

Florida Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Land Conservation and Planning
Flagler County Blueway Florida Forever Project Analysis
December 2024



This document contains the Florida Fish and Wildlife Conservation Commission's (FWC) Geographic Information System (GIS) data analysis of the area yet to be acquired within the **Flagler County Blueway** Florida Forever project. This analysis was performed to provide FWC and others with important fish and wildlife resource information to be used in evaluating and ranking Florida Forever projects. The data selected for analysis are those considered by FWC to spatially reflect important fish and wildlife habitat and life history requirements.

In addition, FWC has completed a field review and associated assessment report for this project/proposal that is incorporated within the Acquisition and Restoration Council Florida Forever Project Evaluation Report. This report is available upon request.

GIS Data

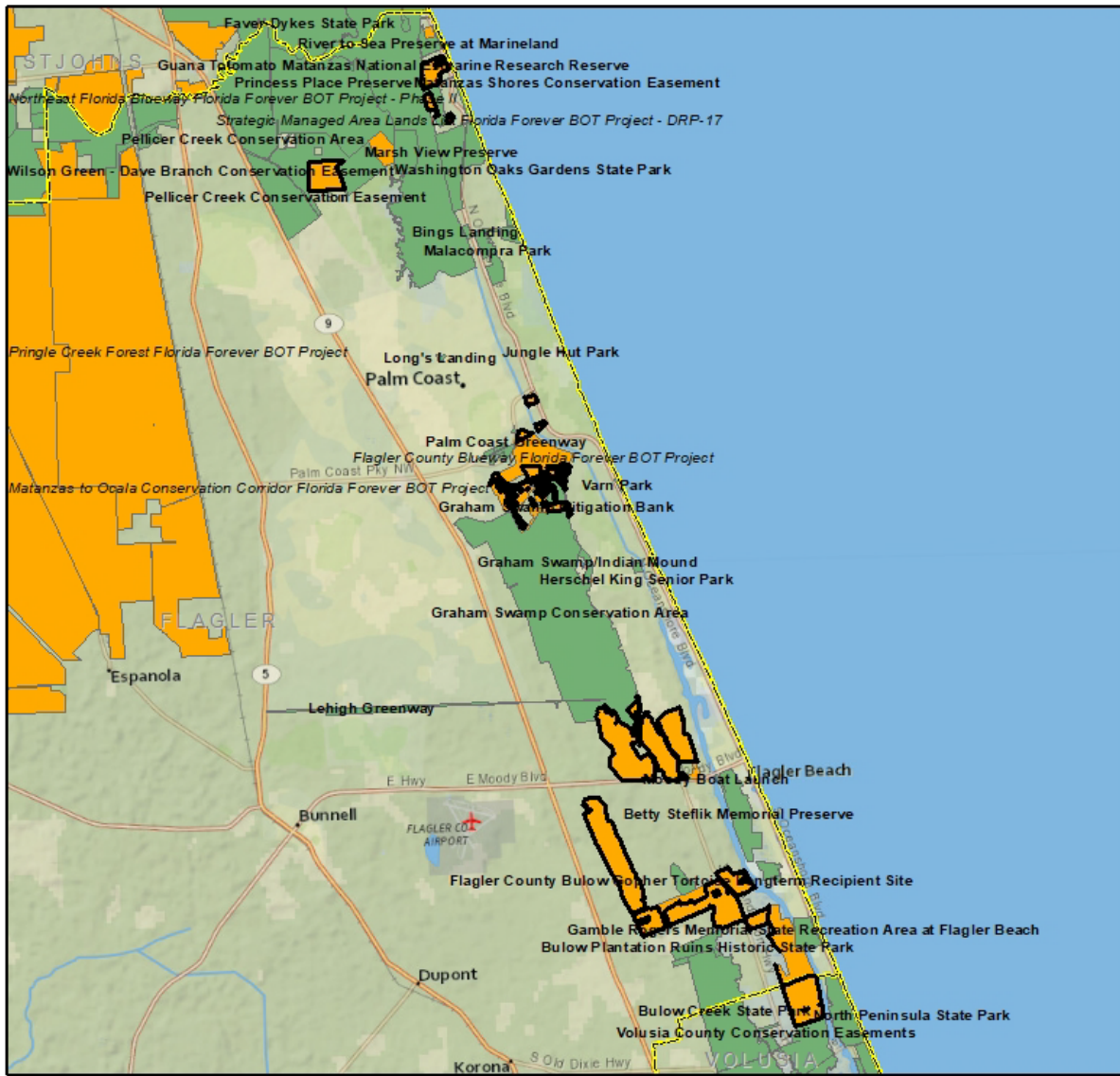
The FWC utilizes the Florida Cooperative Land Cover (CLC) GIS data layer for identification and mapping of land cover. The CLC is a cooperative effort between the FWC and the Florida Natural Areas Inventory (FNAI) to develop ecologically-based statewide land cover from existing sources and expert review of aerial photography. Land cover acreage estimates found in this document are based on GIS analysis of these data.

The FWC Florida Landscape Assessment Model (FLAM)¹ is a GIS model that determines the landscape value based on natural resources and fish and wildlife habitat. The FLAM ranks habitat from a 0-10; a rank of 10 being of greatest value.

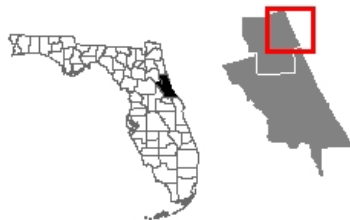
Important fish and wildlife resource GIS data were queried using Environmental Resource Analysis GIS computer software. These data include the following GIS layers:

- FWC-FNAI Florida Cooperative Land Cover
- FWC Strategic Habitat Conservation Areas – Priority and Species
- Critical Lands and Waters Identification Project (CLIP) – Priority 1 and 2 – Terrestrial and Water
- CLIP – Landscape, Biodiversity, and Floodplain Resources
- Panther Location
- Panther Mortality
- Florida Panther Priority Habitat (Primary, Secondary, and Dispersal)
- Black Bear Range
- Rare Fish Locations/ Imperiled Waters
- Southern Bald Eagle Nest
- FWC Imperiled Species Richness

- FNAI Element Occurrences
- FNAI Suitable Habitat that Supports Species Known to Occur in the Vicinity
- Florida Department of Environmental Protection Surface Water Classification
- U.S. Fish and Wildlife Service (USFWS) - National Wetlands Inventory
- USFWS Critical Habitat
- Florida Geological Survey Springs
- Outstanding Florida Waters
- Areas of Critical State Concern



**Flagler County Blueway
Florida Forever Project**
Flagler and Volusia County
2,836 Remaining Acres

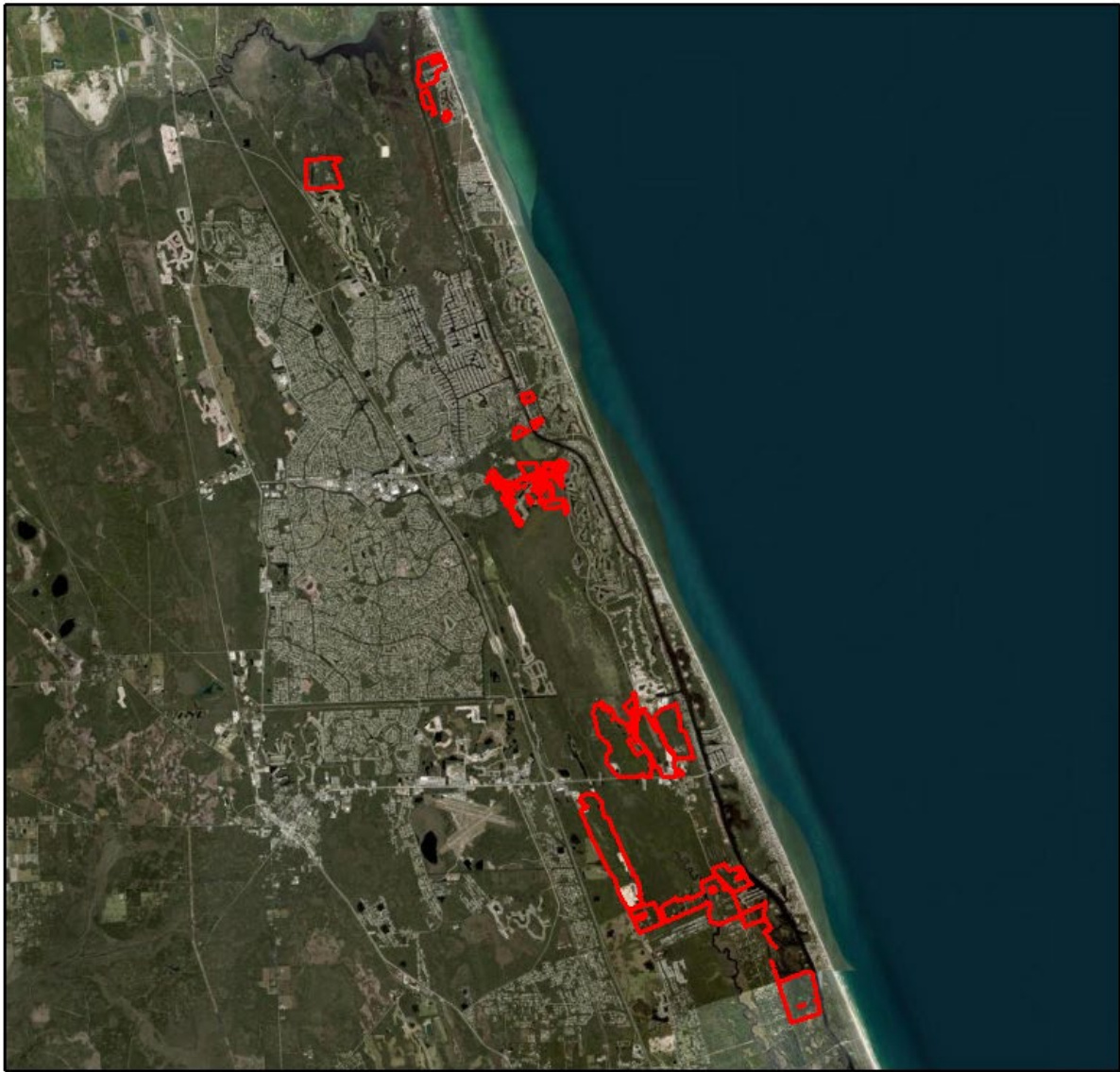


0 2.5 5 7.5 10 Miles

Created in ArcGIS 10.8 by the Florida Fish and Wildlife Conservation Commission October 2023

Vicinity Map

-  Flagler County Blueway Boundary
-  County Boundaries
-  Conservation Lands
-  Florida Forever Projects



Flagler County Blueway
Florida Forever Project
 Flagler and Volusia County
 2,836 Remaining Acres



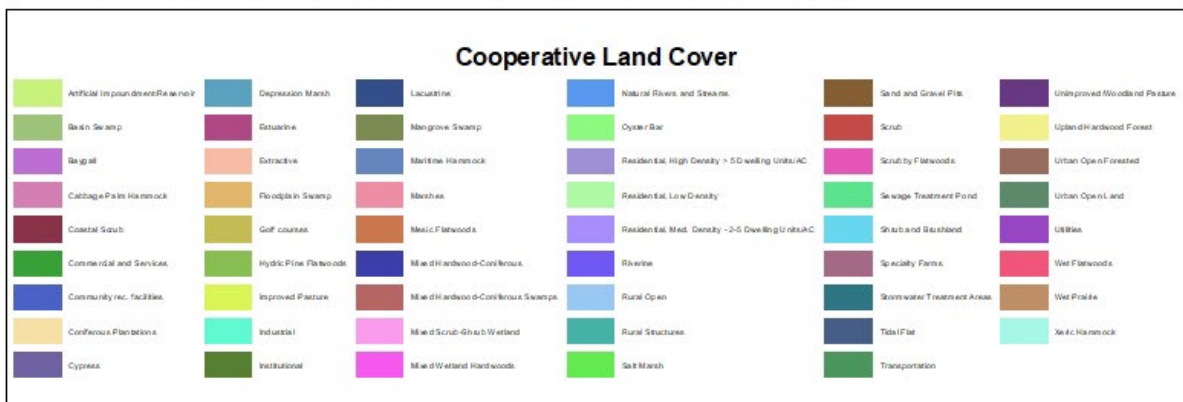
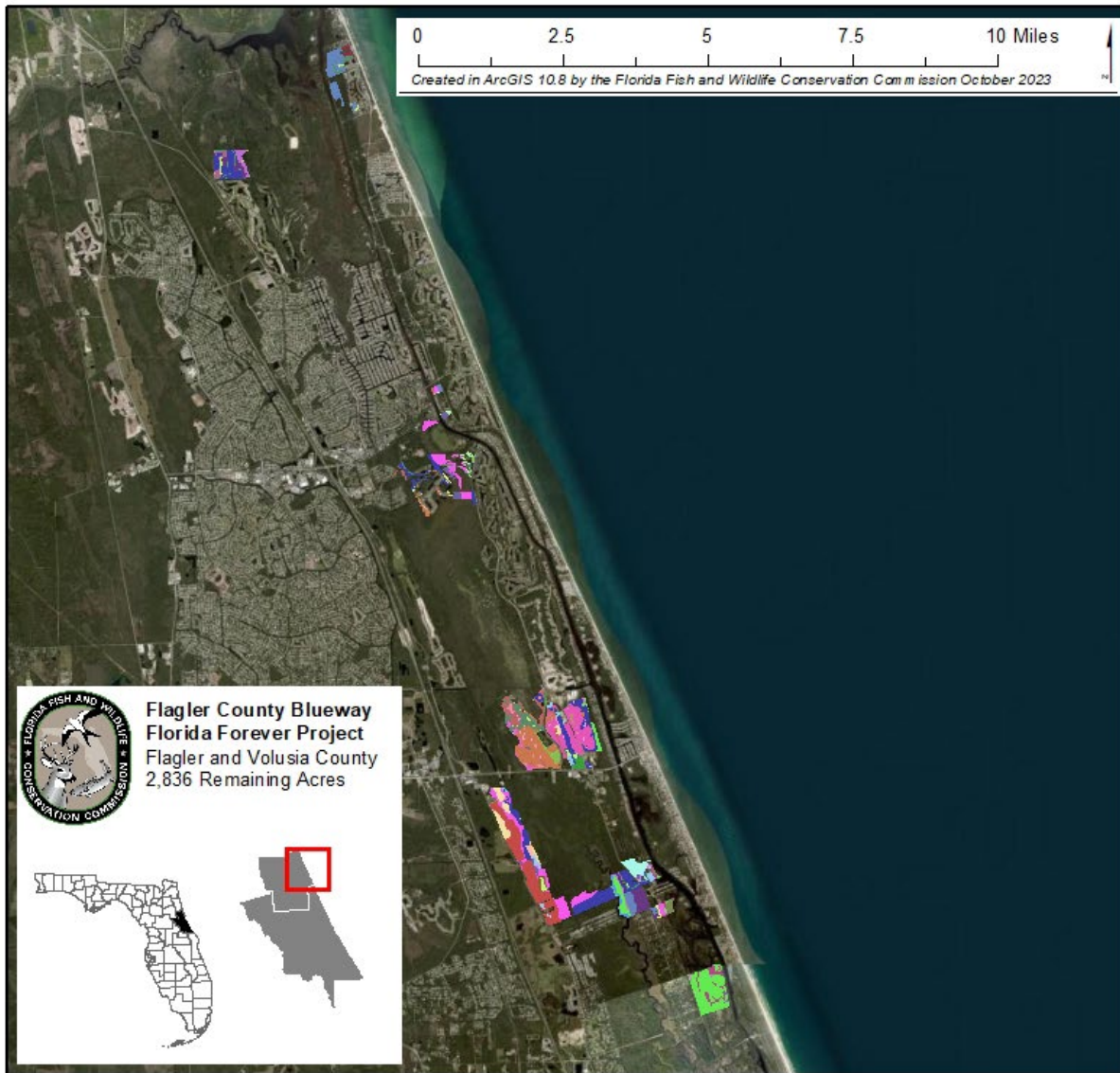
0 2.5 5 7.5 10 Miles

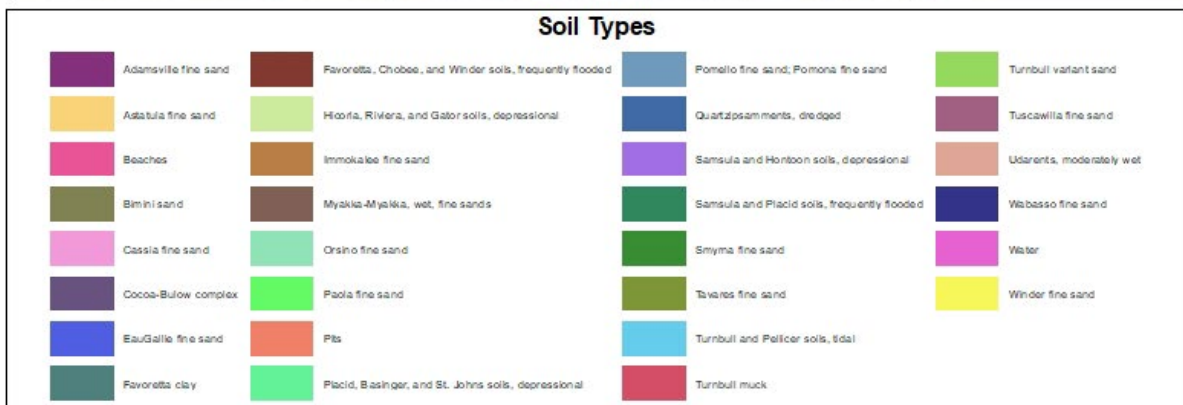
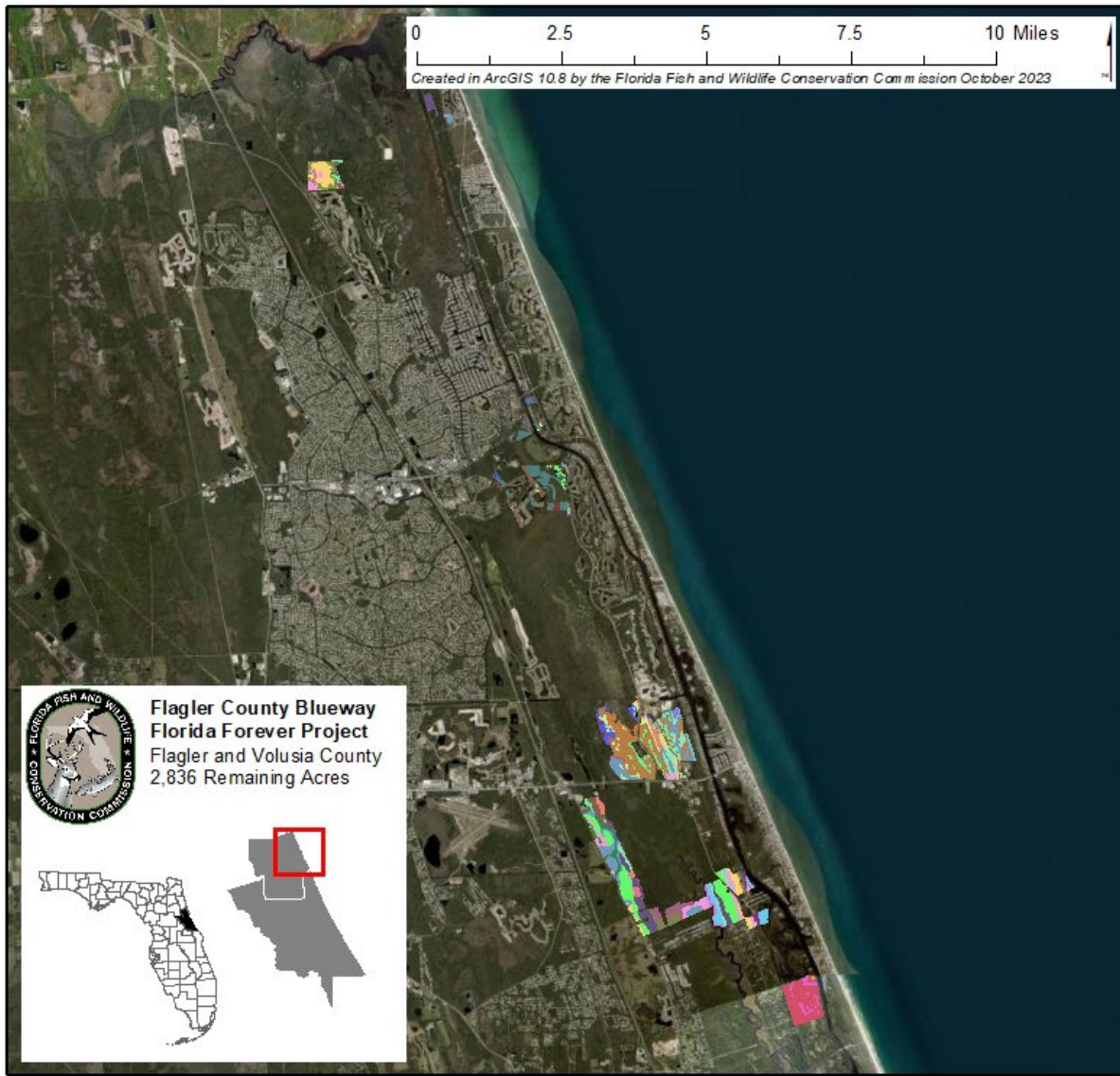
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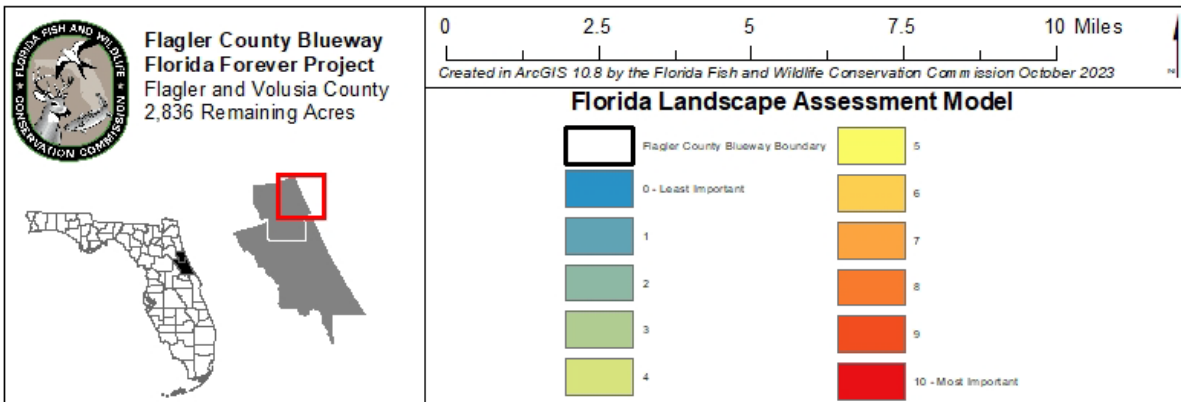
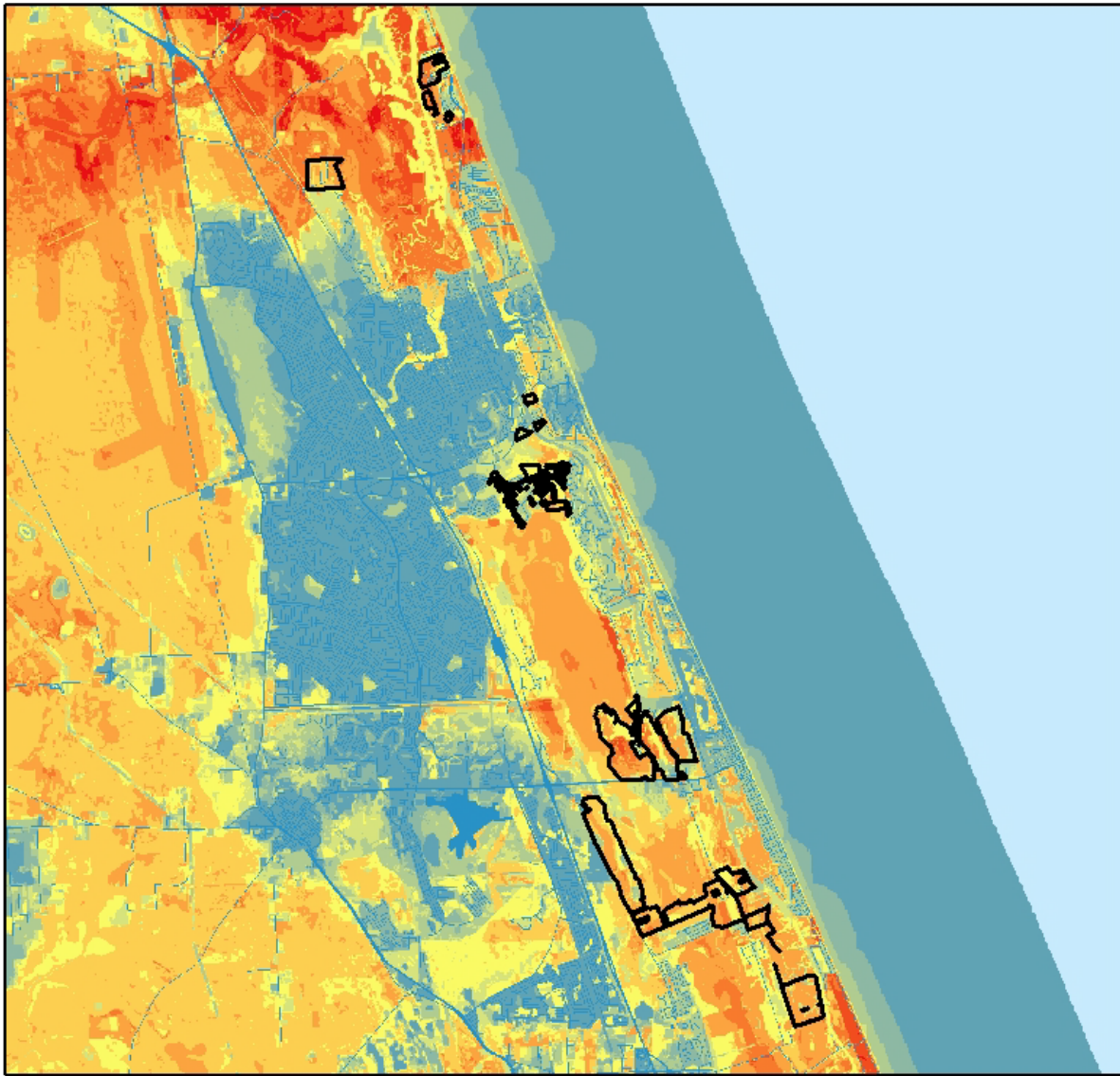
Aerial Imagery



Flagler County Blueway Boundary







FWC Florida Landscape Assessment Model 2023		
	Value	Acres
	0	38.0
	1	1.2
	2	33.8
	3	108.3
	4	203.9
	5	484.4
	6	621.1
	7	1044.6
	8	291.2
	9	8.2
	10	0.0
Mean FLAM value =	6.0	

Comments:

¹ FWC has developed a GIS-based assessment tool that incorporates a wide variety of land cover and wildlife species data. These wildlife species include imperiled species and locally important species. Application of this model assists in the identification and conservation of important wildlife habitats. The FLAM ranks the Florida landscape based upon important natural resources and habitat needs of wildlife as a way to identify ecologically significant lands in the state, and to assess the potential impacts of land development projects on wildlife populations. The FLAM is provided as part of the FWC's continuing technical assistance to various local, regional, state, and federal agencies, and entities interested in wildlife needs and conservation in order to: (1) determine ways to avoid or minimize project impacts by evaluating alternative placements, alignments, and transportation corridors during early planning stages, (2) assess direct, secondary, and cumulative impacts to habitat and wildlife resources, and (3) help identify appropriate parcels for land conservation, and for wetland and upland habitat mitigation.

Environmental Resource Analysis

FWC Land Conservation and Planning

Analysis Shape Type: Polygon

Analysis Timestamp: 11082023 10:05:53

Shape Name: Unnamed polygon centered at -81.177408 °, 29.537207 °

Boundary Area: 2,835.9 acres

Buffer Area: 0 acres

Total Area: 2,835.9 acres

FWC Wildlife Data and Models

Cooperative Land Cover v3.6

Name - State	Code - State	Name - Site	Code - Site	Total Area (acres)	Percent of Area
High Intensity Urban	1822	Commercial and Services	18223	21.57	0.76 %
High Intensity Urban	1822	Residential, Med. Density - 2-5 Dwelling Units/AC	18221	1.01	0.04 %
Low Intensity Urban	1821	Low Structure Density	18212	21.17	0.75 %
Isolated Freshwater Marsh	2121	Depression Marsh	21211	0.32	0.01 %
High Intensity Urban	1822	Institutional	18225	1.34	0.05 %
High Intensity Urban	1822	Industrial	18224	2.13	0.08 %
Low Intensity Urban	1821	Urban Open Land	18211	90.17	3.18 %
Cultural - Lacustrine	3200	Stormwater Treatment Areas	3250	8.02	0.28 %
Cultural - Lacustrine	3200	Sewage Treatment Pond	3240	0.00	0 %
Cultural - Lacustrine	3200	Artificial Impoundment/Reservoir	3220	36.91	1.3 %
Mangrove Swamp	5250	Mangrove Swamp	5250	22.43	0.79 %
Tidal Flat	5220	Tidal Flat	5220	0.04	0 %
Riverine	4000	Riverine	4000	0.65	0.02 %
High Intensity Urban	1822	Residential, High Density > 5 Dwelling Units/AC	18222	2.15	0.08 %
Other Agriculture	18335	Specialty Farms	183352	21.98	0.78 %
Tree Plantations	18333	Coniferous plantation	183332	77.75	2.74 %
Improved Pasture	183313	Improved Pasture	183313	3.82	0.13 %
Natural Rivers and Streams	4100	Natural Rivers and Streams	4100	19.25	0.68 %
Transportation	1840	Transportation	1840	36.32	1.28 %
Rural	1830	Unimproved/Woodland Pasture	183314	88.23	3.11 %
Hydric Hammock	2232	Cabbage Palm Hammock	22323	13.52	0.48 %
Wet Flatwoods	2221	Hydric Pine Flatwoods	22211	29.36	1.04 %
Basin Swamp	22132	Basin Swamp	22132	0.29	0.01 %
Low Intensity Urban	1821	Community rec. facilities	182135	0.12	0 %
Low Intensity Urban	1821	Golf courses	182132	0.01	0 %
Low Intensity Urban	1821	Urban Open Forested	182111	0.12	0 %
Lacustrine	3000	Lacustrine	3000	3.71	0.13 %
Xeric Hammock	1150	Xeric Hammock	1150	56.38	1.99 %
Upland Hardwood Forest	1110	Upland Hardwood Forest	1110	7.38	0.26 %
Salt Marsh	5240	Salt Marsh	5240	294.82	10.4 %
Mesic Flatwoods	1311	Mesic Flatwoods	1311	234.69	8.28 %
Coastal Scrub	1214	Coastal Scrub	1214	12.54	0.44 %
Scrub	1210	Scrub	1210	260.03	9.17 %
Estuarine	5000	Oyster Bar	5230	0.78	0.03 %
Prairies and Bogs	2110	Mixed Scrub-Shrub Wetland	2112	18.17	0.64 %
Rural	1830	Rural Open	1831	41.98	1.48 %
Maritime Hammock	1650	Maritime Hammock	1650	155.04	5.47 %
Estuarine	5000	Estuarine	5000	46.22	1.63 %
Freshwater Forested Wetlands	2200	Mixed Hardwood-Coniferous Swamps	2240	119.49	4.21 %
Freshwater Forested Wetlands	2200	Mixed Wetland Hardwoods	2233	291.65	10.28 %
Cypress	2211	Cypress	2211	42.58	1.5 %
Marshes	2120	Marshes	2120	21.34	0.75 %
Prairies and Bogs	2110	Wet Prairie	2111	8.00	0.28 %
Baygall	2231	Baygall	2231	27.43	0.97 %
Wet Flatwoods	2221	Wet Flatwoods	2221	2.13	0.08 %
Floodplain Swamp	2215	Floodplain Swamp	2215	2.31	0.08 %
Extractive	1870	Sand and Gravel Pits	1872	11.62	0.41 %
Shrub and Brushland	1500	Shrub and Brushland	1500	3.06	0.11 %
Mixed Hardwood-Coniferous	1400	Mixed Hardwood-Coniferous	1400	450.52	15.89 %
Scrubby Flatwoods	1312	Scrubby Flatwoods	1312	209.72	7.4 %
Extractive	1870	Extractive	1870	13.01	0.46 %
Utilities	1860	Utilities	1860	0.38	0.01 %
Rural	1830	Rural Structures	1832	2.22	0.08 %
TOTAL:				2,835.90	100 %

Critical Lands and Waters Identification Project (CLIP) Priority 1 and 2 - Terrestrial and Waters							
CLIP Priority		Total Area (acres)			Percent of Area		
All other cells		906.96			31.98 %		
CLIP P1 in submerged lands/state waters		117.62			4.15 %		
CLIP P1 in terrestrial		1,275.30			44.97 %		
CLIP P2 in submerged lands/state waters		16.97			0.6 %		
CLIP P2 in terrestrial		510.24			17.99 %		
TOTAL:		2,827.09			99.69 %		
CLIP- Landscape Category							
Priority		Total Area (acres)			Percent of Area		
0		75.33			2.66 %		
1		25.50			0.9 %		
2		2,555.78			90.12 %		
3		179.28			6.32 %		
TOTAL:		2,835.90			100 %		
CLIP- Biodiversity Category							
Priority		Total Area (acres)			Percent of Area		
0		184.22			6.5 %		
1		59.74			2.11 %		
2		547.08			19.29 %		
3		742.41			26.18 %		
4		440.16			15.52 %		
5		862.28			30.41 %		
TOTAL:		2,835.90			100 %		
Priority FWC Strategic Habitat Conservation Areas 2021							
Priority		Total Area (acres)			Percent of Area		
0		1,402.56			49.46 %		
1		232.77			8.21 %		
2		273.94			9.66 %		
3		345.98			12.2 %		
5		580.65			20.48 %		
TOTAL:		2,835.90			100 %		
FWC Strategic Habitat Conservation Areas 2009							
Species 1	Species 2	Species 3	Species 4	Species 5	Species 6	Total Area (acres)	Percent of Area
American swallow-tailed kite						223.37	7.88 %
Atlantic salt marsh snake						234.82	8.28 %
Cooper's hawk						592.89	20.91 %
Cooper's hawk	American swallow-tailed kite					125.20	4.41 %
Cooper's hawk	Florida scrub jay					86.86	3.06 %
Cooper's hawk	Florida scrub jay	American swallow-tailed kite				0.89	0.03 %
Florida mouse						0.89	0.03 %
Florida mouse	Florida scrub jay					12.14	0.43 %
Florida scrub jay						162.98	5.75 %
Florida scrub jay	American swallow-tailed kite					15.50	0.55 %
TOTAL:						1,455.54	51.33 %
Panther location							
No Records Found							
Panther mortality							
No Records Found							
Panther Priority Habitat							
No Records Found							
Bear Range							
Bear Range		Total Area (acres)			Percent of Area		
Common		1,481.48			52.24 %		
Frequent		1,345.32			47.44 %		
TOTAL:		2,826.80			99.68 %		
Rare Fish							
No Records Found							
Rare Fish Imperiled Waters							
COMMON NAME		SCIENTIFIC NAME		Total Area (acres)		Percent of Area	
Opossum pipefish		Microphis brachyurus		412.84		14.56 %	
		TOTAL:		412.84		14.56 %	
Southern bald eagle nest							
Nest Count	Earliest Survey Year	Latest Survey Year		Total Area (acres)		Percent of Area	
1	2009	2013		2.14		0.08 %	
		TOTAL:		2.14		0.08 %	
Imperiled Species Richness							

Number of Species	Total Area (acres)	Percent of Area
0	162.22	5.72 %
1	164.18	5.79 %
2	9.03	0.32 %
3	465.57	16.42 %
4	294.39	10.38 %
5	342.95	12.09 %
6	675.71	23.83 %
7	472.31	16.65 %
8	249.54	8.8 %
TOTAL:	2,835.90	100 %

Florida Natural Areas Inventory Data

Element Occurrences

COMMON NAME	SCIENTIFIC NAME	GLOBAL RANK	STATE RANK	FWC STATUS	FEDERAL STATUS	EO Rank	Last Observation	Total Area (acres)	Percent of Area
American Alligator	Alligator mississippiensis	G5	S4	FT(S/A)	SAT	B	2007	2,171.00	76.55 %
Eastern Indigo Snake	Drymarchon couperi	G3	S2?	FT	T	BD	1980	8.30	0.29 %
Florida Black Bear	Ursus americanus floridanus	G5T4	S4	N	N	B	2020-11-19	2,826.78	99.68 %
Florida Scrub-Jay	Aphelocoma coerulescens	G1G2	S1S2	FT	T	E	1981-10	123.67	4.36 %
Florida Scrub-Jay	Aphelocoma coerulescens	G1G2	S1S2	FT	T	NR	1984-04	0.71	0.03 %
Gopher Tortoise	Gopherus polyphemus	G3	S3	ST	N	E	1984	11.22	0.4 %
Loggerhead Sea Turtle	Caretta caretta	G3	S3	FT	T	C	2012	2.35	0.08 %
yellow hibiscus	Pavonia spinifex	G4G5	S2	N	N	E	1979-09-09	118.50	4.18 %
ZZ	Floodplain swamp	G4	S4	N	N	AC	2004	350.48	12.36 %
ZZ	Maritime hammock	G3	S2	N	N	A	2004	2.81	0.1 %
ZZ	Salt marsh	G5	S4	N	N	AB	2007-02-22	4.56	0.16 %
ZZ	Scrub	G2	S2	N	N	B	1992-04-25	2.24	0.08 %
ZZ	Scrub	G2	S2	N	N	CD	2004	26.96	0.95 %
ZZ	Scrub	G2	S2	N	N	NR	1984-03-13	2.81	0.1 %
TOTAL:								5,652.41	199.32 %

Suitable Habitat that Supports Species Known to Occur in the Vicinity

COMMON NAME	SCIENTIFIC NAME	Total Area (acres)	Percent of Area
coastal vervain	Glandularia maritima	110.23	3.89 %
Florida Sandhill Crane	Antigone canadensis pratensis	309.15	10.9 %
Florida Scrub-Jay	Aphelocoma coerulescens	12.42	0.44 %
Gopher Frog	Lithobates capito	86.02	3.03 %
Wood Stork	Mycteria americana	119.52	4.21 %
TOTAL:		637.32	22.47 %

USFWS

Critical Habitat

No Records Found

Area of Critical State Concern

Apalachicola

No Records Found

Big Cypress

No Records Found

Green Swamp

No Records Found

Key West

No Records Found

Lower Keys

No Records Found

Upper Keys

No Records Found

Florida Ecological Greenways Network

Wildlife Corridor Classification

Priority Level	Total Area (acres)	Percent of Area
2	178.68	6.3 %

5	2,609.78	92.03 %
TOTAL:	2,788.46	98.33 %

Water Resources					
FDEP Surface Water Classification					
Waterbody Name	Water Type	Water Basin	Classification	Total Area (acres)	Percent of Area
PALM COAST	ESTUARY	2363D	3M	379.87	13.39 %
PALM COAST	ESTUARY	2363J	3M	486.97	17.17 %
ICWW (ST JOHNS COUNTY; FLAGLER COUNTY)	ESTUARY	2363L	2	11.02	0.39 %
WASHINGTON OAKS GARDENS STATE PARK	ESTUARY	2363M	3M	126.28	4.45 %
STYLES CREEK	STREAM	2595	3F	178.33	6.29 %
ST JOE CANAL	STREAM	2609A	3F	256.86	9.06 %
BULOW CREEK	ESTUARY	2620	3M	1,396.58	49.25 %
		TOTAL:		2,835.90	100 %

Outstanding Florida Waters			
Name	OFW Type	Total Area (acres)	Percent of Area
Bulow Creek State Park	Other	8.75	0.31 %
TOMOKA MARSH AQUATIC PRESERVE	Aquatic Preserve	25.71	0.91 %
	TOTAL:	34.45	1.21 %

Florida Geological Survey Springs			
No Records Found			

National Wetlands Inventory			
Wetland Type	Wetland Code	Total Area (acres)	Percent of Area
FRESHWATER FORESTED/SHRUB WETLAND	PFO4/1C	10.18	0.36 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO3/4C	0.70	0.02 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO2/1F	44.01	1.55 %
FRESHWATER EMERGENT WETLAND	PEM1/SS3C	0.15	0.01 %
ESTUARINE AND MARINE DEEPWATER	E1UBLx	7.39	0.26 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO2F	17.77	0.63 %
FRESHWATER POND	PUBHx	44.35	1.56 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO3/2C	0.04	0 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/3C	17.34	0.61 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/2C	105.63	3.72 %
RIVERINE	R2UBHx	3.32	0.12 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/SS1C	0.01	0 %
RIVERINE	R2UBH	2.18	0.08 %
ESTUARINE AND MARINE WETLAND	E2SS3N	19.02	0.67 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/2F	24.51	0.86 %
ESTUARINE AND MARINE WETLAND	E2EM1P	2.95	0.1 %
FRESHWATER FORESTED/SHRUB WETLAND	PSS1/EM1F	6.34	0.22 %
FRESHWATER EMERGENT WETLAND	PEM1/SS1F	4.42	0.16 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/4C	138.90	4.9 %
FRESHWATER EMERGENT WETLAND	PEM1/SS2F	3.35	0.12 %
ESTUARINE AND MARINE WETLAND	E2SS3P	1.21	0.04 %
ESTUARINE AND MARINE WETLAND	E2FO3P	1.70	0.06 %
ESTUARINE AND MARINE WETLAND	E2EM1N	66.33	2.34 %
ESTUARINE AND MARINE WETLAND	E2EM1/SS3N	20.58	0.73 %
FRESHWATER POND	PABHx	2.08	0.07 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/3R	0.01	0 %
FRESHWATER FORESTED/SHRUB WETLAND	PSS1C	2.13	0.08 %
FRESHWATER FORESTED/SHRUB WETLAND	PSS3C	0.13	0 %
ESTUARINE AND MARINE WETLAND	E2SS3/EM1N	2.52	0.09 %
FRESHWATER POND	PABFx	0.72	0.03 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/SS1F	15.44	0.54 %
FRESHWATER EMERGENT WETLAND	PEM1F	11.32	0.4 %
FRESHWATER FORESTED/SHRUB WETLAND	PSS1/4C	1.60	0.06 %
FRESHWATER EMERGENT WETLAND	PEM1C	6.89	0.24 %
ESTUARINE AND MARINE WETLAND	E2EM1Nd	94.81	3.34 %
ESTUARINE AND MARINE WETLAND	E2SS3Nd	13.84	0.49 %
ESTUARINE AND MARINE WETLAND	E2EM1/SS3Nd	68.79	2.43 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/EM1F	0.99	0.04 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/3A	88.27	3.11 %
FRESHWATER FORESTED/SHRUB WETLAND	PFO1/4A	30.54	1.08 %
ESTUARINE AND MARINE WETLAND	E2FO1P	0.91	0.03 %
ESTUARINE AND MARINE WETLAND	E2FO3/4P	0.00	0 %
FRESHWATER FORESTED/SHRUB WETLAND	PSS1/EM1C	4.13	0.15 %
FRESHWATER EMERGENT WETLAND	PEM1/SS1C	0.86	0.03 %
ESTUARINE AND MARINE WETLAND	E2USN	0.04	0 %
ESTUARINE AND MARINE WETLAND	E2USM	0.02	0 %
ESTUARINE AND MARINE DEEPWATER	E1UBL	92.81	3.27 %
	TOTAL:	981.27	34.6 %

Priority Floodplain Resources		
Priority	Total Area (acres)	Percent of Area

2	694.15	24.48 %
3	490.32	17.29 %
4	116.69	4.11 %
6	0.28	0.01 %
5	2.01	0.07 %
0	1,475.88	52.04 %
1	56.57	1.99 %
TOTAL:	2,835.90	100 %