs) as a direct or indirect result of the use of the County land per the hunting lease.

AN AUTHORIZED RPRESENTATIVE OF CDS INITIATIVES (lessee name), HAVING READ THE FOREGOING WAIVER AND RELEASE OF LIABILITY AND VOLUNTARILY EXECUTED THIS DOCUMENT WITH FULL KNOWLEDGE OF ITS CONTENT.

EXHIBIT D

CDS INITIATIVES

Witness: _____

Print Name: Shannon Halfhill

Witness: Kristen Scire

Print Name: Kristen Scire

Charles David Shelton

Charles David Shelton

Date: 9/12/23

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 12 day of September, 2023 by Charles David Shelton, who is ( ) personally known to me, or (X) has produced FL-DL S435-144-54-161-0 as identification, and who ( ) did ( ) did not take an oath.

ANGELA ANNE MANDESE
Notary Public - State of Florida
Commission # HH 073222
My Comm. Expires Jan 3, 2025
Bonded through National Notary Assn.

Angela A Mandese

Notary Public, State of Florida

Printed: Angela A Mandese

Commission No.: HH 073 222

Expiration: 1/3/2025

Volusia County
FLORIDA

Individual Indemnification, Release, and Waiver Agreement for Hunting Lease

I, _____ ("Invitee") certify that I am authorized to use the County of Volusia (County) land per the hunting lease entered into between the County and _____ (lessee name) as either a hunt club member of _____ (lessee name) or an invitee of _____ (lessee name). I understand that any hunting or recreation conducted on the County land pursuant to the hunting lease is organized, conducted, and performed by a private party and that it is not a County of Volusia event. Absent my execution of this Indemnification, Release, and Waiver Agreement ("Agreement") for the hunting lease, the County of Volusia (County) will not allow me to participate in hunting or any recreation activity on County property.

WHEREFORE, in consideration and exchange for hunting on County property, I acknowledge and agree to the following.

(a) **DECORUM AND CONDUCT.** I understand and agree that hunting on County property is that of an invited guest, and that if I engage in any wrongful or criminal behavior that the County may immediately expel me from County property. I understand and agree that I may be subjected to civil and/or criminal liability for engaging in any such conduct or behavior, where such behavior rises to the level of illegal conduct or otherwise results in fiscal losses or other damage to the County.

(b) **ASSUMPTION OF RISK.** I hereby agree to assume all risk, responsibility and liability to myself for any personal injury, psychological or psychiatric trauma, or wrongful death that may result from my participation in hunting or any recreation activity on County land. As such, it is my intention to waive all rights and release and discharge the County from and neither sue nor bring any proceeding against the County for any claim, demand, or cause of action arising from my negligence, or any negligence or omission of the County or any third party as a result of my participation of hunting or any recreation on County land. Further, it is my intention that this assumption of risk and the waiver and release described herein shall be binding on myself, including any and all of my personal representatives, heirs, executors, trustees, administrators, agents, and assigns.

(c) **WAIVER AND RELEASE.** I irrevocably agree on behalf of myself and all of my personal representatives, heirs, executors, administrators, agents, and assigns to waive, release, and forever discharge any and all actions, suits, obligations, debts, liens, causes of actions or claims or causes of action (known and unknown) for damages against the County of Volusia (a body corporate and politic and a subdivision of the State of Florida), including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status (hereinafter collectively referred to as the "Released Parties") for personal injury, death, property damage, workers compensation, disability, unemployment compensation, wage, costs, expenses, attorney's fees, damages, judgments, orders, or liabilities of

Initials_____
Participant.

whatever kind or nature in law, equity, arising out of the negligence of County or my participation in hunting or any recreation on County land in connection with the County (directly or indirectly), whether active or passive, which may hereafter accrue to me or any of my personal representatives, heirs, executors, administrators, agents, and assigns (hereinafter "Waiver and Release"). Further, I agree that this Waiver and Release is irrevocable and includes, without limitation, waiver and release of the County for any injury, illness, disease, or death that may occur as a result of my, the County's, or any third party's negligence while I am participating in hunting or any recreation on County land.

(e) **I HAVE CAREFULLY READ AND REVIEWED THIS WAIVER AND RELEASE. I UNDERSTAND THAT BY EXECUTING IT, I AM GIVING UP MY RIGHTS TO BRING ANY LEGAL ACTION OR ASSERT ANY CLAIM AGAINST THE COUNTY OF VOLUSIA, INCLUDING ITS DISTRICTS, AUTHORITIES, SEPARATE UNITS OF GOVERNMENT ESTABLISHED BY LAW, ORDINANCE OR RESOLUTION, PARTNERS, ELECTED AND NON-ELECTED OFFICIALS, EMPLOYEES, AGENTS, VOLUNTEERS, AND ANY PARTY WITH WHOM THE COUNTY HAS AGREED BY CONTRACT TO PROVIDE ADDITIONAL INSURED STATUS ON THE BASIS OF THE NEGLIGENCE OF THE COUNTY, ANY THIRD PARTY, OR MYSELF ARISING FROM OR IN CONNECTION WITH MY PARTICIPATION IN THE HUNTING OR ANY RECREATION ON COUNTY LAND. IN ADDITION, I HAVE VOLUNTARILY SIGNED THIS WAIVER AND RELEASE AND FURTHER AGREE THAT NO ORAL REPRESENTATIONS, STATEMENTS, OR INDUCEMENT APART FROM THE FOREGOING WRITTEN WAIVER AND RELEASE HAVE BEEN MADE TO ME BY THE COUNTY OR ITS AGENTS OR REPRESENTATIVES.**

(f) **SEVERABILITY.** The provisions of this Agreement are severable, and, if any provision is determined to be illegal or unenforceable, the remaining provisions and any partially enforceable provisions shall nevertheless be enforceable. The County's failure to enforce any remedy or provision in this document shall not be construed as a waiver of such remedy or provision.

This Indemnification, Release, and Waiver Agreement for hunting or any recreation activity on County land is hereby Agreed to and accepted by:

_____ _____

PARTICIPANT'S SIGNATURE DATE

_____ _____

PARTICIPANT'S NAME – LEGIBLY PRINTED TELEPHONE

IF PARTICIPANT IS UNDER 18 YEARS OF AGE, A CUSTODIAL PARENT OR LEGAL GUARDIAN MUST SIGN ON BEHALF OF AND IN ADDITION TO THE PARTICIPANT, CERTIFYING THAT SUCH PARENT OR GUARDIAN HAS FULLY REVIEWED THIS AGREEMENT WITH PARTICIPANT AND AGREES TO ITS TERMS AND CONDITIONS:

_____ _____

CUSTODIAL PARENT/LEGAL GUARDIAN'S SIGNATURE DATE

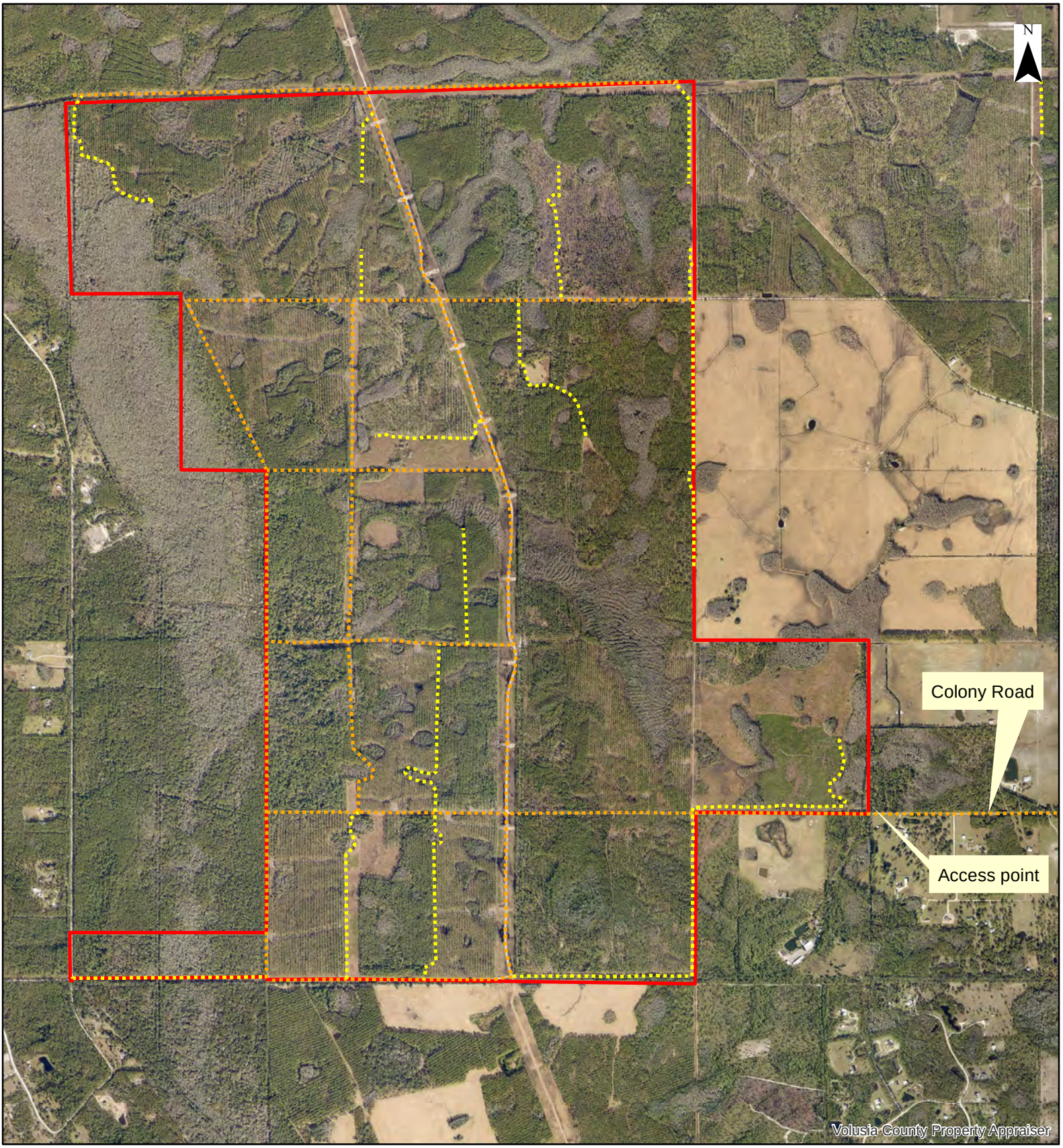
_____ _____

CUSTODIAL PARENT/LEGAL GUARDIAN'S NAME – LEGIBLY PRINTED) TELEPHONE

Initials_____
Participant.

Deep Creek Preserve- Leffler Tract
Volusia County, Florida

Exhibit **F**
Approved Driving Roads & Access



Legend

- Main Roads
- Approved Firelines
- Boundary 2617 acres

0 0.125 0.25 0.5 Miles

1 in = 2,000 feet

Volusia County
FLORIDA

Resource Stewardship Division
123 W. Indiana Ave
Room 200
Deland, FL 32720

HUNTING LEASE BETWEEN
THE COUNTY OF VOLUSIA
AND
DEEP CREEK SPORTSMAN'S CLUB, INC.

THIS HUNTING LEASE ("Lease") is made and entered into by and between COUNTY OF VOLUSIA, a political subdivision of the State of Florida, 123 W. Indiana Avenue, DeLand, Florida 32720 ("Lessor"), and DEEP CREEK SPORTSMAN'S CLUB, INC., 260 Damascus Road, Lake Helen, Florida, 32744 (the "Lessee").

1. LEASE DESCRIPTION

Lessor hereby leases to Lessee, in accordance with the terms, provisions and conditions of this Lease, the following generally described demised premises: 3,220 acres of land described as the Hunt Lease Area of Deep Creek Preserve depicted in Exhibit A hereinafter referred to as "Demised Premises" or "Leased Premises."

2. TERM OF LEASE

The term of this Lease shall begin on October 16, 2023, and shall continue through April 30, 2029, with an option to renew for one additional five (5) year period upon mutual written agreement and approval of County Council, as required. Lessee or Lessor may exercise the option to terminate the Lease by giving the other party to this Lease 30 days written notice of its intent to terminate. All notices shall be in accordance with section 10.13 of this Lease.

3. RENT

Rental Obligations. All payments of rent to Lessor shall be made at Lessor's mailing address or by Electronic Funds Transfer. All payments of rent shall be made without any set-off or deduction whatsoever. Lessee covenants and agrees to pay to Lessor, as Basic Rent, as indicated below per year (the "Basic Rent"). Initial rent shall be prorated for the period of October 16, 2023,

through April 30, 2024. Subsequent payments to the County will be due and payable on May 1st of each year beginning on May 1, 2024. The annual lease payment will increase by three percent (3%) each year beginning on May 1, 2025. Schedule of payments shall be as follows:

10/16/2023 – 04/30/2024	$18,749.77 due 10/16/2023
05/01/2024 – 04/30/2025	$34,615.00 due 05/01/2024
05/01/2025 – 04/30/2026	$35,653.45 due 05/01/2025
05/01/2026 – 04/30/2027	$36,723.05 due 05/01/2026
05/01/2027 – 04/30/2028	$38,559.20 due 05/01/2027
05/01/2028 – 04/30/2029	$39,715.97 due 05/01/2028

4. USE OF PREMISES

4.1 The purpose of this lease agreement is for Lessee to have exclusive hunting lease rights on the Demised Premises as further described in Exhibit A.

Lessee agrees to lease the Demised Premises "as is." At the conclusion of the lease agreement, Lessee shall restore the Demised Premises within thirty (30) days to equal or better condition than it was at the commencement of the lease term.

4.2 General Use Requirements.

Lessee shall not commit or suffer any waste and will not make any use of the Leased Premises which would constitute a nuisance, or which would violate any municipal, county, state or federal statute, ordinance, rule, or regulation.

Lessee shall keep the Demised Premises neat, clean and free from rubbish, insects, and pests at all times, and shall store all trash and garbage outside the Demised Premises.

4.3 Prohibited Uses.

All uses by Tenant of the Demised Premises not expressly permitted by this Lease are

prohibited, including, but not limited to, the following prohibited uses:

a) Operation of feedlot;

b) Committing, or suffering to be committed, any nuisance or other act that might disturb the quiet enjoyment of any person or business located within a reasonable distance of the Demised Premises;

c) Harvesting timber;

d) Mining or removing any topsoil, gravel, shell deposits or other substances from the soil;

e) Conducting, or permitting the conduct of, any dangerous activities on the Demised Premises, including, but not limited to, the setting of any open fires or the use of any explosive devices; or

f) Any other prohibited items or uses as identified in **Exhibit B, Scope of Work/Restrictions**.

5. INDEMNITY AND INSURANCE

5.1 Lessee's Indemnity. Lessee shall indemnify, defend, and hold harmless Lessor, its districts, authorities, separate units of government established by law (constitutional), ordinance or resolution, partners and its agents, officers, volunteers, elected and non-elected officials, employees, and any party whom Lessor has agreed by contract to provide additional insured status, from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees, arising or growing out of or in any way connected with the use, occupancy, management and control of the Leased Premises, or the use or occupation thereof by Lessee, or its agents, servants, subtenants, employees, customers, patrons or invitees, provided that the claim, damage, loss and expense is caused in whole or in part by a negligent act or omission of Lessee, any officer, employee, agent, or contractor of Lessee, or anyone directly employed by any one of them or anyone for whose acts any of them may be liable, except Lessee shall not indemnify and hold harmless Lessor if such claim, damage, loss or expense is the result of the sole negligence of Lessor. Lessee shall execute **Exhibit E** simultaneously with the execution of this lease agreement. Additionally,

Lessee shall cause and ensure that each member of Lessee's hunt club and any invitee by Lessee onto the Demised Premises shall execute **Exhibit F** prior to any club member or invitee's use of the premises.

Lessor expressly retains all rights, benefits, and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes. Notwithstanding anything set forth in this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity of limits of liability of Lessor beyond any statutory limited waiver of immunity or limits of liability which may have been adopted by the Florida Legislature or may be adopted by the Florida Legislature, and the cap on the amount and liability of Lessor for damages, regardless of the number or nature of claims, whether in tort, equity or contract, shall not exceed the dollar amounts set by the legislature for tort claims.

5.2 Lessee's Risk. Lessor shall have no responsibility or liability for any loss of or damage to fixtures or other personal or commercial property of Lessee, or for any loss or damage resulting to Lessee or those claiming by, through or under Lessee, or its or their property, from the theft or damage of any stored property on the Demised Premises.

5.3 Insurance. Lessee will maintain liability insurance coverage for itself, and on behalf of the Lessor for the coverage requirements contained in **Exhibit D**, incorporated, and made a part of this Agreement.

6. ASSIGNMENT

6.1 Prohibition. Lessee covenants and agrees that Lessee will not assign this Lease or sublet the whole or any part of the Leased Premises without, in each instance, having first received the express written consent of Lessor.

7. LESSOR'S ACCESS TO DEMISED PREMISES

7.1 Right of Access. Lessor and members of the public shall have the right to enter the Demised Premises.

8. DEFAULT

8.1 Lessee's Default. Upon the happening of any one or more of the following events, Lessee shall be in default under the terms of this Lease:

(a) Lessee's failure to pay any installment of Basic Rental or any other sum to be paid by Lessee under this Lease within ten (10) days after the same becomes due and payable under this Lease;

(b) Lessee's failure to perform or observe any term or condition contained in this Lease, other than payment of the Basic Rental or any other sum to be paid by Lessee, and Lessee's failure to commence to cure the same within ten (10) days after notice from Lessor to Lessee thereof and to promptly and diligently complete the curing of same;

(c) Lessee's interest under this Lease being assigned by operation of law; or

8.2 Lessor's Remedies. Upon default by Lessee, Lessor, at its discretion, may then exercise any one or more of the following options, which are cumulative in nature:

(a) Terminate this Lease, remove all persons and property from the Demised Premises by summary proceedings or otherwise, and take possession of the Demised Premises, all without prejudice to Lessor's right to collect from Lessee any rent or other sum which became payable to Lessor prior to such termination, together with all damages suffered by Lessor resulting from Lessee's default hereunder;

(b) Re-enter and take possession of the Leased Premises by any lawful means;

(c) Declare the entire remaining accrued unpaid rent and other charges due hereunder to

be immediately due and payable, and take such action available to Lessor to recover and collect same; or

(d) Exercise any and all rights and privileges and pursue any remedy that Lessor may have under the laws of the State of Florida.

8.3 Lessor's Default. Lessor shall in no event be in default in the performance of any of Lessor's obligations hereunder unless and until Lessor shall have failed to perform such obligations within ninety (90) days, or such additional time as is reasonably required to correct any such default, after written notice by Lessee to Lessor properly specifying the manner in which Lessor has failed to perform any such obligation.

9. HAZARDOUS SUBSTANCES

9.1 Hazardous Substances. The term "Hazardous Substances," as used in this Lease shall include, without limitation, all substances declared to be hazardous or toxic under any law or regulation now or hereafter enacted or promulgated by any governmental authority.

(a) Lessee's Restrictions. Lessee shall not cause or permit to occur any violation of any federal, state, or local law, ordinance, or regulation now or hereafter enacted, related to environmental conditions on, under or about the Demised Premises or arising from Lessee's use or occupancy of the Leased Premises.

(b) Lessee's Indemnity. Lessee shall indemnify, defend, and hold harmless Lessor, its respective officers, directors, agents, and employees from all fines, suits, procedures, claims, and actions of every kind and all costs associated therewith including attorneys' and consultants' fees arising out of, or in any way connected with, any deposit, spill, discharge occurring after the Commencement of this Lease caused by Lessee on the Demised Premises.

10. MISCELLANEOUS PROVISIONS

10.1 Brokerage Commission. Lessee represents and warrants that it has had no dealing with any broker or leasing agent in connection with the negotiation or execution of this Lease.

10.2 Covenant of Quiet Enjoyment. Lessee, subject to the terms and provisions of this Lease on payment of rent and observing, keeping, and performing all of the terms and provisions of this Lease on the part of the Lessee to be observed, kept, and performed, shall lawfully, peaceably and quietly have, hold, occupy and enjoy the Demised Premises during the term of this Lease.

10.3 Surrender of Premises. On the expiration or earlier termination of the term of this Lease, Lessee shall quit and surrender the Demised Premises in neat and clean condition and in good order, condition, and repair, together with all work, alterations, and additions. Lessee agrees to promptly repair any and all damage to the Demised Premises resulting from such removal.

10.4 Holding Over. Should Lessee continue in occupancy of the Demised Premises after the termination or expiration of this Lease, Lessee shall become a lessee from month-to-month only upon each and all of the terms herein provided as may be applicable to such month-to-month tenancy.

10.5 Interest on Sums Due. Any sum of money due Lessor according to the terms of this Lease after default by the Lessee shall bear interest from the time due at the highest rate provided under Florida law.

10.6 Waiver of Jury. Lessee and Lessor waive all rights to a trial by jury on any and all matters in any civil action commenced by or against Lessee concerning this Lease or the Leased Premises, and agree to venue in Volusia County.

10.7 Entire Agreement and Amendment. This Lease contains the entire agreement of the parties with respect to the Leased Premises. The terms of this Lease may be amended by mutual

written consent and executed addendum to the Lease by the Lessor and Lessee.

10.8 Time of Essence. Time is of the essence of this Lease and every provision hereof.

10.9 Severability. If any term or provision of this Lease, or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Lease shall not be affected thereby.

10.10 Binding Effect. Except as herein otherwise expressly provided, the terms hereof shall be binding upon and shall inure to the benefit of the heirs, personal representatives, successors and assigns, respectively, of Lessor and Lessee.

10.11 Governing Law. This Lease shall be governed exclusively by the provisions hereof and by the laws of the State of Florida, as the same may from time to time exist. Any litigation arising under this Lease shall be venued in Volusia County, Florida.

10.12 Section Titles; Interpretation. The titles to the sections contained in this Lease are for convenience and reference only. The use of the singular herein shall be deemed to include the plural, and conversely, the plural shall be deemed to include the singular.

10.13 Notices. Any notice, statement, demand, or other communication required or permitted to be delivered, served, or given by either Party to the other shall be deemed delivered, served or given, if mailed in any general or branch United States Post Office (USPS) enclosed in a registered or certified envelope addressed to the respective Party, as follows:

TO LESSOR:	VOLUSIA COUNTY PURCHASING AND CONTRACTS 123 WEST INDIANA AVENUE – ROOM 302 DELAND, FL 32720
COPY TO:	COUNTY ATTORNEY COUNTY OF VOLUSIA 123 W. INDIANA AVENUE, 3RD FLOOR LEGAL

DELAND, FL 32114

TO LESSEE: DEEP CREEK SPORTSMAN'S CLUB, INC.
KEN MULLEN
PO BOX 643
LAKE HELEN, FL 32744

10.14 Electronic Signatures. Lessee acknowledges that Kenneth Mullen (the "Authorized Signatory") is authorized to execute leases/agreements with the County of Volusia and any affixed electronic or conformed signature of the Authorized Signatory shall be the act of and attributable to the Authorized Signatory. By signing this Lease Agreement electronically, the Authorized Signatory does thereby adopt the electronic or conformed signature as his or her own and designates a copy of same for use as an official record by the County of Volusia.

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DocuSign Envelope ID: 0B329E92-C271-4C46-A457-C43B8AE9B8A7

IN WITNESS WHEREOF, this Hunting Lease has been executed as of the date stated above.

LESSOR: COUNTY OF VOLUSIA

ATTEST:

By: _____
George Recktenwald
County Manager

Date: 10/13/2023

By: _____
Jeffrey S. Brower
County Chair

Date: 10/03/2023

LESSEE: DEEP CREEK SPORTSMAN'S CLUB, INC.

ATTEST:

By: DocuSigned by: Peter Mullen 9E3C884TC032416...
Peter Mullen

Date: 9/10/2023 | 05:16:07 PDT

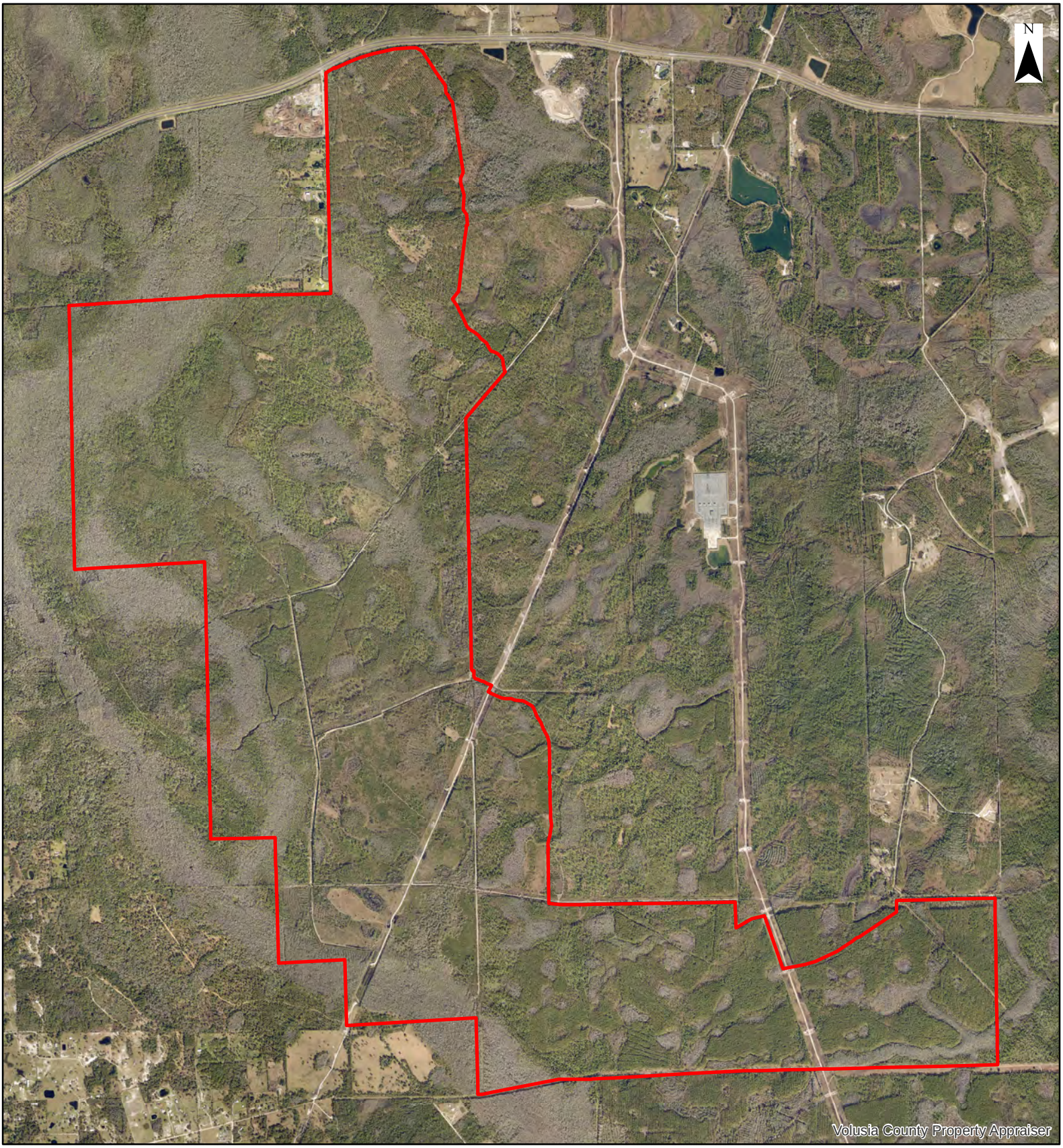
By: DocuSigned by: Kenneth W. Mullen 5500294F91CD465...
Kenneth Mullen
President

Date: 9/7/2023 | 07:58:26 EDT

CC Date: 10/03/2023

Deep Creek Preserve- Kemcho Tract
Volusia County, Florida

Exhibit A
Hunt Lease Area



Legend

Boundary 3220 acres

0 0.25 0.5 1 Miles

1 in = 2,615 feet

Volusia County
FLORIDA

Resource Stewardship Division
123 W. Indiana Ave
Room 200
Deland, FL 32720

EXHIBIT B

Lease Information and Land Restrictions of Lessee

This Lease shall convey exclusive hunting lease rights on approximately 3,220 acres of land described as the Hunt Lease Area depicted in Exhibit A. No hunting shall be allowed outside the area indicated on Exhibit A.

This property was purchased for conservation and water resource protection. The property is open for public use. In addition to normal land management activities, including, but not limited to, timber management, prescribed fire and public educational tours, Lessee may expect hikers, equestrians, and bicyclists as well as County staff and contracted vehicles within the hunt area.

The County of Volusia is not responsible for the protection of Lessee's property and will not be liable for theft of or damage to Lessee's property due to land management activities.

This Lease shall include dog hunting:

A. There shall be hunting only in the areas of Deep Creek Preserve as indicated on Exhibit A – Hunt Lease Area**.** No hunting shall be allowed outside the indicated area.

B. Access to the hunt area shall be from access points indicated on Exhibit C.

C. Lessee shall be limited to a maximum of one member for every one hundred seventy-five (175) acres of the leased premises. Lessee shall provide a complete list and contact information (name, phone, and email address) of all authorized users (Hunt club members) of the leased land to County Project Manager prior to any hunting activities occurring. Lessee's rules may be more restrictive in which case members shall comply with Lessee's rules.

D. Lessee shall develop a set of rules and regulations for all authorized users and guests. The rules shall include, but not limited to, rules regarding vehicle usage and guests. Lessee's rules shall be submitted to the County Project Manager prior to any hunting activities occurring.

E. Lessee shall develop a method of identifying members (decals, placards, etc.) and shall submit it to the County Project Manager for approval prior to any hunting activities occurring.

F. The hunt season shall follow the Florida Fish and Wildlife Commission (FWC) season dates and bag limits for Zone C as noted on: http://myfwc.com/hunting/season-dates

G. Lessee shall comply with FWC hunting regulations and rules as noted on: http://myfwc.com/hunting/regulations. Lessee shall comply with any updates to regulations or rule changes made by the FWC.

H. No permanent tree stands shall be installed within the hunt lease and no stands are permitted within one hundred (100) yards of the property boundary.

I. Lessee must notify the County Project Manager of any FWC or other law violations that occur on the property within fifteen (15) days. Violations of FWC game laws may result in termination of the lease.

J. No timber, plants, non-game animals, minerals, sand, or forest products shall be removed from said premises by the Lessee (excluding legal game) without the express written consent of County Project Manager. Excavation, chopping, or any clearing are prohibited without the express written consent of the County Project Manager.

K. Food plots are permitted at the discretion of the County Project Manager. Food plot size, location and seed content must be pre-approved by the County Project Manager. Feeding stations shall comply with FWC hunting regulations.

L. Camping, the establishment of a hunt camp, or a camping area is prohibited.

M. Portable restrooms shall be prohibited.

N. All vehicles used by Lessee are limited to the existing roads and fire lines in the hunt area indicated on Exhibit B. All-Terrain Vehicles (ATVs) shall be permitted per issuance of a special use authorization Per Volusia County Code of Ordinances, Sec. 82-49, Motor vehicles, "(a) An organized activity involving the use of unlicensed motor vehicles through the use of a special use authorization. (b) Motor vehicles licensed for highway use are allowed on conservation lands provided that:

    1. Said vehicles shall be operated by licensed drivers only on roads designated as open for motor vehicles; and
    2. Said vehicles shall not exceed the ten (10) miles per hour speed limit on conservation lands.

O. County staff shall close roads due to unfavorable conditions as needed.

P. County staff may revoke the special use authorization for ATVs for violations of rules such as operating in areas outside the approved motor vehicle use map.

Q. Grading and road repair and other property improvements shall be allowed with approval and coordination between the Lessee and County Project Manager. However, Lessee improvements will not result in any reduction to the lease payment due.

R. Lessee shall meet with the County Project Manager during the month of February to discuss plans to restore roads to the original condition.

S. A harvest report shall be provided to the County Project Manager within thirty (30) days of the end of turkey hunting season to include all game taken during the hunting season. All harvest reporting shall be done on an approved harvest report form.

T. If bid without dogs, hunting with dogs is prohibited, except bird dogs and retrievers may be used to hunt doves, ducks, geese, and coots during their respective statewide seasons and any dog may be used to hunt small game (gray squirrel, migratory birds, quail and rabbits,) during small game season.

U. Unless hunting, dogs shall remain leashed or kenneled while on the property. Authorized users shall, at all times while on the property, maintain in their possession a current certificate of rabies vaccination for each dog. Authorized users shall ensure that the dog(s) are licensed pursuant to any applicable Volusia County ordinance and shall comply with FWC statewide dog registration program.

V. Trapping is prohibited in the hunt lease area except for the purposes of removing feral hog and pursuant to the rules and regulations of the FWC. Conservation lands staff may also remove feral hog in the hunt lease area.

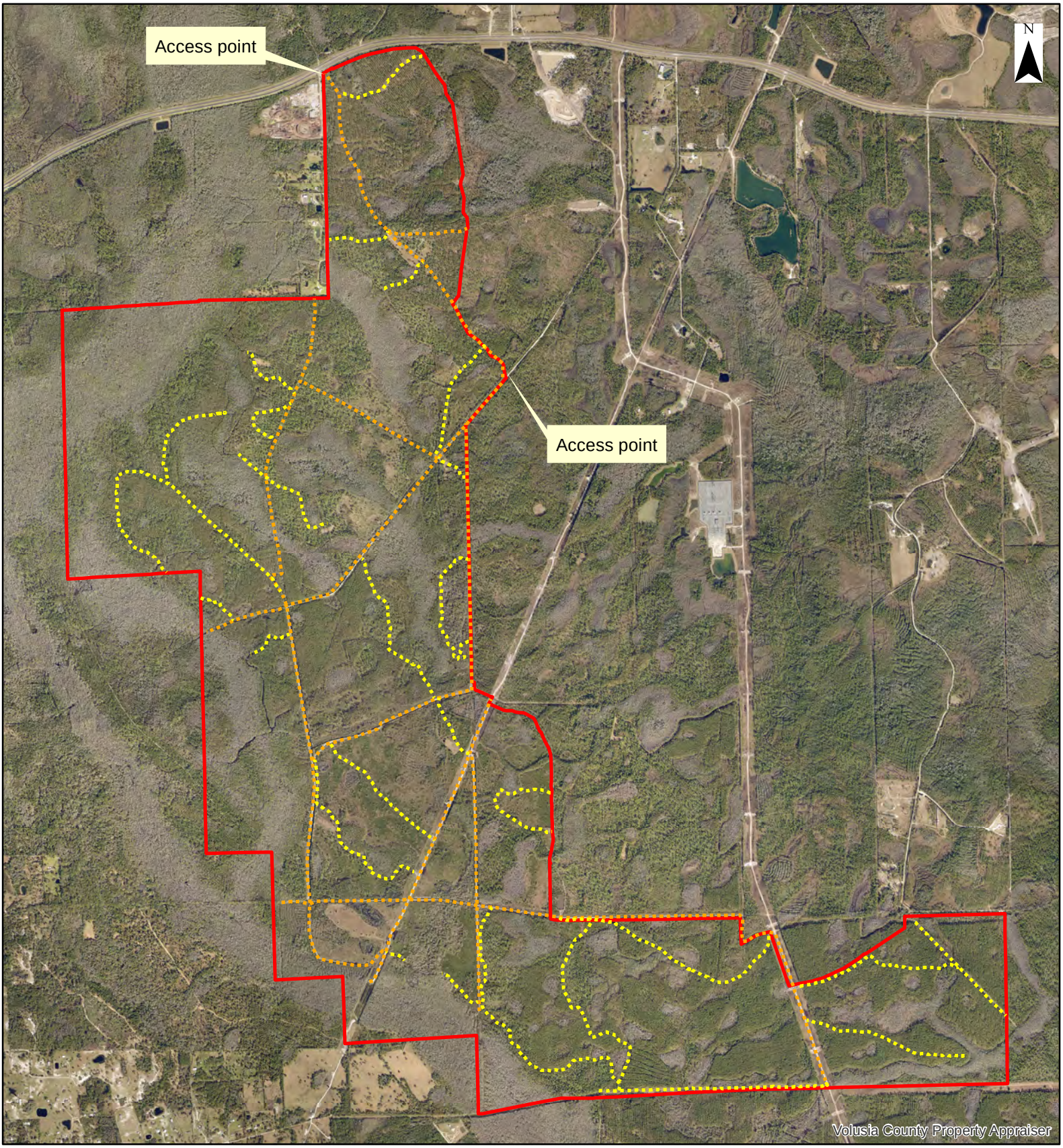
W. Lessee shall not sell hunts or other concessions. Hunting shall be for members and guests only.

X. Lessee shall be required to complete and submit Exhibit E to the County Project Manager prior to any hunting activities occurring.

Y. All members and guests of the awarded Lessee's club shall be required to complete Exhibit F prior to entering the lease area. Copies of each member/guest's waiver shall be provided to the County Project Manager.

Deep Creek Preserve- Kemcho Tract
Volusia County, Florida

Exhibit **C**
Approved Driving Roads & Access



Legend

- Main Roads
- Approved Firelines
- Boundary 2617 acres

0 0.25 0.5 1 Miles

1 in = 2,568 feet

Volusia County
FLORIDA

Resource Stewardship Division
123 W. Indiana Ave
Room 200
Deland, FL 32720

1. Insurance Requirements

Required Types of Insurance

The Contractor shall purchase and maintain at its own expense, during the term of this Agreement, the types and amounts of insurance with limits no less than those shown in Section 5 below, in the form and from companies satisfactory to the County. The Required Types and Limits of Insurance Chart is a listing and general summary of insurance policies required and is not intended to be comprehensive as to the requirements of each specific policy. Contractors shall review the additional requirements in this section and ensure that the insurance policies comply with the specific terms and conditions therein.

For the purposes of indemnification of the County or an endorsement or insurance coverage under this Agreement/Contract under which the County is a “named insured”, “additional named insured”, or “additional insured”, the term “County” includes the County of Volusia (a body corporate and politic and a subdivision of the State of Florida), including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status.

2. Subcontractors and Independent Contractors

All subcontractors & independent contractors utilized by Contractor to provide services to County and its employees under this Agreement/Contract shall be required to maintain all insurance policies with the same terms, conditions, and requirements required of the Contractor in the Required Types and Limits of Insurance Chart and described below in this Exhibit.

3. Claims Made Basis Insurance Policies

All insurance policies written on a Claims Made Form shall maintain a retroactive date prior to or equal to the effective date of the Agreement. The Contractor shall purchase a Supplemental Extended Reporting Period (“SERP”) with a minimum reporting period of not less than three (3) years in the event the policy is canceled, not renewed, switched to occurrence form, or any other event which requires the purchase of a SERP to cover a gap in insurance for claims which may arise under or related to the Agreement. The Contractor’s purchase of the SERP shall not relieve the Contractor of the obligation to provide replacement coverage. In addition, the Contractor shall require the carrier immediately inform the Contractor, the County Risk Manager, and the Purchasing

and Contracts Division of any contractual obligations that may alter its professional liability coverage under the Agreement.

4. Risk Retention Groups and Pools

Contractor shall not obtain an insurance policy required under this Agreement from a Risk Retention Group or Pool.

5. Minimum Required Policies and Limits

Minimum underlying policies, coverages, and limits shall include all policies listed in below:

TYPE OF INSURANCE		
COMMERCIAL GENERAL LIABILITY ☒ Occurrence Basis ☒ Contractual Liability ☒ Endorsement: County Additional Insured ☒ Endorsement: Waiver of Subrogation	EACH OCCURRENCE	$ 1,000,000
	GENERAL AGGREGATE	$ 2,000,000
	Premises-Operations	$ 1,000,000
	Products & Completed Ops	$0
	Personal & Adv Inj.	$ 1,000,000
	Fire Damage	$
		$
CANCELLATION: Thirty (30) days written notice of cancellation is required to the Certificate Holder:		
Certificate Holder: County of Volusia Purchasing & Contracts Division 123 W. Indiana Avenue, Room 302 DeLand, FL 32720 ATTN: Kathy Williams		

6. Additional Insured, Policies, Coverages, Limits, Primary and Non-Contributory Basis

Under all insurance policies where the County is required to be an additional insured, the coverage and limits provided to the County under Contractor's insurance policies shall be that listed in the Required Types and Limits of Insurance Chart or the Contractor's actual limits, whichever is higher.

All coverage provided to the County as an additional insured by said policies shall be primary and shall not be additional to or contributing with any other insurance carried by or for the benefit of the County with any other insurance available to the County. The Contractor shall utilize ISO Form CG 20 38 04 13 and CG 20 37 04 13 or equivalent to provide additional insured status to the County and any party to whom the County is contractually bound to provide additional insured status under a commercial general liability policy.

7. Commercial General Liability Insurance

The Lessee shall acquire and maintain Commercial General Liability insurance, with limits of not less than the amounts shown in the Required Types and Limits of Insurance Chart. Lessee shall not obtain an insurance policy wherein the policy limits are reduced by defense and claim expenses. Such insurance shall be issued on an occurrence basis and include coverage for the Lessee's operations, independent Contractors, Subcontractors and "broad form" property damage coverages protecting itself, its members, employees, agents, Contractors or subsidiaries, and their employees or agents for claims for damages caused by bodily injury, property damage, or personal or advertising injury, and products liability/completed operations including what is commonly known as groups A, B, and C. Such policies shall include coverage for claims by any person as a result of actions directly or indirectly related to the employment of such person or entity by the Lessee or by any of its members arising from work or services performed under the Agreement. Public liability coverage shall include either blanket contractual insurance or a designated contract contractual liability coverage endorsement, indicating expressly the Lessee's Agreement to indemnify, defend and hold harmless the County as provided in the Agreement. The commercial general liability policy shall provide coverage to County when it is required to be named as an additional insured either by endorsement or pursuant to a blanket additional insured endorsement, for those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of any endorsements excluding or limiting coverage for Bodily Injury, Property Damage, Products/Completed Operations, Independent Contractors, Property of County in Contractor's Care, Custody or Control or Property of County on which contracted operations are being performed, Explosion, Collapse or Underground hazards (XCU Coverage, Contractual Liability or Separation of Insureds. When County is added as additional insured by endorsement, ISO Endorsements CG 20 38 and CG 20 37 or their equivalent shall be used and shall provide such additional insured status that is at least as broad as ISO form CG 20 10 11 85. If County has agreed

by separate contract to require Lessee to name another party as an additional insured, Lessee shall add said party as an additional insured to the commercial general liability policy by ISO Endorsement CG 20 38. Lessee shall require its subcontractors performing work under this Lease to add the County and any other party that the County has agreed by separate contract to require Lessee to name as an additional insured to their Commercial General Liability policy as an additional insured by ISO Endorsement CG 20 38. All commercial general liability policies shall provide a waiver of subrogation in favor of the County and any other party required by this Agreement to be named as an additional insured. **The commercial general liability policy shall be provided on a project or location specific basis for the location or project site where the work or services are to be performed under the Agreement.**

8. Primary and Excess Coverage

Any insurance required may be provided by primary and excess insurance policies.

9. Insurance Requirements

A. General Insurance Requirements:

(1) All insurance policies shall be issued by insurers licensed and/or duly authorized under Florida Law to do business in the State of Florida and all insuring companies are required to have a minimum rating of A- and a Financial category size of VIII or greater in the "Best Key Rating Guide" published by A.M. Best & Company, Inc.

(2) Approval by County of any policy of insurance shall not relieve Contractor from its responsibility to maintain the insurance coverage required herein for the performance of work or services by the Contractor or its Subcontractors for the entire term of the Agreement and for such longer periods of time as may be required under other clauses of the Agreement.

(3) Waiver of Subrogation. The Contractor hereby waives all rights against the County and its Subcontractors for damages by reason of any claim, demand, suit or settlement (including workers' compensation) for any claim for injuries or illness of anyone, or perils arising out of the Agreement. The Contractor shall require similar waivers from all its Subcontractors. Contractor's insurance policies shall include a waiver of subrogation in favor of the County. This provision applies to all policies of insurance required under the Agreement (including Workers' Compensation, and general liability).

(4) County Not Liable for Paying Deductibles. For all insurance required by Contractor, the County shall not be responsible or liable for paying deductibles for any claim arising out of or related to the Contractor's business or any Subcontractor performing work or services on behalf of the Contractor or for the Contractor's benefit under the Agreement.

(5) Cancellation Notices. During the term of the Agreement, Contractor shall be responsible for promptly advising and providing the County Risk Manager and the Purchasing and Contracts divisions with copies of notices of cancellation or any other changes in the terms and conditions of the original insurance policies approved by the County under the Agreement within two (2) business days of receipt of such notice or change.

(6) Deductibles. Contractors that maintain and administer a self-insured retention or a large deductible program exceeding the insurance requirements listed in this solicitation using a formal program to fund either program may submit an exception in accordance with the solicitation section detailing Questions, Exceptions, and Addenda, to be considered for this solicitation.

The request must include a summary of the program's design, funding method, and the program's supporting financial information. If additional information is necessary, the County will request more specific information, which must be provided by the Contractor. The County Risk Manager will review the information submitted and determine whether the program is acceptable to the County.

Contractors with no formal risk management program in place to manage and fund deductibles or self-insured retentions may not be considered. Subject to County approval, Contractor may obtain a letter of credit in the amount equivalent to the deductible, which shall remain in effect during the term of the Agreement at no additional cost to the County.

(7) Contractor's obligations or services shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity or insurance defense of additional or named insureds which would otherwise exhaust or be unavailable as to a party or person described in this Contract.

Proof of Insurance

A. The Lessee shall be required to furnish evidence of all required insurance in the form of certificates of insurance, which shall clearly outline all hazards covered as itemized herein, the amounts of insurance applicable to each hazard and the expiration dates.

B. The Lessee shall furnish proof of insurance acceptable to the County prior to or at the time of execution of the Lease and the Lessee shall not commence any hunting activities until the Lessee

has obtained all the insurance required under the Lease and such insurance has been filed with and approved by the County. Upon request from the County, the Lessee shall furnish copies of all requested policies and any changes or amendments thereto, immediately, to the County, the County Risk Manager, and Purchasing and Contracts Divisions, prior to the commencement of any contractual obligations. The Lease may be terminated by the County, without penalty or expense to County, if at any time during the term of the Lease term proof of any insurance required hereunder is not provided to the County.

C. All certificates of insurance shall clearly indicate that the Lessee has obtained insurance of the type, amount and classification required by this Section. No hunting activities by Lessee or its members shall be commenced until County has approved these policies or certificates of insurance. The Lease may be terminated by the County, without penalty or expense, if proof of any insurance required hereunder is not provided to the County.

D. The Lessee shall file replacement certificates with the County at the time of expiration or termination of the required insurance occurring during the term of the Lease. In the event such insurance lapses, the County expressly reserves the right to renew the insurance policies at the Lessee’s expense or terminate the Lease but County has no obligation to renew any policies.

E. The provisions of these sections, Required Types of Insurance; Insurance Requirements; and Proof of Insurance, shall survive the cancellation or termination of the Lease.

Waiver, Release of Liability, and Indemnity

In consideration of the hunting lease entered into on October 15, 2023, by Deep Creek Sportsman's Club, Inc., with the County of Volusia, a body corporate and politic and a subdivision of the State of Florida, including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status or its assignee or agent, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Deep Creek Sportsman's Club, Inc. (lessee name), expressly agrees and contracts, including on behalf of successors and assigns, including its members of its hunt club and any invitees to hunt invited onto the County land by Deep Creek Sportsman's Club, Inc. (lessee name) or conduct recreational activities on the County land subject to the hunting lease with the County, that the County and its insurers, employees, officers, directors, elected officials, assignees, agents, and associates (collectively, "County"), shall not be liable for any damages, arising from the use of the hunting lands by Deep Creek Sportsman's Club, Inc. (lessee name). Deep Creek Sportsman's Club, Inc. (lessee name), agrees to waive any and all claims even in the event they arise directly from the County's, actions, omissions, or negligence.

By the execution of this agreement, Deep Creek Sportsman's Club, Inc. (lessee name) accepts and assumes full responsibility for any and all damages (both economic and non-economic) or losses of any type, which may occur to Deep Creek Sportsman's Club, Inc. (lessee name), does hereby fully and forever releases and discharges the County, its insurers, employees, officers, directors, and associates, from any and all claims, demands, damages, rights of action, or causes of action, present or future, whether the same be known or unknown, anticipated, or unanticipated (collectively, "Claims"), arising from the use of the County land per the hunting lease entered into between Deep Creek Sportsman's Club, Inc. (lessee name) and the County. Deep Creek Sportsman's Club, Inc. (lessee name), expressly agrees to indemnify, defend, and hold the County harmless against any and all claims Deep Creek Sportsman's Club, Inc. (lessee name) may have or come to have against the County related to the use of the County land per the hunting lease, Deep Creek Sportsman's Club, Inc. (lessee name), also agrees to indemnify, defend, and hold harmless the County against any loss, damage, claim, liability, cost and/or expense it incurs (including attorney's fees and court costs) as a direct or indirect result of the use of the County land per the hunting lease.

AN AUTHORIZED RPRESENTATIVE OF DEEP CREEK SPORTSMAN'S CLUB, INC. (lessee name), HAVING READ THE FOREGOING WAIVER AND RELEASE OF LIABILITY AND VOLUNTARILY EXECUTED THIS DOCUMENT WITH FULL KNOWLEDGE OF ITS CONTENT.

DEEP CREEK SPORTSMAN'S CLUB, INC.

Witness:_____ _____

Print Name:_____ Kenneth Mullen

Witness:_____ Date: _____

Print Name:_____

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this _____day of _____, 2023 by _____, _____, who is ( ) personally known to me, or ( ) has produced _____ as identification, and who ( ) did ( ) did not take an oath.

_____

Notary Public, State of Florida

Printed: _____

Commission No.: _____

Expiration: _____

EXHIBIT F

Volusia County
FLORIDA

Individual Indemnification, Release, and Waiver Agreement for Hunting Lease

I, _____ ("Invitee") certify that I am authorized to use the County of Volusia (County) land per the hunting lease entered into between the County and _____ (lessee name) as either a hunt club member of _____ (lessee name) or an invitee of _____ (lessee name). I understand that any hunting or recreation conducted on the County land pursuant to the hunting lease is organized, conducted, and performed by a private party and that it is not a County of Volusia event. Absent my execution of this Indemnification, Release, and Waiver Agreement ("Agreement") for the hunting lease, the County of Volusia (County) will not allow me to participate in hunting or any recreation activity on County property.

WHEREFORE, in consideration and exchange for hunting on County property, I acknowledge and agree to the following.

(a) **DECORUM AND CONDUCT.** I understand and agree that hunting on County property is that of an invited guest, and that if I engage in any wrongful or criminal behavior that the County may immediately expel me from County property. I understand and agree that I may be subjected to civil and/or criminal liability for engaging in any such conduct or behavior, where such behavior rises to the level of illegal conduct or otherwise results in fiscal losses or other damage to the County.

(b) **ASSUMPTION OF RISK.** I hereby agree to assume all risk, responsibility and liability to myself for any personal injury, psychological or psychiatric trauma, or wrongful death that may result from my participation in hunting or any recreation activity on County land. As such, it is my intention to waive all rights and release and discharge the County from and neither sue nor bring any proceeding against the County for any claim, demand, or cause of action arising from my negligence, or any negligence or omission of the County or any third party as a result of my participation of hunting or any recreation on County land. Further, it is my intention that this assumption of risk and the waiver and release described herein shall be binding on myself, including any and all of my personal representatives, heirs, executors, trustees, administrators, agents, and assigns.

(c) **WAIVER AND RELEASE.** I irrevocably agree on behalf of myself and all of my personal representatives, heirs, executors, administrators, agents, and assigns to waive, release, and forever discharge any and all actions, suits, obligations, debts, liens, causes of actions or claims or causes of action (known and unknown) for damages against the County of Volusia (a body corporate and politic and a subdivision of the State of Florida), including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status (hereinafter collectively referred to as the "Released Parties") for personal injury, death, property damage, workers compensation, disability, unemployment compensation, wage, costs, expenses, attorney's fees, damages, judgments, orders, or liabilities of

whatever kind or nature in law, equity, arising out of the negligence of County or my participation in hunting or any recreation on County land in connection with the County (directly or indirectly), whether active or passive, which may hereafter accrue to me or any of my personal representatives, heirs, executors, administrators, agents, and assigns (hereinafter "Waiver and Release"). Further, I agree that this Waiver and Release is irrevocable and includes, without limitation, waiver and release of the County for any injury, illness, disease, or death that may occur as a result of my, the County's, or any third party's negligence while I am participating in hunting or any recreation on County land.

(e) **I HAVE CAREFULLY READ AND REVIEWED THIS WAIVER AND RELEASE. I UNDERSTAND THAT BY EXECUTING IT, I AM GIVING UP MY RIGHTS TO BRING ANY LEGAL ACTION OR ASSERT ANY CLAIM AGAINST THE COUNTY OF VOLUSIA, INCLUDING ITS DISTRICTS, AUTHORITIES, SEPARATE UNITS OF GOVERNMENT ESTABLISHED BY LAW, ORDINANCE OR RESOLUTION, PARTNERS, ELECTED AND NON-ELECTED OFFICIALS, EMPLOYEES, AGENTS, VOLUNTEERS, AND ANY PARTY WITH WHOM THE COUNTY HAS AGREED BY CONTRACT TO PROVIDE ADDITIONAL INSURED STATUS ON THE BASIS OF THE NEGLIGENCE OF THE COUNTY, ANY THIRD PARTY, OR MYSELF ARISING FROM OR IN CONNECTION WITH MY PARTICIPATION IN THE FILMING. IN ADDITION, I HAVE VOLUNTARILY SIGNED THIS WAIVER AND RELEASE AND FURTHER AGREE THAT NO ORAL REPRESENTATIONS, STATEMENTS, OR INDUCEMENT APART FROM THE FOREGOING WRITTEN WAIVER AND RELEASE HAVE BEEN MADE TO ME BY THE COUNTY OR ITS AGENTS OR REPRESENTATIVES.**

(f) **SEVERABILITY.** The provisions of this Agreement are severable, and, if any provision is determined to be illegal or unenforceable, the remaining provisions and any partially enforceable provisions shall nevertheless be enforceable. The County's failure to enforce any remedy or provision in this document shall not be construed as a waiver of such remedy or provision.

This Indemnification, Release, and Waiver Agreement for hunting or any recreation activity on County land is hereby Agreed to and accepted by:

_____ _____
PARTICIPANT'S SIGNATURE DATE

_____ _____
PARTICIPANT'S NAME – LEGIBLY PRINTED TELEPHONE

IF PARTICIPANT IS UNDER 18 YEARS OF AGE, A CUSTODIAL PARENT OR LEGAL GUARDIAN MUST SIGN ON BEHALF OF AND IN ADDITION TO THE PARTICIPANT, CERTIFYING THAT SUCH PARENT OR GUARDIAN HAS FULLY REVIEWED THIS AGREEMENT WITH PARTICIPANT AND AGREES TO ITS TERMS AND CONDITIONS:

_____ _____
CUSTODIAL PARENT/LEGAL GUARDIAN'S SIGNATURE DATE

_____ _____
CUSTODIAL PARENT/LEGAL GUARDIAN'S NAME – LEGIBLY PRINTED) TELEPHONE

APPENDIX I

INTRODUCTION

Fires, naturally occurring or man-induced, are an integral part of the ecology of the southern pine (*Pinus* spp.) region (Miller 1963) and have maintained fire-dependent plant communities in the southeast for millennia. Exclusion of fire reduces nutrient cycling and changes the vegetative community from an open canopy system to a closed one. The growth of dense brush shades out fire-dependent plants, including listed species, and has an adverse effect on fire-dependent wildlife such as Florida scrub-jays and gopher tortoises. Exclusion of fires allows several stages to increase until a climax hardwood community exists. Areas covered by dense brush lose much of their value to wildlife. Additionally, heavy fuel accumulation results in increased wildfire hazard.

Prescribed burning is used extensively in forestry and wildlife management for fuel reduction, brush control, disease and insect control, site preparation, and wildlife habitat improvement. It is a recommended tool for management of such game animals as white-tailed deer (*Odocoileus virginianus*), bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and wild turkey (*Meleagris gallopavo*). The value of prescribed fire to these and other animals, such as raptors and some songbirds, is well documented (Givens 1962, Miller 1963, Stoddard 1963). Prescribed fire benefits wildlife by reducing underbrush density, thus improving access, promoting the growth of succulent vegetation and lowering browse to the feeding height of deer. Additionally, it benefits aesthetic values and enhances growth and fruiting of important wildlife food plants, such as dewberries (*Rubus spp*.) blueberries (*Vaccinium spp*.), and wiregrass (*Aristida stricta* var. *beyrichiana*).

BURN OBJECTIVES

Prescribed fire will be used on Deep Creek Preserve (DCP or Preserve) as a critical management tool in conjunction with other management techniques to accomplish a variety of objectives. The primary objective for using prescribed fire on DCP is to restore and /or maintain fire-dependent natural communities. This will result in preserving native plant communities while simultaneously improving wildlife habitat. The benefits that will be derived from

prescribed burning on DCP include the preservation of native plant communities, improving wildlife habitat, and maintaining overall ecosystem health.

Objectives of the Deep Creek Preserve Prescribed Fire Plan

- Restore and /or maintain fire-dependent native habitat communities
- Reduce fuel loads, to prevent or mitigate effects of wildfires
- (Re)introduce natural fire regime, including growing season burns
- Enhance aesthetics by controlling undesirable vegetation
- Promote succession of longleaf pine in flatwoods communities
- Reduce biomass in shrub and canopy layers, thus increasing herbaceous species cover
- Identify habitats requiring mechanical or other fire surrogate treatments prior to application of prescribed fire
- Identify by habitat and location, appropriate fire-surrogate and other required pre-burn activities
- Identify areas where mechanical treatments are required prior to conducting a prescribed burn
- Control forest diseases and insects
- Improve forage for wildlife
- Remove dead materials and return nutrients to soil
- Reduce oak xeric shrub biomass in the scrubby flatwoods community
- Establish target fire return intervals for onsite communities
- Create/ increase open patches, especially in scrubby flatwoods
- Identify areas / habitats where shrub layer is overgrown or excessive fuel loads exist
- Introduce fire in varying seasonality, intensity and return intervals to promote pyrodiversity
- Evaluate utilization of wildfires as a natural, controlled burn, on a case-by-case basis

DESCRIPTION OF AREA

The Preserve is located in central Volusia County, generally south of State Road 44, west of State Road 415, and east of the municipalities of Deltona and Lake Helen. Deep Creek is partially included within some portions of the County and WMD Tracts and generally forms the western boundary. The total area managed by Volusia County within the Preserve is 9,873 acres.

DCP includes three tracts with different ownerships, the State Tract (formerly known as the Carter Quail Ranch property) owned by the State of Florida, Board of Trustees (BOT), the WMD

Tract (formerly known as the Kemcho Investment Group property) owned by the St. Johns River Water Management District (SJRWMD), and the County Tract (formerly known as the Leffler property) owned by Volusia County (Figure 1). Volusia County is the designated lead management agency for all three tracts, collectively known as Deep Creek Preserve (Preserve).

FIRE-MAINTAINED COMMUNITIES

Approximately 5,978 acres of DCP are comprised of fire-dependent communities. It should be stressed that certain natural communities, such as dome and floodplain swamps, rarely burn to the interior of the community and may only experience fire at their margins. For this reason, the approximate fire-dependent acreage may be considered smaller or larger depending on how often wetlands margins are infiltrated by both prescribed and wildfires.

The acreage and percentage of each natural community as found on each tract of Deep Creek Preserve is shown below in Table 1. The approximate fire return interval is also shown for each natural community.

Table 1. Deep Creek Preserve Land Cover and Associated Fire Return Interval

Land Cover Classification	State Tract (BOT)		County Tract (non-BOT)		WMD Tract (non-BOT)		Fire Return Interval (yrs) Per FNAI (2010)
	Acres	**% Area**	**Acres**	**% Area**	**Acres**	**% Area**	
Artificial Pond	46.9	3.5	2	0.04	--	--	-
Basin Swamp	273.6	20.4	434.6	9.1	753.4	20.1	-
Baygall	176.9	13.2	--	--	--	--	-
Clearing/Regeneration	19.2	1.4	33.8	0.7	10.4	0.3	TBD
Developed	1.5	0.1	5.8	0.1	--	--	-
Dome Swamp	23.4	1.7	313.7	6.6	91.3	2.4	3 - 5*
Floodplain Swamp	--	--	378.8	7.9	514.7	13.8	3 - 5*
Improved Pasture	108.3	8.1	506.8	10.6	--	--	-
Mesic Flatwoods	421.1	31.4	76.6	1.6	231.5	6.2	1 - 3
Scrubby Flatwoods	34.1	2.5	--	--	--	--	5 to 10**
Successional Hydric Forest	24.8	1.9	--	--	--	--	2-7
Utility Corridor	4.2	0.3	126.8	2.6	66.1	1.8	-
Wet Flatwoods	202.6	15.1	2910.3	60.8	2074	55.4	1 - 3
Wet Prairie	3.4	0.3	--	--	--	--	1 - 3
Total* **	**1,339.6**	**100**	**4789.2**	**100**	**3741.4**	**100**	

*Along outer edge/ecotone, interior fire cycle may be as long as 100 to 150 years
** Along outer edge may be 3-5 years
*** Acres are GIS derived from parcel data and may not reflect survey acres

Seven natural communities are considered wholly or partially fire-maintained on DCP. The following accounts briefly describe each community and how fire will be used in their management:

Dome Swamp

An isolated, forested, depression wetland occurring within a fire-maintained community such as mesic flatwoods. These swamps are generally small, but may also be large and shallow. The characteristic dome shape is created by smaller trees that grow in the shallower waters of the outer edge, while taller trees grow in the deeper water in the interior of the swamp.

Fire is essential for maintaining the structure and the species composition of a dome swamp community. Without periodic fires cypress may become less dominant as hardwood or bay canopy species increase and peat accumulates. Cypress has fairly thick, fire-resistant bark and are tolerant of light surface fires, but catastrophic fires burning into the peat can kill cypress

trees, especially when fire has long been absent. The consumption of muck fuels from such a catastrophic wildfire can lower the ground surface and transform a dome swamp into a pond, wet prairie, or shrub bog. Fire frequency is generally greatest at the periphery of the dome and least in the interior, where long hydroperiods and deeper peat, and/or water, maintain high moisture levels. The normal fire cycle might be as short as three to five years along the outer edge and as long as 100 to 150 years towards the center. The domed profile of these swamps may be partly attributable to this frequent, peripheral fire regime. Fire in a long-unburned dome swamp may result in higher cypress mortality in the center of the dome where fire burns through a deeper layer of accumulated peat and kills the cypress roots. Emergent marshes can develop in the center of such dome swamps.

Within dome swamps on DCP, the canopy is moderate in cover and consists primarily of pond cypress (*Taxodium ascendens*), loblolly bay (*Gordonia lasianthus*) along with some mixed pine. The sub-canopy/ shrub layer consists of dahoon holly (*Ilex cassine*) and loblolly bay (*Gordonia lasianthus*). The groundcover layer consists of Virginia chain fern (*Woodwardia virginica*), purple bluestem (*Andropogon glaucopsis*), Sphagnum moss (*Sphagnum* spp.).

Dome swamps will be included within burn units and allowed to burn with the surrounding fire-maintained natural community. Ideally, firebreaks will be placed outside of the ecotone to allow fire to enter the edges of the dome swamp and naturally extinguish as it enters the wetter, interior portions.

Floodplain Swamp

A closed-canopy forest of hydrophytic trees occurring on frequently or permanently flooded hydric soils adjacent to stream and river channels and in depressions and oxbows within floodplains. Trees are often buttressed, and the understory and groundcover are sparse.

Floodplain swamp is usually too wet to support fire; however, large cypress trees are somewhat fire-resistant, and thus infrequent fires during very dry conditions may contribute to cypress dominance. Fires may greatly damage the understory.

Floodplain swamp is located within floodplains of any permanently moving stream or river. It ranges from narrow strips of cypress along primary and secondary streams to expansive stands along large rivers to tidally influenced freshwater swamps near river mouths. Often, floodplain

swamps immediately border the stream or river channel. In many cases, however, floodplain swamps are isolated from the main channel by riverbank levees and restricted to oxbows, overflow channels, old stream beds, and expansive flats commonly called backswamps.

The canopy on DCP is generally closed and appropriate in cover and consists primarily of bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and slash pine (*Pinus elliottii*) on hummocks. The sub-canopy/ shrub layer consists of bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*). The groundcover layer consists of royal fern (*Osmunda spectabilis*), cinnamon fern (*Osmunda cinnamomea*), and fall panicgrass (*Panicum dichotomum*).

Prescribed fire is not a management tool to be utilized inside of floodplain swamps other than within the ecotonal boundary between the swamp and an adjacent pyrogenic community. Fires will be allowed to burn into the margin of the floodplain swamp and its adjacent natural community. If possible, the wetter edge of the floodplain swamp may be utilized as a natural firebreak, avoiding the need for a mineral soil firebreak.

Mesic Flatwoods

Generally characterized by an open canopy of tall pines and dense groundcover including shrubs, grasses, and forbs. Mesic flatwoods is the most common habitat in Florida and lies on the broad, flat, sandy plains with little elevation change.

Historically this community's canopy was dominated by longleaf pine (*Pinus palustris*). Today the majority of mesic flatwoods found throughout central and northeastern Florida are dominated by dense stands of slash pine due to the pine silviculture industry and furthermore by prolonged periods of fire exclusion.

Mesic flatwoods require frequent fire with fire return intervals of 1 to 3 years. Many of the species in this habitat are fire dependent. Longleaf pines have thick bark to protect them from fire, and their seeds need the mineral soil and open sunlight that fire provides to germinate. Longleaf pine during the grass stage is fire resistant. Several species require fire to reproduce. Wiregrass requires growing (lightning) season fire to produce viable seeds. The need for growing (lightning) season, frequent fire to control hardwoods, stimulate flowering in many flatwoods herbs and increase (or maintain) species richness and abundance. Fire return interval and

seasonal variability are an important aspect of returning fire to these systems in the form of prescribed fire. Prescribed burns in mesic flatwoods also indirectly determine the fire frequency and season for all the adjacent natural communities. Statistics from lightning caused fires and numerous other studies show that most areas in Florida naturally burned at the beginning of the lightning season. The exclusion of fire in the twentieth century has significantly impacted this community throughout the southeastern U.S.

The canopy found within the mesic flatwoods within DCP is comprised primarily of slash pine; however, longleaf pine does occur throughout this habitat. Prior silvicultural practices, particularly artificial regeneration activities, have been conducted across much of the area encompassed by this community. Pine plantations represent the majority of total acreage of this community.

The implementation of prescribed fire within mesic flatwoods is critical to the management of DCP. This will include mechanical fuel reduction, dormant season fires for continued fuel reduction, and eventually growing season prescribed fires. Note that the initial fire/mechanical disturbance interval will likely be 2-5 years until maintenance conditions are met to return to the targeted 1-3 year interval.

Scrubby Flatwoods

Open canopy of widely spaced pine trees and a low, shrubby understory dominated by scrub oaks and saw palmetto, often interspersed with areas of barren white sand. Principal canopy species are longleaf pine (*Pinus palustris*) and slash pine (*P. elliottii*) in northern and Central Florida, and South Florida slash pine (*P. elliottii* var. *densa*) south of Lake Okeechobee.

The fire regime of scrubby flatwoods is intermediate between mesic flatwoods (very frequent) to scrub (less frequent) with a wide-ranging fire return interval. The fire return interval may be as frequent as 1-3 years along an edge bordering mesic flatwoods, and much less frequent across the entire habitat (5-10 years). Fire intensity follows the return interval, with lower, less intense fires along the edge and higher, more intense fires across the entire habitat.

The canopy is moderate in cover, and consists primarily of slash pine, along with some sand pine and longleaf pine. The sub-canopy/ shrub layer consists of sand live oak, myrtle oak, Chapman's oak, rusty lyonia and saw palmetto. The shrub layer is patchy and dense, interspersed with open sandy patches.

The application of prescribed fire within the scrubby flatwoods on DCP is a priority for the management team. Mechanical fuel reduction and other disturbance methods may be used to safely apply fire during the restoration phase.

Successional Hydric Forest

A shrubland or closed canopied forest occupying disturbed areas and dominated by fast growing hydrophilic hardwoods.

These shrubland/forests may invade herbaceous habitats (i.e., wet prairie, wet flatwoods, seepage slope, depression marsh, basin marsh, floodplain marsh) due to lengthy fire suppression and/or hydrological alterations OR forested wetlands (dome swamp, basin swamp, strand swamp) that have been cleared and are not succeeding to swamp but to highly disturbed shrubland or forest dominated by hydrophilic hardwoods. Successional hydric shrubland/forests are often shrub thickets with few of the characteristic herbaceous or canopy (e.g. *Taxodium* spp.) species from the former community remaining. They can resemble naturally occurring shrub bogs and can be distinguished from them by occurring in areas of historically herbaceous communities, where fire suppression and/or hydrological alterations have taken place or in former forested swamps that have been logged or undergone severe hydroperiod disruptions. Although some shifts in community type may be better described with a natural community designation, the use of "successional hydric shrubland/forest" is suitable to label areas that are known to be highly disturbed and altered, and where restoration efforts of hydrology restoration and/or re-introduction of fire would be particularly beneficial.

There is canopy layer containing pond cypress (*Taxodium ascendens)*, slash pine (*Pinus elliottii*), and loblolly bay (*Gordonia lasianthus*). The sub-canopy/shrub layer is fairly open, containing pond cypress (*Taxodium ascendens)*, slash pine (*Pinus elliottii*), and loblolly bay (*Gordonia lasianthus*). Groundcover includes purple bluestem (*Andropogon glaucopsis*), Sphagnum moss (*Sphagnum* spp.) blue maidencane (*Amphicarpum muehlenbergianum*), and *Rhynchospora* spp.

As with the hydrology of these altered communities, the fire interval of these areas is altered. The fire regime of these areas depends on the surrounding communities and species composition of the altered community.

The need for restoration is significant, and the general exclusion of fire and artificial hydrologic modification has significantly impacted this community's structure and species composition. Prescribed fire is an important part of restoring this community to its historic condition, but before this can occur, other restoration methods may be employed. This may include, but may not be limited to, harvesting, mechanical fuel reduction such as chopping, and hydrologic restoration.

Wet Flatwoods

Pine forests with a moderate to open canopy, sparse or absent midstory and a dense groundcover of hydrophytic grasses, herbs, and low shrubs. The canopy typically consists of slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*) and/or pond pine (*Pinus serotina*), though the latter is generally a component of a seepage slope forest. Historically, longleaf pine was the most common flatwoods canopy species throughout the southeastern U.S.

Fire return intervals are generally every 1 to 3 years. If the interval is too long, 7 to 10 years, it can lead to an increase in palmetto and woody species cover in the shrub layer, resulting in a decline in grasses and forb cover and diversity. Fire suppression increases the abundance of bay trees in the canopy and can create an organic surface layer. Many factors other than frequency of fire, such as season of fire, pre- and post-fire soil moistures, groundwater levels, weather, plant size or age at the time of fire, can greatly influence tree mortality and vegetation response to fire. Fire in the growing season can reduce the composition of woody vegetation, particularly hardwoods and prevent increases in shrub densities, as well as promote diversity and flowering of herbaceous groundcover.

Wet flatwoods are found throughout the Preserve and are the most common habitat by acreage. Prior silvicultural practices, particularly artificial regeneration activities dominated by slash pine, have been conducted across much of the area encompassed by this community.

The implementation of prescribed fire within wet flatwoods is critical to the management of DCP. This will include mechanical fuel reduction, dormant season fires for continued fuel

reduction, and eventually growing season prescribed fires. Note that the initial fire/mechanical disturbance interval will likely be 2-5 years until maintenance conditions are met to return to the targeted 1-3 year interval.

Wet Prairie

A herbaceous community found on continuously wet, but not inundated, soils on somewhat flat or gentle slopes between lower lying depression marshes, shrub bogs, or dome swamps and slightly higher wet or mesic flatwoods, or dry prairie.

Natural fires likely entered wet prairie from surrounding pinelands and burned through them when they were dry enough to carry fire. Estimated natural fire return is an interval of 2-3 years where wet prairie vegetation is adjacent to mesic/wet flatwoods or sandhill in the Apalachicola National Forest. A similar fire interval was also determined for mesic flatwoods near the Panhandle coast from an analysis of fire scars on pine stumps. In the absence of fire, shrubs and trees invade wet prairie and shade out the light-loving herbaceous species. A further indication of their dependence on fire is the requirement for fire to stimulate flowering in many wet prairie herbs, including two of the dominant grasses, wiregrass and cutthroat grass.

The primary restoration need of the wet prairie community is the reintroduction of fire, which will be accomplished through prescribed burning of the pyrogenic communities within which the prairies are embedded. Care will be taken to ensure this community burns during a prescribed fire and that encroachment from pines, hardwoods, and other wetland brush is controlled to allow for a continuous layer of fine fuels.

PRESCRIBED BURN IMPLEMENTATION

Prescription Requirements

A prescribed burn prescription will be utilized for every prescribed burn implemented on DCP, and each burn will be executed by a Florida Certified Prescribed Burn Manager.

The following parameters will be, at a minimum, defined within each burn prescription submitted to Florida Forest Service (FFS) for approval as required by Florida Statute:

1. Stand or Site Description;
2. Map of the area to be burned;
3. Fire Breaks (External and Internal) to be Constructed or Re-Worked (Map);
4. Minimum number of personnel and equipment types to be used on the prescribed burn;
5. Desired weather factors, including but not limited to surface wind speed and direction, transport wind speed and direction, minimum mixing height, minimum relative humidity, maximum temperature, and the minimum fine fuel moisture;
6. Desired fire behavior factors, such as type of burn technique, flame length, and rate of spread;
7. The time and date the prescription was prepared;
8. The authorization date and the time period of the authorization;
9. An evaluation and approval of the anticipated impact of the proposed burn on related smoke sensitive areas;
10. The signature and number of the Certified Prescribed Burn Manager.

Purpose of Burn and Objectives

Each burn will have a declared purpose and burn objectives that fit within the “Objectives of the Deep Creek Preserve Prescribed Fire Plan” listed on Page 2. This may include burning to facilitate the restoration of a natural community, burning to maintain the ecological integrity of

an area of mesic flatwoods, or applying fire to a stand of planted pine to reduce understory competition.

Declared objectives will be written into the burn prescription for a given burn unit and evaluated by staff at a later date to monitor success.

Season of Burn and Ignition Methods

Both dormant and growing season burns will be implemented on DCP. Areas that have little to no fire history will start with dormant season burns to reduce accumulated fuels. Growing season fires may be utilized in areas that are nearing a restored state or have a significant history of previous prescribed fire. In general, areas that have the highest level of ecological importance will be prioritized for growing season fires (i.e., scrubby flatwoods).
The ignition (or firing) methods used to apply prescribed fire will be varied and tailored to the needs of each burn unit. This may include the use of backing fires, flanking fires, grid ignition, spot fires, heading fires, or aerial ignition. Each method may be used as needed to control the speed and intensity of the fire to achieve stated objectives.

Mop-up and Smoke Management

The area burned will be immediately monitored for leftover smoking fuels and any residual surface fires. These will be extinguished along the margins of a burn unit as outlined in the burn prescription.

Staff will continually monitor residual smoke and fire activity within a unit until activity has ceased for whatever interval of time is defined in the burn prescription. Special care will be taken when burn units are located alongside smoke sensitive areas such as roadways and neighborhoods and may require that all smoking debris are completely extinguished as soon as possible.

Major smoke-sensitive areas near DCP include State Road 44, State Road 415, Interstate 4, and the City of Deltona to the southwest. Surface wind and transport wind directions will be selected, on a per unit basis, to direct smoke away from smoke-sensitive areas.

Burn Unit Boundaries

A conceptual burn unit map is shown on the attached "Deep Creek Preserve Burn Unit Map". The units are broken down based on several factors including existing firelines, timber units, natural community boundaries, existing roads, utility lines, etc. Units may be grouped together on the day of the burn to increase burn acreage.

Not all units are totally comprised of fire-dependent communities. Some units may have considerable acreage in natural communities that have little to no fire return interval. Many of these are bound by major features such as historic logging roads that are convenient for delineating boundaries.

WORKS CITED

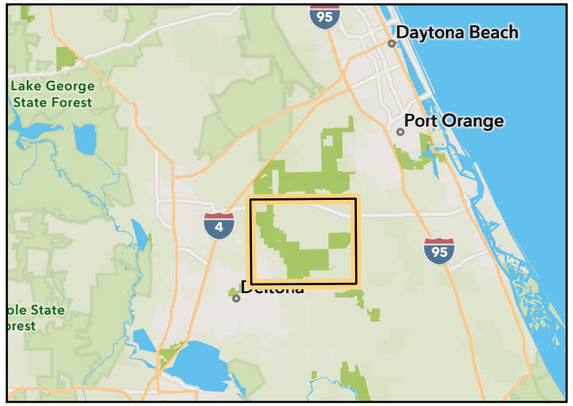
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Deep Creek Preserve
Burn Unit Map

Volusia County FL
2024 Aerial Photo



Legend
- Property Boundary
- BurnUnit

N

0 5 10 20 30 40 Miles

NOTICE:
THIS MAP IS NOT A SURVEY. THEREFORE, ANY DERIVED ACREAGE NUMBERS ON THIS MAP OR ACCOMPANYING REPORT ARE APPROXIMATE AND SHOULD ONLY BE USED FOR PLANNING OR MANAGEMENT.
THIS MAP IS NOT SUITABLE FOR ENGINEERING DESIGN OR CONSTRUCTION. FURTHER, THE USE OF ANY ASSOCIATED ACREAGE NUMBERS FOR SALES OR NEGOTIATIONS IS ENTIRELY AT THE RISK OF THE BUYER AND SELLER.
MAP CREATED BY : C SMITH
MAP CREATED ON : 27 AUGUST 2026

Unit	Acres	Unit	Acres	Unit	Acres	Unit	Acres
1	166.1	19	51.4	37	54.5	55	4.3
2	39.5	20	54.7	38	311.0	56	19.5
3	21.9	21	89.5	39	141.5	57	27.5
4	81.7	22	160.7	40	76.6	58	39.0
5	237.1	23	46.0	41	136.7	59	6.3
6	229.6	24	28.4	42	64.1	60	43.4
7	197.0	25	108.9	43	47.7	61	139.7
8	82.7	26	118.7	44	15.2	62	13.7
9	299.5	27	309.0	45	78.1	63	25.1
10	22.8	28	97.5	46	131.9	64	14.3
11	96.9	29	269.4	47	146.2	65	8.9
12	112.5	30	213.8	48	138.4	66	30.1
13	40.4	31	78.4	49	70.5	67	41.8
14	40.4	32	109.6	50	133.0	68	20.0
15	217.8	33	114.1	51	153.0	69	45.5
16	201.1	34	97.1	52	80.9	70	35.2
17	54.4	35	36.7	53	86.2	71	67.2
18	175.9	36	249.1	54	14.7	72	11.0

APPENDIX J

Deep Creek Preserve

Timber Assessment & Plan

Abbreviations

CY – Cypress
HWD – Hardwood
LL – Longleaf Pine
MS – Marsh
NP – Natural Pine
SL – Slash Pine
DCP – Deep Creek Preserve
BA – Basal Area
FDEP – Florida Department of Environmental Protection
ARC – Acquisition and Restoration Council
MP – Management Plan

Purpose

The purpose of this document is to provide a timber assessment and preliminary forestry plan for Deep Creek Preserve (DCP). DCP consists of three tracts, based on ownership: the State Tract, the County Tract and the WMD Tract. This assessment includes all three tracts, with specific assessments for each described below. The goal of this assessment is to evaluate the potential and feasibility of utilizing silviculture techniques to assist the land manager in achieving objectives described in the DCP Management Plan. This is a preliminary assessment for the initial Management Plan. As described in the Plan, an updated assessment will be completed within two (2) years of the final plan being approved by FDEP ARC.

General Information

Fourteen (14) communities exist within the boundary of this property, including both natural and altered communities. These communities range from Scrubby Flatwoods uplands to Basin Swamp and various wetland and upland habitats in between. Some communities have been altered due to past land use. See the MP for communities' descriptions and exhibits. A Timber Stand Map for stand distribution and acreage is provided in this Timber Assessment and Plan.

Wet flatwoods are the most abundant natural community, occupying multiple large areas throughout each tract, punctuated with more poorly drained areas occupied by other natural communities. Wet flatwoods are described in the application as containing mostly slash pine in the canopy, with some longleaf and some pond pine. The shrub and groundcover layers consist of nearly impenetrable thickets of saw palmetto, gallberry, blackberry and greenbrier in the shrub layer due to fire suppression. Flood plain swamps near the west edge of both the County and WMD Tracts extend from the north boundaries to the south boundaries, and smaller areas of basin swamps occur in the center of these tracts. The State Tract has basin swamps along the western border, extending from the northern to southern border, as well in the northeast corner of the Tract. Several relatively large swamps that appear to be baygalls based on aerial photography occur in a discontinuous band in the

mesic flatwoods. Wet flatwoods are found at intergrades between mesic flatwoods or more disturbed uplands and adjacent wetlands. A dozen dome swamps less than an acre to 3 acres in size are found scattered throughout the property in flatwoods, pine plantation, and pasture.

Fingers of improved pasture extend between other landcover types from the southeast corner of the State Tract. Two large artificial ponds make up a substantial portion of the eastern third of the State Tract. Two smaller artificial ponds occur as well; these are near roads and may be borrow pits from road construction. One utility corridor crosses the property near the northeastern corner of the State Tract and is surrounded by scrubby flatwoods and disturbed areas that are likely to be successional hardwood forest resulting from fire exclusion of pyrogenic habitats. The other utility corridor on the State Tract runs from east to west along the southern border of the Tract.

To better understand timber management methods, knowledge of a few silviculture terms is useful. The cross sectional area (in square feet) of an individual tree measured four and one-half feet above the ground is its Basal Area (BA). Basal Area per acre is the sum of the Basal Area of every tree within a stand divided by the number of acres in the stand. It is used as a measure of a forested area's tree stocking and density. The diameter of an individual tree taken at this height (four and one-half feet above the ground) is referred to as its diameter breast height or DBH. This measurement is used in calculating the Basal Area and combined with height can determine volume of each tree. When the term Basal Area is used as a stand alone term, it is referring to the Basal Area per acre of a stand.

Slash pine exhibits very fast height growth averaging 3 feet annually until about age 9, after this age growth begins to stall due to competition within the stand. More than half of the annual height growth (52%) is completed by April of each growing season. Diameter growth is affected by stand density about 5 years after seeding. Mean annual diameter growth for the first 20 years is about ½ inch for a density of 194 trees per acre. Between the ages of 5 and 9 tree diameter growth drops about 56 % with this density (Bennett, Frank 1963).

Restoration of longleaf pine within its former range is advocated by a number of public and private associations and by governmental agencies, and is advocated by Volusia County where mesic and xeric flatwoods occur. Some land managers desire to employ lower intensity management, particularly longer rotation ages, for which longleaf pine is well suited (Boyer 1990). Very little growth and yield modeling has been accomplished with longleaf pine plantations. The only existing model is restricted to unthinned stands (Lohrey and Bailey 1977). There is however, a large volume of data on growth and yield for naturally occurring and naturally regenerated longleaf pine (Goelz and Leduc) (Somers and Farrar 1991).

Fully stocked pine stands have enough trees per acre of a size large enough to utilize the growing space without causing over-crowding. Pine stands with 70 to 100 sq. ft. BA are considered fully stocked, although lower BA's are typically used in managing for natural pine flatwood stands (refer to County's Desired Future Conditions). It requires more smaller diameter trees than it does larger diameter trees to equal one square foot of basal area. (For example: It takes 357 evenly spaced, six-inch diameter breast height trees per acre to equal 70 sq. ft. BA. Whereas, only 89 twelve-inch DBH trees per acre equals the

same 70 sq. ft. BA).

Pine plantations should be thinned when live crowns in the majority of the dominant and co-dominant trees have been reduced to approximately 1/3 of their total height. Simply, these stands should be thinned to 60 – 70 sq. ft. BA per acre each time they reach 100 sq. ft. BA per acre or more. This will help ensure a stand of vigorous healthy trees. An added benefit of opening up the canopy is that more sunlight will reach the forest floor increasing forage production for wildlife. Once the stand has reached maturity, it may be harvested, then planted or naturally regenerated. If prescribed fire is used prior to any thinning, it is recommended a winter burn be used to condition the stand and lower the chance of high mortality.

A variety of thinning methods can be utilized. Thinning options to consider are: normal thinning with relatively even spacing, group selection, group seed tree, or a combination of all three. Once the plantation becomes mature enough to produce seed, natural regeneration should become established without much difficulty.

One advantage of thinning is that the understory will regenerate the vegetation necessary to allow for the safe application of fire and eliminate the potential for canopy fires. However, immediately after any kind of ground disturbance the area may be susceptible to invasion by exotic/invasive plant species. This is something to be especially concerned with in this part of Florida, and it is recommended that a plan be in place to address this potential problem prior to any harvest activities.

Tracts

State Tract: **Description**
The State Tract consists of Mesic Flatwoods, Basin Swamp, Wet Flatwoods, Baygall, Improved Pasture, Artificial Pond, Scrubby Flatwoods, Successional Hydric Forest, Dome Swamp, Clearing Regeneration, Wet Prairie, Utility Corridor, and Developed. The Mesic Flatwoods, Wet Flatwoods, Baygall, Scrubby Flatwoods, Successional Hydric Forest, and Wet Prairie are suggested for potential thinning. The pine stand density and BA are high overall due to prior pine plantation silviculture and fire suppression. Under previous ownerships, these plantations were treated as industrial silviculture and highly stocked with offsite slash pine. In addition to the artificially high stocking rate, fire suppression has led to much of these areas consisting of nearly impenetrable thickets of saw palmetto, gallberry, blackberry and greenbrier in the shrub layer.

The State Tract contains eleven (11) stands of merchantable pine plantation (SL), eighteen (18) stands of natural pine, uplands (NP), and twenty-one (21) stands of natural timber, bottomland (7 CY, 14 HWD). The total acreage of these stands is 1,113.4 acres. See the attached Timber Stand Map for broken down stands and acreages.

Recommendation:
For the scrub habitat, mechanical thinning of the shrub / subcanopy layer is recommended, followed by prescribed fire.

For the flatwoods habitats, it is recommended to conduct two winter burns prior to

any growing season burn. For harvesting, commence harvest of non-longleaf pines to promote longleaf as the dominant pine in these habitats.

County Tract: **Description**
The State Tract is comprised of several habitats including Wet Flatwoods, Improved Pasture, Basin Swamp, Floodplain Swamp, Dome Swamp, Utility Corridor, Mesic Flatwoods, Clearing Regeneration, Developed and Artificial Pond. The Wet Flatwoods and Mesic Flatwoods habitats are areas with potential to utilize silviculture activities, and these habitats are abundant onsite, with Wet Flatwoods comprising over 60% of the County Tract. The pine stand density and BA range from low to high overall due to prior pine plantation silviculture, fire suppression and ongoing timber thinning operations. Under previous ownerships, these plantations were treated as industrial silviculture and highly stocked with offsite slash pine. In addition to the artificially high stocking rate, fire suppression has led to much of these areas consisting of nearly impenetrable thickets of saw palmetto, gallberry, blackberry and greenbrier in the shrub layer.

The County Tract contains thirty-nine (39) stands of merchantable pine plantation (SL), fifty-nine (59) stands of merchantable, thinned pine plantation (3 NP, 56 SL), sixteen (16) stands of pine plantation, premerchantable (12 LL, 4 SL), fourty-one (41) stands of natural pine, flatwoods (NP), ten (10) stands of natural pine, uplands (NP), and 179 stands of natural timber, bottomland (3 CY, 176 HWD). The total acreage of these stands is 4,772.9 acres. See the attached Timber Stand Map for broken down stands and acreages.

Recommendation:
For the flatwoods habitats, it is recommended to conduct two winter burns prior to any growing season burn. For harvesting, commence harvest of non-longleaf pines to promote longleaf as the dominant pine in these habitats.

WMD Tract: **Description**
The WMD Tract is comprised of several habitats including Wet Flatwoods, Basin Swamp, Floodplain Swamp, Mesic Flatwoods, Dome Swamp, Utility Corridor and Clearing Regeneration. The Wet Flatwoods and Mesic Flatwoods are suggested for potential thinning. The pine stand density and BA range from low to high overall due to prior pine plantation silviculture, fire suppression and ongoing timber thinning operations. Under previous ownerships, these plantations were treated as industrial silviculture and highly stocked with offsite slash pine. In addition to the artificially high stocking rate, fire suppression has led to much of these areas consisting of nearly impenetrable thickets of saw palmetto, gallberry, blackberry and greenbrier in the shrub layer.

The WMD Tract contains seven (7) stands of merchantable pine plantation (SL), six (6) stands of merchantable, thinned pine plantation (SL), twenty-five (25) stands of pine plantation, premerchantable (12 LL, 4 SL), thirty-two (32) stands of natural pine, flatwoods (NP), four (4) stands of natural pine, uplands (1 LL, 3 NP), sixty-seven (67) stands of natural timber, bottomland (10 CY, 57 HWD), and one (1) stand of marsh, bottomland. The total acreage of these stands is 2,871.4 acres. See

the attached Timber Stand Map for broken down stands and acreages.

Recommendation:
For the flatwoods habitats, it is recommended to conduct two winter burns prior to any growing season burn. For harvesting, commence harvest of non-longleaf pines to promote longleaf as the dominant pine in these habitats.

Prescribed Fire

Prescribed fire is an important tool for ecosystem management in Florida. Before European settlement, natural fires occurred at regular intervals on an average of two to five years. These fires reduced the fuel load, produced a seedbed for pine regeneration and released nutrients back into the soil. Prescribed fire, coupled with a well-planned timber harvest, is often the most economical and responsible method for conducting ecosystem management, and restoring areas back to natural conditions.

The major objective when prescribed burning in timber and overgrowth in natural areas should be minimal mortality of the trees. Historic natural fires caused very little tree mortality except in small seedlings because they burn mostly on the finer fuels of wiregrass and pine straw. For fire- suppressed ecosystems, a major regional conservation goal has been ecological restoration, primarily through the reinitiating of historic fire regimes. Unfortunately, fire reintroduction in long unburned stands can have novel, undesirable effects. When burning, even in mature timber, it must be kept in mind that not all fire is good. A hot fire may not initially kill trees, but will stress them enough to dramatically increase their susceptibility to insect and disease attack. This is especially true when combined with other stresses, such as drought or flood.

Many of the stands in DCP are long unburned stands. Therefore, mechanical clearing and winter burning are necessary in several areas prior to re-introduction of natural, growing season, fire regimes.

Economics

Timber sales are common practice in this region, and several pine plantations exist in the area. The best available opportunity at this time is the potential sale of the heavily stocked slash pine within the Wet Flatwoods and Mesic Flatwoods habitats on the State and County Tracts.

Access

DCP maintains access gates providing entry points for each tract. Each tract has relatively easy access Access to the State Tract is from two gates located on State Road 415. The County Tract has access from two gates, one located on State Road 415 and one located on Leffler Landing Road. Access to the WMD Tract is from a gate located State Road 44.

Summary

DCP currently has 8,757.7 acres of timber stands in which silviculture treatments may prove beneficial to achieving the stated habitat restoration and management goals of the Management Plan. It is possible to manage this area in such a manner to provide a more natural appearance, meet Plan objectives and produce revenue through timber harvests. The revenue producing potential of the area is moderate. The most practical application of

silviculture on this property is to achieve forestry objectives and for reducing wildfire hazards.

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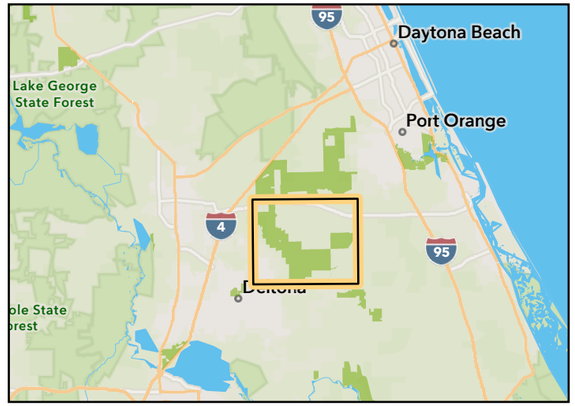
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Deep Creek Preserve
Timber Stand Map

Volusia County FL
2024 Aerial Photo



Legend

- Property Boundary
- Roads
- Marsh, Bottomland
- Natural Pine, Flatwoods
- Natural Pine, Upland
- Natural Timber, Bottomland
- Open, Non-Timber
- Pine Plantation, Merchantable
- Pine Plantation, Merchantable, Thinned
- Pine Plantation, Premerchantable

N

0 5 10 20 30 40 Miles

NOTICE:
THIS MAP IS NOT A SURVEY. THEREFORE, ANY DERIVED ACREAGE NUMBERS ON THIS MAP OR ACCOMPANYING REPORT ARE APPROXIMATE AND SHOULD ONLY BE USED FOR PLANNING OR MANAGEMENT.
THIS MAP IS NOT SUITABLE FOR ENGINEERING DESIGN OR CONSTRUCTION. FURTHER, THE USE OF ANY ASSOCIATED ACREAGE NUMBERS FOR SALES OR NEGOTIATIONS IS ENTIRELY AT THE RISK OF THE BUYER AND SELLER.
MAP CREATED BY : C SMITH
MAP CREATED ON : 27 AUGUST 2026

Land Cover Classification	Deep Creek		Kemcho		Carter		Total	
Stand Type	Number of Stands	Acres	Number of Stands	Acres	Number of Stands	Acres	Number of Stands	Acres
Pine Plantation, Merchantable	**39**	**1121.1**	**7**	**122.6**	**11**	**197.7**	**57**	**1441.4**
SL	39	1121.1	7	122.6	11	197.7	57	1441.4
Pine Plantation, Merchantable, Thinned	**59**	**1420.4**	**6**	**179.1**			**65**	**1599.5**
NP	3	44.4					3	44.4
SL	56	1376.0	6	179.1			62	1555.1
Pine Plantation, Premerchantable	**16**	**290.3**	**25**	**422.4**			**41**	**712.6**
LL	12	201.5	13	139.3			25	340.7
SL	4	88.8	12	283.1			16	371.9
Natural Pine, Flatwoods	**41**	**482.7**	**32**	**650.1**			**73**	**1132.9**
NP	41	482.7	32	650.1			73	1132.9
Natural Pine, Upland	**10**	**175.2**	**4**	**197.6**	**18**	**375.6**	**32**	**748.4**
LL			1	22.5			1	22.5
NP	10	175.2	3	175.1	18	375.6	31	725.8
Natural Timber, Bottomland	**179**	**1283.2**	**67**	**1192.7**	**21**	**540.1**	**267**	**3016.0**
CY	3	3.9	10	72.0	7	34.2	20	110.1
HWD	176	1279.3	57	1120.7	14	505.9	247	2905.9
Marsh, Bottomland			**1**	**0.6**			**1**	**0.6**
MS			1	0.6			1	0.6
Open, Non-Timber	**57**	**879.5**	**12**	**106.3**	**24**	**236.2**	**93**	**1222.0**
Food Plot			1	2.9			1	2.9
Pasture	4	503.5			4	99.9	8	603.4
Roads	14	132.0	5	41.6	2	64.2	21	237.8
Utility	6	137.9	4	43.4	3	9.7	13	191.0
Water	6	2.2			8	48.8	14	51.0
Wildlife	27	103.9	2	18.5	7	13.7	36	136.1
Grand Total	**401**	**5652.4**	**154**	**2871.3**	**74**	**1349.7**	**629**	**9873.4**

APPENDIX K

Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties
(revised June 2021)

These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.

A. Historic Property Definition

Historic properties include archaeological sites and historic structures as well as other types of resources. Chapter 267, Florida Statutes states: " '*Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state."*

B. Agency Responsibilities

Per Chapter 267, *F.S.* and state policy related to historic properties, state agencies of the executive branch must provide the Division of Historical Resources (Division) the opportunity to comment on any undertakings with the potential to affect historic properties that are listed, or eligible for listing, in the National Register of Historic Places, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the undertaking. (267.061(2)(a))

State agencies must consult with the Division when, as a result of state action or assistance, a historic property will be demolished or substantially altered in a way that will adversely affect the property. State agencies must take timely steps to consider feasible and prudent alternatives to the adverse effect. If no feasible or prudent alternatives exist, the state agency must take timely steps to avoid or mitigate the adverse effect. (267.061(2)(b))

State agencies must consult with Division to establish a program to locate, inventory and evaluate all historic properties under ownership or controlled by the agency. (267.061(2)(c))

State agencies are responsible for preserving historic properties under their control. State agencies are directed to use historic properties available to the agency when that use is consistent with the historic property and the agency's mission. State agencies are also directed to pursue preservation of historic properties to support their continued use. (267.061(2)(d))

C. Statutory Authority

The full text of Chapter 267, F.S. and additional information related to the treatment of historic properties is available at:

https://dos.myflorida.com/historical/preservation/compliance-and-review/regulations-guidelines/

D. Management Implementation

Although the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual and do not include detailed project information. Specific information for individual projects must be submitted to the Division for review and comment.

Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. The Division's recommendations may include, but are not limited to: approval of the project as submitted, recommendation for a cultural resource assessment survey by a qualified professional archaeologist, and modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions or alterations to historic structures as well as new construction must also be submitted to the Division for review. Projects involving structures fifty years of age or older must be submitted to the Division for a significance determination**.** In rare cases, structures under fifty years of age may be deemed historically significant.

Adverse effects to historic properties must be avoided when possible, and if avoidance is not possible, additional consultation with the Division is necessary to develop a mitigation plan. Furthermore, managers of state property should make preparations for locating and evaluating historic properties, both archaeological sites and historic structures.

E. Archaeological Resource Management (ARM) Training

The ARM Training Course introduces state land managers to the nature of archaeological resources, Florida archaeology, and the role of the Division in managing state-owned archaeological resources. Participants gain a better understanding of the requirements of state and federal laws with regard to protecting and managing archaeological sites on state managed lands. Participants also receive a certificate recognizing their ability to conduct limited monitoring activities in accordance with the Division's Review Procedure, thereby reducing the time and money spent to comply with state regulations. Additional information regarding the ARM Training Course is available at:

https://dos.myflorida.com/historical/archaeology/education/arm-training-courses/

F. Matrix for Ground Disturbance on State Lands

The matrix is a tool designed to help streamline the Division's Review Procedure. The matrix allows state land managers to make decisions about balancing ground disturbance and stewardship of historic resources. The matrix establishes types of undertakings that are either minor or major disturbances and then guides the land manager to consult the Division, conduct ARM-trained project monitoring, or proceed with the project. Additional information regarding the matrix is available at:

https://dos.myflorida.com/historical/archaeology/education/dhr-matrix-for-ground-disturbance-on-state-lands/

G. Human Remains Treatment

Chapter 872, *Florida Statutes* makes it illegal to willfully and knowingly disturb human remains. In the event human remains are discovered, cease all activity in the area that may disturb the remains. Leave the bones and nearby items in place. Immediately notify law enforcement or the local district medical examiner of the discovery and follow the provisions of Chapter 872, FS. Additional information regarding the treatment of human remains and cemeteries is available at:

https://dos.myflorida.com/historical/archaeology/human-remains/
https://dos.myflorida.com/historical/archaeology/human-remains/abandoned-cemeteries/what-are-the-applicable-laws-and-regulations/

H. Division of Historical Resources Review Procedure

Projects on state owned or controlled properties may submit projects to the Division for review using the streamlined State Lands Consultation Form. The form provides instructions to submit projects for review and outlines the necessary information for the Division to complete the review process. The State Lands Consultation Form and additional information about the Division's review process is available at:

https://dos.myflorida.com/historical/preservation/compliance-and-review/state-lands-review/

* * *

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Compliance and Review Section
Bureau of Historic Preservation
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, FL 32399-0250

StateLandsCompliance@dos.myflorida.com

Phone: (850) 245-6333
Toll Free: (800) 847-7278
Fax: (850) 245-6435

APPENDIX L

Deep Creek Preserve iNaturalist Species Observation Table

Vertebrates

Class	Order	Family	Scientific Name	Common Name
Amphibia	Anura	Bufonidae	Anaxyrus quercicus	Oak Toad
Amphibia	Anura	Bufonidae	Anaxyrus terrestris	Southern Toad
Reptilia	Crocodylia	Alligatoridea	Alligator mississippiensis	American Alligator
Aves	Falconiformes	Falconidae	Falco sparverius	American Kestrel
Aves	Suliformes	Anhingidae	Anhinga anhinga	Anhinga
Aves	Accipitriformes	Accipitridae	Haliaeetus leucocephalus	Bald Eagle
Aves	Passeriformes	Polioptilidae	Polioptila caerulea	Blue-gray Gnatcatcher
Aves	Passeriformes	Paridae	Poecile carolinensis	Carolina Chickadee
Aves	Passeriformes	Turdidae	Sialia sialis	Eastern Bluebird
Aves	Pelecaniformes	Ardeidae	Ardea herodias	Great Blue Heron
Aves	Passeriformes	Parulidae	Setophaga americana	Northern Parula
Aves	Podicipediformes	Podicipedidae	Podilymbus podiceps	Pied-billed Grebe
Aves	Piciformes	Picidae	Dryocopus pileatus	Pileated Woodpecker
Aves	Columbiformes	Columbidae	Columbina	Small Ground Doves
Aves	Pelecaniformes	Ardeidae	Ardea ibis	Western Cattle-Egret
Aves	Pelecaniformes	Threskiornithidae	Eudocimus albus	White Ibis
Aves	Passeriformes	Vireonidae	Vireo griseus	White-eyed Vireo
Aves	Galliformes	Phasianidae	Meleagris gallopavo	Wild Turkey
Aves	Ciconiiformes	Ciconiidae	Mycteria americana	Wood Stork
Aves	Piciformes	Picidae	Sphyrapicus varius	Yellow-bellied Sapsucker
Aves	Anseriformes	Anatidae	Dendrocygna autumnalis	Black-Bellied Whistling-Duck
Aves	Galliformes	Odontophoridae	Colinus virginianus	Northern Bobwhite
Aves	Columbiformes	Columbidae	Zenaida macroura	Mourning Dove
Aves	Cuculiformes	Cucuildae	Coccyzus americanus	Yellow-billed Cuckoo
Aves	Apodiformes	Trocholidae	Archilochus colubris	Ruby-throated Hummingbird
Aves	Gruiformes	Aramidea	Aramus guarauna	Limpkin
Aves	Gruiformes	Gruidae	Antigone canadensis	Sandhill Crane
Aves	Charadriiformes	Scolopacidae	Gallinago delicata	Wilson's Snipe
Aves	Suliformes	Phalacrocoracidae	Nannopterum auritum	Double-crested Cormorant
Aves	Pelecaniformes	Threskiornithidae	Plegadis falcinellus	Glossy Ibis
Aves	Pelecaniformes	Ardeidae	Egretta caerulea	Little Blue Heron
Aves	Pelecaniformes	Ardeidae	Ardea alba	Great Egret
Aves	Cathartiformes	Cathartidae	Cathartes aura	Turkey Vulture
Aves	Cathartiformes	Cathartidae	Coragyps atratus	Black Vulture
Aves	Accipitriformes	Pandionidae	Pandion haliaetus	Osprey
Aves	Accipitriformes	Perninae	Elanoides forficatus	Swallow-tailed Kite
Aves	Accipitriformes	Accipitridae	Astur cooperii	Cooper's Hawk
Aves	Accipitriformes	Accipitridae	Circus hudsonius	Northern Harrier
Aves	Accipitriformes	Accipitridae	Buteo lineatus	Red-shouldered Hawk
Aves	Accipitriformes	Accipitridae	Buteo jamaicensis	Red-tailed Hawk
Aves	Strigiformes	Strigidae	Strix varia	Barred Owl
Aves	Coraciiformes	Alcedinidae	Megaceryle alcyon	Belted Kingfisher
Aves	Piciformes	Picidae	Melanerpes erythrocephalus	Red-headed Woodpecker
Aves	Piciformes	Picidae	Melanerpes carolinus	Red-bellied Woodpecker
Aves	Piciformes	Picidae	Dryobates pubescens	Downy Woodpecker
Aves	Piciformes	Picidae	Leuconotopicus villosus	Hairy Woodpecker
Aves	Piciformes	Picidae	Colaptes auratus	Northern Flicker
Aves	Falconiformes	Falconidae	Caracara plancus	Crested Caracara
Aves	Falconiformes	Falconidae	Falco peregrinus	Peregrine Falcon
Aves	Passeriformes	Tyrannidae	Contopus Virens	Eastern Wood-Pewee
Aves	Passeriformes	Tyrannidae	Sayornis phoebe	Eastern Phoebe
Aves	Passeriformes	Tyrannidae	Myiarchus crinitus	Great Creasted Flycatcher
Aves	Passeriformes	Vireonidae	Vireo solitaris	Blue-headed Vireo
Aves	Passeriformes	Vireonidae	Vireo olivaceus	Red-eyed Vireo
Aves	Passeriformes	Corvidae	Cyanocitta cristata	Blue Jay
Aves	Passeriformes	Corvidae	Corvus brachyrhynchos	American Crow

Deep Creek Preserve iNaturalist Species Observation Table

Aves	Passeriformes	Corvidae	Corvus ossifragus	Fish Crow
Aves	Passeriformes	Paridae	Baeolophus bicolor	Tufted Titmouse
Aves	Passeriformes	Hirundinidae	Tachycineta bicolor	Tree Swallow
Aves	Passeriformes	Hirundinidae	Hirundo rustica	Barn Swallow
Aves	Passeriformes	Regulidae	Corthylio calendula	Ruby-crowned Kinglet
Aves	Passeriformes	Sittidae	Sitta pusilla	Brown-headed Nuthatch
Aves	Passeriformes	Troglodytidae	Troglodytes aedon	Northern House Wren
Aves	Passeriformes	Troglodytidae	Thryothorus ludovicianus	Carolina Wren
Aves	Passeriformes	Sturnidae	Sturnus vulgaris	European Starling
Aves	Passeriformes	Mimidae	Dumetella carolinensis	Gray Catbird
Aves	Passeriformes	Mimidae	Toxostoma rufum	Brown Thrasher
Aves	Passeriformes	Mimidae	Mimus polyglottos	Northern Mockingbird
Aves	Passeriformes	Turdidae	Catharus ustulatus	Swainson's Thrush
Aves	Passeriformes	Turdidae	Catharus guttatus	Hermit Thrush
Aves	Passeriformes	Turdidae	Turdus migratorius	American Robin
Aves	Passeriformes	Bombycillidae	Bombycilla cedrorum	Cedar Waxwing
Aves	Passeriformes	Fringillidae	Haemorhous mexicanus	House Finch
Aves	Passeriformes	Fringillidae	Spinus tristis	American Goldfinch
Aves	Passeriformes	Passerellidae	Peucaea aestivalis	Bachman's Sparrow
Aves	Passeriformes	Spizella	Spizella passerina	Chipping Sparrow
Aves	Passeriformes	Passerellidae	Passerculus sandwichensis	Savannah Sparrow
Aves	Passeriformes	Passerellidae	Melospiza georgiana	Swamp Sparrow
Aves	Passeriformes	Passerellidae	Pipilo erythrophthalmus	Eastern Towhee
Aves	Passeriformes	Icteridae	Sturnella magna	Eastern Meadowlark
Aves	Passeriformes	Icteridae	Agelaius phoeniceus	Red-winged Blackbird
Aves	Passeriformes	Icteridae	Quiscalus quiscala	Common Grackle
Aves	Passeriformes	Icteridae	Quiscalus major	Boat-tailed Grackle
Aves	Passeriformes	Parulidae	Seiurus aurocapilla	Ovenbird
Aves	Passeriformes	Parulidae	Mniotilta varia	Black-and-white Warbler
Aves	Passeriformes	Parulidae	Geothlypis trichas	Common Yellowthroat
Aves	Passeriformes	Parulidae	Leiothlypis celata	Orange-crowned Warbler
Aves	Passeriformes	Parulidae	Setophaga citrina	Hooded Warbler
Aves	Passeriformes	Parulidae	Setophaga ruticilla	American Redstart
Aves	Passeriformes	Parulidae	Setophaga pensylvanica	Chestnut-sided Warbler
Aves	Passeriformes	Parulidae	Setophaga caerulescens	Black-throated Blue Warbler
Aves	Passeriformes	Parulidae	Setophaga palmarum	Palm Warbler
Aves	Passeriformes	Parulidae	Setophaga pinus	Pine Warbler
Aves	Passeriformes	Parulidae	Setephaga coronata	Yellow-rumped Warbler
Aves	Passeriformes	Parulidae	Setophaga dominica	Yellow-throated Warbler
Aves	Passeriformes	Parulidae	Setophaga discolor	Prairie Warbler
Aves	Passeriformes	Cardinalidae	Piranga rubra	Summer Tanager
Aves	Passeriformes	Cardinalidae	Piranga olivacea	Scarlet Tanager
Aves	Passeriformes	Cardinalidae	Cardinalis cardinalis	Northern Cardinal

Fungi

Class	Order	Family	Scientific Name	Common Name
Agaricomycetes	Agaricales	Amanitaceae	Amanita amerivirosa	
Agaricomycetes	Agaricales	Amanitaceae	Amanita cylindrispora	Narrowest-Spored Limbed Lepidella
Agaricomycetes	Agaricales	Amanitaceae	Amanita persicina	Peach-Colored Fly Agaric
Agaricomycetes	Polyporales	Laetiporaceae	Berkcurtia persicina	White Chicken Mushroom
Lecanoromycetes	Lecanorales	Cladoniaceae	Cladonia cristatella	British soldier lichen
Lecanoromycetes	Lecanorales	Cladoniaceae	Cladonia didyma	Southern Soldiers
Lecanoromycetes	Lecanorales	Cladoniaceae	Cladonia evansii	Evans' Deer Moss
Lecanoromycetes	Lecanorales	Cladoniaceae	Cladonia subradiata	Powdery Peg Lichen
Lecanoromycetes	Lecanorales	Cladoniaceae	Cladonia subtenuis	Dixie Reindeer Lichen
Agaricomycetes	Agaricales	Physalacriaceae	Desarmillaria caespitosa	Ringless Honey Mushroom
Lecanoromycetes	Ostropales	Graphidaceae	Dyplolabia afzelii	Afzel's script lichen
Agaricomycetes	Polyporales	Polyporaceae	Ganoderma curtisii	Golden Reishi

Deep Creek Preserve iNaturalist Species Observation Table

Agaricomycetes	Agaricales	Omphalotaceae	Gymnopus spongiosus	hairy-stalked collybia
Agaricomycetes	Boletales	Gyroporaceae	Gyroporus phaeocyanescens	
Arthoniomycetes	Arthoniales	Arthoniaceae	Herpothallon rubrocinctum	Christmas lichen
Agaricomycetes	Polyporales	Polyporaceae	Hexagonia hydnoides	Hairy Hexagonia
Agaricomycetes	Thelephorales	Boletopsidaceae	Hydnellum caeruleum	Blue Tooth
Agaricomycetes	Agaricales	Hygrophoraceae	Hygrocybe glutinipes	Glutinous Waxcap
Agaricomycetes	Polyporales	Cerrenaceae	Irpiciporus mollis	
Agaricomycetes	Agaricales	Hydnangiaceae	Laccaria amethystina	Amethyst Deceiver
Agaricomycetes	Agaricales	Hydnangiaceae	Laccaria laccata	Deceiver
Dothideomycetes	Mycosphaerellales	Mycosphaerellaceae	Neocercosporidium smilacis	
Agaricomycetes	Agaricales	Mycenaceae	Panellus pusillus	
Agaricomycetes	Russulales	Peniophoraceae	Peniophora albobadia	Giraffe Spots
Agaricomycetes	Polyporales	Phaeolaceae	Phaeolus tabulaeformis	
Agaricomycetes	Hymenochaetales	Hymenochaetaceae	Phylloporia amplectens	Pawpaw Polypore
Eurotiomycetes	Pyrenulales	Pyrenulaceae	Pyrenula cruenta	Bark Rash Lichen
Agaricomycetes	Boletales	Sclerodermataceae	Scleroderma areolatum	Leopard Earthball
Agaricomycetes	Russulales	Stereaceae	Stereum complicatum	Crowded Parchment
Agaricomycetes	Polyporales	Polyporaceae	Trametes sanguinea	Cinnabar Bracket
Agaricomycetes	Polyporales	Polyporaceae	Trametes sanguinea	Cinnabar Bracket
Agaricomycetes	Agaricales	Phyllotopsidaceae	Tricholomopsis decora	Decorated Mop
Agaricomycetes	Boletales	Boletaceae	Tylopilus rhoadsiae	Pale Bitter Bolete
Agaricomycetes	Russulales	Stereaceae	Xylobolus subpileatus	

Plants

Class	Order	Family	Scientific Name	Common Name
Magnoliopsida	Sapindales	Sapindaceae	Acer rubrum	Red Maple
Magnoliopsida	Asterales	Asteraceae	Acmella repens	Oppositeleaf Spotflower
Liliopsida	Dioscoreales	Nartheciaceae	Aletris lutea	Yellow Colicroot
Liliopsida	Poales	Poaceae	Amphicarpum muehlenbergianum	Perennial Goobergrass
Liliopsida	Poales	Poaceae	Anatherum brachystachyum	Shortspike Bluestem
Liliopsida	Poales	Poaceae	Anatherum capillipes	Chalky Bluestem
Liliopsida	Poales	Poaceae	Anatherum floridanum	Florida Bluestem
Liliopsida	Poales	Poaceae	Anatherum hirsutius	Savanna Bluestem
Liliopsida	Poales	Poaceae	Anatherum longiberbe	Longbeard Bluestem
Liliopsida	Poales	Poaceae	Anatherum tenuispatheum	Maritime Bushy Bluestem
Liliopsida	Poales	Poaceae	Anatherum virginicum	Broomsedge Bluestem
Liliopsida	Poales	Poaceae	Aristida beyrichiana	Southern Wiregrass
Liliopsida	Poales	Poaceae	Aristida purpurascens tenuispica	
Magnoliopsida	Rosales	Rosaceae	Aronia arbutifolia	Red Chokeberry
Magnoliopsida	Gentianales	Apocynaceae	Asclepias connivens	Largeflower Milkweed
Magnoliopsida	Gentianales	Apocynaceae	Asclepias pedicellata	Savannah Milkweed
Magnoliopsida	Fabales	Polygalaceae	Asemeia grandiflora	Showy Milkwort
Magnoliopsida	Magnoliales	Annonaceae	Asimina incana	Woolly Pawpaw
Magnoliopsida	Magnoliales	Annonaceae	Asimina reticulata	Netted Pawpaw
Liliopsida	Poales	Poaceae	Axonopus fissifolius	Common Carpetgrass
Magnoliopsida	Asterales	Asteraceae	Baccharis glomeruliflora	Silverling
Magnoliopsida	Asterales	Asteraceae	Baccharis halimifolia	Groundsel Tree
Magnoliopsida	Lamiales	Plantaginaceae	Bacopa caroliniana	Carolina Water-Hyssop
Magnoliopsida	Ericales	Ericaceae	Bejaria racemosa	Tarflower
Magnoliopsida	Asterales	Asteraceae	Bidens alba	White Beggarticks
Magnoliopsida	Asterales	Asteraceae	Bidens laevis	Smooth Beggarticks
Magnoliopsida	Asterales	Asteraceae	Bidens mitis	Smallfruit Beggarticks
Magnoliopsida	Asterales	Asteraceae	Bigelowia australis	Florida Rayless Goldenrod
Magnoliopsida	Asterales	Asteraceae	Bigelowia australis	Florida Rayless Goldenrod
Magnoliopsida	Lamiales	Orobanchaceae	Buchnera americana	American Bluehearts
Magnoliopsida	Lamiales	Orobanchaceae	Buchnera floridana	Florida Bluehearts
Magnoliopsida	Lamiales	Lamiaceae	Callicarpa americana	American Beautyberry
Liliopsida	Commelinales	Commelinaceae	Callisia ornata	Scrub Roseling

Deep Creek Preserve iNaturalist Species Observation Table

Liliopsida	Asparagales	Orchidaceae	Calopogon pallidus	Pale Grasspink
Liliopsida	Asparagales	Orchidaceae	Calopogon tuberosus	Tuberous Grasspink
Liliopsida	Poales	Cyperaceae	Carex verrucosa	Warty Sedge
Magnoliopsida	Asterales	Asteraceae	Carphephorus corymbosus	Coastalplain Chaffhead
Liliopsida	Poales	Poaceae	Cenchrus spinifex	Coastal Sandbur
Magnoliopsida	Apiales	Apiaceae	Centella erecta	American Coinwort
Magnoliopsida	Gentianales	Rubiaceae	Cephalanthus occidentalis	Buttonbush
Magnoliopsida	Fabales	Fabaceae	Chamaecrista nictitans	Sensitive Pea
Magnoliopsida	Asterales	Asteraceae	Chaptalia tomentosa	Pineland Daisy
Magnoliopsida	Asterales	Asteraceae	Chrysopsis scabrella	Coastalplain Goldenaster
Magnoliopsida	Asterales	Asteraceae	Chrysopsis subulata	Scrubland Goldenaster
Magnoliopsida	Asterales	Asteraceae	Cirsium horridulum	Bristle Thistle
Magnoliopsida	Asterales	Asteraceae	Cirsium nuttallii	Nuttall'S Thistle
Liliopsida	Poales	Cyperaceae	Cladium mariscus	Swamp Sawgrass
Liliopsida	Commelinales	Commelinaceae	Commelina erecta	Whitemouth Dayflower
Magnoliopsida	Asterales	Asteraceae	Conoclinium coelestinum	Blue Mistflower
Magnoliopsida	Asterales	Asteraceae	Coreopsis leavenworthii	Leavenworth'S Tickseed
Magnoliopsida	Malvales	Cistaceae	Crocanthemum corymbosum	Pine Barren Frostweed
Magnoliopsida	Fabales	Fabaceae	Crotalaria rotundifolia	Rabbitbells
Liliopsida	Poales	Cyperaceae	Cyperus eragrostis	Tall Flatsedge
Liliopsida	Poales	Cyperaceae	Cyperus odoratus	Fragrant Flatsedge
Liliopsida	Poales	Cyperaceae	Cyperus strigosus	Straw-Colored Flatsedge
Liliopsida	Poales	Cyperaceae	Cyperus surinamensis	Tropical Flatsedge
Liliopsida	Poales	Poaceae	Dichanthelium portoricense	Hemlock Witchgrass
Liliopsida	Poales	Poaceae	Dichanthelium scabriusculum	Woolly Witchgrass
Liliopsida	Poales	Poaceae	Dichanthelium strigosum	Roughhair Rosette Grass
Polypodiopsida	Gleicheniales	Gleicheniaceae	Dicranopteris flexuosa	Drooping Forked Fern
Magnoliopsida	Gentianales	Rubiaceae	Diodia virginiana	Buttonweed
Magnoliopsida	Ericales	Ebenaceae	Diospyros virginiana	American Persimmon
Magnoliopsida	Caryophyllales	Droseraceae	Drosera capillaris	Pink Sundew
Liliopsida	Poales	Cyperaceae	Eleocharis flavescens	Yellow Spikerush
Magnoliopsida	Asterales	Asteraceae	Elephantopus elatus	Tall Elephant'S-Foot
Liliopsida	Poales	Poaceae	Eragrostis spectabilis	Purple Lovegrass
Magnoliopsida	Asterales	Asteraceae	Erechtites hieraciifolius	American Burnweed
Magnoliopsida	Asterales	Asteraceae	Erigeron canadensis	Horseweed
Magnoliopsida	Asterales	Asteraceae	Erigeron quercifolius	Oakleaf Fleabane
Magnoliopsida	Asterales	Asteraceae	Erigeron strigosus	Daisy Fleabane
Magnoliopsida	Asterales	Asteraceae	Erigeron vernus	Early Whitetop Fleabane
Liliopsida	Poales	Eriocaulaceae	Eriocaulon decangulare	Ten-Angled Pipewort
Magnoliopsida	Apiales	Apiaceae	Eryngium baldwinii	Baldwin'S Eryngo
Magnoliopsida	Apiales	Apiaceae	Eryngium yuccifolium	Rattlesnake Master
Liliopsida	Asparagales	Orchidaceae	Eulophia alta	Wild Coco
Magnoliopsida	Asterales	Asteraceae	Eupatorium capillifolium	Dogfennel
Magnoliopsida	Asterales	Asteraceae	Eupatorium leptophyllum	False Fennel
Magnoliopsida	Asterales	Asteraceae	Eupatorium mohrii	Mohr'S Thoroughwort
Magnoliopsida	Asterales	Asteraceae	Eupatorium rotundifolium	Round-Leaved Boneset
Magnoliopsida	Malpighiales	Euphorbiaceae	Euphorbia cumulicola	Coastal Dune Sandmat
Liliopsida	Poales	Poaceae	Eustachys petraea	Pinewoods Fingergrass
Magnoliopsida	Asterales	Asteraceae	Euthamia caroliniana	Slender Goldentop
Magnoliopsida	Caryophyllales	Amaranthaceae	Froelichia floridana	Plains Snakecotton
Liliopsida	Poales	Cyperaceae	Fuirena scirpoidea	Southern Umbrella-Sedge
Magnoliopsida	Fabales	Fabaceae	Galactia elliottii	Elliott'S Milkpea
Magnoliopsida	Fabales	Fabaceae	Galactia regularis	Eastern Milk-Pea
Magnoliopsida	Fabales	Fabaceae	Galactia volubilis	Eastern Milkpea
Magnoliopsida	Ericales	Ericaceae	Gaylussacia dumosa	Dwarf Huckleberry
Magnoliopsida	Ericales	Ericaceae	Gaylussacia nana	Dwarf Dangleberry
Magnoliopsida	Ericales	Ericaceae	Gaylussacia tomentosa	Blue Huckleberry
Magnoliopsida	Gentianales	Gelsemiaceae	Gelsemium sempervirens	Yellow Jessamine

Deep Creek Preserve iNaturalist Species Observation Table

Magnoliopsida	Ericales	Theaceae	Gordonia lasianthus	Loblolly Bay
Magnoliopsida	Lamiales	Plantaginaceae	Gratiola hispida	Rough Hedgehyssop
Magnoliopsida	Lamiales	Plantaginaceae	Gratiola ramosa	Branched Hedge-Hyssop
Liliopsida	Asparagales	Orchidaceae	Habenaria floribunda	Toothpetal False Reinorchid
Magnoliopsida	Asterales	Asteraceae	Helenium pinnatifidum	Southeastern Sneezeweed
Magnoliopsida	Asterales	Asteraceae	Helianthus angustifolius	Narrowleaf Sunflower
Magnoliopsida	Gentianales	Rubiaceae	Houstonia procumbens	Roundleaf Bluet
Magnoliopsida	Apiales	Araliaceae	Hydrocotyle umbellata	Manyflower Marshpennywort
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum cistifolium	Roundpod St. John'S-Wort
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum fasciculatum	Peelbark St. John'S Wort
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum gentianoides	Pineweed
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum hypericoides	St. Andrew'S Cross
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum mutilum	Dwarf St. John'S Wort
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum myrtifolium	Myrtleleaf St. John'S Wort
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum tenuifolium	Sandhill St. John'S-Wort
Magnoliopsida	Malpighiales	Hypericaceae	Hypericum tetrapetalum	Fourpetal St. Johnswort
Magnoliopsida	Aquifoliales	Aquifoliaceae	Ilex cassine	Dahoon Holly
Magnoliopsida	Aquifoliales	Aquifoliaceae	Ilex glabra	Gallberry
Magnoliopsida	Fabales	Fabaceae	Indigofera suffruticosa	Shrubby Indigo
Magnoliopsida	Solanales	Convolvulaceae	Ipomoea cordatotriloba	Tievine
Magnoliopsida	Saxifragales	Iteaceae	Itea virginica	Virginia Sweetspire
Liliopsida	Poales	Juncaceae	Juncus biflorus	Large Grass-Leaved Rush
Pinopsida	Pinales	Cupressaceae	Juniperus virginiana	Eastern Redcedar
Pinopsida	Pinales	Cupressaceae	Juniperus virginiana silicicola	Southern Redcedar
Magnoliopsida	Asterales	Asteraceae	Krigia virginica	Virginia Dwarfdandelion
Liliopsida	Commelinales	Haemodoraceae	Lachnanthes caroliana	Carolina Redroot
Magnoliopsida	Asterales	Asteraceae	Lactuca graminifolia	Grass-Leaf Lettuce
Bryopsida	Dicranales	Leucobryaceae	Leucobryum albidum	White Moss
Magnoliopsida	Asterales	Asteraceae	Liatris spicata resinosa	Coastal Plain Blazingstar
Magnoliopsida	Asterales	Asteraceae	Liatris spicata	Dense Blazing Star
Magnoliopsida	Asterales	Asteraceae	Liatris tenuifolia	Shortleaf Blazing Star
Magnoliopsida	Lamiales	Plantaginaceae	Linaria canadensis	Canada Toadflax
Magnoliopsida	Lamiales	Plantaginaceae	Linaria floridana	Florida Toadflax
Magnoliopsida	Lamiales	Linderniaceae	Lindernia monticola	Flatrock Pimpernel
Magnoliopsida	Asterales	Campanulaceae	Lobelia feayana	Bay Lobelia
Magnoliopsida	Asterales	Campanulaceae	Lobelia glandulosa	Glade Lobelia
Magnoliopsida	Asterales	Campanulaceae	Lobelia paludosa	White Lobelia
Magnoliopsida	Myrtales	Onagraceae	Ludwigia maritima	Seaside Primrose-Willow
Magnoliopsida	Myrtales	Onagraceae	Ludwigia octovalvis	Mexican Primrose-Willow
Magnoliopsida	Myrtales	Onagraceae	Ludwigia virgata	Savannah Primrose-Willow
Lycopodiopsida	Lycopodiales	Lycopodiaceae	Lycopodiella alopecuroides	Foxtail Bog Clubmoss
Lycopodiopsida	Lycopodiales	Lycopodiaceae	Lycopodiella appressa	Appressed Bog Clubmoss
Magnoliopsida	Asterales	Asteraceae	Lygodesmia aphylla	Rose Rush
Magnoliopsida	Ericales	Ericaceae	Lyonia fruticosa	Coastal Plain Staggerbush
Magnoliopsida	Ericales	Ericaceae	Lyonia lucida	Fetterbush Lyonia
Magnoliopsida	Myrtales	Lythraceae	Lythrum alatum	Winged Loosestrife
Magnoliopsida	Myrtales	Lythraceae	Lythrum alatum lanceolatum	Winged Lythrum
Magnoliopsida	Lamiales	Plantaginaceae	Mecardonia acuminata	Common Axil-Flower
Magnoliopsida	Asterales	Asteraceae	Mikania scandens	Climbing Hempvine
Magnoliopsida	Fabales	Fabaceae	Mimosa floridana	Florida Sensitive Briar
Magnoliopsida	Fabales	Fabaceae	Mimosa microphylla	Littleleaf Sensitive-Briar
Magnoliopsida	Fabales	Fabaceae	Mimosa quadrivalvis	Fourvalve Mimosa
Magnoliopsida	Gentianales	Loganiaceae	Mitreola petiolata	Lax Hornpod
Magnoliopsida	Fagales	Myricaceae	Morella cerifera	Wax Myrtle
Liliopsida	Asparagales	Asparagaceae	Nolina atopocarpa	Florida Beargrass
Magnoliopsida	Nymphaeales	Nymphaeaceae	Nuphar advena	Spatterdock
Magnoliopsida	Cornales	Nyssaceae	Nyssa biflora	Swamp Tupelo
Magnoliopsida	Asterales	Asteraceae	Oclemena reticulata	Pinebarren Aster

Deep Creek Preserve iNaturalist Species Observation Table

Bryopsida	Dicranales	Octoblepharaceae	Octoblepharum albidum	White Octoblepharum Moss
Magnoliopsida	Myrtales	Onagraceae	Oenothera simulans	Southern Beeblossom
Magnoliopsida	Caryophyllales	Cactaceae	Opuntia austrina	Florida Pricklypear
Polypodiopsida	Osmundales	Osmundaceae	Osmunda spectabilis	American Royal Fern
Polypodiopsida	Osmundales	Osmundaceae	Osmundastrum cinnamomeum	Cinnamon Fern
Liliopsida	Poales	Eriocaulaceae	Paepalanthus anceps	Common Bogbuttons
Magnoliopsida	Asterales	Asteraceae	Palafoxia feayi	Feay'S Palafox
Lycopodiopsida	Lycopodiales	Lycopodiaceae	Palhinhaea cernua	Staghorn Clubmoss
Liliopsida	Poales	Poaceae	Panicum amarum	Bitter Panicgrass
Liliopsida	Poales	Poaceae	Panicum hemitomon	Maidencane
Liliopsida	Poales	Poaceae	Paspalum setaceum	Thin Paspalum
Polypodiopsida	Polypodiales	Thelypteridaceae	Pelazoneuron kunthii	Widespread Maiden Fern
Magnoliopsida	Laurales	Lauraceae	Persea palustris	Swamp Bay
Liliopsida	Poales	Poaceae	Phanopyrum gymnocarpon	Cottonmouth Grass
Polypodiopsida	Polypodiales	Polypodiaceae	Phlebodium aureum	Golden Polypody
Magnoliopsida	Asterales	Asteraceae	Phoebanthus grandiflorus	Florida False Sunflower
Magnoliopsida	Lamiales	Verbenaceae	Phyla nodiflora	Turkey Tangle Frogfruit
Magnoliopsida	Solanales	Solanaceae	Physalis walteri	Dune Groundcherry
Magnoliopsida	Lamiales	Lamiaceae	Piloblephis rigida	Florida Pennyroyal
Magnoliopsida	Lamiales	Lentibulariaceae	Pinguicula caerulea	Blue Butterwort
Magnoliopsida	Lamiales	Lentibulariaceae	Pinguicula pumila	Small Butterwort
Pinopsida	Pinales	Pinaceae	Pinus clausa	Sand Pine
Pinopsida	Pinales	Pinaceae	Pinus elliottii	Slash Pine
Pinopsida	Pinales	Pinaceae	Pinus palustris	Longleaf Pine
Magnoliopsida	Asterales	Asteraceae	Pityopsis tracyi	Tracy'S Silkgrass
Magnoliopsida	Asterales	Asteraceae	Pluchea baccharis	Rosy Camphorweed
Magnoliopsida	Asterales	Asteraceae	Pluchea foetida	Stinking Camphorweed
Magnoliopsida	Lamiales	Tetrachondraceae	Polypremum procumbens	Rust Weed
Liliopsida	Commelinales	Pontederiaceae	Pontederia cordata	Pickerelweed
Magnoliopsida	Saxifragales	Haloragaceae	Proserpinaca palustris	Marsh Mermaidweed
Magnoliopsida	Saxifragales	Haloragaceae	Proserpinaca pectinata	Combleaf Mermaidweed
Magnoliopsida	Asterales	Asteraceae	Pseudognaphalium obtusifolium	Sweet Everlasting
Polypodiopsida	Polypodiales	Dennstaedtiaceae	Pteridium aquilinum	Common Bracken
Polypodiopsida	Polypodiales	Dennstaedtiaceae	Pteridium aquilinum pseudocaudatum	Tailed Bracken Fern
Magnoliopsida	Asterales	Asteraceae	Pterocaulon pycnostachyum	Dense-Spike Blackroot
Magnoliopsida	Apiales	Apiaceae	Ptilimnium capillaceum	Herbwilliam
Magnoliopsida	Asterales	Asteraceae	Pyrrhopappus carolinianus	Carolina Desert-Chicory
Magnoliopsida	Fagales	Fagaceae	Quercus hemisphaerica	Darlington Oak
Magnoliopsida	Fagales	Fagaceae	Quercus minima	Dwarf Live Oak
Magnoliopsida	Fagales	Fagaceae	Quercus myrtifolia	Myrtle Oak
Magnoliopsida	Fagales	Fagaceae	Quercus nigra	Water Oak
Magnoliopsida	Fagales	Fagaceae	Quercus virginiana	Southern Live Oak
Magnoliopsida	Myrtales	Melastomataceae	Rhexia alifanus	Savannah Meadowbeauty
Magnoliopsida	Myrtales	Melastomataceae	Rhexia mariana	Maryland Meadowbeauty
Magnoliopsida	Myrtales	Melastomataceae	Rhexia mariana mariana	Maryland Meadowbeauty
Magnoliopsida	Myrtales	Melastomataceae	Rhexia nashii	Maid Marian
Magnoliopsida	Myrtales	Melastomataceae	Rhexia nuttallii	Nuttall'S Meadowbeauty
Magnoliopsida	Myrtales	Melastomataceae	Rhexia petiolata	Short-Stemmed Meadowbeauty
Magnoliopsida	Myrtales	Melastomataceae	Rhexia virginica	Virginia Meadowbeauty
Magnoliopsida	Sapindales	Anacardiaceae	Rhus copallinum	Shining Sumac
Liliopsida	Poales	Cyperaceae	Rhynchospora cephalantha	Bunched Beaksedge
Liliopsida	Poales	Cyperaceae	Rhynchospora colorata	Whitetop Sedge
Liliopsida	Poales	Cyperaceae	Rhynchospora inundata	Narrowfruit Horned Beaksedge
Liliopsida	Poales	Cyperaceae	Rhynchospora latifolia	Sandswamp Whitetop Sedge
Liliopsida	Poales	Cyperaceae	Rhynchospora odorata	Fragrant Beaksedge
Magnoliopsida	Rosales	Rosaceae	Rubus cuneifolius	Sand Blackberry
Magnoliopsida	Rosales	Rosaceae	Rubus persistens	Persistent Blackberry
Magnoliopsida	Rosales	Rosaceae	Rubus trivialis	Southern Dewberry

Deep Creek Preserve iNaturalist Species Observation Table

Liliopsida	Arecales	Arecaceae	Sabal palmetto	Cabbage Palmetto
Magnoliopsida	Gentianales	Gentianaceae	Sabatia brevifolia	Shortleaf Rose Gentian
Magnoliopsida	Gentianales	Gentianaceae	Sabatia grandiflora	Largeflower Rose Gentian
Magnoliopsida	Gentianales	Gentianaceae	Sabatia stellaris	Marsh Pink
Liliopsida	Alismatales	Alismataceae	Sagittaria chapmanii	Chapman'S Arrowhead
Liliopsida	Alismatales	Alismataceae	Sagittaria graminea	Grass-Leaved Arrowhead
Liliopsida	Alismatales	Alismataceae	Sagittaria lancifolia	Lanceleaf Arrowhead
Magnoliopsida	Malpighiales	Salicaceae	Salix caroliniana	Carolina Willow
Magnoliopsida	Lamiales	Lamiaceae	Salvia lyrata	Lyreleaf Sage
Magnoliopsida	Dipsacales	Viburnaceae	Sambucus canadensis	American Black Elderberry
Magnoliopsida	Ericales	Sarraceniaceae	Sarracenia minor	Hooded Pitcher Plant
Liliopsida	Asparagales	Asparagaceae	Schoenolirion albiflorum	White Sunnybell
Magnoliopsida	Lamiales	Plantaginaceae	Scoparia dulcis	Licorice Weed
Magnoliopsida	Lamiales	Lamiaceae	Scutellaria integrifolia	Helmet Skullcap
Magnoliopsida	Fabales	Polygalaceae	Senega cruciata	Drumheads Milkwort
Magnoliopsida	Fabales	Polygalaceae	Senega cymosa	Tall Pinebarren Milkwort
Magnoliopsida	Fabales	Polygalaceae	Senega lutea	Orange Milkwort
Magnoliopsida	Fabales	Polygalaceae	Senega nana	Candyroot
Magnoliopsida	Fabales	Polygalaceae	Senega ramosa	Low Pinebarren Milkwort
Magnoliopsida	Fabales	Polygalaceae	Senega rugelii	Yellow Bachelor'S Button
Magnoliopsida	Fabales	Polygalaceae	Senega setacea	Coastal Plain Milkwort
Liliopsida	Arecales	Arecaceae	Serenoa repens	Saw Palmetto
Magnoliopsida	Asterales	Asteraceae	Sericocarpus tortifolius	Dixie Aster
Liliopsida	Poales	Poaceae	Setaria parviflora	Knotroot Bristlegrass
Liliopsida	Liliales	Smilacaceae	Smilax glauca	Sawbrier
Liliopsida	Liliales	Smilacaceae	Smilax laurifolia	Laurel-Leaf Greenbrier
Magnoliopsida	Solanales	Solanaceae	Solanum capsicoides	Cockroach Berry
Magnoliopsida	Asterales	Asteraceae	Solidago chapmanii	Chapman'S Goldenrod
Magnoliopsida	Asterales	Asteraceae	Solidago odora	Sweet Goldenrod
Liliopsida	Poales	Poaceae	Sorghastrum secundum	Lopsided Indiangrass
Magnoliopsida	Gentianales	Rubiaceae	Spermacoce remota	Woodland False Buttonweed
Sphagnopsida	Sphagnales	Sphagnaceae	Sphagnum portoricense	Puerto Rico Sphagnum
Sphagnopsida	Sphagnales	Sphagnaceae	Sphagnum strictum	Pale Bog-Moss
Liliopsida	Asparagales	Orchidaceae	Spiranthes praecox	Grass-Leaved Ladies' Tresses
Liliopsida	Asparagales	Orchidaceae	Spiranthes vernalis	Spring Ladies' Tresses
Liliopsida	Poales	Poaceae	Sporobolus pumilus	Marsh Hay Cordgrass
Magnoliopsida	Lamiales	Lamiaceae	Stachys floridana	Florida Hedgenettle
Liliopsida	Liliales	Melanthiaceae	Stenanthium densum	Osceola'S Plume
Liliopsida	Poales	Eriocaulaceae	Syngonanthus flavidulus	Yellow Hatpins
Magnoliopsida	Laurales	Lauraceae	Tamala borbonia	Redbay
Pinopsida	Pinales	Cupressaceae	Taxodium ascendens	Pondcypress
Pinopsida	Pinales	Cupressaceae	Taxodium distichum	Baldcypress
Polypodiopsida	Polypodiales	Blechnaceae	Telmatoblechnum serrulatum	Toothed Midsorus Fern
Magnoliopsida	Lamiales	Lamiaceae	Teucrium canadense	American Germander
Magnoliopsida	Apiales	Apiaceae	Tiedemannia filiformis	Water Cowbane
Liliopsida	Poales	Bromeliaceae	Tillandsia bartramii	Bartram'S Airplant
Liliopsida	Poales	Bromeliaceae	Tillandsia recurvata	Ballmoss
Liliopsida	Poales	Bromeliaceae	Tillandsia setacea	Southern Needleleaf Airplant
Liliopsida	Poales	Bromeliaceae	Tillandsia simulata	Manatee River Airplant
Liliopsida	Poales	Bromeliaceae	Tillandsia usneoides	Spanish Moss
Magnoliopsida	Sapindales	Anacardiaceae	Toxicodendron radicans radicans	
Magnoliopsida	Lamiales	Lamiaceae	Trichostema dichotomum	Blue Curls
Magnoliopsida	Asterales	Asteraceae	Trilisa paniculata	Hairy Chaffhead
Liliopsida	Poales	Typhaceae	Typha latifolia	Broadleaf Cattail
Magnoliopsida	Lamiales	Lentibulariaceae	Utricularia cornuta	Horned Bladderwort
Magnoliopsida	Lamiales	Lentibulariaceae	Utricularia inflata	Swollen Bladderwort
Magnoliopsida	Lamiales	Lentibulariaceae	Utricularia purpurea	Purple Bladderwort
Magnoliopsida	Lamiales	Lentibulariaceae	Utricularia subulata	Zigzag Bladderwort

Deep Creek Preserve iNaturalist Species Observation Table

Magnoliopsida	Ericales	Ericaceae	Vaccinium myrsinites	Shiny Blueberry
Magnoliopsida	Ericales	Ericaceae	Vaccinium stamineum	Deerberry
Magnoliopsida	Lamiales	Verbenaceae	Verbena scabra	Sandpaper Vervain
Magnoliopsida	Lamiales	Verbenaceae	Verbena urticifolia	White Vervain
Magnoliopsida	Fabales	Fabaceae	Vicia acutifolia	Fourleaf Vetch
Magnoliopsida	Fabales	Fabaceae	Vigna luteola	Wild Cowpea
Magnoliopsida	Malpighiales	Violaceae	Viola vittata	Southern Water Violet
Magnoliopsida	Vitales	Vitaceae	Vitis rotundifolia	Muscadine
Polypodiopsida	Polypodiales	Pteridaceae	Vittaria lineata	Shoestring Fern
Polypodiopsida	Polypodiales	Blechnaceae	Woodwardia areolata	Netted Chain Fern
Polypodiopsida	Polypodiales	Blechnaceae	Woodwardia virginica	Virginia Chainfern
Liliopsida	Poales	Xyridaceae	Xyris ambigua	Coastalplain Yellow-Eyed Grass
Liliopsida	Poales	Xyridaceae	Xyris brevifolia	Shortleaf Yellow-Eyed Grass
Liliopsida	Poales	Xyridaceae	Xyris caroliniana	Carolina Yellow-Eyed Grass
Liliopsida	Poales	Xyridaceae	Xyris elliottii	Elliott'S Yelloweyed Grass
Liliopsida	Poales	Xyridaceae	Xyris flabelliformis	Savannah Yellow-Eyed Grass
Liliopsida	Poales	Xyridaceae	Xyris jupicai	Richard'S Yellow-Eyed Grass
Liliopsida	Poales	Xyridaceae	Xyris platylepis	Tall Yellow-Eyed Grass
Liliopsida	Poales	Xyridaceae	Xyris platylepis	Tall Yellow-Eyed Grass
Liliopsida	Asparagales	Asparagaceae	Yucca filamentosa	Common Yucca

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

DCP Management Plan

LOCATION

Volusia County, Florida



DESCRIPTION

None

Local office

Florida Ecological Services Field Office

(352) 448-9151
(772) 562-4288
fw4flesregs@fws.gov

777 37th St
Suite D-101
Vero Beach, FL 32960-3559

https://www.fws.gov/office/florida-ecological-services

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Florida Panther Puma (=Felis) concolor coryi Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1763	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Eastern Black Rail Laterallus jamaicensis jamaicensis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10477	Threatened
Everglade Snail Kite Rostrhamus sociabilis plumbeus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7713	Endangered

NOT FOR CONSULTATION

Florida Scrub-jay Aphelocoma coerulescens — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6174

Whooping Crane Grus americana — EXPN
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/758

Wood Stork Mycteria americana — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8477

Reptiles

NAME	STATUS
Eastern Indigo Snake Drymarchon couperi Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/646	Threatened
Southern Hognose Snake Heterodon simus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3248	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Flowering Plants

NAME	STATUS
Rugel's Pawpaw Deeringothamnus rugelii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5355	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds

NOT FOR CONSULTATION

- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

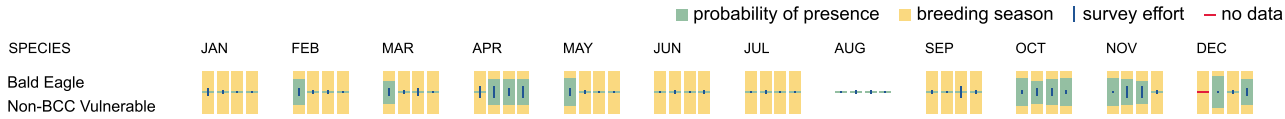
NOT FOR CONSULTATION

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

NOT FOR CONSULTATION

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bachman's Sparrow Peucaea aestivalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6177	Breeds May 1 to Sep 30
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Great Blue Heron Ardea herodias occidentalis This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31
King Rail Rallus elegans This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5

NOT FOR CONSULTATION

Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper Calidris melanotos This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Prairie Warbler Setophaga discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone Arenaria interpres morinella This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Swallow-tailed Kite Elanoides forficatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

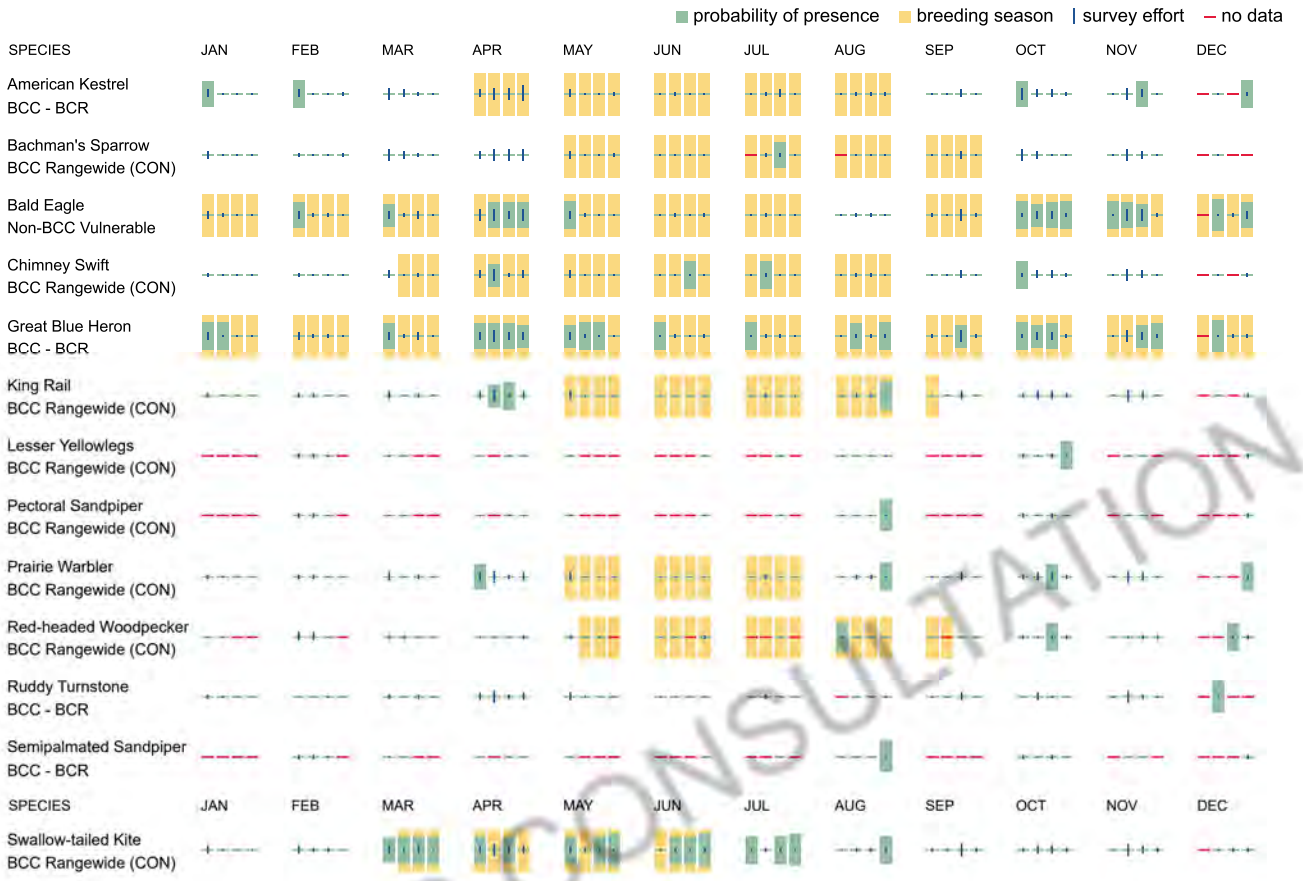
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

APPENDIX M

Appendix D:

Management Prospectus for Carter Quail Ranch, a fee simple proposal.

Concurrent with its adoption of the annual Conservation and Recreation Lands list of acquisition projects pursuant to s. 259.035, the board of trustees shall adopt a management prospectus for each project. The management prospectus shall delineate:

1. *The management goals for the property;*
2. *The conditions that will affect the intensity of management;*
3. *An estimate of the revenue-generating potential of the property, if appropriate;*
4. *A timetable for implementing the various stages of management and for providing access to the public, if applicable;*
5. *A description of potential multiple-use activities as described in this section and s. 253.034;*
6. *Provisions for protecting existing infrastructure and for ensuring the security of the project upon acquisition;*
7. *The anticipated costs of management and projected sources of revenue, including legislative appropriations, to fund management needs; and*
8. *Recommendations as to how many employees will be needed to manage the property, and recommendations as to whether local governments, volunteer groups, the former landowner, or other interested parties can be involved in the management.*

FLORIDA FOREVER MANAGEMENT PROSPECTUS for

Carter–Quail Ranch Potential Acquisition; County of Volusia

Office of Environmental Services - Division of State Lands

Introduction

The Carter-Quail Ranch Property lies within eastern Volusia County, in the unincorporated area of New Smyrna Beach. Located on State Road 415, approximately 2 miles south of the intersection of State Road 44 and 415. There are 7 contiguous parcels that make up the project area, which is approximately 1,339 acres. This is a fee-simple proposal and Volusia County is requesting to be named manager of the Quail Ranch Property. The southwest corner of the Carter property abuts the northeast corner of the 8,000-acre Deep Creek Preserve (DCP), which is managed by Volusia County. DCP is within Florida Forever's Volusia Conservation Corridor project area.

Existing uses of the property include improved pasture for grazing, sod production and silviculture.

This management prospectus serves as a framework for the management plan that will be created after acquisition.

Management Goals and Objectives

The land will be managed as holistic system under the same guidelines as the County of Volusia's DCP Management Plan. This is due to the adjacency/proximity to the Carter-Quail Ranch and the similar types of habitats.

Management goals include:

- implementation of an "Objective-based Management" program in furtherance of the "Desired Future Conditions"
- reintroduce prescribed burning
- harvesting and other silvicultural activities
- maintenance and restoration of surface hydrology
- protection and enhancement of listed species
- control of non- native invasive species

Fire Management Strategies

- Prescribed fire, or an appropriate alternative, shall be used as a primary management technique. Volusia County will develop and implement a comprehensive prescribed burning plan/program on the Property
- Where appropriate, mechanical methods intended to mimic some of the beneficial effects of fire may be used in lieu of prescribed burning or to improve the effectiveness of a subsequent prescribed fire

- The timing and use of fire, or use of alternative methods, should be evaluated in the context of the overall forest management program as applied to attain and maintain the Desired Future Conditions
- Existing internal roads or other features (e.g., trails) should be used where appropriate, as fire breaks
- To the extent practical, allow prescribed fire to enter fire dependent wetland communities
- As practical, use prescribed fire to facilitate the continued health and promote regeneration of listed plant species present on the property
- Evaluate existing firelines for retention and future use
- Consider establishing, where necessary, firelines adjacent to property boundaries

Forest Management/Silviculture Strategies

- Implement appropriate silvicultural and restorative practices (such as, but not limited to, roller chopping, mulching, harvesting and artificial regeneration) as may be necessary to attain and maintain the applicable Desired Future Conditions for the communities within the property.
- Monitor for disease or insect infestations and, if necessary, implement appropriate control practices,
- Follow the applicable “Best Management Practices” (BMPs) when conducting management activities
- Implement activities to restore the pine plantations to natural conditions, consistent with the applicable Desired Future Conditions
- Where appropriate, implement procedures and practices favorable to longleaf pine, in lieu of slash pine
- Restore existing plantations to coincide with historical/natural conditions of the affected community more closely

Maintain and Restore Surface Hydrology

- Ensure that culverts are structurally sound and of functional utility
- Where appropriate, “low water crossings” or other innovative alternatives should be used in lieu of installing new or replacement culverts
- Evaluate the impact of existing internal roads and, where appropriate, remove or reconstruct in a manner which would further restoration of the natural surface water pattern
- Ditch restoration to be undertaken where applicable to restore or maintain the natural surface water pattern

Protection and Enhancement of Listed Species

- The protection of all listed flora and fauna will be done per state and/or federal guidelines and policies
- All protections and enhancements will be afforded these species

Non-Native Invasive Species

- Prevention will be the focus of non-native invasive species management. When such species are discovered, an eradication plan will be developed and implemented based upon the severity of the infestation and the availability of personnel and funding
- Currently, there is an area of bamboo on the northern border that will need treatment

Brief Description of Natural Habitat\Resources, Existing Conditions

The Ranch currently has borrow pits, ditches, screened gazebo, established interior trails, single-family residence and cattle.

Pine flatwoods, including mesic, wet and scrubby are the dominant communities on this property. Other natural communities that were identified on site include strand, basin and dome swamps. A small portion, less than 20%, of the natural habitats have been converted to pasture and borrow pit.

Low intensity silviculture operations have been practiced within the pine flatwoods. While most of the flatwoods have been replanted with slash pine, older longleaf, pond and some minor amounts of sand pine are relatively common. These older trees are good indicators as to past flatwoods conditions. The understory of the flatwoods is generally comprised of gallberry, various oaks, palmetto, fetterbush, wiregrass and numerous herbaceous species. Ecologically, the flatwoods within the property is in fair to good condition. Palmetto dominates the understory, but grasses and herbs are common.

The property contains 450 +/- acres of wetlands along the western portion that is dominated by bald and pond cypress as part of the wetland system which extends off the property. Other dominant groundcover species, which commonly occur, include maidencane, St. John's wort and yellow-eyed grass. Less abundant species include red maple, swamp laurel oak, cabbage palm, wax myrtle, royal fern and cinnamon fern.

The western property boundary is a drainage canal named "Lake Ashby Canal". This Canal, when viewing the Property Appraisers webpage, appears to be within the property boundary. The water quality of the borrow pit on the northern edge of the property appears to be good. Some small patches of cattails and maidencane are found along the shoreline. An extensive internal network of roads are found on this property. These roads

are in good condition and some of them have received an application of asphalt millings to improve the road's durability.

Conditions Affecting Intensity of Management

The conditions which may affect the intensity of management will be directly related to the goals for the site. These goals will be assessed further upon acquisition and will be incorporated into the ten-year management plan. Potential concerns include:

- Ensuring surface hydrology is not impacted by management techniques.
- Protection of wetland resources
- Maintenance of the existing internal road/trail system to ensure access throughout the Property
- Ensure management activities do not cause negative impacts to the Property's existing population of the endemic Rugel's Pawpaw

Public Access

This project will have public access. There will be a designated parking area. The recreation allowed on site will be passive and consist of the following rec types: hiking, fishing, camping, wildlife viewing, bird watching, and other compatible passive recreation. Uses and structures shall be designed and constructed to avoid or minimize impact upon natural resources, listed species and identify cultural/historical resources.

Volusia County's Environmental, Cultural, Historic, and Outdoor Recreation (ECHO) Program is another local ballot measure approved in concert with Volusia Forever in 2000 and again in 2020. If this property is acquired, ECHO could serve as the funding source to provide resource-compatible recreation opportunities, interpret the archeological or historic significance of the area, and environmental education enhancements. Recently, the Volusia County Council approved $1.8 million to fund "Environmental Education and Recreation Plans" at selected conservation properties/Preserves in an effort to improve amenities and enhance visitor experiences. Learn more about ECHO here: https://www.volusia.org/echo

Provisions for Security and Infrastructure

The security provisions would mirror that of Deep Creek Preserve (DCP) which is standard operating procedure of Volusia County Land Management.

- Boundaries would be clearly marked,
- Fences and gates maintained and installed,
- Volusia County Sherriff's office will monitor the property.

Cooperators in Management Activities

Due to the proximity of both the Carter Property and Deep Creek Preserve, which the county currently manages, the County is best positioned to manage this property. Land Management in Volusia County is funded from a 15% set-aside of proceeds from the Volusia Forever ad valorem assessment. The land management team are experienced professional who currently manage 37,111 acres across the county.

Proposed Management Timeline

Year 1

- Mark boundaries and secure property to County standards.
- Develop management plan including a five-year prescribed fire, forest management/silviculture and recreation plans.
- Develop a management plan to treat/eradicate previously mentioned bamboo.
- Develop and establish recreation amenities (parking, trails, interpretive signs).
- Open to public.

Year 2

- Install and maintain firelines as needed.
- Conduct mechanical fuel reduction treatments as appropriate.
- Begin gradual reintroduction of prescribed fire.
- Monitor known cultural, historical and archeological resources.

Year 3

- Continue fuel reduction and prescribed fire as appropriate.
- Initiate upland ecological restoration through silvicultural practices.
- Maintain recreation amenities.
- Continue to monitor known cultural, historical and archeological resources.

Year 4

- Continue fuel reduction and prescribed fire as appropriate.
- Continue upland ecological restoration through silvicultural practices.
- Initiate hydrological restoration as appropriate.
- Maintain recreation amenities.

Year 5

- Continue fuel reduction and prescribed fire as appropriate.
- Continue upland ecological restoration through silvicultural practices.
- Continue hydrological restoration as appropriate.
- Maintain recreation amenities.

Management Costs and Sources of Revenue:

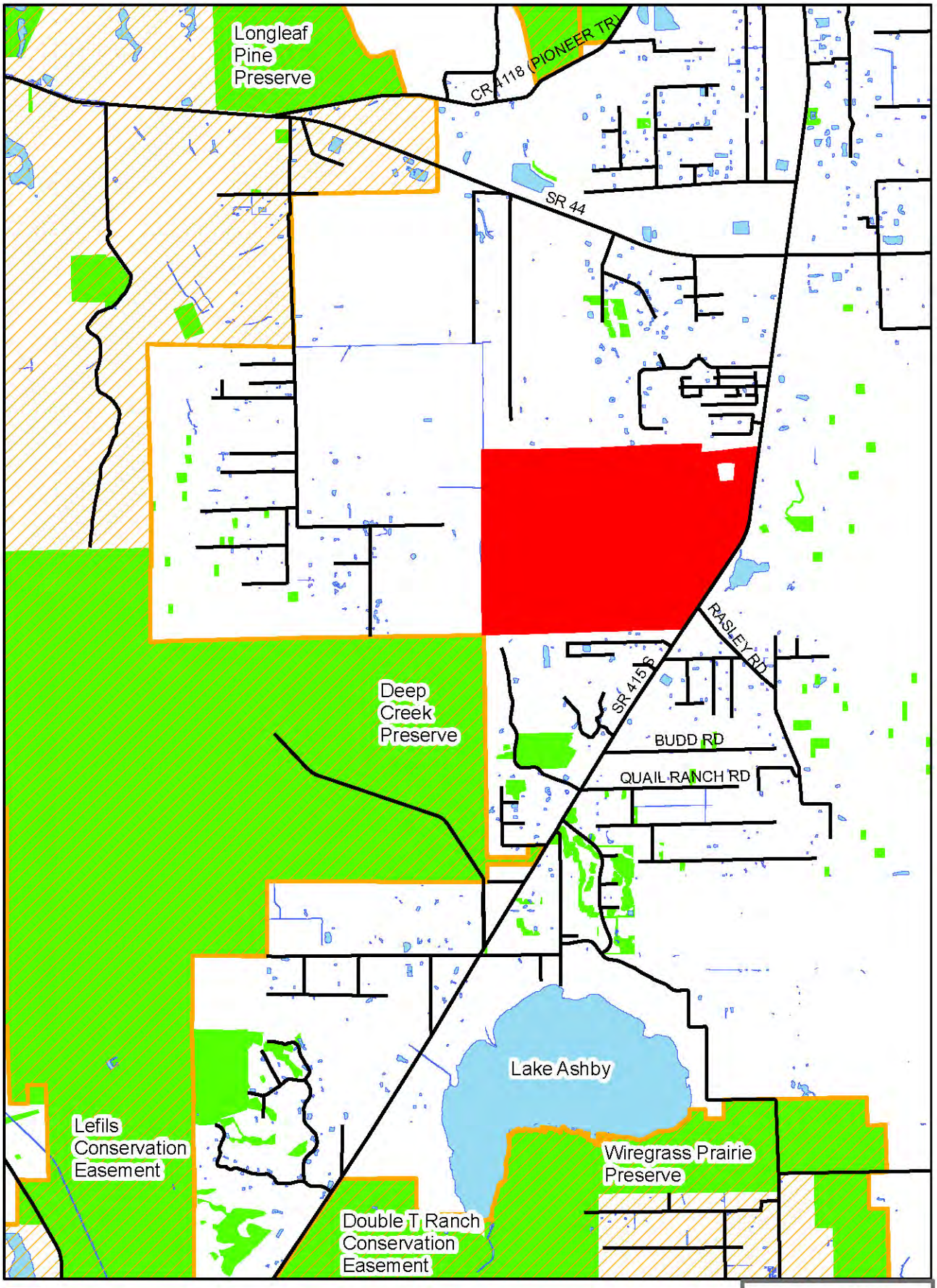
Initial costs are as follows:

Site security (boundary maintenance, signage, fencing/gates)	**$15,000**
Management plan development	**$50,000**
Capital (amenities establishment and development)	**$300,000**
Prescribed fire	**$65,000**
Mechanical fuel reduction	**$60,000**
Upland ecological restoration (430 acres Longleaf Pine restoration, invasive species control)	**$200,000**
Hydrological restoration (culverts and/or low water crossing installation	**$15,000**

Sources of Revenue:

- Volusia Forever 15% set aside
- Volusia ECHO
- Timber
- Allowable lease opportunities
- Vendor agreements for the rental of canoes/kayaks/fishing equipment.
- Facility rentals for special events.
- Primitive camping.

Existing Conservation Lands



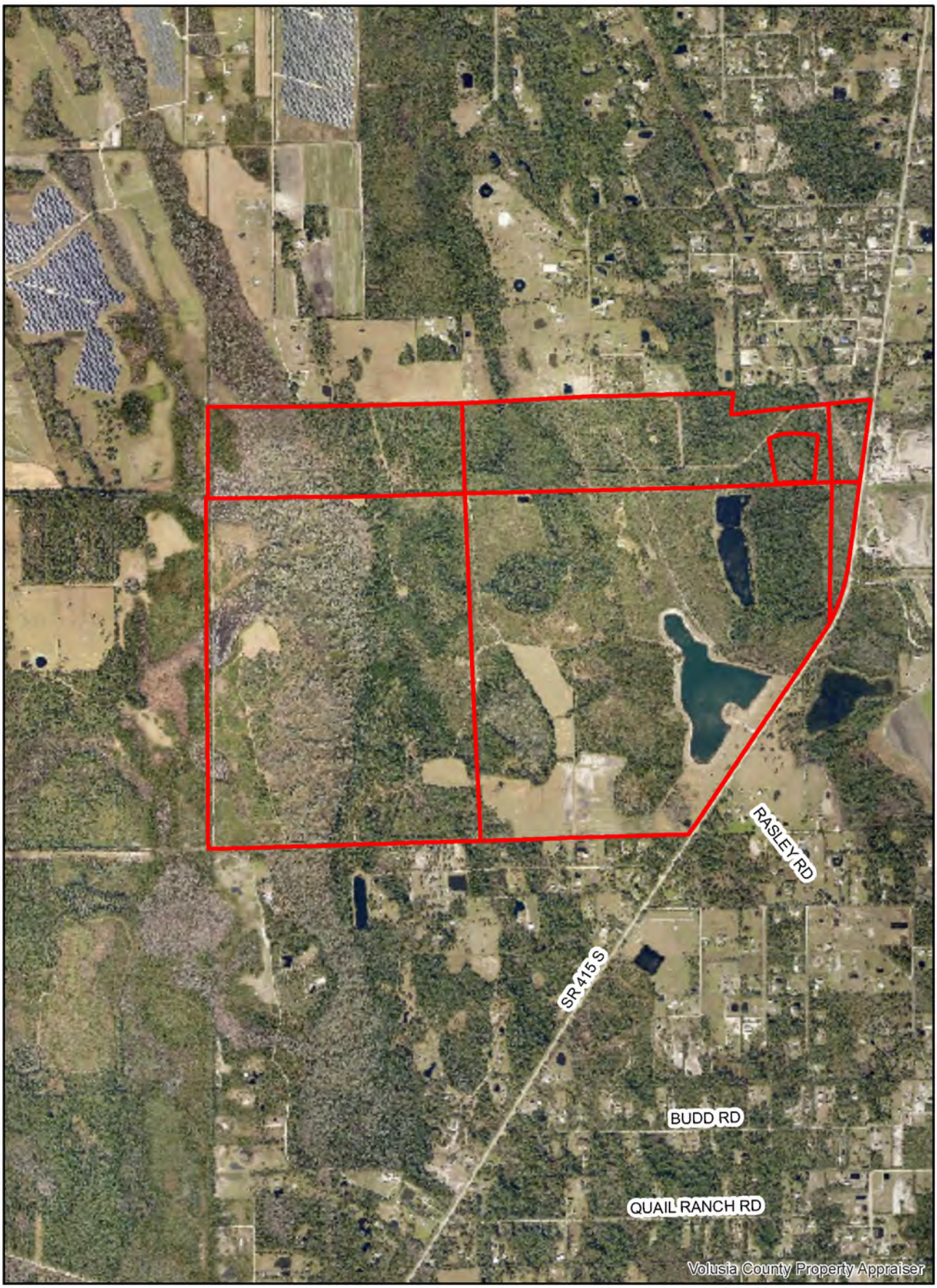
VF Applicant Property-1338.08 Acres

Volusia Conservation Corridor

Existing Conservation Lands and Conservation Easements

Deep Creek Preserve: 8,041 Acres
Longleaf Pine Preserve: 11,808 Acres
Wiregrass Prairie Preserve: 1,423 Acres

Conservation Easements: 4,543 Acres
Small Lots: 60 Acres


RASLEY RD
SR 415 S
BUDD RD
QUAIL RANCH RD
Volusia County Property Appraiser
N
VF Applicant Property

APPENDIX N

NEWS FOR IMMEDIATE RELEASE

April 9, 2026

Media contacts:
Michael Ryan, 386-801-0188
Pat Kuehn, 386-386-748-3989

Volusia County to Update Deep Creek Preserve Management Plan

VOLUSIA COUNTY, FLORIDA – Volusia County's Resource Stewardship Division will update the management plan for Deep Creek Preserve, which includes natural lands south of State Road 44 and west of State Road 415, east of Deltona and Lake Helen, in unincorporated Volusia County.

The preserve's Management Plan Advisory Group will meet from 9 a.m. to noon Tuesday, April 28, in the training room at the Thomas C. Kelly Administration Center, 123 W. Indiana Ave., DeLand.

On Thursday, June 11, the Advisory Group will hold a public hearing from 5:30 to 7 p.m. in the auditorium at the UF IFAS Extension Office, 3100 E. New York Ave., DeLand, to solicit public comments on the preserve's management plan update. The Advisory Group will meet immediately after the public hearing.

Interested individuals can access the agendas and draft management plan at Land Management Plans 30 days before the public hearing.

Members of the public may submit comments orally or in writing at the hearing. Written comments also may be submitted to Ashlyn Russell at arussell@volusia.org or by mail to the Resource Stewardship Division, 123 W. Indiana Ave., Suite 200, DeLand, FL 32720. Comments must be received by 1 p.m. June 11.

Two or more County Council members may attend the meetings and hearing. For more information, contact Nick Dunnam at ndunnam@volusia.org or 386-943-7081, ext. 13459.

- 30 -

Notice under the Americans with Disabilities Act (Title II)

Pursuant to Title II of the ADA, Volusia County does not discriminate against qualified individuals with disabilities in providing or conducting its services, programs or activities. Anyone requiring an auxiliary aid or service for effective communication, or a modification of county policies to participate in a meeting or other event, should contact the county's ADA Title II coordinator, Jim Corbett, at 386-248-1760 no later than two business days before the event or meeting.

NEWS FOR IMMEDIATE RELEASE

April 21, 2026

Media contacts:
Michael Ryan, 386-801-0188
Pat Kuehn, 386-386-748-3989

Volusia County Invites Public Input on Deep Creek Preserve Management Plan

VOLUSIA COUNTY, FLORIDA – Volusia County's Resource Stewardship Division is updating the management plan for Deep Creek Preserve to incorporate the recently acquired Carter Quail Ranch, expanding the preserve's protected natural lands in southeast Volusia County.

The Carter Quail Ranch encompasses natural lands south of State Road 44 and west of State Road 415 and has been formally added to the preserve. The management plan update will reflect this addition and guide future stewardship of the expanded preserve.

The Deep Creek Preserve Advisory Group will meet from 9 a.m. to 12 p.m. Tuesday, April 28, in the TCK training room at the Thomas C. Kelly Administration Center, 123 W. Indiana Ave., DeLand.

Then on Thursday, June 11 the Advisory Group will hold a public hearing from 5:30 to 7 p.m., in the auditorium at the UF/IFAS Extension Office, 3100 E. New York Ave., DeLand, to solicit public comments on the preserve's management plan update. The Advisory Group will meet immediately after the public hearing.

Interested individuals can access the agendas and draft management plan at Land Management Plans 30 days before the public hearing. Members of the public may submit comments orally or in writing at the hearing. Written comments also may be submitted to Ashlyn Russell at arussell@volusia.org or by mail to the Resource Stewardship Division, 123 W. Indiana Ave., Suite 200, DeLand, FL 32720. Comments must be received by 1 p.m. June 11.

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Outlook

Deep Creek Preserve Management Plan Advisory Group

From dyoung <dyoung@ybeconsulting.com>
Date Tue 4/21/2026 12:47 PM
To Bio1 <Bio1@ybeconsulting.com>
Cc Ashlyn Russell <arussell@volusia.org>

3 attachments (19 MB)

FDEP FL Forever Management Prospectus.pdf; DRAFT Deep Creek Preserve Mngmt Plan for MPAG.pdf; VCNR - Deep Creek Mgmt Plan 4-28-2026 Press Release.pdf;

Please note that the advisory group members have been blind-copied on this email to prevent any Sunshine law violations.*

Dear MPAG Members,
Thank you for agreeing to participate as a Management Plan Advisory Group Member. The MPAG serves an important role in providing public input and following Florida Statutes that govern the development and approval of certain management plans.

Three documents are attached to this email for your review:

1. FDEP FL Forever Management Prospectus. This document was prepared by the Florida Department of Environmental Protection, Division of State Lands as part of their Florida Forever Evaluation Report during the acquisition process. This document, along with input from MPAG, is to be used in development of a management plan to be approved by the Acquisition and Restoration Council.
2. DRAFT Deep Creek Preserve Mngmt Plan for MPAG. This document was prepared by the Volusia County Resource Stewardship Division and Young Bear Environmental Consulting for your review and input.
3. VCNR - Deep Creek Mgmt Plan 4-28-2026 Press Release. This document is the County's press release announcing the MPAG meeting and the subsequent public hearing.

More details on the process will be provided during each meeting. Please review the attached documents and be prepared to provide comments at the MPAG meeting. We will follow up with an agenda prior to each meeting.

Regards,
Danny Young
Young Bear Environmental Consulting
ybeconsulting.com
386-212-1952

AGENDA

Management Plan Advisory Group Meeting
Tuesday, April 28, 2026, 9:00 am - noon
Community Assistance Conference Room
TCK Administration Center
121 W. Rich Ave., DeLand

1. Call to Order, Welcome and Roll Call
2. Advisory Group Orientation
3. Deep Creek Preserve Management Plan Overview
4. Advisory Group Comments by Section
5. Advisory Group Comments - Individual
6. Adjournment

On Thursday, June 11, the Advisory Group will hold a public hearing from 5:30 to 7 p.m. in the auditorium at the UF IFAS Extension Office, 3100 E. New York Ave., DeLand, to solicit public comments on the preserve's management plan update. The Advisory Group will meet immediately after the public hearing.

Interested individuals can access the agendas and draft management plan at Land Management Plans 30 days before the public hearing.

Members of the public may submit comments orally or in writing at the hearing. Written comments also may be submitted to Ashlyn Russell at arussell@volusia.org or by mail to the Resource Stewardship Division, 123 W. Indiana Ave., Suite 200, DeLand, FL 32720. Comments must be received by 1 p.m. June 11.

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MANAGEMENT PROSPECTUS
DEEP CREEK WILDLIFE MANAGEMENT AREA

The management prospectus is defined by Florida Statutes as follows:

Ch. 259.032 F.S.

(7)(a) All lands managed under this chapter and s. 2 53.034 must be:

1. Managed in a manner that will provide the greatest combination of benefits to the public and to the resources.
2. Managed for public outdoor recreation which is compatible with the conservation and protection of public lands. Such management may include, but not be limited to, the following public recreational uses: fishing, hunting, camping, bicycling, hiking, nature study, swimming, boating, canoeing, horseback riding, diving, model hobbyist activities, birding, sailing, jogging, and other related outdoor activities.

(b) Concurrent with its adoption of the annual list of acquisition projects pursuant to s. 259.035, the board shall adopt a management prospectus for each project. **The management prospectus shall delineate:**

1. The management goals for the property;
2. The conditions that will affect the intensity of management;
3. An estimate of the revenue-generating potential of the property, if appropriate;
4. A timetable for implementing the various stages of management and for providing access to the public, if applicable;
5. A description of potential multiple-use activities as described in this section and s. 2 53.034;
6. Provisions for protecting existing infrastructure and for ensuring the security of the project upon acquisition;
7. The anticipated costs of management and projected sources of revenue, including legislative appropriations, to fund management needs; and
8. Recommendations as to how many employees will be needed to manage the property, and recommendations as to whether local governments, volunteer groups, the former landowner, or other interested parties can be involved in the management.

Management Prospectus
Deep Creek Wildlife Management Area

1. The management goals for the property

2. The conditions that will affect the intensity of management

3. An estimate of the revenue-generating potential of the property, if appropriate

4. A timetable for implementing the various stages of management and for providing access to the public, if applicable

5. A description of potential multiple-use activities as described in this section and s. 2 53.034

6. Provisions for protecting existing infrastructure and for ensuring the security of the project upon acquisition

7. The anticipated costs of management and projected sources of revenue, including legislative appropriations, to fund management needs

8. Recommendations as to how many employees will be needed to manage the property, and recommendations as to whether local governments, volunteer groups, the former landowner, or other interested parties can be involved in the management.

Deep Creek Preserve Management Plan Overview

County of Volusia

Resource Stewardship Division

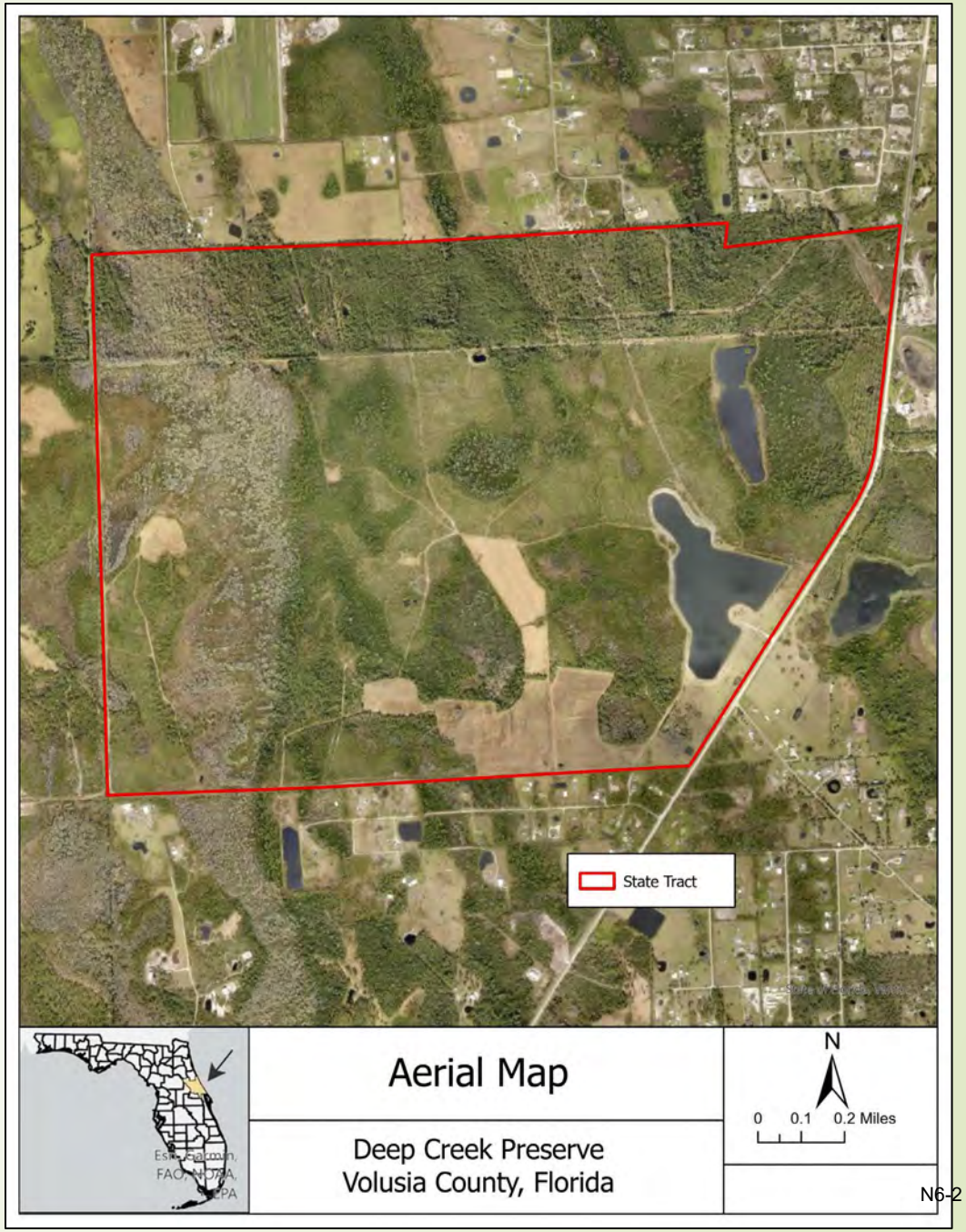
- Management Plan Advisory Group Meeting – April 28, 2026
- Public Hearing – June 11, 2026

YOUNG BEAR ENVIRONMENTAL
YBECONSULTING.COM

Volusia County
FLORIDA

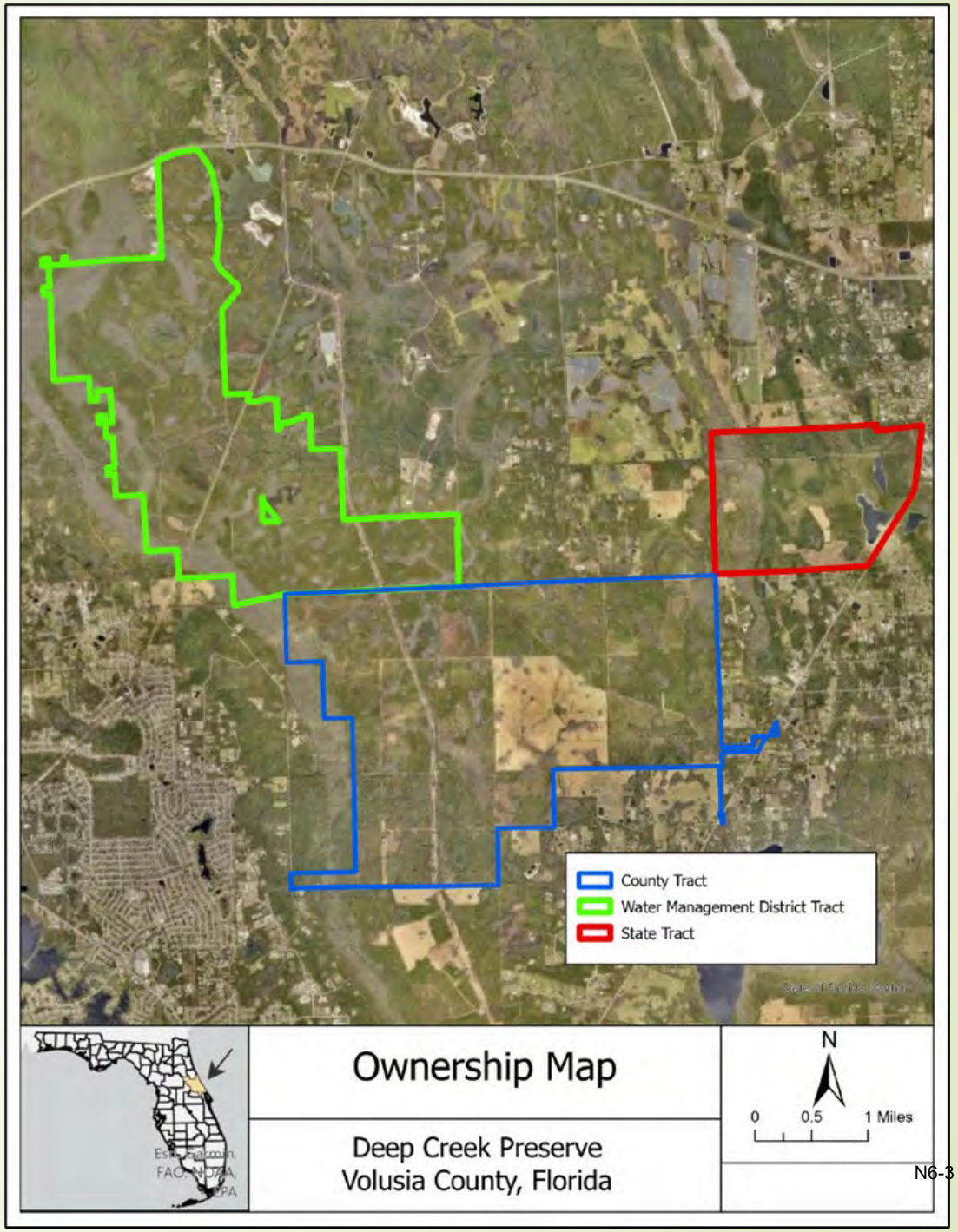
State Acquisition of Carter Quail Ranch

- Acquired March 2025
- Partnership between Volusia Forever and Florida Forever
- FL BOT sole ownership (aka fee simple)
- State Tract is 1,339.66 acres
- Purpose of Acquisition:
  - Conservation and protection of natural and cultural resources
  - Public access
  - Outdoor recreation



Expanded Deep Creek Preserve (DCP)

- DCP – 9,873 acres
- Volusia County - designated lead manager
  - State lease executed Dec. 2025
  - WMD Coop MA



WHY ARE WE HERE?

Florida Statutes dictate management of state-owned land:

- F.S. 259, 253, 256 …
- 10-Year Plans (MPAG, ARC)
- 5-Year Reviews (LMR, MRT)

Two primary factors:

- Resource management, protection
- Public access, outdoor recreation that is ***compatible with conservation***

259.032 Conservation and recreation lands.—

(b) Individual management plans required by s. 253.034(5) for parcels over 160 acres and for parcels located within a state park must be developed with input from an advisory group.

1. Members of the advisory group shall include, at a minimum, representatives of the lead land managing agency, comanaging entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official. If habitat or potentially restorable habitat for imperiled species is located on state lands, the Fish and Wildlife Conservation Commission and the Department of Agriculture and Consumer Services must be included on any advisory group required under chapter 253, and the short-term and long-term management goals required under chapter 253 must advance the goals and objectives of imperiled species management without restricting other uses identified in the management plan.

2. The advisory group shall conduct at least one public hearing within the county in which the parcel or project is located. For those parcels or projects within more than one county, at least one areawide public hearing is acceptable and the lead managing agency shall invite a local elected official from each county. The areawide public hearing must be held in the county in which the core parcels are located. At least 30 days before the public hearing, notice of the hearing must be posted on the parcel or project designated for management, advertised in a paper of general circulation, and announced at a scheduled meeting of the local governing body.

3. The management prospectus required pursuant to paragraph (7)(b) must be available to the public for a period of 30 days before the public hearing.

(c) Once a plan is adopted, the managing agency or entity shall update the plan at least every 10 years in a form and manner adopted by rule of the board. Such updates for parcels over 160 acres and for parcels located within a state park must be developed with input from an advisory group. Such plans may include transfers of leasehold interests to appropriate conservation organizations or governmental entities designated by the council for uses consistent with the purposes of the organizations and the protection, preservation, conservation, restoration, and proper management of the lands and their resources. Volunteer management assistance is encouraged, including, but not limited to, assistance by youths participating in programs sponsored by state or local agencies, by volunteers sponsored by environmental or civic organizations, and by individuals participating in programs for committed delinquents and adults.

WHY ARE WE HERE?

ARC Approval Deadline:	December 19, 2026								
	February	March	April	May	June	July	September	October	December
Report Preparation									
Field Work									
1st Review w Co (incl. G&Os)	February 18, 2026								
2nd Review w Co		March 17, 2026							
Final Draft			April 13, 2026						
Advisory Group									
Prospectus to AG			April 21, 2026						
AG Meeting Date			April 28, 2026						
Draft Plan / Public Notice				May 7, 2026					
Public Hearing					June 11, 2026				
SJRWMD Approval									
Draft Plan for Review		March 17, 2026							
Agenda Deadline & Final Draft			April 17, 2026						
Meeting Date				May 12, 2026					
County Council Approval									
Council Agenda (w Final Plan)					June 22, 2026				
Council Meeting						July 21, 2026			
ARC Approval									
MP to OES							September 4, 2026		
MP to ARC							September 10, 2026		
ARC Agenda to OES								October 30, 2026	
ARC Meeting (Tallahassee)									December 10, 2026

Location and Access

Location:

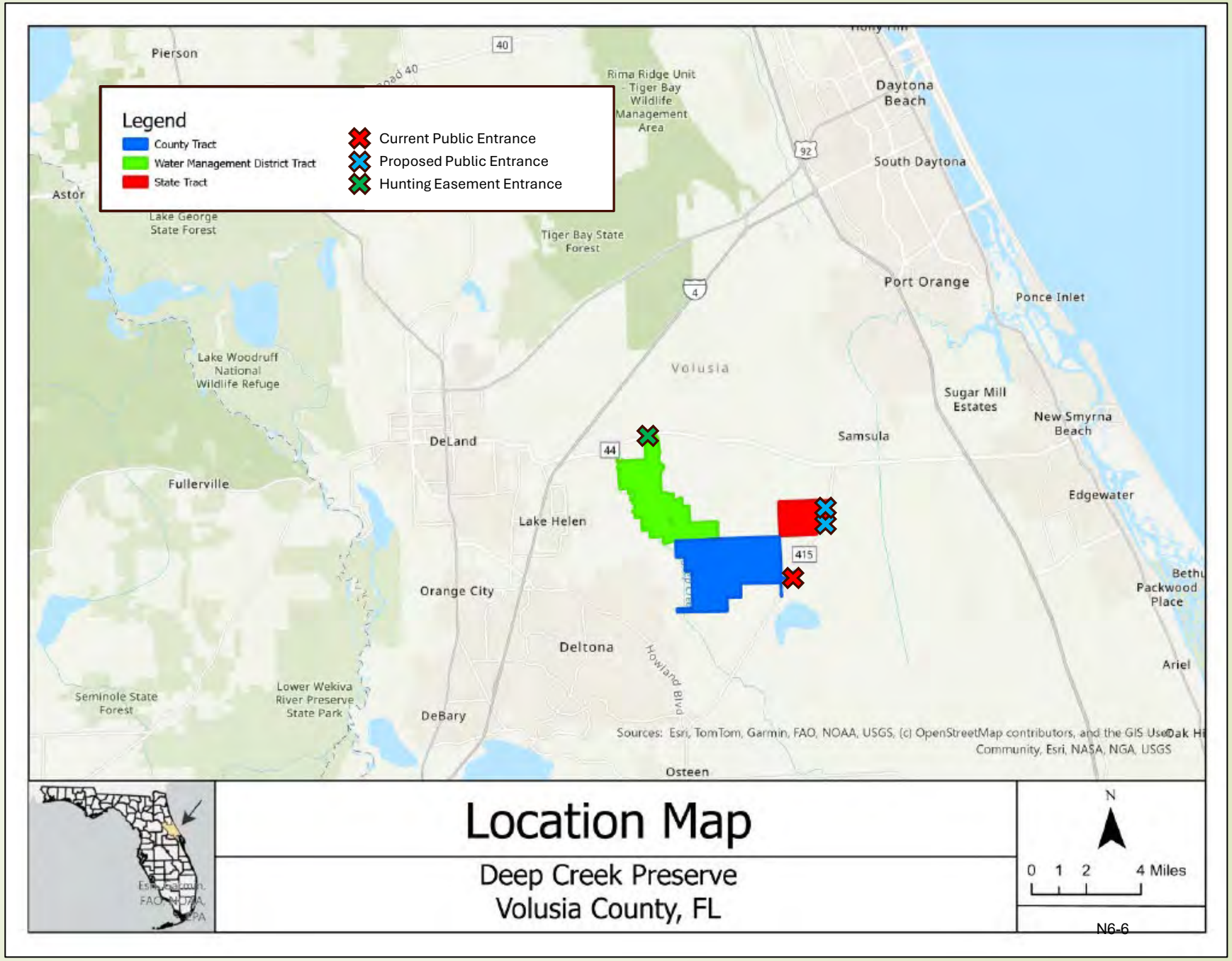
Volusia County

Entrances:

One current public entrance (County Tract)

Two proposed entrances (State Tract, one public, one hunting)

One current hunting easement entrance (WMD Tract)



Adjacent Public Lands

State Owned Properties (BOT):

Tiger Bay State Forest

SJRWMD Properties:

Clark Bay Conservation Area

Palm Bluff Conservation Area

Turnbull Hammock

County Owned Properties:

Longleaf Pine Preserve

Doris Leeper Spruce Creek Preserve

Wiregrass Prairie Preserve

Smyrna Dunes Park

Lighthouse Point

City Owned Properties:

Port Orange City Forest

Ponce Preserve

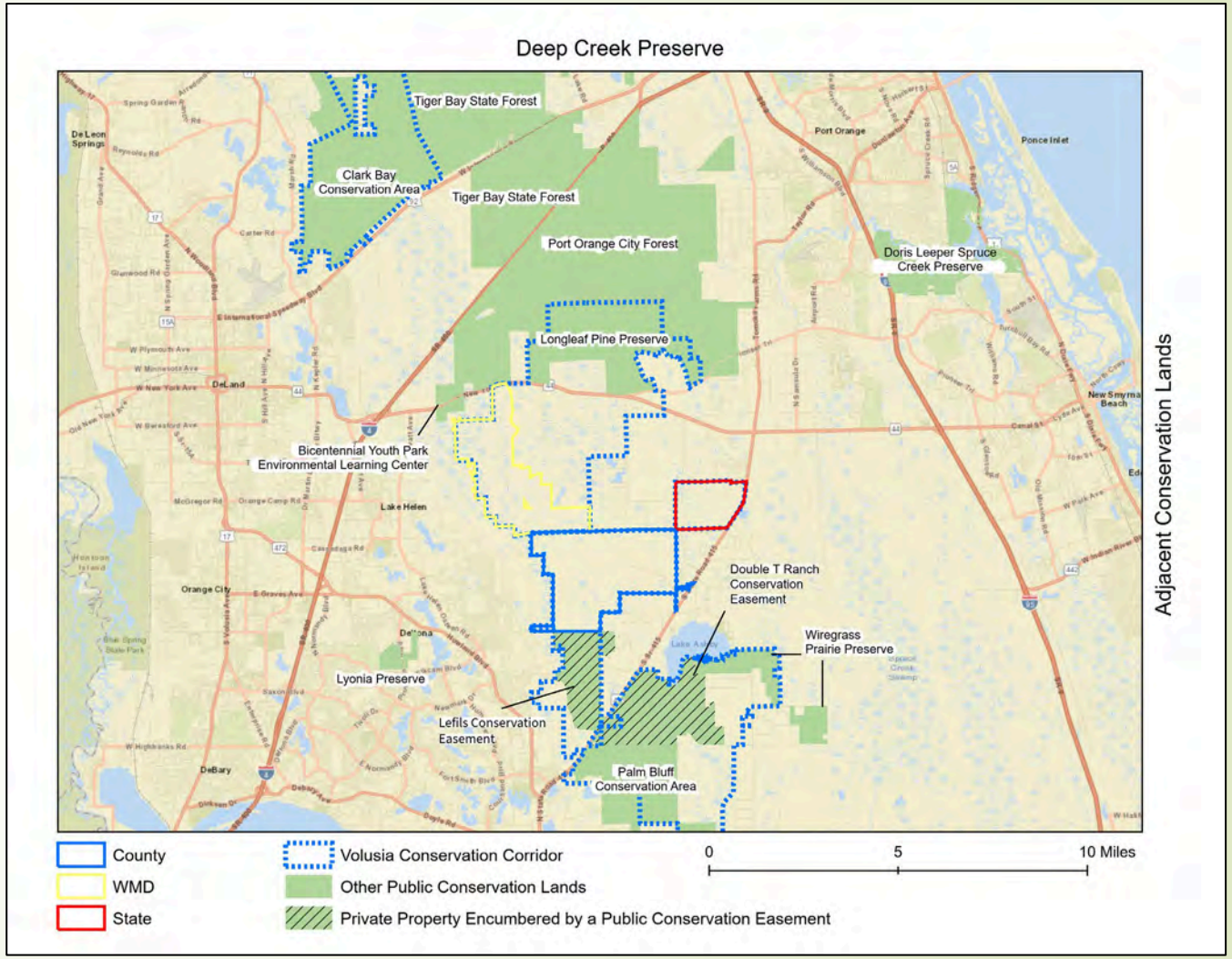
Less Than Fee Simple/Privately Owned Properties

Lefils Conservation Easement

Double T Ranch Conservation Easement

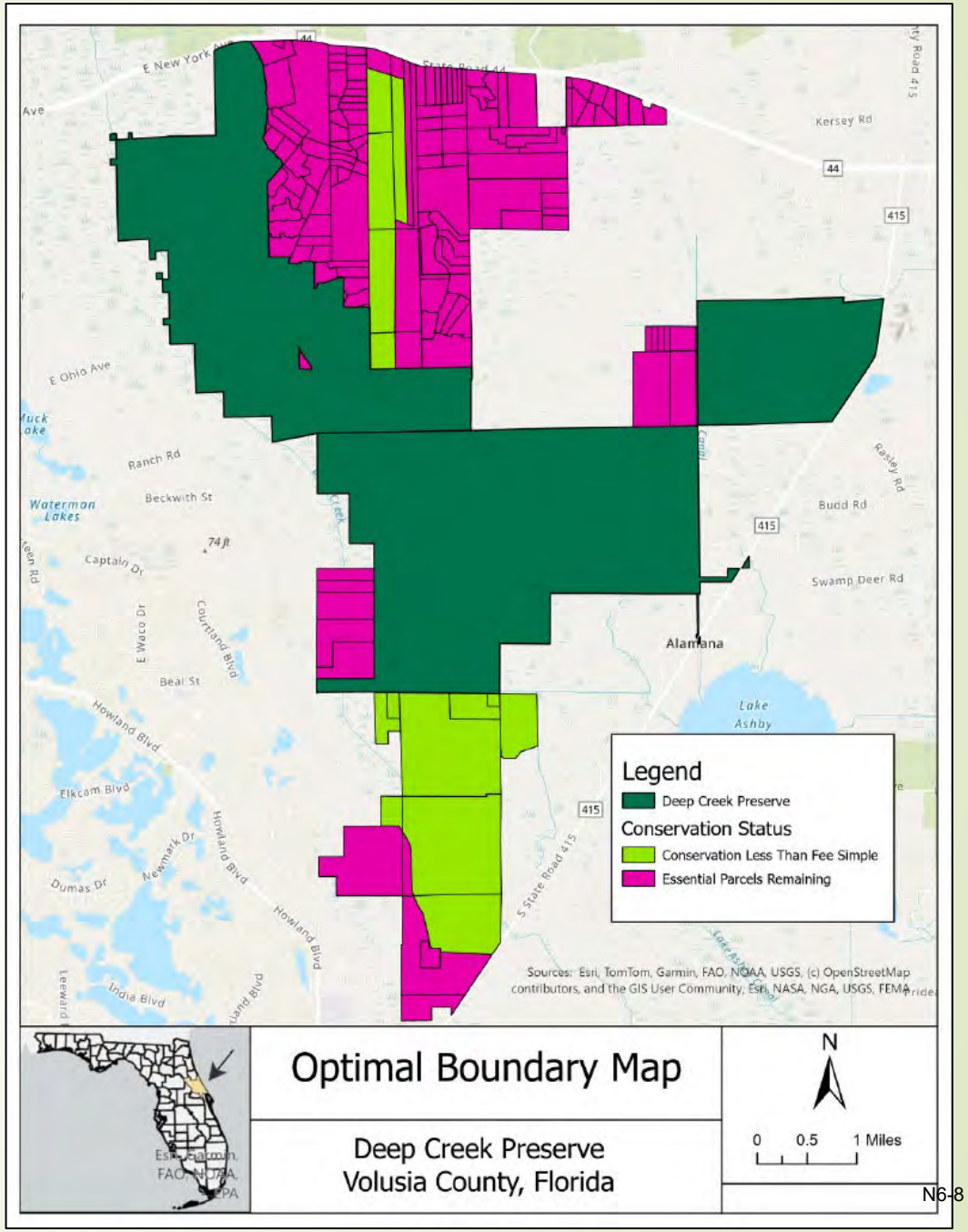
Gamble Place

Farmton Mitigation Bank

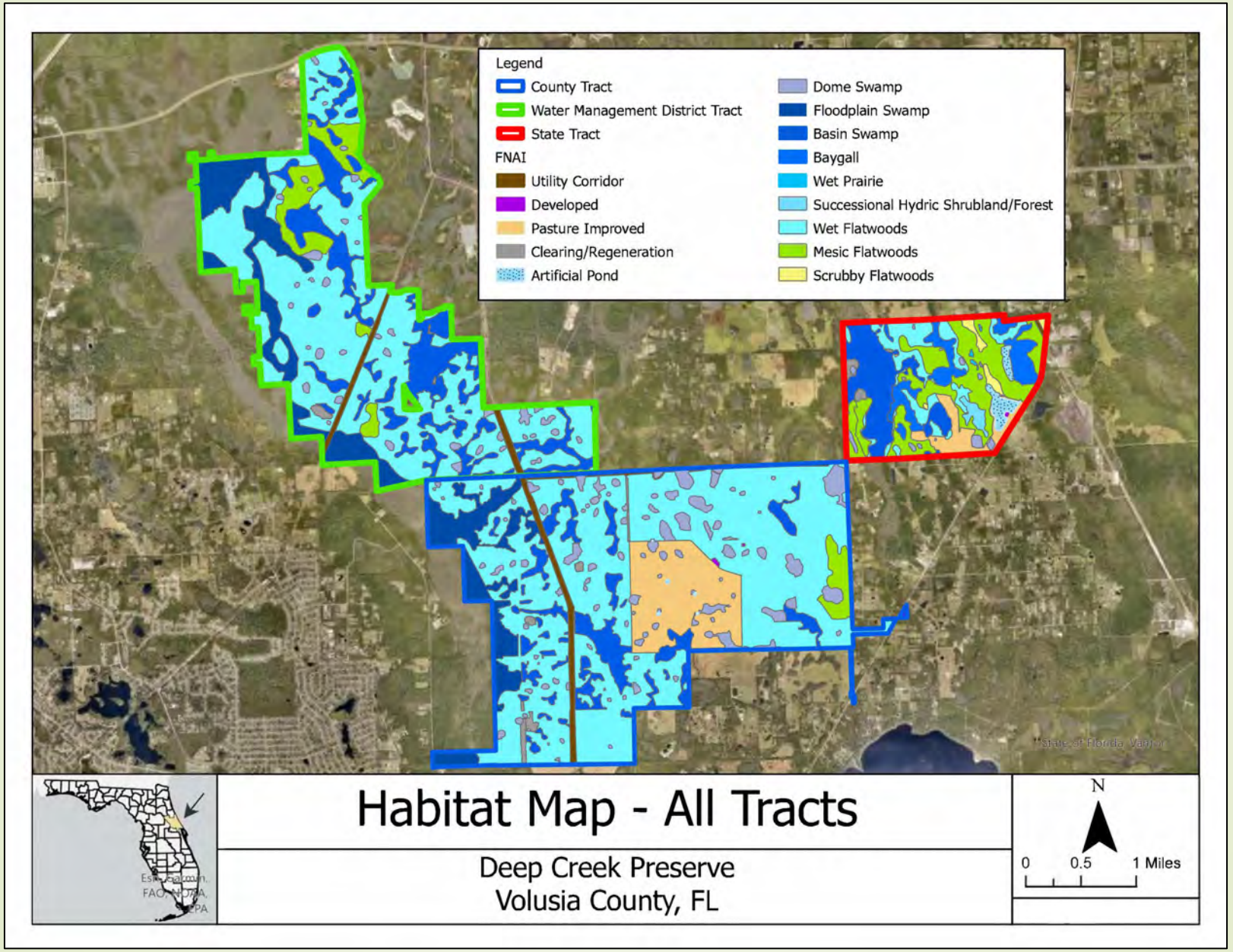


Optimal Boundary

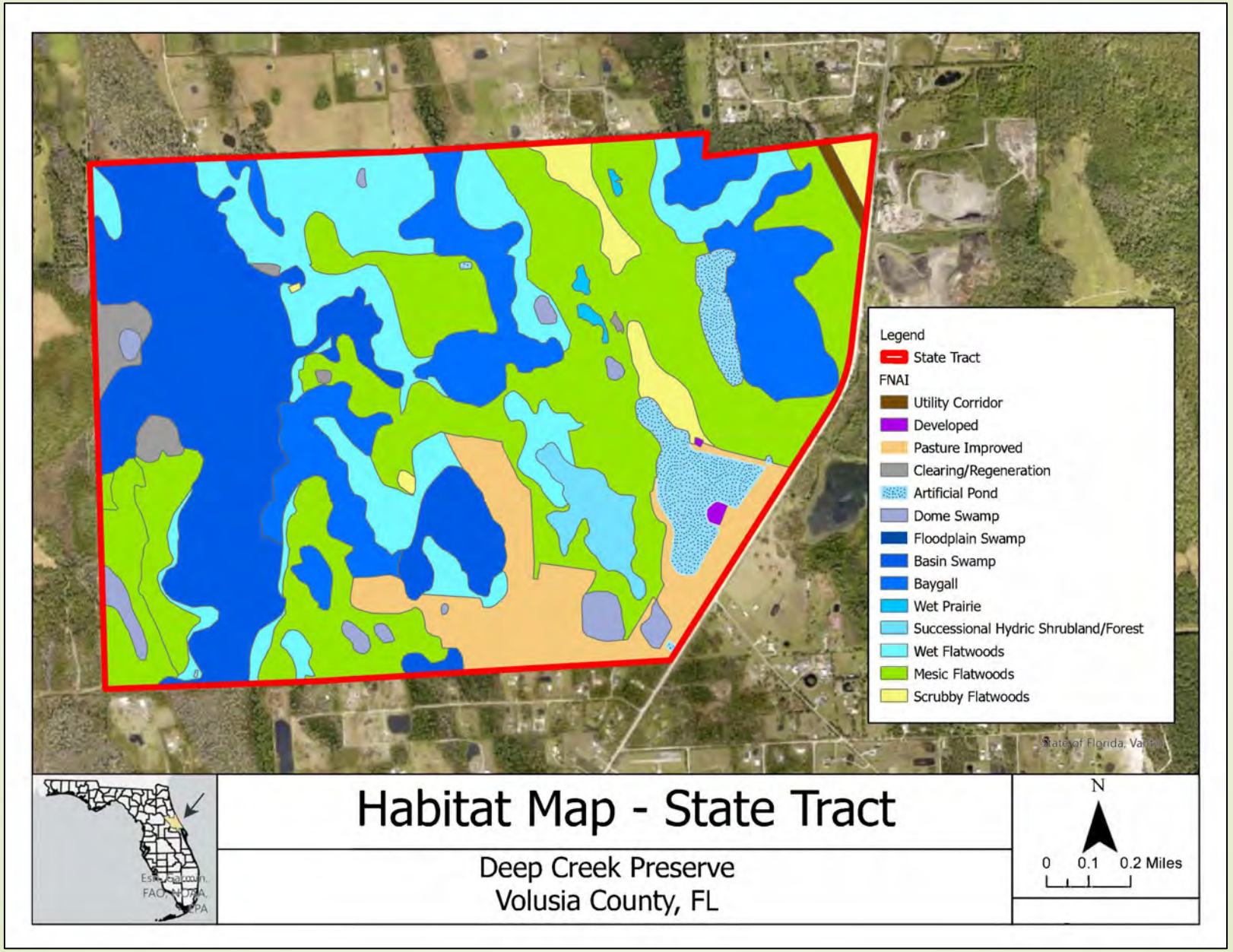
- Guides acquisition of parcels
- Acquisition / Conservation Programs:
  - Florida Forever, Volusia Forever
  - Volusia Conservation Corridor
  - Florida Wildlife Corridors
- Adjustments may add or remove parcels
- Inclusion within this border does not equate ownership



Natural Communities



Natural Communities



Preserve Land Cover and Associated Fire Return Interval

Land Cover Classification	State Tract (BOT)		County Tract (non-BOT)		WMD Tract (non-BOT)		Fire Return Interval (yrs) Per FNAI (2010)
	Acres	% Area	Acres	% Area	Acres	% Area	
Artificial Pond	46.9	3.5%	2	0.04%	--	--	-
Basin Swamp	273.6	20.4%	434.6	9.1%	753.4	20.1%	-
Baygall	176.9	13.2%	--	--	--	--	-
Clearing/Regeneration	19.2	1.4%	33.8	0.7%	10.4	0.3%	TBD
Developed	1.5	0.1%	5.8	0.1%	--	--	-
Dome Swamp	23.4	1.7%	313.7	6.6%	91.3	2.4%	3 - 5*
Floodplain Swamp	--	--	378.8	7.9%	514.7	13.8%	3 - 5*
Improved Pasture	108.3	8.1%	506.8	10.6%	--	--	-
Mesic Flatwoods	421.1	31.4%	76.6	1.6%	231.5	6.2%	1 - 3
Scrubby Flatwoods	34.1	2.5%	--	--	--	--	5 to 10**
Successional Hydric Forest	24.8	1.9%	--	--	--	--	2-7
Utility Corridor	4.2	0.3%	126.8	2.6%	66.1	1.8%	-
Wet Flatwoods	202.6	15.1%	2910.3	60.8%	2074	55.4%	1 - 3
Wet Prairie	3.4	0.3%	--	--	--	--	1 - 3
Total***	1,339.6	100%	4789.2	100%	3741.4	100%	

* Along outer edge/ecotone, interior fire cycle may be as long as 100 to 150 years

** Along outer edge may be 3-5 years

***Acres are GIS derived from parcel data and may not reflect survey acres

Imperiled Species

Species Name	Common Name	Status	Ranking
Danaus plexippus	Monarch butterfly	FT-PDL	G4/S4
Alligator mississippiensis	American alligator	FT(S/A)	G5/S4
Drymarchon couperi	Eastern indigo snake	ST/FT	G4T3/S3
Gopherus polyphemus	Gopher tortoise	ST	G3/S3
Antigone canadensis pratensis	Florida sandhill crane	ST	G5T2/S2
Egretta caerulea	Little blue heron	ST	G5/S4
Egretta tricolor	Tricolored heron	ST	G5/S4
Falco sparverius paulus	Southeastern American kestrel	ST	G5T4/S3
Haliaeetus leucocephalus	Bald Eagle	BGPA	G5/S3
Mycteria americana	Wood stork	S-P	G4/S2
Platalea ajaja	Roseate spoonbill	ST	G5/S2
Caracara plancus syn. Polyborus plancus audubonii	Crested caracara syn. Audubon's crested caracara	FT	G5/S2
Sciurus niger niger	Southeastern fox squirrel	-	G5T5/S3
Sarracenia minor	Hooded pitcher plant	ST	G4T4/S4
Nolina atopocarpa	Florida beargrass	ST	G3/S3
Deeringothamnus rugelii	Rugel's false pawpaw; Yellow squirrel-banana	FE	G1/S1

Imperiled Species

Species Name	
Danaus plexippus	Monarch
Alligator mississippiensis	American
Drymarchon couperi	Eastern in
Gopherus polyphemus	Gopher to
Antigone canadensis pratensis	Florida sa
Egretta caerulea	Little blu
Egretta tricolor	Tricolore
Falco sparverius paulus	Southeast
Haliaeetus leucocephalus	Bald Eag
Mycteria americana	Wood sto
Platalea ajaja	Roseate s
Caracara plancus syn. Polyborus plancus audubonii	Crested c
Sciurus niger niger	Southeast
Sarracenia minor	Hooded p
Nolina atopocarpa	Florida be
Deeringothamnus rugelii	Rugel's fa







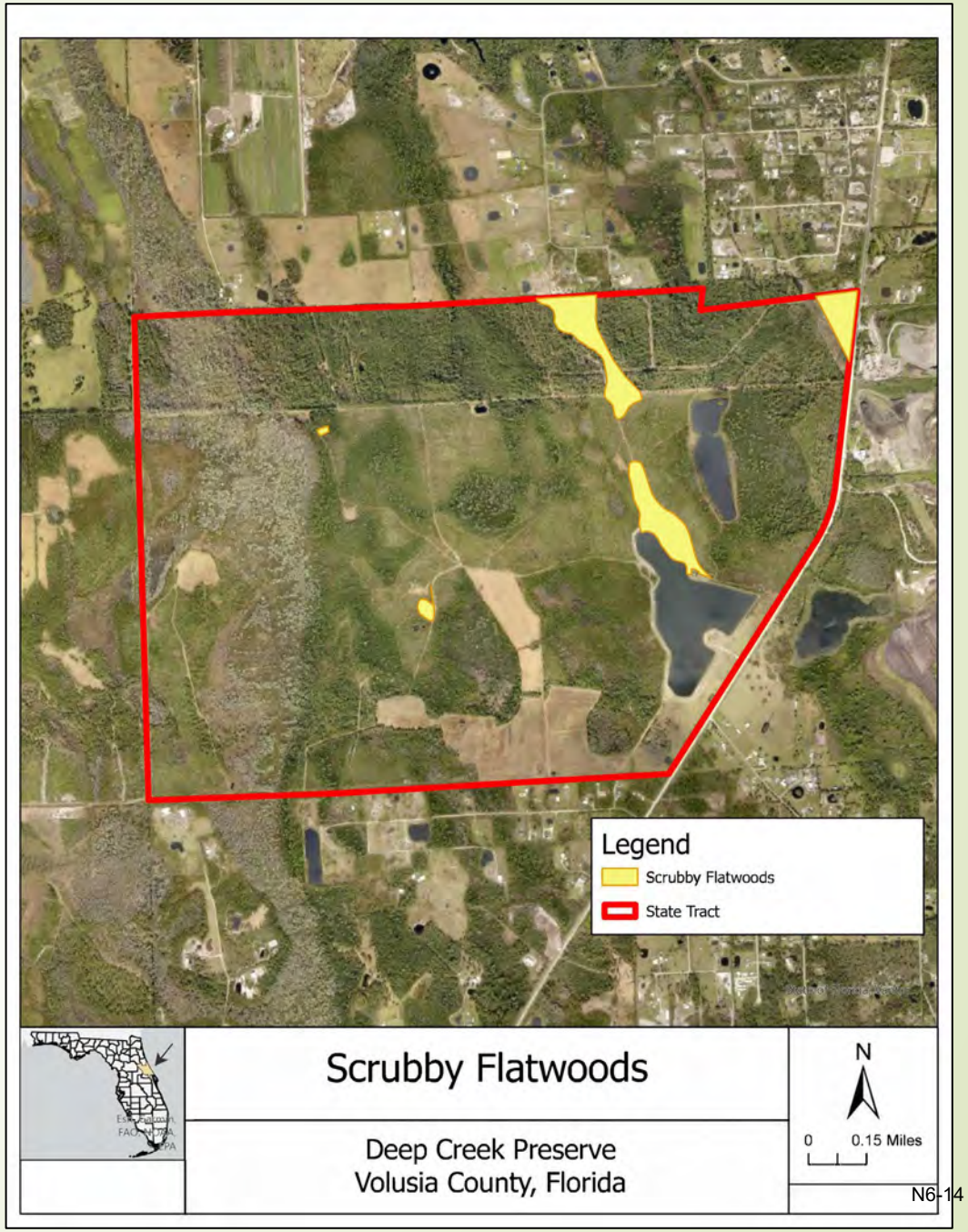


Imperiled Habitats

One imperiled habitat

- Scrubby Flatwoods (G2/S2)
- 34.1 acres
- Entirely on the **State Tract**



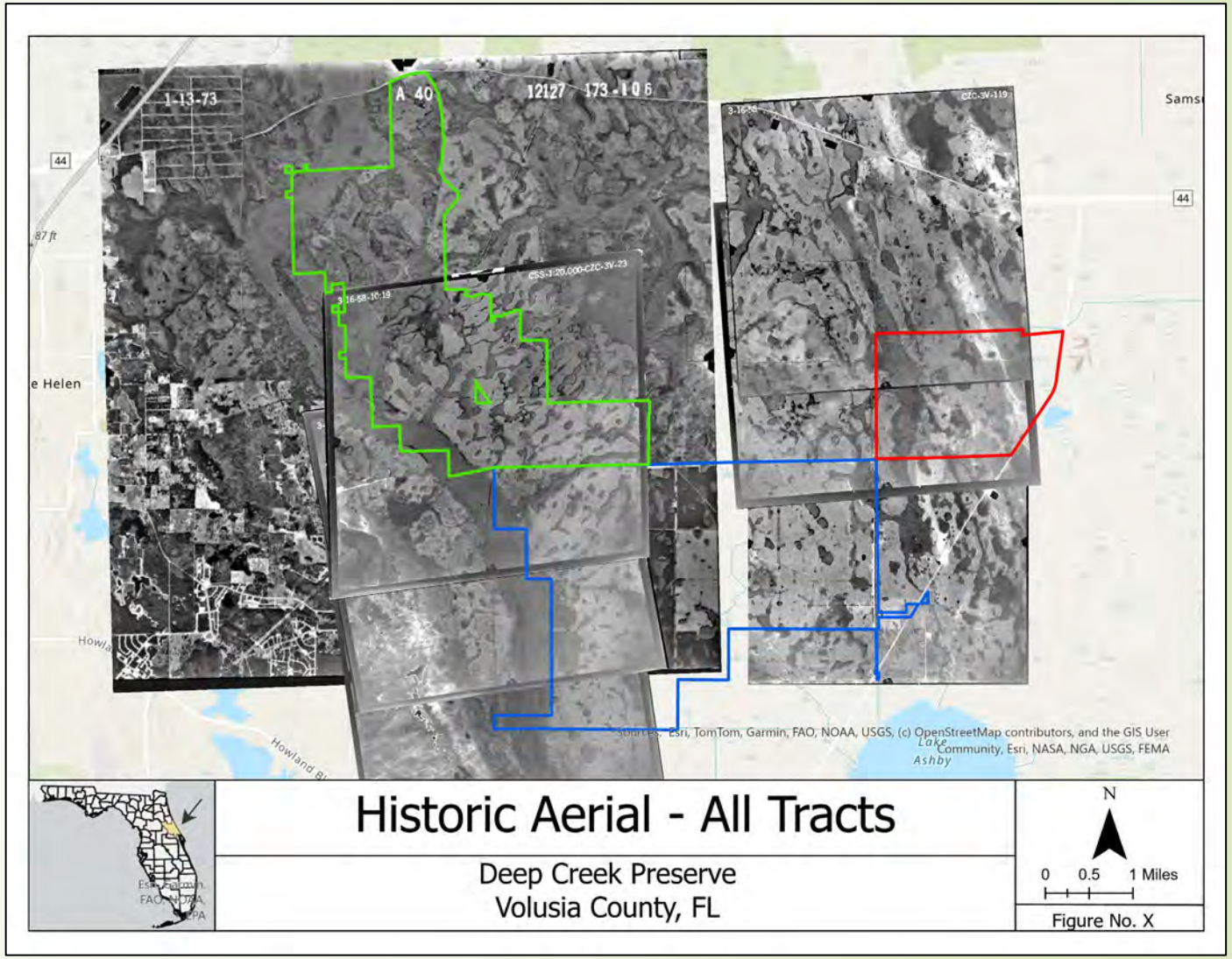


Cultural

One recorded historical site

- Segment of the historic Blue Spring, Orange City and Atlantic Railroad

Town of Rodgers *may* be sited in this area



Uses vs Purpose of Acquisition

Florida Forever Project Evaluation Report

Carter Quail Ranch
Volusia County



Acquisition Type: Fee Simple
Acres: 1,344
Just Value: $3,765,018
Application Date: October 31, 2022
Project Sponsors: Volusia County

Prepared By:
Division of State Lands
Office of Environmental Services

FLORIDA FOREVER
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Submitted to the Acquisition and Restoration Council
April 14, 2023

Uses vs Purpose of Acquisition

Florida Forever Project Evaluation Report

Carter Quail Ranch
Volusia County

Florida Department of Environmental Protection *Carter Quail Ranch PER*

Acquisition of this project would serve to:

- increase the protection of Florida's biodiversity at the species, natural community, and landscape levels.
- increase natural resource-based public recreation or educational opportunities.
- provide and enhance wildlife corridors and valuable habitat for rare and imperiled species.
- provide surface and groundwater protection and protect natural floodplain functions.
- increase the amount of forestland available for sustainable management of natural resources.
- protect, restore, and maintain the quality and natural functions of land, water and wetland systems.

Prepared By:
Division of State Lands
Office of Environmental Services

FLORIDA FOREVER

Submitted to the Acquisition and Restoration Council
April 14, 2023

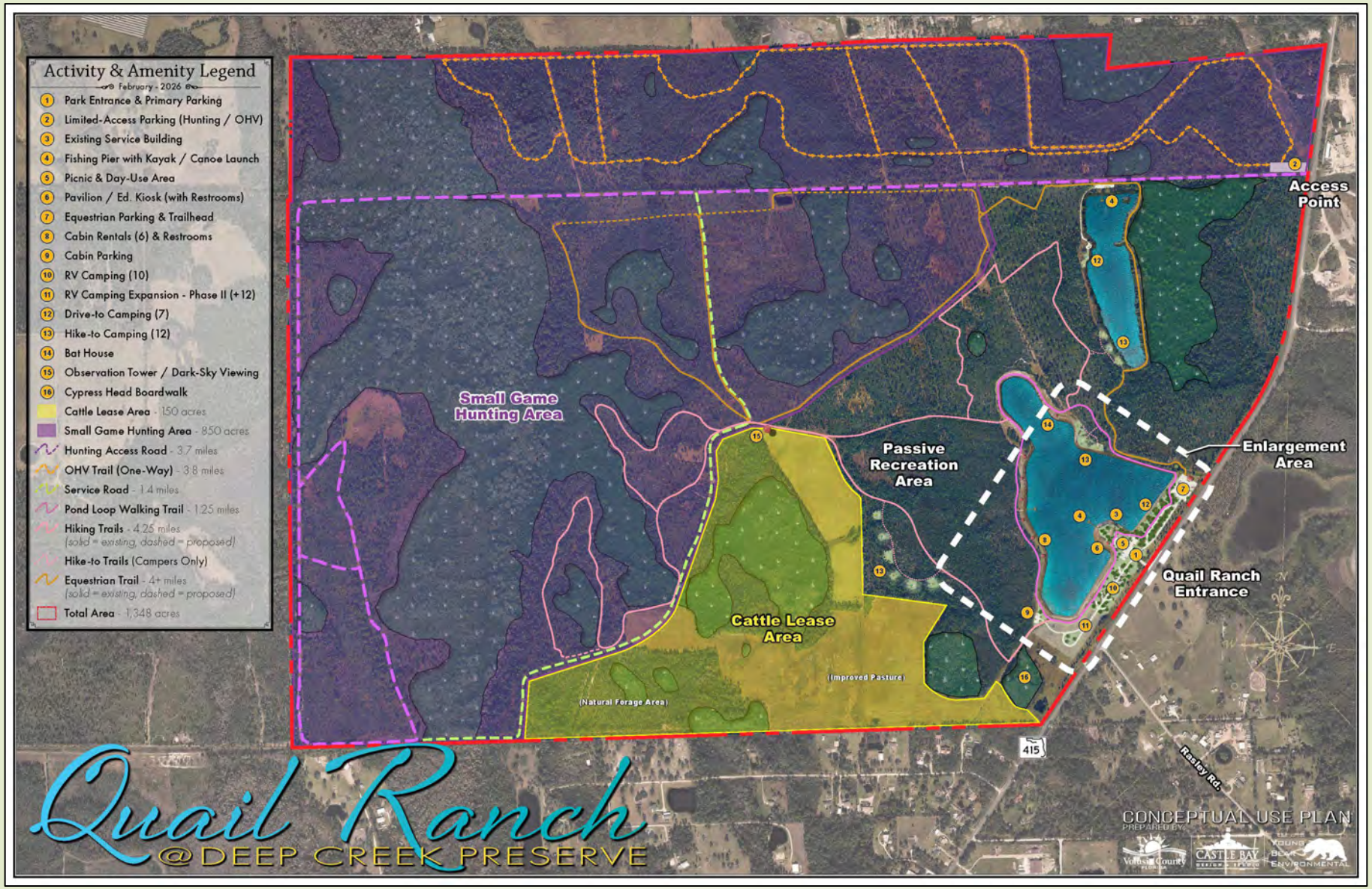
Uses vs Purpose of Acquisition

Activity	Status of Use*		
	Approved	Conditional	Rejected
Protection of listed species	✓		
Preservation of cultural sites	✓		
Preservation of historical sites	✓		
Ecosystem maintenance	✓		
Soil and water conservation	✓		
Hunting		✓	
Fishing		✓	
Wildlife Observation (incl. birding)	✓		
Hiking		✓	
Jogging		✓	
Bicycling		✓	
Equestrian use (Horseback riding)		✓	
Model hobbyist activities		✓	
Mining			✓
Silviculture		✓	
Cattle grazing / range management		✓	
Apiaries		✓	
Bat House Construction		✓	

Uses vs Purpose of Acquisition

Activity	Status of Use*		
	Approved	Conditional	Rejected
Observation Tower / Dark Sky Viewing		✓	
Camping		✓	
Cabin Rentals		✓	
RV Camping		✓	
Canoe / kayak landings & use		✓	
Ecotourism		✓	
Vehicular Access and Parking		✓	
New Linear Facilities			✓
Water Resource Facilities		✓	
Off Highway Vehicle Use		✓	
Survey and Mapping	✓		
Environmental Education (Nature Study)		✓	
Cultivation of native species for seed banks or propagation		✓	
Citriculture or other agriculture / row crops			✓
Swimming / Diving			✓
Boating (power)/ Sailing			✓
Disc Golf		✓	

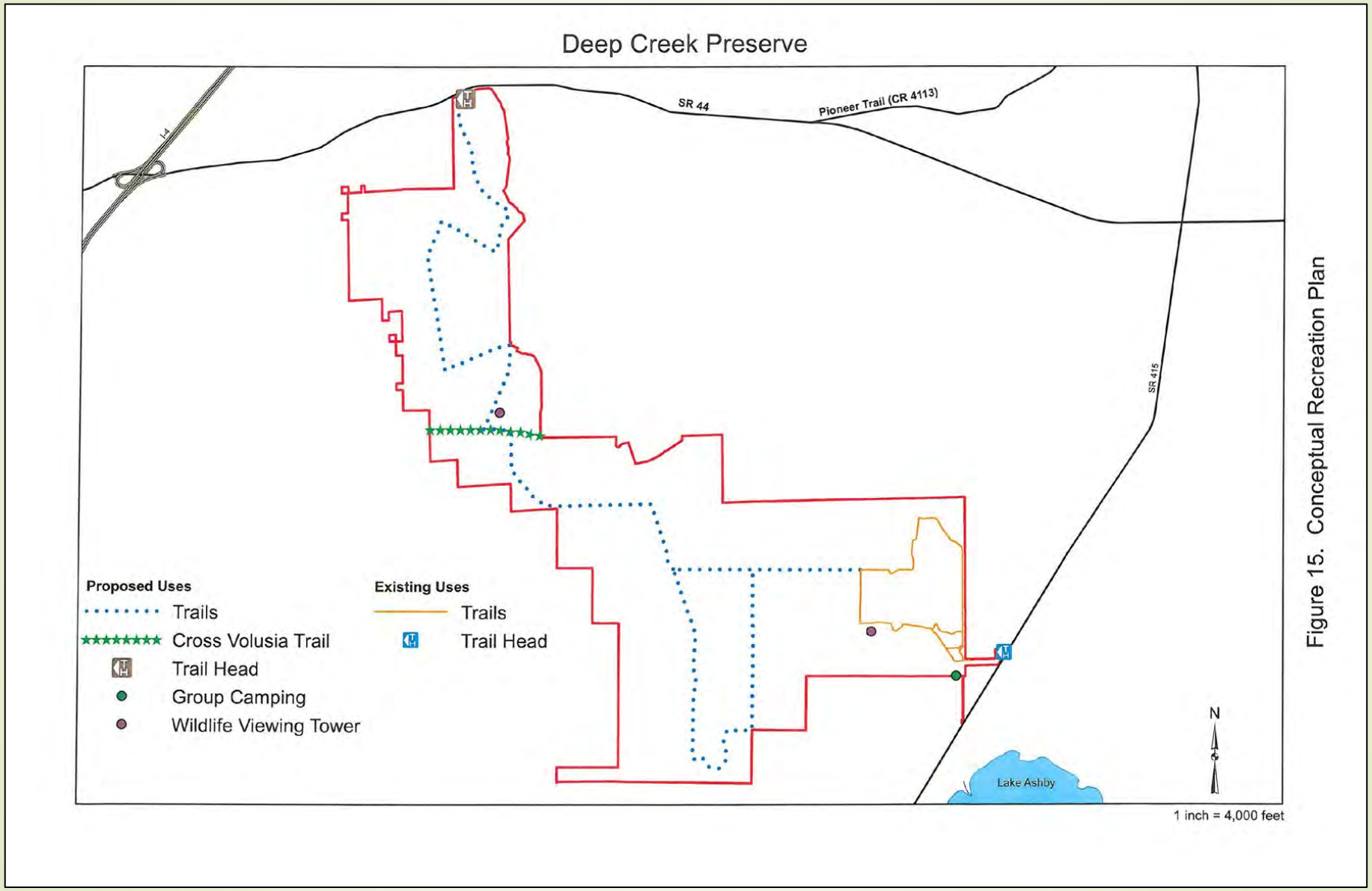
Conceptual Rec Plan (State Tract)

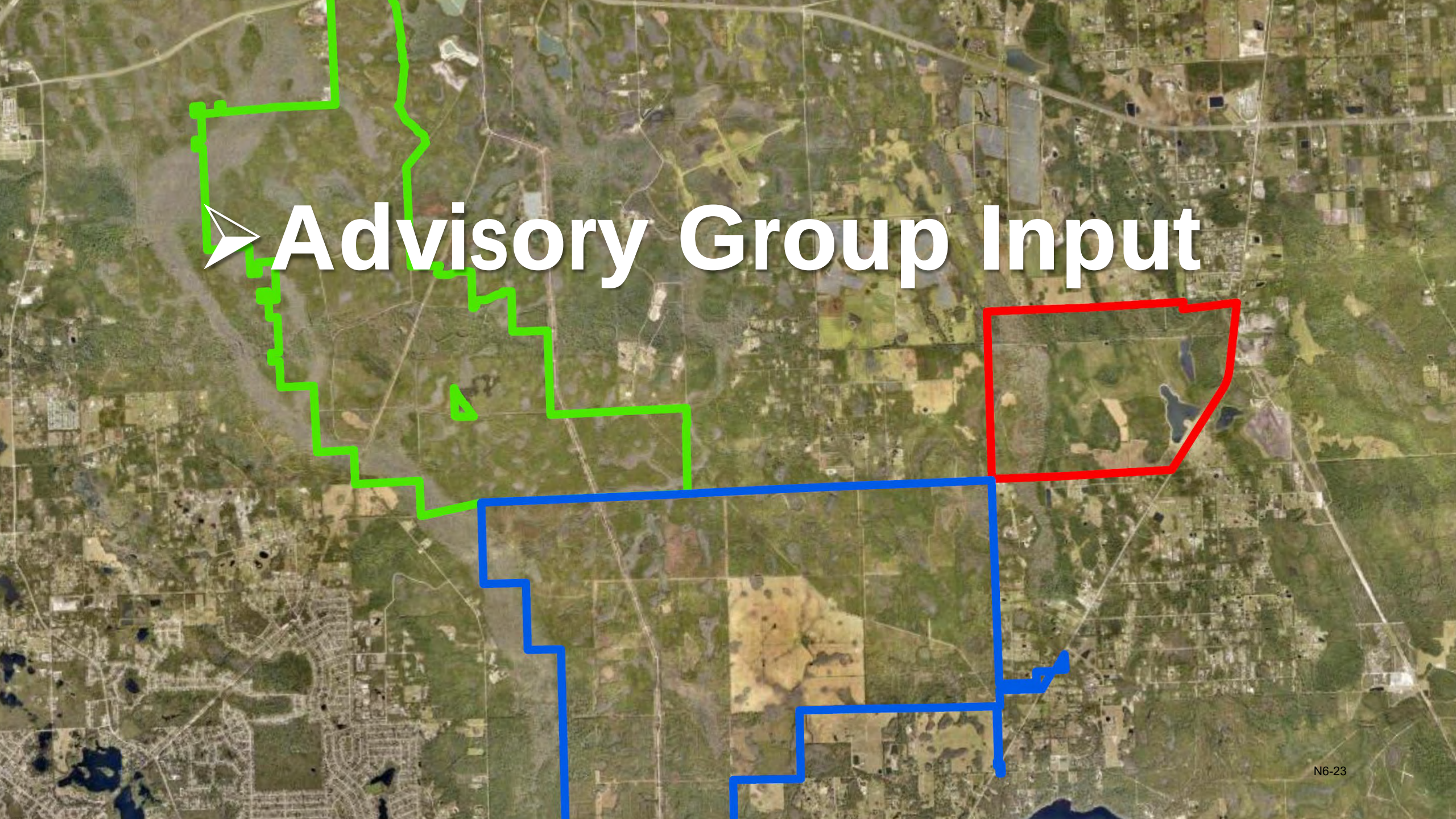


Conceptual Rec Plan (State Tract)



Conceptual Rec Plan




Advisory Group Input

VOLUSIA COUNTY RESOURCE STEWARDSHIP DIVISION

Management Plan Advisory Group (MPAG)

Deep Creek Preserve – Management Plan Update

Meeting Minutes

Date:	Tuesday, April 28, 2026
Time:	9:00 AM – 12:00 PM
Location:	Community Assistance Conference Room, TCK Administration Center, 121 W. Rich Ave., DeLand, FL
Meeting Notice:	Meeting was publicly noticed in compliance with Florida Sunshine Law, §286.011, F.S. The meeting was open to the public at all times.
Subject:	Deep Creek Preserve Management Plan – MPAG Review of Draft Plan (State Tract Addition)

Attendees

Advisory Group Members:

Name	Organization	Role / Seat
Nick Dunnam	Volusia County Resource Stewardship Division	Lead Managing Agency (Spokesperson)
Chris Kinslow	St. Johns River Water Management District	Co-managing Entity
John Gamble	N/A	Local Private Property Owner
David Bagley	Volusia County Soil and Water Conservation District	Soil and Water Conservation District
Sonya Guidry	Pawpaw Chapter, Florida Native Plant Society	Local Conservation Organization
Danny Robins	Volusia County	Local Elected Official – Absent
Greg Hagan	Fish and Wildlife Conservation Commission	Imperiled Species Agency Representative
Donald King	FDACS / Florida Forest Service	Imperiled Species Agency Representative

Staff / Contractors:

- Danny Young, Young Bear Environmental – Lead contractor, plan author, meeting facilitator
- Cole Harper, Young Bear Environmental – Contractor
- Ashlyn Russell, Volusia County Resource Stewardship Division – Administrative Coordinator (note-taker)
- Volusia County land management staff present, Richard Harris, Danielle Dangleman, Holly Giles, and Crystal Smith

Note: *This was an open public meeting held in compliance with Florida's Government in the Sunshine Law, §286.011, F.S. The meeting was open to the public at all times. Minutes are a summary record of proceedings and are open to public inspection per §286.011(2), F.S. All advisory group members were reminded not to discuss the plan with each other outside of officially noticed meetings.*

Purpose of Meeting

The Management Plan Advisory Group (MPAG) convened to review and provide input on the draft Deep Creek Preserve Management Plan, updated to incorporate the newly acquired State Tract (formerly the Carter Quail Ranch). The MPAG's statutory role under §259.032(8), F.S. is to evaluate the new acquisition and ensure the plan meets requirements before it proceeds to public notice and the Acquisition and Restoration Council (ARC). Daniel Young clarified that the advisory group is purely advisory – it is not an official governmental body, does not make motions, and issues recommendations only. Nick Dunnam was confirmed by group consensus as the Spokesperson for the June 11th public hearing.

Background

The State Tract (approximately 1,300 acres, formerly the Carter Quail Ranch) was acquired in March 2025 through Volusia Forever and Florida Forever funds, bringing Deep Creek Preserve to nearly 10,000 acres stretching from State Road 415 to State Road 44. The preserve is made up of three tracts: the County-Owned Tract, the St Johns River Water Management District Tract (managed by Volusia County), and the newly acquired State Tract. Volusia County is the designated lead manager for the preserve. Per Florida Statute, properties over 160 acres require an official management plan updated every 10 years. The county signed the management lease for the State Tract in December 2025 and is on track to submit the plan to ARC by December 2026. Young Environmental was engaged as the contractor to draft the plan in coordination with Volusia County. Existing plan content for the County and Water Management District tracts carries over largely from the 2013 Deep Creek Preserve plan; the primary focus of this MPAG review was the new State Tract. There are no proposed changes to uses or management of the County Tract or Water Management District Tract. Following ARC review, the plan will return to the Water Management District for approval.

Overview Presentation

Daniel Young provided an overview of the draft plan covering the following areas:

Location and Access

The preserve currently has one public entrance on the County Tract. With the State Tract addition, two new entrances are proposed: a southern entrance fully open to the public and a northern entrance on the State Tract open to hunting and vehicular. The Water Management District Tract entrance remains available to hunting lease members only. The State Tract falls within the Volusia Conservation Corridor, which was a significant factor in the acquisition decision.

Natural Communities

Western portions of the preserve are predominantly wet flatwoods, cypress, and floodplain communities. The State Tract contains more upland habitat, including scrubby flatwoods. Of the approximately 10,000 total acres, only 34 acres are classified as imperiled natural communities. Fire-

dependent communities are a management priority, and the county has already begun mowing and fuel reduction on the State Tract since acquisition.

Imperiled Species

Species data was compiled from iNaturalist, eBird, Florida Native Plant Society surveys, Pawpaw Chapter, and staff observations. Key species include gopher tortoise, eastern indigo snake, and Rugel's Pawpaw. Rugel's Pawpaw is federally endangered, endemic to Volusia County, and was a primary driver of the Florida Forever acquisition.

Recreational Uses Concept

County leadership directed a recreation-focused approach for the State Tract. A third-party recreational planning consultant developed the conceptual plan. Proposed amenities include primitive cabin camping (ADA-accessible, no power/water), RV camping, car camping, hike-in camping, hunter camping, equestrian parking and trails, hiking trails, kayak launches, fishing access, and an off-highway vehicle (OHV) trail. All intensive recreational uses are concentrated near SR 415 and the disturbed pasture and borrow pit area to minimize habitat impact. Trail systems are separated by use type. ADA accessibility was incorporated into the conceptual design. A vendor-based model for camping and amenity operations is under consideration to allow land management staff to focus on habitat work.

Section-by-Section Review

Section 1: General Information

No substantive concerns were raised. Members were asked to submit technical and formatting corrections to Daniel Young by email.

Nick Dunnam:

- Noted that all maps in the current draft are placeholders; high-quality maps will be incorporated into the final PDF.

Chris Kinslow:

- Expressed support for the optimal boundary as drawn and noted several adjacent parcels worth pursuing for public ownership. Noted that fully developed parcels can be removed from the optimal boundary in future plan updates.

Section 2: Natural Communities

Greg Hagan:

- Requested the plan more explicitly state that prescribed fire is the preferred disturbance method, while acknowledging mechanical treatments (mowing, roller chopping, mulching, timber thinning) as integrated management tools – not replacements for fire, but surrogates used to prepare the system or maintain disturbance intervals when fire is unavailable.

Danny Young:

- Agreed and noted language would be added to the disturbance regime section to clarify this distinction.

Nick Dunnam:

- Summarized the county's management philosophy as "thin and burn" for fire-dependent communities and noted all Volusia County plans target FNAI-defined desired future conditions with a 1–3 year fire return interval for flatwoods communities, trending toward open pine savanna over time.

Action Item: *Add language to the disturbance regime section clarifying the role of integrated management tools and affirming prescribed fire as the preferred method.*

Section 3: Imperiled Species

Members were invited to submit additional species observations to Daniel Young via email.

Previous/Current Uses Section

Chris Kinslow:

- Noted a paragraph in the State Tract's previous uses section appeared out of place; the group agreed it describes current use and should be moved accordingly.

Action Item: *Move the out-of-place paragraph from the previous use section to the current use section (State Tract).*

Uses and Public Access Discussion

This section generated the most substantive discussion of the meeting. Nick Dunnam provided an overview of the conceptual recreation plan, after which members provided individual input.

Conceptual Recreation Plan Overview

Nick Dunnam:

- Recreational uses are concentrated near SR 415 and the disturbed pasture and borrow pit area. Water access was identified as a top county resident priority.
- Three camping types are proposed: primitive cabins (ADA-accessible), RV/car camping (highway-adjacent), and hike-in camping, with additional camping at a northern pond accessed via the northern entrance.
- Separate trail systems are proposed for hiking, equestrian, and OHV use, none co-located with road systems.
- Hunting is proposed as a public wildlife management area (not a lease); FWC would manage enforcement, brochures, and a quota/day-use permit system. The agreement with FWC is in early stages.
- An OHV trail is proposed along existing roads and trails in the northern section, accessed via automated gate with PIN or QR code entry to track users.
- OHV and hunting seasons could be operationally separated to avoid concurrent competing uses.
- Confirmed that conceptual uses can be modified, relocated, or removed based on ground conditions, species surveys, or ARC/committee direction.
- Clarified that the recreational area around the pond and campsites is outside the hunting boundary.
- Noted that a parcel providing trail linkage between the State Tract and County Tract is currently on Volusia Forever's active acquisition list.
- Reminded members of Sunshine Law requirements: members may not discuss the plan with each other outside of officially noticed meetings and should not reply-all to blind-copied emails.

Off-Highway Vehicle (OHV) Use – Member Discussion

OHV use was the most contested topic of the meeting. The following summarizes all member input on this item:

Sonya Guidry:

- Strongly opposed OHV use, citing terrain damage to natural areas and imperiled species habitat, including Rugel's Pawpaw and gopher tortoise habitat in the northern State Tract where the OHV trail is proposed.
- Raised concern about noise pollution affecting campers, other users, and nearby residents, and the difficulty of enforcing trail boundaries. Referenced OHV damage observed on a multi-use trail near Maytown Road as an example.
- Stated that the Florida Native Plant Society and Pawpaw Chapter are opposed to any OHV use that would damage the natural terrain.
- Noted the existing motocross area on SR 44 (partially county-funded) as a more appropriate OHV location than a conservation preserve.

Chris Kinslow:

- Reviewed the OHV section of the plan and was satisfied to find existing language allowing modification, relocation, or discontinuation of OHV use if resources are adversely impacted.
- Asked whether a defined impact threshold exists. Nick Dunnam responded it would be case-by-case, based on observed damage such as wetland intrusion, continued violations, or abusive use.
- Recommended the OHV paragraph specify "appropriate portions of the State Tract" rather than "the preserve" to eliminate any implication that OHV use extends to the Water Management District or County tracts. Committed to submitting this and other comments by email.

Greg Hagan:

- Asked whether the passive use designation in DEP Appendix D is compatible with OHV use and hunting. Nick Dunnam responded these are proposed as passive outdoor recreation uses; if ARC or the committee determines they are too active, they can be removed.
- Acknowledged that OHV concerns are largely operational rather than plan-level issues but supported seeing them mitigated operationally.

David Bagley:

- Acknowledged concerns about off-road vehicles and agreed that damage and hazards are a real risk if users leave designated trails. Noted these are operational issues rather than plan-level issues and expressed a desire to see OHV use mitigated operationally going forward.

Nick Dunnam:

- Noted the OHV trail is proposed almost entirely on existing roads and trails and is modeled after OHV use permitted at four Florida state forests, at a much smaller scale. The automated gate system would allow the county to track who is on the property at all times.

Outcome: OHV use remained in the plan as a proposed conditional use at the close of the meeting. It was not removed by consensus. Public comment at the June 11th public hearing will provide additional input.

Action Item: *Revise OHV paragraph to reference 'appropriate portions of the State Tract' rather than 'the preserve.'*

Other Uses – Member Input

John Gamble:

- Expressed strong support for ADA accessibility and recommended exploring golf cart or eco-buggy tours for visitors unable to walk long distances, similar to Orlando Wetland Park.
- Proposed building a wading bird rookery on a small island at the south end of the borrow pit pond, with a bird blind approximately 100 feet away, citing the Venice rookery in Sarasota County as a model.
- Suggested a native milkweed and monarch butterfly program. Nick noted that native plant landscaping around camping areas is already under discussion with native plant organizations.
- Expressed concern about RV campsites being located close to SR 415 due to highway noise. Nick acknowledged those sites are intended for users comfortable with an urban-adjacent experience.

Sonya Guidry:

- Expressed concern about a large portion of the State Tract being allocated to hunting, limiting access for non-hunters. Nick Dunnam clarified the recreational pond and campsite area is outside the hunting boundary and other recreational uses are not prohibited in the hunting area as it contains trails and is open to public use.

Donald King:

- Reflected on how the State Tract fits into the bigger picture of the overall preserve and asked about trail connectivity between the State Tract and County Tract. Nick Dunnam confirmed the parcels linking the State Tract with the County Tract are on the active Volusia Forever acquisition list.

David Bagley:

- Expressed that the plan is well thought out and effectively concentrates intensive recreational uses near the highway in already-disturbed areas, with more natural primitive camping toward the back of the property.
- Expressed support for hunting as a conservation tool and enthusiasm for the expansion of Deep Creek Preserve, hoping nearby distressed properties could be acquired to improve connectivity to county lands.

Greg Hagan:

- Expressed general support for the plan's balanced approach to uses and disturbance mitigation. Agreed with earlier comments about needing more explicit integrated management language.

General Consensus on Uses

- Hunting as a public wildlife management area (not a lease) was generally accepted by the group.
- Camping, kayaking, equestrian, and hiking uses were well-received with no significant objections.
- ADA accessibility was affirmed as a priority feature to call out explicitly in the plan.

Goals, Objectives, and Scheduling

Goals and Objectives Structure

Greg Hagan:

- Raised concern that the current layout makes it unclear which objectives correspond to which goals.

Danny Young:

- Clarified that goals are overarching endpoints and objectives are measurable items evaluated during five-year management review visits. Agreed to restructure so numbered objectives appear directly beneath their corresponding goal, and to add footnotes defining “short-term” (0–2 years) and “long-term” (3–10 years) to make the table self-contained. Noted all goals are long-term and equally important at the plan level, but objectives within each goal can be prioritized more explicitly.

Action Item: *(1) Restructure goals/objectives so objectives appear directly under their associated goal. (2) Add footnotes to the goals table defining short-term and long-term classifications.*

Annual Cost Table

Nick Dunnam:

- Noted the annual cost table was blank in the current draft.

Danny Young:

- Confirmed two sets of numbers (staff estimates and prospectus figures) need to be reconciled and will be populated before the public hearing draft.

Action Item: *Populate the annual cost table prior to the public hearing draft (target: May 7–8 release).*

Other Items Discussed

Herbicide / Mechanical Treatments (Table 12)

Donald King:

- Requested that herbicide applications for habitat management be explicitly added to Table 12 beyond just invasive species control. Cited examples including broadcast herbicide, mid-rotation herbicide, pine release for understory control, and hardwood reduction such as laurel oak control. Recommended including language for outside vendor use for these applications.

Danny Young:

- Agreed and noted this ties into the broader integrated management discussion. Will add herbicide applications for habitat management, with vendor language, to both Table 12 and the relevant plan section.

Action Item: *Add herbicide applications for habitat management (with outside vendor language) to Table 12 and the applicable plan section.*

Mosquito Control (Table 12)

John Gamble:

- Noted a reference to mosquito control ditches in the plan and requested review.

Danny Young:

- Confirmed there are no mosquito control ditches on the property; the mosquito control district operated primarily east of I-95. The reference appears only as a standard ARC table row.

Nick Dunnam:

- The group reached consensus to remove the mosquito control ditch row from Table 12. The arthropod control plan remains a standard ARC requirement.

Action Item: *Remove the mosquito control ditch row from Table 12.*

Tract Naming Consistency

Greg Hagan:

- Raised concern about inconsistent use of “preserve” vs. “tract” throughout the plan. The group agreed “the preserve” should refer to the entire 10,000-acre property, and specific ownership units should be referred to as “the [county/state/water management district] tract.”

Action Item: *Review the plan for consistent use of preserve vs. tract terminology and define the distinction early in the document.*

Cattle Lease and Fencing

Chris Kinslow:

- Asked whether the cattle lease area is currently fenced and whether geo-fencing collar technology has been considered.

Nick Dunnam:

- Confirmed the area is fenced with barbed wire. Geo-fencing is not currently used on any county cattle leases but the county is open to it. A member recommended wildlife-friendly fencing techniques, including smooth wire, for any future replacement fencing. Nick agreed this will be part of future lease discussions.

Revenue Generating Potential

Nick Dunnam:

- Outlined proposed revenue sources: land leases (hunting, cattle), timber revenue for ecological restoration purposes, camping reservations, and grants and cost-share opportunities. The land management program covers 39,000 acres and is funded through a 15% set-aside from the Volusia Forever program, with a goal of a self-sustaining balanced budget.

Greg Hagan:

- Affirmed that timber should be harvested only for ecological restoration purposes, not as a primary revenue driver.

Previous Management Reviews

Chris Kinslow:

- Noted the Water Management District conducted a land management review in 2023 and offered to send the document to Daniel Young for inclusion in the plan.

Action Item: *Include the 2023 SJRWMD land management review in the plan appendix (Chris Kinslow to provide document to Danny Young).*

Gopher Tortoise Recipient Site Evaluation

Nick Dunnam / Danny Young:

- Staff is coordinating with FWC on whether any portion of the property could serve as a gopher tortoise recipient site, as required by statute for new acquisitions. FWC offered two options: a

site on the County Tract or on the State Tract. The State Tract option would require artificially lowering the water table, which is counter to conservation goals. Less than 40 acres of scrubby flatwoods would potentially qualify. The recipient site evaluation will be included as an appendix and may be discussed at the public hearing for transparency.

Action Items Summary

Action Item	Responsible	Target
Add prescribed fire preference language; describe mechanical treatments as integrated surrogates	Daniel Young / Young Environmental	May 7 draft
Move out-of-place paragraph to current use section (State Tract)	Daniel Young / Young Environmental	May 7 draft
Revise OHV paragraph to reference ‘appropriate portions of the State Tract’ rather than ‘the preserve’	Daniel Young / Young Environmental	May 7 draft
Restructure goals/objectives so objectives appear under their corresponding goal	Daniel Young / Young Environmental	May 7 draft
Add footnotes to goals table defining short-term and long-term classifications	Daniel Young / Young Environmental	May 7 draft
Populate the annual cost table (reconcile staff and prospectus figures)	Daniel Young + County Staff	May 7 draft
Add herbicide for habitat management (with vendor language) to Table 12 and plan narrative	Daniel Young / Young Environmental	May 7 draft
Remove mosquito control ditch row from Table 12	Daniel Young / Young Environmental	May 7 draft
Review and standardize preserve vs. tract terminology throughout the plan	Daniel Young / Young Environmental	May 7 draft
Add ADA accessibility language explicitly to the plan	Daniel Young / Young Environmental	May 7 draft
Include 2023 SJRWMD land management review in plan appendix	Chris Kinslow → Daniel Young	May 7 draft

Adjournment

Daniel Young thanked all attendees for their time and input. Nick Dunnam affirmed the group has sufficient direction to move forward to the public hearing. The meeting was adjourned.

Minutes prepared by: Ashlyn Russell Date: April 28, 2026

Approved by: Nick Dunnam & Danny Young Date: May 12, 2026

These minutes constitute the official record of the April 28, 2026, MPAG meeting and are open to public inspection pursuant to §286.011(2), Florida Statutes.

Next Steps and Process

- Danny Young and Young Environmental will incorporate all feedback and prepare a revised public hearing draft, targeted for release on approximately May 7–8, 2026 (30 days prior to the public hearing). All MPAG members will receive a copy.
- The public may submit written comments during the 30-day public notice period to Ashlyn Russell at arussell@volusia.org or by mail to Resource Stewardship Division, 123 W. Indiana Ave., Suite 200, DeLand, FL 32720. Comments must be received by 1:00 PM on June 11, 2026.
- The public hearing is scheduled for June 11, 2026, 5:30–7:00 PM, at the UF IFAS Extension Office Auditorium, 3100 E. New York Ave., DeLand. The public will address the MPAG with comments at that time.
- The MPAG will convene immediately after the public hearing to consider whether any additions or deletions are warranted based on public feedback.
- Following the public hearing, the plan will be updated and submitted to ARC, which has 90 days to review and provide input.
- Advisory group members are reminded not to discuss the plan with each other outside of officially noticed meetings per Florida's Sunshine Law, §286.011, F.S.

AGENDA

Public Hearing
Thursday, June 11, 2026, 5:30 pm – 7:30 pm
UF IFAS Extension Office
3100 E. New York Ave., DeLand

1. Call to Order, Welcome and Roll Call
2. Overview of Management Plan Development Process
3. Deep Creek Preserve Management Plan Overview
4. Public Participation*
5. Advisory Group Comments - Individual
6. Adjournment

MPAG Follow-up Meeting

1. Roll Call
2. Overview of public comments
3. Individual Members' Input and Recommendations RE Public Comments
4. Adjournment

Interested individuals can access the agendas and draft management plan at Land Management Plans 30 days before the public hearing.

* Each speaker is allowed one opportunity to speak during a public comment period for a maximum of three minutes during time reserved for public participation. Speakers may not yield their allotted three minutes to another speaker. Members of the public may submit comments orally or in writing at the hearing. Written comments also may be submitted to Ashlyn Russell at arussell@volusia.org or by mail to the Resource Stewardship Division, 123 W. Indiana Ave., Suite 200, DeLand, FL 32720. Comments must be received by 1 p.m. June 11.

Notice under the Americans with Disabilities Act (Title II)

Pursuant to Title II of the ADA, Volusia County does not discriminate against qualified individuals with disabilities in providing or conducting its services, programs or activities. Anyone requiring an auxiliary aid or service for effective communication, or a modification of county policies to participate in a meeting or other event, should contact the county's ADA Title II coordinator, Jim Corbett, at 386-248-1760 no later than two business days before the event or meeting.

VOLUSIA COUNTY RESOURCE STEWARDSHIP DIVISION

Management Plan Advisory Group (MPAG)

Deep Creek Preserve – Management Plan Update

Public Hearing – Meeting Minutes

Date:	Thursday, June 11, 2026
Time:	5:31 PM – 6:16 PM
Location:	UF/IFAS Extension Office Auditorium, 3100 E. New York Ave., DeLand, FL
Meeting Notice:	Meeting was publicly noticed in compliance with Florida Sunshine Law, §286.011, F.S. The meeting was open to the public at all times.
Subject:	Deep Creek Preserve Management Plan – Public Hearing (State Tract Addition)

Attendees

Advisory Group Members:

Name	Organization	Role / Seat	Present / Absent
Nick Dunnam	Volusia County Resource Stewardship Division	Lead Managing Agency (Spokesperson)	X
Chris Kinslow	St. Johns River Water Management District	Co-managing Entity	
John Gamble	N/A	Local Private Property Owner	X
David Bagley	Volusia County Soil and Water Conservation District	Soil and Water Conservation District	
Sonya Guidry	Paw Paw Chapter, Florida Native Plant Society	Local Conservation Organization	X
Danny Robins	Volusia County	Local Elected Official	X
Greg Hagan	Fish and Wildlife Conservation Commission	Imperiled Species Agency Representative	
Donald King	FDACS / Florida Forest Service	Imperiled Species Agency Representative	X

Staff / Contractors:

- Daniel Young, Young Environmental – Lead contractor, plan author, meeting facilitator
- Ashlyn Russell, Volusia County Resource Stewardship Division – Administrative Coordinator (note-taker)
- Hunter Folmar, Richard Harris, Crystal Smith, Holly Giles, Danielle Dangleman

Note: *This was an open public meeting held in compliance with Florida's Government in the Sunshine Law, §286.011, F.S. The meeting was open to the public at all times. Minutes are a summary record of proceedings and are open to public inspection per §286.011(2), F.S. All advisory group members were reminded not to discuss the plan with each other outside of officially noticed meetings.*

Call to Order

Nick Dunnam called the public hearing to order at 5:31 PM. He thanked attendees for coming and provided introductory remarks on the purpose of the meeting. He explained that the hearing is required by Florida Statutes governing management planning for conservation lands acquired through programs such as Florida Forever and Volusia Forever. For parcels over 160 acres, the law requires an Advisory Group and a public hearing in the county where the property is located. Nick noted that all written comments received prior to the hearing are already part of the official record and do not need to be repeated.

Roll call was conducted and all Advisory Group members were confirmed present. Nick outlined the evening's format: Daniel Young and staff would present an overview of the Draft Plan, followed by public comment (three minutes per speaker), and then the Advisory Group would reconvene in a separate meeting to deliberate. Nick reminded speakers to state their name for the record before speaking.

Overview Presentation

Daniel Young provided an overview of the Draft Deep Creek Preserve Management Plan, covering the following areas:

Background and Context

The State of Florida acquired the Carter Quail Ranch property through Florida Forever funding in partnership with Volusia County's Volusia Forever program. The State agreed to purchase the property only with Volusia County's commitment to manage it. This acquisition adds approximately 1,300 acres to Deep Creek Preserve, bringing the total to nearly 10,000 acres stretching through the Volusia Conservation Corridor. Volusia County is designated as the lead manager. The preserve is made up of three tracts: the County-Owned Tract, the Water Management District Tract (managed cooperatively with SJRWMD), and the newly acquired State Tract. Per Florida Statute, properties over 160 acres require an official management plan updated every 10 years; this is the first plan for the State Tract. In 10 years the plan will be updated through a similar process.

Natural Communities

The preserve spans a range of habitats. Western portions are predominantly floodplain, swamp, and hydric pine savanna. The State Tract contains more upland habitat, including scrubby flatwoods. Of the approximately 10,000 total acres, only 34 acres are classified as imperiled natural communities, located on the Carter Quail Ranch parcel. The preserve sits along the Volusia County Ridges system, which extends into Tiger Bay State Forest. Fire-dependent communities are a management priority. The county has already begun mowing and fuel reduction on the State Tract since acquisition, with a long-term goal of open-canopy pine savanna.

Imperiled Species

Key imperiled species on the property include the gopher tortoise, eastern indigo snake, southeastern American kestrel, and Rugél's Pawpaw. Rugél's Pawpaw is federally endangered, endemic to Volusia County, and was a primary driver of the Florida Forever acquisition. Daniel Young noted that detailed species surveys will be completed before any infrastructure is placed in areas where listed species are known to occur. Photos of species that will benefit from the prescribed fire program were shared with attendees.

Proposed Uses

The plan designates the preserve as a multiple-use area. Daniel Young reviewed the categories of uses:

- Rejected uses: mining, new linear facilities, straight agriculture, swimming/diving, and boating/sailing on the borrow pit.
- Straightforward approved uses: listed species protection, cultural and historical site protection, ecosystem maintenance (fire, mowing), water conservation, wildlife observation, and surveying/mapping.
- Conditional uses (may be allowed subject to conditions): hiking, jogging, bicycling, equestrian use, hunting as a public wildlife management area, model hobbyist activities, various camping types (primitive cabin, RV, car, hike-in, hunter), off-highway vehicle (OHV) use, kayaking/fishing, silviculture for restoration, cattle grazing, native species cultivation, apiaries, bat house construction, and water resource facilities.

Conceptual Recreation Plan

Daniel Young presented the conceptual recreation plan developed with a third-party recreation planning consultant. Key elements include:

- Trail systems separated by user group: equestrian trails with dedicated equestrian parking, hiking loops through varied habitats, and an OHV trail in the northern section using existing roads — one-way, gated, and monitored.
- The proposed OHV area is restricted to the northern end of the State Tract, utilizing an existing road feature as a natural separator. Access would be controlled by a gate. The county would monitor use and can close or eliminate the use if resources are adversely impacted.
- Hunting is proposed as a public wildlife management area (not a lease), with FWC managing enforcement, permitting, and a quota/day-use system. The hunting area is separated from the camping and recreation pond area, and OHV and hunting seasons would be operationally separated.
- Camping options include primitive cabin camping (ADA-accessible, no power/water, modeled after Huntington Island State Park), RV/car camping near SR 415 in already-disturbed areas,

hike-in camping, and hunter camping near the northern pond. No paving or utility hookups are proposed; all camping will have a dirt/shell path character similar to Tomoka State Park.

- Kayak launches and fishing access are proposed around the borrow pit lake and other water features. Small non-motorized watercraft (kayaks, small johnboats) are contemplated; power boating is not proposed.
- All intensive uses are concentrated near SR 415 and the existing borrow pit clearing to minimize habitat impact. Rugél's Pawpaw locations are known and will be avoided; detailed surveys will be completed before infrastructure placement.
- A vendor-based model for camping and amenity operations is under consideration to allow land management staff to focus on habitat work.

Public Comment

The floor was opened for public comment. The following individuals addressed the Advisory Group:

1. Melissa Lammers – Ormond by the Sea

Melissa identified herself as Vice-Chair of the ECHO Volusia Forever Alliance. She thanked Volusia County's Resource Stewardship Department and Volusia Forever teams for the Carter Quail Ranch acquisition. She reviewed multiple official documents related to the property — including the Florida Forever application, the Lease Agreement, and the draft Management Plan — and noted consistent language across them prioritizing conservation. She quoted the Florida Forever Project Evaluation Report, which states the project will contribute to a corridor supporting rare and endangered species, provide water quality and quantity protection, and expand public access to resource-based recreation. She also referenced the Lease Agreement, which states the county shall manage the property only for conservation and protection of natural and historical resources and resource-based outdoor activities.

Melissa noted that the draft Management Plan reads more like a plan for a State Park than a conservation preserve, and shared that she consulted a Florida State Park Ranger who expressed concerns about the staffing needed to manage all proposed recreational options. She asked the Advisory Group to prioritize conservation goals and select amenities consistent with the quiet enjoyment of the land. She expressed specific concern about ATV use, questioning whether a 3.8-mile trail would satisfy users and whether boundary violations could be adequately prevented.

2. Kate Muldoon – Paw Paw Chapter, Florida Native Plant Society

Kate spoke on behalf of the Paw Paw Chapter of the Florida Native Plant Society. She reiterated that conservation and preservation are weighted more heavily than recreation in the governing documents, particularly given the presence of imperiled species such as Rugél's Pawpaw, gopher tortoise, and pine lily. She expressed support for the commitment to complete a species survey before any infrastructure is placed.

Kate stated concern that the plan proposes too much recreational activity on a single parcel and questioned why some recreation could not be distributed to other connected parcels, acknowledging this would require plan amendments. She recommended reconsidering the density of campgrounds, RV space, and facilities around the lake. She also stated she does not understand the rationale for including hunting, noting the availability of other hunting areas in central and eastern Volusia County.

3. David Shelton

David identified himself as a representative of one of the hunting leases on the County property. He thanked the Advisory Group for considering a hunting component and expressed support for managing the area as a hunting use. He directed the Advisory Group to his written comments submitted in advance and highlighted one item for the record: he recommended that revenue language in the Management Plan mirror the existing language in the County's 2013 Deep Creek Preserve General Management Plan, which specifies that revenues generated from resource management activities are to be dedicated to further management of the affected property. He noted the current draft language leaves the destination of revenues too open-ended.

4. Brian Schwartz

Brian noted that he is familiar with the property, having worked on it when it was under private ownership. He observed that the map showing the hunting area and the OHV area in close proximity raised the humorous concern that motorcycles might be in the line of fire. He noted that he had hunted the property for 20 years without realizing the Rugél's Pawpaw was present or endangered, and that the plant appeared to have survived that use. He also referenced Daniel Young's earlier statement that the Pawpaw thrives under disturbance.

Close of Public Comment

Daniel Young thanked all speakers and confirmed that no additional public commenters came forward. He announced the public hearing was concluding and that the Advisory Group would convene in a separate meeting to deliberate on the plan and public comments received. A brief recess was taken.

These minutes constitute the official record of the June 11, 2026 Public Hearing MPAG meeting and are open to public inspection pursuant to §286.011(2), Florida Statutes.

VOLUSIA COUNTY RESOURCE STEWARDSHIP DIVISION

Management Plan Advisory Group (MPAG)

Deep Creek Preserve – Management Plan Update

Advisory Group Meeting – Meeting Minutes

Date:	Thursday, June 11, 2026
Time:	6:26 PM – 6:55 PM
Location:	UF/IFAS Extension Office Auditorium, 3100 E. New York Ave., DeLand, FL
Meeting Notice:	Meeting was publicly noticed in compliance with Florida Sunshine Law, §286.011, F.S. The meeting was open to the public at all times.
Subject:	Deep Creek Preserve Management Plan – Advisory Group Review of Public Comment (State Tract Addition)

Attendees

Advisory Group Members:

Name	Organization	Role / Seat	Present / Absent
Nick Dunnam	Volusia County Resource Stewardship Division	Lead Managing Agency (Spokesperson)	X
Chris Kinslow	St. Johns River Water Management District	Co-managing Entity	
John Gamble	N/A	Local Private Property Owner	X
David Bagley	Volusia County Soil and Water Conservation District	Soil and Water Conservation District	
Sonya Guidry	Paw Paw Chapter, Florida Native Plant Society	Local Conservation Organization	X
Danny Robins	Volusia County	Local Elected Official	X
Greg Hagan	Fish and Wildlife Conservation Commission	Imperiled Species Agency Representative	

Donald King	FDACS / Florida Forest Service	Imperiled Species Agency Representative	X

Staff / Contractors:

- Daniel Young, Young Environmental – Lead contractor, plan author, meeting facilitator
- Ashlyn Russell, Volusia County Resource Stewardship Division – Administrative Coordinator (note-taker)
- Hunter Folmar, Richard Harris, Crystal Smith, Holly Giles, Danielle Dangleman

Note: *This was an open public meeting held in compliance with Florida's Government in the Sunshine Law, §286.011, F.S. The meeting was open to the public at all times. Minutes are a summary record of proceedings and are open to public inspection per §286.011(2), F.S. All advisory group members were reminded not to discuss the plan with each other outside of officially noticed meetings.*

Call to Order

Nick Dunnam called the Advisory Group meeting to order at 6:26 PM. Roll call was conducted; all members confirmed present. Nick noted that Daniel Young would summarize the written public comments received prior to the deadline, after which each Advisory Group member would provide input.

Summary of Written Public Comments

Daniel Young summarized the 27 written comments received by the 1:00 PM deadline. Comments were submitted by individuals as well as three organizations: the Volusia County Cattlemen's Association, the Volusia County Farm Bureau, and Pheasants Forever/Quail Forever. A number of comments were also received from members of the Paw Paw Chapter of the Florida Native Plant Society. The primary themes from written comments included:

- Amount of recreational development: Some opposition to the overall volume of proposed recreation on the parcel.
- Off-highway vehicle use: Opposition expressed, primarily from Paw Paw Chapter members.
- Hunting: Both letters in support and letters in opposition were received. Pheasants Forever/Quail Forever members wrote predominantly in support of the hunting component. Several Paw Paw Chapter members wrote in opposition.
- Cattle grazing: Comments both in favor and opposed. The Farm Bureau and Cattlemen's Association submitted letters on official letterhead in support.
- Camping: Some opposition to the volume of camping proposed.
- Prescribed fire: Support expressed by both Pheasants Forever/Quail Forever and Paw Paw Chapter members.
- Rugél's Pawpaw: Many commenters expressed enthusiasm for conservation of the species.

- Drainage: A few nearby residents requested improved drainage, which Daniel Young noted could not be considered unless it restored historical flows; new drainage ditches are not contemplated.
- Grammatical/technical corrections: One detailed comment identified several minor errors to be corrected in the draft.

Member Discussion

Nick Dunnam invited each Advisory Group member to provide input on the public comments and the plan. Members went around the table in order.

Sonya Guidry

Sonya provided background on the Rugél's Pawpaw plant and the Paw Paw Chapter's longstanding documentation of the species, noting that the chapter has conducted an annual Rugél's Round-Up since 2012. She stated that the Carter Quail Ranch parcel contains by far the richest concentration of Rugél's Pawpaw she has ever observed in her years of searching. She expressed that the preserve should remain focused on conservation and that development should be deferred until species surveys are complete and natural communities are better understood. Specific positions:

- Strongly opposed to OHV use, noting gopher tortoises tend to use the same upland terrain preferred for OHV trails, and citing potential habitat damage.
- Does not oppose passive camping, bike trails, or equestrian use; expressed that horseback riding is a welcome activity.
- Opposes cabins and any development that would give the preserve the character of a State Park.
- Questions the rationale for a strong push toward hunting on this property given available hunting areas nearby, including Tiger Bay State Forest, the Kimco Tract of Deep Creek Preserve, Lake George Wildlife Management Area, and multiple private hunting clubs throughout Volusia County.
- The Florida Native Plant Society, through the Paw Paw Chapter, is formally opposed to off-highway vehicle use on preserved lands.

John Gamble

John noted that no commenter, written or in-person, expressed opposition to prescribed fire — a sign he found encouraging of public environmental literacy. He provided the following input:

- Acknowledged both pro- and anti-hunting perspectives but noted that public hunting access in the area is more limited than it might appear: the SJRWMD tract is under a private lease and unavailable to the public, and many nearby areas require draw permits.
- He personally hunted the property when it was privately owned and noted the wildlife density is relatively low, suggesting hunting use may naturally self-regulate based on hunter experience.
- Expressed no concern about the Rugél's Pawpaw under county management, noting the plant survived decades of private cattle and hunting use and will likely flourish under conservation management with prescribed fire.
- Reviewed Farm Bureau comments on cattle and found them reasonable.

- Supportive of a broad range of recreational activities; noted that though he is not personally an ATV user, he recognizes others have different interests.
- Noted no written comments were received from equestrian groups or OHV user groups, which he found notable given their typical advocacy presence at County Council meetings.

Donald King

Donald emphasized that the plan is a conceptual framework — it outlines what land managers are authorized to do, not a guarantee that every use will occur. He noted that Volusia County does a good job of overall land management and that this plan attempts to balance the needs of a large and diverse county population. He called it a good first step and noted that the 10-year review cycle will allow uses that work to continue and uses that do not work to be modified or removed.

Danny Robins

Danny thanked staff for an excellent starting point and provided context from his perspective as the District 3 County Council representative, noting that his district is the largest and most diverse in the county — encompassing surfers, farmers, ranchers, and everything in between. Key points:

- Noted that Volusia County has been one of the most active counties in the state for land conservation, acquiring approximately 8,300 acres since 2021 and ranking second among Florida's 67 counties.
- Shared that his constituents — particularly younger generations — frequently question why conservation land is so restrictive and why they cannot use it more actively. He expressed strong support for expanding recreational access as a way to build public support for conservation programs.
- Referenced the Big Cypress/Everglades as a model for managing sensitive lands for multiple uses, including OHV and other recreation, noting these uses are managed successfully on some of the most environmentally sensitive land in the country.
- Asked Nick Dunnam to clarify boating access. Nick confirmed that the plan contemplates non-motorized watercraft — kayaks, canoes, and small johnboats with electric motors — and that power boating is not proposed due to the size of the waterways and cost of boat ramp infrastructure.
- Expressed strong support for hunting and fishing as constitutionally protected rights in Florida.
- Raised the topic of revenue generation in the context of the proposed State constitutional amendment to eliminate property taxes on homesteaded properties up to a certain value, which he estimated could impact the County by approximately $109 million. He noted that some level of usage fees or revenues from recreational amenities may be necessary to sustain parks and conservation land programs going forward. He supported finding ways to capture tourism revenue from non-local visitors rather than charging local taxpayers.
- Affirmed support for all conditional uses in the plan and expressed full confidence in Nick Dunnam and county staff to manage the property responsibly.

Nick Dunnam

Nick echoed the comments of the group and summarized the county's approach to the plan. Key points:

- The plan reflects two guiding principles from County Council: expanding public recreation and access, and multi-use management of conservation lands.

- The county will conduct listed species surveys and will not place infrastructure over known species locations. Rugél's Pawpaw locations are already known and will be avoided.
- No pavement is proposed anywhere in the preserve.
- RV camping is a new offering on Volusia County conservation lands, modeled on practices used elsewhere on other conservation properties statewide.
- The county manages over 40,000 acres and more than 80 miles of trails and is committed to mitigating conflicts between user groups as they arise.
- If a conditional use is abused or causes harm, the county retains authority to remove it from operation without returning to the State for plan amendment.
- Cattle grazing has a long history on conservation lands in Florida and will continue to be evaluated for compatibility; adjustments will be made if conflicts arise.
- The goal is for conservation land to be experienced and valued by the broadest possible public — including next to some of the most endangered plants in the world — as a strategy for sustaining long-term public and political support for the Volusia Forever program.

Additional Item – Cattle Grazing

The group briefly addressed cattle grazing as a remaining conditional use. It was noted that cattle grazing is still a contemplated use on the State Tract and that if conflicts with other uses arise over time, adjustments can be made to the grazing agreement.

Action Items Summary

No new formal action items were generated at this meeting. The following item was noted for follow-up based on public comment received:

Action Item	Responsible	Target
Review revenue language in the plan and consider aligning with existing 2013 Deep Creek Preserve General Management Plan language specifying that revenues generated from resource management activities are dedicated to further management of the affected property.	Daniel Young / Young Environmental + County Staff	Final draft

Next Steps and Process

- Daniel Young and Young Environmental will incorporate all public hearing and advisory group feedback into the final management plan.
- The final plan will be submitted for County Council review, then to the St. Johns River Water Management District for approval, followed by State review.
- The plan will then be submitted to the Acquisition and Restoration Council (ARC), targeted for the December 10, 2026 ARC meeting. ARC has 90 days to review and provide input.

- Following ARC review, the plan will return to the Water Management District for final approval.
- Advisory group members are reminded not to discuss the plan with each other outside of officially noticed meetings per Florida's Sunshine Law, §286.011, F.S.

Adjournment

Daniel Young thanked all attendees for their time and input. Nick Dunnam thanked the public and affirmed that public input is an important part of the process. The Advisory Group meeting was adjourned at 6:55 PM.

These minutes constitute the official record of the June 11, 2026 Advisory Group MPAG meeting and are open to public inspection pursuant to §286.011(2), Florida Statutes.

St. Johns River
Water Management District

Volusia County
FLORIDA

Name: Graham Williams

Affiliation: SJRWMD

Email: gwilliams@sjrwmd.com

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	Good use of weirs, Low water crossings, culverts, etc to help maintain more natural hydrology.
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	(Yes) No In Progress	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	Good efforts to manage for mixed stands of slash and longleaf throughout the property. Recommend keeping sufficiently high BA targets to ensure needle-drop fuel source persists into long-term future. This will help aid burning with dense gallberry understory.

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	Done. updated as needed (ex. new acquisitions
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	on progress	wildlife openings.
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	site could use more burning but I understand the limitations/challenges. Lots of other management work is underway to set up future burning
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	few exotics seen on tour most had been treated. 2-fold approach to feral hog activ- limit lease + staff.

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	in-progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	@ 11 miles of trails on Deep Ck Pres
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	Explore Udusia tours
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Yes

This is a challenging property to manage for a number of reasons. Vol. Co. is doing a great job!

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No (In Progress)	Good job leveraging funds from cost-share opportunities to do habitat mgmt activities
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No (In Progress)	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No (In Progress)	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	Saw lots of great groundcover
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	will be remapped in LMP update
o Development a Forest Management Plan / Program	2013	Yes No In Progress	update as needed

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going		
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	Updated as needed
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	Facilities are adequate and sufficient for needs.

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Great job with using alternative hunting opportunities in creative ways to provide those recreational opportunities and, in some cases, bring in additional income and also provide beneficial onsite presence and assistance with various property needs.

Keep up the good work!

St. Johns River Water Management District

Volusia County FLORIDA

Name: Sande Habali

Affiliation: Pawpaw Chapter of FNPS

Email: Sndhbl49@gmail.com.

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	(Yes) No (In Progress)	Leffler Tract

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	on an "as needed" basis
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	In Progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	Weather, location dominated
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	As needed	use archeologist experts periodically
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress Hiking Trails	Other than Kemcho
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs	Authorizations permits needed.	Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

I am impressed by the managemet of this property. It is obvious the importance of conservation, protection, + restoration of the property first; then allowances for public activities, very organized programs

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No In Progress	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	Didn't visit
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	Needs remapped
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	in progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No (In Progress)	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No (In Progress)	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	(Yes) No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No (In Progress)	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No (In Progress)	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	Alternative hunting opportunities offered
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	Environmental education through Echo
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Many activities require permits from the County which helps regulate its proper use. For such a newly purchased property the plans & management are in compliance & above.

St. Johns River Water Management District

Volusia County FLORIDA

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Affiliation: FWC

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Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	(Yes) No (In Progress)	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	yes	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

yes

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	(Yes) No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	(Yes) No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	(Yes) No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	(Yes) No In Progress	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	In progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	(Yes) No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	(Yes) No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No (In Progress)	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	(Yes) No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	(Yes) No In Progress	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Yes

St. Johns River Water Management District

Volusia County FLORIDA

Name: Donald King

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Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	Yes No (In Progress)	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	(Yes) No In Progress	
o Development a Forest Management Plan / Program	2013	(Yes) No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	Yes	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	(Yes) No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	(Yes) No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No (In Progress)	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	Yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	Road system needs Imp. for Silvicultural Activities.
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Need for continued Road Improvements
For better access for management activities.

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	(Yes) No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	(Yes) No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	(Yes) No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	(Yes) No In Progress	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	In Progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

St. Johns River Water Management District

Volusia County FLORIDA

Name: Robbie Lee

Affiliation: Miami Corp Management - Farmton Land Manager

Email: rlee@miami-corp.com

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	Yes No In Progress	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	Yes	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	Yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No (In Progress)	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No (In Progress)	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No (In Progress)	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	REMARKED
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	IN PROGRESS	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	(Yes) No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No (In Progress)	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	(Yes) No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	(Yes) No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	(Yes) No In Progress	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

St. Johns River Water Management District

Volusia County FLORIDA

Name: Jason DePue

Affiliation: FL Park Service / DEP

Email: jason.depue@floridadep.gov

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	Yes No In Progress	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	Continue with thinnings, mechanical
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	More fire and maybe more ditch crossings.

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	yes	Become wildlife openings.
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	Continue with more dormant lowers before jumping into growing.
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	Looks good.

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	No trail signs seen. Add some. where needed,
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	Road material needed for wash outs.
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	Recommend a established quota. State changes as needed.
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

yes.

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	Continue with access improvements
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No (In Progress)	FWAI as the DFC.
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No (In Progress)	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No (In Progress)	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	Look for good windows to plant longleaf and burn. More fire when you can.

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	(Yes) No In Progress	Monitor for invasives.
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	Continue to look for opportunities to plant and burn.
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No (In Progress)	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No (In Progress)	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No (In Progress)	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No (In Progress)	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	Basal area of 30-40 is too low. Shoot for 50-70 ba.

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	yes	Wildlife plots.
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	Need to implement burning on a more frequent frequency.
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	Increase annual acres burned.
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	Looks good, Continue surveys.
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	Arm Trained ?
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	Roads/trail improvements needed for vehicle access.

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Yes.

Volusia County
FLORIDA

Growth & Resource Management
Planning and Development Services

July 28, 2026

Mr. Nick Dunnam, Director
Resource Stewardship Division
County of Volusia
123 West. Indiana Ave, Room 200
DeLand, Fl 32720

Re: Deep Creek Preserve Management Plan

Dear Mr. Dunnam:

The Deep Creek Preserve Management Plan has been reviewed, and it is consistent with the Volusia County's Future Land Use and Conservation Element of the Comprehensive Plan.

Please feel free to contact the Planning office at 386-736-5959 or planning@volusia.gov if you have any questions or if we can be of further assistance.

Sincerely,



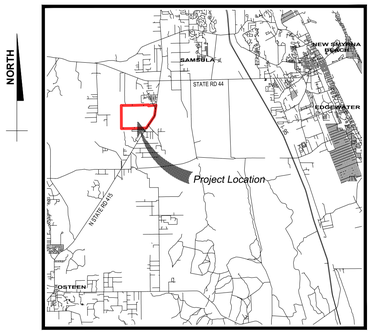
Samantha J. West
Planning Manager
swest@volusia.gov

SJW/jj

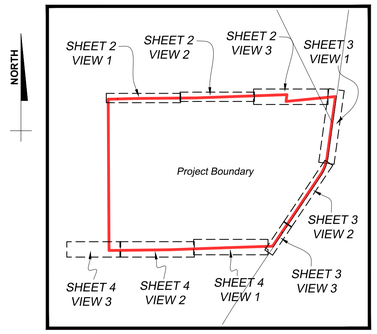
APPENDIX O

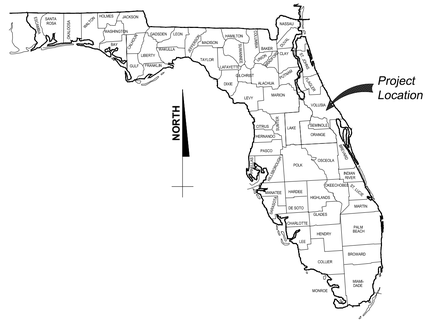
Map of Boundary Survey
of
FDEP Volusia County Conservation Corridor Carter Parcel
Located in
Sections 26, 27, 28, 33, 34 & 35 Township 17 South, Range 32 East
Volusia County, Florida

Location Map
(Not to Scale)



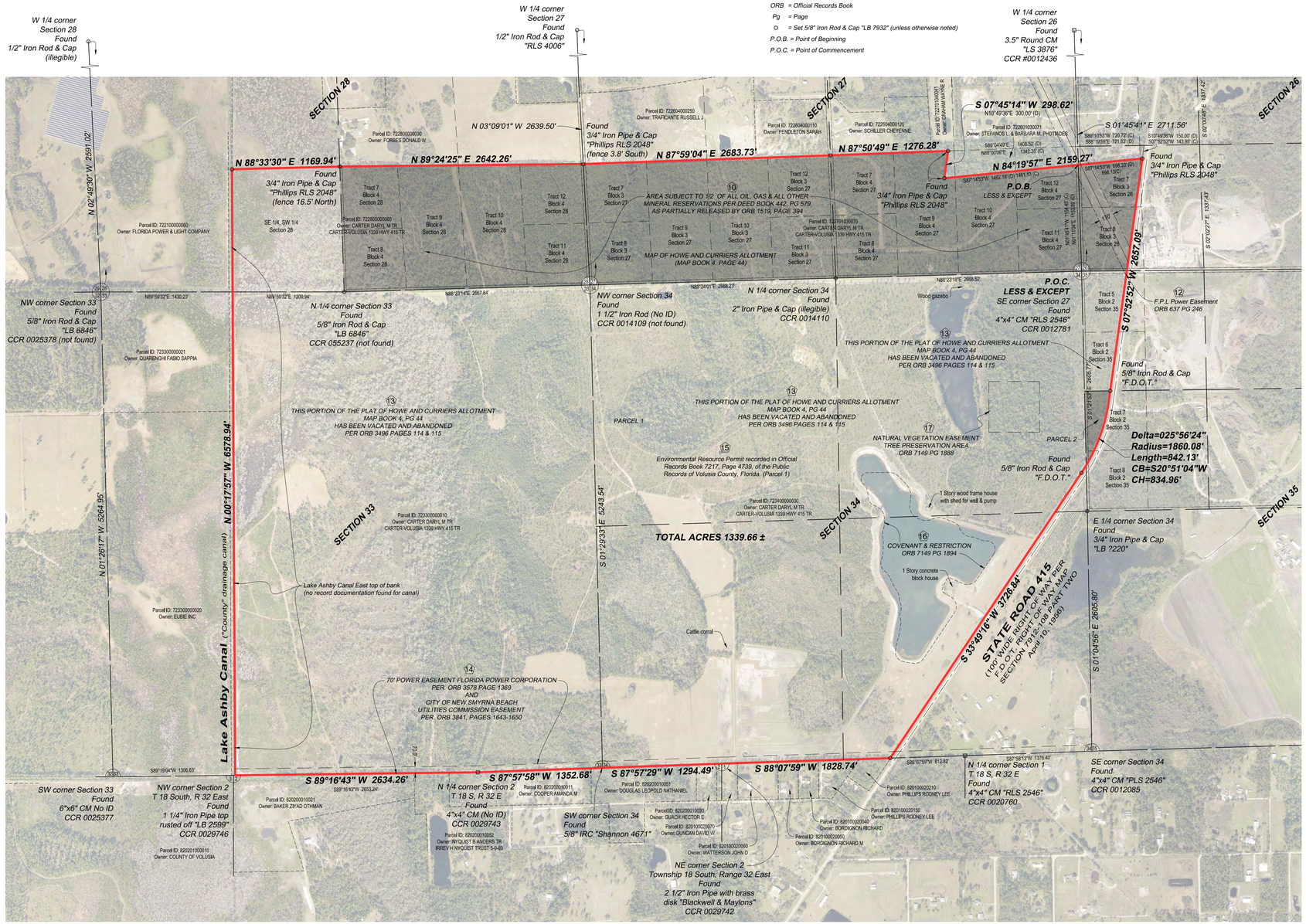
Detail Sheet Key Map





Legend:

(C) = Calculated Measurement
(D) = Deed Measurement
ORB = Official Records Book
Pg = Page
O = Set 5/8" Iron Rod & Cap "LB 7932" (unless otherwise noted)
P.O.B. = Point of Beginning
P.O.C. = Point of Commencement



DESCRIPTION (provided by client):

The Land referred to herein below is situated in the County of Volusia, Slate of Florida, and is described as follows:

Parcel 1:

The South Half of the following described property:

All of Section 34, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415; all of Section 35, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415, except Tract 7, Block 2; all of Section 33, Township 17 South, Range 32 East, Volusia County, Florida, lying East of drainage canal; all as shown on Map of Howe And Curriers Allotment, as per Map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

The North Half of the following described property:

All of Section 34, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415; all of Section 35, Township 17 South, Range 32 East, Volusia County, Florida, lying West of Highway 415, except Tract 7, Block 2; all of Section 33, Township 17 South, Range 32 East, Volusia County, Florida, lying East of drainage canal, all as shown on Map Of Howe and Curriers Allotment, as per Map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

That portion of Howe And Currier Allotment in Sections 26, 27 and 28, Township 17 South, Range 32 East, Volusia County, Florida, being that part of Tracts 7 and 8, Block 3, Section 26, Township 17 South, Range 32 East, Volusia County, Florida, lying Westerly of the Westerly right of way line of State Road 415; all Tracts 7, 8, 9, 10, 11 and 12, Block 4, and all of Tracts 7, 8, 9, 10, 11 and 12, Block 3, Section 27, Township 17 South, Range 32, East and all of Tracts 7, 8, 9, 10, 11 and 12, Block 4, Section 28, Township 17 South, Range 32 East, according to Map in Map Book 4, Page 44 (Map Book 22, Page 147), Public Records of Volusia County, Florida, and to include that portion of the Southeast Quarter of the Southwest Quarter of Section 28, Township 17 South, Range 32 East, lying Easterly of a County drainage canal.

LESS AND EXCEPT:

A portion of Howe And Curriers Allotment in Tract 7, Block 3, Section 26, Township 17 South, Range 32 East, lying Westerly of the Westerly right of way line, State Road 415; and a portion of Tracts 9, 10 and 12, Block 4, Section 27, Township 17 South, Range 32 East, according to Map in Map Book 4, Page 44 (re-filed in Map Book 22, Page 147), Public Records of Volusia County, Florida, being more particularly described as follows:

Commence at a concrete monument stamped "R.L.S. 2546" marking the Southeast corner of said Section 27; thence North 01 degrees 11 minutes 04 seconds East, along the East line of Section 27, 1153.89 feet to the POINT OF BEGINNING of this description; thence departing said East line of Section 27, South 87 degrees 14 minutes 53 seconds West, 1462.18 feet; thence North 10 degrees 49 minutes 36 seconds East and parallel to said State Road 415, 300.00 feet to a point on the Northerly line of Tract(s) 9, 10 and 12, Block 4, Section 27; thence South 89 degrees 04 minutes 49 seconds East along said Northerly line of Tract(s) 9, 10 and 12, Block 4, Section 27, 1408.50 feet; thence South 88 degrees 19 minutes 59 seconds East along the Northerly line of Tract 7, Block 3, Section 26, 721.83 feet to a point on the Westerly right of way of State Road 415; thence South 10 degrees 49 minutes 36 seconds West along Westerly right of way of State Road 415, 150.00 feet; thence South 87 degrees 14 minutes 53 seconds West, 698.33 feet to the POINT OF BEGINNING.

Parcel 2:

Tract 7, Block 2, Howe And Curriers Allotment, lying West of State Road 415 in Section 35, Township 17 South, Range 32 East, according to the Map or Plat thereof, as recorded in Map Book 4, Page 44, Public Records of Volusia County, Florida.

Surveyor's Notes:

1. *This Map of Boundary Survey is not valid without the original signature and the seal of the signing Florida licensed Surveyor and Mapper.*
2. *Additions or deletions to this Map of Boundary Survey by other than the signing party or parties is prohibited without the written consent of the signing party or parties.*
3. *The legal description shown hereon is in accord with the description shown on Exhibit A of the Owen Title Company commitment for title insurance, file number 24-17039, Dated: March 15, 2024 08:00 a.m.*
4. *The bearings shown hereon are based on the West Right of Way line of State Road 415 through the SE 1/4 of Section 34, Township 17 South, Range 32 East as being S33°49'16"W and is relative to the North American Datum of 1983, 2011 Adjustment, projected in the Florida State Plane Coordinate System, Florida East Zone 901, in US survey feet. These bearings are based on Global Positioning System (GPS) measurements to the National Geodetic Survey (NGS) Continuously Operating Reference Stations (CORS) network. The positions of the project control stations shown here have a calculated positional accuracy of 2 cm or better based on the NGS OPUS Adjustment Report.*
5. *Underground improvements, such as foundations and utilities, were not located.*
6. *Source of aerial photography/image: The Florida Department of Transportation APLUS application. This digital orthographic imagery was acquired between the dates of 01/21/2021 & 03/04/2021 per the metadata provided. This imagery is shown for reference only; this survey does not warrant the accuracy of this imagery.*
7. *This survey does not address the location of any wetlands or sovereign lands that may or may not lie within or adjacent to the lands surveyed.*
8. *Regarding Lake Ashby Canal, there was no record documentation found for canal limits or ownership. Mark E. McClain, Engineering Supervisor with the Volusia County Engineering and Constructions Survey Division was contacted and he was not able to identify canal limits or ownership. Mr. McClain provided a survey completed for Volusia County by Bowyer Singleton in October of 2010. This survey of lands within the township south of the subject parcel identified the canal as "Lake Ashby Canal (no recorded documentation found for canal)".*
9. *The field data acquisition phase of this survey was completed on 10/14/2024, as documented in WSP field book 1150.*
10. *I have reviewed the Owen Title Company commitment for title insurance file number 24-17039, Dated: March 15, 2024 08:00 a.m., and the encumbrances, except liens, that affect the land, identified in Schedule B - Part II of the commitment for title insurance have been shown or noted on this survey. Plottable items have been labeled with a pentagon containing the item number. The numbers listed below match the exception numbers listed in Schedule BII. All referenced documents are filed in the Public Records of Volusia County, Florida.*

    10) Reservation of One Half of all oil, gas and sulfur and the right of ingress and egress for locating, producing and removing as set forth and reserved in that certain Special Warranty Deed recorded June 25, 1951 in Deed Book 442, page 578; as partially released by Warranty Deed recorded December 27, 1972 in Official Records Book 1519, page 394, all of the Public Records Volusia.County, Florida. Note: Without Right of Entry. (Parcels 1 & 2)

    11) Right of Way Agreement by and between Santona Land Corporation and Florida Power & Light Company recorded in Official Records Book 637, page 246, Public Records Volusia County, Florida. (Parcel 1)

    12) Easement in favor of Florida Power & Light Company recorded September 4, 1987 in Official Records Book 3030, page 1989, Public Records Volusia County, Florida.(Parcel 1)

    13) Resolution vacating a portion of Howe & Currier Plat as recorded in Official Records Book 3496, Page 1114, of the Public Records of Volusia County, Florida. (Parcels 1 and 2)

    14) Easement in favor of Florida Power Corporation recorded January 22, 1991 in Official Records Book 3578, page 1369; as affected by Easement Deed in favor of the Utilities Commission, City of New Symrna Beach, Florida, recorded July 12,1993 in Official Records Book 3841, page 1643, all of the Public Records Volusia County, Florida. (Parcel 1)

    15) Environmental Resource Permit recorded in Official Records Book 7217, Page 4739, of the Public Records of Volusia County, Florida. (Parcel 1)

    16) Covenant and Restriction recorded in Official Records Book 7149, Page 1894, of the Public Records of Volusia County, Florida. (Parcel 1)

    17) Natural Vegetation Easement in favor of Volusia County recorded in Official Records Book 7149, Page 1888, of the Public Records of Volusia County, Florida. (Parcel 1)

11. *This map of Boundary Survey is certified to and for the the exclusive use of:*

    1) Board of Trustees of the Internal Improvement Trust Fund of the State of Florida
    2) Florida Fish and Wildlife Conservation Commission
    3) Owen Title Company
    4) Commonwealth Land Title Insurance Company

GRAPHIC SCALE
0 300 600 1,200
(IN FEET)
1 inch = 600 ft.

NORTH

CHARLES B. GARDINER
FLORIDA PROFESSIONAL SURVEYOR AND MAPPER
LICENSE NO. LS 5046

Prepared by:

WSP USA, INC.
550 Northlake Boulevard, Suite 1000
Altamonte Springs, FL 32701 USA
Phone: (407) 522-7570
www.wsp.com
Certificate of Authorization Number LB-8599

Prepared for:

DEPT. of ENVIRONMENTAL PROTECTION
DIVISION OF STATE LANDS
BUREAU of SURVEY and MAPPING
3900 COMMONWEALTH BLVD. MS 105
TALLAHASSEE, FL 32399
(850) 488-2427

Revision	Date

County: Volusia County, Florida | Dwg. Date: 1/21/2025
Field Books: 752, 1450 & 1464 | Photo Date: 2021
Office No.: USI0032247.5384 | Drawn by: TW | Checked by: CBG
Dwg. Name: FDEP Volusia Carter Parcel.dwg

Project Title: **FDEP Volusia Conservation Corridor Carter Parcel**
Map of Boundary Survey
of
Sections 26, 27, 28, 33, 34 & 35 Township 17 South, Range 32 East
Volusia County, Florida

Sheet No. 1 of 4

P:\STRUM\Projects\0035\247.5384.VSI - FDEP Volusia Carter Parcel\Acad\SCI Civil 3D 2025\FDEP Volusia Carter Parcel.dwg, 2/4/2025 11:14:01 AM

O1-1

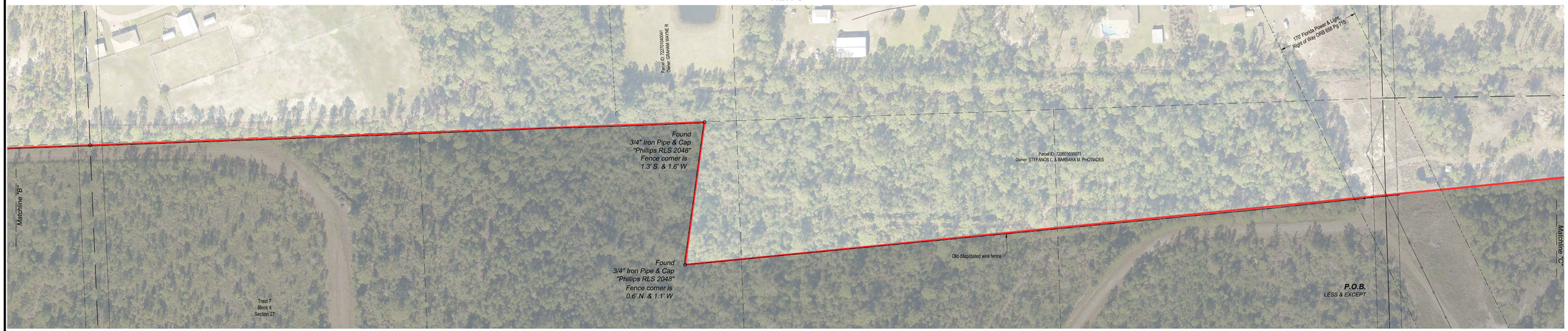
VIEW 1



VIEW 2



VIEW 3



Legend:

- = Stock Wire Fence
- = Barbed Wire Fence
- = Set 5/8" Iron Rod & Cap "LB 7932" (unless otherwise noted)
- OU = Overhead Utility Line
- = Utility Pole

GRAPHIC SCALE

0 50 100 200

(IN FEET)

1 inch = 100 ft.

NORTH

Prepared by:

WSP USA, INC.
550 Northlake Boulevard, Suite 1000
Altamonte Springs, FL 32701 USA
Phone: (407) 522-7570
www.wsp.com
Certificate of Authorization Number LB-8599

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DIVISION OF STATE LANDS
BUREAU OF SURVEY and MAPPING
3900 COMMONWEALTH BLVD. TALLAHASSEE, FL 32399
(850) 488-2427

Prepared for:

Date	Revision

Date	Revision

Project Title:

FDEP Volusia Conservation Corridor Carter Parcel

Map of Boundary Survey
of
Sections 26, 27, 28, 33, 34 & 35, Township 17 South, Range 32 East
Volusia County, Florida

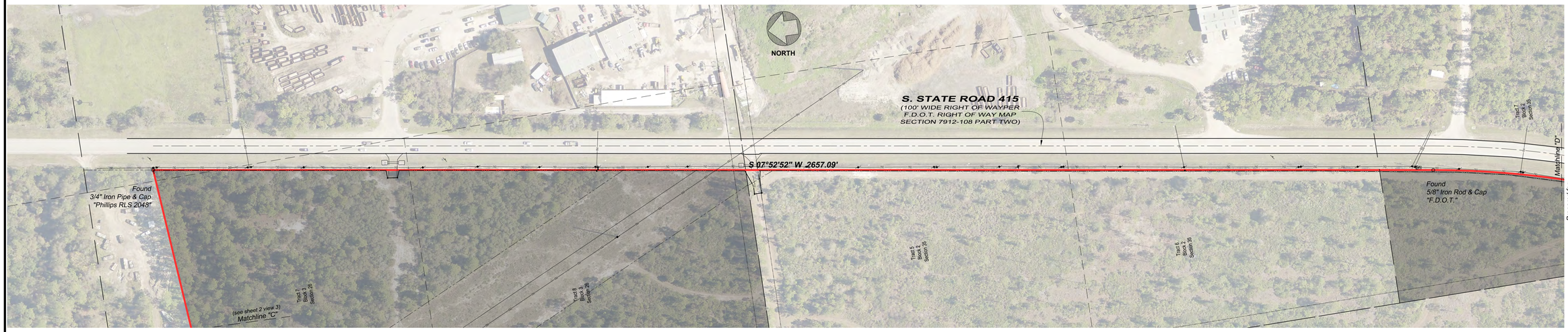
County: Volusia County, Florida	Dwg. Date: 1/21/2025
Field Books: 752, 1450 & 1464	Photo Date: 2021
Office No.: US0039247.5384	Drawn by: TW | Checked by: CBG
Dwg. Name: FDEP Volusia Carter Parcel.dwg	

Sheet No. 2 of 4

O1-2

P:\USA\SOA\US0039247.5384.10 - FDEP Volusia Corridor Parcel\Acad\O1-Civil 3D (2022)\FDEP Volusia Carter Parcel.dwg, 1/5/2025 11:14:22 AM

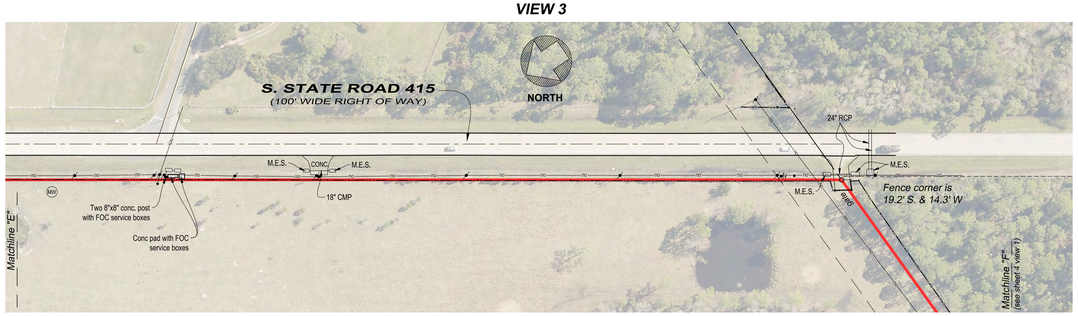
VIEW 1



VIEW 2



VIEW 3



Legend:

- = Stock Wire Fence
- = Barbed Wire Fence
- = Set 5/8" Iron Rod & Cap "LB 7932" (unless otherwise noted)
- = Overhead Utility Line
- = Utility Pole
- CMP = Corrugated Metal Pipe
- RCP = Reinforced Concrete Pipe
- (MW) = Monitor Well

GRAPHIC SCALE

0 50 100 200

(IN FEET)

1 inch = 100 ft.

Prepared by:

WSP USA, INC.
550 Northlake Boulevard, Suite 1000
Altamonte Springs, FL 32701 USA
Phone: (407) 522-7570
www.wsp.com
Certificate of Authorization Number LB-8599

Prepared for:

DEPT. of ENVIRONMENTAL PROTECTION
DIVISION OF STATE LANDS
BUREAU of SURVEY and MAPPING
3900 COMMONWEALTH BLVD. TALLAHASSEE, FL 32399
(850) 488-2427

Revision	Date

Revision	Date

County: Volusia County, Florida
Field Books: 752, 1450 & 1464
Office No.: USI0039247.5384

Dwg. Date: 1/21/2025
Photo Date: 2021
Drawn by: TW | Checked by: CBG

Dwg. Name: FDEP Volusia Carter Parcel.dwg

Project Title:

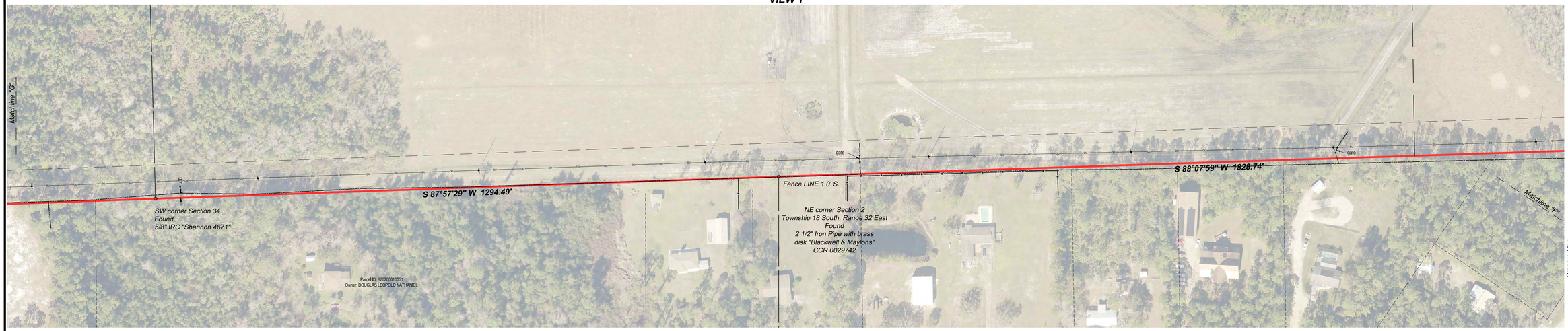
FDEP Volusia Conservation Corridor Carter Parcel

Map of Boundary Survey
of
Sections 26, 27, 28, 33, 34 & 35, Township 17 South, Range 32 East
Volusia County, Florida

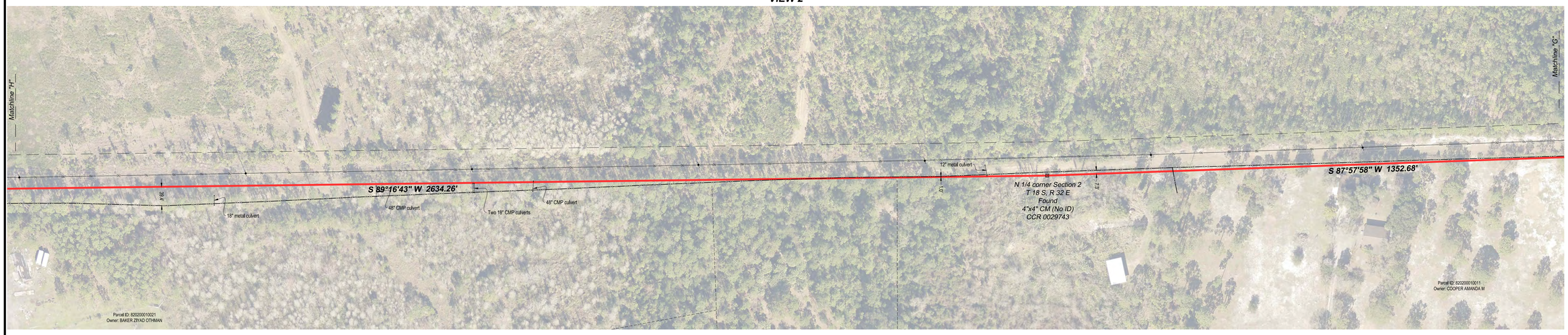
Sheet No. 2 of 4

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VIEW 1



VIEW 2



VIEW 3



Legend:

- = Stock Wire Fence
- = Barbed Wire Fence
- = Set 5/8" Iron Rod & Cap "LB 7932" (unless otherwise noted)
- = Overhead Utility Line
- = Utility Pole
- CMP = Corrugated Metal Pipe
- RCP = Reinforced Concrete Pipe
- = Monitor Well

GRAPHIC SCALE

0 50 100 200

(IN FEET)

1 inch = 100 ft.

NORTH

Prepared by:

WSP USA, INC.
550 Northlake Boulevard, Suite 1000
Altamonte Springs, FL 32701 USA
Phone: (407) 522-7570
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Certificate of Authorization Number LB-8599

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BUREAU of SURVEY and MAPPING
3900 COMMONWEALTH BLVD. TALLAHASSEE, FL 32399
(850) 488-2427

Revision	Date

Dwg. Date:	1/21/2025
Photo Date:	2021
Drawn by: TW	Checked by: CBG

County: Volusia County, Florida
Field Books: 752, 1450 & 1464
Office No.: US0039247.5384
Dwg. Name: FDEP Volusia Carter Parcel.dwg

Project Title:

FDEP Volusia Conservation Corridor Carter Parcel

Map of Boundary Survey
of
Sections 26, 27, 28, 33, 34 & 35, Township 17 South, Range 32 East
Volusia County, Florida

Sheet No. 4 of 4

P:\USA-SOA-JAX\0039247.5384.02 - FDEP Volusia Corrie Parcel\Acad\CAD\Civil 3D 2022\FDEP Volusia Carter Parcel.dwg, 1/5/2025 11:13:05 AM

O1-4

08/10/2015 12:54 PM
Doc stamps .70
(Transfer Amt $ 10)
Instrument# 2015-147296 # 1
Book: 7149
Page: 1888

NATURAL VEGETATION EASEMENT

STATE OF FLORIDA
COUNTY OF VOLUSIA

KNOW ALL MEN BY THESE PRESENT THAT in consideration for the issuance of Volusia County Tree Removal Permit for Final Site Plan 2015-F-FSP-0076, a nonexempt excavation known as the SR 415 Borrow Pit, Daryl M. Carter, as Trustee of the Carter-Volusia Hwy Trust, and not individually ("Grantor"), owner of Volusia County Parcel No. 7234-00-00-0030, has granted to the County of Volusia ("Grantee"), having an address at 123 West Indiana Avenue, DeLand, Florida, 32720, a Natural Vegetation Easement, in and over the real property in the County of Volusia, Florida, as set forth in the sketch attached hereto as Exhibits A (the "Property").

As used herein, the term Grantor shall include any successor or assignee of the Grantor, and the term Grantee shall include any successor or assignee of the Grantee.

It is the purpose and intent of this Natural Vegetation Easement to assure that trees 2" Diameter at Breast Height and larger on the Property will be retained, maintained, and protected to the greatest extent possible in perpetuity.

The following are prohibited within this Natural Vegetation Easement:

1. Structures;
2. Impervious surfaces of any kind, including driveways or sidewalks;
3. Trenching for utilities;
4. Changes in the natural grade; and
5. Stockpiling or storage of any materials.

The following may be permitted within this Natural Vegetation Easement:

1. The use of landscape plants and mulch.
2. Limited crossings of the easement as approved by the County Forester, if such improvements are constructed of pervious material that does not change the natural grade or damage tree roots.

It is understood that the granting of this Natural Vegetation Easement entitles the Grantee or its authorized representatives to enter the above-described land in a reasonable manner and at reasonable times to assure compliance.

The Grantor on behalf of itself and its successors or assigns hereby agrees to bear all cost and liability relating to the retention, maintenance, and protection of trees within this Natural Vegetation Easement, and Grantor does hereby indemnify and hold harmless the Grantee from same.

The Natural Vegetation Easement hereby granted and the obligation to retain, maintain, and protect the trees herein specified shall run with the land and shall be binding upon the Grantor and its successors or assigns, and shall inure to the benefit of the Grantee and its successors and

assigns. However, Grantee agrees to allow Grantor to relocate the natural vegetation easement in a manner which provides for a better habitat and is consistent with the requirements for natural vegetation. Such easement relocation shall require the approval of Grantee.

The terms and conditions of this Natural Vegetation Easement may be enforced by the Grantee by injunctive relief and other appropriate available remedies, and Grantor consents that venue for such enforcement actions shall lie in the circuit court of the 7th Judicial Circuit, in Volusia County, Florida, or the Volusia County Code Enforcement Board. In any enforcement action in which the Grantee prevails, Grantee shall be entitled to recover reasonable attorney's fees and costs in the trial and appellate courts, in addition to the cost of restoring the land to the natural vegetative and hydrologic condition existing at the time of execution of this Natural Vegetation Easement or to the vegetative and hydrologic condition required by the aforementioned permit. These remedies are in addition to any other remedy, fine or penalty, which may be applicable under Chapter 162, 373 or 403 Florida Statutes.

Any forbearance on behalf of the Grantee to exercise its rights in the event of the failure of Grantor to comply with the provisions of this Natural Vegetation Easement shall not be deemed or construed to be a waiver of the Grantee's rights hereunder in the event of any subsequent failure of the Grantor to comply.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

Instrument# [redacted]3
Book: 7149
Page: 1890

IN WITNESS WHEREOF, Grantor has hereunto set Grantor's hand and seal on this 4th day of AUGUST, 2015.

Signed, sealed and delivered
in the presence of:

Pamela Lee Wray
Print Name: Pamela Lee Wray

C. Perry Marsh IV
Print Name: C. Perry Marsh IV

By: _____
Daryl M. Carter, as ~~Trustee~~ of the Carter-Volusia 1339 Hwy 415 Trust, and not individually

STATE OF FLORIDA
COUNTY OF ~~VOLUSIA~~ Orange

The foregoing instrument was acknowledged before me this 4th day of August, 2015, by Daryl M. Carter, as Trustee of the Carter-Volusia 1339 Hwy 415 Trust, who is [✓] personally known to me ~~or [ ] who has produced _____ as identification~~ and who did not take an oath.

Pamela Lee Wray
NOTARY PUBLIC

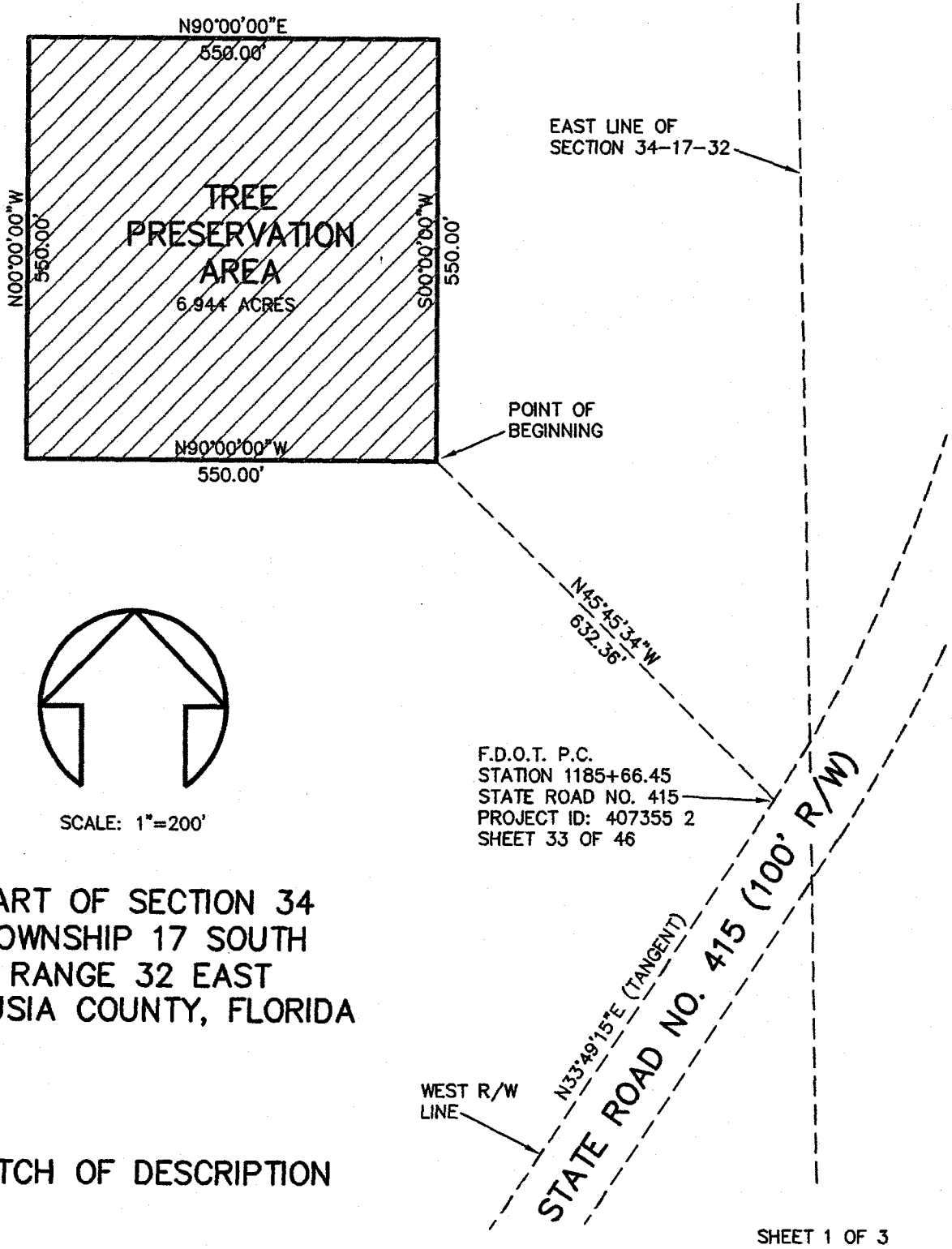
Type or print name: Pamela Lee Wray
Commission No.: FF 106692

PAMELA LEE WRAY
Notary Public - State of Florida
My Comm. Expires Jul 22, 2018
Commission # FF 106692
Bonded Through National Notary Assn.

This document was presented for recording with redacted information.

Instrument# 2015-147296 # 4
Book: 7149
Page: 1891

EXHIBIT A



PART OF SECTION 34
TOWNSHIP 17 SOUTH
RANGE 32 EAST
VOLUSIA COUNTY, FLORIDA

SKETCH OF DESCRIPTION

SHEET 1 OF 3

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

LEGAL DESCRIPTION

A PART OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, DESCRIBED AS FOLLOWS:

FROM THE POINT OF CURVATURE ON THE WEST RIGHT OF WAY LINE OF STATE ROAD NO. 415, STATION 1185+66.45, AS SHOWN ON FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, PROJECT ID: 407355 2, SHEET 33 OF 46, THE TANGENT OF WHICH RUNNING ALONG SAID WEST RIGHT OF WAY LINE TO THE POINT OF CURVATURE IS N.33°49'15"E., RUN N[redacted]W., DEPARTING SAID WEST RIGHT OF WAY LINE, A DISTANCE OF 632.36 FEET TO THE POINT OF BEGINNING; THENCE N.90°00'00"W., A DISTANCE OF 550.00 FEET; THENCE N.00°00'00"W., A DISTANCE OF 550.00 FEET; THENCE N.90°00'00"E., A DISTANCE OF 550.00 FEET; THENCE S.00°00'00"W., A DISTANCE OF 550.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 6.944 ACRES.

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

Instrument# 2015-147296 # 6
Book: 7149
Page: 1893
Diane M. Matousek
Volusia County, Clerk of Court

SURVEYOR'S NOTES

1. BEARING STRUCTURE BASED ON THE FLORIDA STATE PLANE COORDINTE GRID, EAST ZONE (0903) WITH THE BEARING ON THE WEST RIGHT OF WAY LINE OF STATE ROAD NO. 415 BEING N [redacted] E.
2. DIMENSIONS ARE IN GROUND FEET AND DECIMALS THEREOF.
3. BOUNDARY SURVEY OF OVERALL PROPERTY BY SHANNON SURVEYING, INC., DATED JUNE 7, 2004.
4. THERE MAY BE OTHER MATTERS AFFECTING THIS PROPERTY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
5. SKETCH OF DESCRIPTION ONLY, NOT A BOUNDARY SURVEY.

LEGEND/ABBREVIATIONS

℄ = CENTERLINE
+00.00 = EXISTING ELEVATION
● = 5/8" IRON ROD WITH CAP
▲ = PERMANENT CONTROL POINT
■ = 4" X 4" CONCRETE MONUMENT
o = NAIL WITH CAP
Δ = CENTRAL ANGLE
A/C = AIR CONDITIONER
BK. = BOOK
C.M. = CONCRETE MONUMENT
(C) = CALCULATED
CMP = CORRUGATED METAL PIPE
C.R. = COUNTY ROAD
C = CHORD
CB = CHORD BEARING
CONC. = CONCRETE
COR. = CORNER
( ) = DEED OR RECORD DATA
(DESC) = DATA PER DESCRIPTION
EL. = ELEVATION
ELEC. = ELECTRICAL
ESMT. = EASEMENT
F.H. = FIRE HYDRANT
F.S. = FLORIDA STATUTES
F.D.O.T. = FLORIDA DEPARTMENT OF TRANSPORTATION
FFE = FINISHED FLOOR ELEVATION
F.A.C. = FLORIDA ADMINISTRATIVE CODE.
FD. = FOUND
GOV'T = GOVERNMENT
I.P. = IRON PIPE
I.R. = IRON ROD
INV. = INVERT
L = ARC LENGTH
LB = LAND SURVEYOR BUSINESS
L.S. = LAND SURVEYOR
M.B. = MAP BOOK
MAS. = MASONRY
N & W = NAIL AND WASHER
NO. = NUMBER
N.G.V.D. = NATIONAL GEODETIC VERTICAL DATUM
(NTS) = NOT TO SCALE
(NR) = NON-RADIAL
OE = OVERHEAD ELECTRIC
O.R. = OFFICIAL RECORDS
(P) = PLAT DATA
PED. = PEDESTAL
P.O.B. = POINT OF BEGINNING
PT = POINT OF TANGENCY
PCC = POINT OF COMPOUND CURVATURE
POC = POINT ON CURVE
PG. = PAGE
P.R.M. = PERMANENT REFERENCE MONUMENT
P.C.P. = PERMANENT CONTROL POINT
PRC = POINT OF REVERSE CURVATURE
PC = POINT OF CURVATURE
P.L.S. = PROFESSIONAL LAND SURVEYOR
P.B. = PLAT BOOK
RES. = RESIDENCE
R/W = RIGHT OF WAY
(R) = RADIAL
RNG. = RANGE
R = RADIUS
RCP = REINFORCED CONCRETE PIPE
SAN. = SANITARY
SUB. = SUBDIVISION
S.R. = STATE ROAD
SEC. = SECTION
TEL. = TELEPHONE
TWP. = TOWNSHIP
T = TANGENT
TRANS. = TRANSFORMER
T.V. = TELEVISION
U.S. = UNITED STATES
W.V. = WATER VALVE
D = DELTA OR CENTRAL ANGLE

THIS SURVEY DRAWING IS THE PROFESSIONAL OPINION OF THIS SURVEYOR AND FIRM WHICH WAS PREPARED UTILIZING THE BEST AVAILABLE INFORMATION AND AS SUCH DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED. FURTHERMORE, THIS SURVEYOR AND FIRM DOES NOT ASSUME RESPONSIBILITY AND SHALL NOT BE HELD LIABLE FOR CLAIMS ARISING FROM ERRONEOUS OR INCORRECT INFORMATION FURNISHED TO THE SURVEYOR, WHICH WAS USED AS A BASIS IN THE PREPARATION OF THIS SURVEY DRAWING.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.050, F.A.C., PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

VALID WITH SIGNATURE & EMBOSSED SEAL ONLY

KENNETH R. JONES, P.L.S. NO. 4914 KJONES@MDAENG.COM

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

SKETCH OF DESCRIPTION						FIELD DATE:	F.B.	PG(S)
DRAWN BY: KJ	CREW S-C-D	CHECKED BY: KJ	DATE: 7-22-15	SCALE: 1"=200'	PROJ. NO. 1315	FILE: TPA2	SHEET 3 OF 3	

FLORIDA
POWER
CORPORATION

William Akers, Jr.
CNS 115KV Line

Individual

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, their successors and assigns (GRANTOR herein) in consideration of the sum of One Dollar ($1.00) and other valuable considerations, the receipt of which is hereby acknowledged, grant and convey to FLORIDA POWER CORPORATION, its successors, lessees and assigns, (GRANTEE herein) the right, privilege and easement to construct, reconstruct, operate and maintain in perpetuity or until the use thereof is abandoned, one 115KV electric transmission and distribution line and related facilities not to exceed one transmission pole located approximately every 240 feet and supporting wires, guys, anchors, attachments and accessories desirable in connection therewith over, upon and across the following described lands in Volusia County, Florida, and referred to hereinafter as the Easement Area to wit:

A seventy (70) foot wide Easement Area as shown on Florida Power Corporation Drawing No. T-12780-A, Revision No. 1, dated 11/21/90, attached hereto and made a part hereof,being a part of the following described lands:

The South half of the following described Property:

All of Section 34, Township 17 South, Range 32 East, lying West of Highway 415. All of Section 35, Township 17 South, Range 32 East, lying West of Highway 415, except Tract 7, Block 2. All of Section 33, Township 17 South, Range 32 East, lying East of the drainage canal; all as shown on Map of Howe and Currier's Subdivision, as Per map in Map Book 4, Page 44, Public Records of Volusia County, Florida.

Containing 11.5 Acres,

together with the right to patrol, inspect, alter, improve, repair, rebuild or remove such lines and related facilities, including the right to decrease the number and type of supporting structures, wires and voltage, and to build, maintain and protect such roadways as maybe reasonably required for these purposes.

GRANTEE shall have all other rights and privileges reasonably necessary or convenient for the safe and efficient operation and maintenance of said electric transmission and distribution line and related facilities, including the right to trim, cut and keep clear trees, limbs and undergrowth along said line, and further including the reasonable right to enter upon the adjoining lands of the GRANTOR for the purpose of exercising the rights herein granted.

GRANTEE covenants that it will maintain all roadways in the same condition as said roadways now exist on Grantor's property located within the Easement Area.

PAID
3578 1369
CLERK CIRCUIT COURT
VOLUSIA CO.,FL
91 JAN 22 PM 2:52
007481
RECORD VERIFIED

GRANTOR covenants and agrees that no buildings, structures or obstacles will be located or constructed within the Easement Area nor shall ground elevation be altered more than two feet, except for a canal area located on west property line.

GRANTOR reserves the right to plant trees or other vegetation directly on Grantor's south fence line.

GRANTOR shall also have all other rights in and to said Easement Area compatible with GRANTEE's right to the safe and efficient operation and maintenance of said electric transmission and distribution lines and related facilities, including, but not limited to, the right to utilize said Easement Area for (a) ingress and egress, (b) general farming or pasture purposes, (c) planting low growing shrubbery as beautification, subject, however, to GRANTEE's right of ingress and egress, and (d) construction maintenance and travel over roads and across the Easement Area.

All covenants, terms, provisions and conditions herein contained shall inure and extend to and be obligatory upon the successors, lessees and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the said GRANTOR has hereunto affixed its hands and seals this 3 day of December, 1990.

Signed, sealed and delivered
in the presence of:

Maureen McCallum

William Akers, Jr. L.S.

William Akers

_____ L.S.

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing easement was acknowledged before me this 3 day of December, 1990 by William Akers, Jr..

William Akers
Notary Public, State of Florida

My commission expires: 10-19-92

(SEAL)

FLORIDA POWER CORP. LEGAL DEPT. APPROVED Date 12/17/90 By

REC FEE $ 15.00 RECD PAYMENT AS
DOC ST $ 12.60 INDICATED FOR CLASS
TAX $ _____ "C" INTANGIBLE & DOC
PENALTY $ _____ STAMP TAXES SIGNED
INTEREST $ _____
Clerk Circuit Court Volusia Co Florida. V. G. Smith

BOOK 3578 PAGE 1370

BOOK 3578 PAGE 1371

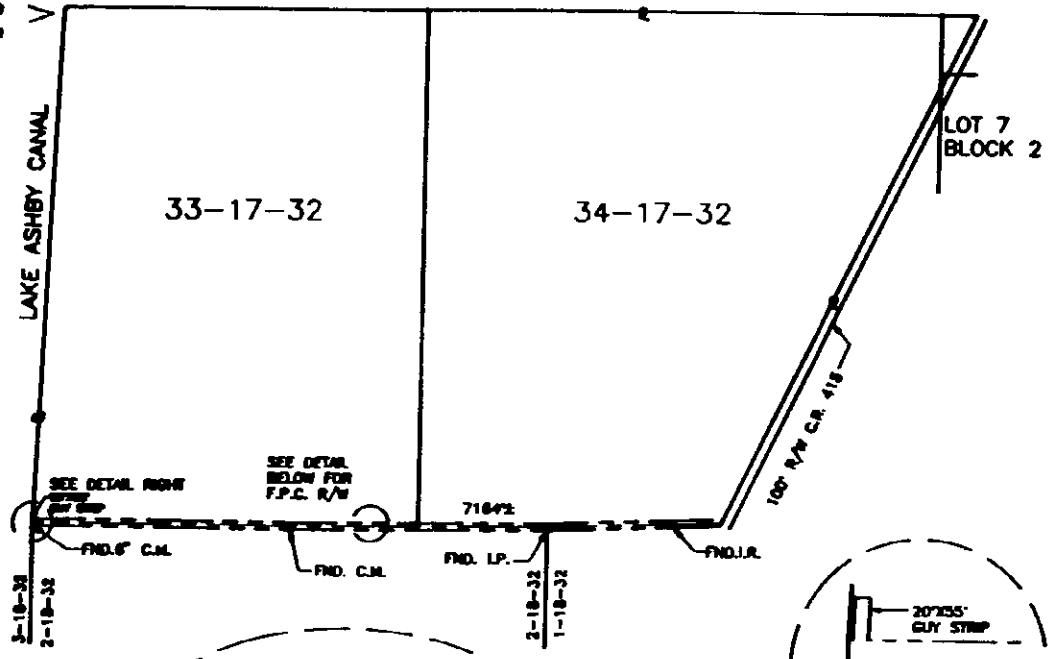
VOLUSIA COUNTY, FL.

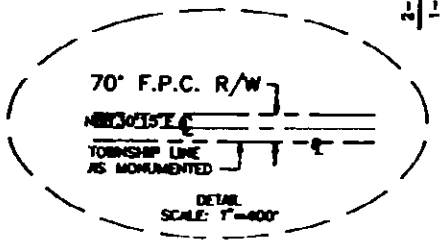
FLORIDA POWER CORPORATION

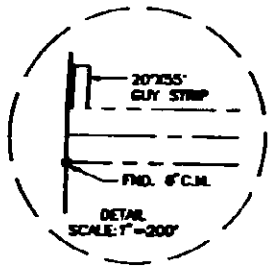
SYSTEM ENGINEERING DEPARTMENT



SCALE: 1" =1600'







F.P.C. R/W – 11.5 ACRES ±

R/W SKETCH
THIS IS NOT A SURVEY

NO.	DATE	REVISIONS
1	[illegible]	[illegible]

CASSADAGA – NEW SMYRNA BEACH 115kv
TRANSMISSION RIGHT–OF–WAY
THROUGH A PORTION OF
SECTIONS 33 AND 34,
TOWNSHIP 17 SOUTH, RANGE 32 EAST
WILLIAM AKERS, JR.
O.R. 2353, PGS. 228–229

DRAWN BY	E.E.P.
DATE	8/9/90
CHECKED	J.N.B.
APPROVED	
SCALE	1"=1600'
DWG. NO.	T–12780–A

007481

BOOK PAGE
3496 1114
VOLUSIA CO.,FL

RESOLUTION NO. 90-157

RESOLUTION VACATING AND ABANDONING A CERTAIN PORTION OF SUBDIVISION PLAT IN VOLUSIA COUNTY, FLORIDA

WHEREAS, WILLIAM AKERS, JR., presented to the County Council a sworn Petition in writing wherein and whereby they seek to have vacated a portion of the plat of Howe and Curriers Allotment as recorded in Map Book 4, Page 44, of the Public Records of Volusia County, Florida, including certain streets, hereinafter described, which said plat is on file in the Office of the Clerk of the Circuit Court of Volusia County, Florida, and to have the property hereinafter described and encompassed in said plat, including streets, returned to acreage for the purpose of taxation; and

WHEREAS, the County Council is of the opinion that said Petition is in proper form and that all things have been done by the said petitioner(s) as conditions precedent to the consideration of action upon said Petition, and

WHEREAS, this Council is of the opinion that the prayer of said Petition should be granted, NOW THEREFORE

BE IT RESOLVED BY THE COUNTY COUNCIL OF VOLUSIA COUNTY, FLORIDA, IN REGULAR MEETING DULY ASSEMBLED IN THE VOLUSIA COUNTY ADMINISTRATION CENTER, COUNTY COUNCIL CHAMBERS, IN THE CITY OF DELAND, FLORIDA, THIS 5TH DAY OF JULY A.D. 1990, AS FOLLOWS:

SECTION I: That portion of the subdivision plat described as follows, to-wit:

That portion of Lot 5 through 8 inclusive of Block 2 in Section 35, Township 17 south, Range 32 East according to the plat of MAP OF HOWE AND CURRIERS ALLOTMENT as recorded in Map 4, Page 44 of the Public Records of Volusia County, Florida which lies Westerly of the Westerly right of way line of State Road Number 415 (a 100 foot wide right of way); and that portion of Lots 1 through 12 inclusive of Block 1 in Section 34, Township 17 South, Range 32 East, and all of Blocks 2 and 3, and that portion of Lots 1 through 10 inclusive of Block 4 in said Section 34 of said plat of MAP OF HOWE AND CURRIERS ALLOTMENT which lies Westerly of the Westerly right of way line of said State Road 415; and all of Blocks 1 and 4 in Section 33, Township 17 South, Range 32 E according to said MAP OF HOWE AND CURRIERS ALLOTMENT; and including the following described right of ways, that portion of the Public Roads being unnamed and undimensioned according to the plat of MAP OF HOWE AND CURRIERS ALLOTMENT as recorded in Map Book 4, Page 44 of the Public Records of Volusia County, Florida, begin more particularly described as follows: that portion of right of way between Block 1 in Section 34 and Block 2 of Section 35, Township 17 South, Range 32 East and which lies northerly of the northwesterly right of way line of State Road 415; and that portion of right of way which lies westerly of Blocks 1 and 4, and easterly of Blocks 2 and 3 in Section 34, Township 17 South, Range 32 East; and that portion of right of way which lies westerly of Blocks 2 and 3 in Section 34, and which lies easterly of Blocks 1 and 4 in Section 33, Township 17 South, Range 32 East; and any portion of the platted right of way which lies westerly of Blocks 1 and 4 in Section 33, Township 17 South, Range 32 East, and which lies easterly of the plat limit; and that portion of right of way which lies northerly of Block 4 in Section 33 and Blocks 3 and 4 in Section 34, and which lies southerly of Block 1 in Section 33, and Blocks 1 and 2 in Section 34, and Block 2 in Section 35, Township 17 South, Range 32 East, Volusia County, Florida.

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VOLUSIA CO.,FL

BOOK PAGE
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be and the same, including streets, is hereby vacated, and the property covered by said plat, including streets, be and the same is hereby returned to acreage as it existed prior to the filing of said plat, for the purpose of taxation.

SECTION II: The Clerk of the Circuit Court is hereby directed to affix upon the face of the plat of the subdivision appropriate notice that the aforementioned portion of plat has been vacated.

DONE AND ORDERED IN OPEN MEETING.

COUNTY COUNCIL
VOLUSIA COUNTY, FLORIDA

BY Alice Cyclon
CHAIRMAN

ATTEST:

Thomas C. Kelly
COUNTY MANAGER/CLERK

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3496 1115
VOLUSIA COUNTY

The News-Journal

Published Daily and Sunday
Daytona Beach, Volusia County, Florida

State of Florida,
County of Volusia:

Before the undersigned authority personally appeared C. Morgan Miller

who, on oath says that he is Classified Manager

of The News-Journal, a daily and Sunday newspaper, published at Daytona Beach in Volusia County, Florida; that the attached copy of advertisement, being a Notice Requesting Vacation

in the matter of Portion of Howe & Curriers Allotment Subdivision

in the Court, was published

in said newspaper in the issues June 15, 22, 1990

Affiant further says that The News-Journal is a newspaper published at Daytona Beach, in said Volusia County, Florida, and that the said newspaper has heretofore been continuously published in said Volusia County, Florida, each day and Sunday and has been entered as second-class mail matter at the post office in Daytona Beach, in said Volusia County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

C. Morgan Miller

Sworn to and subscribed before me

this 22nd day of June

A.D. 1990

Patricia L. Bay

NOTARY PUBLIC, State of Florida at Large
My Commission Expires December 30, 1990
Bonded By AMERICAN PIONEER CASUALTY INS. CO.

LEGAL ADVERTISEMENT

NOTICE RE UESTING VACATION OF A PORTION OF THE PLAT OF HOWE AND CURRIERS ALLOTMENT SUBDIVISION AS RECORDED IN MAP BOOK 4, PAGE 44, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA

TO WHOM IT MAY CONCERN:

Please take notice that William Akers, Jr. will, on the 5th day of July, 1990, at the hour of 9:45 o'clock A.M. in the County Council Meeting Room, County Administration Center, 123 West Indiana Avenue, DeLand, Florida, petition the County Council of Volusia County, Florida, to vacate a portion of the Plat of Howe and Curriers Allotment as recorded in Map Book 4, Page 44, in the Office of the Clerk of the Circuit Court, DeLand, Florida, and more particularly that portion described as follows:

Schedule 'A'

That portion of Lot 5 through 8 inclusive of Block 2 in Section 35, Township 17 South, Range 32 East according to the plat of MAP OF HOWE AND CURRIERS ALLOTMENT as recorded in Map 4, Page 44 of the Public Records of Volusia County, Florida which lies Westerly of the Westerly right of way line of State road Number 415 (a 100 foot wide right of way); and that portion of Lots 1 through 12 inclusive of Block 1 in Section 34, Township 17 South, Range 32 East, and all of Blocks 2 and 3, and that portion of Lots 3 through 10 inclusive of Block 4 in said Section 34 of said plat of MAP OF HOWE AND CURRIERS ALLOTMENT which lies Westerly of the Westerly right of way line of said State Road 415; and all of Blocks 1 and 4 in Section 33, Township 17 South, Range 32E according to said MAP OF HOWE AND CURRIERS ALLOTMENT; and including the following described right of ways, that portion of the Public Roads being unnamed and undimensioned according to the plat of MAP OF HOWE AND CURRIERS ALLOTMENT as recorded in Map Book 4, Page 44 of the Public Records of Volusia County, Florida, being more particularly described as follows: that portion of the right of way between Block 1 in Section 34 and Block 2 of Section 35, Township 17 South, Range 32 East and which lies northerly of the northwesterly right of way line of State Road 415; and that portion of right of way which lies westerly of Blocks 1 and 4, and easterly of Blocks 2 and 3 in Section 34, Township 17 South, Range 32 East; and that portion of right of way which lies westerly of Blocks 2 and 3 in Section 34, and which lies easterly of Blocks 1 and 4 in Section 33, Township 17 South, Range 32 East; and any portion of the platted right of way which lies westerly of Blocks 1 and 4 in Section 33, Township 17 South, Range 32 East, and which lies easterly of the plat limits; and that portion of right of way which lies northerly of Block 4 in Section 33 and Blocks 5 and 4 in Section 34, and which lies southerly of Block 1 in Section 33, and Blocks 1 and 2 in Section 34, and Block 2 in Section 35, Township 17 South, Range 32 East Volusia County, Florida.

Petitioner asserts that he is the fee simple title owner of all that portion of said plat sought to be vacated.

Persons interested may appear and be heard at the time and place above specified.

William Akers, Jr.
1004 John Anderson Highway
Ormond Beach, Florida 32176
June 15, 22, 1990.

O4-3

BOOK PAGE
3496 1117
VOLUSIA CO., FL.

STATE OF FLORIDA

COUNTY OF FLORIDA

I, THOMAS C. KELLY, COUNTY, County Manager, in and for the County of Volusia, State of Florida, do hereby cerfify that the above and foregoing proceedings are true and correct copies of the same with regard to the matter of the vacation and abandonment of certain rights-of-way as therein set forth, as the same appears on file and of record in the office of the County Council of Volusia County, Florida.

IN TESTIMONY WHEREOF, I have hereunto set my hand and official seal at DeLand, Volusia County, Florida, the 13th day of July,1990.

THOMAS C. KELLY

THOMAS C. KELLY, COUNTY MANAGER
VOLUSIA COUNTY, FLORIDA

By Dorothy Buckley
Dorothy Buckley, Deputy Clerk

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BOOK PAGE

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VOLUSIA CO.,FL

REC FEE $ 4650 REC'D PAYMENT AS
DOC ST $ 30188.20 INDICATED FOR CLASS
INT TAX $ _____ "C" INTANGIBLE & DOC
PENALTY $ _____ STAMP TAXES SIGNED
INTEREST $ _____

Clerk Circuit Court Volusia Co. Florida

EASEMENT DEED

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, their heirs, successors and assigns (GRANTOR herein), in consideration of the sum of One Dollar ($1.00) and other valuable considerations, the receipt of which is hereby acknowledged, grant and convey to **THE UTILITIES COMMISSION, CITY OF NEW SMYRNA BEACH, FLORIDA,** 120 Sams Avenue, New Smyrna Beach, Florida, its successors, lessees and assigns, (GRANTEE herein), the right, privilege and easement to construct, reconstruct, operate and maintain in perpetuity, electric transmission and distribution lines and related facilities (including supporting structures, communication and other wires, attachments and accessories desirable in connection therewith) over, upon and across the following described lands in Volusia County, Florida, and referred to hereinafter as the Easement Area to wit:

See Exhibit "A" attached hereto and incorporated by reference herein.

together with the right to patrol, inspect, alter, improve, repair, rebuild, relocate or remove such lines and related facilities, including the right to increase or decrease the number and type of supporting structures, wires and voltage.

GRANTEE shall have all other rights and privileges conveyed to GRANTOR by GRANTOR'S predecessors in title as contained in the public records referenced in Exhibit "B" which is incorporated herein by reference.

GRANTOR warrants and covenants that it has the right to convey to GRANTEE this easement, and that GRANTEE shall have quiet and peaceful possession, use and enjoyment of same.

All covenants, terms, provisions and conditions herein contained shall inure and extend to and be obligatory upon the heirs, successors, lessees and assigns of the respective parties hereto.

IN WITNESS WHEREOF, the said GRANTOR has hereunto affixed its hand and seal this 29th day of June, 1993.

Signed, sealed and delivered in presence of:

Belinda F. Wilson
Printed name: Belinda F. Wilson

Printed name: Charles F. Reischmann

FLORIDA POWER CORPORATION,
a Florida corporation

By: _____ (Seal)
Philip C. Henry

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CLERK OF THE CIRCUIT & CTY. COURT VOLUSIA CTY.

STATE OF FLORIDA
COUNTY OF PINELLAS

I HEREBY CERTIFY that on this day, before me, an officer duly authorized in the State and County aforesaid to take acknowledgments, personally appeared PHILIP C. HENRY, personally known to me ~~or who produced~~ ~~xxxxxxxxxxxxxxxx~~ and under oath acknowledged to me to be the Senior Vice President of Florida Power Corporation, a Florida corporation, and they executed the foregoing instrument for the purposes therein expressed freely and voluntarily under authority duly vested in them by said corporation, and the seal affixed thereto is the true corporate seal of said corporation.

WITNESS my hand and official seal in the County and State last aforesaid this 2nd day of June 1993.

CLAUDIA M. TOLUDEMAN
Notary Public, State of Florida

THIS INSTRUMENT PREPARED BY:

O5-1

EXHIBIT "A"

PARCEL 3-A:
A portion of Sections 33 and 34, Township 17 South; Range 32 East and a portion of Sections 1, 2 and 3, Township 18 South; Range 32 East, Volusia County, Florida and being more particularly described as follows:

As a point of reference commence at a 6" x 6" concrete monument marking the southwest corner of Section 33, Township 17 South; Range 32 East; thence N 89° 56' 23" E on a line to a 6" x 6" concrete monument marking the northwest corner of Section 2, Township 18 South; Range 32 East, a distance of 925.68 feet for the POINT OF BEGINNING; thence N 80° 31' 11" E, a distance of 388.87 feet; thence N 01° 29' 45" W a distance of 6.36 feet; thence N 89° 56' 23" E, a distance of 18.85 feet; thence N 88° 58' 21" E, a distance of 11.69 feet; thence N 05° 43' 05" W, a distance of 54.18 feet; thence N 84° 16' 55" E, a distance of 20.00 feet; thence S 05° 43' 05" E a distance of 55.81 feet; thence N 88° 58' 21" E, a distance of 2598.53 feet; thence N 87° 57' 58" E, a distance of 2647.28 feet; thence N 88° 45' 22" E, a distance of 1448.33 feet; thence N 87° 22' 48" E, a distance of 423.18 feet to the westerly R/W of State Road #415, a 100 foot R/W as now laid out; thence S 33° 49' 28" W along said westerly R/W, a distance of 87.02 feet; thence leaving said Westerly R/W, S 87° 22' 48" W, a distance of 372.33 feet to a 5/8" iron rod and cap stamped RLS #4165; thence S 88° 45' 22" W, a distance of 1448.69 feet to a 2½" iron pipe with brass disc stamped Blackwell & Malone; thence S 87° 57' 58" W, a distance of 2647.41 feet to a 4" x 4" concrete monument; thence S 88° 58' 21" W, a distance of 2631.49 feet to a 6" x 6" concrete monument; thence S 89° 56' 23" W, a distance of 402.91 feet to the Point of Beginning.

The basis of bearings is the Florida State Plane Coordinate System, East Zone, N.A.D. 1983.

PARCEL 3B: A parcel of land lying in Section 34, Township 17 South; Range 32 East and Section 1, Township 18 South; Range 32 East, Volusia County, Florida, being more particularly described as follows: For a point of reference, commence at the southeast corner of said Section 34; thence run S 87° 58' 06" W, a distance of 1059.20 feet to a point on the southwesterly right-of-way line of Rasley Road per OR Book 2914, page 1990, Volusia county, Florida and the POINT OF BEGINNING; thence continue S 87° 58' 06" W, a distance of 317.38 feet to a concrete marker as described in Certified Corner Record Number 0020760; thence run S 88° 08' 05" W, a distance of 689.84 feet to a point on the Southeasterly Right-of-Way of State Road 415, (100 foot Right-of-Way width); thence run N 33° 49' 28" E along said southeasterly right-of-way, a distance of 75.72 feet; thence run N 87° 22' 48" E, a distance of 645.15 feet; thence run N 87° 58' 06" E, a distance of 266.96 feet to the said southwesterly right-of-way; thence run S 37° 59' 24" E along said southwesterly right-of-way, a distance of 86.48 feet to the said Point of Beginning.

The basis of bearings is the Florida State Plane Coordinate System, East Zone, N.A.D. 1983.
PARCEL 3C: A portion of Sections 34, 35 and 36, Township 17 South; Range 32 East and Section 31, Township 17 South; Range 33 East, and a portion of Section 5 Township 18 South; Range 33 East, Volusia County, Florida, being more particularly described as follows:

Beginning at the southeast corner of Section 34 Township 17 South; Range 32 East, said point of beginning being a concrete monument with brass disc stamped PLS #2546; thence S 88° 30' 15" W, along the south line of said Section 34, a distance of 996.66 feet to the easterly right-of-way of Rasley Road as described per Official Records 2754, page 1365 of the Public Records of Volusia County, Florida; thence N 37° 47' 34" W, along said easterly right-of-way, a distance of 86.85 feet; thence N 88° 30' 15" E, and along a line that is 70 feet northerly of and parallel with the said south line of Section 34, a distance of 1048.41 feet; thence N 88° 29' 47" E along a line that is 70 feet northerly of and parallel with the south line of Sections 35

VOLUSIA CO. FL
BOOK 3841 PAGE 1644

18' 14" E, a distance of 25.57 feet; thence S 88° 49' 48" W, a distance of 6.64 feet; thence S 01° 10' 12" E, a distance of 55.00 feet; thence S 88° 49' 48" W, a distance of 10.00 feet; thence N 01° 10' 12" W, a distance of 55.00 feet; thence S 88° 49' 48" W, a distance of 81.24 feet to the southeast corner of Section 36, Township 17 South; Range 32 East; thence S 88° 29' 47" W, along the south line of Sections 35 and 36, Township 17 South; Range 32 East, a distance of 10,556.17 feet to the Point of Beginning.

The basis of bearings is the Florida State Plane Coordinate System, East Zone, N.A.D. 1983.

PARCEL 3D: A part of the Southwest ¼ of Section 31, Township 17 South; Range 33 East, Volusia County, Florida being more particularly described as follows:

As a point of reference commence at the Southwest corner of Section 31, Township 17 South; Range 33 East; thence N 01° 29' 57" W, along the west line of said Section 31, a distance of 1325.40 feet; thence N 89° 37' 49" E, a distance of 57.50 feet for the POINT OF BEGINNING; thence N 01° 18' 32" W, a distance of 662.76 feet to a point, said point being N 89° 31' 50" E, and a distance of 59.70 feet from the west line of said Section 31; thence N 89° 31' 50" E, a distance of 45.00 feet; thence S 01° 18' 32" E, a distance of 662.84 feet; thence S 89° 37' 49" W, a distance of 45.01 feet to the Point of Beginning.

The basis of bearings is the Florida State Plane Coordinate System, East Zone, N.A.D. 1983.

PARCEL 3E:
A parcel of land lying in the Northeast ¼ of Section 21, Township 17 South; Range 33 East, Volusia County, Florida being more particularly described as follows: For a point of reference commence at the Southeast corner of the said Northeast ¼; thence run N 01° 25' 38" W along the east line of the said Northeast ¼, a distance of 135.00 feet to the northerly right of way of State Road #44, a 200 foot right of way as now laid out; thence run S 88° 37' 05" W along said northerly right of way, a distance of 762.22 feet for the POINT OF BEGINNING; thence continue S 88° 37' 05" W along said northerly right of way, a distance of 11.38 feet; to a point on the easterly right of way line of a 60 foot Utilities Commision of the City of New Smyrna Beach Right-of-Way per OR Book 1845, page 101, Public Records of Volusia County, Florida as now monumented; thence N 29° 53' 20" W along said easterly right of way, a distance of 2100.05 feet to a point on a line lying 660 feet south of and parallel to the north line of said Northeast ¼; thence N 88° 38' 13" E along said parallel line, a distance of 79.95 feet; thence S 60° 06' 04" W, a distance of 60.29 feet; thence S 29° 53' 20" E parallel to said easterly right of way line,a distance of 2067.30 feet to the Point of Beginning. Containing 0.50 acre more or less.

VOLUSIA CO. FL
BOOK 3841 PAGE 1646

BOOK PAGE
3841 1647
VOLUSIA CO.,FL

PARCEL 2-32 - PERMANENT FACILITIES EASEMENT

A PARCEL OF LAND LYING IN SECTIONS 4, 5 AND 6, TOWNSHIP 18 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, FLORIDA, SAID SECTIONS HAVING BEEN SUBDIVIDED AS MAP OF HOWE AND CURRIERS ALLOTMENT, AS RECORDED IN MAP BOOK 4, PAGE 44, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF SAID SECTION 6, SAID CORNER BEING MARKED BY A 6"x 6" CONCRETE MONUMENT; THENCE NORTH 88°42'17" EAST, A DISTANCE OF 2906.21 FEET; THENCE NORTH 88°49'08" EAST, A DISTANCE OF 1491.84 FEET TO A POINT ON THE WESTERLY LINE OF A 300 FOOT WIDE F.P.& L. COMPANY EASEMENT AS RECORDED IN O.R. BOOK 2454, PAGE 0397; THENCE SOUTH 19°17'33" EAST ALONG SAID WESTERLY LINE A DISTANCE OF 26.30 FEET; THENCE NORTH 88°49'08" EAST, A DISTANCE OF 58.27 FEET; THENCE SOUTH 01°10'52" EAST, A DISTANCE OF 20.00 FEET; THENCE SOUTH 88°49'08" WEST, A DISTANCE OF 51.73 FEET TO A POINT ON AFORESAID WESTERLY EASEMENT LINE; THENCE SOUTH 19°17'33" EAST ALONG SAID WESTERLY LINE, A DISTANCE OF 418.68 FEET; THENCE NORTH 70°42'27" EAST, A DISTANCE OF 300.00 FEET TO A POINT ON THE EASTERLY LINE OF SAID 300 FOOT WIDE F.P.& L EASEMENT; THENCE NORTH 19°17'33" WEST ALONG SAID EASTERLY LINE, A DISTANCE OF 320.56 FEET; THENCE SOUTH 88°49'08" WEST, A DISTANCE OF 58.27 FEET; THENCE NORTH 01°10'52" WEST, A DISTANCE OF 20.00 FEET; THENCE NORTH 88°49'08" EAST, A DISTANCE OF 51.73 FEET TO A POINT ON AFORESAID EASTERLY LINE; THENCE NORTH 19°17'33" WEST ALONG SAID EASTERLY LINE, A DISTANCE OF 26.30 FEET; THENCE NORTH 88°49'08" EAST, A DISTANCE OF 3537.70 FEET; THENCE NORTH 88°29'40" EAST, A DISTANCE OF 1378.26 FEET TO A POINT ON THE WESTERLY LINE OF LOT H IN SAID SECTION 4 OF SAID MAP OF HOWE AND CURRIERS ALLOTMENT; THENCE SOUTH 00°14'21" EAST ALONG SAID WEST LINE OF LOT H, A DISTANCE OF 70.02 FEET; THENCE SOUTH 88°29'40" WEST, A DISTANCE OF 1376.91 FEET; THENCE SOUTH 88°49'08" WEST, A DISTANCE OF 3441.35 FEET; THENCE SOUTH 19°17'33" EAST, A DISTANCE OF 271.36 FEET; THENCE NORTH 70°42'27" EAST, A DISTANCE OF 55.00 FEET; THENCE SOUTH 19°17'33" EAST, A DISTANCE OF 70.00 FEET; THENCE SOUTH 70°42'27" WEST, A DISTANCE OF 55.00 FEET; THENCE SOUTH 19°17'33" EAST, A DISTANCE OF 55.00 FEET; THENCE SOUTH 70°42'27" WEST, A DISTANCE OF 70.00 FEET TO A POINT ON THE EASTERLY LINE OF AFORESAID F.P.& L EASEMENT; THENCE NORTH 19°17'33" WEST ALONG SAID EASTERLY LINE, A DISTANCE OF 55.00 FEET; THENCE SOUTH 70°42'27" WEST, A DISTANCE OF 300.00 FEET TO A POINT ON THE WESTERLY LINE OF SAID EASEMENT; THENCE SOUTH 19°17'33" EAST ALONG SAID WESTERLY LINE, A DISTANCE OF 55.00 FEET; THENCE SOUTH 70°42'27" WEST, A DISTANCE OF 70.00 FEET; THENCE NORTH 19°17'33" WEST, A DISTANCE OF 55.00 FEET; THENCE SOUTH 70°42'27" WEST, A DISTANCE OF 55.00 FEET; THENCE NORTH 19°17'33" WEST, A DISTANCE OF 70.00 FEET; THENCE NORTH 70°42'27" EAST, A DISTANCE OF 55.00 FEET; THENCE NORTH 19°17'33" WEST, A DISTANCE OF 415.27 FEET; THENCE SOUTH 88°49'08" WEST, A

PARCEL 2-32 - CONTINUED

DISTANCE OF 1441.01 FEET; THENCE SOUTH 88°42'17" WEST, A DISTANCE OF 2900.27 FEET; THENCE SOUTH 79°06'42" WEST, A DISTANCE OF 7.66 FEET TO A POINT ON THE WEST LINE OF SAID SECTION 6; THENCE NORTH 00°03'19" EAST ALONG SAID WEST LINE, A DISTANCE OF 71.30 FEET TO THE POINT OF BEGINNING.

CONTAINING 17.18 ACRES, MORE OR LESS.

BASIS OF BEARINGS IS THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, N.A.D. 1983.

BOOK PAGE
3841 1649
VOLUSIA CO.,FL

PARCEL 3-3 - PERMANENT FACILITIES EASEMENT

A PARCEL OF LAND LYING IN SECTIONS 3 AND 4, TOWNSHIP 18 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, FLORIDA, SAID SECTIONS HAVING BEEN SUBDIVIDED AS MAP OF HOWE AND CURRIERS ALLOTMENT, AS RECORDED IN MAP BOOK 4, PAGE 44, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHWEST CORNER OF SECTION 6, TOWNSHIP 18 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, FLORIDA, SAID CORNER BEING MARKED BY A 6"x 6" CONCRETE MONUMENT; THENCE NORTH 88°42'17" EAST, A DISTANCE OF 2906.21 FEET; THENCE NORTH 88°49'08" EAST, A DISTANCE OF 5345.17 FEET; THENCE NORTH 88°29'40" EAST, A DISTANCE OF 2035.26 FEET TO A POINT ON THE EAST LINE OF THE WEST 1/2 OF LOT H IN SAID SECTION 4 OF AFORESAID MAP OF HOWE AND CURRIERS ALLOTMENT, FOR A POINT OF BEGINNING; THENCE NORTH 88°29'40" EAST, A DISTANCE OF 623.49 FEET; THENCE NORTH 87°52'55" EAST, A DISTANCE OF 2448.84 FEET; THENCE NORTH 88°29'06" EAST, A DISTANCE OF 107.79 FEET; THENCE NORTH 88°38'29" EAST, A DISTANCE OF 4315.28 FEET; THENCE SOUTH 89°59'15" EAST, A DISTANCE OF 1060.83 FEET TO A 6"x 6" CONCRETE MONUMENT; THENCE NORTH 88°30'16" EAST, A DISTANCE OF 1328.17 FEET; THENCE SOUTH 1°29'45" EAST, A DISTANCE OF 33.28 FEET TO A 6"x 6" CONCRETE MONUMENT; THENCE SOUTH 79°55'43" WEST, A DISTANCE OF 393.23 FEET; THENCE SOUTH 4°46'15" EAST, A DISTANCE OF 55.82 FEET; THENCE SOUTH 85°13'45" WEST, A DISTANCE OF 20.00 FEET; THENCE NORTH 4°46'15" WEST, A DISTANCE OF 55.82 FEET; THENCE SOUTH 89°56'23" WEST, A DISTANCE OF 920.58 FEET; THENCE NORTH 89°59'15" WEST, A DISTANCE OF 1060.83 FEET; THENCE SOUTH 88°38'29" WEST, A DISTANCE OF 4399.67 FEET; THENCE SOUTH 87°52'55" WEST, A DISTANCE OF 2470.94 FEET; THENCE SOUTH 88°29'40" WEST, A DISTANCE OF 625.41 FEET TO A POINT ON AFORESAID EAST LINE OF THE WEST 1/2 OF LOT H; THENCE NORTH 0°14'11" WEST ALONG SAID EAST LINE, A DISTANCE OF 70.02 FEET TO THE POINT OF BEGINNING.

CONTAINING 16.10 ACRES, MORE OR LESS.

BASIS OF BEARINGS IS THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, N.A.D. 1983.

KEITH and SCHNARS, LAKELAND DIVISION
Engineers - Planners - Surveyors
2525 Drane Field Road, Suite 7
Lakeland, Florida 33811
813.646-4771

Best Available Copy

BOOK 3841 PAGE 1650
VOLUSIA CO.,FL

FLORIDA POWER CORPORATION
PARCEL 3-44 PERMANENT FACILITIES EASEMENT DESCRIPTION
EUGENE E. O'REILLY ESTATE

A PARCEL OF LAND LYING IN THE SOUTHWEST 1/4 OF SECTION 31, TOWNSHIP 17 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT THE SOUTHWEST CORNER OF SAID SOUTHWEST 1/4; THENCE RUN NORTH 1°29'57" WEST ALONG THE WEST LINE OF SAID SOUTHWEST 1/4, A DISTANCE OF 420.00 FEET; THENCE RUN NORTH 88°49'48" EAST PARALLEL TO THE SOUTH LINE OF SAID SOUTHWEST 1/4, A DISTANCE OF 81.31 FEET TO THE POINT OF BEGINNING; THENCE RUN NORTH 1°18'14" WEST, A DISTANCE OF 904.21 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SAID SOUTHWEST 1/4; THENCE RUN NORTH 89°37'49" EAST ALONG THE SOUTH LINE OF SAID SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4, A DISTANCE OF 15.00 FEET; THENCE RUN SOUTH 1°18'14" EAST, A DISTANCE OF 904.00 FEET TO A POINT ON SAID PARALLEL LINE; THENCE RUN SOUTH 88°49'48" WEST ALONG SAID PARALLEL LINE, A DISTANCE OF 15.00 FEET TO SAID POINT OF BEGINNING.

CONTAINING 0.311 ACRES MORE OR LESS.

BASIS OF BEARINGS IS THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, N.A.D. 1983.

CERTIFICATION:

WE HEREBY CERTIFY THAT THE ABOVE DESCRIPTIONS HAVE BEEN PREPARED BASED ON FIELD SURVEYS CONDUCTED IN ACCORDANCE WITH F.A.C. CHAPTER 21HH-6. WE FURTHER CERTIFY THAT THE DESCRIPTIONS ARE TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

KEITH AND SCHNARS, INC., LAKELAND DIVISION

John Naylor Breed

By: John Naylor Breed, P.L.S.
Florida Certificate No. 4089

3/5/92
Signature Date

KEITH and SCHNARS, LAKELAND DIVISION
Engineers - Planners - Surveyors
2525 Drane Field Road, Suite 7
Lakeland, Florida 33811
813/646-4771

Best Available Copy

BOOK 3841 PAGE 1651 VOLUSIA CO.,FL

FLORIDA POWER CORPORATION
PARCEL 3-45 PERMANENT FACILITIES EASEMENT DESCRIPTION
EUGENE E. O'REILLY ESTATE

A PARCEL OF LAND LYING IN SECTIONS 19, 20, 21, 30 AND 31, TOWNSHIP 17 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FOR A POINT OF REFERENCE, COMMENCE AT THE SOUTHWEST CORNER OF SAID SECTION 31; THENCE RUN NORTH 01°29'57" WEST ALONG THE WEST LINE OF SAID SECTION 31, A DISTANCE OF 1988.10 FEET TO THE NORTHWEST CORNER OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 31; THENCE RUN NORTH 89°31'50" EAST ALONG THE NORTH LINE OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 31, A DISTANCE OF 86.67 FEET TO THE POINT OF BEGINNING; THENCE RUN NORTH 01°18'14" WEST, A DISTANCE OF 3815.06 FEET; THENCE RUN N 01°05'53" W, A DISTANCE OF 7366.05 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF STATE ROAD 44; THENCE RUN N 88°54'17" E, ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 3270.96 FEET; THENCE RUN N 88°37'04" E, CONTINUING ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 11435.41 FEET; THENCE S 01°22'56" E, CONTINUING ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 15.00 FEET; THENCE N 88°37'04" E, CONTINUING ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 383.05 FEET; THENCE RUN S 01°22'56" E, A DISTANCE OF 7.00 FEET; THENCE RUN S 88°37'04" W, A DISTANCE OF 73.19 FEET; THENCE RUN S 29°53'20" E, A DISTANCE OF 73.19 FEET; THENCE RUN S 60°06'40" W, A DISTANCE OF 20.00 FEET; THENCE RUN N 29°53'20" W, A DISTANCE OF 78.36 FEET; THENCE RUN S 88°37'04" W, PARALLEL TO SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 11725.29 FEET; THENCE RUN S 88°54'17" W, PARALLEL TO SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 3161.81 FEET; THENCE RUN S 43°54'12" W, A DISTANCE OF 133.24 FEET; THENCE RUN S 01°05'53" E, A DISTANCE OF 7244.80 FEET; THENCE RUN SOUTH 1°18'14" EAST, A DISTANCE OF 3815.25 FEET TO A POINT ON SAID NORTH LINE OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 31; THENCE RUN SOUTH 89°31'50" WEST ALONG SAID NORTH LINE, A DISTANCE OF 15.00 FEET TO SAID POINT OF BEGINNING.

CONTAINING 13.188 ACRES, MORE OR LESS.

BASIS OF BEARINGS IS THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, N.A.D. 1983.

EXHIBIT "B"

OR Book 3629/1348; Easement in OR Book 3528/548; Order of taking in OR Book 3734/2945; Guying Easement in OR Book 3558/924; Easements in OR Book 3539/ 1397; OR Book 3546/351; OR Book 3578/1369; OR Book 3533/1811; OR Book 3539/1403; OR Book 3596/70; OR Book 3578/1372; OR Book 3514/1184; OR Book 3501/1205; OR Book 3541/666; OR Book 3512/570; OR Book 3528/553; OR Book 3501/1196; OR Book 3501/1194; OR Book 3501/1192; OR Book 3501/1198; OR Book 3512/564; OR Book 3558/918; OR Book 3514/1186; OR Book 3499/749; OR Book 3512/568; OR Book 3501/1190; and OR Book 3512/566; Warranty Deed recorded in OR Book 3557/1192; Easements in OR Book 3523/173; OR Book 3501/1207; OR Book 3519/883; OR Book 3528/551; OR Book 3501/1203; OR Book 3494, Page 404; OR 3596/76; OR 3578/1375, OR Book 3494/406

RECORDED NOTICE OF ENVIRONMENTAL RESOURCE PERMIT

Document Prepared By:
St. Johns River Water Management District (SJRWMD)

Return to:

Name	**Bureau of Regulatory Support**
Agency Name	St.Johns River Water Management District
Street Address	4049 Reid Street / P.O.Box 1429
City,State Zip	Palatka, Fl 32178-1429

RE: Permit No.: 140909-1
Grantee: Daryl M Carter
Carter-Volusia 1339 Highway 415 Land Trust
Parcel ID: 34-17-32[redacted]
County: Volusia

Notice

The SJRWMD hereby gives notice that Environmental Resource Permit No 140909-1 has been issued to authorize the construction or modification of a stormwater management system, works or other activities to serve the real-property described on Exhibit "A" attached hereto and made a part hereof ("Premises"). This property is subject to the requirements and restrictions set forth in Chapter 373, Florida Statutes and Rule 62-330, Florida Administrative Code.

Within thirty (30) days of any transfer of interest or control of that portion of the premises containing the stormwater management system, works or other activities (or any portion thereof), the permittee must notify the Agency in writing of the property transfer. Notification of the transfer does not by itself constitute a permit transfer. Therefore, purchasers of that portion of the premises containing the stormwater management system, works or other activities regulated by the Agency (or any portion thereof) are notified that it is unlawful for any person to construct, alter, operate, maintain, remove or abandon any stormwater management system, dam, impoundment, reservoir, appurtenant work, works, or other activities, including dredging or filling, (or any combination thereof), without first having obtained an environmental resource permit from the Agency in the purchaser's name.

Within thirty (30) days of the completion of construction of the stormwater management system, works or other activities regulated by the Agency, a signed and sealed construction completion certification must be submitted to Agency pursuant to the requirements of Rule [redacted]5), Florida Administrative Code.

This notice is applicable to property containing the regulated stormwater management system, works or other activities. For purposes of this notice only, these facilities include lakes, canals, swales, ditches, berms, retention or detention areas, water control structures, pumps, culverts, inlets, roads, and wetland mitigation areas, buffers and upland compensation areas, and docking facilities.

Conditions
The Permit is subject to the General Conditions set forth in Rule- [redacted] Florida Administrative Code. The Permit also contains additional Special Conditions. Accordingly, interested parties should closely examine the entire Permit, all associated applications, and any subsequent modifications.

Conflict Between Notice And Permit
This Notice of Permit is not a complete summary of the Permit. Provisions in this Notice of Permit shall not be used in interpreting the Permit provisions. In the event of conflict between this Notice of Permit and the Permit, the Permit shall control.

This Notice Is Not An Encumbrance
This Notice is for informational purposes only. It is not intended to be a lien, encumbrance, or cloud on the title of the premises.

Release
This Notice may not be released or removed from the public records without the prior written consent of the Agency.
This Notice of Permit is executed on this 9th day of February 20 16

Susan Getchell
Deputy District Clerk, For Agency

Agency Contact: Bureau of Regulatory Support (BRS) Bureau Chief

STATE OF: Florida

COUNTY OF: Putnam

The foregoing instrument was acknowledged before me this 9th day of February, 2016 by Susan Getchell, as Deputy District Clerk of the St. Johns River Water Management District.

Sandra L Bertram
Notary Public Signature

[Notary Seal]

SANDRA L. BERTRAM
Commission # FF 058703
Expires January 29, 2018
Bonded Thru Troy Fain Insurance [redacted]

Sandra L.Bertram
Printed/Typed Name

Commission Number: FF058703

My Commission Expires: 01-29-2018

LEGAL DESCRIPTION
34 17 32 ALL W OF HIWAY PER OR 4596 PG 4411 & PER OR 5411 PG
0326 PER OR 6030 PG 4671

R-61

08/10/2015 12:54 PM
Instrument# 2015-147297 # 1
Book: 7149
Page: 1894

This Document Prepared by:

Glenn D. Storch, Esq.
Glenn D. Storch, P.A.
420 South Nova Road
Daytona Beach, Florida 32114

Tax Parcel ID Nos.: 7234-00-00-0030
7235-01-02-0050

COVENANT AND RESTRICTION

THIS COVENANT AND RESTRICTION, is made this 4th day of August, 2015 by **DARYL M. CARTER, TRUSTEE OF THE CARTER-VOLUSIA 1339 HIGHWAY 415 LAND TRUST**, and not individually, the record title holder and fee simple owners of the SR 415 Borrow Pit situated in Volusia County, Florida and depicted in Exhibit "A" attached hereto and a made a part hereof (hereinafter referred to as "Owners"), including their heirs, successors and assigns, and hereby covenants and restricts the SR 415 Borrow Pit Property depicted in Exhibit "A" under the terms and conditions more particularly set forth below:

1. This is a Covenant and Restriction that runs with the land depicted in Exhibit "A".

2. At a public hearing on May 21, 2015, the County Council of the County of Volusia approved Special Exception S-15-008 for a nonexempt excavation known as the SR 415 Borrow Pit, subject to conditions.

3. To fulfill the "Fill Restriction Covenant" condition of approved Special Exception S-15-008, the Owners for themselves and their heirs, successors and assigns, hereby covenant and restrict the property depicted in Exhibit "A" as follows:

   a. The excavation pit shall only be filled with water and shall not be filled with construction and demolition debris or other waste material.

4. This Covenant and Restriction shall be effective upon execution, shall be binding upon all successors in interest to the property depicted in Exhibit "A", and may be enforced by the County of Volusia.

5. This Covenant and Restriction shall be recorded in the Public Records of Volusia County, Florida.

6. In the event of any claim, action, litigation or proceeding under this Covenant and Restriction, venue shall be in Volusia County, Florida.

Instrument# 2015-147297 # 2
Book: 7149
Page: 1895

Signed, sealed and delivered
in the presence of:

Pamela Lee Wray
Witness

Witness

THE CARTER-VOLUSIA 1339 HIGHWAY 415 LAND TRUST

By: Daryl M. Carter
Title: Trustee

This document was presented for recording with redacted information.

STATE OF FLORIDA
COUNTY OF Orange

The foregoing instrument was acknowledged before me this 4th day of August 2015, by Daryl M. Carter, Trustee of the Carter-Volusia 1339 Highway 415 Trust, who is [✓] personally known to me ~~or [ ] who has produced _____ as identification~~ and who did not take an oath.

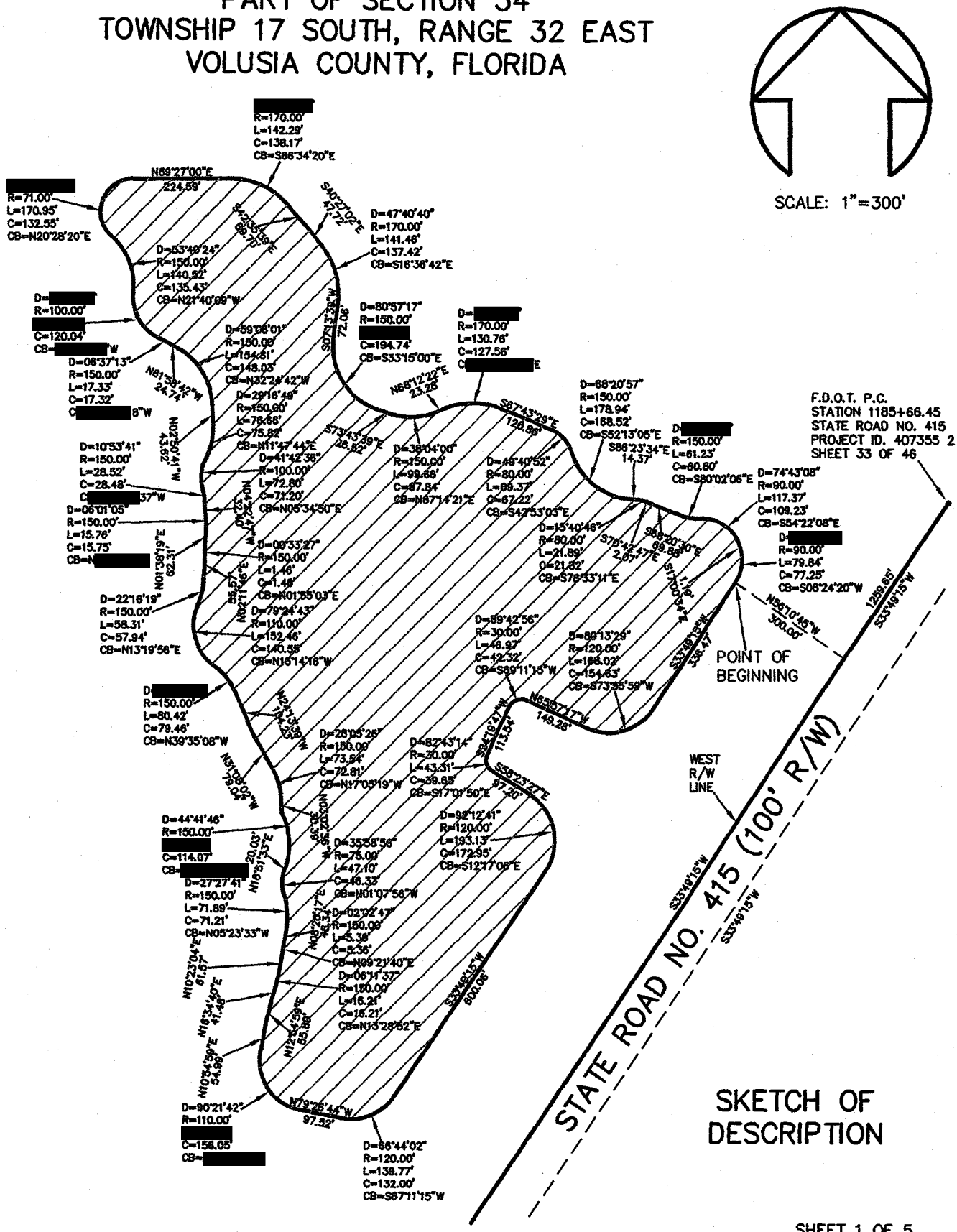
Pamela Lee Wray
NOTARY PUBLIC
Name: Pamela Lee Wray
Commission No.: FF 106692

PAMELA LEE WRAY
Notary Public - State of Florida
My Comm. Expires Jul 22, 2018
Commission # FF 106692
Bonded Through National Notary Assn.

Instrument# 2015-147297 # 3
Book: 7149
Page: 1896

EXHIBIT A

PART OF SECTION 34
TOWNSHIP 17 SOUTH, RANGE 32 EAST
VOLUSIA COUNTY, FLORIDA



SHEET 1 OF 5

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

LEGAL DESCRIPTION

A PART OF SECTION 34, TOWNSHIP 17 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE POINT OF CURVATURE OF A CURVE ON THE WEST RIGHT OF WAY LINE OF STATE ROAD NO. 415, STATION 1185+66.45 AS SHOWN ON FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, PROJECT ID: 407355 2, SHEET 33 OF 46, RUN S.33°49'15"W., ALONG SAID WEST RIGHT OF WAY LINE, A DISTANCE OF 1259.65 FEET; THENCE DEPARTING SAID WEST RIGHT OF WAY LINE, RUN N.56°10'45"W., A DISTANCE OF 300.00 FEET TO THE POINT OF BEGINNING; THENCE S.33°49'15"W., A DISTANCE OF 336.47 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 120.00 FEET AND A CENTRAL ANGLE OF 80°13'29", A CHORD DISTANCE OF 154.63 FEET, AND A CHORD BEARING OF S.73°55'59"W.; THENCE WESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 168.02 FEET; THENCE N.65°57'17"W., A DISTANCE OF 149.28 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 30.00 FEET AND A CENTRAL ANGLE OF 89°42'56", A CHORD DISTANCE OF 42.32 FEET, AND A CHORD BEARING OF S.69°11'15"W.; THENCE WESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 46.97 FEET; THENCE S.24°19'47"W., A DISTANCE OF 113.54 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 30.00 FEET AND A CENTRAL ANGLE OF 82°43'14", A CHORD DISTANCE OF 39.65 FEET, AND A CHORD BEARING OF S.17°01'50"E.; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 43.31 FEET; THENCE S.58°23'27"E., A DISTANCE OF 97.20 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 120.00 FEET AND A CENTRAL ANGLE OF 92°12'41", A CHORD DISTANCE OF 172.95 FEET, AND A CHORD BEARING OF S.12°17'06"E.; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 193.13 FEET; THENCE S.33°49'15"W., A DISTANCE OF 600.06 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 120.00 FEET AND A CENTRAL ANGLE OF 66°44'02", A CHORD DISTANCE OF 132.00 FEET, AND A CHORD BEARING OF S.67°11'15"W.; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 139.77 FEET; THENCE N.79°26'44"W., A DISTANCE OF 97.52 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 110.00 FEET AND A CENTRAL ANGLE OF 90°21'42", A CHORD DISTANCE OF 156.05 FEET, AND A CHORD BEARING OF N.34°15'52"W.; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 173.48 FEET; THENCE N[redacted]E., A DISTANCE OF 54.99 FEET; THENCE N.12°54'59"E., A DISTANCE OF 55.89 FEET; THENCE N.16°34'40"E., A DISTANCE OF 41.48 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 06°11'37", A CHORD DISTANCE OF 16.21 FEET, AND A CHORD BEARING OF N.13°28'52"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 16.21 FEET; THENCE N.10°23'04"E., A DISTANCE OF 61.57 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 02°02'47", A CHORD DISTANCE OF 5.36 FEET, AND A CHORD BEARING OF N.09°21'40"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 5.36 FEET; THENCE N.08°20'17"E., A DISTANCE OF 48.34 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 27°27'41", A CHORD DISTANCE OF 71.21 FEET, AND A CHORD BEARING OF N.05°23'33"W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 71.89 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 75.00 FEET, A CENTRAL ANGLE OF 35°58'56", A CHORD DISTANCE OF 46.33 FEET, AND A CHORD BEARING OF N[redacted]W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 47.10 FEET; THENCE N.16°51'33"E., A DISTANCE OF 20.03 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 44°41'46", A CHORD DISTANCE OF 114.07 FEET, AND A CHORD BEARING OF N.05°29'20"W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 117.01 FEET; THENCE N.03°02'36"W., A DISTANCE OF 30.39 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 28°05'26", A CHORD DISTANCE OF 72.81 FEET, AND A CHORD BEARING OF N.17°05'19"W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 73.54 FEET; THENCE N.31°08'02"W., A DISTANCE OF

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

79.04 FEET; THENCE N.24°13'39"W., A DISTANCE OF 104.23 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 30°42'59", A CHORD DISTANCE OF 79.46 FEET, AND A CHORD BEARING OF N.39°35'08"W.; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 80.42 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 110.00 FEET, A CENTRAL ANGLE OF 79°24'43", A CHORD DISTANCE OF 140.55 FEET, AND A CHORD BEARING OF N.15°14'16"W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 152.46 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 22°16'19", A CHORD DISTANCE OF 57.94 FEET, AND A CHORD BEARING OF N.13°19'56"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 58.31 FEET; THENCE N.02°11'46"E., A DISTANCE OF 55.57 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 00°33'27", A CHORD DISTANCE OF 1.46 FEET, AND A CHORD BEARING OF N.01°55'03"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 1.46 FEET; THENCE N.01°38'19"E., A DISTANCE OF 62.31 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 06°01'05", A CHORD DISTANCE OF 15.75 FEET, AND A CHORD BEARING OF N.01°22'14"W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 15.76 FEET; THENCE N.04°22'47"W., A DISTANCE OF 32.40 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 10°53'41", A CHORD DISTANCE OF 28.48 FEET, AND A CHORD BEARING OF N[redacted]W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 28.52 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 41°42'36", A CHORD DISTANCE OF 71.20 FEET, AND A CHORD BEARING OF N.05°34'50"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 72.80 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 29°16'49", A CHORD DISTANCE OF 75.82 FEET, AND A CHORD BEARING OF N.11°47'44"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 76.66 FEET; THENCE N[redacted]W., A DISTANCE OF 43.62 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 59°08'01", A CHORD DISTANCE OF 148.03 FEET, AND A CHORD BEARING OF N.32°24'42"W.; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 154.81 FEET; THENCE N.61°58'42"W., A DISTANCE OF 24.74 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 06°37'13", A CHORD DISTANCE OF 17.32 FEET, AND A CHORD BEARING OF N.65°17'18"W.; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 17.33 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 73°45'59", A CHORD DISTANCE OF 120.04 FEET, AND A CHORD BEARING OF N.31°42'56"W.; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 128.75 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 53°40'24", A CHORD DISTANCE OF 135.43 FEET, AND A CHORD BEARING OF N[redacted]W.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 140.52 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 71.00 FEET, A CENTRAL ANGLE OF 137°57'21", A CHORD DISTANCE OF 132.55 FEET, AND A CHORD BEARING OF N.20°28'20"E.; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 170.95 FEET; THENCE N.89°27'00"E., A DISTANCE OF 224.59 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 170.00 FEET AND A CENTRAL ANGLE OF 47°57'21", A CHORD DISTANCE OF 138.17 FEET, AND A CHORD BEARING OF S.66°34'20"E.; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 142.29 FEET; THENCE S.42°35'39"E., A DISTANCE OF 69.70 FEET; THENCE S.40°27'02"E., A DISTANCE OF 47.72 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 170.00 FEET AND A CENTRAL ANGLE OF 47°40'40", A CHORD DISTANCE OF 137.42 FEET, AND A CHORD BEARING OF S.16°36'42"E.; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 141.46 FEET; THENCE S.07°13'39"W., A DISTANCE OF 72.06 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 80°57'17", A

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* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

CHORD DISTANCE OF 194.74 FEET, AND A CHORD BEARING OF S.33°15'00"E.; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 211.94 FEET; THENCE S.73°43'39"E., A DISTANCE OF 26.52 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 38°04'00", A CHORD DISTANCE OF 97.84 FEET, AND A CHORD BEARING OF N.87°14'21"E.; THENCE EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 99.66 FEET; THENCE N[redacted]E., A DISTANCE OF 23.28 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 170.00 FEET AND A CENTRAL ANGLE OF 44°04'09", A CHORD DISTANCE OF 127.56 FEET, AND A CHORD BEARING OF S.89°45'34"E.; THENCE EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 130.76 FEET; THENCE S.67°43'29"E., A DISTANCE OF 120.86 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 80.00 FEET AND A CENTRAL ANGLE OF 49°40'52", A CHORD DISTANCE OF 67.22 FEET, AND A CHORD BEARING OF S.42°53'03"E.; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 69.37 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET, A CENTRAL ANGLE OF 68°20'57", A CHORD DISTANCE OF 168.52 FEET, AND A CHORD BEARING OF S.52°13'05"E.; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 178.94 FEET; THENCE S.86°23'34"E., A DISTANCE OF 14.37 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 80.00 FEET AND A CENTRAL ANGLE OF 15°40'46", A CHORD DISTANCE OF 21.82 FEET, AND A CHORD BEARING OF S.78°33'11"E.; THENCE EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 21.89 FEET; THENCE S.70°42'47"E., A DISTANCE OF 2.07 FEET; THENCE S.68°20'30"E., A DISTANCE OF 69.88 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 150.00 FEET AND A CENTRAL ANGLE OF 23°23'12", A CHORD DISTANCE OF 60.80 FEET, AND A CHORD BEARING OF S.80°02'06"E.; THENCE EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 61.23 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 90.00 FEET, A CENTRAL ANGLE OF 74°43'08", A CHORD DISTANCE OF 109.23 FEET, AND A CHORD BEARING OF S.54°22'08"E.; THENCE SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 117.37 FEET; THENCE S.17°00'34"E., A DISTANCE OF 1.19 FEET TO A POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 90.00 FEET AND A CENTRAL ANGLE OF 50°49'49", A CHORD DISTANCE OF 77.25 FEET, AND A CHORD BEARING OF S.08°24'20"W.; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 79.84 FEET TO THE POINT OF BEGINNING.

CONTAINING 30.40 ACRES, MORE OR LESS.

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-258-7999

Instrument# 2015-147297 # 7
Book: 7149
Page: 1900
Diane M. Matousek
Volusia County, Clerk of Court

SURVEYOR'S NOTES

1. BEARING STRUCTURE BASED ON THE FLORIDA STATE PLANE COORDINATE GRID, EAST ZONE (2007), WITH THE BEARING ON THE WEST RIGHT OF WAY LINE OF STATE ROAD NO. 415 BEING [redacted] W.
2. DIMENSIONS ARE IN GROUND FEET AND DECIMALS THEREOF.
3. BOUNDARY SURVEY OF OVERALL PROPERTY BY SHANNON SURVEYING, INC, DATED JUNE 7, 2004.
4. THERE MAY BE OTHER MATTERS AFFECTING THIS PROPERTY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
5. SKETCH OF DESCRIPTION ONLY, NOT A BOUNDARY SURVEY.

LEGEND/ABBREVIATIONS

℄ = CENTERLINE
+00.00 = EXISTING ELEVATION
● = 5/8" IRON ROD WITH CAP
▲ = PERMANENT CONTROL POINT
■ = 4" X 4" CONCRETE MONUMENT
o = NAIL WITH CAP
Δ = CENTRAL ANGLE
A/C = AIR CONDITIONER
BK. = BOOK
C.M. = CONCRETE MONUMENT
(C) = CALCULATED
CMP = CORRUGATED METAL PIPE
C.R. = COUNTY ROAD
C = CHORD
CB = CHORD BEARING
CONC. = CONCRETE
COR. = CORNER
( ) = DEED OR RECORD DATA
(DESC) = DATA PER DESCRIPTION
EL. = ELEVATION
ELEC. = ELECTRICAL
ESMT. = EASEMENT
F.H. = FIRE HYDRANT
F.S. = FLORIDA STATUTES
F.D.O.T. = FLORIDA DEPARTMENT OF TRANSPORTATION
FFE = FINISHED FLOOR ELEVATION
F.A.C. = FLORIDA ADMINISTRATIVE CODE.
FD. = FOUND
GOV'T = GOVERNMENT
I.P. = IRON PIPE
I.R. = IRON ROD
INV. = INVERT
L = ARC LENGTH
LB = LAND SURVEYOR BUSINESS
L.S. = LAND SURVEYOR
M.B. = MAP BOOK
MAS. = MASONRY
N & W = NAIL AND WASHER
NO. = NUMBER
N.G.V.D. = NATIONAL GEODETIC VERTICAL DATUM
(NTS) = NOT TO SCALE
(NR) = NON-RADIAL
OE = OVERHEAD ELECTRIC
O.R. = OFFICIAL RECORDS
(P) = PLAT DATA
PED. = PEDESTAL
P.O.B. = POINT OF BEGINNING
PT = POINT OF TANGENCY
PCC = POINT OF COMPOUND CURVATURE
POC = POINT ON CURVE
PG. = PAGE
P.R.M. = PERMANENT REFERENCE MONUMENT
P.C.P. = PERMANENT CONTROL POINT
PRC = POINT OF REVERSE CURVATURE
PC = POINT OF CURVATURE
P.L.S. = PROFESSIONAL LAND SURVEYOR
P.B. = PLAT BOOK
RES. = RESIDENCE
R/W = RIGHT OF WAY
(R) = RADIAL
RNG. = RANGE
R = RADIUS
RCP = REINFORCED CONCRETE PIPE
SAN. = SANITARY
SUB. = SUBDIVISION
S.R. = STATE ROAD
SEC. = SECTION
TEL. = TELEPHONE
TWP. = TOWNSHIP
T = TANGENT
TRANS. = TRANSFORMER
T.V. = TELEVISION
U.S. = UNITED STATES
W.V. = WATER VALVE
D = DELTA OR CENTRAL ANGLE

THIS SURVEY DRAWING IS THE PROFESSIONAL OPINION OF THIS SURVEYOR AND FIRM WHICH WAS PREPARED UTILIZING THE BEST AVAILABLE INFORMATION AND AS SUCH DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED. FURTHERMORE, THIS SURVEYOR AND FIRM DOES NOT ASSUME RESPONSIBILITY AND SHALL NOT BE HELD LIABLE FOR CLAIMS ARISING FROM ERRONEOUS OR INCORRECT INFORMATION FURNISHED TO THE SURVEYOR, WHICH WAS USED AS A BASIS IN THE PREPARATION OF THIS SURVEY DRAWING.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.050, F.A.C., PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

VALID WITH SIGNATURE & EMBOSSED SEAL ONLY

KENNETH R. JONES, P.L.S. NO. 4914 KJONES@MDAENG.COM

MARK DOWST & ASSOCIATES, INC.
* ENGINEERS PLANNERS SURVEYORS LB#4335 *
536 NORTH HALIFAX AVENUE, SUITE 100, DAYTONA BEACH, FLORIDA 32118 386-[redacted]

SKETCH OF DESCRIPTION					FIELD DATE:	F.B.	PG(S)
DRAWN BY: KJ	CREW	CHECKED BY: KJ	DATE: 7-21-15	SCALE: 1"=300'	PROJ. NO. 1315	FILE: TOB	SHEET 5 OF 5

07-7

APPENDIX P

Florida Department of Agriculture and Consumer Services
Division of Agricultural Environmental Services

ARTHROPOD MANAGEMENT PLAN - PUBLIC LANDS

Section 388.4111, F.S.
Telephone: (850) 617-7995

Return to:
Mosquito Control Program
3125 Conner Blvd., Bldg. 6,
Tallahassee, FL 32399-1650

WILTON SIMPSON
COMMISSIONER

For use in documenting an Arthropod Control Pan for lands designated by the State of Florida or any political subdivision thereof as being environmentally sensitive and biologically highly productive therein. Fill this form out if control work is necessary or planned.

Name of Designated Land: Deep Creek Preserve

Is Control Work Necessary: ☑ Yes ☐ No

Location: Multiple parcels located on or near Deep Creek Preserve within Volusia County Florida.

Land Management Agency: County of Volusia

Division of Resource Stewardship

Are Arthropod Surveillance Activities Necessary? ☑ Yes ☐ No
If "Yes", please explain:
Required as the primary component of an Integrated Pest Management (IPM) program.

Which Surveillance Techniques Are Proposed?
Please Check All That Apply:

- ☑ Landing Rate Counts
- ☑ Light Traps
- ☑ Sentinel Chickens
- ☑ Citizen Complaints
- ☑ Larval Dips
- ☑ Other

If "Other", please explain: Portable "light traps" style trap baited with adult mosquito attractant i.e. Carbon Dioxide, Octenol and/or BG Lure including but not limited to CDC light, BG-Sentinel, BG- Counter. Utilizing Unmanned Aircraft System (UAS) and helicopter to visually locate and access remote mosquito habitat for additional surveillance activities.

Arthropod Species for Which Control is Proposed: Diptera: Culicidae

Key species include but not limited to Cx. quinquefasciatus, Cx. nigripalpus, Cq. perturbans,

Cs. melanura, Ps. ferox, Ps. columbiae. An. quadrimaculatus, Ae. atlanticus, Ae. infirmatus.

Proposed Larval Control: Biological and Chemical Control as part of IPM

Proposed larval monitoring procedure: Dipping, utilizing standard dipping methodology

Are post treatment counts being obtained: ☑ Yes ☐ No

Biological Control of Larvae: Gambusia holbrooki (Mosquitofish) and Biorational agents

Might predacious fish be stocked: ☑ Yes ☐ No

Other biological controls that might be used:

See below for other Biorational agents including Bti and Bs

Material to be Used for Larvaciding Applications:

(Please Check All That Apply:)

❑ Bti

❑ Bs

❑ Methoprene

❑ Non-Petroleum Surface Film

❑ Other, please specify: Spinosad

Please specify the following for each larvacide:

Chemical or Common name: Bti, Bs, Bti/bs combinations, Methoprene and Spinosad

❑ Ground ❑ Aerial

Rate of application: Rates prescribed on the EPA approved product label

Method of application: Hand, Backpack, Buffalo Turbine, ATV, or Other Truck Mounted Applicator,

Helicopter, Fixed wing and/or Unmanned Aircraft System (UAS).

Proposed Adult Mosquito Control:

Aerial adulticiding ☑ Yes ☐ No

Ground adulticiding ☑ Yes ☐ No

Please specify the following for each adulticide:

Chemical or common name: Naled, Deltamethrin, Prallethrin, Sumithrin, Permethrin or Malathion

Rate of application: Rates prescribed on the EPA approved product label

Method of application: Ultra Low Volume (ULV); Hand-held ULV, ATV-mounted ULV unit, Truck-mounted ULV unit, Helicopter - mounted ULV unit, UAS - mounted ULV unit

Proposed Modifications for Public Health Emergency Control: Arthropod control agency may request special exception to this plan during a threat to public or animal health declared by State Health Officer or Commissioner of Agriculture.

VCMC will coordinate closely with the local and state Dept. of Health, Division of Env. We follow Best Management Practices for Mosquito Control as defined by the American Mosquito Control and Florida Mosquito Control Associations (AMCA, FMCA). This control procedure will not change in a public or animal health threat however control activities are likely to increase.

Proposed Notification Procedure for Control Activities: All treatments will occur following surveillance and include required FDACS criteria. Notifications will occur 24 hours in advance of an adulticiding event and will include both phone call and email to Land Manager.

Records:

Are records being kept in accordance with Chapter 388, F.S.:

☑ Yes ☐ No

Records Location: Volusia County Mosquito Control (VCMC), 801 South Street, NSB, Florida

How long are records maintained: 5+ years

Vegetation Modification:

What trimming or altering of vegetation to conduct surveillance or treatment is proposed? Trimming would only occur if access was required for a specific area and after coordination with and approval of the Land Manager.

Proposed Land Modifications:

Is any land modification, i.e., rotary ditching, proposed: N/A

Include proposed operational schedules for water fluctuations: N/A

List any periodic restrictions, as applicable, for example peak fish spawning times.
N/A

Proposed Modification of Aquatic Vegetation: N/A

Land Manager Comments:

Arthropod Control Agency Comments: VCMC has an extensive Integrated Pest Management program, along with are governed and abide by SS Chapter 388 and FAR 5E-13. In addition to regulatory compliance VCMC follows Best Management Practices for Mosquito Control defined by AMCA.

Signature of Lands Manager or Representative Date

Marcus McDonough Digitally signed by Marcus McDonough Date: 2026.08.28 12:42:25 -04'00' 28AUG26

Signature of Mosquito Control Director / Manager Date

Volusia County
FLORIDA

Growth & Resource Management
Planning and Development Services

July 28, 2026

Mr. Nick Dunnam, Director
Resource Stewardship Division
County of Volusia
123 West. Indiana Ave, Room 200
DeLand, Fl 32720

Re: Deep Creek Preserve Management Plan

Dear Mr. Dunnam:

The Deep Creek Preserve Management Plan has been reviewed, and it is consistent with the Volusia County's Future Land Use and Conservation Element of the Comprehensive Plan.

Please feel free to contact the Planning office at 386-736-5959 or planning@volusia.gov if you have any questions or if we can be of further assistance.

Sincerely,



Samantha J. West
Planning Manager
swest@volusia.gov

SJW/jj

APPENDIX R

St. Johns River Water Management District

Volusia County FLORIDA

Name: Graham Williams

Affiliation: SJRWMD

Email: gwilliams@sjrwmd.com

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	Good use of weirs, Low water crossings, culverts, etc to help maintain more natural hydrology.
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	(Yes) No In Progress	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	Good efforts to manage for mixed stands of slash and longleaf throughout the property. Recommend keeping sufficiently high BA targets to ensure needle-drop fuel source persists into long term future. This will help aid burning with dense gallberry understory.

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	Done. updated as needed (ex. new acquisitions
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	on progress	wildlife openings.
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	site could use more burning but I understand the limitations/challenges. Lots of other management work is underway to set up future burning
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	few exotics seen on tour most had been treated. 2-fold approach to feral hog activ limit lease + staff.

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	in-progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	@ 11 miles of trails on Deep Ck Pres
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	Explore Udusia tours
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Yes

This is a challenging property to manage for a number of reasons. Vol. Co. is doing a great job!

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No (In Progress)	Good job leveraging funds from cost-share opportunities to do habitat mngt activities
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No (In Progress)	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No (In Progress)	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	Saw lots of great groundcover
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	will be remapped in LMP update
o Development a Forest Management Plan / Program	2013	Yes No In Progress	update as needed

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going		
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	Updated as needed
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	Facilities are adequate and sufficient for needs.

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Great job with using alternative hunting opportunities in creative ways to provide those recreational opportunities and, in some cases, bring in additional income and also provide beneficial onsite presence and assistance with various property needs.

Keep up the good work!

St. Johns River Water Management District

Volusia County FLORIDA

Name: Sande Habali

Affiliation: Pawpaw Chapter of FNPS

Email: Sndhbl49@gmail.com.

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	(Yes) No (In Progress)	Leffler Tract

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	on an "as needed" basis
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	In Progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	Weather, location dominated
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	As needed	use archeologist experts periodically
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress Hiking Trails	Other than Kemcho
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs	Authorizations permits needed.	Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

I am impressed by the managemet of this property. It is obvious the importance of conservation, protection, & restoration of the property first; then allowances for public activities, very organized programs

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No In Progress	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	Didn't visit
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	Needs remapped
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	in progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No (In Progress)	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No (In Progress)	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	(Yes) No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No (In Progress)	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No (In Progress)	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	Alternative hunting opportunities offered
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	Environmental education through Echo
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Many activities require permits from the County which helps regulate its proper use. For such a newly purchased property the plans & management are in compliance & above.

St. Johns River Water Management District

Volusia County FLORIDA

Name: Caitlyn Crawford

Affiliation: FWC

Email: caitlyn.crawford@myfwc.com

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	(Yes) No (In Progress)	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	yes	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

yes

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	(Yes) No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	(Yes) No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	(Yes) No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	(Yes) No In Progress	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	In progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	(Yes) No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	(Yes) No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No (In Progress)	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	(Yes) No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	(Yes) No In Progress	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Yes

St. Johns River Water Management District

Volusia County FLORIDA

Name: Donald King

Affiliation: FFS

Email: Donald.King@FDACS.gov

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	Yes No (In Progress)	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	(Yes) No In Progress	
o Development a Forest Management Plan / Program	2013	(Yes) No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	Yes	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	(Yes) No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	(Yes) No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No (In Progress)	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	Yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	Road system needs Imp. for Silvicultural Activities.
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Need for continued Road Improvements
For better access for management activities.

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	(Yes) No In Progress	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	(Yes) No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	(Yes) No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	(Yes) No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	(Yes) No In Progress	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	In Progress	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

St. Johns River Water Management District

Volusia County FLORIDA

Name: Robbie Lee

Affiliation: Miami Corp Management - Farmton Land Manager

Email: rlee@miami-corp.com

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	Yes No (In Progress)	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	Yes	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	Yes	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No (In Progress)	
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No (In Progress)	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No (In Progress)	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No (In Progress)	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No In Progress	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No In Progress	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No In Progress	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No In Progress	REMARKED
o Development a Forest Management Plan / Program	2013	Yes No In Progress	

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	IN PROGRESS	
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	(Yes) No In Progress	
o Develop annual burn plans.	Annually by September 1st	(Yes) No In Progress	
o Continue to populate the fire management database.	As burns occur	(Yes) No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No (In Progress)	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	(Yes) No In Progress	
Cultural Resources			
o Identify and report any new sites.	Upon discovery	(Yes) No In Progress	
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	(Yes) No In Progress	

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

(YES) **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

(YES) **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

St. Johns River Water Management District

Volusia County FLORIDA

Name: Jason DePue

Affiliation: FL Park Service / DEP

Email: jason.depue@floridadep.gov

MANAGEMENT REVIEW CHECKLIST
MANAGEMENT REVIEW TEAM MEETING
DEEP CREEK AND LONGLEAF PINE PRESERVES
JUNE 28, 2023

Instructions: Please take time to review the management plan summary. During the meeting, please rate the extent to which you perceive the District is managing the property in accordance with the 2013 Deep Creek Preserve land management plan and 2012 Longleaf Pine Preserve land management plan.

Deep Creek Preserve

LAND MANAGEMENT TASK 2013	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No In Progress	
o Coordinate with Volusia County Division of Water Resources and Utilities for water resource development projects	As requested	Yes No In Progress	

Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	Continue with thinnings, mechanical
o Basin Swamp restoration needs: Minimal; Predominantly in a natural, undisturbed, condition with a canopy typically consisting of pine, cypress and bay. The sparse to moderate groundcover is typically comprised of ferns, various herbaceous species and sawgrass	On-going	Yes No In Progress	
o Mesic Flatwoods restoration needs: Significant. Restoration activities which may be employed include, but may not be limited to, harvesting, chopping, prescribed fire, and artificial regeneration (which may include specie(s) other than slash pine).	On-going	Yes No In Progress	More fire and maybe more ditch crossings.

o Dome Swamp restoration needs: Minimal; The condition of this community varies widely across the Preserve. To varying degrees, the community has been affected by prior harvesting activities and/or modification of the natural hydrology resultant from establishment of the network of ditches found across the Preserve. Overall, natural regeneration within the community is generally acceptable.	On-going	Yes No In Progress	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	
o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	yes	Become wildlife openings.
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	Continue with more dormant lowers before jumping into growing.
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	Looks good.

Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	
o Monitor the one cultural site on the Preserve, the Blue Spring, Orange City and Atlantic Railroad segment.	On-going	yes	

Land Use Management

Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	No trail signs seen. Add some. where needed,
o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	Road material needed for wash outs.
Recreation			
o Modify and/or renew hunt lease	As necessary	Yes No In Progress	Recommend a established quota. State changes AS needed.
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Deep Creek Preserve:

1. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

2. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

yes.

Longleaf Pine Preserve

LAND MANAGEMENT TASK 2012	DUE DATE	REVIEW RATING Do presented observations comply with land management activities/goals set forth in the management plan?	COMMENTS
Resource Protection and Management			
Water Resources			
o Identify improvements necessary for maintenance and restoration of natural surface hydrology.	On-going	Yes No In Progress	Continue with access improvements
Flora and Fauna			
o Compare Habitats to the appropriate —Desired Future Conditions (DFCs)	On-going	Yes No In Progress	FNAI AS the DFC.
o Monitor and Adapt Management Practices in relation to DFCs	On-going	Yes No In Progress	
o Monitor for the presence and condition of listed species, particularly Rugel's pawpaw	On-going	Yes No In Progress	
Natural Community Management (DFC)			
o Wet Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No In Progress	Look for good windows to plant longleaf and burn. More fire when you can.

o Basin Swamp restoration needs: Heavily disturbed; Harvested extensively in the 1990's. Monitor natural regeneration.	On-going	(Yes) No In Progress	Monitor for invasives.
o Mesic Flatwoods restoration needs: Disturbed. Harvested extensively prior to public acquisition. Ground cover is in generally good condition. Apply prescribed fire or mechanical surrogates	On-going	Yes No (In Progress)	Continue to look for opportunities to plant and burn.
o Dome Swamp restoration needs: Heavily disturbed to intact; Many harvested in the 1990's. Monitor natural regeneration. Many are showing signs of well developing regeneration	On-going	Yes No (In Progress)	
o Depression Marsh restoration needs: Fair condition. Apply prescribed fire or mechanical treatments to reduce the tree and scrub encroachment in this natural community.	On-going	Yes No (In Progress)	
o Basin Marsh restoration needs: Disturbed. May have been basin swamp prior to the extensive harvesting operations conducted in the 1990's. Monitor for signs of regeneration.	On-going	Yes No (In Progress)	
o Hydric Hammock restoration needs: Good condition. Monitor for any changes in this natural community	On-going	Yes No (In Progress)	
o Development a Forest Management Plan / Program	2013	Yes No In Progress	Basal area of 30-40 is too low. Shoot for 50-70 ba.

o Evaluate the feasibility of restoring the logging decks and other disturbed areas associated with prior harvesting activities	On-going	yes	Wildlife plots.
Fire Management			
o Develop a Prescribed Burning Plan / Program	2013	Yes No In Progress	Need to implement burning on a more frequent frequency.
o Develop annual burn plans.	Annually by September 1st	Yes No In Progress	Increase annual acres burned.
o Continue to populate the fire management database.	As burns occur	Yes No In Progress	
o Conduct fireline maintenance.	Biannually Spring and Fall unless site conditions warrant otherwise	Yes No In Progress	
Exotic Species			
o Control / Eradicate Exotic and Nuisance Species (including restoration of an affected area, where appropriate)	Annual	Yes No In Progress	Looks good, Continue surveys.
Cultural Resources			
o Identify and report any new sites.	Upon discovery	Yes No In Progress	ARM Trained ?
Land Use Management			
Access			
o Maintain parking areas, signs, gates, trails, and roads	On-going	Yes No In Progress	Roads/trail improvements needed for vehicle access.

o General maintenance (e.g. boundaries, gates, internal roads, etc.)	On-going	Yes No In Progress	
Recreation			
o Evaluate feasibility of alternative hunting opportunities	2015	Yes No In Progress	
Environmental Education			
o Continue to offer educational opportunities if possible and subject to staff and budget availability.	On-going	Yes No In Progress	
Security			
o Coordinate with local law enforcement and FWC for security needs.	As needed	Yes No In Progress	
Cooperative Agreements			
o Administer easements, agreements, leases, and SUAs		Yes No In Progress	

Please answer the following questions for Longleaf Pine Preserve:

3. **Is the property being managed in a manner that is compatible with conservation and recreation?**

YES **NO**

4. **Does the current management plan provide sufficient protection to the properties natural and cultural resources?**

YES **NO**

Group Discussion

Are the management practices in compliance with the current land management plan?

Yes.