



Baseline Document Report

Gem Land Property

Leon and Jefferson Counties, Florida

July 5, 2022
ECT No. 220235-0100

Florida Department of Environmental Protection
Tallahassee, Florida

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Executive Summary

Environmental Consulting & Technology, Inc. (ECT) has prepared this Baseline Documentation Report (BDR) of an approximately 4,132-acre property generally located south of T S Green Road/Lake Road/County Road 142 and east and north of Lake Miccosukee in unincorporated Leon and Jefferson Counties, Florida (herein referred to as the Gem Land Property) in accordance with the requirements of the Division of State Lands Conservation Easement document (September 2012) promulgated by the Florida Department of Environmental Protection (FDEP). The BDR describes the existing condition of the property including the occurrences of land use/cover types, wetlands, soil types, listed species and habitats, and exotic species. The Gem Land Property is comprised of 10 parcels (according to FDEP) located within all or portions of Sections 27 and 34 in Township 3 North and Range 3 East, Sections 25, 26, 35, and 36 in Township 3 North and Range 3 East, Sections 31, 32, and 33 in Township 3 North and Range 4 East, Sections 1, 2, and 12 in Township 2 North and Range 3 East, and Sections 5 and 6 in Township 2 North and Range 4 East.

The land use/vegetative cover was interpreted from 2019 color aerial photographs, the Northwest Florida Water Management District (NWFWMD) Land Use Land Cover (LULC) information from 2018, Natural Resource Conservation Service (NRCS) Leon County Soil Survey maps, Natural Resource Conservation Service (NRCS) Jefferson County Soil Survey maps, and U.S. Fish and Wildlife Service (USFWS) Natural Wetlands Inventory (NWI) maps, and was verified using the classification systems outlined in the Florida Department of Transportation (FDOT) Florida Land Use, Cover, and Forms Classification System (FLUCCS 1999) and the Florida Natural Areas Inventory (FNAI) *Guide to Natural Communities of Florida* (2010 Edition). The resulting map was modified and finalized based upon subsequent ground-truthing during site visits conducted on April 7 and 8 and May 17 and 18, 2022.

The land use/vegetative cover present on the Gem Land Property was classified into 9 land use/cover types. Uplands occupy approximately 3,598.7 acres. The property is highly managed resulting in three upland FLUCCS community types: cropland/pastureland, hardwood-conifer forest, and conifer plantation. Waterbodies occupy approximately 30.5 acres. Wetlands consisting of forested wetlands, streams, and marshes total approximately 502.19 acres. Section 4.2 presents the corresponding FNAI community types.

The site contact, Mr. Shane Wellendorf with Tall Timbers, indicated that the upland areas are predominantly in silvicultural use with planted slash, longleaf, and loblolly pines. The overall health of the plant communities on the Gem Land Property is very good with the wetlands having the most natural composition. He noted that areas with cleared slash pine will be replanted with long leaf pine in an effort to bring back native vegetation to the area. No damage from wild hogs was observed. The site contact was not aware of any archaeological or historic resources onsite. He did note the presence of a small cemetery on an adjacent property that was surveyed separately. No additional information is known at this time.

A report from the USFWS Information for Planning and Consultation (IPaC) and FNAI information were reviewed to identify listed species that are known to occur in the region. The Audubon Center for Birds of Prey, Audubon Florida EagleWatch Nest Locator map, and Florida Fish and Wildlife Conservation Commission (FWC) Wood Stork Colony Locator maps were also reviewed. Based upon the results of this review, listed floral and faunal species were evaluated for the potential to occur onsite. The presence or level of potential for occurrence of these species was evaluated during the field surveys and from information provided by Tall Timbers staff monitoring the site. Listed species that were identified, using USFWS IPaC and FNAI online search tools, were documented on or adjacent to the Gem Land Property. These include the gopher tortoise and the reticulated flatwoods salamander, as well as twelve plant species. Additionally, the bald eagle, although not a listed species but still having separate federal protections, was identified onsite and the location of the nest is documented in the photographs and photograph location figure. A second undocumented bald eagle nest was reported by David Harden on May 17th. This nest is located in the western portion, close to the Leon/Jefferson County line. The location was mapped and the nest was photo-documented. No records of any water bird colonies were identified within or immediately adjacent to the property.

An additional eleven listed species were documented on or near the Gem Land Property boundary according to the data retrieved from the site contact and the site survey. These species were not identified from the USFWS IPaC or FNAI online resource search. The documented species include three avian species (little blue heron, tricolored heron, and southeastern American kestrel), two reptiles (Florida pine snake and American alligator) and two plant species. Listed species and their habitats identified by online resources are included in Tables 1A and 1B.

A search of the Florida Master Site File was requested to identify any known historic and/or archaeological sites or other cultural sites found on the Gem Land Property from prior surveys. The search did not identify any historic structures listed onsite. Three archaeological sites and one cemetery were identified. The Mount Olive AME Church Cemetery is located offsite on an outparcel south of Lake Road.

1.0 Introduction

A baseline documentation report (BDR) was prepared by Environmental Consulting & Technology, Inc. (ECT) on the land referred herein to as Gem Land Property, an approximately 4,132-acre parcel of land generally located south of T S Green Road/Lake Road/County Road 142 and east and north of Lake Miccosukee in unincorporated Leon and Jefferson Counties, Florida. Figure 1 is a location map. The purposes of this assessment are to verify the boundaries and the condition of existing upland and wetland communities, and to assess the likelihood and presence of listed floral and faunal species. Figure 2 is a site map that shows the Gem Land Property. The baseline documentation was conducted as outlined in The Division of State Lands Conservation Easement document provided by FDEP (November 17, 2014).

The acreage and shape of the Gem Land Property were provided to ECT by FDEP. The analysis provided herein is based on the shape and size of the entire property totaling 4,132 acres. The data provided herein can be adjusted should a property survey be made available.

2.0 Certification

The BDR was prepared by the undersigned employee of ECT. ECT's investigation consisted solely of the activities described in the Introduction of this report.

I declare that, to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Gem Land Property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.

This report is certified to, and may be relied on by, The Board of Trustees of the Internal Trust Fund of the State of Florida.

Report Prepared By:



Charlotte Vandaveer
Scientist I

3.0 Methodology

3.1 Map Acquisition and Review

Initially, a site vicinity map from a 2019 color aerial photograph from the Florida Department of Transportation was prepared (Figure 2) to show the relationship of the site to proximate roads and nearby areas. The pertinent NWI map for the area (Figure 3) and the pertinent sections of the Soil Surveys of Leon and Jefferson Counties, Florida maps (Figure 4) were obtained for review and to serve as preliminary base maps for the land use and habitat mapping activities.

3.2 Aerial Photography Interpretation/Habitat Mapping

2019 color aerial photographs of the Gem Land Property were printed and examined for evidence of man-made structures/land alteration and changes in plant community signatures. The aerial photographs were compared to the NWI map and the Soil Surveys mapping. An initial "aerial signature" map was created using aerial photointerpretation. After the field surveys of the property, a final map (Figure 5) depicting the communities and land uses was completed using the *Florida Land Use, Cover and Forms Classification System, Third Edition, FDOT* (1999). The land uses on the map were cross-referenced with the *Guide to the Natural Communities of Florida, 2010 Edition, FNAI*.

3.3 Literature and Database Review

The databases of the FNAI and USFWS IPaC were accessed for Leon and Jefferson Counties to obtain a list of the potential listed animals, plants, and communities that may occur on and within the vicinity of the Gem Land Property. The *Atlas of Florida Vascular Plants, Institute for Systematic Botany*, University of South Florida, was consulted for the proper taxonomic nomenclature. The FWC Wood Stork Colony Locator and Audubon Florida EagleWatch Bald Eagle Nest Locator were accessed for the occurrence of any documented water bird rookeries or bald eagle nest sites within the surrounding area.

3.4 Personal Interviews

Ms. Kim Nguyen with Tall Timbers (site contact) and Mr. David Harden (site representative) were interviewed to gather information regarding the history of the use of the land. They were also questioned about wildlife observations, especially the presence of listed species.

3.5 Field Surveys

On April 7 and 8, and May 17 and 18, 2022, vehicular and pedestrian transects, in combination with visual scanning, were utilized in surveying the Gem Land Property. The interiors of most forested wetlands onsite were not entered due to the size of the property, the depth of the water, and the presence of deep muck soils. The wetlands were observed at several locations to determine representative plant community constituents for each accessible FLUCFCS type. The focus of the survey was to verify the accuracy of the preliminary habitat map and to determine the likelihood of the presence or absence of listed wildlife or plant species. Following the field investigation, the land use map was verified or revised to reflect the status of the plant communities onsite. Where applicable, USFWS and FNAI natural communities have been identified and cross-referenced with FLUCFCS.

3.6 Listed Wildlife And Plant Species

Habitats for listed species were inspected concurrently with the wetland and upland land use surveys.

3.7 Identified Historic And Archaeological Sites

A request was made for a search of the Florida Master Site File for the results of any prior surveys of the Gem Land Property. The results of the search are provided in Section 4.5.

4.0 Results

The approximately 4,132-acre Gem Land Property is generally located south of T S Green Road/Lake Road/County Road 142 and east and north of Lake Miccosukee in unincorporated Leon and Jefferson Counties, Florida. The central portion of the property is located approximately 5 miles northeast of the intersection of County Road 142/State Road 59 and County Road 151. Access to the Gem Land Property is provided primarily by S. Norias Road. Named roads onsite include West Lake Road and Hopkins Landing Road. These roads and numerous unpaved roads/trails provide access through the interior of the site.

The uplands on the Gem Land Property primarily consist of cropland/pastureland, upland pine, hardwood-conifer mixed, and coniferous plantations. The highly managed agricultural plots are used as food plots for Northern bobwhite and are not used for pasture. The crops are rotated between wheat, corn, and winter rye. The tree plantations are generally slash, longleaf, or loblolly pines. The wetlands onsite consist of forested wetlands, streams, and marshes. The quality and condition of the uplands and wetland communities were noted from good to excellent, thereby providing ample forage and shelter for wildlife.

4.1 Interview

The site contacts were interviewed by ECT personnel as part of the investigation of the Gem Land Property. Ms. Kim Nguyen with Tall Timbers, and Mr. David Harden, the property representative, conducted a brief introductory meeting before the site visits were initiated. Mr. Harden explained that Gem Land Company purchased multiple parcels in Jefferson and Leon County since the 1930s. Norias I (Subject Property) was purchased in 1988. The Gem Land Property is a hunting preserve, as evidenced by the numerous bush-hogged trails that give the vegetative cover a checkerboard-like view in aerial photographs. The land has been intensely managed for quail, primarily Northern bobwhite. Mr. Harden indicated that the crops in the food plots usually rotate between wheat, corn, and winter rye. Additionally, Mr. Harden identified the location of the two wells on the tract. During a second interview, Mr. Harden reported a recently constructed bald eagle nest and provided guidance to its location. Ms. Nguyen provided a map depicting the many fire lanes and firebreaks onsite.

4.2 Field Survey

Field surveys were performed on April 7 and 8, and May 17 and 18, 2022. The weather was sunny with temperatures in the mid-70's in the morning to upper 80's in the afternoon. Most of the Gem Land property is easily accessible by vehicle and pedestrian transects using the unpaved roads and trails (see Figure 2). The rolling hills topography provided excellent vantage points for observations.

The survey focused on identifying plant communities and their constituent species, searching for listed plant and animal species, and noting any unique features. The land use/vegetative cover maps prepared prior to the site inspection and based on FLUCFCS Third Edition mapping were modified to more accurately depict the conditions observed in the field. Special emphasis was placed upon searching for listed plants and animal species reported by the USFWS, FNAI database for Leon and Jefferson Counties, and the *Notes of Florida's Endangered and Threatened Plants, Florida Department of Agriculture and Consumer Services* (2010). Regardless of prior record confirmations for the county, all plants and animals listed by the various agencies for the State of Florida and by the USFWS were sought based upon the preferred habitat availability (see Tables 1A and 1B). A description and quality assessment of each habitat type was recorded. Representative photographs of the plant communities/land uses and other notable features are provided as Appendix B. Coordinates and directions of the photographs are also provided in Appendix B and the photograph locations are depicted on Figure 6.

Table 1A. Listed Wildlife Species Identified by USFWS and FNAI Potentially Occurring and/or Documented on or Near the Gem Land Property

Common Name	Scientific Name	Legal Status	Probability of Occurrence	Preferred Habitat
Frosted flatwoods salamander	*Ambystoma cingulatum*	FT	Low	Inhabits slash and longleaf pine flatwoods that have wiregrass and scattered wetlands.
American alligator	*Alligator mississippiensis*	FT(S/A)	High	Lake Miccosukee, streams and small waterbodies provide habitat; no alligators noted.
Barbour's map turtle	*Graptemys barbouri*	ST	Low	Inhabits lotic streams; no map turtles noted.
Eastern indigo snake	*Drymarchon corais couperi*	FT	Low	Occupies a wide range of habitat types including pine and scrubby flatwoods, scrub and sandhill. Often found as commensal species associated with gopher tortoise burrows. No indigo snakes have been observed on-site.
Florida pine snake	*Pituophis melanoleucus mugitus*	ST	Moderate	Inhabits areas with well-drained sandy soils. FWC requests reports of sightings of this snake.
Gopher tortoise	*Gopherus polyphemus*	ST	Present	Burrows excavated in dry upland sands. Tortoises and burrows reported onsite.
Florida Sandhill crane	*Antigone canadensis pratensis*	ST	High	Numerous marshes on tract and large food plots for foraging. No sandhill cranes observed.
Wood stork	*Mycteria americana*	FT	High	Forages in estuarine or freshwater wetlands; nests in trees in cypress or mangrove swamps; some habitat available; no wood storks observed.
Little blue heron	*Egretta caerulea*	ST	High	Forages in marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees. None observed.
Red-cockaded woodpecker	*Picoides borealis*	FE	Low	Inhabits old growth pine flatwoods; cavity nester; no red-cockaded woodpeckers observed.
Roseate Spoonbill	*Platalea ajaja*	ST	High	Forages in marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees; no roseate spoonbills observed.
Tricolored Heron	*Egretta tricolor*	ST	High	Inhabits marshes, swamps, ponds, estuaries, and rivers. Nests in shrubs and small trees. No tricolored herons observed.
Southeastern American Kestrel	*Falco sparverius paulus*	ST	High	Inhabits open lands and nests in cavities of dead trees and abandoned woodpecker nests. Many pine snags and considerable forage areas; possible sighting, needs verification.

Common Name	Scientific Name	Legal Status	Probability of Occurrence	Preferred Habitat
Bald Eagle	*Haliaeetus leucocephalus*	*	Present	Nests in trees or structures along coasts, rivers and lakes, numerous pines available for nesting on tract, but no large bodies of water. Nest JE002 currently occupied; a new nest present

Notes: *Bald eagles are afforded protection under the federal Bald and Golden Eagle Protection Act.

Wildlife:

FE, FT - **Federally** listed as Endangered, Federally listed as Threatened, US Fish and Wildlife Service;
ST – State threatened.

Present: An individual or population of the species was seen directly or through indirect evidence as occurring on the subject property.
High: The occurrence of the species on the subject property is considered likely because of the availability of preferred habitat within the range of distribution.
Moderate: There is a possibility that the species could occur on the subject property based on the availability of somewhat preferred habitat within the range of distribution.
Low: It is unlikely that the species would occur on the subject property due to only marginal habitat availability and or rarity of the species.

Table 1B. Listed Plant Species Identified by USFWS and FNAI Potentially Occurring and/or Documented on or Near the Gem Land Property

Common Name	Botanical Name	Legal Status	Probability of Occurrence	Preferred Habitat
Chapman's rhododendron	*Rhododendron minus var. chapmanii*	FE, SE	High	Mesic pine forests, upper edges of hydric hammocks
Miccosukee gooseberry	*Ribes echinellum*	FT, SE	Present	Mesic forest
Prairie acacia	*Acaciella angustissima*	SE	Low	Sandhills, disturbed land
Apalachicola wild indigo	*Baptisia megacarpa*	SE	Low	Woodlands, ravine slopes
Flyr's nemesis	*Brickellia cordifolia*	SE	Low	Upland woodlands
Woodland poppymallow	*Callirhoe papaver*	SE	Low	Upland mixed forest and pinewoods
Carolina allspice	*Calycanthus floridus*	SE	Low	Bottomland and slope forests
Fragrant pogonia	*Cleistesiopsis oricamporum*	SE	Low	Cut-over pine, wet meadows, savanna
Dimpled troutlily	*Erythronium umbilicatum*	SE	Low	Stream banks, bluffs
Godfrey's swampprivet	*Forestiera godfreyi*	SE	Present	Mesic calcareous woodlands
Wiregrass gentian	*Gentiana pennelliana*	SE	Low	Roadside ditches, wet flatwoods
Spiked crested coralroot	*Hexalectris spicata*	SE	Low	Calcareous pine-hickory woodlands
Appalachian quillwort	*Isoetes appalachiana*	SE	Low	Swampy streams, ephemeral woodland pools
Turkscap lily	*Lilium superbum*	SE	High	Hammocks
Pondspice	*Litsea aestivalis*	SE	Low	Cypress swamps, bay swamps, pond margins
Flameflower	*Macranthera flammea*	SE	Low	Bogs, acidic swamps
Ashe's magnolia	*Magnolia macrophylla var. ashei*	SE	Moderate	Bayheads, bluffs, hammocks
Pyramid magnolia	*Magnolia pyramidata*	SE	Moderate	Bluff forests
Green addersmouth orchid	*Malaxis unifolia*	SE	High	Damp woodlands, sinks
Indian cucumberroot	*Medeola virginiana*	SE	Low	Bottomland forest
Branched tearthumb	*Persicaria meisneriana var. beyrichiana*	SE	High	Floodplain forests, lake shores

Common Name	Botanical Name	Legal Status	Probability of Occurrence	Preferred Habitat
Zigzag silkgrass	*Pityopsis flexuosa*	SE	Low	Sandy oak-pine woodlands
Blackseed plantain	*Plantago rugelii*	SE	Moderate	Meadows, flatwoods, sandy areas
Chapman's fringed orchid	*Platanthera chapmanii*	SE	Low	Spring banks, wet meadows, floodplain forests
Mississippi buttercup	*Ranunculus laxicaulis*	SE	Low	Meadows, savannas
Alabama azalea	*Rhododendron alabamense*	SE	Present	Upper edges of hydric hammocks
Missouri River willow	*Salix eriocephala*	SE	Moderate	Wetlands
Florida willow	*Salix floridana*	SE	Moderate	Wetlands
Whitetop pitcherplant	*Sarracenia leucophylla*	SE	Low	Wet prairies
Bay starvine	*Schisandra glabra*	SE	Low	Bluffs, floodplains
Buckthorn bully	*Sideroxylon lycioides*	SE	Present	Hammocks, floodplains
October ladiestresses	*Spiranthes ovalis var. ovalis*	SE	Moderate	Meadows
Mock pennyroyal	*Stachydeoma graveolens*	SE	Low	Sandhills, flatwoods
Hyssopleaf hedgenettle	*Stachys lythroides*	SE	Low	Floodplain forests
Eastern featherbells	*Stenanthium gramineum*	SE	Low	Pine-hardwood forests
Silky camellia	*Stewartia malacodendron*	SE	Low	Bluffs, steepheads, bayheads
Rue anemone	*Thalictrum thalictroides*	SE	Moderate	Moist woodlands
Florida bellwort	*Uvularia floridana*	SE	Low	Bluffs, rich woodlands
Kral's yelloweyed grass	*Xyris longisepala*	SE	Low	Shores of sandhill ponds
Pinewoods bluestem	*Andropogon arctatus*	ST	Moderate	Pine flatwoods
Indian plantain	*Arnoglossum diversifolium*	ST	Low	Riverine swamps
Wild ginger	*Asarum arifolium*	ST	Moderate	Slope forests, stream banks
Southern lady fern	*Athyrium filix-femina*	ST	Moderate	Wet woodlands, sandy bogs, rocky streams
Scareweed	*Baptisia simplicifolia*	ST	Moderate	Flatwoods, upland sandy soils
Many-flowered grass pink	*Calopogon multiflorus*	ST	Low	Pinewoods, meadows

Common Name	Botanical Name	Legal Status	Probability of Occurrence	Preferred Habitat
Chapman's sedge	*Carex chapmannii*	ST	Moderate	Wetlands
Water sundew	*Drosera intermedia*	ST	Moderate	Wet flatwoods, seepage slopes
Anglepod	*Gonolobus suberosus*	ST	Low	Bluffs
Catesby's lily	*Lilium catesbaei*	ST	Moderate	Wet flatwoods, seapage areas
Cardinal flower	*Lobelia cardinalis*	ST	Moderate	Open wetlands, riverbanks
Crabapple	*Malus angustifolia*	ST	Low	Hedgerows, fencelines
Slender naiad	*Najas filifolia*	ST	Moderate	Freshwater lakes
Southern twayblade	*Neottia biflora*	ST	Low	Wet forested lowlands, stream banks
Giant orchid	*Orthochilus ecristatus*	ST	Moderate	Sandhills, flatwoods, meadows
Fevertree	*Pinckneya bracteata*	ST	Low	Bay, seepage swamps
Blue-flowered butterwort	*Pinguicula caerulea*	ST	Moderate	Wet flatwoods, wet prairie
Yellow-flowered butterwort	*Pinguicula lutea*	ST	Moderate	Wet flatwoods, wet prairie
Yellow-fringed orchid	*Platanthera ciliaris*	ST	High	Marshes, flatwoods, savannas
Crested fringed orchid	*Platanthera cristata*	ST	Low	Marshes, flatwoods, savannas
Gypsy-spikes	*Platanthera flava*	ST	Low	Marshes, flatwoods, savannas
Snowy orchid	*Platanthera nivea*	ST	Low	Marshes, flatwoods, savannas
Rose pogonia	*Pogonia ophioglossoides*	ST	Low	Meadows, flatwoods, savannas
Florida mountain-mint	*Pycnanthemum flaridanum*	ST	Low	Pinewoods, sandhills, hammocks
Panhandle meadow-beauty	*Rhexia salicifolia*	ST	Low	Wet prairies, pond banks
Narrow-leaved beakrush	*Rhynchospora stenophylla*	ST	Low	Wet flatwoods, seepage slopes
Hooded pitcher-plant	*Sarracenia minor*	ST	Low	Wet prairies
Parrot pitcher-plant	*Sarracenia psittacina*	ST	Low	Wet prairies
Lace-lip ladiestresses	*Spiranthes laciniata*	ST	Low	Marshes, flatwoods, savannas

Common Name	Botanical Name	Legal Status	Probability of Occurrence	Preferred Habitat
Little ladiestresses	*Spiranthes tuberosa*	ST	Low	Pine flatwoods
Crane-fly orchid	*Tipularia discolor*	ST	Low	Floodplains, rich woodlands
Threebirds	*Triphora trianthophoros*	ST	Low	Rich woodlands, slope forest, hammocks
Harper's yelloweyed grass	*Xyris scabrifolia*	ST	Low	Seepage slopes, wet prairies
Atamasco lily	*Zephyranthes atamasca var. atamasca*	ST	Present	Wet meadows, seepage areas
Treat's rainlily	*Zephyranthes atamasca var. treatiae*	ST	Low	Wet meadows, seepage areas

Notes: Only vouchered specimens of listed species from Leon and/or Jefferson Counties, Florida included in list.
Botanical nomenclature follows Wunderlin, R.P., B.F. Hansen, A.R. Franck, and F.B. Essig, 2022. Atlas of Florida Plants (http://florida.plantatlas.usf.edu/). [S. M. Landry and K. N. Campbell (application development),

Plant Species:

FE, FT - **Federally** listed as Endangered, Federally listed as Threatened, US Fish and Wildlife Service;
SE, ST – State endangered, State threatened.

Present: An individual or population of the species was seen directly or through indirect evidence as occurring on the subject property.
High: The occurrence of the species on the subject property is considered likely because of the availability of preferred habitat within the range of distribution.
Moderate: There is a possibility that the species could occur on the subject property based on the availability of somewhat preferred habitat within the range of distribution.
Low: It is unlikely that the species would occur on the subject property due to only marginal habitat availability and or rarity of the species.

Observations of mammalian wildlife that occurred onsite included tracks of whitetail deer (*Odocoileus virginianus*), coyote (*Canis latrans*), nine-banded armadillo (*Dasypus novemcinctus*), raccoon (*Procyon lotor*), pocket gopher (*Geomys pinetis*), Sherman's fox squirrel (*Sciurus niger shermani*) and gray squirrel (*Scuirus carolinensis*). Avian species observed included wild turkey (*Meleagris gallopavo*), bald eagle (*Haliaeetus leucocephalus*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), swallow-tailed kite (*Elanoides forficatus*), black vulture (*Coragyps atratus*), turkey vulture (*Cathartes aura*), Northern cardinal (*Cardinalis cardinalis*), mourning dove (*Zenaida macroura*), ground dove (*Columbina passerina*), Eastern meadowlark (*Sturnella magna*), Northern bobwhite (*Colinus virginianus*), Eastern bluebird (*Sialia sialis*), blue jay (*Cyanocitta cristata*), orchard oriole (*Icteris spurius*), summer tanager (*Piranga rubra*), Northern mockingbird (*Mimus polyglottos*), purple martin (*Progne subis*), chimney swift (*Chaetura pelagica*), Eastern towhee (*Pipilo erythrophthalmus*), white-eyed vireo (*Vireo griseus*), pine warbler (*Setophaga pinus*), Carolina wren (*Thryothorus ludovicianus*), tufted titmouse (*Baeolophus bicolor*), indigo bunting (*Passerina cyanea*), red-winged blackbird (*Agelaius phoeniceus*), common grackle (*Quiscalus quiscula*), Eastern kingbird (*Tyrannis tyrannis*), brown thrasher (*Toxostoma rufum*), yellow-billed cuckoo (*Coccyzus americanus*), wood duck (*Aix sponsa*), great egret (*Ardea alba*), little blue heron (*Egretta caerulea*), great blue heron (*Ardea herodias*), red-headed woodpecker (*Melanerpes erythrocephalus*), and pileated woodpecker (*Dryocopus pileatus*). Reptiles and amphibians observed included soft shell turtle (*Apalone ferox*), unidentified possibly Eastern chicken turtle (*Deirochelys reticularia*), pig frog (*Lithobates grylio*), southern leopard frog (*Lithobates sphenocephalus*), green tree frog (*Hyla cinerea*), wood frog (*Lithobates sylvaticus*), green anole (*Anolis carolinensis*), and black racer (*Coluber constrictor*). Gopher tortoises (*Gopherus polyphemus*) are reported to be living on the property although no tortoises or burrows were observed.

Figure 5 is a land use/vegetative cover map depicting the habitat types observed onsite. Figure 6 depicts the locations of the photographs. The use of the FLUCFCS 600 – Wetland codes does not imply formal wetland jurisdictional lines. The land use lines were done by aerial photo interpretation and direct observation. Land use and cover types within the entire site were mapped and classified into nine (9) categories— cemetery (less than 0.1 acre), cropland/pastureland (473.2 acres), coniferous plantations (2,997.4 acres), hardwood-conifer mixed (128.3 acres), reservoirs (30.5 acres), stream and lake swamps (225.2 acres), mixed wetland hardwoods (200.3 acres), wetland forested mixed (38 acres), and freshwater marshes (38.7 acres). The corresponding FNAI community types are provided below.

The following is a brief description of each FLUCFCS and FNAI community type or land use that occurs on the site.

100 URBAN AND BUILT-UP

148 Cemetery — A small cemetery was observed on the hillslope west of Norias Club Pond. Four headstones are present: three people and a pet. The cemetery is set in a live oak hammock with a brick retaining wall with a wrought iron fence surrounding (and leveling) the site. The entrance is on the eastern side. The minimal landscaping in the cemetery consists of a boxwood (*Buxus* sp.) hedge and two *Camellia*. According to the dates on the headstones, the last burial was in 1969. It is apparent that the site is regularly, if infrequently, maintained.

200 AGRICULTURE

210 Cropland and Pastureland (FNAI: Agriculture) — This category, as applied to the Gem Land Property, identifies the agricultural activities and agricultural areas as the many agricultural fields, food plots, and meadows scattered throughout the tract. The food plots are rotated between wheat, corn, and winter rye. Several of the agricultural fields and food plots are fallow and have recruited native annual species like ragweed (*Ambrosia artemisiifolia*), Canada goldenrod (*Solidago canadensis*), tropical flatsedge (*Cyperus surinamensis*), cutleaf evening primrose (*Oenothera laciniata*), dock (*Rumex* sp.), camphorweed (*Heterotheca subaxillaris*), mustard (*Brassica juncea*), and trumpet creeper (*Campsis radicans*). The annually disked agricultural fields and food plots promote annual native species, which are beneficial to some wildlife and promote plant diversity on the Subject Property.

The meadows are mostly bahiagrass (*Paspalum notatum*) with grasses like centipede (*Eremochloa ophiuroides*) and carpetgrass (*Axonopus* spp.) and minor cover of low forbs like white clover (*Trifolium repens*), black medic (*Medicago lupulina*), tasselflower (*Emilia sonchifolia*), dwarf dandelion (*Krigia cespitosa*), and rabbitbells (*Crotalaria rotundifolia*). These areas are maintained by mowing.

400 UPLAND FORESTS

The upland forests, including the hardwood-conifer mix (434) and the coniferous plantation (441), are designated as silvicultural areas.

434 Hardwood-Conifer Mixed (FNAI: Mesic Hammock) – The mesic hammock is generally a broad-leaf evergreen forest with pines. The typical canopy community includes live oak (*Quercus virginiana*), slash pine (*Pinus elliottii*), American beech (*Fagus grandifolia*), pignut hickory (*Carya glabra*), laurel oak (*Quercus laurifolia*), sugarberry, southern magnolia (*Magnolia grandiflora*), and red maple (*Acer rubrum*). Shrub constituents may consist of beautyberry, sumac, gallberry, wax myrtle, and sparkleberry (*Vaccinium arboretum*). Depending upon available light, the floor of the forest may be covered in leaf litter and duff or may support cover like Virginia creeper, muscadine (*Vitis rotundifolia*), or grasses like woodoats (*Chasmanthium* spp.) or witchgrasses (*Dichanthelium* spp.).

441 Coniferous Plantations (FNAI: Pine Plantation) — This classification is used to designate pinelands which were produced by planting pine seedlings. These stands are characterized by high numbers of trees per acre (usually 400 to 600) and a uniform appearance of even-aged pine rows. The understory layers typical of native pine communities have been cleared prior to planting, but there is some regeneration of the native species. At the time of the survey, the canopy in various areas of the pine plantation contained loblolly pine (*Pinus taeda*), slash pine (*Pinus elliottii*), longleaf pine (*Pinus palustris*) and/or shortleaf pine (*Pinus echinata*). Selective harvesting has created widely spaced pines; this mimics native upland pine habitat and allows the recruitment/regeneration of shrub and herbaceous layers containing a variety of plant species including coralbean (*Erythrina herbacea*), shrubby lespedeza (*Lespedeza bicolor*), sumac *(Rhus copallinum*), beautyberry (*Callicarpa americana*), wax myrtle (*Morella cerifera*), gallberry (*Ilex glabra*), saw palmetto (*Serenoa repens*), white indigo (*Baptisia alba*), bracken fern (*Pteridium aquilinum*), frostweed (*Verbesina virginica*), elephant's foot (*Elephantopus* sp.), butterfly weed (*Asclepias tuberosa*), twinflower (*Dyschoriste oblongifolia*), sensitive brier (*Mimosa quadrivalvis*), giant ragweed (*Ambrosia trifida*), ironweed (*Vernonia* sp.), dog fennel (*Eupatorium capillifolium*), club moss (*Lycopodiella* sp.), sand blackberry (*Rubus cuneifolius*), greenbrier (*Smilax bona-nox*), Virginia creeper (*Parthenocissus quinquefolia*), and muscadine (*Vitis rotundifolia***)**. Understory diversity in the pine plantation provides valuable quail habitat and is maintained with frequent prescribed fire every 1- 2 years.

500 WATER

530 Reservoirs (FNAI: Artificial Pond) — This category refers to artificial waterbodies created either by excavation or impounding. Several of the reservoirs appear to have been shallow ponds or deep marshes in the past and have been altered by impounding to increase capacity. The largest of these waterbodies is known as Norias Club Pond. A review of historic aerial photographs indicates this area appears covered with wetland vegetation in the 1940's. The pond is deeper than in the past because of impounding by a road at its outlet. Shore vegetation is composed of Leavenworth's tickseed (*Coreopsis leavenworthii*), beaksedges (*Rhynchospora* spp.), maidencane (*Panicum hemitomon*), soft rush (*Juncus effusus*), southern watergrass (*Luziola fluitans*), and other graminoids. Water shield (*Brasenia scherberi*), white waterlilies (*Nymphaea odorata*), frog's-bit (*Limnobium spongia*), and American lotus (*Nelumbo lutea*) are the emergent species in the deeper water.

Other reservoirs on the tract range from relatively open water to densely covered with emergents (ex. white waterlilies). Several of the impoundments appear to go dry with lack of rainfall or during droughty years. The onsite reservoirs provide habitat/resources for aquatic animals, numerous birds, herpetofauna, and other wildlife.

600 WETLANDS

615 Stream and Lake Swamps (Bottomland) (FNAI: Hardwood-Bottomland Forest) — This community, often referred to as bottomland or stream hardwoods, is usually found on, but not restricted to, river, creek, and lake floodplain or overflow areas. This community is found onsite along the shoreline of Lake Miccosukee and various creeks. This land use type has a wide variety of hardwood species. The canopy constituents are bald cypress (*Taxodium distichum*), swamp tupelo (*Nyssa biflora*), sweetbay (*Magnolia virginiana*), laurel oak (*Quercus laurifolia*), American elm (*Ulmus americana*), sugarberry (*Celtis laevigata*), willows (*Salix* spp.), water hickory (*Carya aquatica*), and popash (*Fraxinus caroliniana*). Other members of the community may include red maple (*Acer rubrum*), river birch (*Betula nigra*), and sweetgum (*Liquidambar styraciflua*). The typical shrub layer includes buttonbush (*Cephalanthus occidentalis*), Virginia willow (*Itea virginica*), switchcane (*Arundinaria gigantea*), silverling (*Baccharis glomeruliflora*), fetterbush (*Lyonia lucida*), highbush blueberry (*Vaccinium corymbosum*), and dwarf palmetto (*Sabal minor*). The ground is frequently inundated and may be bare or have populations of false hop sedge (*Carex lupuliformis*), lizard's tail (*Saururus cernuus*),

pickerelweed (*Pontederia cordata*), swamp fern (*Telmatoblechnum serrulatum*), cinnamon fern (*Osmundastrum cinnamomeum*), and/or royal fern (*Osmunda regalis*).

The Miccosukee gooseberry (*Ribes echinellum*), listed by FWS (federal) as threatened and by FWC (State) as endangered, was observed in several locations growing on the mid to upper slope of the bottomland swamp near Lake Miccosukee. Plants growing in the same habitat near the gooseberry include Virginia creeper, smooth Solomon's seal (*Polygonatum biflorum*), and green dragon (*Arisaema dracontium*),

617 Mixed Wetland Hardwoods (FNAI: Hardwood - Hydric Hammock) – The mixed hardwoods community is similar in composition of species to the bottomland swamp, but laurel oak and/or live oak (*Quercus virginiana*) are the dominant canopy species. Other minor canopy species include water oak, sweetbay, sugarberry, American elm, dahoon *(Ilex cassine*), and swamp tupelo. Shrubs include elderberry (*Sambucus nigra* subsp. *canadensis*), silverling, gallberry, fetterbush, Virginia willow, and buttonbush. The herbaceous stratum mostly consists of lizard's tail (*Saururus cernuus*), Virginia chain fern (*Woodwardia virginica*), and various ferns. Water spangles (*Salvinia minima*) were noted in areas of inundation.

The State endangered Alabama azalea (*Rhododendron alabamense*) was found growing in the hydric hammock near the west boundary of the tract.

630 Wetland Forested Mixed (FNAI: None) — This classification includes mixed forest communities in which neither hardwoods nor conifers achieve a two-third dominance of the crown canopy composition. These communities may be the result of selective logging, high wind damage, or other impacts. On the Gem Land Property, any hardwood species typical of Mixed Wetland Hardwoods (617) may occur intermixed with pine and/or cypress. The ground cover was generally herbaceous but can be quite variable both in its abundance and in its species composition. Noted herbaceous species included Virginia dayflower (*Commelina virginica*), warty sedge (*Carex verrucosa*), southern beaksedge (*Rhynchospora microcarpa*), muscadine, Virginia creeper, swamp fern, and other wetland species. These herbaceous plants may form a continuous cover where the tree canopy is sparse and ample light reaches the ground or it can be nearly absent beneath a dense forest canopy.

641 Freshwater Marshes (FNAI: Depression Marsh) — Freshwater marsh communities consist predominately of emergent aquatic herbs that grow in relatively shallow ponds or sloughs. They are heterogeneous in terms of structure and species diversity. The type of marsh and/or its quality is dictated by position in the landscape, hydroperiod, frequency of fire, type of substrate and the degree of human-induced perturbation such as grading and drainage. In the marsh communities observed onsite, most have a wide fringe of graminoids like maidencane, beaksedges, cutgrass (*Leersia* sp.), cutthroat grass (*Panicum abcissum*), southern watergrass (*Luziola fluitans*), yellow-eyed grasses (*Xyris* spp.), Elliott's lovegrass (*Eragrostis elliottii*), deertongue witchgrass (*Dichanthelium clandestinum*), Carolina redroot (*Lachnanthes caroliana*), prairie iris (*Iris savannarum*), and soft rush (*Juncus effusus*). Coastal plain willow (*Salix caroliniana*) is becoming established where fire has been restricted. Inundated portions of the marsh support pickerelweed, bladderworts (*Utricularia* spp.), frog's-bit and other obligate species. Numerous additional species are generally present, most of them occurring where the water is relatively shallow.

4.3 Listed Wildlife and Plant Species Observed

Gopher tortoise burrows are reportedly present onsite although no tortoises or burrows were observed during the surveys. The gopher tortoise is currently classified by FWC as a threatened species, its status having been elevated in 2007 from a Florida species of special concern. Several listed species known to coexist in gopher tortoise burrows are considered likely to be found onsite including the eastern indigo snake and gopher frog. Table 1 lists the probability of occurrence for state or federally listed species potentially occurring on the Gem Land Property and identifies the state and federally listed species that were observed onsite during the surveys.

One bald eagle nest (JE002) identified on the Gem Land Property is listed on the Audubon Florida EagleWatch Public NestApp. This nest was not monitored during the 2021 season and its status is listed as unknown. The location of this nest is shown as Photo 157 on Figure 6 and the nest appears active for this season. A second (and undocumented) bald eagle nest is located near the Leon/Jefferson County line. The next closest nest (LN 003) is approximately 7.5 miles to the west-northwest. The Audubon Florida EagleWatch program includes all FWC eagle location data.

The USFWS Florida Wood Stork Colony Locator was reviewed for any known wood stork colonies within or in proximity to the Gem Land Property. No records of any onsite colonies were identified. The closest known colony (Atlas number: 592001) is 14 miles southwest of the nearest Gem Land Property boundary. No water bird colonies were observed during the field survey.

The Miccosukee gooseberry (*Ribes echinellum*) is a very rare species first discovered in March 1924 by two botanists inspecting the eastern shore of Lake Miccosukee. Two patches of the Miccosukee gooseberries are present on the Gem Land Property. The first population of gooseberries is located near the terminus of Hopkins Landing Road at the eastern shore of the lake. The second population is present in the hardwood-bottomland forest about 3900 feet southeast of the first. This location had the only known population until 1957 when a disjunct population was discovered near Steven's Creek in South Carolina. A second population was found in South Carolina in 1981.

The natural range of the Alabama azalea (*Rhododendron alabamense*) is limited to the State of Alabama and a few miles into surrounding states. Natural populations of this azalea are known in only four counties in Florida. The spicy-fragrant flowers are white with the upper petal blotched in yellow making this shrub desirable to plant collectors. The shrub grows on acidic upland soils derived from sandstone. In the past few decades, there has been a rapid decline in the individual populations of this azalea caused by timbering, development, collecting, and herbicide use. The population on the Gem Land Property possibly offers genetic diversity for the viability of the species.

4.4 Nuisance and Exotic Plant Species

The FDEP's Bureau of Invasive Plant Management (62C-52.011—Prohibited Aquatic Plants) information, the *Florida Department of Agriculture and Consumer Services, Division of Plant Industry Chapter 5B-57-007-Noxious Weed List*, and the *Florida Exotic Pest Plant Council 2019 List of Invasive Plant Species* were reviewed to assist in the assessment of the presence of any onsite non-native nuisance and/or invasive exotic species. Five nuisance species were noted on or near the tract. Coralberry (*Ardisia crenata*) is present on the eastern side of Hopkins Landing; Japanese climbing fern (*Lygodium japonicum*) was noted along West Lake Road and at various locations along forested streams and near marshes; heavenly bamboo (*Nandina domestica*) is growing near the Alabama azaleas; Chinese privet (*Ligustrum sinense*) has formed a dense stand near the stream and lake swamp in the very southern

portion of the site; and water hyacinth (*Eichhornia crassipes*) was found floating in Lake Miccosukee. The sightings constitute very minor populations of these species, but all five species tend to proliferate.

4.5 Florida Master Site File Search

A search of the Florida Master Site File was requested. The results of the search are provided in Appendix C. The search did not identify any historic structures listed onsite. There are three archaeological sites recorded onsite (identified as Bull Pasture, Fig Tree, and Back Pasture) and one cemetery identified as the Mount Olive AME Church cemetery. The cemetery is located in an outparcel located south of Lake Road. The locations of the sites are presented in Appendix C.

4.6 Unauthorized Activities

During the site visits on April 7 and 8, and May 17 and 18, 2022 no unauthorized activities were observed on the Gem Land Property.

4.7 Infrastructure

The periphery of the Subject Property has been fenced including both sides of West Lake Road, which is a paved public access road that crosses the Subject Property. Other named roads onsite are S. Norias Road, Hopkin's Landing Road, and Johnson Road. There are several farm gates (approximately six gates) in the fencing which provide access to the unpaved trails in the interior. The network of trails are designed for off-road vehicles and range from hard dirt surface trails to tracks that cross through muddy drainages. Appendix A depicts the roads and trails.

Firebreaks surround the perimeter of the Subject Property and around the agricultural areas in the northwest corner of the Subject Property. The breaks help control the spread of both controlled burns and wildfires (See Appendix A).

An electrical distribution line supplies power to an onsite well and to structures located on the outparcels. The lines are supported by wooden poles spaced about 350 to 400 feet apart. The corridor crosses through several land cover types and is maintained to prevent/reduce power outages due to falling trees or weather events.

There are two wells, one of which is active and provides water to the buildings on the outparcels.

A private, four-grave, cemetery is present west of Norias Club Pond.

A future, reserved impoundment area is depicted on the map provided in Appendix A.

4.8 Adjacent Lands

The Gem Land Property is east of Miccosukee, Florida and west of Monticello, Florida. Lake Miccosukee borders portions of the western and southern property boundaries. The Mays Pond Plantation Conservation Easement immediately abuts portions of the eastern and southern boundaries of the property. The Miccosukee Hills Conservation Easement is located to the west and the Red Hills Conservation Florida Forever BOT Project is located north of the western portion of the boundary. Residential development is located on several of the adjoining properties. Most of the land directly surrounding the Gem Land Property is undeveloped or in agricultural/silvicultural use.

The Gem Land Property is also known as the Red Hills Conservation Area/Norias-Phase I Conservation Easement Tract and is the subject of a Conservation Easement to protect the land in perpetuity. This property will close gaps in the continuity of conservation lands around Lake Miccosukee.

4.9 Conservation Values Summary

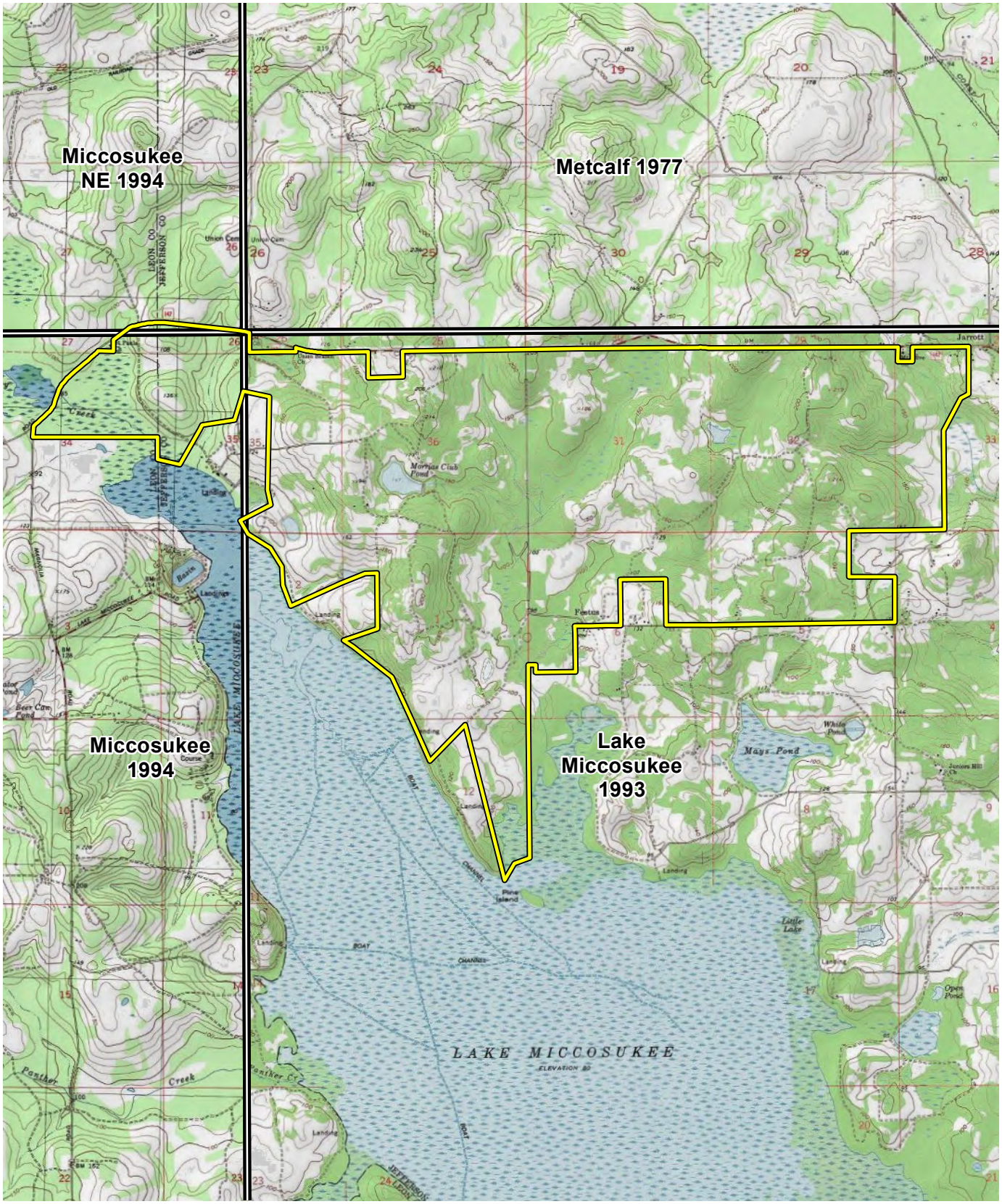
The Conservation Easement document notes the following:

> It is the purpose of this Easement to assure that the Property will be retained forever in its natural, scenic, wooded condition to provide a relatively natural habitat for fish, wildlife, plants, or similar ecosystems, and to preserve portions of the Property as productive farmland and forest land that sustains for the long term both the economic and conservation values of the Property and its environs, through management guided by the following principles:

- Protection of scenic and other distinctive rural character of the landscape
- Maintenance of soil productivity and control of soil erosion
- Protection of natural upland and wetland vegetative communities
- Maintenance and enhancement of wildlife and game habitat
- Protection of unique and fragile natural areas and rare species habitats

- Maintenance or improvement of the overall quality of the timber resource
- Maintenance of the value of the resource in avoiding land fragmentation, protection of surface water quality, the Floridan Aquifer, wetlands, and riparian areas
- Maintenance of economically viable agricultural practices that protect the landscape as a working enterprise in harmony with the open space and scenic qualities of the Property
- Protection of historical and archaeological resources on the Property
- Maintenance of existing upland/wetland natural communities
- Restoration of disturbed upland/wetland natural communities

Figures



Legend

Property Boundary

USGS Quadrangle Index (24k)

Sources: USGS, Miccosukee Quad, Miccosukee NE Quad, 1994; Lake Miccosukee Quad, 1993; ECT, 2022.

Figure 1
Site Location Map

Gem Land Property
Leon County & Jefferson County, Florida

ECT



Legend

Project Boundary

N

0 1,000 2,000

Feet

Sources: NWFWMD, 2021; FDOT Imagery, 2018, 2019; ECT, 2022.

Figure 2
Site Map

Gem Land Property
Leon County & Jefferson County, Florida

ECT



Legend

- Project Boundary
- Manmade Impoundments
- Wetland
- Streams/Drainages

N

0 1,000 2,000

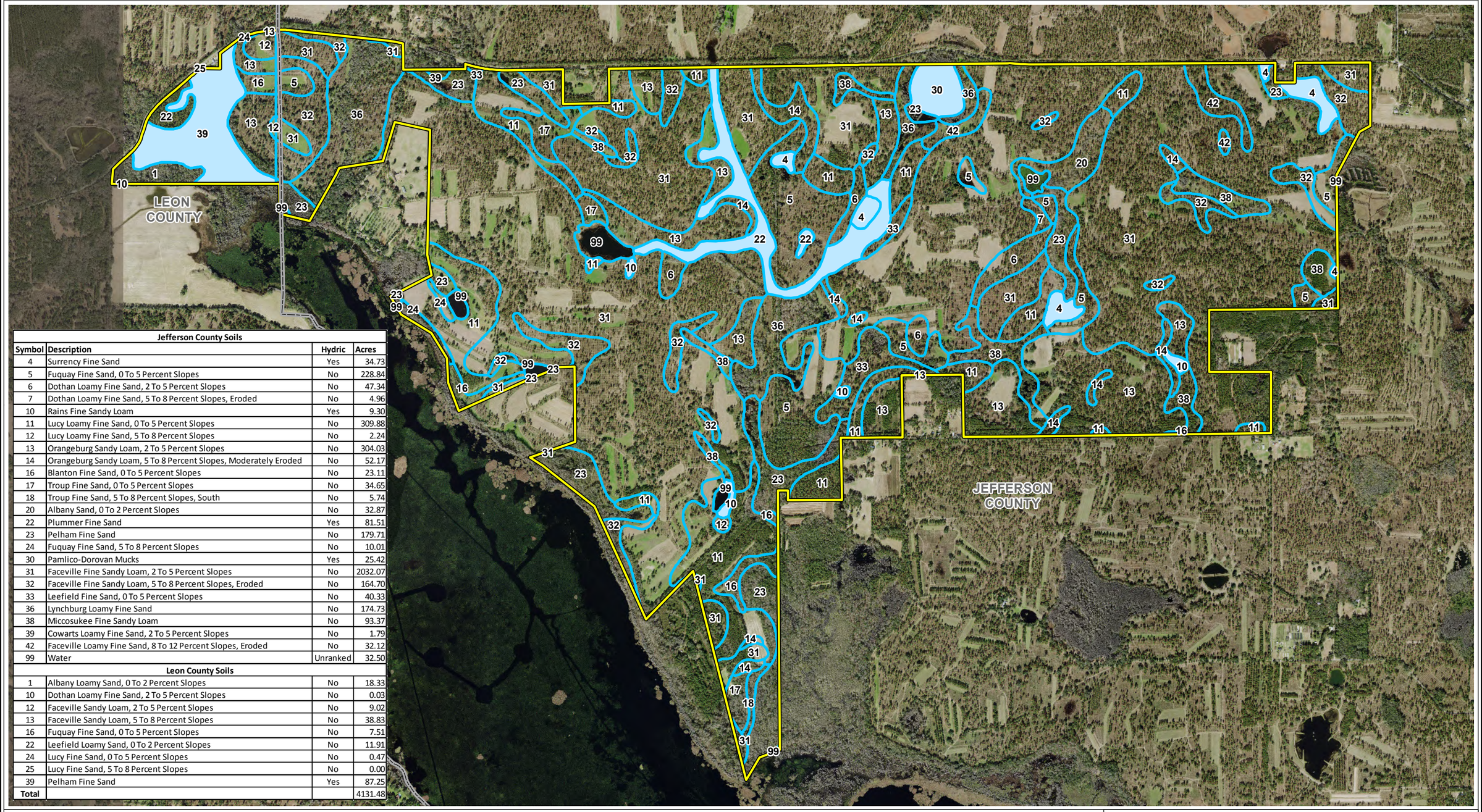
Feet

Sources: NWFWMD, 2021; FDOT Imagery, 2018, 2019; ECT, 2022.

Figure 3
Wetlands

Gem Land Property
Leon County & Jefferson County, Florida

ECT



Jefferson County Soils			
Symbol	Description	Hydric	Acres
4	Surrency Fine Sand	Yes	34.73
5	Fuquay Fine Sand, 0 To 5 Percent Slopes	No	228.84
6	Dothan Loamy Fine Sand, 2 To 5 Percent Slopes	No	47.34
7	Dothan Loamy Fine Sand, 5 To 8 Percent Slopes, Eroded	No	4.96
10	Rains Fine Sandy Loam	Yes	9.30
11	Lucy Loamy Fine Sand, 0 To 5 Percent Slopes	No	309.88
12	Lucy Loamy Fine Sand, 5 To 8 Percent Slopes	No	2.24
13	Orangeburg Sandy Loam, 2 To 5 Percent Slopes	No	304.03
14	Orangeburg Sandy Loam, 5 To 8 Percent Slopes, Moderately Eroded	No	52.17
16	Blanton Fine Sand, 0 To 5 Percent Slopes	No	23.11
17	Troup Fine Sand, 0 To 5 Percent Slopes	No	34.65
18	Troup Fine Sand, 5 To 8 Percent Slopes, South	No	5.74
20	Albany Sand, 0 To 2 Percent Slopes	No	32.87
22	Plummer Fine Sand	Yes	81.51
23	Pelham Fine Sand	No	179.71
24	Fuquay Fine Sand, 5 To 8 Percent Slopes	No	10.01
30	Pamlico-Dorovan Mucks	Yes	25.42
31	Faceville Fine Sandy Loam, 2 To 5 Percent Slopes	No	2032.07
32	Faceville Fine Sandy Loam, 5 To 8 Percent Slopes, Eroded	No	164.70
33	Leefield Fine Sand, 0 To 5 Percent Slopes	No	40.33
36	Lynchburg Loamy Fine Sand	No	174.73
38	Miccosukee Fine Sandy Loam	No	93.37
39	Cowarts Loamy Fine Sand, 2 To 5 Percent Slopes	No	1.79
42	Faceville Loamy Fine Sand, 8 To 12 Percent Slopes, Eroded	No	32.12
99	Water	Unranked	32.50
	Leon County Soils		
1	Albany Loamy Sand, 0 To 2 Percent Slopes	No	18.33
10	Dothan Loamy Fine Sand, 2 To 5 Percent Slopes	No	0.03
12	Faceville Sandy Loam, 2 To 5 Percent Slopes	No	9.02
13	Faceville Sandy Loam, 5 To 8 Percent Slopes	No	38.83
16	Fuquay Fine Sand, 0 To 5 Percent Slopes	No	7.51
22	Leefield Loamy Sand, 0 To 2 Percent Slopes	No	11.91
24	Lucy Fine Sand, 0 To 5 Percent Slopes	No	0.47
25	Lucy Fine Sand, 5 To 8 Percent Slopes	No	0.00
39	Pelham Fine Sand	Yes	87.25
Total			4131.48

Legend

- Project Boundary
- County Boundary
- Soil
- Hydric Soil

N

0 1,000 2,000

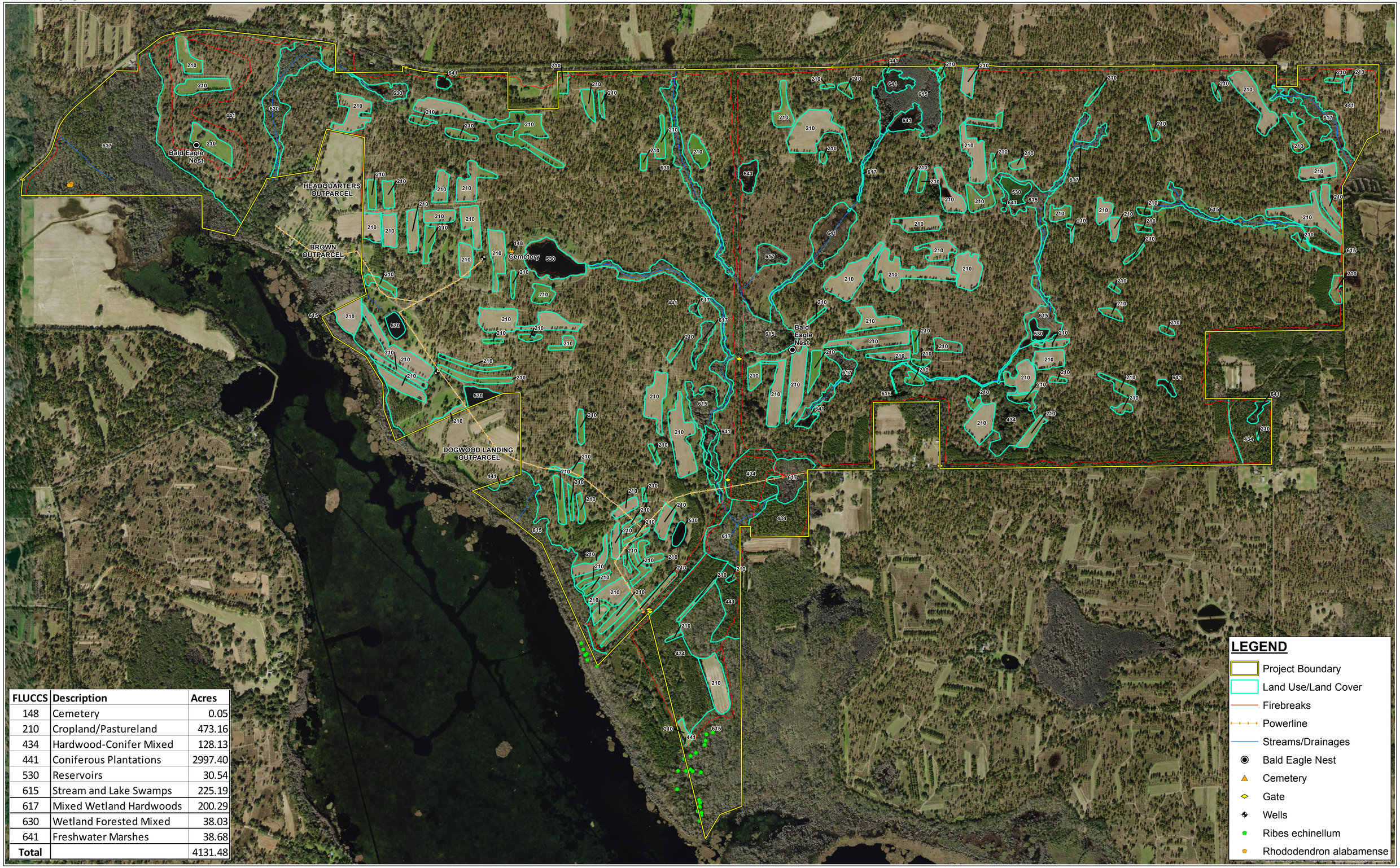
Feet

Sources: NWFWMD, 2021; FDOT Imagery, 2018, 2019; ECT, 2022.

Figure 4
Soils Map

Gem Land Property
Leon County & Jefferson County, Florida

ECT



FLUCCS	Description	Acres
148	Cemetery	0.05
210	Cropland/Pastureland	473.16
434	Hardwood-Conifer Mixed	128.13
441	Coniferous Plantations	2997.40
530	Reservoirs	30.54
615	Stream and Lake Swamps	225.19
617	Mixed Wetland Hardwoods	200.29
630	Wetland Forested Mixed	38.03
641	Freshwater Marshes	38.68
Total		4131.48

Land Use/Land Cover
Gem Property
Leon County & Jefferson County, Florida

1 inch = 800 feet
0 400 800
Feet

N

ECT

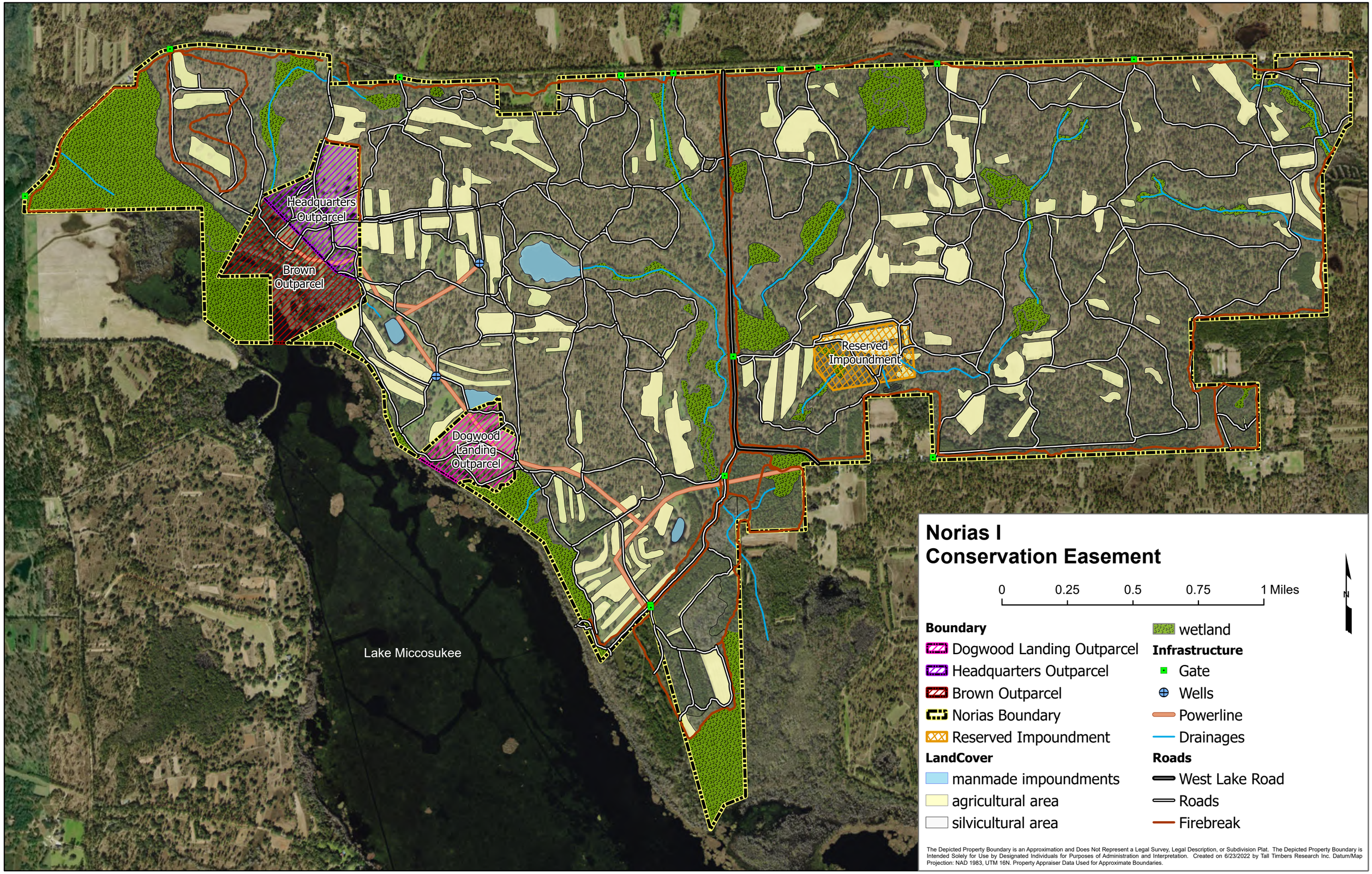
Sources: NWFWMD, 2021; FDOT Imagery, 2019, 2020; ECT, 2022.



Figure 6 Photograph Locations
Gem Property
Leon County & Jefferson County, Florida

Sources: NWFWMD, 2021; FDOT Imagery, 2019, 2020; ECT, 2022.

Appendix A Land Use/Land Cover with Roads, Firebreaks, and Infrastructure



Norias I
Conservation Easement

0 0.25 0.5 0.75 1 Miles

N

Boundary
- Dogwood Landing Outparcel
- Headquarters Outparcel
- Brown Outparcel
- Norias Boundary
- Reserved Impoundment

LandCover
- manmade impoundments
- agricultural area
- silvicultural area
- wetland

Infrastructure
- Gate
- Wells
- Powerline
- Drainages

Roads
- West Lake Road
- Roads
- Firebreak

The Depicted Property Boundary is an Approximation and Does Not Represent a Legal Survey, Legal Description, or Subdivision Plat. The Depicted Property Boundary is Intended Solely for Use by Designated Individuals for Purposes of Administration and Interpretation. Created on 6/23/2022 by Tall Timbers Research Inc. Datum/Map Projection: NAD 1983, UTM 16N. Property Appraiser Data Used for Approximate Boundaries.

Appendix B Photographs



Photograph No. 1. ATT_5, Well 1, in use



Photograph No. 2. ATT_6, Well 2, not in use



Photograph No. 3. ATT_9, 210 Food plot with mustard; north



Photograph No. 4. ATT_10, 210 Food plot with rye; north



Photograph No. 5. ATT_21, 210 Food plot with wheat; south



Photograph No. 6. ATT_144, 210 Existing impoundment (duck pond); northeast



Photograph No. 7. ATT_150, Electrical distribution line, east



Photograph No. 8. ATT_157, Bald eagle nest JE002



Photograph No. 9. ATT_159, New bald eagle nest, undocumented, northwest



Photograph No. 10. ATT_160, Trail and brush cover regeneration in pine plantation, north



Photograph No. 11. ATT_162, 441 Pineland with trail, brush cover and food plot in distance, east



Photograph No. 12. ATT_163, 641 Freshwater marsh; north



Photograph No. 13. ATT_164, 630 Wetland hardwood-conifer, mixed; west



Photograph No. 14. ATT_166, 148 Cemetery with view of Norias Club Pond; east



Photograph No. 15. ATT_166, 148 Cemetery entrance; northwest



Photograph No. 16. ATT_167, 530 Norias Club Pond, west



Photograph No. 17. ATT_169, 641 Freshwater marsh with willows, south



Photograph No. 18. ATT_172, 615 Stream and Lake Swamps, north



Photograph No. 19. ATT_173, 530 Impoundment with 95% cover of waterlilies, southeast



Photograph No. 20. ATT_174, 411 Pines with brushy understory, west



Photograph No. 21. ATT_181, 441 Pine plantation, south



Photograph No. 22. ATT_182, 530 Impoundment, south



Photograph No. 23. ATT_185, Hopkin's Landing Road, northeast



Photograph No. 24. ATT_190, 615 Stream and Lake Swamps, east



Photograph No. 25. ATT_205, 617 Mixed Wetland Hardwoods, east



Photograph No. 26. ATT_206, West Lake Road, south



Photograph No. 27. ATT_207, S. Norias Road, south



Photograph No. 28 ATT_208, Endangered Miccousukee gooseberry



Photograph No. 29. ATT_38, Food plot, wheat and mustard, north



Photograph No. 30. ATT_46, Food plot, legume, south



Photograph No. 31. ATT_50, Food plot, mixed vegetation, southeast



Photograph No. 32. ATT_52, Food plot, wheat, north



Photograph No. 33. ATT_80, Food plot, southeast



Photograph No. 34. ATT_68, Food plot, wheat, north



Photograph No. 35. ATT_81, Food plot, wheat, east



Photograph No. 36. ATT_85, Food plot, mixed vegetation, northeast



Photograph No. 37. ATT_91, Food plot, wheat, northwest



Photograph No. 38. ATT_93, Food plot, mustard, east



Photograph No. 39. ATT_102, Food plot, wheat, north



Photograph No. 40. ATT_128, Food plot, wheat and mustard, south



Photograph No. 41. ATT_113, Food plot, wheat, west



Photograph No. 42. ATT_144, Impoundment with gate valve, southeast



Photograph No. 43. ATT_154, Food plot, mustard, south

Gem Land Site Photographs

Photograph No.	Location ID	FLUCCS	Subject	Direction	Latitude	Longitude
1	5		Water well 1		30.607263	-83.993115
2	6		Water well 2, not in use		30.613435	-83.990065
3	9	210	Food Plot with mustard	North	30.616386	-83.997087
4	10	210	Food Plot with rye	North	30.616423	-83.996009
5	21	210	Food Plot with wheat	South	30.61575	-83.996112
6	144	210	Impounded Food Plot with corn	Northeast	30.605914	-83.99112
7	150		Electrical distribution line	East	30.601966	-83.98532
8	157		Bald eagle nest JE002		30.608423	-83.970676
9	159		Undocumented bald eagle nest	Northwest	30.618134	-84.007591
10	160	441	Brush cover regeneration in pine plantation	Directional photos NW and SW	30.624407	-84.009552
11	162	441	Pineland with trail and brush cover	East	30.616367	-83.993835
12	163	641	Freshwater marsh	North	30.622667	-83.992928
13	164	630	Wetland hardwood-conifer, mixed	West	30.623134	-83.994967
14	166	148	Cemetery	East, Norias Club Pond in background	30.613906	-83.988368
15	166	148	Cemetery entrance	Northwest	30.613906	-83.988368
16	167	530	Norias Club Pond	West	30.612998	-83.983576
17	169	641	Freshwater marsh with willows	South	30.618837	-83.973367
18	172	615	Stream and Lake Swamp	North	30.622604	-83.961534
19	173	530	Impoundment with 95% cover of waterlilies	Southeast	30.617381	-83.95754
20	174	411	Pineland with brushy understory	West	30.616022	-83.95747
21	181	441	Pine plantation	South	30.612851	-83.937326
22	182	530	Impoundment	South	30.610551	-83.995389
23	185		Hopkin's Landing Road	Northeast	30.592146	-83.983223
24	190	615	Stream and Lake Swamp	East	30.587069	-83.976075
25	205	617	Mixed Hardwood Swamp	East	30.602655	-83.971039
26	206		West Lake Road at intersection of Lake Road	South	30.623783	-83.974373
27	207		S. Norias Road at intersection of Lake Road	South		
28	208		Miccosukee gooseberry, endangered	near terminus of Hopkin's Landing Road		
29	38	210	Food Plot with wheat and mustard	North	30.611108	-83.986857
30	46	210	Food Plot with legume	South	30.605023	-83.984077
31	50	210	Food Plot with mixed vegetation	Southeast	30.60326	-83.979838
32	52	210	Food Plot with wheat	North	30.601548	-83.97757

Gem Land Site Photographs

Photograph No.	Location ID	FLUCCS	Subject	Direction	Latitude	Longitude
33	80	210	Food Plot	Southeast	30.61321	-83.96507
34	68	210	Food Plot with wheat	North	30.622342	-83.959438
35	81	210	Food Plot with wheat	East	30.615964	-83.948752
36	85	210	Food Plot with mixed vegetation	Northeast	30.621741	-83.952019
37	91	210	Food Plot with wheat	Northwest	30.62074	-83.940644
38	93	210	Food Plot with mustard	East	30.610578	-83.951435
39	102	210	Food Plot with wheat	North	30.62222	-83.935483
40	128	210	Food Plot with wheat and mustard	South	30.59149	-83.976355
41	113	210	Food Plot with wheat	West	30.608748	-83.953483
42	144	210	Food Plot with gate valve	Southeast	30.605914	-83.99112
43	154	210	Food Plot with mustard	South	30.600582	-83.984162

Appendix C Florida Master Site File Review Results

AR=3
SS=0
CM=1
RG=0
BR=0
Total=4

Cultural Resource Roster

SiteID	Type	Site Name	Address	Additional Info	SHPO Eval	NR Status
JE00152	AR	BULL PASTURE				
JE00154	AR	FIG TREE				
JE00155	AR	BACK PASTURE				
JE02154	CM	Mount Olive AME Church Cemetery	None	Established c1900, Graves = 150		