Florida Forever
Conservation Needs Assessment

Technical Report

Version 5.4

November 2025

prepared by the

Florida Natural Areas Inventory

Florida
Natural Areas
Inventory

CONTEN2TS

LIST OF APPENDICES

LIST OF ACRONYMNS

BOT	Board of Trustees
BMP	Best Management Practices
CAMA	Office of Coastal and Aquatic Managed Areas
CARL	Conservation and Recreation Lands
CLIP	Critical Lands & Waters Identification Project
CLC	Cooperative Land Cover
DEP	Department of Environmental Protection
DHR	Division of Historical Resources
DLG	Digital Line Graph
DOF	Division of Forestry
DRP	Division of Recreation and Parks
E	Endangered
EO	Element Occurrence
ESRI	Environmental Systems Research Institute, Inc.
FFCNA	Florida Forever Conservation Needs Assessment
FEMA	Federal Emergency Management Agency
FLUCCS	Florida Land Use Land Cover Classification System
FNAI	Florida Natural Areas Inventory
FNAIHAB	FNAI Rare Species Habitat Conservation Priorities model
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information Systems
GRANK	Global Rank
NRAP	Natural Resources Acquisition Report

NRCS	Natural Resources Conservation Service (U. S. Dept. Agriculture)
NWFWMD	Northwest Florida Water Management District
NWI	National Wetlands Inventory
OES	Office of Environmental Services
OFW	Outstanding Florida Water
PNA	Potential Natural Area
RCW	Red-cockaded Woodpecker
SFHA	Special Flood Hazard Area
SFWMD	South Florida Water Management District
SHCA	Strategic Habitat Conservation Area
SJRWMD	St. Johns River Water Management District
SLER	Bureau of Submerged Lands and Environmental Resources
SRWMD	Suwannee River Water Management District
SSC	Species of Special Concern
SWFWMD	Southwest Florida Water Management District
T	Threatened
USGS	United States Geological Survey
WMD	Water Management District

INTRODUCTION

At the beginning of the Florida Forever program, the Florida Natural Areas Inventory was contracted by the Department of Environmental Protection to develop a Florida Forever Conservation Needs Assessment (FFCNA) to assist the Florida Forever Advisory Council in establishing priorities and measures of progress for the Florida Forever program. The FFCNA is a geographic analysis of the distribution of certain natural resources and resource-based land uses that have been identified by the Council and Florida Legislature as needing increased conservation attention. Work on the FFCNA began in April 2000, and in December 2000 the Summary Report (Florida Natural Areas Inventory 2000), including color maps, was submitted to the Advisory Council. We were able to draw on the expertise of resource professionals around the state, who helped to interpret the Florida Forever measures and to develop methods for creating representative data layers (see Appendix J). This Technical Report provides detailed documentation for the primary data developed for the FFCNA. Additional data and analyses are documented in the Project Ranking Support Analyses (RSA) Documentation.

The data and analyses described in this Technical Report apply only to Version 4.6 of the Florida Forever Conservation Needs Assessment, as completed in November 2021. Rather than a static series of maps, the FFCNA continues to be an ongoing process that is revised as additional lands are acquired, the data are reviewed, and as better information becomes available (Appendix H outlines these revisions). We continue to work with experts around the state to make the FFCNA as informative and useful to the Florida Forever program as possible.

<u>Overview of FNAI Florida Forever Work</u>
Since its founding in 1981, the Florida Natural Areas Inventory has played an active role in scientific evaluation of potential environmental land acquisition projects. When the Florida Forever program began in 2000, that involvement grew to multiple roles that are summarized in Figure 1. FNAI supports land acquisition decisions in two complementary ways. First, FNAI conservation planners and GIS analysts compile, prioritize, and analyze natural resource information from a primarily data-driven perspective, which includes the Florida Forever Conservation Needs Assessment documented in this report. Second, FNAI staff biologists review in-house data to prepare Preliminary Evaluation Reports on all Florida Forever proposals. They then conduct site visits and final evaluations on each proposal voted forward by the Acquisition and Restoration Council (ARC). These two general efforts support each other, with scientists referring to prioritized natural resource models developed as part of the FFCNA, and GIS modelers updating data as needed based on information gathered from site visits.

Figure 2 outlines the Geographic Information Systems (GIS) data and analyses developed by FNAI in more detail, showing how the Florida Forever Conservation Needs Assessment relates to overall Florida Forever work. The FFCNA, consisting of a series of statewide models of natural resource priorities, forms the core of these efforts. These data feed directly into products including the Natural Resource Acquisition Progress Report (NRAP), and tables of resource statistics for new Florida Forever proposals and Boundary Amendments. The FFCNA also informs a series of analyses that score Florida Forever projects and new proposals based on their value for individual resources (Single Resource Evaluation) and across multiple resources (F-TRAC Analysis). Those Project Ranking Support Analyses are detailed in the RSA

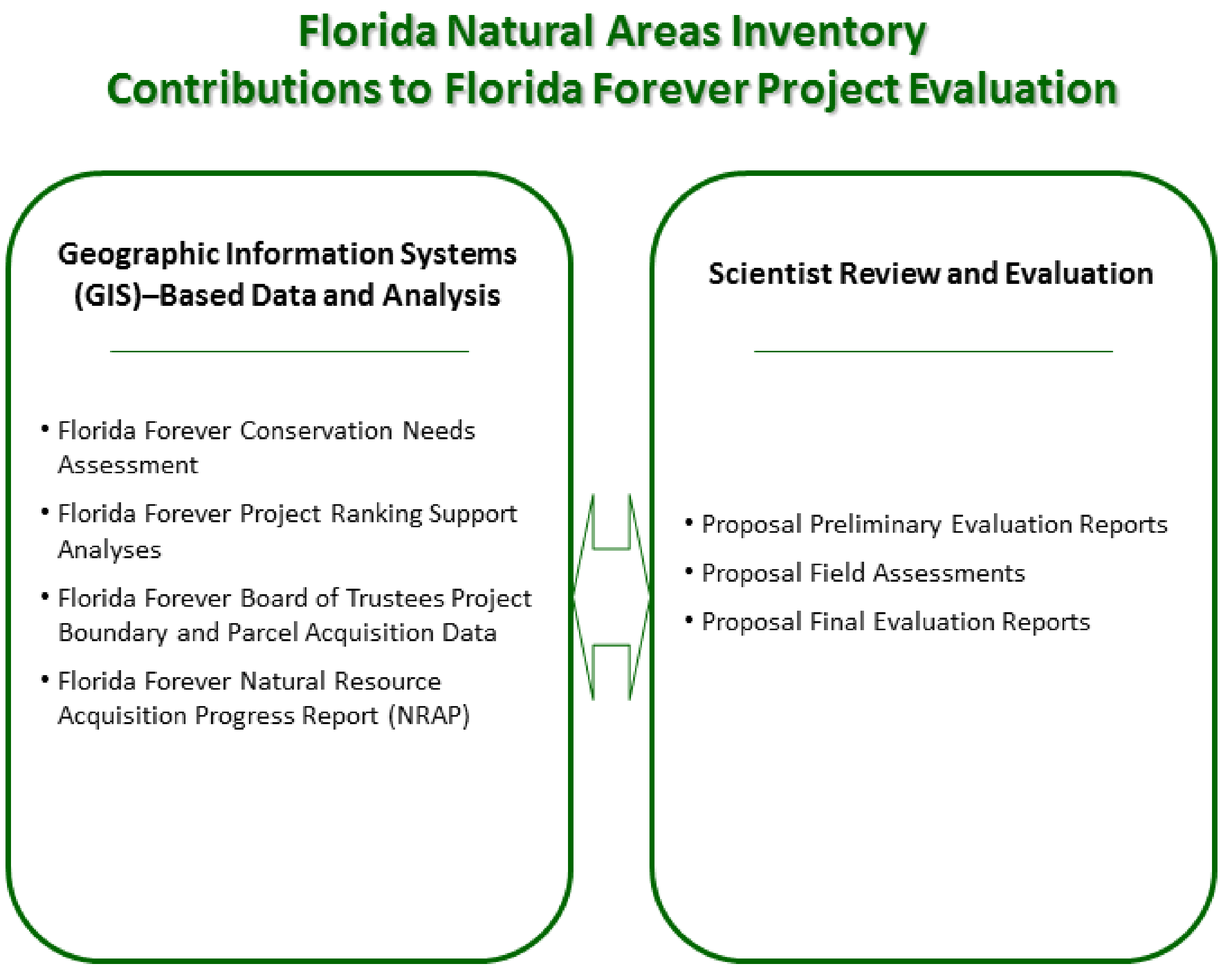


Figure 1. Florida Natural Areas Inventory contributions to Florida Forever Project Evaluation

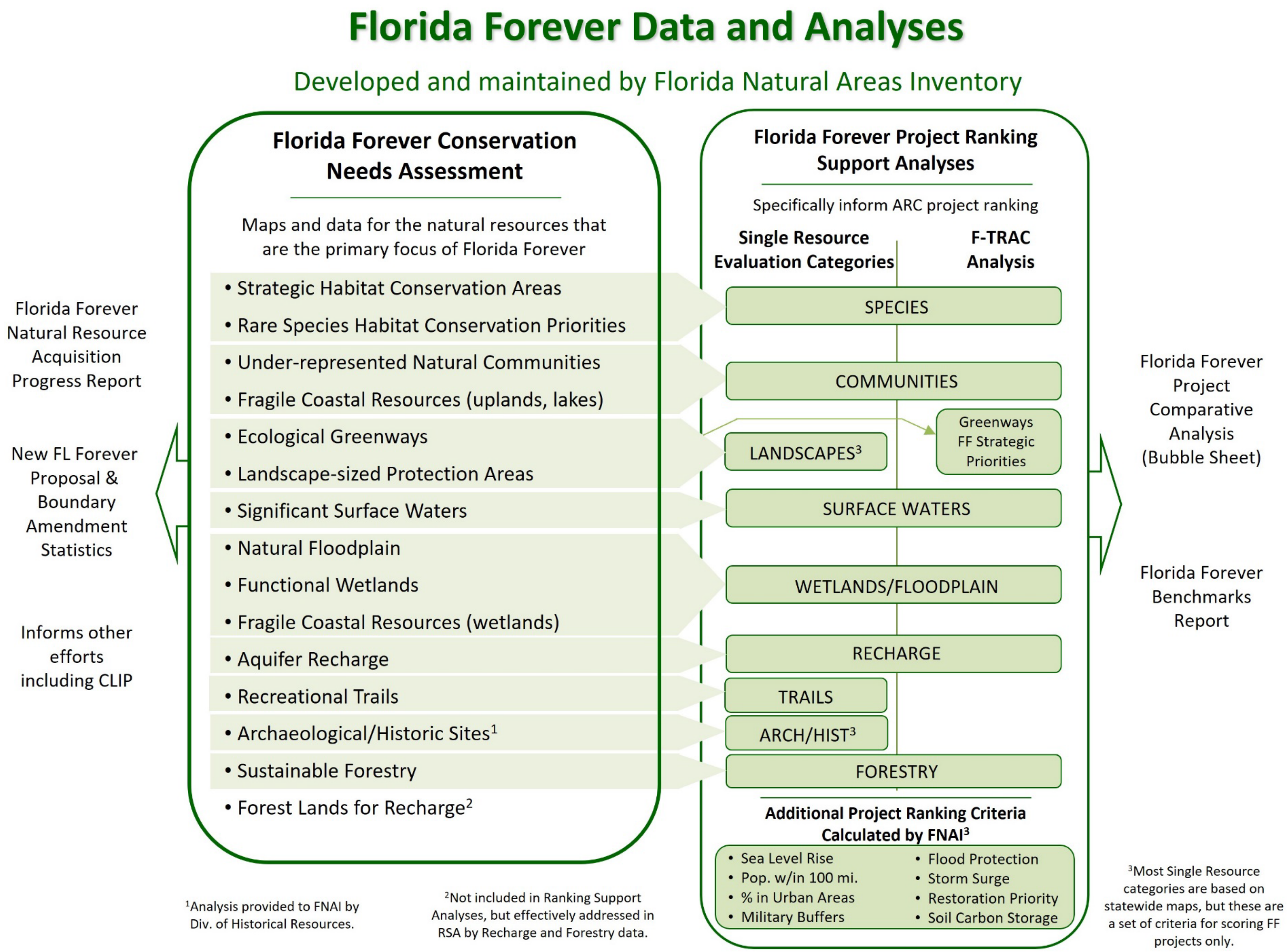


Figure 2. Relationships between Florida Forever data and analyses developed and maintained by Florida Natural Areas Inventory.

Documentation. The FFCNA data are organized around specific performance measures listed in the Florida Forever Act (see below), which leads to some redundancy in resource type or function across data layers. We therefore re-combined certain data into Decision Support data layers for use in the Ranking Support Analyses, as detailed in the RSA Documentation.

Data Layers Included in the Florida Forever Conservation Needs Assessment

The data layers included in the FFCNA correspond to 14 performance measures or criteria approved by the Legislature for the Florida Forever program. These fourteen measures were selected for the FFCNA because they are resource-based criteria that can be used to set acquisition priorities. Several other measures fit this description but could not be mapped because the current data are inadequate (e.g. natural resource-based recreation), or the data were not complete statewide. The remaining measures were either non-resource based, such as the use of alternatives to fee-simple acquisition, or were post-acquisition measures, such as reforestation or removal of non-native invasive plants. A complete list of Florida Forever goals and measures is found in s. 259.105, F.S. and 18-24, F.A.C. (see Appendix A).

Use of the Florida Forever Conservation Needs Assessment

The information contained in this report was developed or compiled specifically to address specific performance measures of the Florida Forever Act and to inform actions relating to the Florida Forever program. As such, the data do not necessarily represent a definition of the resource that is appropriate for general use outside the Florida Forever program. Although the information contained in the FFCNA may be relevant to other conservation planning activities, it should not be used for purposes other than the Florida Forever program without coordination with the Florida Natural Areas Inventory, or the original, primary sources of data.

The data layers compiled in this report represent a statewide perspective of natural resource distributions. We recognize that more detailed local information may be available for some resource types, and we encourage collaboration with the Florida Natural Areas Inventory in providing a local perspective to future versions of the FFCNA. The data layers are currently available online, subject to a use agreement, at http://www.fnai.org/.

Data Specifications

Data layer development was done in ArcGIS 10.2 – 10.6, and ArcGIS Pro 3.x, Geographic Information System (GIS) software packages produced by Environmental Systems Research Institute, Inc. (ESRI). All data layers are in Florida Albers projection with the NAD 1983 (2011) datum, and the distance units are in meters. The projection parameters are as follows:

24 00 00	First Standard Parallel
31 30 00	Second Standard Parallel
-84 00 00	Central Meridian
24 00 00	Latitude of Origin
400000	False Easting (meters)
0	False Northing (meters)

For modeling and statistical purposes, all data layers were converted to 15 meter grids using the Spatial Analyst extension.

Organization of this Report

Following the introduction, the report is organized into three parts: (1) descriptions of how each measure was defined and the method for creating the representative data layer. This part comprises most of the document and includes separate sections for each measure; (2) references; and (3) appendices. Three appendices will be noted here: Appendix B summarizes changes to the FFCNA for each version update going back to the original version completed in 2000. That summary is helpful for determining when or if an earlier version of a particular data layer or analysis was changed. Appendix C summarizes several "basemap" data layers that are essential building blocks of many of the FFCNA data and analyses, including land cover, species occurrence data, and landscape quality/integrity analyses. Appendix J is a brief chronology of expert workshops FNAI has held from 2000 to present to inform various FFCNA data and modeling decisions.

DATA LAYER DEVELOPMENT

This section is divided into 14 subsections corresponding to the Florida Forever measures included in the *Conservation Needs Assessment.* We discuss how we interpreted each measure as defined by 18-24, F.A.C. (implementation of s. 259.105, F.S.), how we defined each measure based on geographic data, and the methods we used to develop each data layer. The following is a list of Florida Forever measures and criteria and their corresponding numbers from 18-24, F.A.C. (see Appendix A).

Section	**Measure**
1- Strategic Habitat Conservation Areas	B1
2- FNAI Rare Species Habitat Conservation Priorities	B2
3- Ecological Greenways	B3
4- Under-represented Natural Communities	B4
5- Landscape-sized Protection Areas	B5
6- Natural Floodplain	C3
7- Surface Water Protection	C4
8- Fragile Coastal Resources	C6
9- Functional Wetlands	C7
10- Aquifer Recharge	D3
11- Recreational Trails	E2
12- Significant Archaeological Sites	F2
13- Sustainable Forest Management	G1
14- Forestland to Maintain Recharge Function	G3

Section 1
Strategic Habitat Conservation Areas

Measure B1: The number of acres acquired of significant strategic habitat conservation areas.
Source: Florida Fish and Wildlife Conservation Commission

Measure definition

The Florida Fish and Wildlife Conservation Commission originally identified strategic habitat conservation areas (SHCA) in the Commission report, "Closing the Gaps in Florida's Wildlife Habitat Conservation System" (Cox et al. 1994). The goal of the SHCAs is to identify the minimum amount of land needed in Florida to ensure long-term survival of key components to Florida's biological diversity. In 2006, the SHCAs underwent a significant revision based on a new suite of species, updated datasets, new datasets that did not exist when the original analysis was conducted, and improved analytical techniques including spatially explicit population viability analyses. The revised SHCAs identified important remaining habitat conservation needs on private lands for 33 terrestrial vertebrates, totaling more than 8 million acres (Endries et al. 2009). In 2020, FNAI worked with FWC to further revise SHCAs, using the latest species habitat models developed by FWC. No changes were made to which species warranted SHCAs in the 2020 update. In 2023, Cooper's hawk (*Accipiter cooperii*) was removed from the SHCA model at the recommendation of the Florida Forever Expert Working Group. In 2025, developed lands from a new Cooperative Land Cover version 4.0 update were removed from SHCA.

In order to help focus Florida Forever acquisition efforts, we worked with FWC staff to prioritize the SHCAs, and to add habitat needs within existing conservation lands. Methods for prioritizing SHCAs and including habitat within conservation lands are described below. Detailed methods for development of the SHCAs are documented in a report by FWC (Endries et al. 2009).

Identification of SHCAs on Conservation Lands

The SHCAs identify privately-owned areas for only those species that do not have adequate protection on conservation lands, thereby omitting species whose critical habitat is protected on conservation lands. Red-cockaded woodpecker, for example, is not included as an SHCA because no additional private lands are needed for its long term persistence; however it could be argued that red-cockaded woodpecker habitat on conservation lands should be included as an SHCA because it would be required for the species to persist. Sixty-two wildlife species were selected for analysis**.** A population risk assessment was conducted for each of 62 focal vertebrate species although only 33 were selected as sufficiently at risk to warrant inclusion as an SHCA. This means that 29 species have sufficient protection on conservation lands such that their habitat on these lands could be thought of as an SHCA. In order to reflect habitat needs within existing conservation lands we worked with FWC to augment the SHCAs to include potential habitat within conservation lands for all 62 focal species.

Prioritization of SHCAs

The approach for prioritizing SHCAs was based on global and state natural heritage ranks. The SHCAs were not prioritized based on species richness. If two or more species overlap, the area is classed according to the species with highest priority. In 2020 the SHCAs prioritization was updated to reflect changes in ranks to several species. The species were grouped into six priority classes as shown in Table 1-1.

Strategic Habitat Conservation Areas
2020 Update Using Latest Available FWC Species Models

Species	Common Name	State Rank	Global Rank
Priority 1	SHCAs and potential habitat for species with ranks of **S1** and **G1-G3**		
SHCA species - full statewide potential habitat models			
Ammodramus savannarum floridanus	florida grasshopper sparrow	S1	G5T1
Odocoileus virginianus clavium	florida key deer	S1	G5T1
Peromyscus polionotus allophrys	choctawhatchee beach mouse	S1	G5T1
Peromyscus polionotus niveiventris	southeastern beach mouse	S1	G5T1
Peromyscus polionotus peninsularis	st. andrews beach mouse	S1	G5T1
Peromyscus polionotus phasma	anastasia island beach mouse	S1	G5T1
Puma concolor coryi	florida panther	S1	G5T1
Sylvilagus palustris hefneri	lower keys marsh rabbit	S1	G5T1
Oryzomys palustris sanibeli	sanibel island rice rat	S1	G5T1
Charadrius nivosus	cuban snowy plover	S1	G3
Additional species - potential habitat on conservation lands only			
Tantilla oolitica	rim rock crowned snake	S1	G1
Microtus pennsylvanicus dukecampbelli	florida salt marsh vole	S1	G5T1
Plestiodon egregius egregius	florida keys mole skink	S1	G5T1
Plestiodon egregius insularis	cedar key mole skink	S1	G5T1
Kinosternon baurii pop. 1	striped mud turtle (lower keys pop.)	S1	G5T1
Ambystoma bishopi	reticulated flatwoods salamander	S1	G2
Ambystoma cingulatum	frosted flatwoods salamander	S1	G2
Passerina ciris pop. 1	painted bunting	S1	G5T3
Priority 2	SHCAs and potential habitat for species with ranks of **S1, G4-G5** or **S2, G2-G3**		
SHCA species - full statewide potential habitat models			
Buteo brachyurus	short-tailed hawk	S1	G4
Myotis grisescens	gray bat	S1	G4
Ammospiza maritima fisheri	louisiana seaside sparrow	S1	G4T4
Desmognathus monticola	seal salamander	S1	G5
Aphelocoma coerulescens	florida scrub-jay	S2	G2
Crocodylus acutus	american crocodile	S2	G2
Plestiodon reynoldsi	sand skink	S2	G2
Notophthalmus perstriatus	striped newt	S2	G2
Oryzomys palustris natator	silver rice rat	S2	G5T2

Sciurus niger avicennia	big cypress fox squirrel	S2	G5T2
Ammospiza maritima macgillivraii	macgillivray's seaside sparrow	S2	G4T3
Nerodia clarkii clarkii	gulf salt marsh snake	S2	G4T3
Additional species - potential habitat on conservation lands only			
Lithobates okaloosae	bog frog	S2	G2
Antigone canadensis pratensis	florida sandhill crane	S2	G5T2
Dryobates borealis	red-cockaded woodpecker	S2	G3
Priority 3	SHCAs and potential habitat for species with ranks of **S2, G4-G5** or **S3, G3**		
SHCA species - full statewide potential habitat models			
Rosthramus sociabilis	florida snail kite	S2	G4
Elanoides forficatus	swallow-tailed kite	S2	G5
Patagioenas leucocephala	white-crowned pigeon	S3	G3
Podomys floridanus	florida mouse	S3	G3
Ammospiza maritima peninsulae	scott's seaside sparrow	S3	G4T3
Athene cunicularia floridana	florida burrowing owl	S3	G4T3
Additional species - potential habitat on conservation lands only			
n/a	wading birds	S2	G4
Caracara cheriway	crested caracara	S2	G5
Parkesia motacilla	louisiana waterthrush	S2	G5
Gopherus polyphemus	gopher tortoise	S3	G3
Sciurus niger shermani	sherman's fox squirrel	S3	G5T3
Priority 4	SHCAs and potential habitat for species with ranks of **S3** and **G4**		
SHCA species - full statewide potential habitat models			
Hyla andersonii	pine barrens tree frog	S3	G4
Additional species - potential habitat on conservation lands only			
Anas fulvigula	mottled duck	S3	G4
Myotis austroriparius	southeastern bat	S3	G4
Falco sparverius paulus	southeastern american kestrel	S3	G5T4
Priority 5	SHCAs and potential habitat for species with ranks of **S3, G5** or **S4, G4**		
SHCA species - full statewide potential habitat models			
Coccyzus minor	mangrove cuckoo	S3	G5
Ursus americanus floridanus	florida black bear	S4	G5T4
Additional species - potential habitat on conservation lands only			
Aramus guarauna	limpkin	S3	G5
Haliaeetus leucocephalus	southern bald eagle	S3	G5
Rynchops niger	black skimmer	S3	G5
Vireo altiloquus	black-whiskered vireo	S3	G5

Priority 6	SHCAs and potential habitat for species with ranks of **S4-S5** and **G5**
No species from the SHCA analysis currently meet these criteria	

Table 1-1. Prioritization of SHCAs and of potential habitat for additional species.

A map and acreage table for this data layer are provided in Appendix J.

Section 2
FNAI Rare Species Habitat Conservation Priorities

Measure B2: The number of acres acquired of highest priority conservation areas for Florida's rarest species.
Source: Florida Natural Areas Inventory

Measure definition

The FNAI Habitat Conservation Priorities data layer (FNAIHAB) prioritizes places on the landscape that would protect both the greatest number of rare species and those species with the greatest conservation need. We developed the data layer by first selecting species with the greatest conservation need in Florida and developing habitat maps around known occurrences of those species. FNAI currently has more than 30,000 occurrence records for Florida's rare and endangered species in the source feature polygons. For this data layer we wanted to identify habitat areas, based on these point locations that represent the geographic extent of the species occurrence on the landscape. We created habitat polygons only around known occurrences, rather than creating polygons of potential habitat where no occurrence records exist. In using this method, we are able to definitively say that acquisition of a habitat area serves to protect a particular species because we have documentation of the species at that site. The habitats were then ranked based on quality/suitability for the species and the species were weighted based on conservation need. The weighted habitat maps for 634 species were then overlaid to determine overall conservation priorities for Florida's rarest species. The process of selecting species, creating habitat maps, weighting species by conservation need, and building the overlay model is discussed below.

Selection of Species

Species and subspecies were selected for inclusion in FNAIHAB based on the following criteria:

- All G1 species or subspecies
- All G2 species or subspecies
- All G3/S1 full species
- All G3/S2 full species
- G3/S3 Florida-Endemic full species
- T3 Florida-Endemic subspecies
- Any additional Federally Listed species

These selection criteria resulted in 634 species being included in FNAIHAB25, as listed in Appendix F.

Occurrence Selection Criteria

As outlined below, most FNAIHAB species models are based on identifying habitat in the vicinity of documented occurrences. The FNAI Element Occurrence Source Feature database was the sole source of documented occurrences for most species except a few noted in the Custom Species Model descriptions below. A subset of FNAI Source Features was ***excluded*** from modeling based on the following criteria:

- QC Status = Failed.
- Representation Accuracy = Low, or Very Low AND source feature polygon >30,000 acres (exception may be made if species is a bird or other wide-ranging species and source Conceptual Feature type is polygon).
- Introduced populations (except a subset of introduced populations of *Chrysopsis* floridana were included).
- EO Rank = X (extirpated)
- Source Feature Rank = X

Modeling Methods
Species were assigned to one of four categories of modeling methods: Standard, Aquatic, Cave/Spring, or Custom. Appendix F indicates which method was used for each species.

<u>Standard Method</u>
A majority of species were modeled following the standard method, which we describe as “occurrence-based suitable habitat mapping”.

Suitable Habitat Classes: the land cover source for this method was the Florida Cooperative Land Cover (CLC) dataset, version 3.4 (see Appendix E). Each species was assigned one or more CLC classes to be included as suitable habitat. Due to the large number of species, a draft suitable land cover list was first generated from the Biotics Element Natural Communities field together with an overlay of species’ higher-precision occurrence data on CLC. All draft models received a QC review that primarily involved modifying the suitable land cover class list based on reviewer knowledge, EO description field, and model results.

Buffers: Two buffers are used to select and limit land cover polygons associated with an EO (Figure 2-1). The “Primary” buffer determines which land cover polygons in the vicinity will be selected, while the “Maximum” buffer limits the outer extent of land cover polygons at a specified distance from the EO. Each species was assigned a buffering radius based on the species’ biology (see Appendix G). For most plant species for example, the radius was 400 meters, while the radius was generally larger for animals. Both Primary and Maximum buffers varied by species radius criteria and EO size as detailed in Table 2-1.

Table 2-1: FNAIHAB Species Buffer Criteria

EO polygon size:	**<10 acres**	**10-99 acres**	**100-999 acres AND**		**1,000+ acres AND**	
			Rep Acc = VH, H, or M	**Rep Acc = L, VL**	**Rep Acc = VH or H**	**Rep Acc = M, L, VL**
Primary Buffer	full radius	0.75x radius	0.5x radius	0.25x radius	0.25x radius	1 meter
Maximum Buffer	4x radius	3.5x radius	3x radius	3x radius	2x radius	2x radius

The rationale for these buffers is based on the nature of FNAI Element Occurrence polygons. Because EOs are already buffered to account for potential spatial error, low-precision EOs tend to be larger than high-precision EOs. The attenuation of buffer sizes based on EO size is an attempt to avoid biasing habitat area mapped by original EO spatial precision.

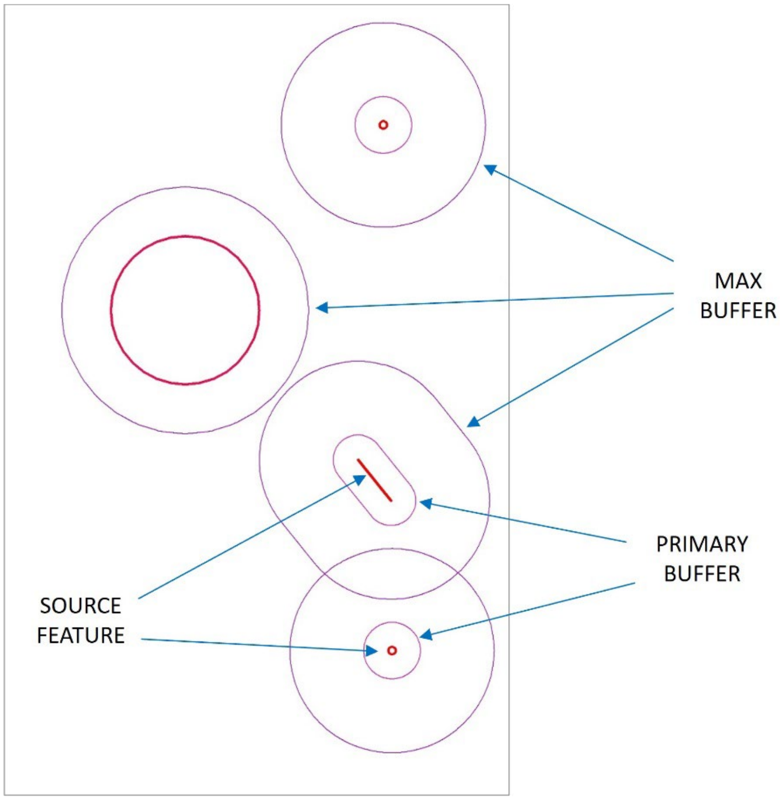


Figure 2-1. Example Primary and Maximum Buffers of a Species' Source Features.

Land Cover Selection: Land Cover was selected for each species in four stages: Core habitat selection and three additional passes to address specific conditions. The additional passes are generally intended to capture additional land cover for higher-precision source features that is not found on the species' "suitable" land cover class list.

Core Habitat Selection. CLC land cover is clipped to the species' Maximum Buffers. Suitable polygons were created by selecting suitable land cover classes then dissolving (combining) adjacent features. All suitable polygons intersecting the Primary Buffer are selected. Suitable polygons located w/in 16m of initial selection are also added (to account for minor linear features such as rural roads). See Figure 2-2.

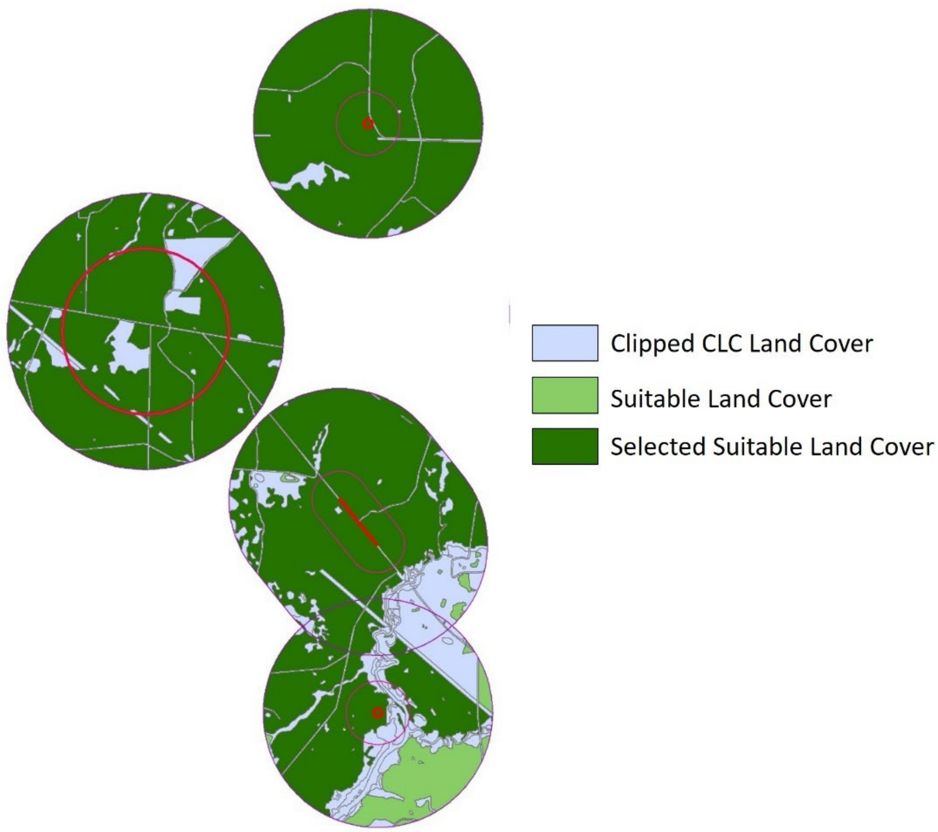


Figure 2-2. Selection of Core Suitable Habitat.

<u>Marginal Habitat Selection</u>. If a source feature for which we have relatively high confidence is found on land cover not included in the species' suitable list, the following procedures apply:

Source feature meets these criteria:

- Representation Accuracy is Very High, High, or (Medium AND <25ac)
- EO Rank <> H (historical), H?, or X?
- Last Observation Date < 30 years

CLC polygons categorized as 1-3 (Natural, Semi-natural, Improved Pasture & Field Crops) in the FNAI 5-class system (see Appendix E) are clipped to species' Primary Buffers. Clipped polygons are selected if they intersect a qualifying source feature and there is sufficient overlap (50+% of source poly is in CLC poly; or 50+% of CLC poly is in source poly). See Figure 2-3.

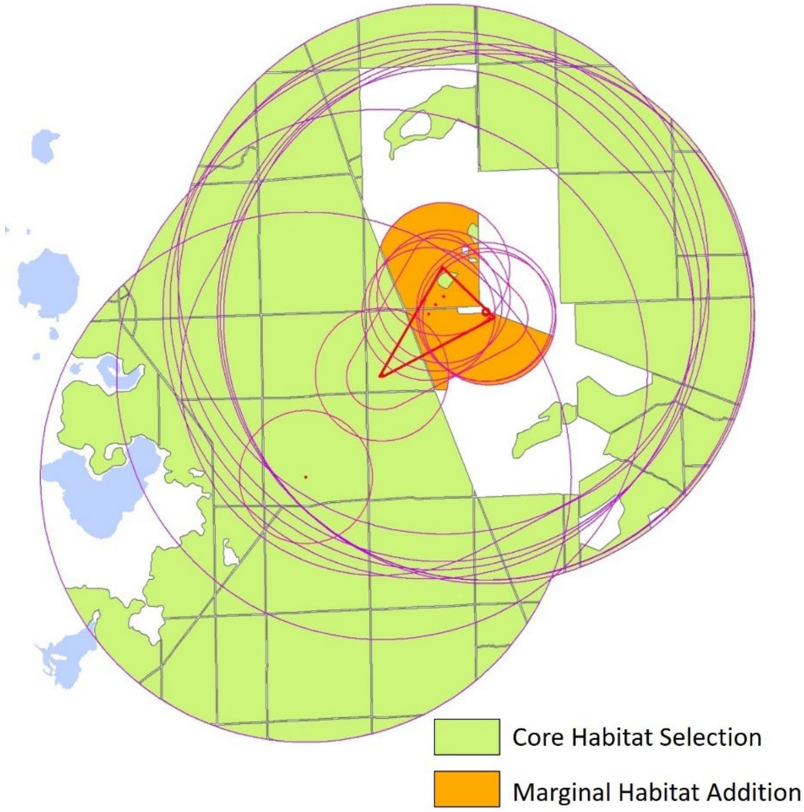


Figure 2-3. Marginal Habitat Selection (similar process for Historical).

Historical EO Habitat Selection: This selection is aimed at older occurrences not captured by suitable land cover but with relatively high locational precision.

Source feature meets these criteria:

- Representation Accuracy is Very High, High, or (Medium and <25ac)
- (EO Rank = H, H?, X?) ***OR*** (Last Observation Date >= 30 years)

CLC polygons categorized as 1 (Natural) only are clipped to species' Primary Buffers. Clipped polygons are selected if they intersect a qualifying source feature and there is sufficient overlap (50+% of source poly is in CLC poly; or 50+% of CLC poly is in source poly). Historical habitat selection results in additions similar to those shown in Figure 2-3.

High Confidence EO Addition: for highest confidence occurrences, the following procedures apply:

Source feature meets these criteria:

- Representation Accuracy of Very High or High
- Area <2.5 acres
- Last Observation Date <20 years

- EO Rank <> H, H?, or X?
- Source feature is not already completely within core, marginal, or historic habitat polygons

Any CLC polygon intersecting the qualifying source feature is selected and,

- If combined area of selected CLC poly(s) is <25 acres, entire selection is added (Figure 2-4a).
- If combined area >= 25 acres, the source polygon is buffered by 15m and the buffer (only) is added (Figure 2-4b).

Figure 2-4a. High Confidence EO Addition. Light green is Core Habitat selection, violet pink is addition due to High Confidence source feature (small red dot). In this case entire polygon is added. (Underlying land cover actually appears to be suitable habitat – remnant scrub – but CLC classes it as Urban Open.)

Figure 2-4b. High Confidence EO Addition. Light green is Core Habitat selection, pink is additions due to High Confidence source features (small red dots). In this case CLC polygons are >=25 acres so 15m buffer is applied to source features (both locations appear to be remnant natural vegetation).

The polygons selected by each of the four selection procedures are merged to form the final base habitat layer for each species.

<u>Aquatic Method</u>

Because FNAIHAB is primarily intended to inform environmental land acquisition, and most water bodies in Florida are legally sovereign submerged lands, the goal of this aquatic method was to identify terrestrial lands adjacent to and supporting the habitat quality of waterbodies occupied by a species.

Waterbody Basemap: two sources were combined to build a common basemap of waterbodies for aquatic habitat mapping – CLC v3.4 and NHD flowlines. All CLC polygons in the Water category of the FNAI 5-class system (see Appendix E) were included. NHD flowlines were buffered by 5m and merged with CLC water to add smaller stream and tributary systems not included in CLC. The final waterbody file was dissolved along HUC-12 boundaries to allow selection of portions of waterbodies found within certain HUCs.

Modified Species Source Extents: Aquatic species source features were categorized as either LIMIT or EXTEND sources, based on Locational Uncertainty and Conceptual Feature type, as outlined by the matrix in Figure 2-5.

Conceptual Feature	Locational Uncertainty			
	Negligible	Linear	Areal Delimited	Areal Estimated
POINT	EXTEND	EXTEND	LIMIT	EXTEND
LINE	LIMIT	EXTEND	EXTEND	EXTEND
POLYGON	LIMIT	LIMIT	LIMIT	LIMIT

Figure 2-5. Decision matrix for classifying source features as LIMIT or EXTEND.

EXTEND sources are those for which the source feature generally does not adequately map to the intended water feature, and so must be extended along the water feature to more accurately represent the species' location. LIMIT sources are limited to the actual source feature extent as it generally portrays the actual species' location within the waterbody (Figure 2-6).

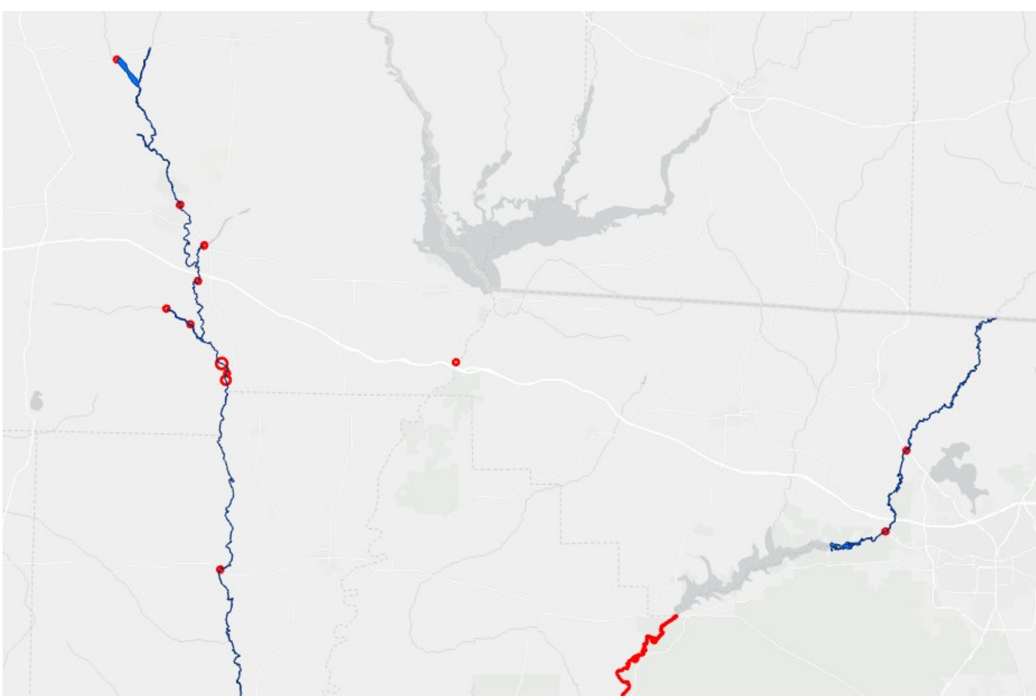


Figure 2-6. Example of EXTEND (red outline) and LIMIT (blue polygon) sources.

EXTEND sources are linked to associated waterbodies using NHD flowline IDs. Linked waterbodies are selected for the extent of the HUC-12, *AND* one HUC-12 directly upstream. Upstream HUCs were included to reflect areas contributing runoff to documented occurrence locations. Final modified source feature extents are shown in Figure 2-7.

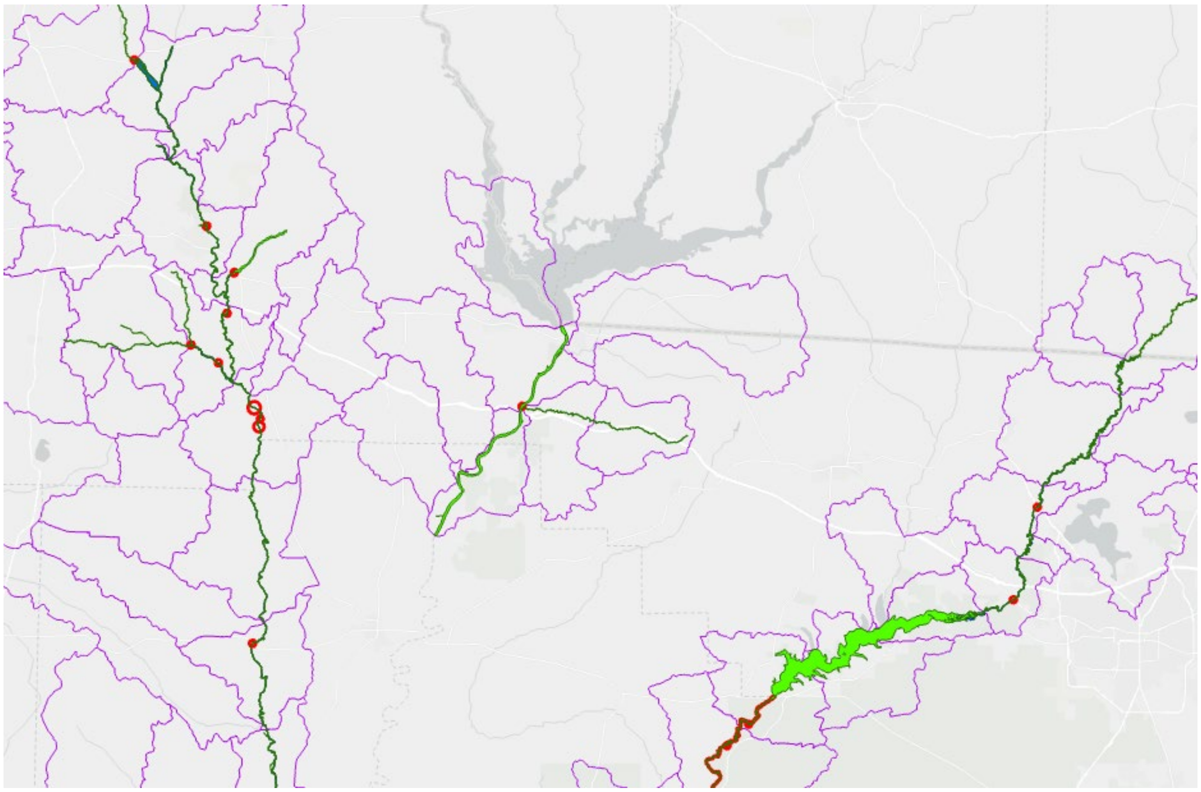


Figure 2-7. Same example as Fig. 2-6 above; modified source extents in dark/light green. HUC-12s outlined in purple. The EXTEND source near the center overlaps three adjacent HUCS, hence the extent.

Selecting Land Cover: Modified source extent waterbodies are buffered by 1 mile. All waterbodies within the 1-mile buffer that intersected the source extents were selected. This larger set of waterbodies was buffered by 300m and by 1 mile. CLC 5-class 1 and 2 (Natural and Seminatural) were clipped to the 300m buffer and selected. CLC wetlands were clipped to the 1-mile buffer and selected (see Figure 2-8).

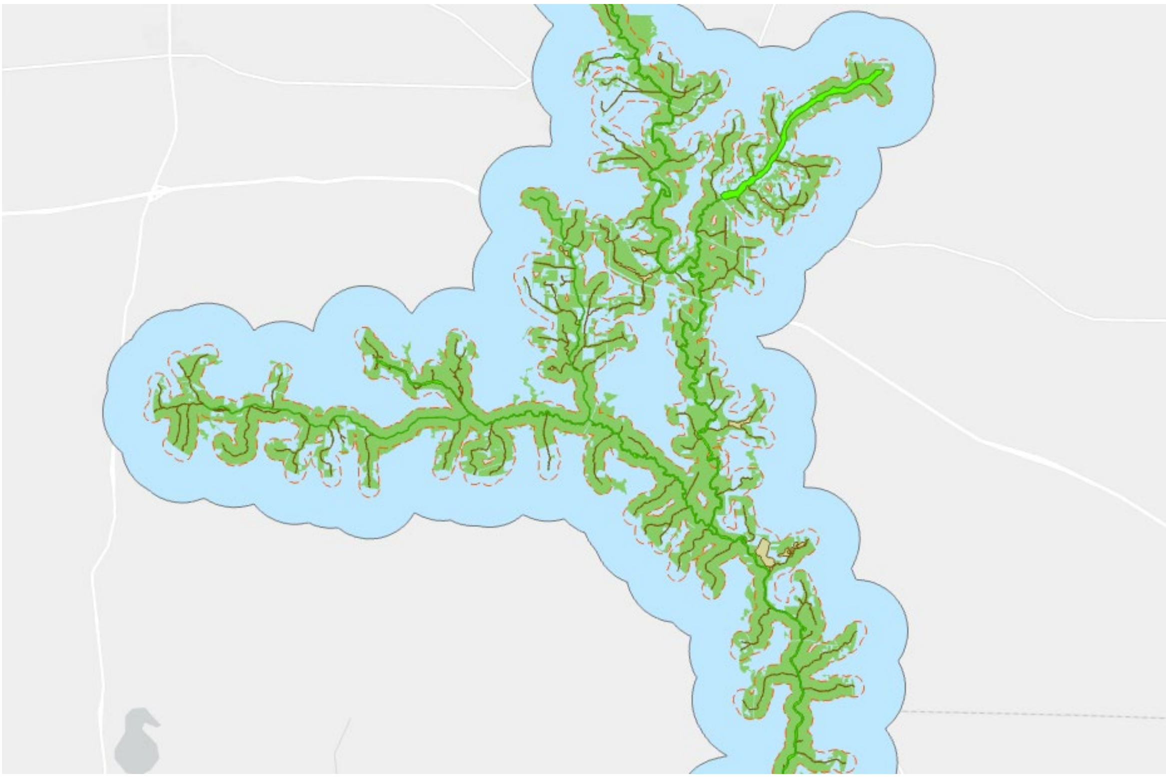


Figure 2-8. Modified source extent in dark green (wider polygons have bright green fill). Connected waterbodies for buffering in brown. 300m upland buffer in dashed orange. 1-mile wetland buffer in light blue. Final habitat selection in light green. Note selected habitat in this region is mostly uplands, with occasional wetlands extending beyond the 300m buffer.

<u>Cave/Spring Method</u>

This method is for species found only in aquatic or terrestrial caves or underground springs. The method consists of a buffer around each source feature and selection of land cover within each buffer. The standard cave buffer distance is 250m, but is modified based on source feature size and precision as shown in Table 2-2.

Table 2-2. Buffer distance for cave/spring source features.

Source Feature Acres	Representation Accuracy	Buffer Radius
<10	any	250m
10-100	any	187m
100-1,000	VH, H, Med	125m
100-1,000	Low, VL	62m
1,000+	VH, H	62m
1,000+	M, L, VL	1m

CLC land cover FNAI classes 1-4 (Natural, Seminatural, Unimproved Pasture & Field Crops, Improved Pasture, and Intensive Agriculture/Rural Residential) are clipped by buffers to become the habitat model basemap for each species.

Custom Species Models

The automated methods outlined above were considered inadequate to identify habitat for several species, so custom modeling methods were developed for each species. These were generally wide-ranging species with insufficient occurrence documentation in the FLEO database, or species with unique habitat preferences that are not captured by CLC land cover. Table 2-3 lists the species subject to custom modeling, and detailed methods for each species are found in Appendix K.

Table 2-3. Species with custom model methods.

SCINAME	COMMONNAME
Acipenser oxyrinchus desotoi	Gulf Sturgeon
Ammodramus savannarum floridanus	Florida Grasshopper Sparrow
Ammospiza maritima mirabilis	Cape Sable Seaside Sparrow
Antigone canadensis pratensis	Florida Sandhill Crane
Aphelocoma coerulescens	Florida Scrub-Jay
Caracara cheriway	Crested Caracara
Caretta caretta	Loggerhead Sea Turtle
Charadrius melodus	Piping Plover
Charadrius nivosus	Snowy Plover
Chelonia mydas	Green Sea Turtle
Cicindela blanda	Sandbar Tiger Beetle
Cicindela wapleri	White-sand Tiger Beetle
Crocodylus acutus	American Crocodile
Dermochelys coriacea	Leatherback Sea Turtle
Drymarchon couperi	Eastern Indigo Snake
Dryobates borealis	Red-cockaded Woodpecker
Eretmochelys imbricata	Hawksbill Sea Turtle
Halophila johnsonii	Johnson's seagrass
Lepidochelys kempii	Kemp's Ridley Sea Turtle
Liatris gholsonii	Gholson's blazing star
Mustela frenata peninsulae	Florida Long-tailed Weasel
Mycteria americana	Wood Stork
Myotis grisescens	Gray Bat
Peromyscus polionotus allophrys	Choctawhatchee Beach Mouse
Peromyscus polionotus leucocephalus	Santa Rosa Beach Mouse
Peromyscus polionotus niveiventris	Southeastern Beach Mouse
Peromyscus polionotus peninsularis	St. Andrews Beach Mouse
Peromyscus polionotus phasma	Anastasia Island Beach Mouse
Peromyscus polionotus trissyllepsis	Perdido Key Beach Mouse
Puma concolor coryi	Florida Panther
Sciurus niger avicennia	Big Cypress Fox Squirrel
Sigmodon hispidus exsputus	Lower Keys Cotton Rat
Sterna dougallii	Roseate Tern

Habitat Quality Index

Not all species occurrence locations are equal in terms of habitat quality and population viability. We developed the Habitat Quality Index (HQI) to assess habitat quality of distinct patches and inform FNAIHAB conservation priorities. After habitat model basemaps are completed, each species' model is scored for estimated habitat quality using the Habitat Quality Index method described below. This method primarily applies to models built following the Standard method, along with some custom models. Aquatic models' scoring method is described separately below.

<u>Defining Habitat Patches</u>
The basic unit of scoring for the Habitat Quality Index is the habitat patch. Habitat patches were defined primarily by the overlay of species' habitat models onto their primary buffers. The following rules apply:

- All habitat polygons intersecting the same primary buffer are assigned to the same patch.
- If two or more primary buffers are intersected by a common habitat polygon, all polygons intersecting those buffers are assigned to the same patch.

Figure 2-9 illustrates these rules.

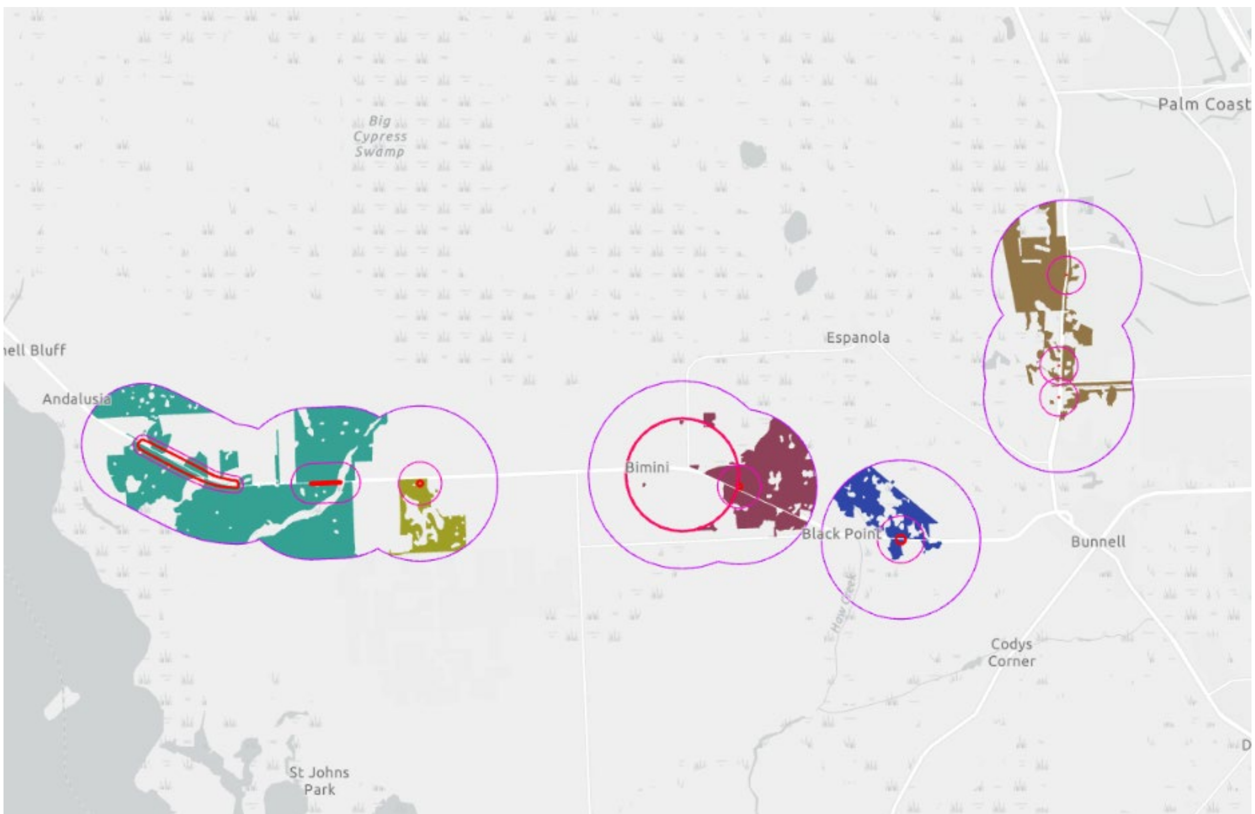


Figure 2-9. A subset of habitat patches for *Helianthus carnosus*. Polygons connected by primary buffers (pink) are assigned to the same patches. In some cases polygons may end up closer to polygons from another patch than to polygons from the same patch, as in the brick red patch at center. Those polygons in the same patch were selected based on the same source feature however.

<u>HQI Criteria</u>
The Habitat Quality Index combines four separate measures that address the condition, viability, and landscape context of a patch.

Element Occurrence Rank: Many element occurrences, including most that have been documented within the last 15-20 years, have been assigned an EO Rank based on the perceived viability of the observed population. This rank is a good assessment of the general condition of the population and its surrounding habitat. It also takes into account whether the population is being actively managed or is threatened by impacts such as development or invasive species.

Habfit: This is a simple measure of how well the land cover types included in a patch fit the preferred habitat for a species. FNAI staff assigned a Habfit of High, Medium, or Low during the mapping process. In general, most Natural land cover types that are compatible with the species' habitat preferences were assigned High, most Seminatural land cover types (eg. plantation, pasture) were assigned Medium, and intensively developed lands were assigned Low. In some cases Natural cover types might be assigned Medium if they are not the preferred habitat for the species (e.g. uplands for a wetland-preferring species) but were nevertheless mapped due to occurrence of the species. A Habfit of Low was rarely assigned as intensive land cover types were rarely included in species' habitat models. If a patch included a mix of Natural and Seminatural cover types, the majority type was assigned. Note that Habfit reflects ONLY land cover type. It does not consider patch size, shape, context, or any other factor.
For the Automated Suitability Scoring, CLC 3-class landcover is tabulated on each habitat patch and classed as High, Medium, or Low Habfit for each species as follows:

- Strict Xeric Species: Natural Uplands = High; Wetlands, Seminatural, Water (due to grid error) = Medium; Non-Natural = Low
- General Species: All Natural = High; Seminatural, Water = Medium; Non-Natural = Low
- Strict Wetland Species: Natural Wetlands, Water = High; Natural Uplands, Seminatural (all) = Medium; Non-Natural = Low

A simple weighted average of High, Medium, Low acres is calculated (3*High; 2*Med; 1*Low) and the overall patch is classed as follows:

- >=2.5 is High
- >=1.4 – <2.5 is Medium
- <1.4 is Low

Size: Individual patches mapped for a species can vary considerably in area, with some being small enough to be considered sub-optimal for a species. We considered the concept of identifying a "minimum viable patch" for each species (or species group), but the effort required to research each species' spatial requirements would have been prohibitive. Instead we summarized mapped patch sizes by species group and general habitat requirement categories. Ultimately we classified species into four general habitat types – rockland, small-patch, intermediate, and matrix – and three biotic groups – plants, amphibians/reptiles/invertebrates, and birds/mammals. For each of the ten resulting combinations we identified a benchmark patch size (BPS) that corresponded roughly to the midpoint between the lowest quartile patch size and median patch size for that class combination. The benchmarks are outlined in Table 2-4:

Table 2-4. Benchmark Patch Sizes for size scoring.

Benchmark Patch Sizes, acres

Habitat Type	**PLANTS**	**AMPHIBIANS REPTILES INVERTEBRATES**	**BIRDS MAMMALS**
ROCKLAND PLANTS	20	n/a	n/a
SMALL-PATCH	50	50	50
INTERMEDIATE	100	100	500
MATRIX	500	1,000	2,000

Rockland includes plant species found in pine rocklands only or both pine rocklands and rockland hammocks. Small-Patch includes scrub, rockland hammock (but not pine rockland), beach, cave, and spring species. Intermediate includes slope, marsh, hammock, etc. **Matrix** includes flatwoods, sandhill, saltmarsh, mangrove, prairies, floodplain forests, etc.

Configuration: This criterion measures the shape and fragmentation of the patch, as well as the intensity of land cover types along the immediate edge of the patch (landscape context). This measure is a modified edge-to-area ratio. Each habitat patch was buffered by 100 meters. Using CLC land cover data, the areas of Natural, Seminatural, Water, and Non-natural land cover types were tabulated within the buffer (buffer only, does not include the patch itself). The acreages were then weighted as follows:

- Natural acres *x* 0.1
- Water acres *x* 0.25
- Seminatural acres *x* 1
- Non-natural acres *x* 3

The weighted acres were then totaled, and divided by the total patch area taken to the power of 0.68 (taking a fractional power of area normalized the ratio for patch size – large and small patches with the same shape and landscape context score identically). We found this weighted ratio to be an effective measure for assessing patch shape, fragmentation, and edge context. Configuration scores were then classed into five classes, based on comparison with modelers' subjective assessments of patch configuration and context for a sample of nine representative species models, as follows:

HIGH	<1.5
MED HIGH	1.5 – 2.799
MEDIUM	2.8 – 6.249
MED LOW	6.25 – 13.999
LOW	14.0+

A group of **coastal species** was found to be unfairly penalized by the above classification. These species naturally occur in linear patches (often along barrier islands) with relatively high edge-to-area ratios, and often in proximity to coastal highways that count as intensive land uses. For those species we used an alternate classification from the same starting configuration score:

HIGH	<4.0
MED HIGH	4.0 – 6.499
MEDIUM	6.5 – 17.999
MED LOW	18.0 – 24.999
LOW	25.0+

Species strictly found along barrier islands or the middle/upper Keys should be included in this category. The following species were classified according to the coastal/linear classes (for each species, all patches were classed using the same class system):

- *Charadrius alexandrinus*
- *Charadrius melodus*
- *Helianthus debilis ssp. vestitus*
- *Hojeda inaguensis*
- *Jacquemontia reclinata*
- *Neotoma floridana smalli*
- *Oryzomys palustris* pop. 2
- *Peromyscus polionotus allophrys*
- *Peromyscus polionotus leucocephalus*
- *Peromyscus polionotus niveiventris*
- *Peromyscus polionotus peninsularis*
- *Peromyscus polionotus phasma*
- *Peromyscus polionotus trissyllepsis*
- *Plestiodon egregius insularis*
- *Procyon lotor auspicatus*
- *Sigmodon hispidus insulicola*
- *Tephrosia angustissima* var. *curtissii*

HQI Calculation

Each of the four criteria was scored on a 10-point scale, as shown in Table 2-5:

EORANK	pts
A	10
AB	9
B	8
BC	7
BD	6
C	5
CD	4
D	3
H	2
X?	1
other	not factored

HABFIT	pts
High	10
Medium	6
Low	1

SIZE	pts
3.5x benchmark	10
2x	9
1x	8
0.75x	7
0.5x	6
0.33x	5
0.2x	4
0.15x	3
0.1x	2
<0.1x	1

Configuration	pts
High	10
Medium-High	8
Medium	6
Medium-Low	4
Low	1

Table 2-5. HQI Criteria Scoring

When no EO Rank was assigned for a patch, only the three other factors were considered. Points for all factors were added together and averaged back to a 10 point scale. The final Habitat Quality Index score was assigned as follows:

- High 7.5-10
- Medium 4.5-7.49
- Low <4.5

Aquatic HQI

In general, Aquatic models were scored 10 (high) within 300m buffers, and 6 (medium) within 1 mile buffers. For locations surrounding sources with EO Rank of H, H?, or X?, scores were 8 for 300m buffers and 4 for 1 mile buffers. If multiple sources overlap a location, the higher HQI scores are used.

Cave Species HQI

All mapped habitat for Cave/Spring species was scored 10 (High).

Species Conservation Needs Weighting

Each species receives a Conservation Needs Weight based on the following criteria: Grank, Srank, percent habitat protected on conservation lands, and endemism (whether the species' range is entirely within Florida). This weighting is specifically designed to prioritize species that would benefit most from additional land acquisition for conservation, and differs from the FNAIHAB version used in the Critical Lands and Waters Identification Project (CLIP) database. Table 2-6 details the points assigned for each criterion.

Grank	FF pts		Srank	Pts		% Protected Points			Endemism	
G1	500		S1	40		0 - 4.9%	200		Endemic	20
G2T1	450		S2	30		5 - 9.9%	190		other	0
G3T1	390		S3	20		10 - 14.9%	180			
G4T1	300		S4	10		15 - 19.9%	170			
G2	166		S5	0		20 - 24.9%	160			
G5T1	155					25 - 29.9%	150			
G3T2	150					30 - 34.9%	140			
G4T2	130					35 - 39.9%	130			
G5T2	100					40 - 44.9%	120			
G3	50					45 - 49.9%	110			
G4T3	45					50 - 54.9%	100			
G5T3	39					55 - 59.9%	90			
G4	16					60 - 64.9%	80			
G5T4	14					65 - 69.9%	70			
G5	5					70 - 74.9%	60			
						75 - 79.9%	50			
						80 - 84.9%	40			
						85 - 89.9%	30			
						90 - 94.9%	20			
						95 - 99.9%	10			
						100%	0			

Table 2-6. Species Conservation Need Weighting Criteria Points

Table 2-7 highlights some notable species as examples of the Conservation Needs Weighting system. All FNAIHAB species weights are listed in Appendix G.

Table 2-7. Example species conservation needs weights.

Species	Grank	Srank	% Protected	Endemic	Total
Torreya taxifolia	G1	S1	46%	n	
Florida torreya	*500*	*40*	*110*	*0*	***650***
Puma concolor coryi	G5T1	S1	71%	Y	
Florida Panther	*155*	*40*	*60*	*20*	***275***
Sceloporus woodi	G2	S2	80%	Y	
Florida Scrub Lizard	*166*	*30*	*40*	*20*	***256***
Cambarus pyronotus	G2	S2	87%	Y	
Fireback Crayfish	*166*	*30*	*30*	*20*	***246***
Antigone canadensis pratensis	G5T2	S2	53%	n	
Florida Sandhill Crane	*100*	*30*	*100*	*0*	***230***
Callophrys irus	G2	S2	96%	n	
Frosted Elfin	*166*	*30*	*10*	*0*	***206***
Caracara cheriway	G5	S2	34%	n	
Crested Caracara	*5*	*30*	*140*	*0*	***175***

Model Overlay and Class Breaks

Each species habitat model was converted to a 15-meter raster grid with cell values corresponding to patch HQI scores. Each grid was weighted (multiplied) by the species' conservation needs weight score, and all 634 weighted grids were summed. The resulting overlay model had values ranging from 160 to 207,453. In keeping with previous versions of FNAIHAB, the raw overlay was divided into six priority classes, as shown in Table 2-8.

Table 2-8. Final FNAIHAB22 Class Breaks

Class	Overlay Cell Value	Acres Private Land	Acres Conservation Land	Acres Total	Notes
Priority 1	15,200+	763,930	357,310	1,121,240	Two max-weighted G1s can get in
Priority 2	8500 – 15,199	1,137,679	458,716	1,596,395	Two max-weighted G2s can get in
Priority 3	6000 - 8499	1,276,913	682,080	1,958,994	Two max G3s; One min G1 can get in
Priority 4	4000 – 5999	2,204,290	1,362,374	3,566,664	Mid G3 + Max G4 (or two Max G4s) can get in
Priority 5	2500 – 3999	2,077,348	2,273,065	4,350,414	One max G4 can get in; Mid G2 can get in
Priority 6	1 - 2499	2,023,671	4,355,427	6,379,099	Remaining values

The Notes in Table 2-8 indicate the basic rationale for each class break. Both class acreage and species weighting criteria were considered in setting class breaks. The breaks are designed so that the top priority can represent a few species with high conservation need, or several species with moderate conservation need (rarity-weighted richness). A map of the final model is shown in Appendix J.

Model Updates

The FNAIHAB model as described above is the product of a comprehensive update in 2022. The 2022 model has been further updated in 2025 by the removal of developed lands from the new Cooperative Land Cover version 4.0 update.

Section 3
Significant Landscapes, Linkages and Conservation Corridors

Measure B3: The number of acres acquired of significant landscapes, landscape linkages, and conservation corridors, giving priority to completing linkages.
Source: University of Florida and Department of Environmental Protection/Office of Greenways and Trails.

Measure definition

The Florida Ecological Greenways Network (FEGN) of the Statewide Greenways System Planning Project is a statewide system of landscape hubs, linkages, and conservation corridors that was developed by the University of Florida using a GIS decision support model. The FEGN delineation process combined a systematic landscape analysis of ecological significance and the identification of critical landscape linkages in a way that can be replicated, enhanced with new data, and applied at different scales. The Ecological Network connects and integrates existing conservation areas with unprotected areas of high ecological significance. Such an integrated conservation land network will protect important ecological functions, community and landscape juxtapositions, and the need for biotic movement more thoroughly than the present collection of isolated conservation areas. The highest priority landscape linkages within Ecological Greenways Network are critical for conserving viable populations of our flagship species such as the Florida black bear and Florida panther that require large connected areas to support viable populations. These and other high priority ecological greenways also represent the best opportunities to maintain large, connected landscapes that will best conserve biological diversity over the long term and maintain essential ecological processes and services including water quality and quantity protection, protection from storms, clean air, nature recreation, etc.

Methods

The original delineation process was collaborative and overseen by three separate state-appointed greenways councils. During the development of the model, technical input was obtained from the Florida Greenways Commission, Florida Greenways Coordinating Council, state, regional, and federal agencies, scientists, university personnel, conservation groups, planners and the general public in over 20 sessions. When the modeling was completed, the results were thoroughly reviewed in public meetings statewide as part of the development of the Greenways Implementation Plan completed in 1999. A detailed description of the original model is in the Final Report of the Statewide Greenways System Planning Project (Carr et al. 1999; Hoctor et al. 2000; http://www.geoplan.ufl.edu). The FEGN has since undergone a series of updates including in 2013 and 2016, and most recently in 2021 (Hoctor 2021). In 2025 a version of FEGN used for the FFCNA had developed lands removed based on the new Cooperative Land Cover version 4.0 update.

Prioritization

The original Ecological Greenways encompassed nearly 23,000,000 acres including open water, and existing conservation lands. If open water and conservation lands are excluded, there are approximately 11,000,000 acres remaining. In order for the Ecological Greenways network to be a more effective planning tool, the University of Florida identified priorities using a two-step prioritization process. In 1998 two meetings with staff from the Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, Florida Natural Areas Inventory, the Water Management Districts, and other agencies and groups were conducted to discuss criteria and data for selecting priorities. Based on these meetings, the University of Florida developed a GIS model that refined and modified the original ecological greenways model process to identify features within the ecological greenways model results that were high, moderate, or lower priorities for protecting statewide connectivity.

The next step involved separating areas identified as high and moderate priorities into even more refined classes of priority using a general set of criteria. Though the original prioritization was used to support this effort, more refined priorities were needed to serve as a better planning tool. The following criteria were used to place potential landscape linkage and corridor projects into more refined priority classes:

1) Potential importance for maintaining or restoring populations of wide-ranging species (e.g., Florida black bear and Florida panther)

2) Importance for maintaining a statewide, connected reserve network from south Florida through the panhandle.

3) Other important landscape linkages that provide additional opportunities to maintain statewide connectivity especially in support of higher priority linkages.

4) Importance as a riparian corridor to protect water resources, provide functional habitat gradients, and to possibly provide connectivity to areas within other states.

The results of the second phase of prioritization were reviewed and approved by the Florida Greenways and Trails Council in November 2001.

The Florida Greenways Program implementation report (1998) included the identification of critical linkages as the next step following prioritization in the process of protecting an ecological greenways network across the state. Critical linkages serve as more defined project areas that are most important for protecting the Florida Ecological Greenways Network. Such critical linkages are to be approved by the Florida Greenways and Trails Council on an iterative basis as linkages are protected or priorities change over time. Two primary data sets were used to delineate the first iteration of critical linkages. To define linkages that are most critical to the protection of the Florida Ecological Greenways Network, prioritization based on both ecological criteria and level of threat by conversion to development (development pressure) is needed. For ecological-based prioritization, the prioritization process described above that categorized the Florida Ecological Greenways Network into six priority levels was used. Development pressure was modeled by Jason Teisinger (2002). These analyses were then combined to identify candidate areas for selection as Critical Linkages. Areas were selected that had either very high ecological significance or high ecological significance while also having critical areas threatened by development. Ten areas were selected for Critical Linkage status and these areas will now serve as the highest priorities for protecting landscape connectivity through the Florida Forever Program, Save Our Rivers program, and for other conservation initiatives where state, regional, and local government can work with willing landowners to protect our best remaining large, connected landscapes statewide.

In 2008, for the Critical Lands and Waters Identification Project (CLIP), two additional priority levels were added to the existing Florida Ecological Greenways Network priority classes as a strategic subset of the original Priority 1 and Priority 2 areas. These two new highest priority classes, Critical Linkages 1 and Critical Linkages 2, were delineated by identifying the areas within Priority 1 and Priority 2 linkages that were considered most important for completing a statewide ecological network of public and private conservation lands. These Critical Linkages were reviewed and accepted by the CLIP Technical Advisory Group as part of the development of the CLIP database and identification of CLIP statewide conservation priorities. These new priorities were also accepted by the Florida Greenways and Trails Council in December 2008.

In 2013 the FEGN underwent revision as part of the Critical Lands and Waters Identification Project (CLIP; Hoctor et al 2013). In 2016, as part of the CLIP 4.0 updates there were further revisions to the priorities in the FEGN, following recommendations to continue work discussed in the 2013 report. The updates focused on three primary goals: addressing impacts from sea level rise, addressing functional connectivity to other states; and better reflect areas that should be considered high priorities for corridor protection statewide. Full details of the revisions may be found in the CLIP v.4 Technical Report (Oetting et al 2016).

<u>Florida Forever Strategic Priorities</u>
In 2021 the FEGN was again revised based on latest natural resource and land cover data with funding from the Florida Dept. of Environmental Protection, Div. of State Lands (Hoctor 2021). This revision included a new analysis called Florida Forever Strategic Priorities to specifically address conservation priorities for Florida Forever Land Acquisition (FNAI 2021a). Florida Forever Strategic Priorities are outlined further in the Florida Forever Project Ranking Support Analyses Documentation report (FNAI 2025).

A map and acreage table for this data layer are shown in Appendix J.

Section 4
Under-represented Natural Communities

Measure B4: The number of acres acquired of under-represented native ecosystems.
Source: Florida Natural Areas Inventory

Measure Definition

According to the Guide to Natural Communities of Florida (FNAI 2010b), Florida features 81 different natural community types. Many of these types, particularly wetland communities, are relatively well-represented on existing conservation lands, and therefore are less of a priority for land acquisition than some of Florida's rarest communities that are currently not well-protected.

Methods

The 1997 *Florida Preservation 2000 Program Remaining Needs and Priorities Report* (Brock 1997) identified natural community types that were inadequately represented on conservation lands in Florida (based on Kautz 1993). Since that time, the Office of Environmental Services (OES), Florida Department of Environmental Protection, has regularly reported progress toward protecting additional acres of natural communities through land acquisition. Based on the OES criteria, a natural community is considered to be inadequately represented on conservation lands if less than 15% of the original extent of that community is currently found on existing conservation lands.

Table 4-1 lists those communities that are included in the data layer for measure B4, using the OES criteria as a starting point. The original acreages were calculated from a map of historic vegetation produced by Davis (1967). Remaining acreages were calculated based on the individual natural community data layers developed for this measure, as described below. Seepage slopes and upland glades were not identified as distinct communities on the original Davis map, so we are unable to report the percent of original acreage remaining. However, seepage slopes are known to be a rare community type that supports a large number of rare endemic plant species. Some estimates suggest that less than 1% of the original extent of seepage slope communities remain (FNAI 1990). Upland glade is also a critically imperiled community (ranked G1/S1 by FNAI) that supports endemic plant species.

Similarly, although we do not have a historical map of sandhill upland lake, we can assume that this community is under-represented because the associated sandhill community is under-represented. Previous statewide land cover overestimated the amount of remaining dry prairie so that it exceeded the 15% threshold; recent improvements in mapping dry prairie, however, confirm that this imperiled community is under-represented on conservation lands. Dry prairie is critical habitat for the endemic Florida grasshopper sparrow. Upland pine was also added as an under-represented type based on recommendations from resource experts.

Taken as a whole, the scrub community type appears to be fairly well protected based on Table 4-1. However, much of the scrub on conservation lands is located in the Ocala National Forest. If scrub other than that in the Ocala region is considered, 84% of the original scrub extent is unprotected. Scrub is also a community that supports a large number of endemic species, particularly in the Lake Wales Ridge region.

Table 4-1. Natural community types considered to be under-represented.

Natural Community	Original Acres	Remaining Acres	Acres Protected at Baseline (July 2001)	Percent of Original Protected (July 2001)
Upland Glade (G1)	n/a	30	0	n/a
Pine Rockland (G1)	224,000	16,900	15,770	7
Scrub (G2)	979,000	507,380	352,010	36
Rockland Hammock (G2)	296,000	19,100	15,350	5
Dry Prairie (G2)	1,205,000[a]	154,770	92,680	8
Seepage Slope (G2)	n/a	6,230	6,200	n/a
Sandhill (G3)	6,943,000	829,600	490,310	7
Sandhill Upland Lake (G3)	n/a	76,280	14,120	n/a
Pine Flatwoods (G4)	12,558,000	2,381,090	1,092,790	9
Upland Hardwood (G5)	1,635,000	200,530	32,340	2
Upland Pine (G4)	n/a	220,200	162,040	n/a

[a]Historical extent of dry prairie based on Bridges (2006)

General Approach and Data Sources

In 2020 we undertook a comprehensive review and update of under-represented natural communities, starting with a comparison of the most recent Cooperative Land Cover (FNAI 2010a [CLC]) version 3.4 with the previous natural communities layer (based largely on CLC version 3.2). This update followed a tiered system of data sources, with each higher tier taking precedence over lower tier sources:

- **Tier I. FNAI NC Mapping** – FNAI staff have conducted detailed, rigorous ground-truthed natural community mapping on more than 3.2 million acres of conservation lands, primarily on lands managed by FWC, FFS, and Water Management Districts. This data may be considered a "gold standard" data source for the present purpose. The version used for the present update was compiled in March 2020.
- **Tier II. FNAI Historic NC Mapping** – In addition to the current mapping in Tier I, FNAI has also undertaken historical natural community mapping for more than 2.8 million acres of conservation lands, in some cases on the same managed areas as current mapping. This mapping is largely based on aerial photography from the 1930s – 1940s with additional references to soils and early survey data. Historical mapping was compared with current CLC v3.4 land cover and any converted semi-natural or non-natural land uses were removed from the historical mapping before use. In some cases historical natural community types may have undergone ecological succession sufficient to warrant different classification. These areas were also removed where known, but in general the goal of land management on these lands is restoration to the historical condition.
- **Tier III. Selected State Park Land Cover Mapping –** The DEP Division of Recreation and Parks (DRP) develops natural community maps as part of their management plans for all state parks, based on the FNAI natural community classification. These maps are often but not always incorporated into CLC land cover. In certain cases where these maps differ, the DRP map was found to be preferred based on aerial photo review. For the present update, Upland Pine on Torreya State Park, and the full land cover map for Collier-Seminole State Park, were incorporated into this Tier (based on DRP's 2019 statewide mapping update).

- **Tier IV. FNAI Aerial Photo Review 2020** – As part of the current review we examined aerial photography and other data sources for most locations where the CLC v3.4 classification differed from the previous FFCNA Natural Communities v4.41 data layer. In a majority of cases CLC v3.4 was found to be correct, but we identified different natural community classifications for 528 polygons totaling around 40,000 acres.
- **Tier V. FFCNA NatCom v4.41 Upland Hardwood Forest** – As described further below, previous FNAI modifications to CLC for Upland Hardwood Forest were maintained with this update, with the exception of converted land uses identified in CLC v3.4.
- **Tier VI. FFCNA NatCom v4.41 Sandhill Upland Lakes and Coastal Lakes –** As described further below, previous FNAI modifications to CLC for these lakes were maintained in this update.
- **Tier VII. Cooperative Land Cover version 3.4** – In all remaining areas not covered by the above tiers, the latest CLC version 3.4 was used.

Additional mapping decisions that have been made for specific natural community types are described further below:

Upland Glade
The primary data source for this community is CLC v3.4, which contains all known upland glade sites as mapped and ground-truthed by FNAI.

Pine Rockland
With CLC version 3.4 there is now good correspondence with previous FNAI efforts to delineate pine rockland, so CLC is the primary source.

Scrub
We used CLC v3.4 for scrub and scrubby flatwoods with a number of specific corrections based on aerial photo review and comparison with previous CLC versions.

Rockland Hammock
With CLC version 3.4 there is now good correspondence with previous FNAI efforts to delineate rockland hammock, so CLC is the primary source.

Dry Prairie
We used CLC v3.4 as the primary source for dry prairie.

Seepage Slope
The primary source for seepage slope is FNAI historical natural community mapping, as a large number of seepage slopes occur on Blackwater State Forest which has been mapped by FNAI. In other areas CLC v3.4 is the primary source.

Sandhill Upland Lake
Distinguishing sandhill upland lakes from other lake types is challenging. No comprehensive differentiation of lake types exists in available land cover data. We attempted to identify relatively pristine sandhill upland lakes by applying criteria to the lakes category of WMD land cover. First, we selected lakes with >= 75% overlap with historic sandhill or scrub based on the Davis (1967)

map or within 60 meters of sandhill, scrub or scrubby flatwoods based on the current under-represented natural community maps. Because sandhill lakes are typically lentic water bodies without significant surface inflows and outflows, we eliminated lakes that were associated with 1st or 2nd order streams based on the National Hydrography Dataset. Next we established a size range of 1 – 1000 acres that should fit the majority of sandhill lakes. The lower limit attempts to separate permanent lakes from more temporary depression ponds. The upper limit approaches the maximum size of sandill lakes on current protected areas but also attempts to limit the sandhill lakes to those that can be acquired by the state and that are not sovereign submerged lands. We also included any sandhill upland lakes identified in the FNAI element occurrence database or in FNAI natural community mapping projects. Finally, we eliminated lakes for which >33% of the perimeter was not a 'natural' land cover type. Where sandhill upland lakes overlapped other natural communities, we retained the sandhill lake classification. Although we believe this data layer captures the majority of sandhill upland lakes, we acknowledge that it likely contains other lake types and excludes some high quality sandhill lakes.

Sandhill
We used CLC v3.4 as the primary source for sandhill.

Upland Pine
We used CLC v3.4 as the primary source for upland pine.

Pine Flatwoods
This community includes both mesic and wet flatwoods. We used CLC v3.4 as the primary source and included the following classes:

CLC v3.1 SITECODE	LAND COVER TYPE
1300	Pine Flatwoods and Dry Prairie
1310	Dry Flatwoods
1311	Mesic Flatwoods
1340	Palmetto Prairie
2220	Other Coniferous Wetlands
2221	Wet Flatwoods
22211	Hydric Pine Flatwoods
222111	Cutthroat Grass Flatwoods
222112	Cabbage Palm Flatwoods
22212	Hydric Pine Savanna
2222	Pond Pine

Upland Hardwood Forest
Upland Hardwood Forest is difficult to accurately map with remotely-sensed data because its signature often cannot be distinguished from other hardwood forest types, including disturbed, semi-natural types and successional hardwood forest. Prior to FFCNA v4.1 this community was based primarily on 2003 FWC Landsat Vegetation. In the recent versions we used a combination of CLC v3.1, FNAI element occurrences, physiographic provinces, and spatial analysis to improve the representation of upland hardwood forest.

First we included polygons from CLC v3.1 where detailed land cover type was ‘Upland Hardwood Forest’. Next we selected FNAI element occurrence source polygons for the following upland hardwood-associated species: Hexastylis arifolia , Monotropsis reynoldsiae , Calycanthus floridus , Erythronium umbilicatum , Matelea alabamensis , Matelea floridana , Matelea flavidula , Epigaea repens , Aquilegia canadensis var. australis , Hemidactylium scutatum , Agkistrodon contortrix , Tamias striatus , Helmitheros vermivorum. We also selected all Upland Hardwood Forest element occurrences. All polygons were reviewed with 2013 or later ortho-aerial imagery. In general, any CLC v.3.1 Mixed-Hardwood Coniferous polygons that overlapped these element occurrences were selected for inclusion. Other CLC 3.1 polygons or newly digitized polygons were added where upland hardwood forest appeared to be extant based on the imagery review.

Next, in consultation with FNAI’s community ecologist, polygons were limited to physiographic provinces (White et al 1970) that corresponded to the range of upland hardwood forest as defined in the Guide to the natural communities of Florida: 2010 edition (FNAI 2010b). These include the following:

Alachua Lake Cross Valley
Beacon Slope
Bell Ridge
Brooksville Ridge
Central Valley
Cotton Plant Ridge
Crescent City Ridge
Deland Ridge
Dunellon Gap
Duval Upland
Fairfield Hills
Florahome Valley
Fountain Slope
Grand Ridge
Greenhead Slope
Gulf Coastal Lowlands
High Springs Gap
Intraridge Valley
Kenwood Gap
Lake Harris Cross Valley
Lake Henry Ridge
Lake Munson Hills
Lake Upland
Lake Wales Ridge
Lakeland Ridge
Marianna Lowlands
Marion Upland
Martel Hill
Mount Dora Ridge
New Hope Ridge
Northern Highlands
Ocala Hill
Orlando Ridge
Polk Upland
Relict Bar
Rock Ridge Hills
St. Johns River Offset
Sumter Upland
Tallahassee Hills
Trail Ridge
Tsala Apopka Plain
Wakulla Sand Hills
Welaka Hill
Western Highlands
Western Valley
Winter Haven Ridge
Zephyrhills Gap

We also conducted a spatial analysis to exclude hardwood forests in our dataset that occurred as ‘hedge rows’, i.e. thin strips bordering agricultural land uses.

Finally, for the 2020 update we relied primarily on FFCNA NatCom v4.41 based the extensive work outlined above, with additional updates based on higher tier data sources.

Final Natural Communities Dataset

The seven tiers outlined above were combined, with the natural community classification of each higher tier data source overriding all lower tiers.

Note that each year, under-represented natural communities are updated to include field verification of communities within new Florida Forever proposals. In 2025, developed lands were also removed based on the new Cooperative Land Cover version 4.0 update. An acreage table and map of this data layer are shown in Appendix J.

Section 5
Landscape-sized Protection Areas

Measure B5: The number of landscape-sized protection areas that exhibit a mosaic of predominantly intact or restorable natural communities (>50,000 acres) established through new acquisition projects, or augmentations to previous projects.

Source: Florida Natural Areas Inventory

Measure definition

For the purpose of the Florida Forever Conservation Needs Assessment, this measure is interpreted narrowly to mean a count of the number of contiguous areas managed for conservation that are greater than 50,000 acres in size. For project evaluation purposes we have developed a separate analysis measuring the relative contribution of each Florida Forever project to existing or potential Landscape-sized Protection Areas. That project-based analysis is detailed in the Ranking Support Analyses Documentation.

Methods

For this measure, managed areas were grouped into Managed Area Complexes (MACs). The FNAI Florida Managed Areas (FLMA) coverage was converted to raster and "water out" was removed. The raster underwent a 3-cell Expand and Shrink process to close small gaps, and the resulting raster was Region-Grouped. Each contiguous region is a separate Managed Area Complex (a MAC can contain multiple different managed areas, as long as they are contiguous after the expand/shrink process). MACs greater than 50,000 acres are counted toward this measure for the Florida Forever Natural Resource Acquisition Progress (NRAP) report.

Section 6
Natural Floodplain

Measure C3: The number of acres acquired that protect natural floodplain functions.
Source: FEMA, FNAI

Measure Definition
Floodplains are often described in terms of statistical frequency of flooding, i.e. 10-year floodplain or 100-year floodplain. The boundary of the 100-year flood is commonly used in floodplain mitigation programs to identify areas where the risk of flooding is significant, e.g. FEMA data. We worked closely with members of the Florida Forever Technical Advisory Group who recommended that the natural floodplain should be represented by natural or semi-natural areas within the 100-year floodplain as identified by FEMA.

Methods
The source data layers for 100-year floodplain include the following:

1. FEMA Digital Flood Insurance Rate Map (DFIRM) Database, 2001 – 2017, for 63 counties.
2. FEMA Digital Q3 Flood Data, 1996 (FEMA96), for 4 counties without DFIRM (Palm Beach, Citrus, Hendry, Sarasota).
3. Floodplain estimated using the overlap of wetlands and hydric soils data fill gaps in DFIRM or FEMA 96 data, especially for South Florida counties. The wetlands/hydric soils floodplain surrogate was used in DFIRM counties where DFIRM data listed FLD_ZONE as D, AREA NOT INCLUDED, and in FEMA 96 counties where FEMA 96 data listed ZONE as ANI, D, X500, or NULL. The wetlands/soils floodplain surrogate was recommended by a subgroup of the Florida Forever Technical Advisory Group after several alternate methods, including use of digital elevation data, were explored.

The precision of FEMA data is variable from county to county, and from urban to rural areas.
In areas where FEMA data existed, we used the 100-year floodplain or Special Flood Hazard Area (SFHA) as Natural Floodplain. Sovereign submerged lands and developed lands were excluded from this layer.

Prioritization
Data were prioritized into 6 categories using the Functional Wetlands prioritization method (see Section 9 of this report). Floodplain priorities were assigned based on natural quality without regard to upland/wetland status using a Land Use Intensity index (LUI) developed by Tom Hoctor at the University of Florida (updated by FNAI in 2018 based on Cooperative Land Cover Map v3.3) and the FNAI Potential Natural Areas (PNA). In 2025, developed lands were removed based on the new Cooperative Land Cover version 4.0 update.

An acreage table and map of this data layer are shown in Appendix J.

Section 7
Surface Water Protection

Measure C4: The number of acres acquired that protect surface waters of the state
Source: Florida Natural Areas Inventory and Florida Department of Environmental Protection/ Office of Coastal and Aquatic Managed Areas

Measure Definition

In consultation with water resource experts from the water management districts, the Florida Department of Environmental Protection (DEP) Division of Water Resource Management, and DEP Office of Coastal and Aquatic Managed Areas (CAMA), we determined that this measure concerns the protection of surface waters that currently remain in good condition, as opposed to those in need of restoration. Restoration efforts are covered under other Florida Forever goals and measures.

The next step was to determine which types of surface water resources should be included as significant surface waters. Initially, CAMA staff agreed to compile data layers to be used in this measure. They provided GIS data for shellfish harvesting areas, seagrass beds, and Outstanding Florida Waters (OFWs). OFWs include Special OFWs, which are those not located in existing managed areas, Other OFWs (those within managed areas), and Aquatic Preserves.

On August 18, 2000, we conducted a water resources review meeting with experts from the water management districts, DEP, and the Florida Geological Survey (see Appendix H for a description of the Water Resources Workshop). As a result of that meeting, we agreed to include National Wild and Scenic Rivers, springs, and estuaries included in the National Estuary Program. Subsequently we also included water bodies important for imperiled fish as a base layer (Hoehn 1998).

Methods

Significant surface waters were grouped into eight distinct categories, and a separate sub-model was developed for each. The eight sub-models and the final combination are described below:

Sub-model 1: Special OFW Rivers

The features included in this sub-model are only the rivers designated Special OFWs, and the Loxahatchee River (Florida's only National Wild & Scenic River). Some lake systems in central Florida and some coastal areas are also designated Special OFWs, but those were included in other sub-models. The following features were selected for buffering:

- all streams within the major basin of the OFW river. These were selected from the National Hydrography "nhd_reach" line data layer.
- The special OFW boundary for each river, from the special OFW data layer developed by DEP.
- Stream polygons associated with the OFW river, from the water management FLUCCS landcover data layers.

Each of these data sets was buffered by 1000 feet and by 1 mile. The 1 mile buffer was overlaid on the "drainage basins 1997 areas" data layer from DEP. The buffers were manually edited to remove portions that did not lie within the basins flowing into the streams of interest.

All sub-basins included in the major river basins were also scored based on three factors: stream order, downstream length, and basin class. Stream order was based on nhd_reach level, modified so that each Special OFW river started as stream order 1. To calculate downstream length, each Special

OFW River was divided into four equal stream lengths. All tributaries flowing into each of the four segments were scored as contributing to 1, 2, 3, or all 4 stream lengths. The sub-basin containing the OFW river (which was usually a single sub-basin running the length of the river) was divided at these four segments, with the division line following elevation patterns from a 30-meter Digital Elevation Model. Basin class was defined by size of the overall basin of each Special OFW river (Table 7-1). Sub-basins were scored based on the three factors as shown in Table 7-2

Table 7-1. Basin classification based on total area of the basin.

Basin Class	Basin Area (sq. mi.)
1	10,000+
2	6,000 – 9,999
3	4,000 – 5,999
4	1,000 – 3,999
5	100 –999
6	0 – 99

Table 7-2. Scoring system for the Special OFW Rivers sub-basins.

Stream Order	Stream Order Points	Basin Class	Basin Class Points	Downstream Length	Length Points	**Total Points**	**Model Class**
1	100	1	90	4	70	**250-260**	**1**
2	70	2	80	3	55	**230-249**	**2**
3	50	3	70	2	40	**200-229**	**3**
4	35	4	60	1	25	**170-199**	**4**
5	25	5	50			**130-169**	**5**
6	20	6	50			**100-129**	**6**
7	15					**1-99**	**7**
8	10						

Finally, the two buffers were overlaid on the sub-basins model (with the 1000 foot buffer overriding the 1 mile buffer where the two overlapped) and the final Special OFW sub-model was scored as shown in Table 7-3. A map of the Special OFW Rivers sub-model is shown in Fig. 7-1.

Table 7-3. Prioritization system for the Special OFW Rivers sub-model.

Buffer	Basin Model Class	**OFW Rivers sub-model Priority Class**
1,000 feet	1	**1**
1,000 feet	2	**2**
1,000 feet	3	**3**
1 mile	1	**4**
1,000 feet	4	**4**
1 mile	2	**5**
1,000 feet	5	**5**
1 mile	3	**6**
1,000 feet	6	**6**
1 mile	4	**7**
1 mile	5	**8**
none	1	**8**
1 mile	6	**9**
none	2	**9**
none	3-6	**10**

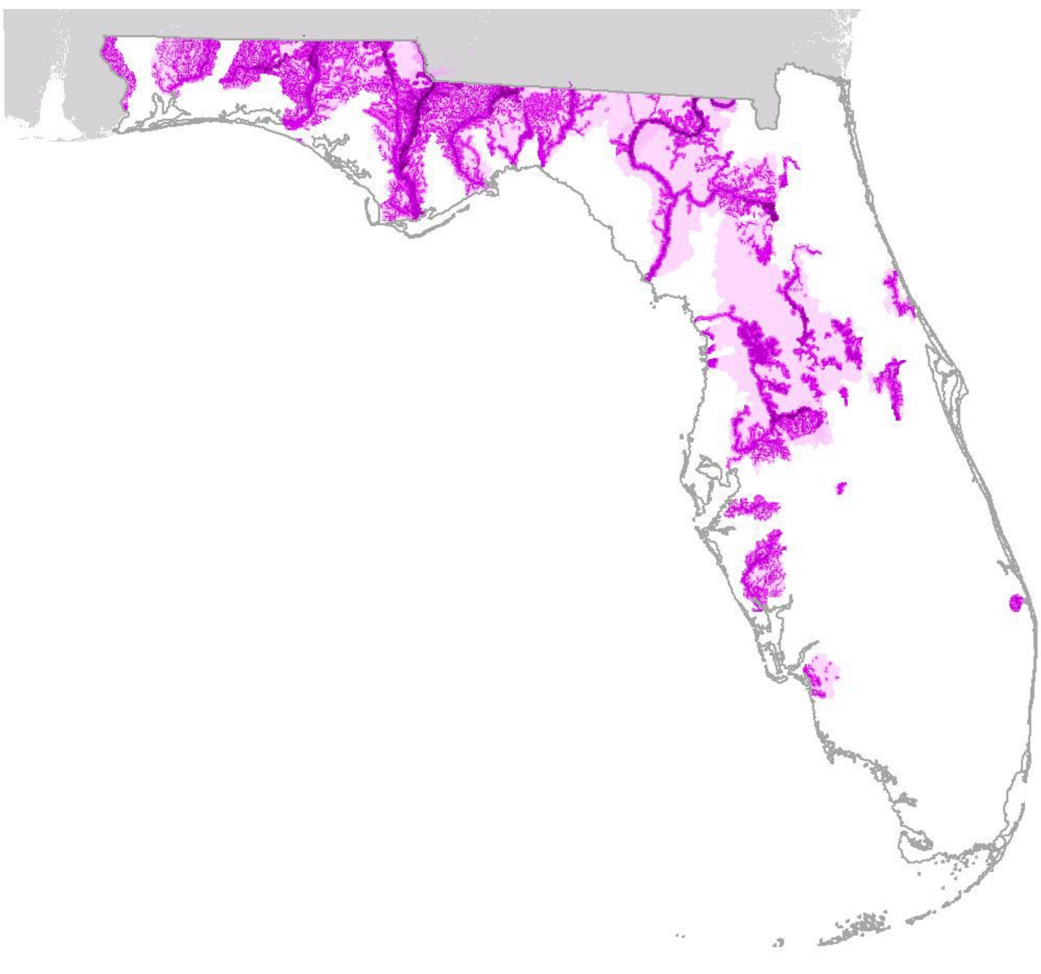


Figure 7-1. Special OFW rivers sub-model with darker colors showing higher priorities.

Sub-model 2: Coastal Surface Waters

This sub-model included the following coastal resources: shellfish harvesting areas, seagrass beds, coastal aquatic preserves, and national estuaries. Each of these data sets and their tributary streams was buffered by 1000 feet and by 1 mile. The 1 mile buffers were manually edited to remove portions that did not lie within the basins flowing into the resources of interest.

In 2015, this model was updated to address areas with intensive canal networks. Methods described as occurring "within the Update Zone" apply to the area shown in Fig. 7-2.

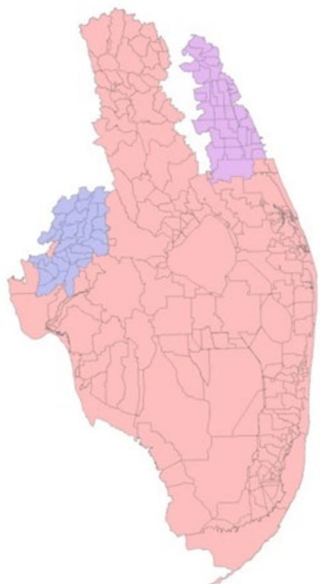


Figure 7-2. "Update Zone" for Surface Water revisions.

The 1-mile buffer was overlaid on watershed sub-basins: "drainage basins 1997 areas" data layer from DEP for most of the state. NRDC HUC 12 basins were default in the Update Zone; SFWMD Arc Hydro Enhanced sub-watersheds were more detailed and used where available through most of the SFWMD.

Streams data used statewide was obtained from FWC in 2007. These streams were a modification of NHD streams based on an updated digital elevation model. Within the Update Zone, a 2014 update of NHD flowlines maintained by DEP was used.

Within the Update Zone, canals and other artificial waterways were eliminated from consideration. Only natural stream systems were buffered by 1,000 feet and 1 mile. Natural waterbody polygons intersecting these stream systems were buffered as well. In addition, natural wetland polygons intersecting the stream systems were also selected. Wetland polygons were not given a 1,000 ft buffer, but were given a 1 mile buffer.

All sub-basins statewide were then scored based on proximity to the coastal resources. Sub-basins contiguous to the resource were given a proximity score of 1, sub-basins adjacent to proximity 1 were scored proximity 2, and so on (within the Update Zone, the "least proximal" sub-basin scored 18). Some larger basins were subdivided at arbitrary intervals to make them more comparable to other sub-basins in size. Those divisions were made following elevation patterns from a 10-meter Digital Elevation Model obtained from FWC.

Finally, the two buffers were overlaid on the coastal proximity model (with the 1000 foot buffer overriding the 1 mile buffer where the two overlapped) and the final Coastal sub-model was scored as shown in Table 7-4. A map of the Coastal sub-model is shown in Fig. 7-3.

Table 7-4. Prioritization system for the coastal sub-model.

Buffer	Coastal Proximity	**Coastal sub-model Priority Class**
1,000 feet	1	**1**
1,000 feet	2-3	**3**
1 mile	1	**4**
1,000 feet	4+	**5**
1 mile	2-3	**5**
1 mile	4+	**6**
none	1	**6**
none	2-3	**7**
none	4+	**8**

Figure 7-3. The coastal sub-model with darker colors showing higher priorities.

Sub-model 3: Other OFWs (Managed Areas)
This sub-model includes the category of "other Outstanding Florida Waters" which essentially includes all state conservation lands and federal lands managed by the National Park Service or U.S. Fish & Wildlife Service. All waterbodies on these lands are included in the other OFW designation (see DEP website: http://www.dep.state.fl.us/water/wqssp/ofw.htm). Because these OFWs typically cover only segments of rivers, or lakes within the managed area boundaries, they were treated differently from the more complete OFW river systems modeled in the Special OFW sub-model. Also included in this category is the everglades hydrological system. The OFW designation for the everglades includes all wetlands within the system, so wetlands in the managed areas spanning the everglades (Everglades NP, Big Cypress NP, Everglades WMA, and Loxahatchee NWR) were included as resources to be buffered in this sub-model.

Stream and basin data and model methods followed the approach outlined in the Coastal Sub-model above, including the 2015 updates in the Update Zone. The same scoring system was used as listed in Table 7-5.

A map of the Other OFW sub-model is shown in Fig. 7-4.

Table 7-5. Prioritization system for the Other OFW sub-model.

Buffer	OFW Proximity	**Other OFW sub-model Priority Class**
1,000 feet	1	**1**
1,000 feet	2-3	**3**
1 mile	1	**4**
1,000 feet	4+	**5**
1 mile	2-3	**5**
1 mile	4+	**6**
none	1	**6**
none	2-3	**7**
none	4+	**8**

Figure 7-4. Other OFWs sub-model with darker colors showing higher priorities.

Sub-model 4: Keys

The entire Florida Keys are included in the list of Outstanding Florida Waters by DEP. The keys were treated identically to the other coastal resources and could have been included in the Coastal sub-model, but were modeled separately in the event that they might have been prioritized differently.

The keys coastline was selected from a detailed shoreline data layer available from DEP. Those line segments were then buffered by 1000 feet and 1 mile as with the other water resources. All land areas on the keys were treated as proximity of 1 (equivalent to coastal proximity; Fig. 7-4).

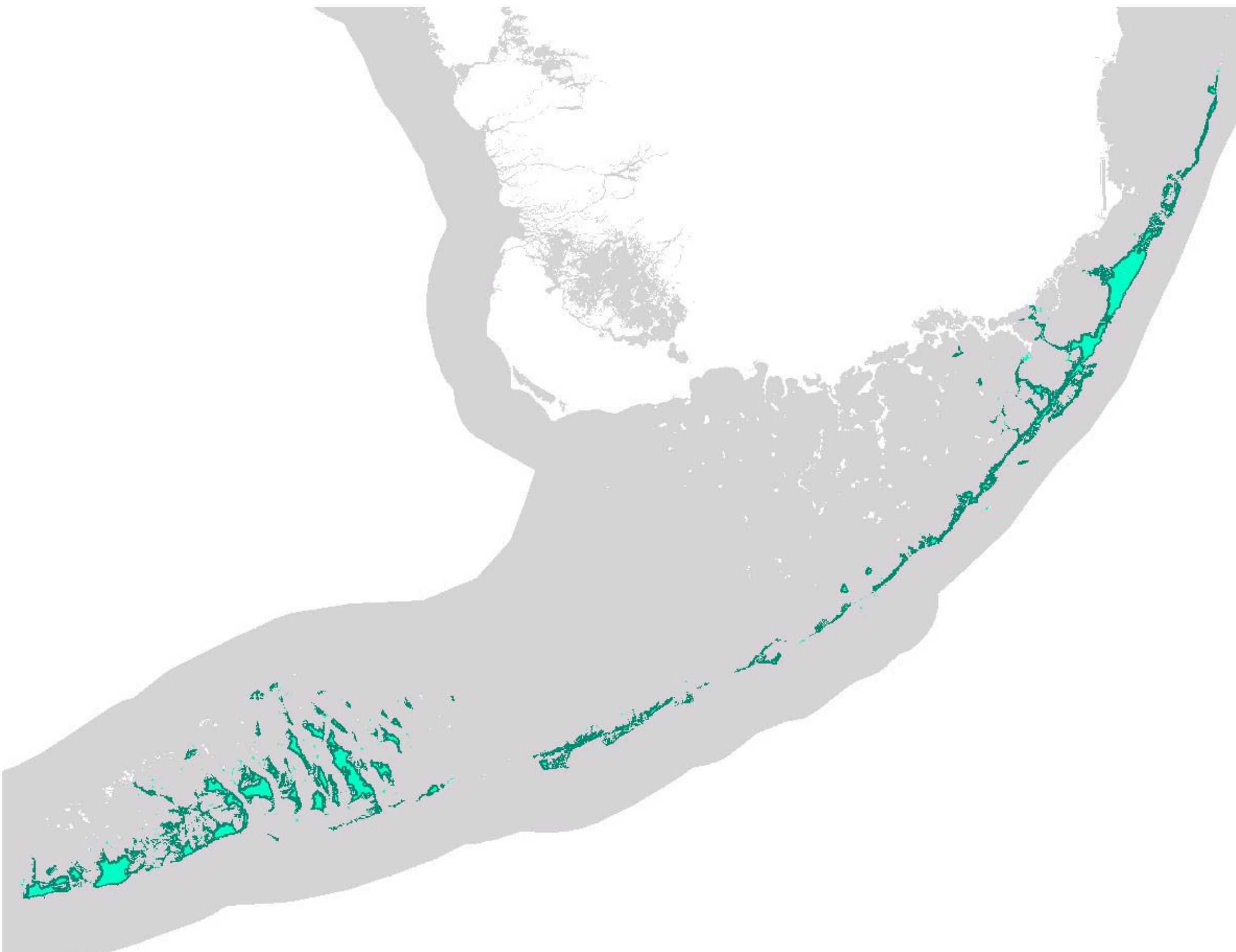


Figure 7-5. Keys sub-model with darker colors showing higher priorities.

Sub-model 5: Springs

The Springs model was revised in 2023 based on the latest springs data from DEP and incorporation of Outstanding Florida Springs, which were newly designated in 2016 (DEP 2023). DEP maintains a point data layer of springs by magnitude; these points were buffered by the standard 1000 foot and 1 mile buffers (edited by basin boundaries as described above). The buffers were classified into 8 priorities, as outlined in Table 7-6 below.

A map of the Springs sub-model is shown in Fig. 7-5.

Table 7-6. Prioritization of Springs Buffers

Priority	Description
1	1,000ft buffer of Magnitude 1 Springs *OR* Outstanding Florida Springs
2	1,000ft buffer of Magnitude 2 Springs
3	1,000ft buffer of Magnitude 3 Springs
4	1,000ft buffer of Magnitude 4+ Springs
5	1 mile buffer of Magnitude 1 Springs *OR* Outstanding Florida Springs
6	1 mile buffer of Magnitude 2 Springs
7	1 mile buffer of Magnitude 3 Springs
8	1 mile buffer of Magnitude 4+ Springs

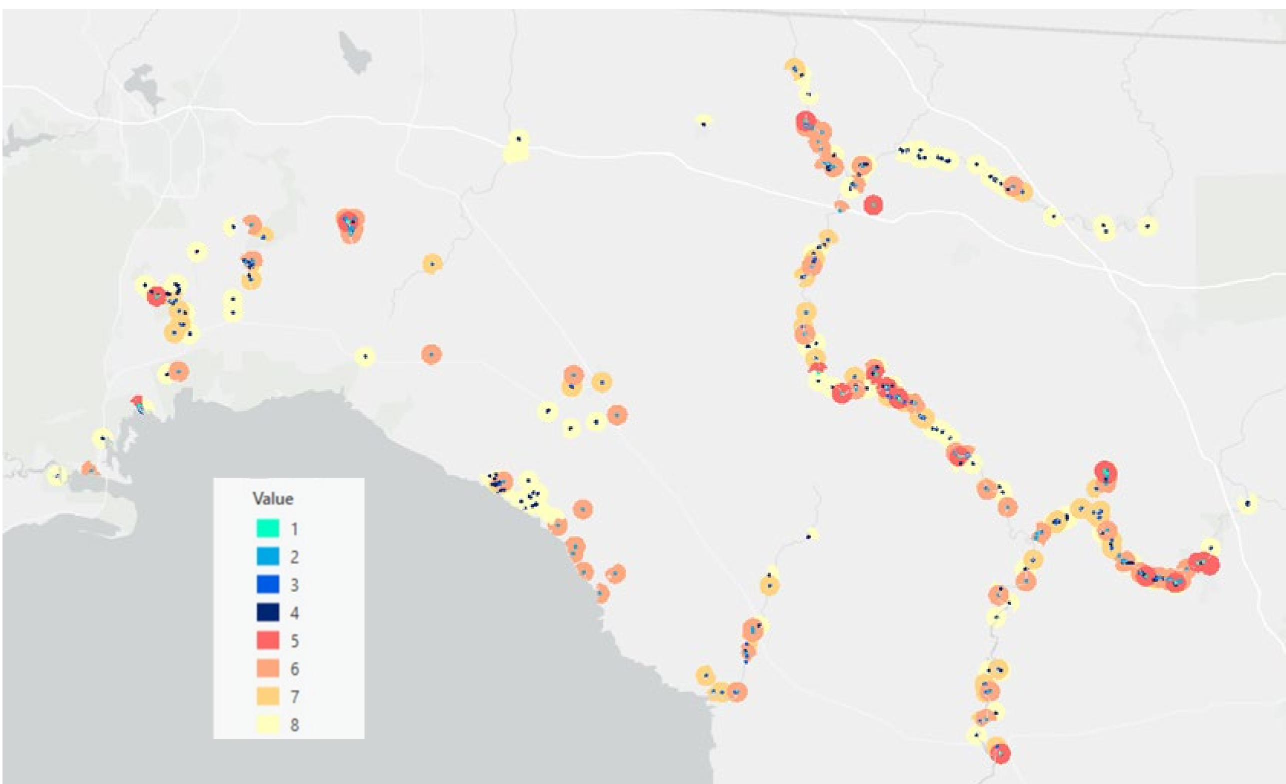


Figure 7-6. Revised Springs sub-model (detail).

Sub-model 6: Rare Fish Basins

A study by Ted Hoehn at the Florida Fish and Wildlife Conservation Commission identified basins that are important for rare and imperiled fish species (Hoehn 1998). Hoehn distributed a model of those fish basins weighted by species rarity and diversity. The model was divided into 5 priority classes. This modeling has since been updated by Mark Barrett at FWC (Barrett 2013), resulting in occurrence data and potential habitat modeling for 26 species.

This sub-model consists of HUC 12 basins and streams identified by Barrett, overlaid with the 1000 foot and 1 mile buffers. Species were weighted according to Hoehn's original method, and basins were scored based on all species included. A documented occurrence of a species in a basin was scored double a modeled potential for the species in the basin. Basins were assigned to priority classes as follows:

P1 (High) = 520+
P2 (Med High) = 300-519
P3 (Med) = 140-299
P4 (Med Low) = 60-139
P5 (Low) = 10-59

These breaks were modified from Hoehn's original method due to the larger number of species and basins modeled, and the particular scoring system used in the current update, but they are intended to follow the general intent of Hoehn's method.

The sub-model priorities were defined as shown in Table 7-7 and a map is shown in Fig. 7-6.

Table 7-7. Prioritization system for the rare fish basins sub-model.

Buffer	Basin Priority Class	**Rare Fish Sub-model Priority Class**
1,000 feet	1	**1**
1,000 feet	2	**2**
1,000 feet	3	**3**
1,000 feet	4	**4**
1 mile	1	**4**
1,000 feet	5	**5**
1 mile	2	**5**
1 mile	3	**6**
1 mile	4	**7**
1 mile	5	**8**
none	1	**9**
none	2-3	**10**
none	4-5	**11**

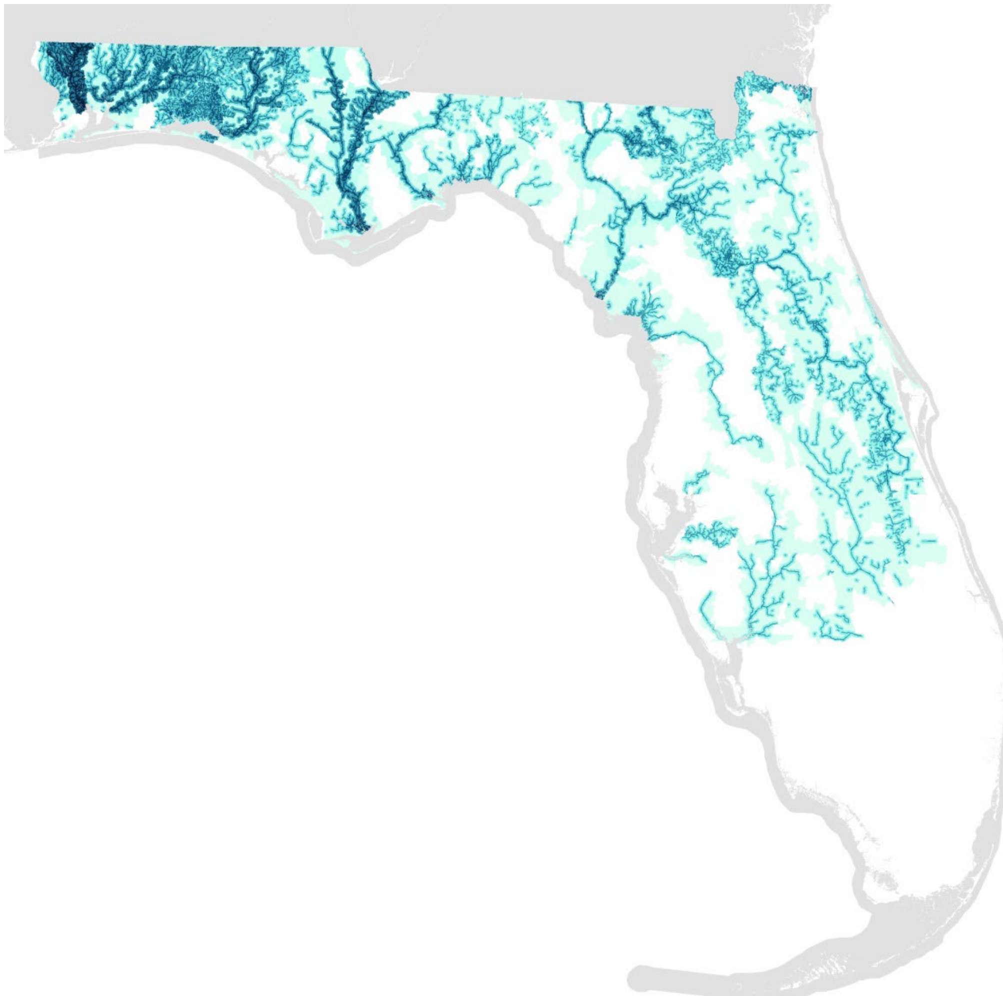


Figure 7-7. Rare fish sub-model with darker colors showing higher priorities.

Sub-model 7: OFW Lakes and Inland Aquatic Preserves

This sub-model represents a small subset of resources that were modeled separately to reflect their high priority. The modeling method is identical to Sub-model 3 (other OFWs). These resources were separated from Sub-model 3 in order to give them a higher priority in the final integrated Surface Water model (see below).

The 1000 foot buffers of these resources are identified in Figure 7-8. Inland aquatic preserves are shown in purple, OFW lakes are shown in pink. All of these buffers are treated as Sub-model 7 Priority 1 for the final overlay. All other buffers and basins related to these resources remain the same as in Sub-model 3.

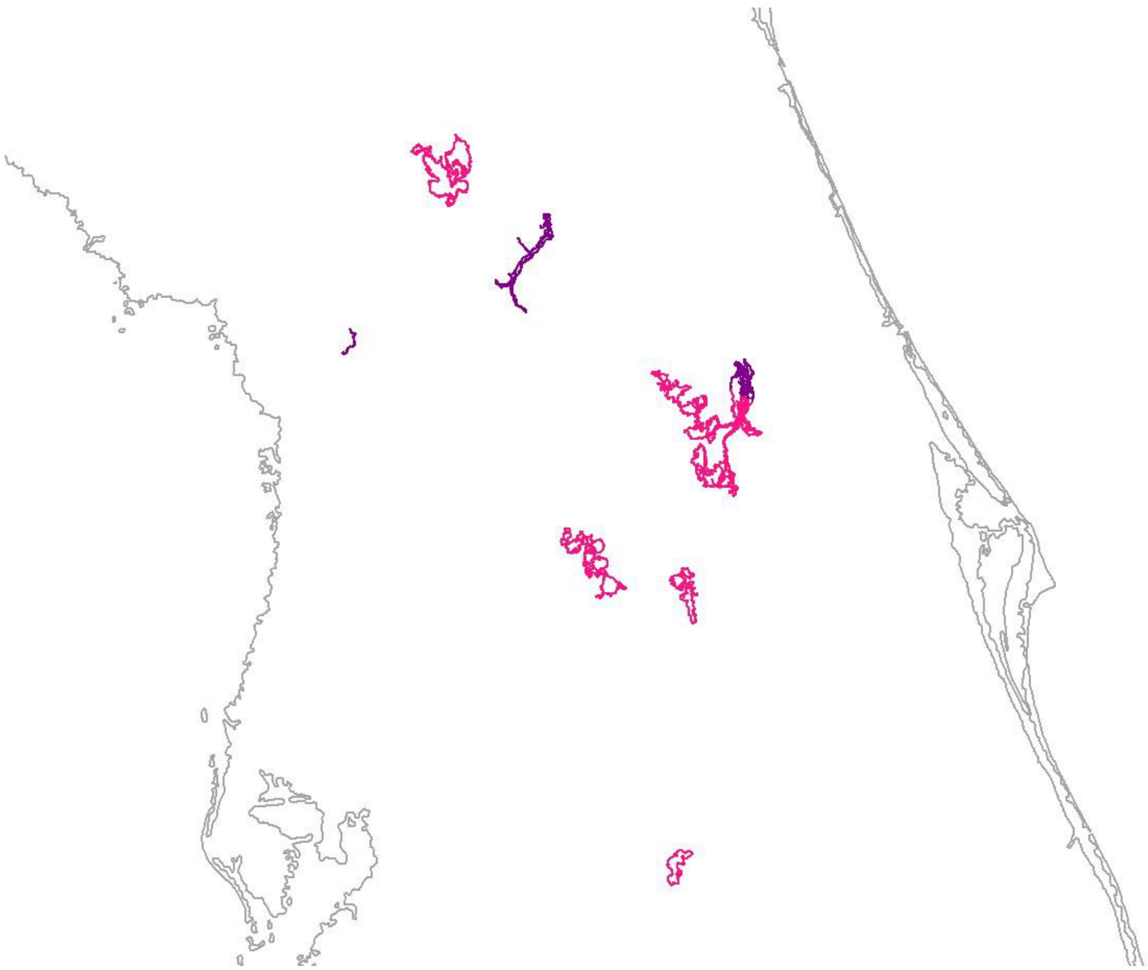


Figure 7-8. OFW lakes and inland Aquatic Preserves sub-model with darker colors showing higher priorities.

Sub-model 8: Water Supply Sources

Water supply sources are those water bodies in the state that are designated Class 1 (potable water supply) by DEP (source: 2014 update of "Surface Water Class Boundaries (areas)" data layer). Those sources and their tributaries were buffered by 1,000 feet and 1 mile, and basin proximity was assigned using the same method as described for the Coastal sub-model, including the 2015 Update Zone revisions. The final sub-model priority classes also follow the same system as outlined for the Coastal sub-model.

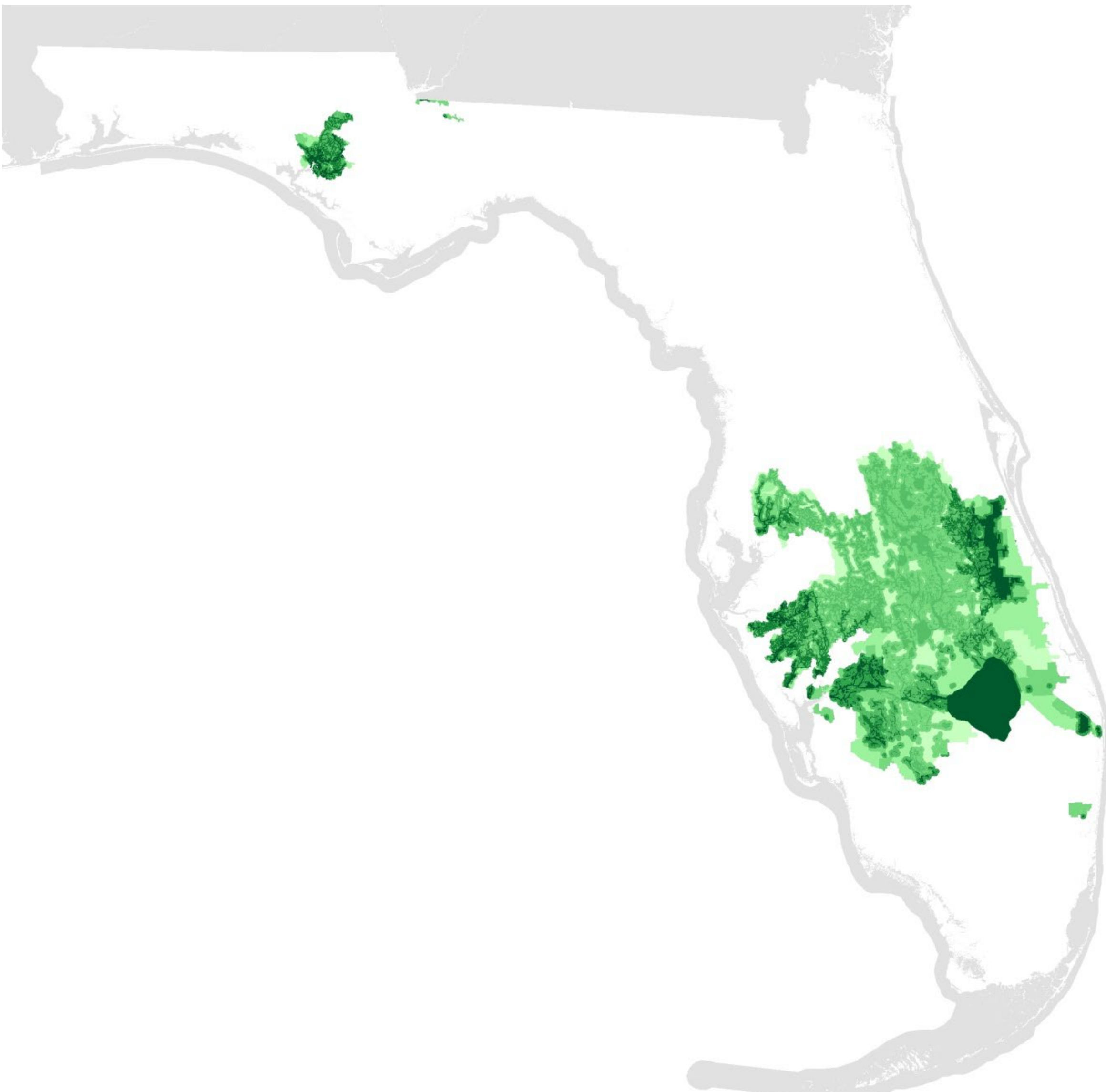


Figure 7-9. Water Supply sub-model with darker colors showing higher priorities.

Final Surface Water Model Integration

The final model is a straightforward overlay of the eight sub-models and is classed into seven priorities using the rules shown in Table 7-8.

Table 7-8. Prioritization system for the integrated surface water model.

2015 Model Scoring									
SURFACE WATER PRIORITY	Special OFW Rivers	Coastal	MA OFWs	Keys	Springs	Rare Fish	Lakes OFWs	Water Supply	Notes
1	1	1		1	1	1	1	1	1,000 ft buffers only
2	2		1		2-4	2			1,000 ft buffers only
3	3	3		2	5	3		3	1,000 ft + 1 mile (keys, springs)
4	4-5	4	3-4		6-8	4-5		4	1,000 ft + 1 mile
5	6-7	5	5			6-7		5	1,000 ft + 1 mile
6	8	6	6			8-9		6	basins + 1mile
7	9-10	7-8	7-8			10-11		7-8	basins + 1mile (Sp. OFW only)

Finally, FNAI's standard "water out" data layer was used to remove water bodies from the model. Developed lands were also removed. In 2025, latest developed lands were removed based on the new Cooperative Land Cover version 4.0 update.

An acreage table and map of this data layer are shown in Appendix J.

Section 8
Fragile Coastal Resources

Measure C6: The number of acres acquired that protect fragile coastal resources
Source: Florida Natural Areas Inventory

Measure Definition

We defined fragile coastal resources as those natural communities most vulnerable to disturbance or development. Upland coastal communities face a variety of threats, especially invasion by non-native species and real estate development (Johnson and Barbour 1990). The high percentage of Florida's upland barrier coast already developed (>50%) and the continued rapid rate of development prompted an assessment of remaining coastal uplands in Florida (Johnson and Muller 1993; Johnson and Gulledge 2005). The major upland communities surveyed by Johnson and Muller were included in the fragile coastal resources data layer: beach dune, coastal grassland, coastal strand, coastal scrub, and maritime hammock. Coastal wetland communities are also threatened by development and other human activities. Florida Marine Research Institute has documented significant losses to salt marsh and mangrove communities (Florida Fish and Wildlife Conservation Commission 2000), which were also included in this data layer. Finally, we also included imperiled coastal lakes - Coastal Dune Lakes and Coastal Rockland Lakes - because they are recognized as globally imperiled (G2) communities.

We restricted coastal natural communities to those that occur within one kilometer of the shoreline of marine or estuarine waters, or those that were identified and mapped for the assessment of Florida's remaining coastal upland communities (Johnson and Gulledge 2005).

We recognize that some important coastal resources, such as seagrass beds and shellfish harvesting areas are not explicitly represented in this data layer. These resources, however, were identified by DEP/Coastal and Aquatic Managed Areas as important surface waters and, therefore, are captured in the surface water protection data layer. In future revisions, we may reconsider the most appropriate representation of data that overlaps different resource categories.

Methods

Coastal classes were extracted from the Florida Cooperative Land Cover Map v3.5 (Table 8-1). In addition, we included all beach habitat mapped as part of the Florida Beaches Habitat Conservation Plan, FNAI EOs for coastal berms, and all scrub, scrubby flatwoods and xeric hammock on barrier islands.

An acreage table and map of this data layer are shown in Appendix J.

Table 8-1. Community types included in the fragile coastal resources data layer.

Coastal Uplands	Coastal Wetlands	Coastal Lakes
Scrub (G2)	Salt marsh (G5)	Coastal Dune Lake (G2)
Scrubby Flatwoods (G2)	Mangrove (G5)	Coastal Rockland Lake (G2)
Beach Dune (G3)	Keys Tidal Rock Barren (G3)	
Coastal Berm (G3)		
Coastal Grassland (G3)		
Coastal Strand (G3)		
Maritime Hammock (G3)		
Shell Mound (G2)		

Section 9
Functional Wetlands

Measure C7: The number of acres of functional wetland systems protected
Source: FNAI; WMD; FDEP

Measure Definition

We consulted with resource experts on how best to define and represent functional wetlands. First, we considered which, of the statewide digital datasets that represent wetlands, to use: U. S. Fish and Wildlife Service's 1:24,000 National Wetlands Inventory (NWI), wetlands from the FWC Landsat land cover data, or wetland polygons from the Land Use Land Cover (LULC) data. Previous versions of the Functional Wetlands were based on NWI data; these data, however, are not regularly updated. Based on our experience as well as the recommendation of experts we decided, instead of NWI, to use wetlands identified in the LULC data. Recent updates to the wetlands classification and spatial delineation appear to have improved the accuracy of these data over NWI. In August 2010, the Cooperative Land Cover Map (CLC; FNAI 2010a) was published which incorporates the latest LULC data for most of the state but also incorporates more recent high quality ground-truthed data on many state conservation lands. We therefore assumed the wetlands classes of the CLC to be the most up-to-date and accurate and used these as our base dataset.

The functionality of wetlands is more difficult to define. Although some research on a local level has attempted to assess the functional status or significance of wetlands (Sutter et. al. 1999; South Florida Water Management District, 2001), there is no such effort on a statewide scale. Even on the local level, it may be difficult to find agreement on a scientific methodology for assessing functionality (Swanson, SLER, pers. comm.). One suggestion was to use size as an indicator of functionality. This, however, was rejected because it would lead to de-emphasis or elimination of small depressional wetlands, which have a critical function in the systems where they occur. We finally reached a consensus that with the available data the closest approximation to "functional wetlands" that we could achieve was "wetlands existing in a natural state". We used a Land Use Intensity index (LUI) and Potential Natural Areas to estimate the natural functionality of lands adjacent to wetlands.

Methods

We created a functional wetlands data layer by first selecting all wetland land cover classes within the Cooperative Land Cover Map v4.0 (CLC), with a few corrections based on comparison with the previous version of CLC.

Prioritization

Wetlands were assigned priorities based on natural quality using a Land Use Intensity index (LUI) developed by Tom Hoctor at the University of Florida (updated by FNAI in 2018 based on CLC v3.3) and the FNAI Potential Natural Areas (PNA).

The LUI characterizes the intensity of land use across the state on a scale of 1 – 10 with 10 being the least intense (most natural). Intensity is based on a multi-scale neighborhood analysis of five general categories of land use: natural, semi-natural (such as rangelands and pine plantation), improved pasture/rural residential, agricultural/low-intensity development, and high intensity development. The assumption is that areas dominated by high intensity land uses are more likely to have severe ecological threats and much lower ecological integrity than areas dominated by natural land cover. FNAI revised the LUI in October 2018 based on CLC v3.3, provided to FNAI by FWC in August 2018.

The PNAs are ranked from P1 to P4 based on size, perceived quality, and type of natural community present. PNAs with these ranks were grouped into "high quality" natural areas. PNAs ranked P5 are areas that do not meet the criteria for P1 – P4 but are nonetheless believed to be ecologically viable tracts of land representative of Florida's natural ecosystems.

Table 9-1 shows how both the LUI and PNAs were applied to help refine the prioritization of functional wetlands. An acreage table and map of this data layer are shown in Appendix J.

Table 9-1. Prioritization method for wetlands based on Land Use Intensity index and FNAI Potential Natural Areas.

Land Use Intensity Index	PNA 1 – 4	PNA 5	Non-PNA
10 *(lowest intensity)*	Priority 1	Priority 2	Priority 2
9	Priority 2	Priority 3	Priority 3
8	Priority 3	Priority 3	Priority 4
7	Priority 3	Priority 4	Priority 4
6	Priority 4	Priority 4	Priority 5
5	Priority 4	Priority 5	Priority 6
4	Priority 5	Priority 6	Priority 6
1 - 3	Priority 6	Priority 6	Priority 6

Section 10
Aquifer Recharge

Measure D3: The number of acres acquired of ground water recharge areas critical to springs, sinks, aquifers, other natural systems, or water supply.
Source: Advanced Geospatial, Inc.; Florida Natural Areas Inventory

Measure Definition

This measure is broad in scope, underscoring specific resources such as springs and sinks, but also covering recharge areas for aquifers, natural systems and water supply. Areas of potential recharge to the Floridan and surficial aquifers were determined from source data inputs for soil hydraulic conductivity, proximity to karst features, depth to water, and overburden. In order to further prioritize areas important to recharge protection, we incorporated additional data related to springs and public water supply.

Methods

Florida Natural Areas Inventory subcontracted with Advanced Geospatial, Inc. (AGI) to develop a statewide Recharge Potential model. Input data layers for the model were consistent with those used in the Florida Aquifer Vulnerability Assessment (FAVA) developed by the Florida Geological Survey and consisted of soil hydraulic conductivity, proximity to karst features, depth to water, and overburden. Using a spatial analysis called Fuzzy Logic, AGI combined the layers in a logical fashion based on observations derived from the FAVA model. Detailed documentation for the base model may be found in AGI's final report, "FNAI- Recharge Component, 2009" which is included as Appendix I in this report.

The AGI model is a statewide grid of 300 x 300 meter cells, with cell values ranging from 0 – 1 on a continuous scale. The continuous values allow for flexibility in how the model is applied. For Florida Forever reporting and evaluation it was necessary to group the values into several priority classes, ranging from high to low, to help focus on the most important places statewide to protect significant recharge areas. The prioritization also addresses the intent of Florida Forever to acquire recharge areas important for springs and water supply. FNAI consulted with AGI, Florida Geological Survey (FGS) and DEP to accomplish this prioritization.

Prioritization

Discharge Removal
As suggested by reviewers of the AGI model, we removed areas where recharge is not happening. AGI identified areas of discharge for the Floridan (FAS) and Surficial Aquifer Systems (SAS). We worked with AGI to create a layer of discharge areas to be removed from the recharge model. Within the extent of the SAS we only used SAS discharge areas. Outside the extent of the SAS we used FAS discharge areas (Fig. 10-1).

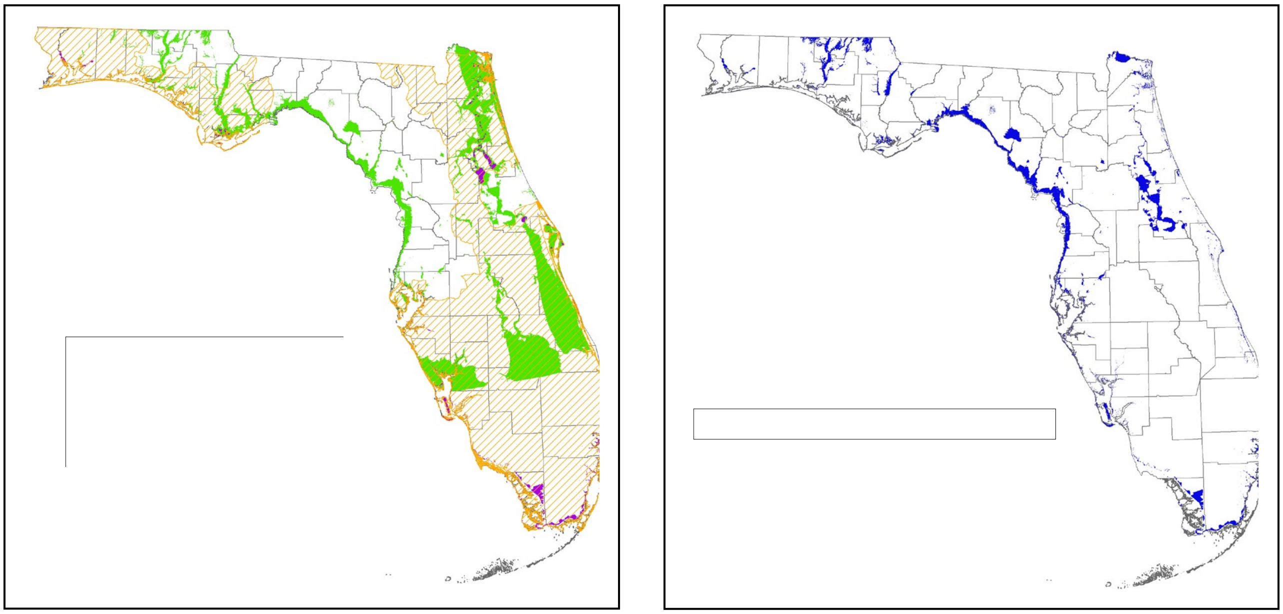


Figure 10-1. Discharge areas removed from the Recharge Potential model based on SAS discharging within the SAS extent and FAS discharging outside the SAS extent. Areas of FAS discharging within the SAS extent were not removed.

Classification of Continuous Values

We classified the Recharge Potential model into five priority classes as a starting point. Table 10-1 shows the value ranges and resulting acreage in each priority class. The "five-class" model is shown in Fig. 10-2. The choice of break values for the classes (0.9, 0.8, 0.6, 0.4) is based on the pattern used with other Florida Forever resource datasets, where the high priority classes define the most limited resource and typically contain the fewest acres.

Table 10-1. Prioritization scheme of "five-class" recharge model.

Priority Class	**Value Range**	**Acres**	**Percentage of AGI model**
Priority 1 (Highest)	0.9 - 1	1,452,534	4%
Priority 2	0.8 – 0.89	4,902,351	14%
Priority 3	0.6 – 0.79	9,717,013	28%
Priority 4	0.4 – 0.59	6,941,868	20%
Priority 5	0.001 – 0.39	11,772,698	34%
TOTAL		34,786,464	100%

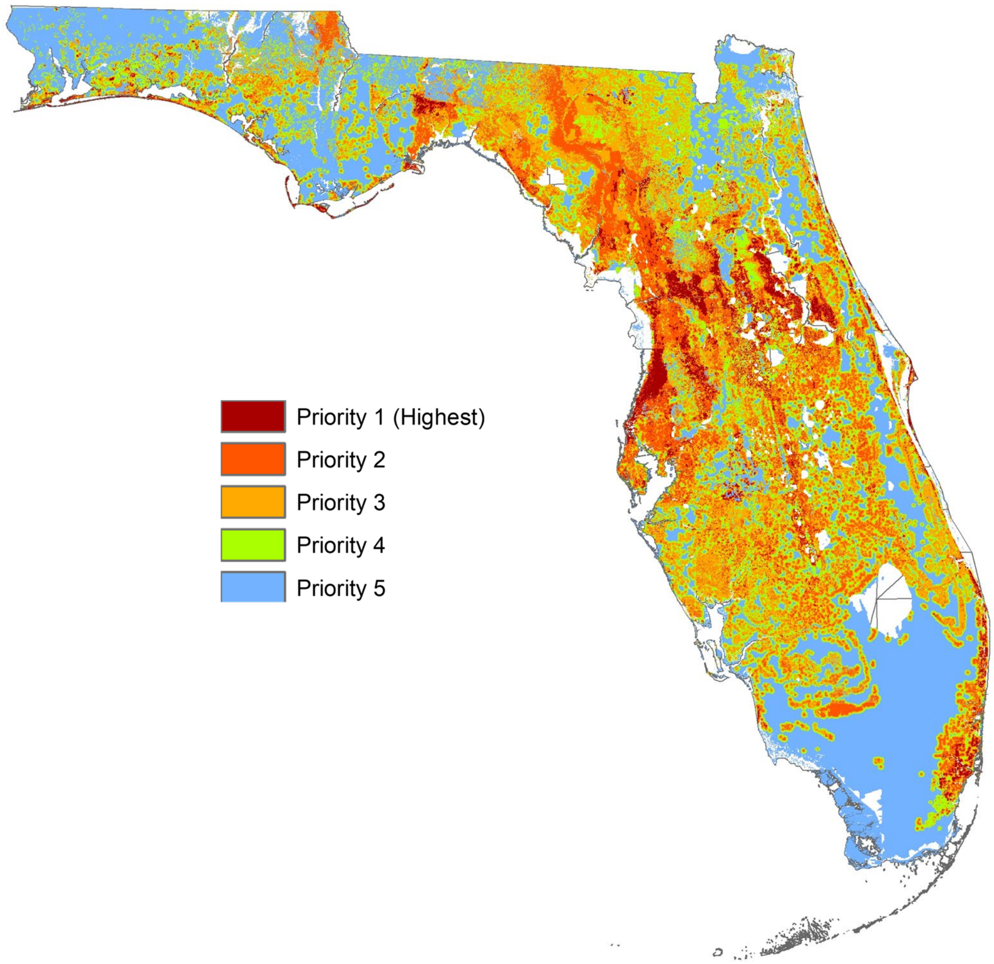


Figure 10-2. Five-class potential recharge model with discharge removed.

Final Prioritization with Springs, Public Water Supply Data, and Swallets
In order to elevate the importance of recharge for springs and water supply we decided that areas meeting criteria for those resources would receive a boost of one priority level. The criteria are discussed below.

Springs.- Specific language in the Florida Forever Act, as well as input from DEP and others indicates that recharge for springs should be given special consideration. We initially assumed that springshed delineations would be an appropriate data source for this. Florida Geological Survey (FGS) advised us, however, that the current springshed data was not suitable for this analysis for several reasons: 1) springsheds have not been delineated for all springs; 2) the existing springsheds are inconsistently delineated and derived from different sources using different methods in different time periods; and 3) springshed boundaries are dynamic and change based on factors such as climate and pumpage; therefore they should not be used for an 'in or out' measurement.

FGS recommended using the "Springs Protection Areas" dataset developed by FGS for the Department of Community Affairs in 2005 (Fig. 10-3). This data layer incorporates springsheds and other information to provide a resource for land-use decision makers. The Springs Protection Areas are described in an online document:
ftp://ftp.dep.state.fl.us/pub/geo/FGS_Publications/OFMS/springshed_dca_poster_OFMS95_12-17-04.pdf

We applied the Springs Protection Area as an overlay to the five-class model, discussed further below.

Water Supply.- Data that identify specific recharge areas important for public water supply may exist on a regional or local level but do not exist statewide. Ideally 'wellsheds', similar to springsheds, would be delineated to identify areas critical to recharging public supply wells. We consulted with staff of the water management districts and DEP's Source Water Assessment and Protection Program (SWAPP) to identify the best available data for this measure. The recommended alternative was to buffer public supply wells based on well type following the method of SWAPP: Community wells are given 1000 foot radius buffers; non-community and non-transient non-community wells are given 500 foot radius buffers (Fig. 10-3). Although this method applies a consistent set of buffers to public water supply wells statewide, it actually identifies setbacks to prevent direct well contamination rather than identifying important recharge areas for those wells. Nonetheless, the wellhead protection zones should be considered a high priority because of the critical importance of these wells to public water supply. We applied the Public Water Supply (PWS) Well Buffers as an overlay to the five-class model, discussed further below.

Swallets.- In April 2015 we consulted with FGS about potential updates to the Aquifer Recharge priorities. Staff at FGS recommended that swallets be considered in the prioritization. Swallets are stream-to-sink features where surface waters enter karst features and interact with Florida aquifers.

We first obtained a point dataset of FGS Swallets, 2007 edition from DEP (http://www.dep.state.fl.us/gis/datadir.htm accessed 6 May 2015). The current dataset is incomplete in that it represents primarily major swallets that reside within first magnitude springsheds. It is important to include these but with the intent to update the recharge layer as the swallet data are expanded. In order to identify priority drainage areas associated with swallets we created a dataset of flowlines into swallets where the reach extent was limited to 1 mi upstream of the swallet feature (most were much shorter than 1 mi). We then buffered the flowlines and swallet point features by a primary buffer of 1000 feet, following surface protection buffer, and a secondary 1 mile buffer as recommended by FGS. Finally, we retained only portions of buffers that were within the DEP watershed (WBID) associated with each swallet feature.

Overlay.- Any areas of the five-class model that overlapped either the Springs Protection Areas or buffered PWS Wells retained their original priority class. Areas outside of the Springs Protection Areas or buffered PWS Wells were assigned the next lower priority class, resulting in a final prioritized model with 6 classes.

Swallet priorities were incorporated into the final prioritized recharge dataset in 2015 based on overlap of prioritized recharge with swallet buffers as follows: If recharge area is within a swallet 1000-foot buffer, it is assigned Priority1; if recharge area is within a swallet 1-mile buffer, then the original priority class is boosted by 1 to the next highest priority class unless it was already Priority 1; any remaining non-recharge areas (i.e. discharge) within the swallet 1-mile buffer were assigned as Priority 6.

The final Recharge Prioritization map and acreage table are shown in Appendix J.

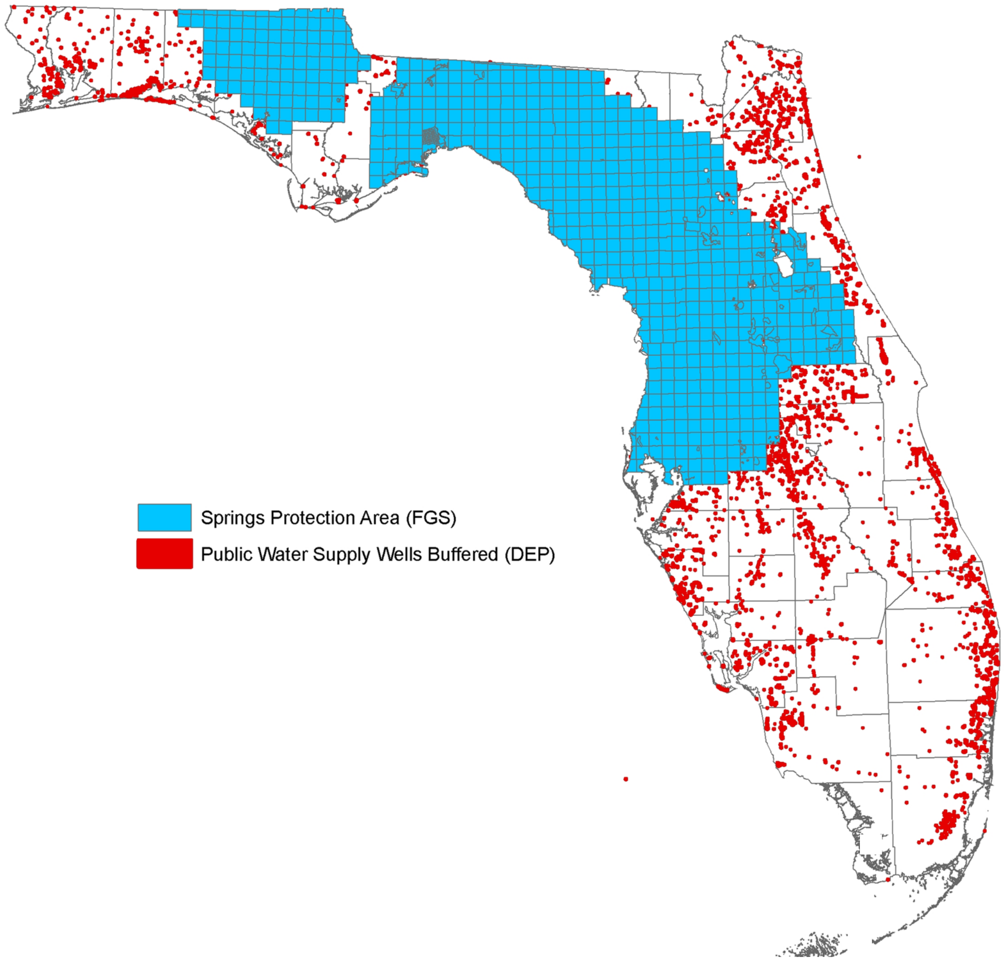


Figure 10-3. Springs Protection Areas and buffered PWS wells used in final prioritization of the Recharge Potential Model.

Section 11
Recreational Trails

Measure E2: The miles of trails that are available for public recreation, giving priority to those that provide significant connections including those that will assist in completing the Florida National Scenic Trail.
Source: University of Florida and Department of Environmental Protection/Office of Greenways and Trails.

Measure Definition

A Trail Opportunities Network was developed as part of the Florida Greenways and Trails System to identify a set of potential trail corridors that provide a connected set of linear recreational opportunities statewide (Florida Department of Environmental Protection and Florida Greenways Coordinating Council 1998, 2004, 2013, 2015, 2018, 2023). The Trails Network is designed to provide opportunities to move along trails systems from major city to major city and from those urban areas to sites of historic, cultural and ecological significance. Version 5.1 is based on the 2024-2028 Florida Greenways and Trails System Plan, published in 2023 (Florida Department of Environmental Protection 2023).

Methods

The trail opportunities are composed of sub-network corridors for hiking and multi-use. We met with the staff of DEP/Office of Greenways and Trails to develop a version of land trail priorities and opportunities suitable for project evaluation purposes. We combined the Land Trail Priorities and Opportunities polylines and assigned Priority 1 to all trail 'Priorities', and Priority 2 to trail 'Opportunities'. If trail types overlapped, the segment retained the priority of the highest ranked segment. We buffered trail lines by 0.25 miles to create half mile corridors. Both linear distance and corridor acreage were used to evaluate projects for recreational trails. A mileage table and a map of this data layer are shown in Appendix J.

Section 12
Significant Archaeological Sites

Measure F1: The increase in the number of and percentage of historic and archaeological properties, which are listed in the Florida Master Site File or National Register of Historic Places that are protected or preserved for public use.
Source: Department of State/Division of Historical Resources

Measure Definition

Florida Department of State/Division of Historical Resources (DHR) maintains the Florida Master Site File and administers the National Register of Historic Places in Florida. Because the Florida Forever program will focus primarily on acquiring lands rather than buildings, DHR recommended that only archaeological sites and not historic structures be considered acquisition criteria in this assessment. DHR provided geographic data for the Florida Master Site File, which contains more than 30,000 archaeological sites. Standing structures are still important variables in considering acquisitions through the Florida Forever program and any historic properties purchased would still count toward meeting the measure.

Methods

DHR provided digital boundaries of archaeological sites from the Florida Master Site File. These data were included in the *Assessment*. As of November 2018 there were 35,420 sites of which 15,044 were protected in July 2001 at the onset of the Florida Forever program.

Section 13
Sustainable Forest Management

Measure G1: The number of acres acquired that are available for sustainable forest management
Source: Water Management District land cover; historic vegetation map of Davis (1967)

Measure Definition

We consulted with forestry experts from the Florida Forest Service (FFS) and the University of Florida (UF) on how best to define, represent, and prioritize measure G1 with existing geographic data. The statutory definition of sustainable forest management includes the ". . . reforestation, managing, growing, nurturing, and harvesting of trees for useful products . . ." (see S253.036, F.S.). According to forestry experts, this definition refers primarily to pine trees, thus we developed a statewide data layer of natural and planted pinelands. Whether or not these forests are available upon acquisition for sustainable forest management will depend on the policies of the managing agency. For example, although FFS considers all its pinelands to be available for forest management, other agencies may manage these areas primarily for uses other than timber harvest.

Methods

We selected all upland coniferous forest and coniferous plantation polygons from the Cooperative Land Cover (CLC) v.3.7 to represent existing pinelands. This category was then subdivided into natural pinelands and plantation. For Ocala National Forest, which is dominated by planted sand pine but managed as scrub, we overrode the majority land cover classification of sand pine scrub so that these areas would be scored as pine plantation (Table 13.1). Open water and developed lands were removed from all categories.

Eight criteria factors were used to prioritize pinelands: Natural vs. Planted, Size, Distance to Market, Site Index, Years Since Last Burn, Burn Frequency, Access/Operability, and Landscape Integrity. Sources for these factors are listed below in Table 13-2.

For size, we defined patches as a group of continuous pineland classes from the CLC. We selected these pineland classes, combined pineland polygons into patches and calculated acres for each patch. For distance to market, we created a point mills file from location data on mills in Florida, Georgia, and Alabama and then ran the Distance Accumulation geoprocessing tool. Site index is defined as average total height that dominant and codominant pine trees obtain. We used the Soil Survey Geographic Database (SSURGO) to assign the maximum weighted site index value among all *Pinus* species to each SSURGO map unit. For years since last burn, we used data from the 2022 SE Fire Map based on the number of years since the last burn in an area. For burn frequency, we used data from the SE Fire Map based on the number of burns documented between 2000-2022 in an area. For access/operability, we assigned SSURGO "Harvest Equipment Operability" class to each SSURGO map unit based on aggregated dominant condition ("well-suited", "moderately suited", "poorly suited") for that map unit. For landscape integrity, we used the University of Florida- Center for Landscape Conservation Planning landscape integrity layer developed for the Critical Lands and Waters Identification Project (CLIP v4; Oetting et al. 2016). For all factors described above, we scored classes based on categories in Table 13-3. We created a weighted overlay with the aforementioned factors for the final layer.

Table 13-1. Cooperative Land Cover categories selected for existing and potential pinelands.

Natural Pine		**Planted or Disturbed Pine**	
CLC Code	Description	CLC Code	Description
1200	High Pine and Scrub	1213	Sand Pine Scrub (Ocala NF only)
1230	Upland Coniferous	182112	Urban Open Pine
1231	Upland Pine	18312	Rural Open Pine
1240	Sandhill	18333	Tree Plantations
1300	Pine Flatwoods and Dry Prairie (excl dry prairie)	183332	Coniferous Plantation
1310	Dry Flatwoods	18312	Rural Open Pine
1311	Mesic Flatwoods	2450	Wet Coniferous Plantation
1312	Scrubby Flatwoods		
2220	Other Coniferous Wetlands		
2221	Wet Flatwoods		
22211	Hydric Pine Flatwoods		
22212	Hydric Pine Savanna		
2222	Pond Pine		

Table 13-2. Input factors, data sources, and weights used in the weighted sum prioritization of the sustainable forestry layer.

Factor	**Source**	**Weight**
Type (Natural vs. Planted)	CLC	15%
Size	CLC	25%
Miles to Mills	FFS Mill Data	15%
Site Index	SSURGO	10%
Fire – Years Since Last Burn	SE Fire Map	10%
Fire – Burn Frequency	SE Fire Map	5%
Access/Operability	SSURGO	10%
Landscape Integrity	UF- CLCP (for CLIP & FEGN)	10%

Table 13-3. Scoring system used for sustainable forestry input factors.

Factor	Classes	Score
Type	Natural	10
	Plantation	8
Size	>7,500 acres	10
	2,500-7,500 acres	5
	< 2,500 acres	1
	n/a	n/a
Miles to Mills	<25 miles	10
	25-50 miles	5
	>50 miles	1
Site Index	85-100	10
	75-85	8
	65-75	6
	25-65	4
	0-25	1
Fire – Years Since Last Burn	0-4	10
	5-7	6
	8+	1
Fire – Burn Frequency (2000-2022)	7+ burns	10
	4-6	8
	2-3	6
	1	3
	0	1
Access/Operability	Well suited	10
	Moderately suited	6
	Poorly suited	1
	Not rated	0
Landscape Integrity	9-10	10
	7-8	8
	5-6	5
	3-4	2
	1-2	1

The forestry data were scored based on the 8 criteria above, resulting in a grid with grid cell scores ranging from 185 to 1000. Table 13-4 shows the score range for each priority class. In 2025 developed lands were removed based on the Cooperative Land Cover version 4.0 update. An acreage table and map for this data layer are shown in Appendix J.

Table 13-4. Score ranges for the priority classes of the sustainable forestry data layer.

G1: Sustainable Forestry	Scores
Priority 1	775-1000
Priority 2	675-775
Priority 3	600-675
Priority 4	500-600
Priority 5	185-500

Section 14
Forestland to Maintain Recharge Function

Measure G2: The number of acres of forestland acquired that will serve to maintain natural groundwater recharge functions.
Source: Cooperative Land Cover; Florida Geological Survey; Water Management Districts; other water resource experts

Measure Definition
In consultation with forestry experts from the Division of Agriculture and Consumer Services/Florida Forest Service and the Florida Forestry Association, we defined this measure as the acres of existing forestland that are also areas of high recharge.

Methods
We selected existing pineland data developed for Measure G1 that overlapped with Priorities 1 – 3 of the Aquifer Recharge data layer developed for Measure D3.

REFERENCES

Advanced GeoSpatial Inc. 2009. FNAI – Recharge Component. A report prepared for Florida Natural Areas Inventory, Tallahassee, Florida.

Arthur, J. D., A. E. Baker, J. R. Cichon, A. R. Wood, A. Rubin. 2005. Florida Aquifer Vulnerability Assessment (FAVA): Contamination potential of Florida's principal aquifer systems. Florida Geological Survey, Florida Department of Environmental Protection, Tallahassee, Florida.

Aucott, W. 1988. Water Resources Investigation Report 88-4057. USGS.

Barrett, M.A. 2013. Fish species distribution modeling in Florida freshwater streams: A focus on rare and imperiled species. Final Report. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL. 64 pp.

Bridges, E. L. 2006. Landscape ecology of Florida dry prairie in the Kissimmee River region. Pages 14-44 in R. F. Noss, editor. Land of fire and water. Proceedings of the Florida Dry Prairie Conference. Painter, DeLeon Springs, Florida.

Brock, O. G. 1997. Florida Preservation 2000 Program Remaining Needs and Priorities: Addendum Report. Land Acquisition and Management Advisory Council.

Carr, M. H., P. D. Zwick, T. S. Hoctor and M. A. Benedict. 1999. Final Report, Phase II, Florida Statewide Greenways Planning Project. Department of Landscape Architecture, University of Florida, Gainesville, Florida.

Cox, J., R. Kautz, M. MacLaughlin, and T. Gilbert. 1994. Closing the gaps in Florida's wildlife habitat conservation system. Florida Game and Fresh Water Fish Commission, Office of Environmental Services, Tallahassee, Florida.

Davis, J. H., Jr. 1967. General map of the natural vegetation of Florida. Circ. S-178. Institute of Food and Agricultural Science, Agricultural Experiment Station, University of Florida, Gainesville, Florida.

Delany, M. F., M. B. Shumar, M. E. McDermott, P. S. Kubilis, J. L. Hatchitt and R. G. Rivero. 2007. Florida grasshopper sparrow distribution, abundance, and habitat availability. Southeastern Naturalist 6:15-26.

Eaton, M. J., P. T. Hughes, J. D. Nichols, A. Morkill, and C. Anderson. 2011. Spatial patch occupancy patterns of Lower Keys marsh rabbit. Journal of Wildlife Management 75:1186-1193.

Endries, M., B. Stys, G. Mohr, G. Kratimenos, S. Langley, K. Root, and R. Kautz. 2009. Wildlife Habitat Conservation Needs in Florida: Updated Recommendations for Strategic Habitat Conservation Areas. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

Faulhaber, C. A., N. D. Perry, N. J. Silvy, R. R. Lopez, P. A. Frank, P. T. Hughes, and M. J. Peterson. 2007. Updated distribution of the Lower Keys marsh rabbit. Journal of Wildlife Management 71:208–212.

Fitzpatrick, J. W., B. Pranty, and B. Stith. 1994. Florida scrub-jay statewide map, 1992 – 1993. U. S. Fish and Wildlife Service Report, Cooperative Agreement no. 14-16-0004-91-950.
Florida Department of Environmental Protection. 1997. Final report: ecological integrity grant. Florida Department of Environmental Protection, Tallahassee, Florida.

Florida Department of Environmental Protection and Florida Greenways Coordinating Council. 1998. Connecting Florida's Communities with Greenways and Trails: The Five-Year Implementation Plan for the Florida Greenways and Trails System. Florida Department of Environmental Protection, Office of Greenways and Trails. Tallahassee, Florida.

Florida Department of Environmental Protection and Florida Greenways Coordinating Council. 2004. 2004 Update and Prioritization of Florida's Trail Network. Florida Department of Environmental Protection, Office of Greenways and Trails. Tallahassee, Florida.

Florida Department of Environmental Protection. 2013. Florida Greenways & Trails System Plan 2013 - 2017. Florida Department of Environmental Protection. Tallahassee, Florida.

Florida Department of Environmental Protection. 2023. Florida Greenways & Trails System 2024-2028 Plan and Maps Update. Florida Department of Environmental Protection. Tallahassee, Florida. Online: https://floridadep.gov/parks/ogt/content/florida-greenways-and-trails-system-plan-and-maps. Last accessed 10/29/23.

Florida Fish and Wildlife Conservation Commission, Florida Marine Research Institute. 2000. Atlas of Marine Resources, version 1.3b.

Florida Geoplan Center. 1998. Phase II final report for the Florida Statewide Greenways System Planning Project. University of Florida, Gainesville, Florida.

Florida Natural Areas Inventory. 1990. Guide to the natural communities of Florida. Florida Natural Areas Inventory. Tallahassee, Florida.

Florida Natural Areas Inventory. 2000. Florida Forever Conservation Needs Assessment: Summary report to the Florida Forever Advisory Council. Florida Natural Areas Inventory and Florida Department of Environmental Protection, Tallahassee, Florida.

Florida Natural Areas Inventory. 2010a. Development of a Cooperative Land Cover Map: Final Report. Florida Natural Areas Inventory. Tallahassee, Florida.

Florida Natural Areas Inventory. 2010b. Guide to the natural communities of Florida – 2010 Edition. Florida Natural Areas Inventory. Tallahassee, Florida.

Florida Natural Areas Inventory. 2021a. Florida Ecological Greenways Network: Strategic Priorities for Land Acquisition. Final Report to Florida Department of Environmental Protection, Division of State Lands. Tallahassee, FL, June 2021.

Florida Natural Areas Inventory. 2024. Florida Forever Project Ranking Support Analyses Documentation. Online: https://www.fnai.org/PDFs/FF_RSA_Report_Nov2024.pdf. Last accessed 12/15/2024.

Florida Natural Areas Inventory and Florida Forest Service. 2014. Longleaf Pine Ecosystem Geodatabase v.1 Final Report. Online: http://fnai.org/LongleafGDB.cfm. Last accessed 6/11/2015.

Florida Panther Subteam of the Multi-Species/Ecosystem Recovery Implementation Team for South Florida. 2002. Landscape Conservation Strategy for the Florida Panther in South Florida. U.S. Fish and Wildlife Service. Vero Beach, Florida.

Franz, R., and L. Franz. 1979. Distribution, habitat preference, and status of populations of the Black Creek crayfish, *Procambarus (Ortmannicus) pictus* (Decapoda: Cambaridae). Florida Scientist 42(1):13-17.

Hoctor, T. S., M. H. Carr, and P. D. Zwick. 2000. Identifying a linked reserve system using a regional landscape approach: the Florida ecological network. Conservation Biology 14:984-1000.

Hoctor, T. 2021. Florida Ecological Greenways Network Update Project Final Report. Final report to the Florida Department of Environmental Protection, Division of State Lands, Tallahassee, FL, May 31, 2021.

Hoehn, T. S. 1998. Rare and imperiled fish species of Florida: a watershed perspective. Office of Environmental Services, Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida.

Johnson, A. F., and M. G. Barbour. 1990. Dunes and maritime forests. Pp. 429-480 *in* R. L. Myers and J. J. Ewel (eds.), Ecosytems of Florida. The University of Central Florida Press, Gainesville, Florida.

Johnson, A. F. and J. W. Muller. 1993. An assessment of Florida's remaining coastal upland natural communities: final summary report. Florida Natural Areas Inventory.

Kautz, R. S. 2000. Ranking of Strategic Habitat Conservation Areas and lands needed for Florida black bear and Florida panther. Unpublished report of Florida Fish and Wildlife Conservation Commission, Office of Environmental Services, Tallahassee, Florida.

Kautz, R. S. 1993. Trends in Florida wildlife habitat 1936- 1987. Florida Scient. 56(1): 7-24.

Kautz, R. S., D. T. Gilbert, and G. M. Mauldin. 1993. Vegetative cover in Florida based on 1985-1989 Landsat Thematic Mapper imagery. Florida Scientist 56:135-154.

Moler, P. E. 1992. Eastern indigo snake, *Drymarchon corais couperi* (Holbrook). Pp. 181-186 *in* P. E. Moler (ed.), Rare and Endangered Biota of Florida, vol. 3: Amphibians and Reptiles. Univ. Press of Florida, Gainesville, Florida.

Morrison, J. L. 1996. Crested caracara (*Caracara plancus*). Pp. 1-28 *in* A. Poole and F. Gill (eds.), Birds of North America, No. 249. National Academy of Sciences, Philadelphia PA and The American Ornithologists' Union, Washington, D.C.

NeSmith, C. C. and S. S. Jue. 2003. Resurvey of the distribution and status of MacGillivray's Seaside Sparrow and Worthington's Marsh Wren in Florida. Final Report to the Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida.

Oetting, J., T. Hoctor, and M. Volk. 2016. Critical Lands and Waters Identification Project (CLIP): Version 4.0, Technical Report - September 2016. Tallahassee, Florida.

Ogden, J. C. 1990. Habitat management guidelines for the wood stork in the southeast region. U. S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia.

Pimm, S. L., J. L. Lockwood, C. N. Jenkins, J. L. Curnutt, M. P. Nott, R. D. Powell, and O. L. Bass Jr. 2002. Sparrow in the Grass: A report on the first ten years of research on the Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis).

Platt, W. J., and M. W. Schwartz. 1990. Temperate hardwood forests. Pp. 194-229 *in* R. L. Myers and J. J. Ewel (eds.), Ecosytems of Florida. The University of Central Florida Press, Gainesville, Florida.

Stith. B. 1999. Metapopulation viability analysis of the Florida scrub-jay (*Aphelocoma coerulescens*): a statewide assessment. U. S. Fish and Wildlife Service Report, Contract # 1448-40181-98-M234.

Stys, B., R. Kautz, D. Reed, M. Kertis, R. Kawula, C. Keller and A. Davis. 2003. Florida Vegetation and Land Cover Data Derived from 2003 Landsat ETM+ Imagery. Florida Fish and Wildlife Commission, Tallahassee, FL.

Sutter, L. A., J. B. Stanfill, D. M. Haupt, C. J. Bruce, and J.E. Wuenscher. 1999. NC-CREWS: North Carolina coastal regional evaluation of wetland significance. North Carolina Division of Coastal Management, Department of Environment and Natural Resources, Raleigh, North Carolina.

Thatcher, C., F. van Manen and J. Clark. 2006. An assessment of habitat north of the Caloosahatchee River for Florida panthers. Final Report to U. S. Fish and Wildlife Service.

Tsai, J., P. Frederick and K. Meyer. 2011. Finding wood stork habitat and conserving the right features. Final Report for: Felburn Foundation, Georgia Department of Natural Resources, National Fish and Wildlife Foundation/Southern Company, South Florida Water Management District. University of Florida, Gainesville.

U. S. Fish and Wildlife Service. 1981. Florida Everglades Kite critical habitat *in* Region 4 Endangered Species Notebook. U. S. Fish and Wildlife Service, Atlanta, Georgia.

APPENDIX A

Florida Forever Program Goals and Measures

Sections of Florida Administrative Code Chapter 18-24, Florida Forever Land Acquisition and Mangement, that contains measures or criteria addressed by the Florida Forever Conservation Needs Assessment**:**

18-24.0022 Florida Forever Goals and Numeric Performance Measures.

(1) The Florida Forever goals and measures described in this rule apply to all programs that receive Florida Forever Trust Funds pursuant to Section 259.105(3), F.S. Some goals and measures are specific to acquiring land, while others are primarily measures for capital improvement expenditures. Some measures are not directly related to Florida Forever program activities per se, but are general ecosystem function measures that may have an indirect connection or a post-acquisition land management or land use component. Some measures are specific to one or more of the programs funded under Florida Forever pursuant to Section 259.105(3), F.S, while the majority of the goals and measures overlaps with several programs.

(2) The council shall employ the following Florida Forever goals and measures when evaluating, selecting and ranking acquisition projects. Numeric values for these measures shall be supplied to the Council pursuant to paragraph 18-24.006(3)(c), F.A.C.:

(a) Enhance the coordination and completion of land acquisition projects, as measured by:

1. The number of acres proposed to be acquired that contribute to the enhancement of essential natural resources (such as retention of biodiversity and water quantity and quality), ecosystem service parcels (such as those that assist in carbon sequestration, flood control and storm surge protection), and connecting linkage corridors, as identified and developed by the best available scientific analysis, and measured under goals paragraphs (2)(b), (c), (d), and (g) of this rule.

2. The number of acres proposed to be protected through the use of alternatives to fee-simple acquisition.

3. The number of Florida Forever acquisition funding partners and partners with other funding sources, including the percent of funding to be derived from partnerships, and the estimated amount of funds to be made available by the funding partners.

4. For ranking purposes only, the remaining acres and percent completion of each project on the Florida Forever list.

(b) Increase the protection of Florida's biodiversity at the species, natural community, and landscape levels, as measured by:

1. The number of acres proposed to be acquired of significant strategic habitat conservation areas, as identified in the Florida Forever Conservation Needs Assessment.

2. The number of acres proposed to be acquired of highest priority conservation areas for Florida's rarest species, as identified in the Florida Forever Conservation Needs Assessment.

3. The number of acres proposed to be acquired of significant landscapes, landscape linkages, and conservation corridors, giving priority to completing linkages, as identified in the Florida Forever Conservation Needs Assessment.

4. The number of acres proposed to be acquired of underrepresented native ecosystems, as identified in the Florida Forever Conservation Needs Assessment.

5. The number of acres proposed to be acquired that would establish or enhance a landscape-sized protection area of at least 50,000 acres that exhibits a mosaic of predominantly intact or restorable natural communities, as identified in the Florida Forever Conservation Needs Assessment.

6. The number of imperiled species known or reported to occur on the acquisition project.

(c) Protect, restore, and maintain the quality and natural functions of land, water, and wetland systems of the state, as measured by:

1. The number of acres proposed to be acquired that enhance the management feasibility of existing conservation lands, as documented by the affected agency(ies) that manage or own the existing conservation lands.

2. The number of acres proposed to be acquired for restoration, enhancement, and management as identified in plans prepared pursuant to Section 373.199, F.S., the management prospectus for an acquisition project prepared pursuant to Section 259.032(9)(d), F.S., or the Florida Ecological Restoration Inventory, which is maintained by the Department of Environmental Protection's Division of Water Resource Management and available at www.dep.state.fl.us/water/wetlands/feri or by writing Florida Wetland Restoration Information Center, 2600 Blair Stone Road, M.S. 3500, Tallahassee, Florida 32399, or by calling (850) 245-8336.

3. The number of acres proposed to be acquired that protect natural floodplain functions, as identified in the Florida Forever Conservation Needs Assessment.

4. The number of acres proposed to be acquired that protect surface waters of the state in designated watersheds, as identified in the Florida Forever Conservation Needs Assessment.

5. The number of acres proposed to be acquired to minimize damage from flooding, as identified by the Department of Environmental Protection in coordination with the water management districts.

6. The number of acres proposed to be acquired that protect fragile coastal resources, as identified in the Florida Forever Conservation Needs Assessment. These include those acres that help species and natural communities adapt to climate change.

7. The number of acres of functional wetland systems proposed to be protected, as identified in the Florida Forever Conservation Needs Assessment.

(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, as measured by:

1. The number of acres proposed to be 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, as identified by the water management districts in plans prepared pursuant to Section 373.199, F.S.

2. The number of acres proposed to be acquired for a water resource development project, as identified in plans prepared pursuant to Section 373.199, F.S.

3. The number of acres proposed to be acquired of groundwater recharge areas critical to springs, sinks, aquifers, other natural systems, or water supply, as identified in the Florida Forever Conservation Needs Assessment.

(e) Increase natural resource-based public recreational and educational opportunities, as measured by:

1. The number of acres proposed to be acquired that are proposed to be available for potential natural resource-based public recreation or education, as identified by the Department of Environmental Protection in coordination with other agencies.

2. The miles of trails that are proposed to be made available for public recreation, giving priority to those that provide significant connections including those that will assist in completing the Florida National Scenic Trail, as identified in the Florida Forever Conservation Needs Assessment.

3. For ranking purposes only, the population served within 100 miles of the acquisition project.

(f) Preserve significant archaeological or historic sites, as measured by:

1. The number and relative significance of archaeological sites identified on the acquisition proposal, as reported by the Department of State's Division of Historical Resources in the Florida Master Site File.

2. The number and relative significance of historic sites identified on the acquisition proposal, as reported by the Department of State's Division of Historical Resources in the Florida Master Site File.

(g) Increase the amount of agricultural and forest land available for sustainable management of natural and agricultural resources, as measured by:

1. The number of acres proposed to be acquired that are potentially available for sustainable forest management and could provide economic return utilizing multiple-use management, as identified in the Florida Forever Conservation Needs Assessment.
2. The number of acres of forestland proposed to be acquired that will serve to maintain natural groundwater recharge functions, as identified by overlaying data from measures subparagraphs (2)(d)3. and (g)1. above.
3. For ranking purposes only, the number of acres of improved agricultural lands proposed to be protected, as verified by the Department of Agriculture and Consumer Services in coordination with the landowner.
4. For ranking purposes only, the number of acres of unimproved agricultural lands proposed to be protected, as verified by the Department of Agriculture and Consumer Services in coordination with the landowner.
5. The number of development units proposed to be acquired, as verified by the landowner through the approved local government comprehensive plan.

(h) Increase the amount of open space available in urban areas, as measured by:

1. The number of acres proposed to be purchased of open space within urban service areas.
2. The number of linear feet proposed to be acquired to protect working waterfronts, as defined in Sections 380.503(18)(a) and (b), F.S.

18-24.006 Council Evaluation and Ranking.

(1) Following full review, the Council shall develop a list of projects for consideration by the Board in accordance with the provisions of Sections 259.105(3)(b) and 259.105(4), (8), (9), (10), (13), (14), (15), and (16), F.S.

(2) Following the full review of projects pursuant to Rule 18-24.005, F.A.C., the Council shall select projects for inclusion on the list. An affirmative vote of at least five council members shall be required to place a project on the list to be presented to the Board. The Council may provide recommendations to the Division of State Lands on which category or categories to place each land acquisition project, or portions thereof.

(3) The Division of State Lands shall categorize the list pursuant to Section 259.105(17), F.S., in preparation for work plan development. The Council shall evaluate the entire list of approved projects and rank them individually in numerical priority order within each category for consideration by the Board as follows:

(a) When assigning priority rankings to projects the Council shall give increased priority to those projects that meet the provisions of the Florida Forever criteria described in Sections 259.105(9)(j) and (l), F.S., as further described in subsections 18-24.0021(10) and (12), F.A.C., and in Section 259.105(10), F.S., as described in paragraph (3)(b) of this rule.

(b) The council shall also give increased priority to those projects where the state's land conservation plans overlap with the military's need to protect lands, water, and habitat to ensure the sustainability of military missions including:

1. Protecting habitat on nonmilitary land for any species found on military land that is designated as threatened or endangered, or is a candidate for such designation under the Endangered Species Act or any Florida statute, as determined by Florida Natural Areas Inventory in coordination with Florida Fish and Wildlife Conservation Commission or Department of Agriculture and Consumer Services;
2. Protecting areas underlying low-level military air corridors or operating areas, as described in official military documents presented by the affected military installations; and
3. Protecting areas identified as clear zones, accident potential zones, and air installation compatible use buffer zones delineated by our military partners, and for which federal or other funding is available to assist with the project pursuant to subsection 18-24.021(11), F.A.C.

(c) Priority Rankings for each project shall be determined by the Council based on the results of the full review detailed in Rule 18-24.005, F.A.C., a comparative analysis of each project's ability to meet the Florida Forever goals and measures and the Florida Forever criteria as identified in Rules 18-24.0021 and 18-24.0022, F.A.C., and additional information as identified in paragraphs (a), (b), and (d). As an initial information source for conducting this comparative analysis, the Department of Environmental Protection shall provide the council a comparative analysis and evaluation of each Florida Forever Project, which shall include rankings for each geographic-based resource type outlined in the subsection 18-24.0022(2), F.A.C., as well as rankings based on an efficient resource analysis using a computer modeling approach to conservation reserve design that involves iterative site selection, which describes those projects offering the greatest return in resource protection given the estimated acreage likely to be acquired by the Florida Forever Program. The Department also shall provide the council with a matrix of the criteria met by each project including the criteria described in paragraph (b), as well as information on the current status of negotiations to acquire property on the Division of State Lands work plan as described in subsection (6). The Council shall also consider any other contributing technical analysis of Florida Forever projects submitted by Council members, other organizations or persons in conducting its review of projects for priority ranking.

(d) The Council shall also consider the following when developing its priority list:

1. Projects that are considered priority resources, as described in subsection 18-24.0022(6), F.A.C., for multiple Florida Forever goals shall be given greater consideration than those that are considered priority resources for fewer or only one Florida Forever goal. Projects that meet multiple Florida Forever criteria, as described in Rule 18-24.0021, F.A.C., shall be given greater consideration than those that meet fewer or only one Florida Forever criterion.

2. Projects with the greatest percentage of acreage acquired, as measured by subparagraph 18-24.0022(2)(a)4., F.A.C., shall be given greater consideration than those with a lesser percentage of acreage acquired if the remaining lands to be acquired contribute significantly to the Florida Forever goals and measures.

3. Projects that close a critical gap in a recreational or ecological greenway, or landscape linkage, shall be given greater consideration than those that do not.

4. Projects that provide the greatest opportunities for resource-based recreation as identified in the State Comprehensive Outdoor Recreation Plan, which is prepared by the Department of Environmental Protection's Division of Recreation and Parks for the State of Florida pursuant to Section 375.021, F.S., shall be given greater consideration than those that provide fewer opportunities for resource-based recreation.

5. Lands that help to address the challenges of global climate change by providing opportunities to sequester carbon, provide habitat, protect coastal lands or barrier islands, and otherwise mitigate and help adapt to the effects of sea-level rise, shall be given greater consideration than those that do not.

6. Many factors, other than technical resource data, are important in the project evaluation, selection, and ranking process. For example threat of development or loss of resource values are difficult factors with no clear methodology for comparing projects numerically at this time. Similarly, public support, owner's willingness to sell at a reasonable price, management needs and other important factors takes on many forms that are not readily quantifiable. Additionally, other important information that may not be explicitly captured by the current Florida Forever goals and measures may be presented to the Council in the Project Evaluation Report, prepared pursuant to Rule 18-24.005, F.A.C., or during public hearings held pursuant to paragraphs 18-24.004(1)(c) and 18-24.005(3)(c), F.A.C. The Council shall consider these and other factors identified during the project evaluation and public hearings of the council as additional information when deciding where to rank a project on the priority list.

APPENDIX B

Chronology of Data and Analysis Revisions

The Florida Natural Areas Inventory has actively maintained and updated the Florida Forever Conservation Needs Assessment (FFCNA) since the beginning of the Florida Forever program in 2000. In many cases data layers have been updated as new and improved models and analyses have been completed. Data are also updated based on updated and improved land cover data that provide more accurate classifications as well as updates to land use changes. In order to keep the main body of the Technical Report concise and focused on the current version of FFCNA, we are using this appendix to maintain an archive of updates and revisions from previous versions. Changes are listed in chronological order organized by FFCNA version numbers. Increasingly we are attempting to provide a rationale for the changes to help the reader understand why revisions were considered necessary or beneficial.

<u>Revisions from Version 1.3 to Version 2.0 (2005)</u>
The Conservation Needs Assessment data layers are regularly revised as better information becomes available. For example, since Version 1.3 new FWC Landsat Land Cover data (2003) has been developed; also, new data are continually being added to the FNAI rare species database. Version 2.0 constitutes a major revision to several data layers: 1) FNAI Rare Species Habitat Conservation Priorities was updated based on substantial new species location information, updates to the Conservation Lands database, and a revised methodology for determining a species conservation need; 2) Under-represented Natural Communities were updated based on the 2003 FWC Landsat Land Cover, and new survey information for upland glades, pine rocklands and scrub; 3) Natural Floodplain data were revised based on 2003 FWC Landsat Land Cover and new methodology as recommended by water resource experts; 4) Surface Water Protection was revised based on input from water resource experts and using a new methodology that better reflects the protection priorities for different types of surface waters; and 5) Recreational Trails was updated by the Office of Greenways and Trails and University of Florida in 2004.

<u>Revisions from Version 2.0 to Version 2.1 (2006)</u>
The Fragile Coastal Resources data layer was updated with new information from a status survey of coastal uplands by Johnson and Gulledge (2005). The Aquifer Recharge data was revised based on the Florida Aquifer and Vulnerability Analysis and other data from Florida Geological Survey. We anticipate further revision of this data in 2006. We also anticipate correcting all data layers for lands that have been developed since the creation of the underlying land cover data.

Revisions from Version 2.1 to Version 2.2 (2007)
The FNAI Rare Species Habitat Conservation Priorities were revised to reflect updates to the FNAI element occurrence database, including new species location information for G1 species and species rank changes; habitat maps for all species were revised to remove lands that had been developed as of 2004.

The Under-represented Natural Community layer was updated based on revisions to several natural communities (pine rocklands, sandhill, and pine flatwoods) and the inclusion of two new communities (dry prairie and sandhill upland lakes). We added sandhill upland lake and dry prairie as under-represented types based on recommendations from resource experts. Although we do not have a historical map of sandhill upland lake, we can assume that this community is under-represented because the associated sandhill community is under-represented. Previous statewide land cover overestimated the amount of remaining dry prairie so that it exceeded the 15% threshold; recent improvements in mapping dry prairie, however, confirm that this imperiled community is under-represented on conservation lands. Dry prairie is critical habitat for the endemic Florida grasshopper sparrow.

The Sustainable Forestry and Forestland to Maintain Recharge Function layers were updated based on recent WMD land cover data. We also corrected all data layers for lands that have been developed as of 2004.

Revisions from Version 2.2 to Version 3 (2008)
A new version of Strategic Habitat Conservation Areas was published by FWC in 2007 with significant changes in species models and population viability analysis methods over the previous version published in 1994 and later supplement in 2000. The prioritization method for SHCAs is different as well. The Under-represented Natural Community layer was updated based on revisions to several natural communities (scrub, sandhill, and pine flatwoods).

Surface Water Protection: There are three major changes from the previous surface water model (version 2.2). First, we revised the coastal submodel to include updated basin data for the South Florida Water Management District, and an updated streams coverage developed by FWC. Second, we added a new submodel, Water Supply, which prioritizes areas important for potable water sources. Third we revised the "Other OFW" submodel priorities to be consistent with the system used for the coastal and water supply submodels. Based on those changes, the final model integration has also changed, and the final model now has seven priority classes rather than the previous six.

Revisions from Version 3.0 to Version 3.1 (2009)
The Under-represented Natural Community layer was updated based on ongoing revisions to several natural communities (scrub, sandhill, dry prairie and pine flatwoods). The Ecological Greenways layer was updated by Tom Hoctor at the University of Florida to include two additional priority classes—Critical Linkages 1 and Critical Linkages 2. New versions of the Strategic Habitat Conservation Area and Recharge layers are expected in summer 2009.

Revisions from Version 3.1 to Version 3.2 (2009)
The Strategic Habitat Conservation Areas dataset was revised and finalized in June 2009 by FWC. The revision includes additional species and revisions to the prioritization since 2007. A Prioritized Recharge dataset, developed by Advanced Geospatial, Inc. and Florida Natural Areas Inventory, was completed in June 2009.

Revisions from Version 3.2 to Version 3.3 (2010)
The Strategic Habitat Conservation Areas (SHCA) dataset was modified for the Needs Assessment to include ‘strategic’ habitat on conservation lands; the SHCA were originally identified only on private lands. The Functional Wetlands data were revised to include all wetlands identified by the Land Use Land Cover data developed by DEP and the water management districts; previous versions of wetlands were based on the National Wetlands Inventory. The prioritization of wetlands was also revised. Minor revisions were made to the Under-represented Natural Communities and Rare Species Habitat Conservation Priorities.

Revisions from Version 3.3 to Version 3.33 (2011)
The Under-represented Natural Communities, Functional Wetlands, and Sustainable Forestry datasets were modified for the FFCNA based on the Cooperative Land Cover Map v1.1 (FNAI 2010a). The Large Landscapes data layer was replaced by a new method for evaluating projects based on their contribution to large landscapes. New data were developed to evaluate lands that help address the challenges of global Climate Change, a new Florida Forever ranking criterion added by amendment of Administrative Rule 18-24 in 2010.

Revisions from Version 3.33 to Version 4.0 (2013)
Version 4 contains significant changes to several data layers including Rare Species Habitat Conservation Priorities, Natural Communities, Ecological Greenways, Natural Floodplain, and Recreational Trails. These updates include real ecological condition changes as determined from surveys and recent aerial photography, changes in imperilment status of species and communities, new availability of high quality data such as digital elevation and 100-year floodplain, and reassessment of statewide priorities for recreational trails and greenways. Changes also reflect recommendations of the Florida Forever Expert Advisory Group and Critical Lands and Waters Identification Project Technical Advisory Group.

Upland Pine was added to the Natural Community layer based on recommendations from the Expert Advisory Group.

Rare Species Habitat Conservation Priorities (FNAIHAB): We changed species’ selection criteria to broaden the number of species included and place more emphasis on the rarest (G1-G2) species. Total number of species included increased from 247 to 281. The new criteria have shifted the focus more toward the rarest species as shown in the following table:

FNAIHAB Version 4.0 Species Composition Compared to Version 3.3

	Version 3.3		Version 4.0	
	Number	Percent	Number	Percent
Total Species	247	100%	281	100%
Plants	142	57%	151	54%
Invertebrates	41	17%	66	23%
Vertebrates	64	26%	64	23%
G1	114	46%	155	55%
G2	89	36%	92	33%
G3	39	16%	32	11%
G4	3	1.2%	1	0.4%
G5	2	0.8%	1	0.4%

The standard species habitat method was revised in an attempt to be more objective, transparent, and consistent across species. A maximum buffer system was added in order to standardize the maximum extent of a habitat polygon from the original occurrence location.

The method used to map aquatic species also changed significantly from FNAIHAB Version 3.3. The buffer for natural uplands changed from 100 meters to 1,000 feet, and a new buffer of 1 mile was used to limit the extent of wetlands adjacent to the water body or buffered uplands.

We significantly revised the methods used to map certain wide-ranging generalist species, including indigo snake and black bear.

We changed the method for assigning Suitability scores to habitat patches. Previously Suitability has been scored subjectively by expert judgment. FNAI scientists (and occasionally outside experts) reviewed each habitat patch and assigned a score based on factors including land cover type, size, shape, fragmentation, landscape context, etc. This method worked well, but was time-consuming and lacked transparency and consistency. Our goal for the current FNAIHAB revision was to develop an objective, quantitative, transparent method that could be scored efficiently using automated GIS tools.

The conservation needs weighting method has also been revised for FNAIHAB version 4.0. While we are still weighting species on similar criteria (Grank, percent protected, etc.), we have eliminated the Conservation Needs Weight groupings used in previous versions. Each species now receives an individual score that is used in weighting each species' habitat model for the overlay model. The previous groupings were intended to "round" species' conservation needs weights into five groups of species with similar conservation need. In practice they complicated the scoring and model-building process and added a layer of obfuscation to the modeling framework, and we ultimately decided they were not necessary.

Revisions from Version 4.0 to Version 4.01 (2014)

Version 4.01 includes revisions to Natural Communities, Sustainable Forestry, and Recreational Trails. Natural Communities were updated within the boundaries of new Florida Forever proposals considered by ARC in 2014 based on field visits by FNAI staff. Sustainable Forestry was updated based on the latest land cover (CLC v2.3) and information on longleaf pine sites from the Longleaf Pine Ecosystem Geodatabase v.2. The Recreational Trails data layer now includes the Florida Greenways and Trails System "Priority Paddling Trails", in addition to Land Trail Priorities and Opportunities.

Revisions from Version 4.01 to Version 4.1 (2015)

Version 4.1 includes revisions to Natural Communities, Fragile Coastal Resources, Significant Surface Waters, Functional Wetlands, Natural Floodplain, Sustainable Forestry, and Aquifer Recharge. Natural Communities, Coastal Resources, Wetlands, and Forestry were updated based on substantial updates to statewide land cover with the September 2015 publication of the Cooperative Land Cover Map v3.1. The latest land cover was also used to revise supporting data such as the Land Use Intensity Index which is used in the prioritization of Functional Wetlands and Natural Floodplain.

Surface Waters underwent significant revision based on recommendations from the Critical Lands and Waters Identification Project (CLIP) Technical Advisory Group to eliminate intensive canal networks in south Florida from consideration. The new method eliminated canals and other artificial waterways from consideration within an update zone in south Florida. Only natural stream systems were buffered by 1,000 feet and 1 mile. Natural waterbody polygons intersecting these stream systems were buffered as well. In addition, natural wetland polygons intersecting the stream systems were also selected. Wetland polygons were not given a 1,000ft buffer, but were given a 1 mile buffer. Basin proximity to resource scores were also collapsed into three categories: 1 (proximal), 2-3, and 4+. These changes affected the Coastal, Other OFW, and Water Supply submodels. The Rare Fish basins submodel was also revised to incorporate new modeling data from FWC.

Aquifer Recharge was updated to include priorities associated with swallet features as recommended by the Florida Geological Survey.

Revisions from Version 4.1 to Version 4.2 (2016)

Version 4.2 includes revisions to Strategic Habitat Conservation Areas (SHCA), Natural Communities, Ecological Greenways, and Recreational Trails. The prioritization of SHCAs was revised to reflect changes in the imperilment ranks of species. Natural Communities were updated based on field assessments of 2015-2016 Florida Forever proposals. Ecological

Greenways underwent significant revision as part of updates to CLIP v4.0, with the number of priority classes being reduced from 6 to 5 but with an overall increase in acreage for the total area identified. Recreational Trails was updated with the 2015 version of land trail priorities and opportunities published by the FDEP/Office of Greenways and Trails.

Revisions from Version 4.2 to Version 4.3 (2017)

Version 4.3 includes revisions to Natural Communities, Functional Wetlands, and Natural Floodplain. Natural Communities were updated based on field assessments of 2016-2017 Florida Forever proposals. Wetlands were revised based on a significant update to the Cooperative Land Cover Map (v3.2.5), which resulted in improvements to the baseline wetlands dataset as well as to the Land Use Intensity Index (LUI) used in the prioritization scheme. The Natural Floodplain layer was updated based on new digital FEMA/DFIRM data for several counties and, as for wetlands, the prioritization was updated based on a new LUI developed from improvements to the Cooperative Land Cover Map.

Revisions from Version 4.3 to Version 4.4 (2018)

Version 4.4 includes revisions to Natural Communities, Functional Wetlands, and Natural Floodplain. Natural Communities were updated based on field assessments of 2017-2018 Florida Forever proposals. Wetlands were revised based on some localized updates to the Cooperative Land Cover Map (v3.3), which resulted in improvements to the baseline wetlands dataset as well as to the Land Use Intensity Index (LUI) used in the prioritization scheme. The Natural Floodplain layer was updated to add the surrogate floodplain to areas in Sarasota, Charlotte, Lee, St. Lucie and Martin counties and, as for wetlands, the prioritization was updated based on a new LUI developed from improvements to the Cooperative Land Cover Map.

Revisions from Version 4.4 to Version 4.6 (2021)

Version 4.6 includes revisions to Strategic Habitat Conservation Areas, Natural Communities, and Greenways. SHCAs were revised in 2020 using the latest species habitat models available from FWC. No changes were made to the species list or the species designated as needing SHCAs, vs. those mapped on conservation lands only. The prioritization was updated with the latest Global and State rarity ranks. Natural Communities were updated with CLC version 3.4 and the latest field mapping data. Greenways was updated in 2021 resulting in a new statewide map of FEGN priorities as well as new Florida Forever Strategic Priorities on priorities 1-3.

Revisions from Version 4.6 to Version 5.0 (2022)

Version 5.0 includes revisions to Rare Species Habitat Conservation Priorities (FNAIHAB), Natural Communities, and Fragile Coastal Resources. FNAIHAB underwent a major update to include 634 individual species habitat maps (versus 281 in the previous version). The standard methods for developing the underlying habitat maps, habitat suitability scores, and species weighting were all revised. Natural Communities were updated with the latest field mapping data for new Florida Forever proposals. The Fragile Coastal Resources layer was revised to improve mapping for beach dune and rockland hammock.

Revisions from Version 5.0 to 5.1 (2023)
The Springs sub-model of the Significant Surface Water model was revised to incorporate Outstanding Florida Springs. The Recreational Trails layer, which was previously based on the 2018-2023 Florida Greenways and Trails System Plan was updated to reflect trail priorities and opportunities in the 2024-2028 Plan. An interim update of Developed Lands was compiled from CLC v3.4 and the latest versions of FLUCCS statewide. The FLUCCS component was a conservative selection of developed classes, and reviewed against FFCNA data and FLMA to remove problematic areas that did not appear developed in aerials. This new "DEV23.2" layer was used to remove developed lands from all FFCNA layers except Recharge. Natural Communities were updated with the latest field mapping data for new Florida Forever proposals.

Revisions from Version 5.1 to 5.2 (2024)
Cooper's hawk (*Accipiter cooperii*) was removed from the SHCA model.

Revisions from Version 5.2 to 5.3 (2024)
The Sustainable Forestry data layer was substantially revised with input from the Florida Forest Service and University of Florida. Natural Communities were updated with the latest field mapping data for new Florida Forever proposals.

Revisions from Version 5.3 to 5.4 (2025)
Developed lands were selected from the new Cooperative Land Cover version 4.0 update and removed from the following FFCNA layers: FNAIHAB, SHCA, Natural Communities, Greenways, Surface Waters, Floodplain, and Forestry. The Wetlands model was completely rebuilt using CLC v4.0. Potential Natural Areas were also rebuilt from CLC v4.0 and used in new prioritizations of Floodplain and Wetlands. Natural Communities were updated with the latest field mapping data for new Florida Forever proposals.

APPENDIX C

Basemap Data Layers

The following data were integral to the development of final data layers for many of the Florida Forever measures, and are referenced throughout this document. For ease of organization and reference, these data are described in this section. We also identify advantages and disadvantages of each data type with regard to their use in the Florida Forever Conservation Needs Assessment.

FNAI Element Occurrences

The Florida Natural Areas Inventory (FNAI or the Inventory) maintains a database of occurrences of more than 1,200 rare plant and animal species and about 80 natural community types known to occur in Florida. Currently this FNAI database includes more than 33,000 occurrences of plants, animals, and communities. These records are compiled from a variety of sources, including FNAI science staff surveys, scientific literature, museum collections, federal, state, and local government agencies, and academic experts. The data are managed in a relational database and in GIS coverages in the form of point and/or polygon locations for individual Element Occurrences (EOs).

For each element occurrence data are maintained on observation dates, habitat description and quality, number and status of individuals, management considerations, locational certainty and best sources for the occurrence information. For animals and plants, EOs generally refer to more than a casual sighting; they usually indicate a viable population of the species. Natural community EOs represent high quality examples of natural communities, and thus are not a comprehensive coverage of all occurrences of a given community type.

For each element (species or community) FNAI maintains both a Global Rank (G-RANK) and a State Rank (S-RANK) to indicate the overall rarity of the species or community on a global and statewide basis. A complete listing and explanation of global and state ranks is available in Appendix D, along with an explanation of state and federal listing status for listed species.

For some EOs, FNAI has developed polygon boundaries representing the true geographic extent of the occurrence. However, these boundaries are still in development and are not available in a comprehensive format for all elements.

A list of the plants, animals, and communities tracked by the FNAI, along with their global and state ranks and federal and state listing status, is published annually and is available from the Inventory.

The FNAI element occurrence database is the single most comprehensive source for locations of rare species and natural communities throughout the state. The data are compiled in a consistent fashion based on uniform standards and are quality-checked by FNAI scientists. The occurrences are to some extent an abstraction of the location of species and communities on the landscape. In order to identify geographic areas for conservation, a map of polygons showing the geographic extent of species occurrences would be useful. To address this issue, we developed habitat models based on FNAI EO locations and land cover maps, which are explained in more detail under Measure B2 in this document.

FNAI Managed Areas/Conservation Lands

The Florida Natural Areas Inventory maintains a database of lands managed for conservation by federal, state, and local governments, as well as private conservation entities. The database includes attributes such as managing agency, acreage, and description, as well as GIS boundaries for each managed area. Currently more than 2,800 individual managed areas are documented in the FNAI database. The managed areas may be viewed online via Florida's Conservation Lands Interactive Map or downloaded as a shapefile at https://geodata.fnai.org/.

The FNAI managed areas database is the most comprehensive, up-to-date source of boundaries and information for conservation lands in Florida. The GIS coverage is used as the source coverage for conservation lands by federal, state, and local government agencies throughout the state. Although all federal and state conservation lands are documented in the database, not all local government lands are currently included. The Inventory is dependent on the efforts of 67 counties and more than 300 municipalities to document this information. However, local governments with substantial environmental land acquisition programs, such as Hillsborough, Brevard, Duval, and Miami-Dade Counties, are active partners and are well-represented in the database. The database also does not attempt to address conservation easements from a variety of federal, state, and local regulatory and incentive programs.

Cooperative Land Cover

The Florida Cooperative Land Cover Map, first published in August 2010 (FNAI 2010a), was a project to develop an improved statewide land cover map from existing sources and expert review of aerial photography for focal communities. The final land cover map includes over 6 million acres derived from local, regional and site-specific sources and 1.4 million acres classified during aerial photo review. The remaining area (32 million acres) consists of Land Use Land Cover data (FLUCCS) developed by the Florida Department of Environmental Protection, St. Johns River Water Management District, Southwest Florida Water Management District and South Florida Water Management District. All data were crosswalked into the Florida Land Cover Classification System.

This dataset represents the best available statewide land cover for ecological analyses. It is used in the development of several Needs Assessment datasets including Under-represented Natural Communities and Functional Wetlands. This dataset largely supersedes use of the FLUCCS data which was a primary base layer for many FFCNA datasets prior to publication of the CLC. The CLC, now maintained by FWC, is updated regularly. In 2025, FNAI completed a comprehensive update of CLC with funding from FWC. This involved: incorporating the latest FLUCCS data, reviewing and improving problematic land cover classes, reviewing and improving coastal land cover, and incorporating 2024 developed lands statewide from Google Dynamic World land cover. These updates were compiled in CLC version 4.0. The specific CLC version used is referenced in the methods for individual Needs Assessment datasets. The full list of CLC land cover classes, along with an alternate grouping for major types such as Natural, Semi-natural, Non-natural, etc. are found in Appendix E.

FNAI Potential Natural Areas

The Potential Natural Areas (PNA) data layer identifies, throughout the State of Florida, contiguous areas containing an assemblage of variably intact, high-quality natural communities. These areas were originally delineated by FNAI scientific staff through interpretation of natural vegetation from 1988-1993 FDOT aerial photographs and from input received during Regional Ecological Workshops held for each regional planning council. Each of those workshops were attended by experts familiar with natural areas in the region. All PNA classifications and rankings were made based on the combined judgment of at least two scientists making independent determinations. Element occurrences in the FNAI database may or may not be present on these sites.

Potential Natural Areas represent a comprehensive, statewide coverage of natural areas. This is also the only natural community coverage that ranks communities based on estimates of quality (the PNA priorities 1 through 5). As with other land cover data layers based on aerial photography, it is difficult to make precise community classifications based on remote sensing. For this reason, FNAI scientists did not attempt to delineate individual community types within PNA boundaries. The PNAs remain accurate, however, as a coverage of general areas of natural vegetation.

Potential Natural Areas were assigned ranks of Priority 1 through Priority 5 based on size, perceived quality, and type of natural community present. The areas included in Priority 5 are exceptions to the above criteria. These areas were identified through the same process of aerial photographic interpretation and regional workshops as the PNA 1 through 4 ranked sites, but do not meet the standard criteria. PNA 5 areas were considered lower priority for conservation than areas ranked PNA 1- 4, but nonetheless were believed to be ecologically viable tracts of land representative of Florida's natural ecosystems.

PNAs on CARL projects were assigned a rank by FNAI staff; PNAs on conservation lands and SOR projects at the time of that analysis were not ranked, they have a grid value of 100.
In addition we added original FNAI Areas of Conservation Interest (ACI) sites, many of which were identified based on similar criteria to PNAs. ACI sites were never ranked by FNAI scientists in the same way as PNAs, so we developed an automatic ranking system based on the acres of priority natural communities each site contained. ACI ranks overall are a good match for PNA ranks, but the different methodology means that the two are not entirely comparable.

The original PNAs were digitized based on 1:100,000 scale county maps and lacked the geographic precision desirable for the type of geographic overlay analyses undertaken in the *Conservation Needs Assessment*. In addition, the original PNAs did not take into consideration existing managed areas, Save Our Rivers (SOR) acquisition projects, or Conservation and Recreation Lands (CARL) acquisition projects that existed at the time of the original analysis (roughly 1995). In April 2011, we therefore revised the PNA boundaries by overlaying the original PNA polygons onto the Cooperative Land Cover (CLC) polygons (FNAI 2010a). The

CLC boundaries conform more closely to land cover patterns than the original PNA boundaries, based on comparison with digital ortho-aerial photography.

The April 2011 revisions also involved the demotion or deletion of some PNAs. These rank demotions and deletions were based on the percentage of the original PNA boundary filled by CLC-identified natural and semi-natural land cover. In other words, using the CLC as a representation of current landcover, we demoted fragmented PNAs and deleted highly fragmented PNAs.

In April 2014 PNAs underwent a minor revision to remove developed lands based on CLC v2.3, re-assess fragmentation based on this removal, and adjust priorities as determined by the re-assessment.

In July 2018 revisions were made to remove developed lands based on CLC v3.2.5, re-assess fragmentation based on this removal, and adjust priorities as determined by the re-assessment.

In 2025, FNAI completed a more comprehensive update based on the CLC version 4.0 update. While original PNA boundaries and priorities remain key criteria for identification and prioritization, additional criteria were developed or revised from the original project. The 2025 update consisted of 4 major steps: PNA focal site selection, focal site expansion, site delineation, and prioritization. Each step is summarized below.

Focal Natural Community Site Selection: primary selection criteria were modified from the original PNA method. Many criteria were based on a statistical analysis of natural community polygon size from the CLC v4.0.

- ALL polygons: Upland Glade, Pine Rockland, Coastal Dune Lake, Coastal Rock Barren, Keys Cactus Barren, Spring-Run Stream, Terrestrial Cave
- 15+ acres: Coastal Berm, Shell Mound
- 25+ acres: Coastal Interdunal Swale, Seepage Slope, Wet Prairie (ONLY from FLEO or reference natcoms, not CLC), Rockland Hammock
- 40+ acres: Maritime Hammock, Scrubby Flatwoods
- 50+ acres: Beach Dune, Coastal Grassland, Coastal Strand, Scrub
- 100+ acres: Upland Mixed Woodland, Dry Prairie
- 150+ acres: Strand Swamp
- 250+ acres: Sandhill, Slope Forest
- 500+ acres: all other Natcoms (G3S3-G5) EXCEPT large matrix coms: Wet Flatwoods, Mesic Flatwoods, Floodplain Swamp, Salt Marsh, Mangrove Swamp
- 2500+ acres: any contiguous Natural (matrix coms listed above plus landscape mosaics).
- Reference Natcoms: include all polys or CLC polys with a refnatcom centroid.
- Original PNA P1-4 boundaries: any Natural with centroid in original PNA P1-4

Focal Site Expansion: The purpose of this step is to fill in gaps around the focal sites to map a more cohesive landscape, and to conform a bit more to the original PNA boundary intent. Focal sites were buffered and nearby natural lands were added, with seminatural lands included within buffers to form the statewide “basemap” from which PNAs would be selected and prioritized.

Site Designation for Final Selection and Prioritization: For 2025, priorities were assigned to the entire basemap in two distinct ways. First, priorities were assigned to original 1990s PNA (and ACI) sites by modifying their original priorities. These modified priorities extended into surrounding PNA basemap areas, but NOT into 1995 conservation land or CARL boundaries. Those areas were assigned priorities along with novel 2025 basemap locations. In order to achieve this, we defined PNA Sites as collections of basemap polygons within 200 meters of each other (accounting for certain obstacles).

Prioritization: sites were assigned priorities in four groups:

1. modifying original PNA priorities,
2. allocating modified-original PNA priorities to PNA-adjacent sites,
3. assigning new priorities to MA95, CARL95, and new PNA sites,
4. allocated new MACARL priorities to MACARL-adjacent sites

Criteria for assigning/modifying priorities are outlined in the following tables:

Criteria for Changing Original PNA Priorities:

PNA Priority	Highest NC Grank	Percent Natural	Result
P1	ANY	>=60%	**KEEP P1**
P1	G1	30-60%	**KEEP P1**
P1	G2-5	30-60%	**Demote P2**
P1	G1	10-30%	**Demote P2**
P1	G2-5	10-30%	**Demote P3**
P1	G1	5-10%	**Demote P3**
P1	G1	<5%	**DELETE**
P1	G2-5	<10%	**DELETE**
P2	G1	>=80%	**Promote P1**
P2	G2-5	>=60%	**KEEP P2**
P2	G1	30-80%	**KEEP P2**
P2	G2-5	30-60%	**Demote P3**
P2	G1	10-30%	**Demote P3**
P2	G2-5	10-30%	**Demote P4**
P2	any	<10%	**DELETE**
P3	G1	>=80%	**Promote P2**
P3	G2-5	>=60%	**KEEP P3**
P3	G1	30-80%	**KEEP P3**
P3	G2-5	30-60%	**Demote P4**
P3	G1	10-30%	**Demote P4**
P3	G2-5	10-30%	**Demote P5**
P3	any	<10%	**DELETE**
P4	G1	>=80%	**Promote P3**
P4	G2-5	>=60%	**KEEP P4**
P4	G1	10-80%	**KEEP P4**
P4	G2-5	10-60%	**Demote P5**
P4	any	<10%	**DELETE**
P5	G1	>=80%	**Promote P3**
P5	G1	30-80%	**Promote P4**
P5	G2-3	>=50%	**Promote P4**
P5	G4-5	>=20%	**KEEP P5**
P5	G1	5-30%	**KEEP P5**
P5	G2-3	10-50%	**KEEP P5**
P5	G4-5	<20%	**DELETE**
P5	G2-3	<10%	**DELETE**
P5	G1	<5%	**DELETE**

Criteria for MA95, CARL95, and new 2025 PNA sites:

Highest NC Grank	Acres	Percent Natural	Result
G1	>=10	>=80%	**P1**
G1	>=10	40-80%	**P2**
G1	>=10	20-40%	**P3**
G1	>=10	<20%	**P4**
G1	<10	>=80%	**P2**
G1	<10	40-80%	**P3**
G1	<10	20-40%	**P4**
G1	<10	5-20%	**P5**
G1	<10	<5%	**DELETE**
G2	>=100	>=80%	**P1**
G2	>=100	60-80%	**P2**
G2	>=100	40-60%	**P3**
G2	>=100	<40%	**P4**
G2	50-100	>=80%	**P2**
G2	50-100	60-80%	**P3**
G2	50-100	20-60%	**P4**
G2	50-100	<20%	**P5**
G2	<50	>=80%	**P3**
G2	<50	60-80%	**P4**
G2	<50	20-60%	**P5**
G2	<50	<20%	**DELETE**
G3	>=1000	>=90%	**P1**
G3	>=1000	70-90%	**P2**
G3	>=1000	50-70%	**P3**
G3	>=1000	30-50%	**P4**
G3	>=1000	<30%	**P5**
G3	100-1000	>=80%	**P2**
G3	100-1000	60-80%	**P3**
G3	100-1000	40-60%	**P4**
G3	100-1000	20-40%	**P5**
G3	100-1000	<20%	**DELETE**
G3	<100	>=80%	**P3**
G3	<100	60-80%	**P4**
G3	<100	40-60%	**P5**
G3	<100	<40%	**DELETE**
G4-5	>=10,000	>=90%	**P1**
G4-5	>=10,000	80-90%	**P2**
G4-5	>=10,000	70-80%	**P3**
G4-5	>=10,000	60-70%	**P4**
G4-5	>=10,000	20-60%	**P5**
G4-5	>=10,000	<20%	**DELETE**
G4-5	1000-10k	>=90%	**P2**
G4-5	1000-10k	70-90%	**P3**
G4-5	1000-10k	40-70%	**P4**
G4-5	1000-10k	20-40%	**P5**
G4-5	1000-10k	<20%	**DELETE**
G4-5	100-1000	>=80%	**P3**
G4-5	100-1000	60-80%	**P4**
G4-5	100-1000	40-60%	**P5**
G4-5	100-1000	<40%	**DELETE**
G4-5	<100	>=80%	**P4**
G4-5	<100	50-80%	**P5**
G4-5	<100	<50%	**DELETE**
AFTER PRELIM REVIEW, ADDED:			
ANY	>=100,000	>=70%	**P1**

Although these revisions improve on the original dataset, it is important to note that PNAs have not been completely re-evaluated since they were originally created in the mid-1990s. For most uses, we recommend grouping PNA ranks 1-4 as one class of "high value" potential natural areas, with PNA rank 5 as a separate "moderate value" class. This avoids issues with the different methodologies originally used to prioritize PNAs, ACIs, and CARL projects.

FWC Landsat Vegetation and Land Cover

In the early 1990s, the Florida Game and Fresh Water Fish Commission (now known as the Florida Fish and Wildlife Conservation Commission, or FWC) collaborated with the Florida Department of Transportation to develop a statewide land cover map based on satellite imagery. This dataset was based on Landsat Thematic Mapper data at a resolution of 30 m square pixels, or grid cells. The satellite imagery was taken from 1985 to 1989. The data were classified into 22 land cover types, including 17 “natural” classes and 4 “disturbed” classes. For more information on the FWC satellite imagery, see Kautz et al. (1993) and Cox et al. (1994).

The FWC Landsat Vegetation and Land Cover was updated in 2003 (Stys et al. 2003). The current data contains 43 cover classes and is a 30m grid. This land cover layer is the basemap for the Strategic Habitat Conservation Areas model (measure B1).

Because the satellite imagery does not rely on human interpretation, it provides an objective classification that is consistent statewide. However, due to the limitations of satellite imagery analysis, the 43 classes of the satellite imagery are coarse, and not sufficient to capture the wide range of natural communities necessary to identify all habitat types. The satellite imagery also does not distinguish between pine plantation and natural pine communities.

UF Landscape Integrity Index

The Landscape Integrity Index (LSI) was developed by the UF Center for Landscape Conservation Planning (UF CLCP) and GeoPlan Center, specifically for the Critical Lands and Waters Identification Project (CLIP). It is comprised of two related landscape indices assessing ecological integrity based on land use intensity and patch size of natural communities and semi-natural land uses. Since these analyses are dependent on landscape-scale analysis, buffer areas in Georgia and Alabama were included to provide accurate assessment of the areas of Florida near the Georgia or Alabama border. Note that this index is intended to primarily characterize terrestrial ecosystems and therefore values for large water bodies are not considered significant.

The Land Use Intensity Index (LUI) assesses the intensity of land use within landscapes statewide based on five general categories of land cover/land use: natural, semi-natural, improved pasture, agricultural/low-intensity development, and high intensity development (see Appendix E). The assumption is that areas dominated by high intensity land uses are more likely to have severe ecological threats and much lower ecological integrity than areas dominated by natural land cover. The land use data used is from the 2017 Cooperative Land Cover (CLC) data set, version 2.3, within Florida and Southeastern GAP land cover data for a buffer area in Alabama and Georgia. The land use intensity analysis was conducted by giving each CLC land use intensity category (see Appendix E) a rank and conducting a shifting window (or neighborhood) analysis at 3 different scales: approximately 10 acres; approximately 100 acres;

and approximately 1000 acres. The three different scales were used to address the fact that many species and ecological processes operate at different scales. The analysis creates an output where all of the land use intensity values within each neighborhood are summed and then reclassified to create a land use intensity index with ranks of 1-10 (where 10 equals lowest land use intensity) for each of the three scales. Each of the three scales are then combined using a weighted average where the two larger scales were given an equal weight and the smallest scale was given half the weight of the larger scales to create the final Land Use Intensity Index.

The Patch Size Index (PSI) combines the land use data with major roads data to identify contiguous patches of natural and semi-natural land cover and ranks them based on area. In addition all pasturelands within the south-central prairies region were also considered "intact" and potentially part of patches. This region was defined by delineating a 10km buffer around the grassland ecosystem areas in central and southwest Florida identified in the Davis Potential Natural Vegetation map for Florida, the historical extent of dry prairie from FNAI, and all known existing dry prairie occurrences from FNAI. Major roads were defined as all roads that have 4 or more through lanes and all roads with average annual daily traffic of 5,000 or more vehicles per day. These roads were selected because they are considered to be the most likely to fragment habitat through a combination of road width and traffic level. Patches are identified as contiguous areas of suitable land cover not fragmented by large roads, more intensive land uses, or large or wide water bodies. Open water is not included when identifying patches or determining patch area because the Patch Size Index is intended to characterize the ecological integrity of terrestrial (including wetlands) ecosystems. The assumption is that small patches are likely to have the highest threat and lowest ecological integrity and large patches are likely to have the lowest threat and highest ecological integrity. The following scheme was used to rank patches based on area:

Patch Score	**Patch Size** (acres)
1	<10
2	10-99
3	100-999
4	1,000-4,999
5	5,000-9,999
6	10,000-49,999
7	50,000-99,999
8	100,000-499,999
9	500,000-999,999
10	1million+

The combination of the Land Use Intensity and Patch Size Indices was created by adding the two together and dividing by two to create a non-weighted average of the two indices. Values of 10 represent areas with the highest potential ecological integrity based on these landscape indices and 1 represents the lowest ecological integrity. The following are general descriptions of the landscape integrity priority levels: Index Level 10--areas with the highest ecological integrity where natural lands predominate in very large patches; Index Level 9--areas with the highest ecological integrity; Index Level 8--areas with high ecological integrity; Index Level 7--areas with moderately high ecological integrity; Index Level 6--areas with moderate ecological integrity; Index Level 5--areas with moderate ecological integrity and also includes most large areas of coastal water and large lakes, which are not intended to be a primary target of this index;

Index Level 4--areas with moderately low ecological integrity; Index Level 3--areas with low ecological integrity; Index Level 2--areas with very low ecological integrity; Index Level 1--areas with little or no ecological integrity due to predominance of intensive land uses.

The Landscape Integrity Index was used as an input for scoring Suitability of several species habitat models in the FNAI Rare Species Habitat Conservation Priorities model, while the sub-model Land Use Intensity Index is used as an input to prioritize the Wetlands and Natural Floodplain FFCNA layers. The most current version of the LUI used for FFCNA work is from 2018 based on CLC v3.3. The most current Landscape Integrity Index was created by UF CLCP in 2021.

APPENDIX D

FLORIDA NATURAL AREAS INVENTORY RANK EXPLANATIONS

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 status
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 E
Crosswalk of Florida Cooperative Land Cover v4.0 into Land Use Intensity Classes

Cooperative Land Cover v4.0 Class		5 Class System
1000	Terrestrial	
1100	Hardwood Forested Uplands	NATURAL
1110	Upland Hardwood Forest	NATURAL
1111	Dry Upland Hardwood Forest	NATURAL
1112	Mixed Hardwoods	NATURAL
1120	Mesic Hammock	NATURAL
1121	Evergreen Levee Hammock	NATURAL
1122	Prairie Mesic Hammock	NATURAL
1123	Live Oak	NATURAL
1124	Pine - Mesic Oak	NATURAL
1125	Cabbage Palm	NATURAL
1130	Rockland Hammock	NATURAL
1131	Thorn Scrub	NATURAL
1140	Slope Forest	NATURAL
1150	Xeric Hammock	NATURAL
1200	High Pine and Scrub	NATURAL
1210	Scrub	NATURAL
1211	Oak Scrub	NATURAL
1212	Rosemary Scrub	NATURAL
1213	Sand Pine Scrub	NATURAL
1214	Coastal Scrub	NATURAL
1220	Upland Mixed Woodland	NATURAL
1230	Upland Coniferous	NATURAL
1231	Upland Pine	NATURAL
1240	Sandhill	NATURAL
1300	Pine Flatwoods and Dry Prairie	NATURAL
1310	Dry Flatwoods	NATURAL
1311	Mesic Flatwoods	NATURAL
1312	Scrubby Flatwoods	NATURAL
1320	Pine Rockland	NATURAL
1330	Dry Prairie	NATURAL
1340	Palmetto Prairie	NATURAL
1400	Mixed Hardwood-Coniferous	NATURAL
1410	Successional Hardwood Forest	NATURAL
1500	Shrub and Brushland	SEMINAT
1510	Other Shrubs and Brush	SEMINAT
1600	Coastal Uplands	NATURAL
1610	Beach Dune	NATURAL
1620	Coastal Berm	NATURAL
1630	Coastal Grassland	NATURAL
1640	Coastal Strand	NATURAL

Cooperative Land Cover v4.0 Class		5 Class System
1650	Maritime Hammock	NATURAL
1660	Shell Mound	NATURAL
1670	Sand Beach (Dry)	NATURAL
1700	Barren and Outcrop Communities	NATURAL
1710	Sinkhole	NATURAL
1720	Upland Glade	NATURAL
1730	Limestone Outcrop	NATURAL
1740	Keys Cactus Barren	NATURAL
1750	Bare Soil	SEMINAT
1760	Exposed Rock	NON-NAT
1761	Exposed Rock w/ Marsh Grasses	NON-NAT
1800	Cultural - Terrestrial	NON-NAT
1810	Mowed Grass	INTENSIVE AG ETC
1811	Vegetative Berm	SEMINAT
1812	Highway Rights of Way	INTENSIVE AG ETC
1813	Upland Wildlife Crossing	SEMINAT
1820	Urban	
1821	Low Intensity Urban	IMPR PAST / FIELD CROPS
18211	Urban Open Land	IMPR PAST / FIELD CROPS
182111	Urban Open Forested	IMPR PAST / FIELD CROPS
182112	Urban Open Pine	IMPR PAST / FIELD CROPS
18212	Residential, Low Density	IMPR PAST / FIELD CROPS
18213	Grass	INTENSIVE AG ETC
182131	Parks and Zoos	INTENSIVE AG ETC
182132	Golf courses	INTENSIVE AG ETC
182133	Ballfields	NON-NAT
182134	Cemeteries	INTENSIVE AG ETC
182135	Community rec. facilities	INTENSIVE AG ETC
18214	Trees	SEMINAT
1822	High Intensity Urban	NON-NAT
18221	Residential, Med. Density - 2-5 Dwelling U	NON-NAT
18222	Residential, High Density > 5 Dwelling Ur	NON-NAT
18223	Commercial and Services	NON-NAT
18224	Industrial	NON-NAT
18225	Institutional	NON-NAT
1830	Rural	
1831	Rural Open	SEMINAT
18311	Rural Open Forested	SEMINAT
183111	Oak - Cabbage Palm Forests	SEMINAT
18312	Rural Open Pine	SEMINAT
1832	Rural Structures	IMPR PAST / FIELD CROPS
1833	Agriculture	
18331	Cropland/Pasture	IMPR PAST / FIELD CROPS
183311	Row Crops	INTENSIVE AG ETC

Cooperative Land Cover v4.0 Class		5 Class System
1833111	Irrigated Row Crops	INTENSIVE AG ETC
183312	Field Crops	IMPR PAST / FIELD CROPS
1833121	Irrigated Field Crops	INTENSIVE AG ETC
183313	Improved Pasture	IMPR PAST / FIELD CROPS
183314	Unimproved/Woodland Pasture	SEMINAT
183315	Other Open Lands - Rural	SEMINAT
1833151	Fallow Cropland	SEMINAT
18332	Orchards/Groves	INTENSIVE AG ETC
183321	Citrus	INTENSIVE AG ETC
183322	Fruit Orchards	INTENSIVE AG ETC
183323	Pecan	INTENSIVE AG ETC
183324	Fallow Orchards	SEMINAT
18333	Tree Plantations	SEMINAT
183331	Hardwood Plantations	SEMINAT
183332	Coniferous Plantations	SEMINAT
1833321	Wet Coniferous Plantations	SEMINAT
18334	Vineyard and Nurseries	INTENSIVE AG ETC
183341	Tree Nurseries	INTENSIVE AG ETC
183342	Sod Farms	INTENSIVE AG ETC
183343	Ornamentals	INTENSIVE AG ETC
183344	Vineyards	INTENSIVE AG ETC
183345	Floriculture	INTENSIVE AG ETC
18335	Other Agriculture	INTENSIVE AG ETC
183351	Feeding Operations	INTENSIVE AG ETC
183352	Specialty Farms	INTENSIVE AG ETC
1840	Transportation	NON-NAT
1841	Roads	NON-NAT
1842	Rails	NON-NAT
1850	Communication	NON-NAT
1860	Utilities	NON-NAT
1861	Solar Farms	IMPR PAST / FIELD CROPS
1870	Extractive	NON-NAT
1871	Strip Mines	NON-NAT
1872	Sand and Gravel Pits	NON-NAT
1873	Rock Quarries	NON-NAT
1874	Oil & Gas Fields	NON-NAT
1875	Reclaimed Lands	SEMINAT
1876	Abandoned Mining Lands	NON-NAT
1877	Spoil Area	INTENSIVE AG ETC
1880	Bare Soil/Clear Cut	SEMINAT
2000	Palustrine	
2100	Freshwater Non-Forested Wetland	NATURAL
2110	Prairies and Bogs	NATURAL
2111	Wet Prairie	NATURAL

Cooperative Land Cover v4.0 Class		5 Class System
21111	Wiregrass Savanna	NATURAL
21112	Cutthroat Seep	NATURAL
21113	Calcareous Wet Prairie	NATURAL
21114	Pitcherplant Prairie	NATURAL
2112	Mixed Scrub-Shrub Wetland	NATURAL
21121	Shrub Bog	NATURAL
2113	Marl Prairie	NATURAL
2114	Seepage Slope	NATURAL
2120	Marshes	NATURAL
2121	Isolated Freshwater Marsh	NATURAL
21211	Depression Marsh	NATURAL
21212	Basin Marsh	NATURAL
2122	Coastal Interdunal Swale	NATURAL
2123	Floodplain Marsh	NATURAL
21231	Freshwater Tidal Marsh	NATURAL
2124	Slough Marsh	NATURAL
2125	Glades Marsh	NATURAL
21251	Keys Freshwater Marsh	NATURAL
2130	Marshes (Continued)	NATURAL
2131	Sawgrass	NATURAL
2132	Cattail	NATURAL
2133	Spike Rush	NATURAL
2134	Maidencane	NATURAL
2135	Dog Fennel & Low Marsh Grasses	NATURAL
2136	Arrowroot	NATURAL
2137	Giant Cutgrass	NATURAL
2138	Buttonbush	NATURAL
2139	Other spp.	NATURAL
2140	Floating/Emergent Aquatic Vegetation	NATURAL
2141	Slough	NATURAL
21411	Pond Apple Slough	NATURAL
2142	Water Lettuce	NATURAL
2143	Spatterdock	NATURAL
2144	Water Hyacinth	NATURAL
2145	Duck Weed	NATURAL
2146	Water Lily	NATURAL
2147	Other spp.	NATURAL
2150	Submergent Aquatic Vegetation	NATURAL
2200	Freshwater Forested Wetlands	NATURAL
2210	Cypress/Tupelo (including mixed Cypress/	NATURAL
2211	Cypress	NATURAL
2212	Tupelo	NATURAL
2213	Isolated Freshwater Swamp	NATURAL
22131	Dome Swamp	NATURAL

Cooperative Land Cover v4.0 Class		5 Class System
221311	Stringer Swamp	NATURAL
221312	Gum Pond	NATURAL
22132	Basin Swamp	NATURAL
2214	Strand Swamp	NATURAL
2215	Floodplain Swamp	NATURAL
22151	Freshwater Tidal Swamp	NATURAL
2220	Other Coniferous Wetlands	NATURAL
2221	Wet Flatwoods	NATURAL
22211	Hydric Pine Flatwoods	NATURAL
222111	Cutthroat Grass Flatwoods	NATURAL
222112	Cabbage Palm Flatwoods	NATURAL
22212	Hydric Pine Savanna	NATURAL
2222	Pond Pine	NATURAL
2223	Atlantic White Cedar	NATURAL
2224	Slash Pine Swamp Forest	NATURAL
2230	Other Hardwood Wetlands	NATURAL
2231	Baygall	NATURAL
22311	Bay Swamp	NATURAL
22312	South Florida Bayhead	NATURAL
2232	Hydric Hammock	NATURAL
22321	Coastal Hydric Hammock	NATURAL
22322	Prairie Hydric Hammock	NATURAL
22323	Cabbage Palm Hammock	NATURAL
2233	Mixed Wetland Hardwoods	NATURAL
22331	Bottomland Forest	NATURAL
22332	Alluvial Forest	NATURAL
2234	Titi Swamp	NATURAL
2240	Mixed Hardwood-Coniferous Swamps	NATURAL
2241	Cypress/Hardwood Swamps	NATURAL
2242	Cypress/Pine/Cabbage Palm	NATURAL
2300	Non-vegetated Wetland	NATURAL
2400	Cultural - Palustrine	SEMINAT
2410	Impounded Marsh	SEMINAT
2420	Impounded Swamp	SEMINAT
2430	Grazed Wetlands	SEMINAT
2440	Clearcut Wetland	SEMINAT
2450	Wetland Wildlife Crossing	SEMINAT
3000	Lacustrine	WATER
3100	Natural Lakes and Ponds	WATER
3110	Limnetic	WATER
3111	Clastic Upland Lake	WATER
3112	Coastal Dune Lake	WATER
3113	Flatwoods/Prairie/Marsh Lake	WATER
3114	River Floodplain Lake/Swamp Lake	WATER

Cooperative Land Cover v4.0 Class		**5 Class System**
3115	Sinkhole Lake	WATER
3116	Coastal Rockland Lake	WATER
3117	Sandhill Lake	WATER
3120	Littoral	WATER
3200	Cultural - Lacustrine	WATER
3210	Artificial/Farm Pond	WATER
3211	Aquacultural Ponds	WATER
3220	Artificial Impoundment/Reservoir	WATER
3230	Quarry Pond	WATER
3240	Sewage Treatment Pond	WATER
3250	Stormwater Treatment Areas	INTENSIVE AG ETC
3260	Industrial Cooling Pond	WATER
4000	Riverine	WATER
4100	Natural Rivers and Streams	WATER
4110	Alluvial Stream	WATER
4120	Blackwater Stream	WATER
4130	Spring-run Stream	WATER
4131	Major Springs	WATER
4140	Seepage Stream	WATER
4150	Calcareous Stream	WATER
4160	Tidally-influenced Stream	WATER
4170	Riverine Sandbar	NATURAL
4200	Cultural - Riverine	WATER
4210	Canal	WATER
4220	Ditch/Artificial Intermittent Stream	WATER
4230	Industrial Effluent Stream	WATER
5000	Estuarine	WATER
5100	Subtidal	WATER
5200	Intertidal	NATURAL
5210	Exposed Limestone	NATURAL
5211	Vegetated	NATURAL
52111	Keys Tidal Rock Barren	NATURAL
5212	Non-vegetated	NATURAL
5220	Tidal Flat	NATURAL
5221	Mud	NATURAL
5222	Sand	NATURAL
5230	Oyster Bar	WATER
5240	Salt Marsh	NATURAL
5241	Salt Flat	NATURAL
5242	Cordgrass	NATURAL
5243	Needlerush	NATURAL
5250	Mangrove Swamp	NATURAL
5251	Buttonwood Forest	NATURAL
5252	Scrub Mangrove	NATURAL

Cooperative Land Cover v4.0 Class		5 Class System
5300	Cultural - Estuarine	WATER
5310	Estuarine Ditch/Channel	WATER
5320	Estuarine Artificial Impoundment	WATER
5330	Aquaculture	WATER
6000	Marine	WATER
6100	Surf Zone	WATER
7000	Exotic Plants	INTENSIVE AG ETC
7100	Australian Pine	INTENSIVE AG ETC
7200	Melaleuca	INTENSIVE AG ETC
7300	Brazilian Pepper	INTENSIVE AG ETC
7400	Exotic Wetland Hardwoods	INTENSIVE AG ETC
8000	Open Water	WATER
9000	Other	
9100	Unconsolidated Substrate	NATURAL

APPENDIX F. Mapping Methods and Parameters for FNAIHAB Species

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Acipenser brevirostrum	Shortnose Sturgeon	Fishes	AQUA	G3	S1	E	N	1	n/a	n/a	n/a	n/a	n/a	n/a
Acipenser oxyrinchus desotoi	Gulf Sturgeon	Fishes	CUSTOM	G3T2T3	S2?	T	N	18	n/a	n/a	n/a	n/a	n/a	n/a
Acrolophus pholeter	Gopher Tortoise Acrolophus Moth	Butterflies and Moths	STD	G1	S1		Y	1	1000	Strict Upland	Matrix	ARI	1000	General
Aeschynomene pratensis var. pratensis	meadow jointvetch	Plants and Lichens	STD	G4T3	S3		Y	95	400	Strict Wetland	Small Patch	Plants	50	General
Aethecerinus hornii	Horn's Aethecerinus Long-Horned Beetle	Beetles	STD	G2	S2		Y	8	1000	Strict Upland	Small Patch	ARI	50	General
Agalinis georgiana	pine barren false foxglove	Plants and Lichens	STD	G1	S1		N	9	400	General	Intermediate	Plants	100	General
Agarodes logani	Logan's Agarodes Caddisfly	Caddisflies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Agarodes ziczac	Zigzag Blackwater River Caddisfly	Caddisflies	AQUA	G2	S2		Y	26	n/a	n/a	n/a	n/a	n/a	n/a
Ageratum maritimum	Cape Sable whiteweed	Plants and Lichens	STD	G2G3	S2		N	3	400	Strict Upland	Small Patch	Plants	50	General
Aglaodiaptomus marshianus	Lake Jackson Copepod	Copepods	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Agrimonia incisa	incised groove-bur	Plants and Lichens	STD	G3	S2		N	35	400	General	Matrix	Plants	500	General
Alasmidonta triangulata	Southern Elktoe	Clams and Mussels	AQUA	G1	S1		N	1	n/a	n/a	n/a	n/a	n/a	n/a
Aletris bracteata	bracted colic-root	Plants and Lichens	STD	G2	S2		N	1	400	General	Intermediate	Plants	100	General
Alosa alabamae	Alabama Shad	Fishes	AQUA	G2G3	S2		N	1	n/a	n/a	n/a	n/a	n/a	n/a
Amblema neisleri	Fat Threeridge	Clams and Mussels	AQUA	G1	S1	E		10	n/a	n/a	n/a	n/a	n/a	n/a
Amblyscirtes alternata	Dusky Roadside-Skipper	Butterflies and Moths	STD	G2G3	S2		N	10	1000	General	Matrix	ARI	1000	General
Amblyscirtes reversa	Reversed Roadside-Skipper	Butterflies and Moths	STD	G3G4	S1		N	3	1000	General	Intermediate	ARI	100	General
Ambystoma bishopi	Reticulated Flatwoods Salamander	Amphibians	STD	G2	S1	E	N	36	1000	General	Matrix	ARI	1000	General
Ambystoma cingulatum	Frosted Flatwoods Salamander	Amphibians	STD	G2	S1	T	N	33	1000	General	Matrix	ARI	1000	General
Ammodramus savannarum floridanus	Florida Grasshopper Sparrow	Birds	CUSTOM	G5T1	S1	E	Y	9	n/a	n/a	n/a	n/a	n/a	n/a
Ammospiza maritima mirabilis	Cape Sable Seaside Sparrow	Birds	CUSTOM	G4T1	S1	E	Y	1	2000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Ammospiza maritima peninsulae	Scott's Seaside Sparrow	Birds	STD	G4T3	S3		Y	17	2000	Strict Wetland	Matrix	Birds/Mammals	2000	General
Amorpha herbacea var. crenulata	crenulate lead-plant	Plants and Lichens	STD	G4T1	S1	E	Y	10	400	General	Rockland Plants	Plants	20	General
Anaea troglodyta floridalis	Florida Leafwing	Butterflies and Moths	STD	G4?T1	S1	E	Y	1	1000	Strict Upland	Small Patch	ARI	50	General
Aneflomorpha delongi	Delong's Aneflomorpha Long-Horned Beetle	Beetles	STD	G2	S1S2		N	5	1000	General	Small Patch	ARI	50	General
Anemia wrightii	Wright's anemia	Plants and Lichens	STD	G2?	S1		N	10	400	General	Small Patch	Plants	50	General
Anodonta heardi	Apalachicola Floater	Clams and Mussels	AQUA	G2	S1S2		N	4	n/a	n/a	n/a	n/a	n/a	n/a
Anomala exigua	Pygmy Anomala Scarab Beetle	Beetles	STD	G1	S1		Y	4	1000	Strict Upland	Matrix	ARI	1000	General
Anomala eximia	Archbold Anomala Scarab Beetle	Beetles	STD	G2	S2		Y	7	1000	Strict Upland	Small Patch	ARI	50	General
Antigone canadensis pratensis	Florida Sandhill Crane	Birds	CUSTOM	G5T2	S2		N	71	12000	General	Intermediate	Birds/Mammals	500	General
Aphaostracon asthenes	Blue Spring Hydrobe Snail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Aphaostracon chalarogyrus	Freemouth Hydrobe Snail	Snails and Allies	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Aphaostracon monas	Wekiwa Hydrobe Snail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Aphaostracon pycnus	Dense Hydrobe Snail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Aphaostracon theiocrenetum	Clifton Springs Hydrobe Snail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Aphaostracon xynoelictum	Fenney Springs Hydrobe Snail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Aphelocoma coerulescens	Florida Scrub-Jay	Birds	CUSTOM	G1G2	S1S2	T	Y	460	n/a	n/a	n/a	n/a	n/a	n/a
Aphodius baileyi	Bailey's Pocket Gopher Aphodius Beetle	Beetles	STD	G2G3	S2		N	7	1000	Strict Upland	Matrix	ARI	1000	General
Aphodius bakeri	Baker's Pocket Gopher Aphodius Beetle	Beetles	STD	G2G3	S2		N	16	1000	Strict Upland	Matrix	ARI	1000	General
Aphodius gambrinus	Amber Pocket Gopher Aphodius Beetle	Beetles	STD	G2	S1S2		N	13	1000	Strict Upland	Matrix	ARI	1000	General
Aphodius pholetus	Rare Pocket Gopher Aphodius Beetle	Beetles	STD	G1G2	S1		N	5	1000	Strict Upland	Matrix	ARI	1000	General
Aphodius platypleurus	Broad-Sided Pocket Gopher Aphodius Beetle	Beetles	STD	G2G3	S2		N	27	1000	Strict Upland	Matrix	ARI	1000	General
Aphodius tanytarsus	Long-Clawed Pocket Gopher Aphodius Beetle	Beetles	STD	G2G3	S2S3		N	23	1000	Strict Upland	Matrix	ARI	1000	General
Aphodius troglodytes	Gopher Tortoise Aphodius Beetle	Beetles	STD	G2G3	S2		N	28	1000	Strict Upland	Intermediate	ARI	100	General
Arctosa sanctaerosae	Santa Rosa Wolf Spider	Spiders	STD	G3	S2S3		N	14	1000	Strict Upland	Small Patch	ARI	50	Coast/Linear
Ardea herodias occidentalis	Great White Heron	Birds	STD	G5T2	S2		N	122	2000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Argythamnia argothamnoides	Blodgett's silverbush	Plants and Lichens	STD	GNR	S2	T	Y	31	400	Strict Upland	Rockland Plants	Plants	20	General
Arnoglossum album	chalky Indian-plantain	Plants and Lichens	STD	G1	S1		Y	2	400	General	Intermediate	Plants	100	General
Arnoglossum diversifolium	variable-leaved Indian-plantain	Plants and Lichens	STD	G2	S2		N	35	400	General	Intermediate	Plants	100	General
Asaphomyia floridensis	Florida Asaphomyian Tabanid Fly	Flies	STD	G1	S1		Y	2	1000	General	Small Patch	ARI	50	General
Asclepias viridula	southern milkweed	Plants and Lichens	STD	G2	S2		N	63	400	General	Intermediate	Plants	100	General
Asimina tetramera	four-petal pawpaw	Plants and Lichens	STD	G1	S1	E	Y	14	400	Strict Upland	Small Patch	Plants	50	General
Asplenium verecundum	modest spleenwort	Plants and Lichens	STD	G1	S1		N	14	400	General	Small Patch	Plants	50	General
Asplenium x heteroresiliens	Morzenti's spleenwort	Plants and Lichens	STD	G2	S1		N	13	400	General	Intermediate	Plants	100	General
Asplenium x plenum	ruffled spleenwort	Plants and Lichens	STD	G1Q	S1		Y	3	400	General	Intermediate	Plants	100	General
Atrytone arogos arogos	Arogos Skipper	Butterflies and Moths	STD	G2G3T1T2	S1		N	11	1000	Strict Upland	Matrix	ARI	1000	General
Atrytonopsis loammi	Loammi Skipper	Butterflies and Moths	STD	G2	S2?		N	13	1000	General	Matrix	ARI	1000	General
Baetisca becki	A Mayfly	Mayflies	AQUA	G2G3	S2		N	26	n/a	n/a	n/a	n/a	n/a	n/a
Baetisca escambiensis	Escambia Mayfly	Mayflies	AQUA	G2G3	S1S2		N	5	n/a	n/a	n/a	n/a	n/a	n/a
Balduina atropurpurea	purple honeycomb-head	Plants and Lichens	STD	G2	S1		N	13	400	General	Intermediate	Plants	100	General
Baptisia calycosa var. calycosa	Canby's wild indigo	Plants and Lichens	STD	G3T1	S1		Y	3	400	Strict Upland	Matrix	Plants	500	General
Baptisia calycosa var. villosa	hairy wild indigo	Plants and Lichens	STD	G3T3	S3		Y	199	400	General	Matrix	Plants	500	General
Baptisia megacarpa	Apalachicola wild indigo	Plants and Lichens	STD	G2	S1		N	13	400	General	Intermediate	Plants	100	General
Basiphyllaea corallicola	rockland orchid	Plants and Lichens	STD	G2G3	S1		N	5	400	Strict Upland	Rockland Plants	Plants	20	General
Bigelowia nuttallii	Nuttall's rayless goldenrod	Plants and Lichens	STD	G3G4	S1		N	4	400	Strict Upland	Intermediate	Plants	100	General
Bombus fraternus	Southern Plains Bumble Bee	Ants, Bees, and Wasps	STD	G2G4	S1S2		N	41	1000	Strict Upland	Intermediate	ARI	100	General
Bonamia grandiflora	Florida bonamia	Plants and Lichens	STD	G3	S3	T	Y	95	400	Strict Upland	Small Patch	Plants	50	General
Bourreria cassinifolia	smooth strongbark	Plants and Lichens	STD	G3?	S1		N	18	400	Strict Upland	Rockland Plants	Plants	20	General
Bourreria radula	rough strongbark	Plants and Lichens	STD	G2?	S1		N	3	400	Strict Upland	Rockland Plants	Plants	20	General
Brickellia cordifolia	Flyr's brickell-bush	Plants and Lichens	STD	G3	S2		N	17	400	General	Intermediate	Plants	100	General

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Brickellia mosieri	Florida brickell-bush	Plants and Lichens	STD	G5T1	S1	E	Y	15	400	Strict Upland	Rockland Plants	Plants	20	General
Caecidotea hobbsi	Florida Cave Isopod	Isopods	CAVE	G1G2	S1S2		Y	9	n/a	n/a	n/a	n/a	n/a	n/a
Caecidotea putea	Apalachicolan Cave Isopod	Isopods	CAVE	G1G3	S1S2		N	15	n/a	n/a	n/a	n/a	n/a	n/a
Caenis eglinensis	Eglin Caenis Mayfly	Mayflies	AQUA	G1	S1		Y	4	n/a	n/a	n/a	n/a	n/a	n/a
Calamovilfa curtissii	Curtiss' sandgrass	Plants and Lichens	STD	G3	S3		Y	139	400	General	Intermediate	Plants	100	General
Callophrys gryneus sweadneri	Florida Olive Hairstreak	Butterflies and Moths	STD	G5T2	S2		Y	9	1000	General	Intermediate	ARI	100	General
Callophrys hesseli	Hessel's Hairstreak	Butterflies and Moths	STD	G3	S2		N	7	1000	General	Intermediate	ARI	100	General
Callophrys irus	Frosted Elfin	Butterflies and Moths	STD	G2G3	S2		N	11	1000	Strict Upland	Matrix	ARI	1000	General
Calopogon multiflorus	many-flowered grass-pink	Plants and Lichens	STD	G2G3	S2S3		N	86	400	General	Matrix	Plants	500	General
Calydorea coelestina	Bartram's ixia	Plants and Lichens	STD	G2G3	S2S3		Y	62	400	General	Intermediate	Plants	100	General
Calystegia catesbeiana	trailing bindweed	Plants and Lichens	STD	G3	S1		N	9	400	Strict Upland	Matrix	Plants	500	General
Cambarellus blacki	Cypress Crayfish	Crabs, Crayfishes, and Shrim	STD	G1	S1		Y	3	1000	Strict Wetland	Small Patch	ARI	50	General
Cambarellus schmitti	Fontal Dwarf Crayfish	Crabs, Crayfishes, and Shrim	AQUA	G2G3	S2S3			21	n/a	n/a	n/a	n/a	n/a	n/a
Cambarus cryptodytes	Dougherty Plain Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G2G3	S2		N	40	n/a	n/a	n/a	n/a	n/a	n/a
Cambarus pyronotus	Fireback Crayfish	Crabs, Crayfishes, and Shrim	STD	G2	S2		Y	12	1000	General	Intermediate	ARI	100	General
Campanula robinsiae	Brooksville bellflower	Plants and Lichens	STD	G1	S1	E	Y	5	400	General	Intermediate	Plants	100	General
Caracara cheriway	Crested Caracara	Birds	CUSTOM	G5	S2	T	N	226	2500	General	Matrix	Birds/Mammals	2000	General
Caretta caretta	Loggerhead Sea Turtle	Reptiles	CUSTOM	G3	S3	T	N	12	n/a	n/a	n/a	n/a	n/a	n/a
Carex lutea	Golden Sedge	Plants and Lichens	STD	G2	S2	E*	N	2	400	Strict Wetland	Intermediate	Plants	100	General
Catesbaea parviflora	small-flowered lily thorn	Plants and Lichens	STD	G3?	S1		N	4	400	Strict Upland	Rockland Plants	Plants	20	General
Caupolicana floridana	Giant Scrub Plasterer Bee	Ants, Bees, and Wasps	STD	G1	S1		Y	2	1000	Strict Upland	Small Patch	ARI	50	General
Centris errans	Florida Locust-berry Oil-collecting Bee	Ants, Bees, and Wasps	STD	G3	S2		N	5	1000	Strict Upland	Small Patch	ARI	50	General
Centrosema arenicola	sand butterfly pea	Plants and Lichens	STD	G2Q	S2		Y	37	400	Strict Upland	Intermediate	Plants	100	General
Ceraclea limnetes	Sandhill Lake Caddisfly	Caddisflies	AQUA	G2	S1		Y	4	n/a	n/a	n/a	n/a	n/a	n/a
Ceratocanthus aeneus	Shining Ball Scarab Beetle	Beetles	STD	G2G3	S2		N	6	1000	General	Intermediate	ARI	100	General
Ceratophaga vicinella	Gopher Tortoise Shell Moth	Butterflies and Moths	STD	G1G3	S1S2		N	10	1000	Strict Upland	Intermediate	ARI	100	General
Chamaecrista lineata var. keyensis	Big Pine partridge pea	Plants and Lichens	STD	G5T2	S2	E	Y	17	400	Strict Upland	Rockland Plants	Plants	20	General
Chamaesyce cumulicola	sand-dune spurge	Plants and Lichens	STD	G2	S2		Y	32	400	Strict Upland	Small Patch	Plants	50	General
Chamaesyce deltoidea ssp. deltoidea	deltoid spurge	Plants and Lichens	STD	G2T1	S1	E	Y	26	400	Strict Upland	Rockland Plants	Plants	20	General
Chamaesyce deltoidea ssp. pinetorum	pinelands spurge	Plants and Lichens	STD	G2T1	S1	T	Y	19	400	General	Rockland Plants	Plants	20	General
Chamaesyce deltoidea ssp. serpyllum	wedge spurge	Plants and Lichens	STD	G2T1	S1	E	Y	3	400	Strict Upland	Rockland Plants	Plants	20	General
Chamaesyce garberi	Garber's spurge	Plants and Lichens	STD	G1	S1	T	Y	48	400	General	Small Patch	Plants	50	General
Chamaesyce porteriana	Porter's broad-leaved spurge	Plants and Lichens	STD	G2	S2		Y	39	400	General	Small Patch	Plants	50	General
Charadrius melodus	Piping Plover	Birds	CUSTOM	G3	S2	T	N	56	n/a	n/a	n/a	n/a	n/a	n/a
Charadrius nivosus	Snowy Plover	Birds	CUSTOM	G3	S1	N	N	53	500	General	Small Patch	Birds/Mammals	50	Coast/Linear
Chelonia mydas	Green Sea Turtle	Reptiles	CUSTOM	G3	S2S3	T	N	12	n/a	n/a	n/a	n/a	n/a	n/a
Chelyoxenus xerobatis	Gopher Tortoise Hister Beetle	Beetles	STD	G2G3	S2		N	16	1000	General	Intermediate	ARI	100	General
Cheumatopsyche gordonae	Gordon's Little Sister Sedge Caddisfly	Caddisflies	AQUA	G1G2	S1S2		Y	21	n/a	n/a	n/a	n/a	n/a	n/a
Cheumatopsyche petersi	Peters' Cheumatopsyche Caddisfly	Caddisflies	AQUA	G3	S2		N	27	n/a	n/a	n/a	n/a	n/a	n/a
Chionanthus pygmaeus	pygmy fringe tree	Plants and Lichens	STD	G2G3	S2S3	E	Y	53	400	Strict Upland	Intermediate	Plants	100	General
Chondropoma dentatum	Crenulate Horn	Snails and Allies	STD	G2G3	S2?		N	14	1000	Strict Upland	Small Patch	ARI	50	General
Chromolaena frustrata	Cape Sable thoroughwort	Plants and Lichens	STD	G1	S1	E	Y	9	400	General	Small Patch	Plants	50	General
Chrysopsis floridana	Florida goldenaster	Plants and Lichens	STD	G3	S3	E, PDL	Y	44	400	Strict Upland	Small Patch	Plants	50	General
Chrysopsis godfreyi	Godfrey's goldenaster	Plants and Lichens	STD	G2	S2		N	61	400	Strict Upland	Small Patch	Plants	50	General
Chrysopsis gossypina ssp. cruiseana	Cruise's goldenaster	Plants and Lichens	STD	G5T2	S2		N	31	400	Strict Upland	Small Patch	Plants	50	Coast/Linear
Chrysopsis highlandsensis	highlands goldenaster	Plants and Lichens	STD	G2	S2		Y	20	400	Strict Upland	Small Patch	Plants	50	General
Cicindela blanda	Sandbar Tiger Beetle	Beetles	CUSTOM	G3G4	S2S3		N	3	1000	General	Small Patch	ARI	50	General
Cicindela highlandensis	Highlands Tiger Beetle	Beetles	STD	G2G3	S2S3		Y	12	1000	Strict Upland	Intermediate	ARI	100	General
Cicindela olivacea	Olive Tiger Beetle	Beetles	STD	G3	S1		N	1	1000	Strict Upland	Small Patch	ARI	50	General
Cicindela wapleri	White-sand Tiger Beetle	Beetles	CUSTOM	G3G4	S2		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Cicindelidia floridana	Miami Tiger Beetle	Beetles	STD	G1	S1	E	Y	3	1000	Strict Upland	Small Patch	ARI	50	General
Cladonia perforata	perforate reindeer lichen	Plants and Lichens	STD	G2G3	S2S3	E	Y	32	400	General	Intermediate	Plants	100	General
Clitoria fragrans	scrub pigeon-wing	Plants and Lichens	STD	G2G3	S2	T	Y	66	400	Strict Upland	Intermediate	Plants	100	General
Cochlodinella poeyana	Truncate Urocoptid	Snails and Allies	STD	G1G2	S1S2		N	11	1000	Strict Upland	Small Patch	ARI	50	General
Colaspis thomasi	Scrub Oak Colaspis	Beetles	STD	G1	S1		Y	2	1000	Strict Upland	Small Patch	ARI	50	General
Coleataenia abscissa	cutthroatgrass	Plants and Lichens	STD	G3	S3		Y	104	400	General	Intermediate	Plants	100	General
Colletes titusensis	A Cellophane bee	Ants, Bees, and Wasps	STD	G1G2	S1S2		Y	1	1000	General	Intermediate	ARI	100	General
Colletes ultravalidus	Sandhill Cellophane Bee	Ants, Bees, and Wasps	STD	G2G3	S2?		N	7	1000	General	Matrix	ARI	1000	General
Colubrina cubensis var. floridana	Cuban snake-bark	Plants and Lichens	STD	G2G3T1	S1		N	9	400	Strict Upland	Rockland Plants	Plants	20	General
Conradina brevifolia	short-leaved rosemary	Plants and Lichens	STD	G2Q	S2	E	Y	22	400	Strict Upland	Intermediate	Plants	100	General
Conradina etonia	Etonia rosemary	Plants and Lichens	STD	G1	S1	E	Y	3	400	Strict Upland	Small Patch	Plants	50	General
Conradina glabra	Apalachicola rosemary	Plants and Lichens	STD	G1	S1	E	Y	3	400	General	Intermediate	Plants	100	General
Conradina grandiflora	large-flowered rosemary	Plants and Lichens	STD	G3	S3		Y	89	400	Strict Upland	Small Patch	Plants	50	General
Consolea corallicola	semaphore pricklypear	Plants and Lichens	STD	G1	S1	E	Y	2	400	General	Intermediate	Plants	100	General
Copris gopheri	Gopher Tortoise Copris Beetle	Beetles	STD	G2	S2		Y	6	1000	Strict Upland	Intermediate	ARI	100	General
Coreopsis integrifolia	ciliate-leaf tickseed	Plants and Lichens	STD	G1G2	S1		N	12	400	General	Intermediate	Plants	100	General
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	Mammals	STD	G3G4	S1		N	8	5000	General	Intermediate	Birds/Mammals	500	General
Cotinis aliena	Keys Green June Beetle	Beetles	STD	G1	S1		Y	3	1000	General	Intermediate	ARI	100	General
Crangonyx grandimanus	Florida Cave Amphipod	Amphipods	CAVE	G2G3	S2S3		Y	38	n/a	n/a	n/a	n/a	n/a	n/a
Crangonyx hobbsi	Hobbs's Cave Amphipod	Amphipods	CAVE	G2G3	S2S3		Y	32	n/a	n/a	n/a	n/a	n/a	n/a
Crangonyx manubrium	Jackson County Cave Amphipod	Amphipods	CAVE	G1G2	S1		N	7	n/a	n/a	n/a	n/a	n/a	n/a
Crangonyx parhobbsi	Florida Big Bend Cave Amphipod	Amphipods	CAVE	G1G2	S1S2		N	15	n/a	n/a	n/a	n/a	n/a	n/a
Crangonyx sulphurium	Sulphurous Cave Amphipod	Amphipods	CAVE	G1	S1		Y	3	n/a	n/a	n/a	n/a	n/a	n/a

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Crocodylus acutus	American Crocodile	Reptiles	CUSTOM	G2	S2	T	N	6	n/a	n/a	n/a	n/a	n/a	n/a
Croomia pauciflora	croomia	Plants and Lichens	STD	G3	S2		N	15	400	General	Intermediate	Plants	100	General
Crotalaria avonensis	Avon Park rabbit-bells	Plants and Lichens	STD	G1	S1	E	Y	5	400	Strict Upland	Small Patch	Plants	50	General
Crystallaria asprella	Crystal Darter	Fishes	AQUA	G3	S1		N	1	n/a	n/a	n/a	n/a	n/a	n/a
Ctenium floridanum	Florida toothache grass	Plants and Lichens	STD	G2	S2		N	37	400	General	Intermediate	Plants	100	General
Ctenogobius stigmaturus	Spottail Goby	Fishes	AQUA	G2	S2		N	8	n/a	n/a	n/a	n/a	n/a	n/a
Cucurbita okeechobeensis	Okeechobee gourd	Plants and Lichens	STD	G1	S1	E	Y	5	400	General	Intermediate	Plants	100	General
Cuphea aspera	Florida waxweed	Plants and Lichens	STD	G2	S2		Y	27	400	General	Intermediate	Plants	100	General
Cyclargus thomasi bethunebakeri	Miami Blue	Butterflies and Moths	STD	G4T1	S1	E	Y	4	1000	Strict Upland	Small Patch	ARI	50	General
Cyclocephala miamiensis	Miami Chafer Beetle	Beetles	STD	G2	S2		Y	4	1000	General	Intermediate	ARI	100	General
Cyprinella callitaenia	Bluestripe Shiner	Fishes	AQUA	G2G3	S2		N	9	n/a	n/a	n/a	n/a	n/a	n/a
Cyprinodon variegatus hubbsi	Lake Eustis Pupfish	Fishes	AQUA	G5T2Q	S2		Y	8	n/a	n/a	n/a	n/a	n/a	n/a
Dalea carthagenensis var. floridana	Florida prairie clover	Plants and Lichens	STD	G5T1	S1	E	Y	3	400	General	Small Patch	Plants	50	General
Dasymutilla archboldi	Lake Wales Ridge Velvet Ant	Ants, Bees, and Wasps	STD	G2G3	S2S3		Y	18	1000	Strict Upland	Intermediate	ARI	100	General
Dasyscias franzi	Shaggy Ghostsnail	Snails and Allies	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Deeringothamnus pulchellus	beautiful pawpaw	Plants and Lichens	STD	G1	S1	E	Y	41	400	General	Matrix	Plants	500	General
Deeringothamnus rugelii	Rugel's pawpaw	Plants and Lichens	STD	G1	S1	E	Y	32	400	General	Matrix	Plants	500	General
Dendrophylax lindenii	ghost orchid	Plants and Lichens	STD	G1	S1		N	15	400	General	Intermediate	Plants	100	General
Denisophytum pauciflorum	fewflower holdback	Plants and Lichens	STD	G2G4	S1		N	1	400	Strict Upland	Rockland Plants	Plants	20	General
Dermochelys coriacea	Leatherback Sea Turtle	Reptiles	CUSTOM	G2	S2	E	N	7	1000	General	Small Patch	ARI	50	Coast/Linear
Desmodium ochroleucum	creamflower tick-trefoil	Plants and Lichens	STD	G2G3	S1		N	1	400	General	Intermediate	Plants	100	General
Desmognathus auriculatus	Holbrook's Southern Dusky Salamander	Amphibians	STD	G3	S1		N	6	1000	General	Intermediate	ARI	100	General
Desmognathus sp. 1	Eglin Ravine Dusky Salamander	Amphibians	STD	G2G3Q	S2		N	4	1000	General	Intermediate	ARI	100	General
Diadophis punctatus acricus	Key Ringneck Snake	Reptiles	STD	G5T1	S1		Y	8	1000	Strict Upland	Small Patch	ARI	50	General
Dicerandra christmanii	Garrett's scrub balm	Plants and Lichens	STD	G1	S1	E	Y	4	400	Strict Upland	Intermediate	Plants	100	General
Dicerandra cornutissima	longspurred mint	Plants and Lichens	STD	G2	S2	E	Y	13	400	Strict Upland	Intermediate	Plants	100	General
Dicerandra frutescens	scrub mint	Plants and Lichens	STD	G1	S1	E	Y	9	400	Strict Upland	Intermediate	Plants	100	General
Dicerandra immaculata var. immaculata	Lakela's balm	Plants and Lichens	STD	G1T1	S1	E	Y	9	400	Strict Upland	Small Patch	Plants	50	General
Dicerandra immaculata var. savannarum	savanna balm	Plants and Lichens	STD	G1T1	S1	E	Y	4	400	General	Small Patch	Plants	50	General
Dicerandra modesta	blushing scrub balm	Plants and Lichens	STD	G1	S1	E	Y	2	400	Strict Upland	Intermediate	Plants	100	General
Digitaria floridana	Florida fingergrass	Plants and Lichens	STD	G1	S1		Y	2	400	Strict Upland	Matrix	Plants	500	General
Digitaria gracillima	longleaf fingergrass	Plants and Lichens	STD	G1	S1		Y	2	400	Strict Upland	Intermediate	Plants	100	General
Digitaria pauciflora	few-flowered fingergrass	Plants and Lichens	STD	G1	S1	T	Y	8	400	General	Small Patch	Plants	50	General
Diplotaxis rufa	Red Diplotaxis Beetle	Beetles	STD	G2G3	S2S3		Y	6	1000	General	Intermediate	ARI	100	General
Dorymyrmex flavopectus	Bi-colored Scrub Cone Ant	Ants, Bees, and Wasps	STD	G2	S2		Y	9	1000	Strict Upland	Small Patch	ARI	50	General
Drapetis sp. 1	Gopher Tortoise Burrow Dance Fly	Flies	STD	G1G2	S1S2		Y	2	1000	Strict Upland	Small Patch	ARI	50	General
Drymarchon couperi	Eastern Indigo Snake	Reptiles	CUSTOM	G3	S2?	T	N	493	n/a	n/a	n/a	n/a	n/a	n/a
Dryobates borealis	Red-cockaded Woodpecker	Birds	CUSTOM	G3	S2	E, PT	N	89	n/a	n/a	n/a	n/a	n/a	n/a
Eburia stroheckeri	Strohecker's Ivory-Spotted Long-Horned Beetle	Beetles	STD	G1G2	S1S2		Y	1	1000	Strict Upland	Small Patch	ARI	50	General
Elimia albanyensis	Black-crested Elimia Snail	Snails and Allies	AQUA	G3Q	S1		N	3	n/a	n/a	n/a	n/a	n/a	n/a
Elimia clenchi	Slackwater Elimia	Snails and Allies	AQUA	G3Q	S1S2		N	8	n/a	n/a	n/a	n/a	n/a	n/a
Elliptio arctata	Delicate Spike	Clams and Mussels	AQUA	G2G3Q	S2		N	1	n/a	n/a	n/a	n/a	n/a	n/a
Elliptio chipolaensis	Chipola Slabshell	Clams and Mussels	AQUA	G1	S1	T	N	1	n/a	n/a	n/a	n/a	n/a	n/a
Elliptio fraterna	Brother Spike	Clams and Mussels	AQUA	G1G2	S1		N	1	n/a	n/a	n/a	n/a	n/a	n/a
Elliptio mcmichaeli	Fluted Elephant-ear	Clams and Mussels	AQUA	G2G3	S1S2		N	16	n/a	n/a	n/a	n/a	n/a	n/a
Elliptio monroensis	St. Johns Elephantear	Clams and Mussels	AQUA	G1G2	S1S2		N	5	n/a	n/a	n/a	n/a	n/a	n/a
Elliptio purpurella	Inflated Spike	Clams and Mussels	AQUA	G2	S2		N	5	n/a	n/a	n/a	n/a	n/a	n/a
Elliptoideus sloatianus	Purple Bankclimber	Clams and Mussels	AQUA	G2	S1S2	T	N	23	n/a	n/a	n/a	n/a	n/a	n/a
Elytraria caroliniensis var. angustifolia	narrow-leaved Carolina scalystem	Plants and Lichens	STD	G4T2	S2		Y	16	400	General	Intermediate	Plants	100	General
Enaphalodes archboldi	Archbold Scrub Oak Long-horned Beetle	Beetles	STD	G1G2	S1S2		Y	1	1000	Strict Upland	Small Patch	ARI	50	General
Enneacanthus chaetodon	Blackbanded Sunfish	Fishes	AQUA	G3G4	S1S3		N	19	n/a	n/a	n/a	n/a	n/a	n/a
Ephyriades brunnea floridensis	Florida Duskywing	Butterflies and Moths	STD	G4T2	S2		Y	5	1000	Strict Upland	Small Patch	ARI	50	General
Eragrostis pectinacea var. tracyi	Sanibel lovegrass	Plants and Lichens	STD	G5T1	S1		Y	14	400	General	Intermediate	Plants	100	Coast/Linear
Eretmochelys imbricata	Hawksbill Sea Turtle	Reptiles	CUSTOM	G3	S1	E	N	7	n/a	n/a	n/a	n/a	n/a	n/a
Eriocaulon nigrobracteatum	dark-headed hatpins	Plants and Lichens	STD	G1	S1		Y	25	400	Strict Wetland	Small Patch	Plants	50	General
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	Plants and Lichens	STD	G4T3	S3	T	Y	101	400	Strict Upland	Intermediate	Plants	100	General
Eryngium cuneifolium	wedge-leaved button-snakeroot	Plants and Lichens	STD	G1	S1	E	Y	15	400	Strict Upland	Small Patch	Plants	50	General
Etheostoma okaloosae	Okaloosa Darter	Fishes	AQUA	G2	S2	T, PDL	Y	8	n/a	n/a	n/a	n/a	n/a	n/a
Eucanthus alutaceus	Mat Red Globe Scarab Beetle	Beetles	STD	G2G3	S1S2		N	4	1000	General	Intermediate	ARI	100	General
Eumops floridanus	Florida bonneted bat	Mammals	STD	G1	S1	E	Y	14	5000	General	Intermediate	Birds/Mammals	500	General
Euphorbia rosescens	scrub spurge	Plants and Lichens	STD	G1	S1		Y	18	400	Strict Upland	Small Patch	Plants	50	General
Euphorbia telephioides	telephus spurge	Plants and Lichens	STD	G1	S1	T	Y	25	400	General	Intermediate	Plants	100	General
Euphoria discicollis	Pocket Gopher Flower Beetle	Beetles	STD	G2	S1S2		N	6	1000	General	Intermediate	ARI	100	General
Euphyes berryi	Berry's Skipper	Butterflies and Moths	STD	G2	S2		N	22	1000	General	Intermediate	ARI	100	General
Euphyes dukesi calhouni	Calhoun's Skipper	Butterflies and Moths	STD	G3G4T1	S1		Y	17	1000	General	Intermediate	ARI	100	General
Euphyes pilatka klotsi	Klots' Skipper	Butterflies and Moths	STD	G3T2	S2		Y	2	1000	General	Small Patch	ARI	50	General
Eurybia spinulosa	pinewoods aster	Plants and Lichens	STD	G1	S1		Y	61	400	General	Intermediate	Plants	100	General
Eurycea hillisi	Hillis's Dwarf Salamander	Amphibians	STD	G3	S1S2		N	7	1000	General	Intermediate	ARI	100	General
Eurycea sphagnicola	Bog Dwarf Salamander	Amphibians	STD	G1G2	S1S2		N	9	1000	General	Intermediate	ARI	100	General
Eurycea wallacei	Georgia Blind Salamander	Amphibians	CAVE	G2	S2		N	28	n/a	n/a	n/a	n/a	n/a	n/a
Eutrichota gopheri	Gopher Tortoise Burrow Fly	Flies	STD	G2G3	S2S3		N	13	1000	General	Intermediate	ARI	100	General
Evolvulus grisebachii	Grisebach's false-morning-glory	Plants and Lichens	STD	G2G3	S1		N	1	400	Strict Upland	Rockland Plants	Plants	20	General

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Floridobia alexander	Alexander Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia fraterna	Creek Siltsnail	Snails and Allies	AQUA	G2	S2		Y	4	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia helicogyra	Crystal Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia leptospira	Flatwood Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia mica	Ichetucknee Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia petrifons	Rock Springs Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia ponderosa	Ponderous Spring Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia porterae	Green Cove Springsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia vanhyningi	Seminole Spring Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobia wekiwae	Wekiwa Siltsnail	Snails and Allies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Floridobolus floydi	Floyd's Sandhill Millipede	Millipedes	STD	G1	S1		Y	6	1000	Strict Upland	Matrix	ARI	1000	General
Floridobolus orini	Orin's Scrub Millipede	Millipedes	STD	G1G2	S1S2		Y	13	1000	Strict Upland	Small Patch	ARI	50	General
Floridobolus penneri	Florida Scrub Millipede	Millipedes	STD	G1G2	S1S2		Y	11	1000	Strict Upland	Small Patch	ARI	50	General
Forestiera godfreyi	Godfrey's swampprivet	Plants and Lichens	STD	G2	S2		N	18	400	General	Intermediate	Plants	100	General
Fothergilla gardenii	dwarf witch-alder	Plants and Lichens	STD	G3G4	S1		N	7	400	General	Intermediate	Plants	100	General
Fundulus jenkinsi	Saltmarsh Topminnow	Fishes	AQUA	G3	S2		N	9	n/a	n/a	n/a	n/a	n/a	n/a
Fusconaia burkei	Tapered Pigtoe	Clams and Mussels	AQUA	G2G3	S2	T	N	10	n/a	n/a	n/a	n/a	n/a	n/a
Fusconaia escambia	Narrow Pigtoe	Clams and Mussels	AQUA	G1G2	S1	T	N	2	n/a	n/a	n/a	n/a	n/a	n/a
Galactia pinetorum	pineland milkpea	Plants and Lichens	STD	G2Q	S2		Y	18	400	General	Rockland Plants	Plants	20	General
Galactia smallii	Small's milkpea	Plants and Lichens	STD	G1Q	S1	E	Y	13	400	Strict Upland	Rockland Plants	Plants	20	General
Galeandra bicarinata	two-keeled helmet orchid	Plants and Lichens	STD	G1	S1		N	4	400	General	Small Patch	Plants	50	General
Gentiana pennelliana	wiregrass gentian	Plants and Lichens	STD	G3	S3		Y	152	400	General	Intermediate	Plants	100	General
Geolycosa xera	McCrone's Burrowing Wolf Spider	Spiders	STD	G2G3	S2S3		Y	35	1000	Strict Upland	Intermediate	ARI	100	General
Geomysaprinus floridae	Equal-clawed Gopher Tortoise Hister Beetle	Beetles	STD	G1G2	S1S2		Y	2	1000	General	Matrix	ARI	1000	General
Geopsammodius fuscus	Dark Tiny Sand-loving Scarab	Beetles	STD	G1	S1		Y	2	1000	Strict Upland	Small Patch	ARI	50	General
Geopsammodius morrisi	Morris' Tiny Sand-loving Scarab	Beetles	STD	G1	S1		Y	4	1000	Strict Upland	Matrix	ARI	1000	General
Geopsammodius relictillus	Relictual Tiny Sand-loving Scarab	Beetles	STD	G2G3	S2S3		Y	26	1000	Strict Upland	Small Patch	ARI	50	General
Geopsammodius subpedalis	Underfoot Tiny Sand-loving Scarab	Beetles	STD	G2G3	S2		N	10	1000	Strict Upland	Small Patch	ARI	50	Coast/Linear
Geopsammodius withlacoochee	Withlacoochee Tiny Sand-loving Scarab	Beetles	STD	G1	S1		Y	2	1000	Strict Upland	Matrix	ARI	1000	General
Glandularia maritima	coastal vervain	Plants and Lichens	STD	G3	S3		Y	59	400	General	Small Patch	Plants	50	General
Glandularia tampensis	Tampa vervain	Plants and Lichens	STD	G2	S2		Y	30	400	General	Intermediate	Plants	100	General
Gomphurus modestus	Gulf Coast Clubtail	Dragonflies and Damselflies	AQUA	G3G4	S1		N	3	n/a	n/a	n/a	n/a	n/a	n/a
Graptemys barbouri	Barbour's Map Turtle	Reptiles	AQUA	G2	S2		N	7	n/a	n/a	n/a	n/a	n/a	n/a
Graptemys ernsti	Escambia Map Turtle	Reptiles	AQUA	G2	S2		N	4	n/a	n/a	n/a	n/a	n/a	n/a
Gronocarus autumnalis	Lobed Spiny Burrowing Beetle	Beetles	STD	G2G3	S2		N	10	1000	Strict Upland	Intermediate	ARI	100	General
Gronocarus inornatus	Lobeless Spiny Burrowing Beetle	Beetles	STD	G1G2	S1S2		Y	10	1000	Strict Upland	Intermediate	ARI	100	General
Guaiacum sanctum	lignum-vitae	Plants and Lichens	STD	G2G3	S1		N	22	400	General	Small Patch	Plants	50	General
Halophila johnsonii	Johnson's seagrass	Plants and Lichens	CUSTOM	G2Q	S2	T, PDL	Y	10	n/a	n/a	n/a	n/a	n/a	n/a
Hamamelis ovalis	Leonard's witch hazel	Plants and Lichens	STD	G2G3	SNR		N	3	400	General	Intermediate	Plants	100	General
Hamiota australis	Southern Sandshell	Clams and Mussels	AQUA	G2G3	S1	T	N	4	n/a	n/a	n/a	n/a	n/a	n/a
Hamiota subangulata	Shiny-rayed Pocketbook	Clams and Mussels	AQUA	G2	S1S2	E	N	8	n/a	n/a	n/a	n/a	n/a	n/a
Haroldiataenius saramari	Sand Pine Scrub Ataenius Beetle	Beetles	STD	G3G4	S3S4		Y	29	1000	Strict Upland	Small Patch	ARI	50	General
Harperocallis flava	Harper's beauty	Plants and Lichens	STD	G2	S2	E	Y	29	400	General	Intermediate	Plants	100	General
Harrisia aboriginum	aboriginal prickly apple	Plants and Lichens	STD	G1	S1	E	Y	14	400	General	Intermediate	Plants	100	Coast/Linear
Harrisia fragrans	fragrant prickly apple	Plants and Lichens	STD	G1	S1	E	Y	13	400	General	Intermediate	Plants	100	General
Harrisia simpsonii	Simpson's prickly apple	Plants and Lichens	STD	G2	S2		Y	42	400	General	Intermediate	Plants	100	General
Hartwrightia floridana	hartwrightia	Plants and Lichens	STD	G2	S2		N	63	400	General	Intermediate	Plants	100	General
Hasteola robertiorum	Florida hasteola	Plants and Lichens	STD	G1	S1		Y	15	400	General	Intermediate	Plants	100	General
Helianthus carnosus	lake-side sunflower	Plants and Lichens	STD	G1G2	S1S2		Y	23	400	General	Intermediate	Plants	100	General
Helianthus debilis ssp. vestitus	hairy beach sunflower	Plants and Lichens	STD	G5T2	S2		Y	22	400	General	Intermediate	Plants	100	Coast/Linear
Hesperapis oraria	Gulf Coast Solitary Bee	Ants, Bees, and Wasps	STD	G1G2	S1S2		N	12	1000	Strict Upland	Small Patch	ARI	50	Coast/Linear
Heterodon simus	Southern Hognose Snake	Reptiles	STD	G2	S2S3		N	43	2500	General	Intermediate	ARI	100	General
Hogna ericeticola	Rosemary Wolf Spider	Spiders	STD	G1	S1		Y	14	1000	Strict Upland	Small Patch	ARI	50	General
Hojeda inaguensis	Keys Mudcloak	Snails and Allies	STD	G3G4	S2		N	5	1000	General	Small Patch	ARI	50	Coast/Linear
Homoeoneuria dolani	Blue Sand-river Mayfly	Mayflies	AQUA	G3G4	S1S2		N	3	n/a	n/a	n/a	n/a	n/a	n/a
Hydroperla phormidia	A Stonefly	Stoneflies	AQUA	G3	S2		N	15	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila apalachicola	Apalachicola Hydroptila Caddisfly	Caddisflies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila bribriae	Kriebel's Hydroptila Caddisfly	Caddisflies	AQUA	G1	S1		Y	9	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila eglinensis	Saberlike Hydroptila Caddisfly	Caddisflies	AQUA	G1	S1		Y	11	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila hamiltoni	Hamilton's Hydroptila Caddisfly	Caddisflies	AQUA	G1	S1		Y	3	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila molsonae	Molson's Microcaddisfly	Caddisflies	AQUA	G2	S2		N	8	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila okaloosa	Rogue Creek Hydroptila Caddisfly	Caddisflies	AQUA	G1	S1		Y	3	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila sarahae	Sarah's Hydroptila Caddisfly	Caddisflies	AQUA	G1G2	S1S2		Y	10	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila sykorai	Sykora's Hydroptila Caddisfly	Caddisflies	AQUA	G1	S1		Y	2	n/a	n/a	n/a	n/a	n/a	n/a
Hydroptila wakulla	Wakulla Springs Vari-colored Microcaddisfly	Caddisflies	AQUA	G2	S2		Y	11	n/a	n/a	n/a	n/a	n/a	n/a
Hymenocallis gholsonii	Gholson's spiderlily	Plants and Lichens	STD	G1	S1		Y	2	400	General	Intermediate	Plants	100	General
Hymenocallis godfreyi	Godfrey's spiderlily	Plants and Lichens	STD	G1	S1		Y	5	400	Strict Wetland	Matrix	Plants	500	General
Hymenocallis henryae var. glaucifolia	spiderlily	Plants and Lichens	STD	G2T2	S2		Y	12	400	General	Intermediate	Plants	100	General
Hymenocallis henryae var. henryae	Henry's spiderlily	Plants and Lichens	STD	G2T2T3	S2		Y	23	400	General	Intermediate	Plants	100	General
Hypericum cumulicola	Highlands Scrub hypericum	Plants and Lichens	STD	G2	S2	E	Y	37	400	Strict Upland	Small Patch	Plants	50	General
Hypericum edisonianum	Edison's ascyrum	Plants and Lichens	STD	G2G3	S2		Y	35	400	Strict Wetland	Intermediate	Plants	100	General
Hypericum lissophloeus	smoothbark St. John's wort	Plants and Lichens	STD	G2	S2		Y	200	400	Strict Wetland	Small Patch	Plants	50	General
Hypotrichia spissipes	Florida Hypotrichia Scarab Beetle	Beetles	STD	G3G4	S3S4		Y	4	1000	Strict Upland	Intermediate	ARI	100	General
Idia gopheri	Gopher Tortoise Noctuid Moth	Butterflies and Moths	STD	G2G3	S2S3		N	6	1000	Strict Upland	Matrix	ARI	1000	General

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Illicium parviflorum	star anise	Plants and Lichens	STD	G2	S2		Y	24	400	General	Intermediate	Plants	100	General
Ipomoea microdactyla	wild potato morning glory	Plants and Lichens	STD	G2	S2		N	15	400	Strict Upland	Rockland Plants	Plants	20	General
Ipomoea tenuissima	rocklands morning glory	Plants and Lichens	STD	G3	S1		N	9	400	Strict Upland	Rockland Plants	Plants	20	General
Ischyrus dunedinensis	Three Spotted Pleasing Fungus Beetle	Beetles	STD	G2G3	S2S3		N	11	1000	Strict Upland	Small Patch	ARI	50	General
Islandiana sp. 2	Marianna Cave Sheetweb Weaver Spider	Spiders	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Isonychia berneri	A Mayfly	Mayflies	AQUA	G2G3	S1S2		N	3	n/a	n/a	n/a	n/a	n/a	n/a
Jacquemontia curtissii	pineland jacquemontia	Plants and Lichens	STD	G2	S2		Y	49	400	General	Small Patch	Plants	50	General
Jacquemontia reclinata	beach jacquemontia	Plants and Lichens	STD	G1	S1	E	Y	22	400	General	Small Patch	Plants	50	Coast/Linear
Justicia cooleyi	Cooley's water-willow	Plants and Lichens	STD	G2Q	S2	E	Y	18	400	General	Intermediate	Plants	100	General
Justicia crassifolia	thick-leaved water-willow	Plants and Lichens	STD	G3	S3		Y	52	400	General	Intermediate	Plants	100	General
Keltonia robusta	Conradina Mirid Bug	True Bugs and Allies	STD	G2	S2		N	1	1000	Strict Upland	Small Patch	ARI	50	General
Keltonia rubrofemorata	Scrub Wireweed Mirid Bug	True Bugs and Allies	STD	G2	S2		Y	12	1000	Strict Upland	Small Patch	ARI	50	General
Kinosternon baurii pop. 1	Striped Mud Turtle, Lower Keys Population	Reptiles	STD	G5T1Q	S1		Y	22	2500	General	Small Patch	ARI	50	General
Lampropeltis extenuata	Short-tailed Snake	Reptiles	STD	G3	S3		Y	58	2500	Strict Upland	Intermediate	ARI	100	General
Lampropeltis floridana	Florida Kingsnake	Reptiles	STD	G2	S2		Y	4	2500	General	Intermediate	ARI	100	General
Lampropeltis meansi	Apalachicola Kingsnake	Reptiles	STD	G2	S2		Y	15	2500	General	Intermediate	ARI	100	General
Lampropeltis occipitolineata	South Florida Mole Kingsnake	Reptiles	STD	G2	S2		Y	14	2500	General	Intermediate	ARI	100	General
Lantana depressa var. depressa	Florida lantana	Plants and Lichens	STD	G2T1	S1		Y	33	400	Strict Upland	Rockland Plants	Plants	20	General
Lantana depressa var. floridana	Atlantic Coast Florida lantana	Plants and Lichens	STD	G2T1	S1		Y	27	400	General	Small Patch	Plants	50	Coast/Linear
Lantana depressa var. sanibelensis	Gulf Coast Florida lantana	Plants and Lichens	STD	G2T1	S1		Y	3	400	Strict Upland	Small Patch	Plants	50	General
Lasioglossum surianae	Florida Keys Sweat Bee	Ants, Bees, and Wasps	STD	G2	S2		N	7	1000	General	Intermediate	ARI	100	General
Laterallus jamaicensis	Black Rail	Birds	STD	G3	S2	T	N	28	1000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Latrodectus bishopi	Red Widow Spider	Spiders	STD	G2G3	S2S3		Y	26	1000	Strict Upland	Small Patch	ARI	50	General
Lechea cernua	nodding pinweed	Plants and Lichens	STD	G3	S3		Y	186	400	Strict Upland	Small Patch	Plants	50	General
Lechea divaricata	pine pinweed	Plants and Lichens	STD	G2	S2		Y	51	400	General	Small Patch	Plants	50	General
Leiopsammodius deyrupi	Scrub Little Mole Scarab	Beetles	STD	G1G2	S1S2		Y	3	1000	General	Intermediate	ARI	100	General
Lepidochelys kempii	Kemp's Ridley Sea Turtle	Reptiles	CUSTOM	G1	S1	E	N	9	1000	General	Small Patch	ARI	50	Coast/Linear
Lepidostoma morsei	Morse's Little Plain Brown Sedge	Caddisflies	AQUA	G2G3	S1		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Leuctra cottaquilla	A Stonefly	Stoneflies	AQUA	G2	S2		N	11	n/a	n/a	n/a	n/a	n/a	n/a
Liatris gholsonii	Gholson's blazing star	Plants and Lichens	CUSTOM	G1	S1		Y	13	400	General	Intermediate	Plants	100	General
Liatris ohlingerae	Florida blazing star	Plants and Lichens	STD	G2	S2	E	Y	61	400	Strict Upland	Small Patch	Plants	50	General
Liatris provincialis	Godfrey's blazing star	Plants and Lichens	STD	G2	S2		Y	57	400	General	Intermediate	Plants	100	General
Libellula jesseana	Purple Skimmer	Dragonflies and Damselflies	AQUA	G1G2	S1S2		Y	7	n/a	n/a	n/a	n/a	n/a	n/a
Liguus fasciatus matecumbensis	Florida Tree Snail	Snails and Allies	STD	G3T2	S2		Y	3	1000	Strict Upland	Small Patch	ARI	50	General
Lindera subcoriacea	bog spicebush	Plants and Lichens	STD	G3	S1		N	3	400	General	Intermediate	Plants	100	General
Linsleyonides albomaculatus	Tropical White-Spotted Long-Horned Beetle	Beetles	STD	G2G4	S1		N	2	1000	Strict Upland	Small Patch	ARI	50	General
Linum arenicola	sand flax	Plants and Lichens	STD	G1G2	S1S2	E	Y	14	400	General	Rockland Plants	Plants	20	General
Linum carteri var. carteri	Carter's small-flowered flax	Plants and Lichens	STD	G2T1	S1	E	Y	10	400	General	Small Patch	Plants	50	General
Linum carteri var. smallii	Small's flax	Plants and Lichens	STD	G2T2	S2		Y	12	400	General	Intermediate	Plants	100	General
Linum macrocarpum	spring hill flax	Plants and Lichens	STD	G2	S2		N	1	400	General	Intermediate	Plants	100	General
Linum westii	West's flax	Plants and Lichens	STD	G1	S1		Y	31	400	Strict Wetland	Intermediate	Plants	100	General
Liopinus sp. 1	Scrub Hickory Longhorn Beetle	Beetles	STD	G1	S1		Y	1	1000	General	Intermediate	ARI	100	General
Lithobates capito	Gopher Frog	Amphibians	STD	G2G3	S3		N	209	1000	General	Matrix	ARI	1000	General
Lithobates okaloosae	Florida Bog Frog	Amphibians	STD	G2	S2		Y	35	1000	General	Intermediate	ARI	100	General
Litsea aestivalis	pondspice	Plants and Lichens	STD	G3?	S2		N	39	400	Strict Wetland	Intermediate	Plants	100	General
Lobelia apalachicolensis	apalachicola lobelia	Plants and Lichens	STD	G2	SNR			25	400	General	Intermediate	Plants	100	General
Lomariopsis kunzeana	holly vine fern	Plants and Lichens	STD	G2G4	S1		N	4	400	General	Small Patch	Plants	50	General
Lupinus aridorum	scrub lupine	Plants and Lichens	STD	G3T1	S1	E	Y	40	400	Strict Upland	Small Patch	Plants	50	General
Lupinus westianus	Gulf Coast lupine	Plants and Lichens	STD	G3T3	S3		Y	109	400	Strict Upland	Small Patch	Plants	50	General
Lythrum curtissii	Curtiss' loosestrife	Plants and Lichens	STD	G1	S2		N	20	400	Strict Wetland	Intermediate	Plants	100	General
Lythrum flagellare	lowland loosestrife	Plants and Lichens	STD	G3	S3		Y	71	400	Strict Wetland	Intermediate	Plants	100	General
Macbridea alba	white birds-in-a-nest	Plants and Lichens	STD	G2	S2	T	Y	44	400	General	Intermediate	Plants	100	General
Macdunnoa brunnea	A Mayfly	Mayflies	AQUA	G3G4	S2S3		N	4	n/a	n/a	n/a	n/a	n/a	n/a
Machimus polyphemi	Gopher Tortoise Robber Fly	Flies	STD	G2	S1S2		N	1	1000	Strict Upland	Matrix	ARI	1000	General
Macranthera flammea	hummingbird flower	Plants and Lichens	STD	G3	S2		N	42	400	Strict Wetland	Intermediate	Plants	100	General
Macrhybopsis pallida	Florida Chub	Fishes	AQUA	G3	S2		N	7	n/a	n/a	n/a	n/a	n/a	n/a
Macrochelys suwanniensis	Suwannee Alligator Snapping Turtle	Reptiles	AQUA	G2	S2	PT	N	3	n/a	n/a	n/a	n/a	n/a	n/a
Macrochelys temminckii	Alligator Snapping Turtle	Reptiles	AQUA	G3	S3	PT	N	23	n/a	n/a	n/a	n/a	n/a	n/a
Magnolia ashei	Ashe's magnolia	Plants and Lichens	STD	G3	S2		Y	79	400	General	Intermediate	Plants	100	General
Malaclemys terrapin rhizophorarum	Mangrove Terrapin	Reptiles	STD	G4T2	S2		Y	14	5000	General	Matrix	ARI	1000	General
Marshallia ramosa	southern marshallia	Plants and Lichens	STD	G2G3	S1		N	2	400	Strict Upland	Matrix	Plants	500	General
Matelea alabamensis	Alabama spiny-pod	Plants and Lichens	STD	G2	S2		N	28	400	General	Intermediate	Plants	100	General
Matelea baldwyniana	Baldwyn's spiny-pod	Plants and Lichens	STD	G3	S1		N	5	400	General	Intermediate	Plants	100	General
Matelea flavidula	Carolina milkvine	Plants and Lichens	STD	G3?	S1		N	7	400	General	Intermediate	Plants	100	General
Matelea floridana	Florida spiny-pod	Plants and Lichens	STD	G2	S2		N	58	400	General	Matrix	Plants	500	General
Medionidus penicillatus	Gulf Moccasinshell	Clams and Mussels	AQUA	G2	S1	E	N	3	n/a	n/a	n/a	n/a	n/a	n/a
Medionidus simpsonianus	Ochlockonee Moccasinshell	Clams and Mussels	AQUA	G1	S1	E	N	4	n/a	n/a	n/a	n/a	n/a	n/a
Medionidus walkeri	Suwannee Moccasinshell	Clams and Mussels	AQUA	G1	S1	T	N	2	n/a	n/a	n/a	n/a	n/a	n/a
Melanoplus adelogyrus	Volusia Grasshopper	Grasshoppers and Allies	STD	G1G2	S1S2		Y	2	1000	Strict Upland	Intermediate	ARI	100	General
Melanoplus apalachicolae	Apalachicola Grasshopper	Grasshoppers and Allies	STD	G1	S1		Y	2	1000	Strict Upland	Matrix	ARI	1000	General
Melanoplus forcipatus	Broad Cercus Scrub Grasshopper	Grasshoppers and Allies	STD	G2	S2		Y	13	1000	Strict Upland	Small Patch	ARI	50	General
Melanoplus gurneyi	Gurney's Spurthroat Grasshopper	Grasshoppers and Allies	STD	G1G2	S1S2		Y	4	1000	Strict Upland	Small Patch	ARI	50	General
Melanoplus indicifer	East Coast Scrub Grasshopper	Grasshoppers and Allies	STD	G1	S1		Y	3	1000	Strict Upland	Small Patch	ARI	50	General

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Melanoplus nanciae	Ocala Claw-Cercus Grasshopper	Grasshoppers and Allies	STD	G1?	S1?		Y	3	1000	Strict Upland	Small Patch	ARI	50	General
Melanoplus ordwayae	Ordway Melanoplus Grasshopper	Grasshoppers and Allies	STD	G1G2	S1S2		Y	3	1000	Strict Upland	Small Patch	ARI	50	General
Melanoplus pygmaeus	Pygmy Sandhill Grasshopper	Grasshoppers and Allies	STD	G1G3	S1S3		Y	3	1000	Strict Upland	Intermediate	ARI	100	General
Melanoplus tequestae	Tequesta Grasshopper	Grasshoppers and Allies	STD	G2G3	S2S3		Y	25	1000	Strict Upland	Small Patch	ARI	50	General
Melanoplus withlacoocheensis	Withlacoochee Melanoplus Grasshopper	Grasshoppers and Allies	STD	G1G3	S1S3		Y	2	1000	Strict Upland	Matrix	ARI	1000	General
Menidia conchorum	Key Silverside	Fishes	AQUA	G2Q	S2	SC	Y	23	n/a	n/a	n/a	n/a	n/a	n/a
Mexistenasellus floridensis	Marianna Cave Isopod	Isopods	CAVE	G1	S1			1	n/a	n/a	n/a	n/a	n/a	n/a
Micropterus cataractae	Shoal Bass	Fishes	AQUA	G3	S1		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Microtus pennsylvanicus dukecampbelli	Florida Salt Marsh Vole	Mammals	STD	G5T1	S1	E	Y	1	1000	Strict Wetland	Matrix	Birds/Mammals	2000	General
Mixogaster delongi	Delong's Mixogaster Flower Fly	Flies	STD	G1G2	S1S2		Y	2	1000	General	Small Patch	ARI	50	General
Mononeuria paludicola	Godfrey's stitchwort	Plants and Lichens	STD	G1	S1		N	3	400	General	Intermediate	Plants	100	General
Monotropsis reynoldsiae	pygmy pipes	Plants and Lichens	STD	G2	S2		Y	12	400	General	Intermediate	Plants	100	General
Mosiera longipes	mangroveberry	Plants and Lichens	STD	G3G4	S2		N	33	400	General	Small Patch	Plants	50	General
Moxostoma sp. 1	Apalachicola Redhorse	Fishes	AQUA	G3	S2		N	3	n/a	n/a	n/a	n/a	n/a	n/a
Mustela frenata peninsulae	Florida Long-tailed Weasel	Mammals	CUSTOM	G5T3?	S3?		Y	66	1000	General	Intermediate	Birds/Mammals	500	General
Mycotrupes cartwrighti	Cartwright's Mycotrupes Beetle	Beetles	STD	G3	S2		N	6	1000	Strict Upland	Matrix	ARI	1000	General
Mycotrupes gaigei	North Peninsular Mycotrupes Beetle	Beetles	STD	G2G3	S2S3		Y	7	1000	Strict Upland	Intermediate	ARI	100	General
Mycotrupes pedester	Southwest Florida Mycotrupes Beetle	Beetles	STD	G1G2	S1S2		Y	5	1000	Strict Upland	Small Patch	ARI	50	General
Mycteria americana	Wood Stork	Birds	CUSTOM	G4	S2	T	N	238	n/a	n/a	n/a	n/a	n/a	n/a
Myotis grisescens	Gray Bat	Mammals	CUSTOM	G3G4	S1	E	N	7	1000	General	Matrix	Birds/Mammals	2000	General
Najas filifolia	Narrowleaf Naiad	Plants and Lichens	AQUA	G3	S2		N	52	n/a	n/a	n/a	n/a	n/a	n/a
Nectopsyche tavara	Tavares White Miller Caddisfly	Caddisflies	AQUA	G3	S3		Y	29	n/a	n/a	n/a	n/a	n/a	n/a
Nemastylis floridana	celestial lily	Plants and Lichens	STD	G2	S2		Y	57	400	General	Intermediate	Plants	100	General
Nemopalpus nearcticus	Sugarfoot Moth Fly	Flies	STD	G2	S2		Y	2	1000	General	Intermediate	ARI	100	General
Neofiber alleni	Round-tailed Muskrat	Mammals	STD	G2	S2		N	58	1000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Neotoma floridana smalli	Key Largo Woodrat	Mammals	STD	G5T1	S1	E	Y	19	1000	Strict Upland	Small Patch	Birds/Mammals	50	Coast/Linear
Neotrichia rasmusseni	Rasmussen's Neotrichia Caddisfly	Caddisflies	AQUA	G1	S1S2		Y	5	n/a	n/a	n/a	n/a	n/a	n/a
Neovison vison halilimnetes	Gulf Salt Marsh Mink	Mammals	STD	G5T2	S2		Y	11	1000	General	Intermediate	Birds/Mammals	500	General
Neovison vison pop. 1	American Mink, Southern Florida population	Mammals	STD	G5T2Q	S2		Y	7	1000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Nerodia clarkii taeniata	Atlantic Salt Marsh Snake	Reptiles	STD	G4T1Q	S1	T	Y	4	2500	Strict Wetland	Intermediate	ARI	100	General
Nolina atopocarpa	Florida beargrass	Plants and Lichens	STD	G3	S3		Y	146	400	General	Matrix	Plants	500	General
Nolina brittoniana	Britton's beargrass	Plants and Lichens	STD	G3	S3	E	Y	110	400	Strict Upland	Intermediate	Plants	100	General
Notophthalmus perstriatus	Striped Newt	Amphibians	STD	G2G3	S2		N	173	1000	General	Intermediate	ARI	100	General
Notropis melanostomus	Blackmouth Shiner	Fishes	AQUA	G2	S1		N	21	n/a	n/a	n/a	n/a	n/a	n/a
Nuphar advena ssp. ulvacea	West Florida cowlily	Plants and Lichens	STD	G5T2	S2		N	32	400	Strict Wetland	Intermediate	Plants	100	General
Nyctiophylax morsei	Morse's Dinky Light Summer Sedge	Caddisflies	AQUA	G2	S2		N	20	n/a	n/a	n/a	n/a	n/a	n/a
Nyssa ursina	bog tupelo	Plants and Lichens	STD	G3	S3		Y	80	400	Strict Wetland	Intermediate	Plants	100	General
Odocoileus virginianus clavium	Key Deer	Mammals	STD	G5T1	S1	E	Y	16	5000	General	Intermediate	Birds/Mammals	500	General
Odontotaenius floridanus	Archbold Bess Beetle	Beetles	STD	G1G2	S1S2		Y	6	1000	Strict Upland	Small Patch	ARI	50	General
Oecetis daytona	Daytona Long-horned Caddisfly	Caddisflies	AQUA	G3	S2S3		N	9	n/a	n/a	n/a	n/a	n/a	n/a
Oecetis parva	Little Oecetis Longhorned Caddisfly	Caddisflies	AQUA	G2	S2		N	9	n/a	n/a	n/a	n/a	n/a	n/a
Oecetis porteri	Porter's Long-horn Caddisfly	Caddisflies	AQUA	G3G4	S2S3		N	15	n/a	n/a	n/a	n/a	n/a	n/a
Okenia hypogaea	burrowing four-o'clock	Plants and Lichens	STD	G3?	S2		N	28	400	Strict Upland	Small Patch	Plants	50	Coast/Linear
Onthophagus aciculatulus	Sandyland Onthophagus Beetle	Beetles	STD	G2	S2		Y	13	1000	Strict Upland	Small Patch	ARI	50	General
Onthophagus polyphemi polyphemi	Punctate Gopher Tortoise Onthophagus Beetle	Beetles	STD	G2G3T2T3	S2		N	30	1000	General	Intermediate	ARI	100	General
Onthophagus polyphemi sparsisetosus	Smooth Gopher Tortoise Onthophagus Beetle	Beetles	STD	G2G3T2	S1S2		N	3	1000	Strict Upland	Matrix	ARI	1000	General
Onychomira floridensis	A Comb-Clawed Beetle	Beetles	STD	G1	S1		Y	4	1000	Strict Upland	Intermediate	ARI	100	General
Ophiogomphus australis	Southern Snaketail	Dragonflies and Damselflies	AQUA	G1G2	S1S2		N	5	n/a	n/a	n/a	n/a	n/a	n/a
Opuntia triacantha	three-spined pricklypear	Plants and Lichens	STD	G2G4	S1		N	6	400	General	Small Patch	Plants	50	General
Orbexilum virgatum	pineland scurfpea	Plants and Lichens	STD	G1	S1		N	3	400	General	Matrix	Plants	500	General
Orthalicus reses nesodryas	Florida Keys Tree Snail	Snails and Allies	STD	G2T2	S2		Y	3	1000	Strict Upland	Small Patch	ARI	50	General
Orthalicus reses reses	Stock Island Tree Snail	Snails and Allies	STD	G2T1	S1	T	Y	5	1000	Strict Upland	Small Patch	ARI	50	General
Orthotrichia dentata	Dentate Orthotrichian Microcaddisfly	Caddisflies	AQUA	G2G3	S2		N	4	n/a	n/a	n/a	n/a	n/a	n/a
Oryzomys palustris argentatus	Key Rice Rat	Mammals	STD	G5T2Q	S2	E	Y	9	1000	General	Intermediate	Birds/Mammals	500	Coast/Linear
Oryzomys palustris sanibeli	Sanibel Island Marsh Rice Rat	Mammals	STD	G5T1Q	S1		Y	3	1000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Osmia calaminthae	Blue Calamintha Bee	Ants, Bees, and Wasps	STD	G1	S1		Y	4	1000	Strict Upland	Small Patch	ARI	50	General
Oxyethira chrysocara	Gold Head Branch Caddisfly	Caddisflies	AQUA	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Oxyethira elerobi	Elerob's Microcaddisfly	Caddisflies	AQUA	G3G4	S2S3		N	19	n/a	n/a	n/a	n/a	n/a	n/a
Oxyethira florida	Florida Cream and Brown Microcaddisfly	Caddisflies	AQUA	G2	S2		Y	4	n/a	n/a	n/a	n/a	n/a	n/a
Oxyethira kelleyi	Kelly's Cream and Brown Mottled Microcaddisfly	Caddisflies	AQUA	G1G2	S1S2		Y	22	n/a	n/a	n/a	n/a	n/a	n/a
Oxyethira setosa	Setose Cream and Brown Mottled Microcaddisfly	Caddisflies	AQUA	G2G3	S1S2		N	4	n/a	n/a	n/a	n/a	n/a	n/a
Panorpa floridana	Florida Scorpionfly	Scorpionflies	STD	G1	S1		Y	4	1000	General	Intermediate	ARI	100	General
Panorpa rufa	Red Scorpionfly	Scorpionflies	STD	G2G3	S2		N	2	1000	Strict Upland	Matrix	ARI	1000	General
Pantherophis guttatus pop. 1	Red Rat Snake, Lower Keys Population	Reptiles	STD	G5T2Q	S2		Y	23	2500	General	Small Patch	ARI	50	General
Papilio aristodemus ponceanus	Schaus' Swallowtail	Butterflies and Moths	STD	G3G4T1	S1	E	N	3	1000	General	Small Patch	ARI	50	General
Parnassia caroliniana	Carolina grass-of-parnassus	Plants and Lichens	STD	G3	S2		N	22	400	General	Intermediate	Plants	100	General
Parnassia grandifolia	large-leaved grass-of-parnassus	Plants and Lichens	STD	G3	S2		N	18	400	General	Intermediate	Plants	100	General
Paronychia chartacea var. chartacea	paper-like nailwort	Plants and Lichens	STD	G3T3	S3	T	Y	94	400	Strict Upland	Small Patch	Plants	50	General
Paronychia chartacea var. minima	Crystal Lake nailwort	Plants and Lichens	STD	G3T1	S1	T	Y	20	400	General	Small Patch	Plants	50	General
Passiflora pallens	pineland passion-flower	Plants and Lichens	STD	G3G4	S2		N	2	400	General	Small Patch	Plants	50	General
Peltotrupes profundus	Florida Deepdigger Scarab Beetle	Beetles	STD	G3	S3		Y	21	1000	Strict Upland	Intermediate	ARI	100	General
Peltotrupes youngi	Ocala Deepdigger Scarab Beetle	Beetles	STD	G2	S2		Y	17	1000	Strict Upland	Small Patch	ARI	50	General
Percina austroperca	Southern Logperch	Fishes	AQUA	G3	S2		N	7	n/a	n/a	n/a	n/a	n/a	n/a

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Peromyscus gossypinus allapaticola	Key Largo Cotton Mouse	Mammals	STD	G5T1Q	S1	E	Y	15	1000	Strict Upland	Small Patch	Birds/Mammals	50	Coast/Linear
Peromyscus polionotus allophrys	Choctawhatchee Beach Mouse	Mammals	CUSTOM	G5T1	S1	E	Y	2	n/a	n/a	n/a	n/a	n/a	n/a
Peromyscus polionotus leucocephalus	Santa Rosa Beach Mouse	Mammals	CUSTOM	G5T1	S1		Y	5	n/a	n/a	n/a	n/a	n/a	n/a
Peromyscus polionotus niveiventris	Southeastern Beach Mouse	Mammals	CUSTOM	G5T1	S1	T	Y	6	n/a	n/a	n/a	n/a	n/a	n/a
Peromyscus polionotus peninsularis	St. Andrews Beach Mouse	Mammals	CUSTOM	G5T1	S1	E	Y	2	n/a	n/a	n/a	n/a	n/a	n/a
Peromyscus polionotus phasma	Anastasia Island Beach Mouse	Mammals	CUSTOM	G5T1	S1	E	Y	6	n/a	n/a	n/a	n/a	n/a	n/a
Peromyscus polionotus trissyllepsis	Perdido Key Beach Mouse	Mammals	CUSTOM	G5T1	S1	E	N	1	n/a	n/a	n/a	n/a	n/a	n/a
Phanogomphus westfalli	Westfall's Clubtail	Dragonflies and Damselflies	AQUA	G2	S2		Y	11	n/a	n/a	n/a	n/a	n/a	n/a
Phidippus workmani	Workman's Jumping Spider	Spiders	STD	G2G3	S2S3		N	12	1000	Strict Upland	Intermediate	ARI	100	General
Philonthus gopheri	Gopher Tortoise Rove Beetle	Beetles	STD	G1	S1			2	1000	General	Intermediate	ARI	100	General
Philonthus testudo	Western Gopher Tortoise Rove Beetle	Beetles	STD	G2	S1		N	1	1000	General	Intermediate	ARI	100	General
Phoebanthus tenuifolius	narrow-leaved phoebanthus	Plants and Lichens	STD	G3	S3		Y	64	400	General	Matrix	Plants	500	General
Photomorphus archboldi	Nocturnal Scrub Velvet Ant	Ants, Bees, and Wasps	STD	G2	S2		Y	23	1000	Strict Upland	Intermediate	ARI	100	General
Phyllanthus liebmannianus ssp. platylepis	pinewoods dainties	Plants and Lichens	STD	G4T2	S2		Y	47	400	General	Matrix	Plants	500	General
Phyllophaga elizoria	Elizoria June Beetle	Beetles	STD	G2	S2		Y	13	1000	Strict Upland	Small Patch	ARI	50	General
Phyllophaga elongata	Elongate June Beetle	Beetles	STD	G3	S3		Y	38	1000	Strict Upland	Small Patch	ARI	50	General
Phyllophaga okeechobea	Diurnal Scrub June Beetle	Beetles	STD	G2	S2		Y	8	1000	Strict Upland	Small Patch	ARI	50	General
Phyllophaga ovalis	Oval June Beetle	Beetles	STD	G1G2	S1S2		Y	4	1000	Strict Upland	Matrix	ARI	1000	General
Phyllophaga panorpa	Southern Lake Wales Ridge June Beetle	Beetles	STD	G1	S1		Y	5	1000	General	Intermediate	ARI	100	General
Phyllophaga skelleyi	Skelley's June Beetle	Beetles	STD	G2	S2		Y	12	1000	Strict Upland	Matrix	ARI	1000	General
Physostegia godfreyi	Apalachicola dragon-head	Plants and Lichens	STD	G3	S3		Y	70	400	General	Intermediate	Plants	100	General
Pieza rhea	Scrub Pygmy Bee Fly	Flies	STD	G1G2	S1S2		Y	7	1000	General	Intermediate	ARI	100	General
Pilosocereus robinii	tree cactus	Plants and Lichens	STD	G1	S1	E	Y	9	400	General	Intermediate	Plants	100	General
Pinguicula ionantha	Godfrey's butterwort	Plants and Lichens	STD	G2	S2	T	Y	106	400	Strict Wetland	Intermediate	Plants	100	General
Pisonia rotundata	devil's smooth-claw	Plants and Lichens	STD	G1G3	S1		N	6	400	General	Rockland Plants	Plants	20	General
Pityopsis flexuosa	zigzag silkgrass	Plants and Lichens	STD	G3	S3		Y	65	400	Strict Upland	Matrix	Plants	500	General
Platanthera chapmanii	Chapman's fringed orchid	Plants and Lichens	STD	G2	S2		N	56	400	General	Intermediate	Plants	100	General
Pleotomodes needhami	Ant-loving Scrub Firefly	Beetles	STD	G1G2	S1S2		Y	8	1000	Strict Upland	Small Patch	ARI	50	General
Plesioclytus relictus	Florida Relictual Long-horned Beetle	Beetles	STD	G1	S1		Y	2	1000	Strict Upland	Small Patch	ARI	50	General
Plestiodon egregius egregius	Florida Keys Mole Skink	Reptiles	STD	G5T1	S1		Y	20	1000	Strict Upland	Small Patch	ARI	50	Coast/Linear
Plestiodon egregius insularis	Cedar Key Mole Skink	Reptiles	STD	G5T1	S1		Y	7	1000	Strict Upland	Small Patch	ARI	50	Coast/Linear
Plestiodon egregius lividus	Blue-tailed Mole Skink	Reptiles	STD	G5T2	S2	T	Y	42	1000	Strict Upland	Intermediate	ARI	100	General
Plestiodon egregius pop. 1	Mole Skink, Egmont Key population	Reptiles	STD	G5T1Q	S1		Y	1	1000	Strict Upland	Small Patch	ARI	50	General
Plestiodon reynoldsi	Sand Skink	Reptiles	STD	G3	S3	T	Y	191	1000	Strict Upland	Intermediate	ARI	100	General
Pleurobema pyriforme	Oval Pigtoe	Clams and Mussels	AQUA	G2	S1S2	E	N	11	n/a	n/a	n/a	n/a	n/a	n/a
Pleurobema strodeanum	Fuzzy Pigtoe	Clams and Mussels	AQUA	G2G3	S2	T	N	9	n/a	n/a	n/a	n/a	n/a	n/a
Podomys floridanus	Florida Mouse	Mammals	STD	G3	S3		Y	90	1000	Strict Upland	Small Patch	Birds/Mammals	50	General
Poinsettia pinetorum	pineland spurge	Plants and Lichens	STD	G2	S2		Y	17	400	Strict Upland	Rockland Plants	Plants	20	General
Polycentropus floridensis	Florida Brown Checkered Summer Sedge	Caddisflies	AQUA	G2	S2		N	8	n/a	n/a	n/a	n/a	n/a	n/a
Polygala lewtonii	Lewton's polygala	Plants and Lichens	STD	G2	S2	E	Y	51	400	Strict Upland	Intermediate	Plants	100	General
Polygala smallii	tiny polygala	Plants and Lichens	STD	G1	S1	E	Y	14	400	General	Intermediate	Plants	100	General
Polygonella basiramia	Florida jointweed	Plants and Lichens	STD	G3	S3	E	Y	78	400	Strict Upland	Small Patch	Plants	50	General
Polygonella myriophylla	Small's jointweed	Plants and Lichens	STD	G3	S3	E	Y	72	400	Strict Upland	Small Patch	Plants	50	General
Polymnia laevigata	Tennessee leafcup	Plants and Lichens	STD	G3	S1		N	1	400	General	Intermediate	Plants	100	General
Polyphylla gracilis	Slender Polyphyllan Scarab Beetle	Beetles	STD	G2G3	S2		N	2	1000	Strict Upland	Matrix	ARI	1000	General
Polyphylla pubescens	Eglin Uplands Scarab Beetle	Beetles	STD	G1G2	S1S2		Y	3	1000	Strict Upland	Matrix	ARI	1000	General
Polyphylla starkae	Auburndale Scrub Scarab Beetle	Beetles	STD	G1	S1		Y	2	1000	Strict Upland	Small Patch	ARI	50	General
Polyphylla woodruffi	Woodruff's Polyphyllan Scarab Beetle	Beetles	STD	G1	S1		Y	3	1000	Strict Upland	Small Patch	ARI	50	Coast/Linear
Potamogeton floridanus	Florida pondweed	Plants and Lichens	AQUA	G1	S1		Y	2	n/a	n/a	n/a	n/a	n/a	n/a
Praticolella bakeri	Ridge Scrubsnail	Snails and Allies	STD	G2G3	S2S3		Y	8	1000	Strict Upland	Small Patch	ARI	50	General
Pristis pectinata	Smalltooth Sawfish	Fishes	AQUA	G1G3	S1S2	E	N	2	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus acherontis	Orlando Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	8	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus attiguus	Silver Glen Springs Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus capillatus	Capillaceous Crayfish	Crabs, Crayfishes, and Shrim	AQUA	G2	S1		N	5	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus delicatus	Big-cheeked Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus econfinae	Panama City Crayfish	Crabs, Crayfishes, and Shrim	STD	G1G2	S1S2	T	Y	17	1000	General	Intermediate	ARI	100	General
Procambarus erythrops	Santa Fe Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	5	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus escambiensis	Escambia Crayfish	Crabs, Crayfishes, and Shrim	STD	G2	S2		N	8	1000	General	Intermediate	ARI	100	General
Procambarus franzi	Orange Lake Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	3	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus horsti	Big Blue Spring Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	8	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus latipleurum	Wingtail Crayfish	Crabs, Crayfishes, and Shrim	STD	G2	S2		Y	8	1000	General	Intermediate	ARI	100	General
Procambarus leitheuseri	Coastal Lowland Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1G2	S1S2		Y	8	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus lucifugus	Light-fleeing Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1G2	S1S2		Y	25	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus milleri	Miami Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	13	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus morrisi	Putnam County Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus orcinus	Woodville Karst Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	13	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus pallidus	Pallid Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G2G3	S2S3		Y	41	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus pictus	Black Creek Crayfish	Crabs, Crayfishes, and Shrim	AQUA	G2	S2	N	Y	8	n/a	n/a	n/a	n/a	n/a	n/a
Procambarus rathbunae	Combclaw Crayfish	Crabs, Crayfishes, and Shrim	STD	G1	S1		Y	4	1000	General	Small Patch	ARI	50	General
Procambarus rogersi expletus	Perfect Crayfish	Crabs, Crayfishes, and Shrim	STD	G4QT1	S1		Y	4	1000	General	Intermediate	ARI	100	General
Procambarus youngi	Florida Longbeak Crayfish	Crabs, Crayfishes, and Shrim	AQUA	G1G2	S1S2		Y	3	n/a	n/a	n/a	n/a	n/a	n/a
Procyon lotor auspicatus	Key Vaca Raccoon	Mammals	STD	G5T2	S2		Y	1	5000	General	Intermediate	Birds/Mammals	500	Coast/Linear

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Procyon lotor incautus	Key West Raccoon	Mammals	STD	G5T2Q	S2		Y	16	5000	General	Intermediate	Birds/Mammals	500	General
Progomphus alachuensis	Tawny Sanddragon	Dragonflies and Damselflies	AQUA	G3	S3		Y	22	n/a	n/a	n/a	n/a	n/a	n/a
Prunus geniculata	scrub plum	Plants and Lichens	STD	G3	S3	E	Y	115	400	Strict Upland	Intermediate	Plants	100	General
Pseudemys nelsoni pop. 1	Florida Red-bellied Turtle, Panhandle Population	Reptiles	AQUA	G5T2Q	S2		Y	5	n/a	n/a	n/a	n/a	n/a	n/a
Pseudobranchus striatus lustricolus	Gulf Hammock Dwarf Siren	Amphibians	STD	G5T1Q	S1		Y	3	1000	General	Small Patch	ARI	50	General
Pseudocharis minima	Lesser Wasp Moth	Butterflies and Moths	STD	G3	S2S3		N	8	1000	General	Small Patch	ARI	50	General
Pseudophoenix sargentii	Florida cherry-palm	Plants and Lichens	STD	G3G4	S1		N	1	400	Strict Upland	Small Patch	Plants	50	General
Pseudosinella pecki	Peck's Cave Springtail	Springtails	CAVE	G2G3	S1		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Pteroglossaspis ecristata	giant orchid	Plants and Lichens	STD	G2G3	S2		N	201	400	General	Intermediate	Plants	100	General
Ptomaphagus geomysi	Elongate Pocket Gopher Ptomaphagus Beetle	Beetles	STD	G2G3	S2		N	22	1000	General	Matrix	ARI	1000	General
Ptychobranchus jonesi	Southern Kidneyshell	Clams and Mussels	AQUA	G1	S1	E	N	1	n/a	n/a	n/a	n/a	n/a	n/a
Puma concolor coryi	Florida Panther	Mammals	CUSTOM	G5T1	S1	E	Y	9	n/a	n/a	n/a	n/a	n/a	n/a
Quadrula infucata	Sculptured Pigtoe	Clams and Mussels	AQUA	G3	S2S3		N	4	n/a	n/a	n/a	n/a	n/a	n/a
Quadrula kleiniana	Florida Mapleleaf	Clams and Mussels	AQUA	G2G3	S2		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Rallus longirostris insularum	Mangrove Clapper Rail	Birds	STD	G5T3	S3		Y	6	1000	Strict Wetland	Matrix	Birds/Mammals	2000	General
Rallus longirostris scottii	Florida Clapper Rail	Birds	STD	G5T3?	S3?		Y	11	1000	Strict Wetland	Matrix	Birds/Mammals	2000	General
Reginaia rotulata	Round Ebonyshell	Clams and Mussels	AQUA	G1	S1	E	N	1	n/a	n/a	n/a	n/a	n/a	n/a
Remasellus parvus	Swimming Little Florida Cave Isopod	Isopods	CAVE	G1G2	S1S2		Y	4	n/a	n/a	n/a	n/a	n/a	n/a
Rhexia parviflora	small-flowered meadowbeauty	Plants and Lichens	STD	G2G3	S2		N	54	400	General	Small Patch	Plants	50	General
Rhododendron chapmanii	Chapman's rhododendron	Plants and Lichens	STD	G1	S1	E	Y	23	400	General	Intermediate	Plants	100	General
Rhynchosia swartzii	Swartz's snoutbean	Plants and Lichens	STD	G3	S1		N	1	400	General	Intermediate	Plants	100	General
Rhynchospora megaplumosa	large-plumed beaksedge	Plants and Lichens	STD	G2	S2		Y	16	400	General	Small Patch	Plants	50	General
Rhynchospora thornei	Thorne's beaksedge	Plants and Lichens	STD	G3	S1S2		N	12	400	General	Intermediate	Plants	100	General
Ribes echinellum	Miccosukee gooseberry	Plants and Lichens	STD	G1	S1	T	N	1	400	General	Intermediate	Plants	100	General
Romulus globosus	Round-Necked Romulus Long-Horned Beetle	Beetles	STD	G1G2	S1S2		Y	6	1000	General	Small Patch	ARI	50	General
Rostrhamus sociabilis	Snail Kite	Birds	STD	G4G5	S2	E	N	30	5000	Strict Wetland	Intermediate	Birds/Mammals	500	General
Roystonea regia	Florida royal palm	Plants and Lichens	STD	G2G3	S2		N	15	400	General	Small Patch	Plants	50	General
Rudbeckia auriculata	eared coneflower	Plants and Lichens	STD	G2	S1		N	2	400	General	Intermediate	Plants	100	General
Rudbeckia nitida	St. John's blackeyed susan	Plants and Lichens	STD	G3	S2		N	13	400	General	Intermediate	Plants	100	General
Ruellia noctiflora	nightflowering wild petunia	Plants and Lichens	STD	G3?	S2		N	31	400	General	Intermediate	Plants	100	General
Rutela formosa	Handsome Flower Scarab Beetle	Beetles	STD	G3G4	S1S2		N	3	1000	Strict Upland	Small Patch	ARI	50	General
Sachsia polycephala	Bahama sachsia	Plants and Lichens	STD	G2	S2		N	22	400	General	Rockland Plants	Plants	20	General
Sacoila lanceolata var. paludicola	Fakahatchee ladies'-tresses	Plants and Lichens	STD	G4T1	S1		Y	3	400	General	Intermediate	Plants	100	General
Salix floridana	Florida willow	Plants and Lichens	STD	G2G3	S2S3		N	36	400	Strict Wetland	Intermediate	Plants	100	General
Sarracenia rubra ssp. gulfensis	Gulf Coast redflower pitcherplant	Plants and Lichens	STD	G3G4T2	S2		Y	143	400	Strict Wetland	Intermediate	Plants	100	General
Satyrium kingi	King's Hairstreak	Butterflies and Moths	STD	G3G4	S2		N	9	1000	General	Intermediate	ARI	100	General
Sceloporus woodi	Florida Scrub Lizard	Reptiles	STD	G2G3	S2S3		Y	148	1000	Strict Upland	Intermediate	ARI	100	General
Schisandra glabra	bay star-vine	Plants and Lichens	STD	G3	S2		N	20	400	General	Intermediate	Plants	100	General
Schistocerca ceratiola	Rosemary Grasshopper	Grasshoppers and Allies	STD	G2G3	S2S3		Y	12	1000	Strict Upland	Intermediate	ARI	100	General
Schizachyrium niveum	scrub bluestem	Plants and Lichens	STD	G1G2	S1S2		Y	65	400	Strict Upland	Intermediate	Plants	100	General
Schizachyrium sericatum	silky bluestem	Plants and Lichens	STD	G1Q	S1		Y	1	400	General	Rockland Plants	Plants	20	General
Schwalbea americana	chaffseed	Plants and Lichens	STD	G2	S1	E	N	5	400	General	Intermediate	Plants	100	General
Sciurus niger avicennia	Big Cypress Fox Squirrel	Mammals	CUSTOM	G5T2	S2		Y	11	n/a	n/a	n/a	n/a	n/a	n/a
Scutellaria floridana	Florida skullcap	Plants and Lichens	STD	G2	S2	T	Y	29	400	General	Intermediate	Plants	100	General
Scutellaria havanensis	Havana skullcap	Plants and Lichens	STD	G3G4	S2		N	5	400	General	Matrix	Plants	500	General
Selaginella armata var. eatonii	pygmy spike moss	Plants and Lichens	STD	G2G3	S2		N	6	400	General	Small Patch	Plants	50	General
Selonodon archboldi	Archbold Cebrionid Beetle	Beetles	STD	G1G2	S1S2		Y	5	1000	Strict Upland	Intermediate	ARI	100	General
Selonodon mandibularis	Large-Jawed Cebrionid Beetle	Beetles	STD	G2G4	S2S4		Y	16	1000	General	Intermediate	ARI	100	General
Selonodon santarosae	Santa Rosa Cebrionid Beetle	Beetles	STD	G1	S1		Y	3	1000	General	Intermediate	ARI	100	General
Serica frosti	Frost's Silky June Beetle	Beetles	STD	G1G2	S1S2		Y	9	1000	Strict Upland	Intermediate	ARI	100	General
Setophaga discolor paludicola	Florida Prairie Warbler	Birds	STD	G5T3	S3		Y	26	500	General	Intermediate	Birds/Mammals	500	General
Sideroxylon alachuense	silver buckthorn	Plants and Lichens	STD	G1	S1		N	4	400	General	Intermediate	Plants	100	General
Sideroxylon reclinatum ssp. austrofloridense	Everglades bully	Plants and Lichens	STD	G4G5T1	S1	T	Y	2	400	General	Small Patch	Plants	50	General
Sideroxylon thornei	Thorne's buckthorn	Plants and Lichens	STD	G3	S1		N	7	400	General	Intermediate	Plants	100	General
Sigmodon hispidus exsputus	Lower Keys Cotton Rat	Mammals	CUSTOM	G5T2	S2		Y	2	1000	General	Intermediate	Birds/Mammals	500	General
Sigmodon hispidus insulicola	Insular Cotton Rat	Mammals	STD	G5T1T2	S1S2		Y	4	1000	General	Intermediate	Birds/Mammals	500	Coast/Linear
Silene polypetala	fringed campion	Plants and Lichens	STD	G2	S1	E	N	11	400	General	Intermediate	Plants	100	General
Siphloplecton brunneum	A Mayfly	Mayflies	AQUA	G1G2	S1S2		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Sminthurus floridanus	Florida Sminthurus Springtail	Springtails	STD	G1	S1		N	4	1000	General	Matrix	ARI	1000	General
Somatochlora calverti	Calvert's Emerald	Dragonflies and Damselflies	AQUA	G3	S2S3		N	8	n/a	n/a	n/a	n/a	n/a	n/a
Sosippus placidus	Lake Placid Funnel Wolf Spider	Spiders	STD	G1G2	S1S2		Y	11	1000	Strict Upland	Small Patch	ARI	50	General
Sparbarus miccosukee	Miccosukee Mayfly	Mayflies	AQUA	G1G2	S1S2			3	n/a	n/a	n/a	n/a	n/a	n/a
Spigelia gentianoides	gentian pinkroot	Plants and Lichens	STD	G2	S2	E	N	9	400	General	Matrix	Plants	500	General
Spigelia loganioides	pinkroot	Plants and Lichens	STD	G2	S2		Y	12	400	General	Intermediate	Plants	100	General
Spiranthes brevilabris	small ladies'-tresses	Plants and Lichens	STD	G1G2	S1		N	1	400	General	Intermediate	Plants	100	General
Spiranthes floridana	Florida ladies'-tresses	Plants and Lichens	STD	G1	S1		N	1	400	General	Intermediate	Plants	100	General
Stachydeoma graveolens	mock pennyroyal	Plants and Lichens	STD	G2G3	S2S3		Y	43	400	General	Intermediate	Plants	100	General
Stachys lythroides	hyssopleaf hedgenettle	Plants and Lichens	STD	G5T1Q	S1		N	5	400	Strict Wetland	Intermediate	Plants	100	General
Stelis ater	Southwest Florida Stelis Bee	Ants, Bees, and Wasps	STD	G2	S2		Y	10	1000	General	Intermediate	ARI	100	General
Sterna dougallii	Roseate Tern	Birds	CUSTOM	G4	S1	T	N	15	500	Strict Upland	Intermediate	Birds/Mammals	500	General
Storeria victa pop. 1	Florida Brown Snake, Lower Keys Population	Reptiles	STD	G5T1Q	S1		Y	6	1000	General	Small Patch	ARI	50	General
Strophitus radiatus	Rayed Creekshell	Clams and Mussels	AQUA	G2G3	S1		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Strophitus williamsi	Flatwoods Creekshell	Clams and Mussels	AQUA	G2	S1		N	2	n/a	n/a	n/a	n/a	n/a	n/a

SCINAME	COMMONNAME	EL_GROUP2	Method	G_RANK	S_RANK	FEDSTATUS	ENDEMIC	NUM_EO	RADIUS	HABFIT	Benchmark Patch Size HabType	BPS_SppGroup	BPS_acres	Config SppGroup
Strymon acis bartrami	Bartram's Scrub-Hairstreak	Butterflies and Moths	STD	G4?T1	S1	E	Y	4	1000	Strict Upland	Small Patch	ARI	50	General
Strymon martialis	Martial Scrub-Hairstreak	Butterflies and Moths	STD	G3G4	S2S3		N	11	1000	General	Small Patch	ARI	50	General
Stygobromus doughertyensis	Dougherty Plain Cave Amphipod	Amphipods	CAVE	G1G2	S1		N	1	n/a	n/a	n/a	n/a	n/a	n/a
Stygobromus floridanus	Florida Panhandle Cave Amphipod	Amphipods	CAVE	G1G2	S1S2			5	n/a	n/a	n/a	n/a	n/a	n/a
Stylisma abdita	scrub stylisma	Plants and Lichens	STD	G3	S3		Y	79	400	Strict Upland	Intermediate	Plants	100	General
Stylosanthes calcicola	pineland pencil flower	Plants and Lichens	STD	G3G4	S2		N	8	400	General	Rockland Plants	Plants	20	General
Stylurus potulentus	Yellow-sided Clubtail	Dragonflies and Damselflies	AQUA	G2	S2		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Stylurus townesi	Bronze Clubtail	Dragonflies and Damselflies	AQUA	G3	S2		N	2	n/a	n/a	n/a	n/a	n/a	n/a
Sylvilagus palustris hefneri	Lower Keys Marsh Rabbit	Mammals	STD	G5T1	S1	E	Y	18	1000	General	Intermediate	Birds/Mammals	500	General
Tantilla oolitica	Rim Rock Crowned Snake	Reptiles	STD	G1G2	S1S2		Y	29	1000	General	Small Patch	ARI	50	General
Taxus floridana	Florida yew	Plants and Lichens	STD	G2	S2		Y	8	400	General	Intermediate	Plants	100	General
Telamona archboldi	Archbold's Treehopper	True Bugs and Allies	STD	G1	S1		Y	3	1000	Strict Upland	Small Patch	ARI	50	General
Tephrosia angustissima var. corallicola	rockland hoary-pea	Plants and Lichens	STD	G1T1	S1		Y	3	400	Strict Upland	Rockland Plants	Plants	20	General
Tephrosia angustissima var. curtissii	coastal hoary-pea	Plants and Lichens	STD	G1T1	S1		Y	9	400	Strict Upland	Small Patch	Plants	50	Coast/Linear
Tettigidea empedonepia	Torreya Pygmy Grasshopper	Grasshoppers and Allies	STD	G1	S1		N	1	1000	General	Intermediate	ARI	100	General
Thalictrum cooleyi	Cooley's meadowrue	Plants and Lichens	STD	G1	S1	E	N	1	400	General	Intermediate	Plants	100	General
Thamnophis sauritus pop. 1	Eastern Ribbon Snake, Lower Keys Population	Reptiles	STD	G5T1Q	S1		Y	8	2500	General	Intermediate	ARI	100	General
Tiedemannia filiformis ssp. greenmanii	giant water cowbane	Plants and Lichens	STD	G3	S3		Y	46	400	Strict Wetland	Intermediate	Plants	100	General
Tolumnia bahamensis	dancing-lady orchid	Plants and Lichens	STD	G3	S1		N	10	400	Strict Upland	Small Patch	Plants	50	General
Torreya taxifolia	Florida torreya	Plants and Lichens	STD	G1	S1	E	N	20	400	General	Intermediate	Plants	100	General
Toxolasma sp. 1	Gulf Lilliput	Clams and Mussels	AQUA	G2	S2		N	3	n/a	n/a	n/a	n/a	n/a	n/a
Tragia saxicola	pineland noseburn	Plants and Lichens	STD	G2	S2		Y	37	400	Strict Upland	Rockland Plants	Plants	20	General
Triaenodes florida	Floridian Triaenode Caddisfly	Caddisflies	AQUA	G3	S2		N	9	n/a	n/a	n/a	n/a	n/a	n/a
Triaenodes furcellus	Little-fork Triaenode Caddisfly	Caddisflies	AQUA	G3	S3		Y	17	n/a	n/a	n/a	n/a	n/a	n/a
Trichechus manatus latirostris	Florida Manatee	Mammals	AQUA	G2G3T2	S2S3	T	N	44	n/a	n/a	n/a	n/a	n/a	n/a
Trichomanes punctatum ssp. floridanum	Florida filmy fern	Plants and Lichens	STD	G4G5T1	S1	E	Y	8	400	General	Intermediate	Plants	100	General
Trigonopeltastes floridana	Scrub Palmetto Flower Scarab Beetle	Beetles	STD	G2G3	S2S3		Y	22	1000	Strict Upland	Small Patch	ARI	50	General
Trillium lancifolium	narrow-leaved trillium	Plants and Lichens	STD	G3	S2		N	12	400	General	Intermediate	Plants	100	General
Triphora craigheadii	Craighead's nodding-caps	Plants and Lichens	STD	G1	S1		Y	7	400	General	Intermediate	Plants	100	General
Triphora rickettii	Rickett's nodding-caps	Plants and Lichens	STD	G1	S1		Y	3	400	General	Intermediate	Plants	100	General
Triplax alachuae	Alachua Pleasing Fungus Beetle	Beetles	STD	G2G4	S2S4		Y	3	1000	Strict Upland	Intermediate	ARI	100	General
Tripsacum floridanum	Florida gamagrass	Plants and Lichens	STD	G2	S2		Y	26	400	General	Rockland Plants	Plants	20	General
Troglocambarus maclanei	North Florida Spider Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G2	S2		Y	16	n/a	n/a	n/a	n/a	n/a	n/a
Troglocambarus sp. 1	Orlando Spider Cave Crayfish	Crabs, Crayfishes, and Shrim	CAVE	G1	S1		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Typocerus fulvocinctus	Yellow-banded Typocerus Long-horned Beetle	Beetles	STD	G2G3	S2S3		Y	10	1000	General	Matrix	ARI	1000	General
Utterbackia peninsularis	Peninsular Floater	Clams and Mussels	AQUA	G2G3	S2S3		Y	6	n/a	n/a	n/a	n/a	n/a	n/a
Uvularia floridana	Florida merrybells	Plants and Lichens	STD	G3	S1		N	13	400	General	Intermediate	Plants	100	General
Verbesina heterophylla	variable-leaf crownbeard	Plants and Lichens	STD	G2	S2		N	30	400	General	Matrix	Plants	500	General
Vicia ocalensis	Ocala vetch	Plants and Lichens	STD	G2	S2		Y	7	400	Strict Wetland	Small Patch	Plants	50	General
Villosa amygdala	Florida Rainbow	Clams and Mussels	AQUA	G3	S3		Y	1	n/a	n/a	n/a	n/a	n/a	n/a
Villosa choctawensis	Choctaw Bean	Clams and Mussels	AQUA	G2G3	S1S2	E	N	10	n/a	n/a	n/a	n/a	n/a	n/a
Virginia valeriae pop. 1	Smooth Earth Snake, Highlands County Populatic	Reptiles	STD	G5T1Q	S1		Y	2	1000	General	Small Patch	ARI	50	General
Warea amplexifolia	clasping warea	Plants and Lichens	STD	G1	S1	E	Y	24	400	Strict Upland	Intermediate	Plants	100	General
Warea carteri	Carter's warea	Plants and Lichens	STD	G1	S1	E	Y	34	400	General	Intermediate	Plants	100	General
Xyris isoetifolia	Quillwort yellow-eyed grass	Plants and Lichens	STD	G2	S2		N	40	400	Strict Wetland	Intermediate	Plants	100	General
Xyris longisepala	karst pond xyris	Plants and Lichens	STD	G2G3	S2		N	118	400	Strict Wetland	Small Patch	Plants	50	General
Xyris louisianica	Louisiana yellow-eyed grass	Plants and Lichens	STD	G2G3	S1		N	5	400	General	Intermediate	Plants	100	General
Xyris panacea	St. Marks yellow-eyed grass	Plants and Lichens	STD	G1	S1		Y	5	400	Strict Wetland	Small Patch	Plants	50	General
Zale perculta	Okefenokee Zale Moth	Butterflies and Moths	STD	G2?	S2		N	4	1000	General	Intermediate	ARI	100	General
Zanthoxylum coriaceum	Biscayne prickly ash	Plants and Lichens	STD	G3	S1		N	3	400	General	Small Patch	Plants	50	General
Zanthoxylum flavum	satinwood	Plants and Lichens	STD	G3	S1		N	3	400	General	Rockland Plants	Plants	20	General
Zephyranthes simpsonii	redmargin zephyrlily	Plants and Lichens	STD	G2G3	S2S3		N	17	400	General	Intermediate	Plants	100	General
Ziziphus celata	scrub ziziphus	Plants and Lichens	STD	G1	S1	E	Y	14	400	Strict Upland	Small Patch	Plants	50	General

APPENDIX G. FNAIHAB Species Conservation Needs Weights

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Acipenser brevirostrum	Shortnose Sturgeon	G3	S1	N	35%	50	40	130	0	**220**
Acipenser oxyrinchus desotoi	Gulf Sturgeon	G3T2	S2	N	65%	150	30	70	0	**250**
Acrolophus pholeter	Gopher Tortoise Acrolophus Moth	G1	S1	Y	10%	500	40	180	20	**740**
Aeschynomene pratensis var. pratensis	meadow jointvetch	G4T3	S3	Y	97%	45	20	10	20	**95**
Aethecerinus hornii	Horn's Aethecerinus Long-Horned Beetle	G2	S2	Y	82%	166	30	40	20	**256**
Agalinis georgiana	pine barren false foxglove	G1	S1	N	98%	500	40	10	0	**550**
Agarodes logani	Logan's Agarodes Caddisfly	G1	S1	Y	16%	500	40	170	20	**730**
Agarodes ziczac	Zigzag Blackwater River Caddisfly	G2	S2	Y	96%	166	30	10	20	**226**
Ageratum maritimum	Cape Sable whiteweed	G2	S2	N	88%	166	30	30	0	**226**
Aglaodiaptomus marshianus	Lake Jackson Copepod	G1	S1	Y	8%	500	40	190	20	**750**
Agrimonia incisa	incised groove-bur	G3	S2	N	76%	50	30	50	0	**130**
Alasmidonta triangulata	Southern Elktoe	G1	S1	N	36%	500	40	130	0	**670**
Aletris bracteata	bracted colic-root	G2	S2	N	93%	166	30	20	0	**216**
Alosa alabamae	Alabama Shad	G2	S2	N	47%	166	30	110	0	**306**
Amblema neislerii	Fat Threeridge	G1	S1		57%	500	40	90	0	**630**
Amblyscirtes alternata	Dusky Roadside-Skipper	G2	S2	N	98%	166	30	10	0	**206**
Amblyscirtes reversa	Reversed Roadside-Skipper	G3	S1	N	100%	50	40	10	0	**100**
Ambystoma bishopi	Reticulated Flatwoods Salamander	G2	S1	N	36%	166	40	130	0	**336**
Ambystoma cingulatum	Frosted Flatwoods Salamander	G2	S1	N	80%	166	40	50	0	**256**
Ammodramus savannarum floridanus	Florida Grasshopper Sparrow	G5T1	S1	Y	85%	155	40	40	20	**255**
Ammospiza maritima mirabilis	Cape Sable Seaside Sparrow	G4T1	S1	Y	100%	300	40	10	20	**370**
Ammospiza maritima peninsulae	Scott's Seaside Sparrow	G4T3	S3	Y	88%	45	20	30	20	**115**
Amorpha herbacea var. crenulata	crenulate lead-plant	G4T1	S1	Y	96%	300	40	10	20	**370**
Anaea troglodyta floridalis	Florida Leafwing	G4T1	S1	Y	100%	300	40	10	20	**370**
Aneflomorpha delongi	Delong's Aneflomorpha Long-Horned Beetle	G2	S1	N	56%	166	40	90	0	**296**
Anemia wrightii	Wright's anemia	G2	S1	N	100%	166	40	10	0	**216**
Anodonta heardi	Apalachicola Floater	G2	S1	N	49%	166	40	110	0	**316**
Anomala exigua	Pygmy Anomala Scarab Beetle	G1	S1	Y	52%	500	40	100	20	**660**
Anomala eximia	Archbold Anomala Scarab Beetle	G2	S2	Y	72%	166	30	60	20	**276**
Antigone canadensis pratensis	Florida Sandhill Crane	G5T2	S2	N	53%	100	30	100	0	**230**
Aphaostracon asthenes	Blue Spring Hydrobe Snail	G1	S1	Y	77%	500	40	50	20	**610**
Aphaostracon chalarogyrus	Freemouth Hydrobe Snail	G1	S1	Y	0%	500	40	200	20	**760**
Aphaostracon monas	Wekiwa Hydrobe Snail	G1	S1	Y	95%	500	40	10	20	**570**
Aphaostracon pycnus	Dense Hydrobe Snail	G1	S1	Y	99%	500	40	10	20	**570**
Aphaostracon theiocrenetum	Clifton Springs Hydrobe Snail	G1	S1	Y	62%	500	40	80	20	**640**
Aphaostracon xynoelictum	Fenney Springs Hydrobe Snail	G1	S1	Y	0%	500	40	200	20	**760**
Aphelocoma coerulescens	Florida Scrub-Jay	G1	S1	Y	74%	500	40	60	20	**620**
Aphodius baileyi	Bailey's Pocket Gopher Aphodius Beetle	G2	S2	N	66%	166	30	70	0	**266**
Aphodius bakeri	Baker's Pocket Gopher Aphodius Beetle	G2	S2	N	63%	166	30	80	0	**276**
Aphodius gambrinus	Amber Pocket Gopher Aphodius Beetle	G2	S1	N	95%	166	40	10	0	**216**
Aphodius pholetus	Rare Pocket Gopher Aphodius Beetle	G1	S1	N	77%	500	40	50	0	**590**
Aphodius platypleurus	Broad-Sided Pocket Gopher Aphodius Beetle	G2	S2	N	60%	166	30	80	0	**276**
Aphodius tanytarsus	Long-Clawed Pocket Gopher Aphodius Beetle	G2	S2	N	51%	166	30	100	0	**296**
Aphodius troglodytes	Gopher Tortoise Aphodius Beetle	G2	S2	N	76%	166	30	50	0	**246**
Arctosa sanctaerosae	Santa Rosa Wolf Spider	G3	S2	N	68%	50	30	70	0	**150**
Ardea herodias occidentalis	Great White Heron	G5T2	S2	N	85%	100	30	30	0	**160**
Argythamnia argothamnoides	Blodgett's silverbush	G3	S2	Y	76%	50	30	50	20	**150**
Arnoglossum album	chalky Indian-plantain	G1	S1	Y	0%	500	40	200	20	**760**
Arnoglossum diversifolium	variable-leaved Indian-plantain	G2	S2	N	58%	166	30	90	0	**286**
Asaphomyia floridensis	Florida Asaphomyian Tabanid Fly	G1	S1	Y	97%	500	40	10	20	**570**
Asclepias viridula	southern milkweed	G2	S2	N	65%	166	30	80	0	**276**
Asimina tetramera	four-petal pawpaw	G1	S1	Y	80%	500	40	50	20	**610**
Asplenium verecundum	modest spleenwort	G1	S1	N	86%	500	40	30	0	**570**
Asplenium x heteroresiliens	Morzenti's spleenwort	G2	S1	N	27%	166	40	150	0	**356**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Asplenium x plenum	ruffled spleenwort	G1	S1	Y	0%	500	40	200	20	**760**
Atrytone arogos arogos	Arogos Skipper	G2T1	S1	N	97%	450	40	10	0	**500**
Atrytonopsis loammi	Loammi Skipper	G2	S2	N	90%	166	30	30	0	**226**
Baetisca becki	A Mayfly	G2	S2	N	43%	166	30	120	0	**316**
Baetisca escambiensis	Escambia Mayfly	G2	S1	N	58%	166	40	90	0	**296**
Balduina atropurpurea	purple honeycomb-head	G2	S1	N	46%	166	40	110	0	**316**
Baptisia calycosa var. calycosa	Canby's wild indigo	G3T1	S1	Y	99%	390	40	10	20	**460**
Baptisia calycosa var. villosa	hairy wild indigo	G3	S3	Y	98%	50	20	10	20	**100**
Baptisia megacarpa	Apalachicola wild indigo	G2	S1	N	24%	166	40	160	0	**366**
Basiphyllaea corallicola	rockland orchid	G2	S1	N	81%	166	40	40	0	**246**
Bigelowia nuttallii	Nuttall's rayless goldenrod	G3	S1	N	53%	50	40	100	0	**190**
Bombus fraternus	Southern Plains Bumble Bee	G3	S1	N	54%	50	40	100	0	**190**
Bonamia grandiflora	Florida bonamia	G3	S3	Y	88%	50	20	30	20	**120**
Bourreria cassinifolia	smooth strongbark	G3	S1	N	85%	50	40	30	0	**120**
Bourreria radula	rough strongbark	G2	S1	N	23%	166	40	160	0	**366**
Brickellia cordifolia	Flyr's brickell-bush	G3	S2	N	58%	50	30	90	0	**170**
Brickellia mosieri	Florida brickell-bush	G5T1	S1	Y	85%	155	40	40	20	**255**
Caecidotea hobbsi	Florida Cave Isopod	G1	S1	Y	28%	500	40	150	20	**710**
Caecidotea putea	Apalachicolan Cave Isopod	G2	S1	N	24%	166	40	160	0	**366**
Caenis eglinensis	Eglin Caenis Mayfly	G1	S1	Y	29%	500	40	150	20	**710**
Calamovilfa curtissii	Curtiss' sandgrass	G3	S3	Y	72%	50	20	60	20	**150**
Callophrys gryneus sweadneri	Florida Olive Hairstreak	G5T2	S2	Y	93%	100	30	20	20	**170**
Callophrys hesseli	Hessel's Hairstreak	G3	S2	N	96%	50	30	10	0	**90**
Callophrys irus	Frosted Elfin	G2	S2	N	96%	166	30	10	0	**206**
Calopogon multiflorus	many-flowered grass-pink	G2	S2	N	95%	166	30	10	0	**206**
Calydorea coelestina	Bartram's ixia	G2	S2	Y	20%	166	30	160	20	**376**
Calystegia catesbeiana	trailing bindweed	G3	S1	N	45%	50	40	110	0	**200**
Cambarellus blacki	Cypress Crayfish	G1	S1	Y	91%	500	40	20	20	**580**
Cambarellus schmitti	Fontal Dwarf Crayfish	G2	S2		56%	166	30	90	0	**286**
Cambarus cryptodytes	Dougherty Plain Cave Crayfish	G2	S2	N	31%	166	30	140	0	**336**
Cambarus pyronotus	Fireback Crayfish	G2	S2	Y	87%	166	30	30	20	**246**
Campanula robinsiae	Brooksville bellflower	G1	S1	Y	42%	500	40	120	20	**680**
Caracara cheriway	Crested Caracara	G5	S2	N	34%	5	30	140	0	**175**
Caretta caretta	Loggerhead Sea Turtle	G3	S3	N	42%	50	20	120	0	**190**
Carex lutea	Golden Sedge	G2	S2	N	100%	166	30	10	0	**206**
Catesbaea parviflora	small-flowered lily thorn	G3	S1	N	89%	50	40	30	0	**120**
Caupolicana floridana	Giant Scrub Plasterer Bee	G1	S1	Y	96%	500	40	10	20	**570**
Centris errans	Florida Locust-berry Oil-collecting Bee	G3	S2	N	97%	50	30	10	0	**90**
Centrosema arenicola	sand butterfly pea	G2	S2	Y	53%	166	30	100	20	**316**
Ceraclea limnetes	Sandhill Lake Caddisfly	G2	S1	Y	15%	166	40	180	20	**406**
Ceratocanthus aeneus	Shining Ball Scarab Beetle	G2	S2	N	47%	166	30	110	0	**306**
Ceratophaga vicinella	Gopher Tortoise Shell Moth	G2	S1	N	88%	166	40	30	0	**236**
Chamaecrista lineata var. keyensis	Big Pine partridge pea	G5T2	S2	Y	85%	100	30	30	20	**180**
Chamaesyce cumulicola	sand-dune spurge	G2	S2	Y	91%	166	30	20	20	**236**
Chamaesyce deltoidea ssp. deltoidea	deltoid spurge	G2T1	S1	Y	77%	450	40	50	20	**560**
Chamaesyce deltoidea ssp. pinetorum	pinelands spurge	G2T1	S1	Y	99%	450	40	10	20	**520**
Chamaesyce deltoidea ssp. serpyllum	wedge spurge	G2T1	S1	Y	85%	450	40	30	20	**540**
Chamaesyce garberi	Garber's spurge	G1	S1	Y	87%	500	40	30	20	**590**
Chamaesyce porteriana	Porter's broad-leaved spurge	G2	S2	Y	83%	166	30	40	20	**256**
Charadrius melodus	Piping Plover	G3	S2	N	72%	50	30	60	0	**140**
Charadrius nivosus	Snowy Plover	G3	S1	N	83%	50	40	40	0	**130**
Chelonia mydas	Green Sea Turtle	G3	S2	N	42%	50	30	120	0	**200**
Chelyoxenus xerobatis	Gopher Tortoise Hister Beetle	G2	S2	N	77%	166	30	50	0	**246**
Cheumatopsyche gordonae	Gordon's Little Sister Sedge Caddisfly	G1	S1	Y	97%	500	40	10	20	**570**
Cheumatopsyche petersi	Peters' Cheumatopsyche Caddisfly	G3	S2	N	54%	50	30	100	0	**180**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Chionanthus pygmaeus	pygmy fringe tree	G2	S2	Y	52%	166	30	100	20	**316**
Chondropoma dentatum	Crenulate Horn	G2	S2	N	80%	166	30	50	0	**246**
Chromolaena frustrata	Cape Sable thoroughwort	G1	S1	Y	96%	500	40	10	20	**570**
Chrysopsis floridana	Florida goldenaster	G3	S3	Y	76%	50	20	50	20	**140**
Chrysopsis godfreyi	Godfrey's goldenaster	G2	S2	N	81%	166	30	40	0	**236**
Chrysopsis gossypina ssp. cruiseana	Cruise's goldenaster	G5T2	S2	N	78%	100	30	50	0	**180**
Chrysopsis highlandsensis	highlands goldenaster	G2	S2	Y	76%	166	30	50	20	**266**
Cicindela blanda	Sandbar Tiger Beetle	G3	S2	N	36%	50	30	130	0	**210**
Cicindela highlandensis	Highlands Tiger Beetle	G2	S2	Y	65%	166	30	70	20	**286**
Cicindela olivacea	Olive Tiger Beetle	G3	S1	N	3%	50	40	200	0	**290**
Cicindelidia floridana	Miami Tiger Beetle	G1	S1	Y	79%	500	40	50	20	**610**
Cladonia perforata	perforate reindeer lichen	G2	S2	Y	71%	166	30	60	20	**276**
Clitoria fragrans	scrub pigeon-wing	G2	S2	Y	82%	166	30	40	20	**256**
Cochlodinella poeyana	Truncate Urocoptid	G1	S1	N	90%	500	40	30	0	**570**
Colaspis thomasi	Scrub Oak Colaspis	G1	S1	Y	81%	500	40	40	20	**600**
Coleataenia abscissa	cutthroatgrass	G3	S3	Y	74%	50	20	60	20	**150**
Colletes titusensis	A Cellophane bee	G1	S1	Y	100%	500	40	10	20	**570**
Colletes ultravalidus	Sandhill Cellophane Bee	G2	S2	N	77%	166	30	50	0	**246**
Colubrina cubensis var. floridana	Cuban snake-bark	G2T1	S1	N	98%	450	40	10	0	**500**
Conradina brevifolia	short-leaved rosemary	G2	S2	Y	59%	166	30	90	20	**306**
Conradina etonia	Etonia rosemary	G1	S1	Y	90%	500	40	30	20	**590**
Conradina glabra	Apalachicola rosemary	G1	S1	Y	58%	500	40	90	20	**650**
Conradina grandiflora	large-flowered rosemary	G3	S3	Y	65%	50	20	80	20	**170**
Consolea corallicola	semaphore pricklypear	G1	S1	Y	95%	500	40	20	20	**580**
Copris gopheri	Gopher Tortoise Copris Beetle	G2	S2	Y	56%	166	30	90	20	**306**
Coreopsis integrifolia	ciliate-leaf tickseed	G1	S1	N	14%	500	40	180	0	**720**
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	G3	S1	N	63%	50	40	80	0	**170**
Cotinis aliena	Keys Green June Beetle	G1	S1	Y	59%	500	40	90	20	**650**
Crangonyx grandimanus	Florida Cave Amphipod	G2	S2	Y	20%	166	30	160	20	**376**
Crangonyx hobbsi	Hobbs's Cave Amphipod	G2	S2	Y	9%	166	30	190	20	**406**
Crangonyx manubrium	Jackson County Cave Amphipod	G1	S1	N	48%	500	40	110	0	**650**
Crangonyx parhobbsi	Florida Big Bend Cave Amphipod	G1	S1	N	65%	500	40	80	0	**620**
Crangonyx sulphurium	Sulphurous Cave Amphipod	G1	S1	Y	100%	500	40	10	20	**570**
Crocodylus acutus	American Crocodile	G2	S2	N	94%	166	30	20	0	**216**
Croomia pauciflora	croomia	G3	S2	N	56%	50	30	90	0	**170**
Crotalaria avonensis	Avon Park rabbit-bells	G1	S1	Y	80%	500	40	50	20	**610**
Crystallaria asprella	Crystal Darter	G3	S1	N	62%	50	40	80	0	**170**
Ctenium floridanum	Florida toothache grass	G2	S2	N	71%	166	30	60	0	**256**
Ctenogobius stigmaturus	Spottail Goby	G2	S2	N	71%	166	30	60	0	**256**
Cucurbita okeechobeensis	Okeechobee gourd	G1	S1	Y	93%	500	40	20	20	**580**
Cuphea aspera	Florida waxweed	G2	S2	Y	42%	166	30	120	20	**336**
Cyclargus thomasi bethunebakeri	Miami Blue	G4T1	S1	Y	100%	300	40	10	20	**370**
Cyclocephala miamiensis	Miami Chafer Beetle	G2	S2	Y	0%	166	30	200	20	**416**
Cyprinella callitaenia	Bluestripe Shiner	G2	S2	N	46%	166	30	110	0	**306**
Cyprinodon variegatus hubbsi	Lake Eustis Pupfish	G5T2	S2	Y	30%	100	30	150	20	**300**
Dalea carthagenensis var. floridana	Florida prairie clover	G5T1	S1	Y	91%	155	40	20	20	**235**
Dasymutilla archboldi	Lake Wales Ridge Velvet Ant	G2	S2	Y	78%	166	30	50	20	**266**
Dasyscias franzi	Shaggy Ghostsnail	G1	S1	Y	91%	500	40	20	20	**580**
Deeringothamnus pulchellus	beautiful pawpaw	G1	S1	Y	74%	500	40	60	20	**620**
Deeringothamnus rugelii	Rugel's pawpaw	G1	S1	Y	53%	500	40	100	20	**660**
Dendrophylax lindenii	ghost orchid	G1	S1	N	92%	500	40	20	0	**560**
Denisophytum pauciflorum	fewflower holdback	G3	S1	N	81%	50	40	40	0	**130**
Dermochelys coriacea	Leatherback Sea Turtle	G2	S2	N	35%	166	30	130	0	**326**
Desmodium ochroleucum	creamflower tick-trefoil	G2	S1	N	57%	166	40	90	0	**296**
Desmognathus auriculatus	Holbrook's Southern Dusky Salamander	G3	S1	N	81%	50	40	40	0	**130**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Desmognathus sp. 1	Eglin Ravine Dusky Salamander	G2	S2	N	72%	166	30	60	0	**256**
Diadophis punctatus acricus	Key Ringneck Snake	G5T1	S1	Y	86%	155	40	30	20	**245**
Dicerandra christmanii	Garrett's scrub balm	G1	S1	Y	55%	500	40	100	20	**660**
Dicerandra cornutissima	longspurred mint	G2	S2	Y	40%	166	30	130	20	**346**
Dicerandra frutescens	scrub mint	G1	S1	Y	58%	500	40	90	20	**650**
Dicerandra immaculata var. immaculata	Lakela's balm	G1	S1	Y	17%	500	40	170	20	**730**
Dicerandra immaculata var. savannarum	savanna balm	G1	S1	Y	23%	500	40	160	20	**720**
Dicerandra modesta	blushing scrub balm	G1	S1	Y	24%	500	40	160	20	**720**
Digitaria floridana	Florida fingergrass	G1	S1	Y	98%	500	40	10	20	**570**
Digitaria gracillima	longleaf fingergrass	G1	S1	Y	0%	500	40	200	20	**760**
Digitaria pauciflora	few-flowered fingergrass	G1	S1	Y	100%	500	40	10	20	**570**
Diplotaxis rufa	Red Diplotaxis Beetle	G2	S2	Y	67%	166	30	70	20	**286**
Dorymyrmex flavopectus	Bi-colored Scrub Cone Ant	G2	S2	Y	77%	166	30	50	20	**266**
Drapetis sp. 1	Gopher Tortoise Burrow Dance Fly	G1	S1	Y	96%	500	40	10	20	**570**
Drymarchon couperi	Eastern Indigo Snake	G3	S2	N	62%	50	30	80	0	**160**
Dryobates borealis	Red-cockaded Woodpecker	G3	S2	N	89%	50	30	30	0	**110**
Eburia stroheckeri	Strohecker's Ivory-Spotted Long-Horned Beetle	G1	S1	Y	96%	500	40	10	20	**570**
Elimia albanyensis	Black-crested Elimia Snail	G3	S1	N	26%	50	40	150	0	**240**
Elimia clenchi	Slackwater Elimia	G3	S1	N	44%	50	40	120	0	**210**
Elliptio arctata	Delicate Spike	G2	S2	N	0%	166	30	200	0	**396**
Elliptio chipolaensis	Chipola Slabshell	G1	S1	N	38%	500	40	130	0	**670**
Elliptio fraterna	Brother Spike	G1	S1	N	66%	500	40	70	0	**610**
Elliptio mcmichaeli	Fluted Elephant-ear	G2	S1	N	39%	166	40	130	0	**336**
Elliptio monroensis	St. Johns Elephantear	G1	S1	N	59%	500	40	90	0	**630**
Elliptio purpurella	Inflated Spike	G2	S2	N	33%	166	30	140	0	**336**
Elliptoideus sloatianus	Purple Bankclimber	G2	S1	N	52%	166	40	100	0	**306**
Elytraria caroliniensis var. angustifolia	narrow-leaved Carolina scalystem	G4T2	S2	Y	94%	130	30	20	20	**200**
Enaphalodes archboldi	Archbold Scrub Oak Long-horned Beetle	G1	S1	Y	78%	500	40	50	20	**610**
Enneacanthus chaetodon	Blackbanded Sunfish	G3	S2	N	50%	50	30	100	0	**180**
Ephyriades brunnea floridensis	Florida Duskywing	G4T2	S2	Y	90%	130	30	20	20	**200**
Eragrostis pectinacea var. tracyi	Sanibel lovegrass	G5T1	S1	Y	21%	155	40	160	20	**375**
Eretmochelys imbricata	Hawksbill Sea Turtle	G3	S1	N	13%	50	40	180	0	**270**
Eriocaulon nigrobracteatum	dark-headed hatpins	G1	S1	Y	3%	500	40	200	20	**760**
Eriogonum longifolium var. gnaphalifolium	scrub buckwheat	G4T3	S3	Y	84%	45	20	40	20	**125**
Eryngium cuneifolium	wedge-leaved button-snakeroot	G1	S1	Y	60%	500	40	80	20	**640**
Etheostoma okaloosae	Okaloosa Darter	G2	S2	Y	97%	166	30	10	20	**226**
Eucanthus alutaceus	Mat Red Globe Scarab Beetle	G2	S1	N	40%	166	40	120	0	**326**
Eumops floridanus	Florida bonneted bat	G1	S1	Y	74%	500	40	60	20	**620**
Euphorbia rosescens	scrub spurge	G1	S1	Y	63%	500	40	80	20	**640**
Euphorbia telephioides	telephus spurge	G1	S1	Y	48%	500	40	110	20	**670**
Euphoria discicollis	Pocket Gopher Flower Beetle	G2	S1	N	62%	166	40	80	0	**286**
Euphyes berryi	Berry's Skipper	G2	S2	N	89%	166	30	30	0	**226**
Euphyes dukesi calhouni	Calhoun's Skipper	G3T1	S1	Y	87%	390	40	30	20	**480**
Euphyes pilatka klotsi	Klots' Skipper	G3T2	S2	Y	88%	150	30	30	20	**230**
Eurybia spinulosa	pinewoods aster	G1	S1	Y	24%	500	40	160	20	**720**
Eurycea hillisi	Hillis's Dwarf Salamander	G3	S1	N	3%	50	40	200	0	**290**
Eurycea sphagnicola	Bog Dwarf Salamander	G1	S1	N	98%	500	40	10	0	**550**
Eurycea wallacei	Georgia Blind Salamander	G2	S2	N	30%	166	30	140	0	**336**
Eutrichota gopheri	Gopher Tortoise Burrow Fly	G2	S2	N	79%	166	30	50	0	**246**
Evolvulus grisebachii	Grisebach's false-morning-glory	G2	S1	N	92%	166	40	20	0	**226**
Floridobia alexander	Alexander Siltsnail	G1	S1	Y	99%	500	40	10	20	**570**
Floridobia fraterna	Creek Siltsnail	G2	S2	Y	50%	166	30	100	20	**316**
Floridobia helicogyra	Crystal Siltsnail	G1	S1	Y	73%	500	40	60	20	**620**
Floridobia leptospira	Flatwood Siltsnail	G1	S1	Y	99%	500	40	10	20	**570**
Floridobia mica	Ichetucknee Siltsnail	G1	S1	Y	91%	500	40	20	20	**580**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Floridobia petrifons	Rock Springs Siltsnail	G1	S1	Y	98%	500	40	10	20	**570**
Floridobia ponderosa	Ponderous Spring Siltsnail	G1	S1	Y	25%	500	40	160	20	**720**
Floridobia porterae	Green Cove Springsnail	G1	S1	Y	28%	500	40	150	20	**710**
Floridobia vanhyningi	Seminole Spring Siltsnail	G1	S1	Y	23%	500	40	160	20	**720**
Floridobia wekiwae	Wekiwa Siltsnail	G1	S1	Y	96%	500	40	10	20	**570**
Floridobolus floydi	Floyd's Sandhill Millipede	G1	S1	Y	17%	500	40	170	20	**730**
Floridobolus orini	Orin's Scrub Millipede	G1	S1	Y	90%	500	40	20	20	**580**
Floridobolus penneri	Florida Scrub Millipede	G1	S1	Y	66%	500	40	70	20	**630**
Forestiera godfreyi	Godfrey's swampprivet	G2	S2	N	68%	166	30	70	0	**266**
Fothergilla gardenii	dwarf witch-alder	G3	S1	N	85%	50	40	30	0	**120**
Fundulus jenkinsi	Saltmarsh Topminnow	G3	S2	N	54%	50	30	100	0	**180**
Fusconaia burkei	Tapered Pigtoe	G2	S2	N	34%	166	30	140	0	**336**
Fusconaia escambia	Narrow Pigtoe	G1	S1	N	59%	500	40	90	0	**630**
Galactia pinetorum	pineland milkpea	G2	S2	Y	97%	166	30	10	20	**226**
Galactia smallii	Small's milkpea	G1	S1	Y	81%	500	40	40	20	**600**
Galeandra bicarinata	two-keeled helmet orchid	G1	S1	N	93%	500	40	20	0	**560**
Gentiana pennelliana	wiregrass gentian	G3	S3	Y	70%	50	20	70	20	**160**
Geolycosa xera	McCrone's Burrowing Wolf Spider	G2	S2	Y	69%	166	30	70	20	**286**
Geomysaprinus floridae	Equal-clawed Gopher Tortoise Hister Beetle	G1	S1	Y	85%	500	40	40	20	**600**
Geopsammodius fuscus	Dark Tiny Sand-loving Scarab	G1	S1	Y	81%	500	40	40	20	**600**
Geopsammodius morrisi	Morris' Tiny Sand-loving Scarab	G1	S1	Y	65%	500	40	80	20	**640**
Geopsammodius relictillus	Relictual Tiny Sand-loving Scarab	G2	S2	Y	72%	166	30	60	20	**276**
Geopsammodius subpedalis	Underfoot Tiny Sand-loving Scarab	G2	S2	N	88%	166	30	30	0	**226**
Geopsammodius withlacoochee	Withlacoochee Tiny Sand-loving Scarab	G1	S1	Y	37%	500	40	130	20	**690**
Glandularia maritima	coastal vervain	G3	S3	Y	89%	50	20	30	20	**120**
Glandularia tampensis	Tampa vervain	G2	S2	Y	52%	166	30	100	20	**316**
Gomphurus modestus	Gulf Coast Clubtail	G3	S1	N	33%	50	40	140	0	**230**
Graptemys barbouri	Barbour's Map Turtle	G2	S2	N	50%	166	30	110	0	**306**
Graptemys ernsti	Escambia Map Turtle	G2	S2	N	56%	166	30	90	0	**286**
Gronocarus autumnalis	Lobed Spiny Burrowing Beetle	G2	S2	N	63%	166	30	80	0	**276**
Gronocarus inornatus	Lobeless Spiny Burrowing Beetle	G1	S1	Y	11%	500	40	180	20	**740**
Guaiacum sanctum	lignum-vitae	G2	S1	N	79%	166	40	50	0	**256**
Halophila johnsonii	Johnson's seagrass	G2	S2	Y	65%	166	30	70	20	**286**
Hamamelis ovalis	Leonard's witch hazel	G2	S2	N	47%	166	30	110	0	**306**
Hamiota australis	Southern Sandshell	G2	S1	N	29%	166	40	150	0	**356**
Hamiota subangulata	Shiny-rayed Pocketbook	G2	S1	N	32%	166	40	140	0	**346**
Haroldiataenius saramari	Sand Pine Scrub Ataenius Beetle	G3	S3	Y	84%	50	20	40	20	**130**
Harperocallis flava	Harper's beauty	G2	S2	Y	78%	166	30	50	20	**266**
Harrisia aboriginum	aboriginal prickly apple	G1	S1	Y	81%	500	40	40	20	**600**
Harrisia fragrans	fragrant prickly apple	G1	S1	Y	64%	500	40	80	20	**640**
Harrisia simpsonii	Simpson's prickly apple	G2	S2	Y	87%	166	30	30	20	**246**
Hartwrightia floridana	hartwrightia	G2	S2	N	85%	166	30	40	0	**236**
Hasteola robertiorum	Florida hasteola	G1	S1	Y	71%	500	40	60	20	**620**
Helianthus carnosus	lake-side sunflower	G1	S1	Y	10%	500	40	190	20	**750**
Helianthus debilis ssp. vestitus	hairy beach sunflower	G5T2	S2	Y	62%	100	30	80	20	**230**
Hesperapis oraria	Gulf Coast Solitary Bee	G1	S1	N	86%	500	40	30	0	**570**
Heterodon simus	Southern Hognose Snake	G2	S2	N	66%	166	30	70	0	**266**
Hogna ericeticola	Rosemary Wolf Spider	G1	S1	Y	0%	500	40	200	20	**760**
Hojeda inaguensis	Keys Mudcloak	G3	S2	N	82%	50	30	40	0	**120**
Homoeoneuria dolani	Blue Sand-river Mayfly	G3	S1	N	37%	50	40	130	0	**220**
Hydroperla phormidia	A Stonefly	G3	S2	N	57%	50	30	90	0	**170**
Hydroptila apalachicola	Apalachicola Hydroptila Caddisfly	G1	S1	Y	45%	500	40	120	20	**680**
Hydroptila bribriae	Kriebel's Hydroptila Caddisfly	G1	S1	Y	98%	500	40	10	20	**570**
Hydroptila eglinensis	Saberlike Hydroptila Caddisfly	G1	S1	Y	96%	500	40	10	20	**570**
Hydroptila hamiltoni	Hamilton's Hydroptila Caddisfly	G1	S1	Y	97%	500	40	10	20	**570**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Hydroptila molsonae	Molson's Microcaddisfly	G2	S2	N	61%	166	30	80	0	**276**
Hydroptila okaloosa	Rogue Creek Hydroptila Caddisfly	G1	S1	Y	96%	500	40	10	20	**570**
Hydroptila sarahae	Sarah's Hydroptila Caddisfly	G1	S1	Y	97%	500	40	10	20	**570**
Hydroptila sykorai	Sykora's Hydroptila Caddisfly	G1	S1	Y	22%	500	40	160	20	**720**
Hydroptila wakulla	Wakulla Springs Vari-colored Microcaddisfly	G2	S2	Y	82%	166	30	40	20	**256**
Hymenocallis gholsonii	Gholson's spiderlily	G1	S1	Y	100%	500	40	10	20	**570**
Hymenocallis godfreyi	Godfrey's spiderlily	G1	S1	Y	94%	500	40	20	20	**580**
Hymenocallis henryae var. glaucifolia	spiderlily	G2	S2	Y	97%	166	30	10	20	**226**
Hymenocallis henryae var. henryae	Henry's spiderlily	G2	S2	Y	54%	166	30	100	20	**316**
Hypericum cumulicola	Highlands Scrub hypericum	G2	S2	Y	60%	166	30	90	20	**306**
Hypericum edisonianum	Edison's ascyrum	G2	S2	Y	68%	166	30	70	20	**286**
Hypericum lissophloeus	smoothbark St. John's wort	G2	S2	Y	34%	166	30	140	20	**356**
Hypotrichia spissipes	Florida Hypotrichia Scarab Beetle	G3	S3	Y	89%	50	20	30	20	**120**
Idia gopheri	Gopher Tortoise Noctuid Moth	G2	S2	N	66%	166	30	70	0	**266**
Illicium parviflorum	star anise	G2	S2	Y	89%	166	30	30	20	**246**
Ipomoea microdactyla	wild potato morning glory	G2	S2	N	92%	166	30	20	0	**216**
Ipomoea tenuissima	rocklands morning glory	G3	S1	N	85%	50	40	40	0	**130**
Ischyrus dunedinensis	Three Spotted Pleasing Fungus Beetle	G2	S2	N	83%	166	30	40	0	**236**
Islandiana sp. 2	Marianna Cave Sheetweb Weaver Spider	G1	S1	Y	100%	500	40	10	20	**570**
Isonychia berneri	A Mayfly	G2	S1	N	90%	166	40	30	0	**236**
Jacquemontia curtissii	pineland jacquemontia	G2	S2	Y	95%	166	30	10	20	**226**
Jacquemontia reclinata	beach jacquemontia	G1	S1	Y	71%	500	40	60	20	**620**
Justicia cooleyi	Cooley's water-willow	G2	S2	Y	45%	166	30	110	20	**326**
Justicia crassifolia	thick-leaved water-willow	G3	S3	Y	49%	50	20	110	20	**200**
Keltonia robusta	Conradina Mirid Bug	G2	S2	N	47%	166	30	110	0	**306**
Keltonia rubrofemorata	Scrub Wireweed Mirid Bug	G2	S2	Y	55%	166	30	100	20	**316**
Kinosternon baurii pop. 1	Striped Mud Turtle, Lower Keys Population	G5T1	S1	Y	77%	155	40	50	20	**265**
Lampropeltis extenuata	Short-tailed Snake	G3	S3	Y	83%	50	20	40	20	**130**
Lampropeltis floridana	Florida Kingsnake	G2	S2	Y	73%	166	30	60	20	**276**
Lampropeltis meansi	Apalachicola Kingsnake	G2	S2	Y	92%	166	30	20	20	**236**
Lampropeltis occipitolineata	South Florida Mole Kingsnake	G2	S2	Y	18%	166	30	170	20	**386**
Lantana depressa var. depressa	Florida lantana	G2T1	S1	Y	56%	450	40	90	20	**600**
Lantana depressa var. floridana	Atlantic Coast Florida lantana	G2T1	S1	Y	89%	450	40	30	20	**540**
Lantana depressa var. sanibelensis	Gulf Coast Florida lantana	G2T1	S1	Y	90%	450	40	20	20	**530**
Lasioglossum surianae	Florida Keys Sweat Bee	G2	S2	N	48%	166	30	110	0	**306**
Laterallus jamaicensis	Black Rail	G3	S2	N	92%	50	30	20	0	**100**
Latrodectus bishopi	Red Widow Spider	G2	S2	Y	96%	166	30	10	20	**226**
Lechea cernua	nodding pinweed	G3	S3	Y	66%	50	20	70	20	**160**
Lechea divaricata	pine pinweed	G2	S2	Y	72%	166	30	60	20	**276**
Leiopsammodius deyrupi	Scrub Little Mole Scarab	G1	S1	Y	88%	500	40	30	20	**590**
Lepidochelys kempii	Kemp's Ridley Sea Turtle	G1	S1	N	53%	500	40	100	0	**640**
Lepidostoma morsei	Morse's Little Plain Brown Sedge	G2	S1	N	73%	166	40	60	0	**266**
Leuctra cottaquilla	A Stonefly	G2	S2	N	82%	166	30	40	0	**236**
Liatris gholsonii	Gholson's blazing star	G1	S1	Y	72%	500	40	60	20	**620**
Liatris ohlingerae	Florida blazing star	G2	S2	Y	59%	166	30	90	20	**306**
Liatris provincialis	Godfrey's blazing star	G2	S2	Y	82%	166	30	40	20	**256**
Libellula jesseana	Purple Skimmer	G1	S1	Y	25%	500	40	150	20	**710**
Liguus fasciatus matecumbensis	Florida Tree Snail	G3T2	S2	Y	81%	150	30	40	20	**240**
Lindera subcoriacea	bog spicebush	G3	S1	N	85%	50	40	40	0	**130**
Linsleyonides albomaculatus	Tropical White-Spotted Long-Horned Beetle	G3	S1	N	89%	50	40	30	0	**120**
Linum arenicola	sand flax	G1	S1	Y	74%	500	40	60	20	**620**
Linum carteri var. carteri	Carter's small-flowered flax	G2T1	S1	Y	46%	450	40	110	20	**620**
Linum carteri var. smallii	Small's flax	G2	S2	Y	79%	166	30	50	20	**266**
Linum macrocarpum	spring hill flax	G2	S2	N	98%	166	30	10	0	**206**
Linum westii	West's flax	G1	S1	Y	92%	500	40	20	20	**580**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Liopinus sp. 1	Scrub Hickory Longhorn Beetle	G1	S1	Y	62%	500	40	80	20	**640**
Lithobates capito	Gopher Frog	G2	S3	N	68%	166	20	70	0	**256**
Lithobates okaloosae	Florida Bog Frog	G2	S2	Y	91%	166	30	20	20	**236**
Litsea aestivalis	pondspice	G3	S2	N	50%	50	30	100	0	**180**
Lobelia apalachicolensis	apalachicola lobelia	G2	S2		81%	166	30	40	0	**236**
Lomariopsis kunzeana	holly vine fern	G3	S1	N	91%	50	40	20	0	**110**
Lupinus aridorum	scrub lupine	G3T1	S1	Y	4%	390	40	200	20	**650**
Lupinus westianus	Gulf Coast lupine	G3	S3	Y	54%	50	20	100	20	**190**
Lythrum curtissii	Curtiss' loosestrife	G1	S2	N	60%	500	30	90	0	**620**
Lythrum flagellare	lowland loosestrife	G3	S3	Y	65%	50	20	80	20	**170**
Macbridea alba	white birds-in-a-nest	G2	S2	Y	66%	166	30	70	20	**286**
Macdunnoa brunnea	A Mayfly	G3	S2	N	33%	50	30	140	0	**220**
Machimus polyphemi	Gopher Tortoise Robber Fly	G2	S1	N	100%	166	40	10	0	**216**
Macranthera flammea	hummingbird flower	G3	S2	N	73%	50	30	60	0	**140**
Macrhybopsis pallida	Florida Chub	G3	S2	N	47%	50	30	110	0	**190**
Macrochelys suwanniensis	Suwannee Alligator Snapping Turtle	G2	S2	N	45%	166	30	120	0	**316**
Macrochelys temminckii	Alligator Snapping Turtle	G3	S3	N	51%	50	20	100	0	**170**
Magnolia ashei	Ashe's magnolia	G3	S2	Y	58%	50	30	90	20	**190**
Malaclemys terrapin rhizophorarum	Mangrove Terrapin	G4T2	S2	Y	92%	130	30	20	20	**200**
Marshallia ramosa	southern marshallia	G2	S1	N	20%	166	40	160	0	**366**
Matelea alabamensis	Alabama spiny-pod	G2	S2	N	82%	166	30	40	0	**236**
Matelea baldwyniana	Baldwyn's spiny-pod	G3	S1	N	21%	50	40	160	0	**250**
Matelea flavidula	Carolina milkvine	G3	S1	N	6%	50	40	190	0	**280**
Matelea floridana	Florida spiny-pod	G2	S2	N	63%	166	30	80	0	**276**
Medionidus penicillatus	Gulf Moccasinshell	G2	S1	N	38%	166	40	130	0	**336**
Medionidus simpsonianus	Ochlockonee Moccasinshell	G1	S1	N	53%	500	40	100	0	**640**
Medionidus walkeri	Suwannee Moccasinshell	G1	S1	N	35%	500	40	140	0	**680**
Melanoplus adelogyrus	Volusia Grasshopper	G1	S1	Y	53%	500	40	100	20	**660**
Melanoplus apalachicolae	Apalachicola Grasshopper	G1	S1	Y	86%	500	40	30	20	**590**
Melanoplus forcipatus	Broad Cercus Scrub Grasshopper	G2	S2	Y	73%	166	30	60	20	**276**
Melanoplus gurneyi	Gurney's Spurthroat Grasshopper	G1	S1	Y	21%	500	40	160	20	**720**
Melanoplus indicifer	East Coast Scrub Grasshopper	G1	S1	Y	67%	500	40	70	20	**630**
Melanoplus nanciae	Ocala Claw-Cercus Grasshopper	G1	S1	Y	98%	500	40	10	20	**570**
Melanoplus ordwayae	Ordway Melanoplus Grasshopper	G1	S1	Y	96%	500	40	10	20	**570**
Melanoplus pygmaeus	Pygmy Sandhill Grasshopper	G2	S2	Y	12%	166	30	180	20	**396**
Melanoplus tequestae	Tequesta Grasshopper	G2	S2	Y	73%	166	30	60	20	**276**
Melanoplus withlacoocheensis	Withlacoochee Melanoplus Grasshopper	G2	S2	Y	93%	166	30	20	20	**236**
Menidia conchorum	Key Silverside	G2	S2	Y	74%	166	30	60	20	**276**
Mexistenasellus floridensis	Marianna Cave Isopod	G1	S1		11%	500	40	180	0	**720**
Micropterus cataractae	Shoal Bass	G3	S1	N	5%	50	40	190	0	**280**
Microtus pennsylvanicus dukecampbelli	Florida Salt Marsh Vole	G5T1	S1	Y	91%	155	40	20	20	**235**
Mixogaster delongi	Delong's Mixogaster Flower Fly	G1	S1	Y	100%	500	40	10	20	**570**
Mononeuria paludicola	Godfrey's stitchwort	G1	S1	N	0%	500	40	200	0	**740**
Monotropsis reynoldsiae	pygmy pipes	G2	S2	Y	68%	166	30	70	20	**286**
Mosiera longipes	mangroveberry	G3	S2	N	69%	50	30	70	0	**150**
Moxostoma sp. 1	Apalachicola Redhorse	G3	S2	N	73%	50	30	60	0	**140**
Mustela frenata peninsulae	Florida Long-tailed Weasel	G5T3	S3	Y	43%	39	20	120	20	**199**
Mycotrupes cartwrighti	Cartwright's Mycotrupes Beetle	G3	S2	N	42%	50	30	120	0	**200**
Mycotrupes gaigei	North Peninsular Mycotrupes Beetle	G2	S2	Y	17%	166	30	170	20	**386**
Mycotrupes pedester	Southwest Florida Mycotrupes Beetle	G1	S1	Y	100%	500	40	10	20	**570**
Mycteria americana	Wood Stork	G4	S2	N	69%	16	30	70	0	**116**
Myotis grisescens	Gray Bat	G3	S1	N	31%	50	40	140	0	**230**
Najas filifolia	Narrowleaf Naiad	G3	S2	N	32%	50	30	140	0	**220**
Nectopsyche tavara	Tavares White Miller Caddisfly	G3	S3	Y	66%	50	20	70	20	**160**
Nemastylis floridana	celestial lily	G2	S2	Y	75%	166	30	60	20	**276**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Nemopalpus nearcticus	Sugarfoot Moth Fly	G2	S2	Y	12%	166	30	180	20	**396**
Neofiber alleni	Round-tailed Muskrat	G2	S2	N	91%	166	30	20	0	**216**
Neotoma floridana smalli	Key Largo Woodrat	G5T1	S1	Y	89%	155	40	30	20	**245**
Neotrichia rasmusseni	Rasmussen's Neotrichia Caddisfly	G1	S1	Y	86%	500	40	30	20	**590**
Neovison vison halilimnetes	Gulf Salt Marsh Mink	G5T2	S2	Y	83%	100	30	40	20	**190**
Neovison vison pop. 1	American Mink, Southern Florida population	G5T2	S2	Y	99%	100	30	10	20	**160**
Nerodia clarkii taeniata	Atlantic Salt Marsh Snake	G4T1	S1	Y	4%	300	40	200	20	**560**
Nolina atopocarpa	Florida beargrass	G3	S3	Y	90%	50	20	20	20	**110**
Nolina brittoniana	Britton's beargrass	G3	S3	Y	68%	50	20	70	20	**160**
Notophthalmus perstriatus	Striped Newt	G2	S2	N	90%	166	30	30	0	**226**
Notropis melanostomus	Blackmouth Shiner	G2	S1	N	8%	166	40	190	0	**396**
Nuphar advena ssp. ulvacea	West Florida cowlily	G5T2	S2	N	72%	100	30	60	0	**190**
Nyctiophylax morsei	Morse's Dinky Light Summer Sedge	G2	S2	N	68%	166	30	70	0	**266**
Nyssa ursina	bog tupelo	G3	S3	Y	77%	50	20	50	20	**140**
Odocoileus virginianus clavium	Key Deer	G5T1	S1	Y	80%	155	40	40	20	**255**
Odontotaenius floridanus	Archbold Bess Beetle	G1	S1	Y	72%	500	40	60	20	**620**
Oecetis daytona	Daytona Long-horned Caddisfly	G3	S2	N	69%	50	30	70	0	**150**
Oecetis parva	Little Oecetis Longhorned Caddisfly	G2	S2	N	67%	166	30	70	0	**266**
Oecetis porteri	Porter's Long-horn Caddisfly	G3	S2	N	68%	50	30	70	0	**150**
Okenia hypogaea	burrowing four-o'clock	G3	S2	N	69%	50	30	70	0	**150**
Onthophagus aciculatulus	Sandyland Onthophagus Beetle	G2	S2	Y	76%	166	30	50	20	**266**
Onthophagus polyphemi polyphemi	Punctate Gopher Tortoise Onthophagus Beetle	G2	S2	N	79%	166	30	50	0	**246**
Onthophagus polyphemi sparsisetosus	Smooth Gopher Tortoise Onthophagus Beetle	G2	S1	N	78%	166	40	50	0	**256**
Onychomira floridensis	A Comb-Clawed Beetle	G1	S1	Y	89%	500	40	30	20	**590**
Ophiogomphus australis	Southern Snaketail	G1	S1	N	28%	500	40	150	0	**690**
Opuntia triacantha	three-spined pricklypear	G3	S1	N	80%	50	40	40	0	**130**
Orbexilum virgatum	pineland scurfpea	G1	S1	N	94%	500	40	20	0	**560**
Orthalicus reses nesodryas	Florida Keys Tree Snail	G2	S2	Y	84%	166	30	40	20	**256**
Orthalicus reses reses	Stock Island Tree Snail	G2T1	S1	Y	76%	450	40	50	20	**560**
Orthotrichia dentata	Dentate Orthotrichian Microcaddisfly	G2	S2	N	41%	166	30	120	0	**316**
Oryzomys palustris argentatus	Key Rice Rat	G5T2	S2	Y	82%	100	30	40	20	**190**
Oryzomys palustris sanibeli	Sanibel Island Marsh Rice Rat	G5T1	S1	Y	78%	155	40	50	20	**265**
Osmia calaminthae	Blue Calamintha Bee	G1	S1	Y	59%	500	40	90	20	**650**
Oxyethira chrysocara	Gold Head Branch Caddisfly	G1	S1	Y	90%	500	40	20	20	**580**
Oxyethira elerobi	Elerob's Microcaddisfly	G3	S2	N	43%	50	30	120	0	**200**
Oxyethira florida	Florida Cream and Brown Microcaddisfly	G2	S2	Y	69%	166	30	70	20	**286**
Oxyethira kelleyi	Kelly's Cream and Brown Mottled Microcaddisfly	G1	S1	Y	88%	500	40	30	20	**590**
Oxyethira setosa	Setose Cream and Brown Mottled Microcaddisfly	G2	S1	N	64%	166	40	80	0	**286**
Panorpa floridana	Florida Scorpionfly	G1	S1	Y	93%	500	40	20	20	**580**
Panorpa rufa	Red Scorpionfly	G2	S2	N	94%	166	30	20	0	**216**
Pantherophis guttatus pop. 1	Red Rat Snake, Lower Keys Population	G5T2	S2	Y	79%	100	30	50	20	**200**
Papilio aristodemus ponceanus	Schaus' Swallowtail	G3T1	S1	N	100%	390	40	10	0	**440**
Parnassia caroliniana	Carolina grass-of-parnassus	G3	S2	N	97%	50	30	10	0	**90**
Parnassia grandifolia	large-leaved grass-of-parnassus	G3	S2	N	94%	50	30	20	0	**100**
Paronychia chartacea var. chartacea	paper-like nailwort	G3	S3	Y	60%	50	20	80	20	**170**
Paronychia chartacea var. minima	Crystal Lake nailwort	G3T1	S1	Y	42%	390	40	120	20	**570**
Passiflora pallens	pineland passion-flower	G3	S2	N	97%	50	30	10	0	**90**
Peltotrupes profundus	Florida Deepdigger Scarab Beetle	G3	S3	Y	55%	50	20	90	20	**180**
Peltotrupes youngi	Ocala Deepdigger Scarab Beetle	G2	S2	Y	98%	166	30	10	20	**226**
Percina austroperca	Southern Logperch	G3	S2	N	51%	50	30	100	0	**180**
Peromyscus gossypinus allapaticola	Key Largo Cotton Mouse	G5T1	S1	Y	87%	155	40	30	20	**245**
Peromyscus polionotus allophrys	Choctawhatchee Beach Mouse	G5T1	S1	Y	93%	155	40	20	20	**235**
Peromyscus polionotus leucocephalus	Santa Rosa Beach Mouse	G5T1	S1	Y	85%	155	40	30	20	**245**
Peromyscus polionotus niveiventris	Southeastern Beach Mouse	G5T1	S1	Y	97%	155	40	10	20	**225**
Peromyscus polionotus peninsularis	St. Andrews Beach Mouse	G5T1	S1	Y	81%	155	40	40	20	**255**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Peromyscus polionotus phasma	Anastasia Island Beach Mouse	G5T1	S1	Y	67%	155	40	70	20	**285**
Peromyscus polionotus trissyllepsis	Perdido Key Beach Mouse	G5T1	S1	N	73%	155	40	60	0	**255**
Phanogomphus westfalli	Westfall's Clubtail	G2	S2	Y	72%	166	30	60	20	**276**
Phidippus workmani	Workman's Jumping Spider	G2	S2	N	86%	166	30	30	0	**226**
Philonthus gopheri	Gopher Tortoise Rove Beetle	G1	S1		100%	500	40	10	0	**550**
Philonthus testudo	Western Gopher Tortoise Rove Beetle	G2	S1	N	73%	166	40	60	0	**266**
Phoebanthus tenuifolius	narrow-leaved phoebanthus	G3	S3	Y	78%	50	20	50	20	**140**
Photomorphus archboldi	Nocturnal Scrub Velvet Ant	G2	S2	Y	73%	166	30	60	20	**276**
Phyllanthus liebmannianus ssp. platylepis	pinewoods dainties	G4T2	S2	Y	50%	130	30	110	20	**290**
Phyllophaga elizoria	Elizoria June Beetle	G2	S2	Y	69%	166	30	70	20	**286**
Phyllophaga elongata	Elongate June Beetle	G3	S3	Y	71%	50	20	60	20	**150**
Phyllophaga okeechobea	Diurnal Scrub June Beetle	G2	S2	Y	36%	166	30	130	20	**346**
Phyllophaga ovalis	Oval June Beetle	G1	S1	Y	98%	500	40	10	20	**570**
Phyllophaga panorpa	Southern Lake Wales Ridge June Beetle	G1	S1	Y	11%	500	40	180	20	**740**
Phyllophaga skelleyi	Skelley's June Beetle	G2	S2	Y	49%	166	30	110	20	**326**
Physostegia godfreyi	Apalachicola dragon-head	G3	S3	Y	68%	50	20	70	20	**160**
Pieza rhea	Scrub Pygmy Bee Fly	G1	S1	Y	79%	500	40	50	20	**610**
Pilosocereus robinii	tree cactus	G1	S1	Y	76%	500	40	50	20	**610**
Pinguicula ionantha	Godfrey's butterwort	G2	S2	Y	84%	166	30	40	20	**256**
Pisonia rotundata	devil's smooth-claw	G2	S1	N	82%	166	40	40	0	**246**
Pityopsis flexuosa	zigzag silkgrass	G3	S3	Y	70%	50	20	60	20	**150**
Platanthera chapmanii	Chapman's fringed orchid	G2	S2	N	81%	166	30	40	0	**236**
Pleotomodes needhami	Ant-loving Scrub Firefly	G1	S1	Y	81%	500	40	40	20	**600**
Plesioclytus relictus	Florida Relictual Long-horned Beetle	G1	S1	Y	63%	500	40	80	20	**640**
Plestiodon egregius egregius	Florida Keys Mole Skink	G5T1	S1	Y	78%	155	40	50	20	**265**
Plestiodon egregius insularis	Cedar Key Mole Skink	G5T1	S1	Y	49%	155	40	110	20	**325**
Plestiodon egregius lividus	Blue-tailed Mole Skink	G5T2	S2	Y	38%	100	30	130	20	**280**
Plestiodon egregius pop. 1	Mole Skink, Egmont Key population	G5T1	S1	Y	99%	155	40	10	20	**225**
Plestiodon reynoldsi	Sand Skink	G3	S3	Y	73%	50	20	60	20	**150**
Pleurobema pyriforme	Oval Pigtoe	G2	S1	N	35%	166	40	140	0	**346**
Pleurobema strodeanum	Fuzzy Pigtoe	G2	S2	N	38%	166	30	130	0	**326**
Podomys floridanus	Florida Mouse	G3	S3	Y	64%	50	20	80	20	**170**
Poinsettia pinetorum	pineland spurge	G2	S2	Y	85%	166	30	30	20	**246**
Polycentropus floridensis	Florida Brown Checkered Summer Sedge	G2	S2	N	99%	166	30	10	0	**206**
Polygala lewtonii	Lewton's polygala	G2	S2	Y	83%	166	30	40	20	**256**
Polygala smallii	tiny polygala	G1	S1	Y	81%	500	40	40	20	**600**
Polygonella basiramia	Florida jointweed	G3	S3	Y	61%	50	20	80	20	**170**
Polygonella myriophylla	Small's jointweed	G3	S3	Y	53%	50	20	100	20	**190**
Polymnia laevigata	Tennessee leafcup	G3	S1	N	77%	50	40	50	0	**140**
Polyphylla gracilis	Slender Polyphyllan Scarab Beetle	G2	S2	N	65%	166	30	70	0	**266**
Polyphylla pubescens	Eglin Uplands Scarab Beetle	G1	S1	Y	100%	500	40	10	20	**570**
Polyphylla starkae	Auburndale Scrub Scarab Beetle	G1	S1	Y	68%	500	40	70	20	**630**
Polyphylla woodruffi	Woodruff's Polyphyllan Scarab Beetle	G1	S1	Y	93%	500	40	20	20	**580**
Potamogeton floridanus	Florida pondweed	G1	S1	Y	8%	500	40	190	20	**750**
Praticolella bakeri	Ridge Scrubsnail	G2	S2	Y	62%	166	30	80	20	**296**
Pristis pectinata	Smalltooth Sawfish	G2	S1	N	93%	166	40	20	0	**226**
Procambarus acherontis	Orlando Cave Crayfish	G1	S1	Y	27%	500	40	150	20	**710**
Procambarus attiguus	Silver Glen Springs Cave Crayfish	G1	S1	Y	78%	500	40	50	20	**610**
Procambarus capillatus	Capillaceous Crayfish	G2	S1	N	9%	166	40	190	0	**396**
Procambarus delicatus	Big-cheeked Cave Crayfish	G1	S1	Y	100%	500	40	10	20	**570**
Procambarus econfinae	Panama City Crayfish	G1	S1	Y	1%	500	40	200	20	**760**
Procambarus erythrops	Santa Fe Cave Crayfish	G1	S1	Y	0%	500	40	200	20	**760**
Procambarus escambiensis	Escambia Crayfish	G2	S2	N	26%	166	30	150	0	**346**
Procambarus franzi	Orange Lake Cave Crayfish	G1	S1	Y	4%	500	40	200	20	**760**
Procambarus horsti	Big Blue Spring Cave Crayfish	G1	S1	Y	63%	500	40	80	20	**640**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Procambarus latipleurum	Wingtail Crayfish	G2	S2	Y	7%	166	30	190	20	**406**
Procambarus leitheuseri	Coastal Lowland Cave Crayfish	G1	S1	Y	46%	500	40	110	20	**670**
Procambarus lucifugus	Light-fleeing Cave Crayfish	G1	S1	Y	3%	500	40	200	20	**760**
Procambarus milleri	Miami Cave Crayfish	G1	S1	Y	0%	500	40	200	20	**760**
Procambarus morrisi	Putnam County Cave Crayfish	G1	S1	Y	0%	500	40	200	20	**760**
Procambarus orcinus	Woodville Karst Cave Crayfish	G1	S1	Y	72%	500	40	60	20	**620**
Procambarus pallidus	Pallid Cave Crayfish	G2	S2	Y	10%	166	30	190	20	**406**
Procambarus pictus	Black Creek Crayfish	G2	S2	Y	48%	166	30	110	20	**326**
Procambarus rathbunae	Combclaw Crayfish	G1	S1	Y	1%	500	40	200	20	**760**
Procambarus rogersi expletus	Perfect Crayfish	G4T1	S1	Y	0%	300	40	200	20	**560**
Procambarus youngi	Florida Longbeak Crayfish	G1	S1	Y	51%	500	40	100	20	**660**
Procyon lotor auspicatus	Key Vaca Raccoon	G5T2	S2	Y	88%	100	30	30	20	**180**
Procyon lotor incautus	Key West Raccoon	G5T2	S2	Y	75%	100	30	50	20	**200**
Progomphus alachuensis	Tawny Sanddragon	G3	S3	Y	26%	50	20	150	20	**240**
Prunus geniculata	scrub plum	G3	S3	Y	64%	50	20	80	20	**170**
Pseudemys nelsoni pop. 1	Florida Red-bellied Turtle, Panhandle Population	G5T2	S2	Y	32%	100	30	140	20	**290**
Pseudobranchus striatus lustricolus	Gulf Hammock Dwarf Siren	G5T1	S1	Y	2%	155	40	200	20	**415**
Pseudocharis minima	Lesser Wasp Moth	G3	S2	N	97%	50	30	10	0	**90**
Pseudophoenix sargentii	Florida cherry-palm	G3	S1	N	100%	50	40	10	0	**100**
Pseudosinella pecki	Peck's Cave Springtail	G2	S1	N	50%	166	40	110	0	**316**
Pteroglossaspis ecristata	giant orchid	G2	S2	N	70%	166	30	70	0	**266**
Ptomaphagus geomysi	Elongate Pocket Gopher Ptomaphagus Beetle	G2	S2	N	80%	166	30	40	0	**236**
Ptychobranchus jonesi	Southern Kidneyshell	G1	S1	N	29%	500	40	150	0	**690**
Puma concolor coryi	Florida Panther	G5T1	S1	Y	71%	155	40	60	20	**275**
Quadrula infucata	Sculptured Pigtoe	G3	S2	N	46%	50	30	110	0	**190**
Quadrula kleiniana	Florida Mapleleaf	G2	S2	N	35%	166	30	130	0	**326**
Rallus longirostris insularum	Mangrove Clapper Rail	G5T3	S3	Y	60%	39	20	80	20	**159**
Rallus longirostris scottii	Florida Clapper Rail	G5T3	S3	Y	80%	39	20	50	20	**129**
Reginaia rotulata	Round Ebonyshell	G1	S1	N	64%	500	40	80	0	**620**
Remasellus parvus	Swimming Little Florida Cave Isopod	G1	S1	Y	65%	500	40	70	20	**630**
Rhexia parviflora	small-flowered meadowbeauty	G2	S2	N	71%	166	30	60	0	**256**
Rhododendron chapmanii	Chapman's rhododendron	G1	S1	Y	5%	500	40	190	20	**750**
Rhynchosia swartzii	Swartz's snoutbean	G3	S1	N	82%	50	40	40	0	**130**
Rhynchospora megaplumosa	large-plumed beaksedge	G2	S2	Y	93%	166	30	20	20	**236**
Rhynchospora thornei	Thorne's beaksedge	G3	S1	N	31%	50	40	140	0	**230**
Ribes echinellum	Miccosukee gooseberry	G1	S1	N	54%	500	40	100	0	**640**
Romulus globosus	Round-Necked Romulus Long-Horned Beetle	G1	S1	Y	78%	500	40	50	20	**610**
Rostrhamus sociabilis	Snail Kite	G4	S2	N	82%	16	30	40	0	**86**
Roystonea regia	Florida royal palm	G2	S2	N	98%	166	30	10	0	**206**
Rudbeckia auriculata	eared coneflower	G2	S1	N	0%	166	40	200	0	**406**
Rudbeckia nitida	St. John's blackeyed susan	G3	S2	N	47%	50	30	110	0	**190**
Ruellia noctiflora	nightflowering wild petunia	G3	S2	N	61%	50	30	80	0	**160**
Rutela formosa	Handsome Flower Scarab Beetle	G3	S1	N	76%	50	40	50	0	**140**
Sachsia polycephala	Bahama sachsia	G2	S2	N	88%	166	30	30	0	**226**
Sacoila lanceolata var. paludicola	Fakahatchee ladies'-tresses	G4T1	S1	Y	99%	300	40	10	20	**370**
Salix floridana	Florida willow	G2	S2	N	77%	166	30	50	0	**246**
Sarracenia rubra ssp. gulfensis	Gulf Coast redflower pitcherplant	G3T2	S2	Y	95%	150	30	10	20	**210**
Satyrium kingi	King's Hairstreak	G3	S2	N	54%	50	30	100	0	**180**
Sceloporus woodi	Florida Scrub Lizard	G2	S2	Y	80%	166	30	50	20	**266**
Schisandra glabra	bay star-vine	G3	S2	N	38%	50	30	130	0	**210**
Schistocerca ceratiola	Rosemary Grasshopper	G2	S2	Y	84%	166	30	40	20	**256**
Schizachyrium niveum	scrub bluestem	G1	S1	Y	70%	500	40	70	20	**630**
Schizachyrium sericatum	silky bluestem	G1	S1	Y	30%	500	40	150	20	**710**
Schwalbea americana	chaffseed	G2	S1	N	91%	166	40	20	0	**226**
Sciurus niger avicennia	Big Cypress Fox Squirrel	G5T2	S2	Y	70%	100	30	70	20	**220**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Scutellaria floridana	Florida skullcap	G2	S2	Y	54%	166	30	100	20	**316**
Scutellaria havanensis	Havana skullcap	G3	S2	N	86%	50	30	30	0	**110**
Selaginella armata var. eatonii	pygmy spike moss	G2	S2	N	100%	166	30	10	0	**206**
Selonodon archboldi	Archbold Cebrionid Beetle	G1	S1	Y	87%	500	40	30	20	**590**
Selonodon mandibularis	Large-Jawed Cebrionid Beetle	G3	S3	Y	44%	50	20	120	20	**210**
Selonodon santarosae	Santa Rosa Cebrionid Beetle	G1	S1	Y	99%	500	40	10	20	**570**
Serica frosti	Frost's Silky June Beetle	G1	S1	Y	80%	500	40	50	20	**610**
Setophaga discolor paludicola	Florida Prairie Warbler	G5T3	S3	Y	82%	39	20	40	20	**119**
Sideroxylon alachuense	silver buckthorn	G1	S1	N	69%	500	40	70	0	**610**
Sideroxylon reclinatum ssp. austrofloridense	Everglades bully	G4T1	S1	Y	96%	300	40	10	20	**370**
Sideroxylon thornei	Thorne's buckthorn	G3	S1	N	94%	50	40	20	0	**110**
Sigmodon hispidus exsputus	Lower Keys Cotton Rat	G5T2	S2	Y	77%	100	30	50	20	**200**
Sigmodon hispidus insulicola	Insular Cotton Rat	G5T1	S1	Y	85%	155	40	30	20	**245**
Silene polypetala	fringed campion	G2	S1	N	7%	166	40	190	0	**396**
Siphloplecton brunneum	A Mayfly	G1	S1	Y	67%	500	40	70	20	**630**
Sminthurus floridanus	Florida Sminthurus Springtail	G1	S1	N	98%	500	40	10	0	**550**
Somatochlora calverti	Calvert's Emerald	G3	S2	N	58%	50	30	90	0	**170**
Sosippus placidus	Lake Placid Funnel Wolf Spider	G1	S1	Y	81%	500	40	40	20	**600**
Sparbarus miccosukee	Miccosukee Mayfly	G1	S1		70%	500	40	70	0	**610**
Spigelia gentianoides	gentian pinkroot	G2	S2	N	28%	166	30	150	0	**346**
Spigelia loganioides	pinkroot	G2	S2	Y	63%	166	30	80	20	**296**
Spiranthes brevilabris	small ladies'-tresses	G1	S1	N	99%	500	40	10	0	**550**
Spiranthes floridana	Florida ladies'-tresses	G1	S1	N	94%	500	40	20	0	**560**
Stachydeoma graveolens	mock pennyroyal	G2	S2	Y	64%	166	30	80	20	**296**
Stachys lythroides	hyssopleaf hedgenettle	G5T1	S1	N	6%	155	40	190	0	**385**
Stelis ater	Southwest Florida Stelis Bee	G2	S2	Y	68%	166	30	70	20	**286**
Sterna dougallii	Roseate Tern	G4	S1	N	78%	16	40	50	0	**106**
Storeria victa pop. 1	Florida Brown Snake, Lower Keys Population	G5T1	S1	Y	85%	155	40	30	20	**245**
Strophitus radiatus	Rayed Creekshell	G2	S1	N	27%	166	40	150	0	**356**
Strophitus williamsi	Flatwoods Creekshell	G2	S1	N	1%	166	40	200	0	**406**
Strymon acis bartrami	Bartram's Scrub-Hairstreak	G4T1	S1	Y	93%	300	40	20	20	**380**
Strymon martialis	Martial Scrub-Hairstreak	G3	S2	N	82%	50	30	40	0	**120**
Stygobromus doughertyensis	Dougherty Plain Cave Amphipod	G1	S1	N	11%	500	40	180	0	**720**
Stygobromus floridanus	Florida Panhandle Cave Amphipod	G1	S1		34%	500	40	140	0	**680**
Stylisma abdita	scrub stylisma	G3	S3	Y	83%	50	20	40	20	**130**
Stylosanthes calcicola	pineland pencil flower	G3	S2	N	84%	50	30	40	0	**120**
Stylurus potulentus	Yellow-sided Clubtail	G2	S2	N	40%	166	30	130	0	**326**
Stylurus townesi	Bronze Clubtail	G3	S2	N	48%	50	30	110	0	**190**
Sylvilagus palustris hefneri	Lower Keys Marsh Rabbit	G5T1	S1	Y	82%	155	40	40	20	**255**
Tantilla oolitica	Rim Rock Crowned Snake	G1	S1	Y	75%	500	40	60	20	**620**
Taxus floridana	Florida yew	G2	S2	Y	72%	166	30	60	20	**276**
Telamona archboldi	Archbold's Treehopper	G1	S1	Y	90%	500	40	30	20	**590**
Tephrosia angustissima var. corallicola	rockland hoary-pea	G1	S1	Y	91%	500	40	20	20	**580**
Tephrosia angustissima var. curtissii	coastal hoary-pea	G1	S1	Y	68%	500	40	70	20	**630**
Tettigidea empedonepia	Torreya Pygmy Grasshopper	G1	S1	N	78%	500	40	50	0	**590**
Thalictrum cooleyi	Cooley's meadowrue	G1	S1	N	83%	500	40	40	0	**580**
Thamnophis sauritus pop. 1	Eastern Ribbon Snake, Lower Keys Population	G5T1	S1	Y	79%	155	40	50	20	**265**
Tiedemannia filiformis ssp. greenmanii	giant water cowbane	G3	S3	Y	13%	50	20	180	20	**270**
Tolumnia bahamensis	dancing-lady orchid	G3	S1	N	86%	50	40	30	0	**120**
Torreya taxifolia	Florida torreya	G1	S1	N	46%	500	40	110	0	**650**
Toxolasma sp. 1	Gulf Lilliput	G2	S2	N	45%	166	30	110	0	**306**
Tragia saxicola	pineland noseburn	G2	S2	Y	84%	166	30	40	20	**256**
Triaenodes florida	Floridian Triaenode Caddisfly	G3	S2	N	77%	50	30	50	0	**130**
Triaenodes furcellus	Little-fork Triaenode Caddisfly	G3	S3	Y	85%	50	20	40	20	**130**
Trichechus manatus latirostris	Florida Manatee	G2	S2	N	55%	166	30	90	0	**286**

SCINAME	COMMONNAME	ROUNDED GRANK	ROUNDED SRANK	ENDEMIC	Pct FLMA	Grank Pts	Srank Pts	Prot Pts	Endemic Pts	TOTAL
Trichomanes punctatum ssp. floridanum	Florida filmy fern	G4T1	S1	Y	37%	300	40	130	20	**490**
Trigonopeltastes floridana	Scrub Palmetto Flower Scarab Beetle	G2	S2	Y	72%	166	30	60	20	**276**
Trillium lancifolium	narrow-leaved trillium	G3	S2	N	55%	50	30	90	0	**170**
Triphora craigheadii	Craighead's nodding-caps	G1	S1	Y	69%	500	40	70	20	**630**
Triphora rickettii	Rickett's nodding-caps	G1	S1	Y	94%	500	40	20	20	**580**
Triplax alachuae	Alachua Pleasing Fungus Beetle	G3	S3	Y	77%	50	20	50	20	**140**
Tripsacum floridanum	Florida gamagrass	G2	S2	Y	96%	166	30	10	20	**226**
Troglocambarus maclanei	North Florida Spider Cave Crayfish	G2	S2	Y	6%	166	30	190	20	**406**
Troglocambarus sp. 1	Orlando Spider Cave Crayfish	G1	S1	Y	42%	500	40	120	20	**680**
Typocerus fulvocinctus	Yellow-banded Typocerus Long-horned Beetle	G2	S2	Y	75%	166	30	50	20	**266**
Utterbackia peninsularis	Peninsular Floater	G2	S2	Y	57%	166	30	90	20	**306**
Uvularia floridana	Florida merrybells	G3	S1	N	31%	50	40	140	0	**230**
Verbesina heterophylla	variable-leaf crownbeard	G2	S2	N	94%	166	30	20	0	**216**
Vicia ocalensis	Ocala vetch	G2	S2	Y	86%	166	30	30	20	**246**
Villosa amygdala	Florida Rainbow	G3	S3	Y	93%	50	20	20	20	**110**
Villosa choctawensis	Choctaw Bean	G2	S1	N	49%	166	40	110	0	**316**
Virginia valeriae pop. 1	Smooth Earth Snake, Highlands County Population	G5T1	S1	Y	82%	155	40	40	20	**255**
Warea amplexifolia	clasping warea	G1	S1	Y	10%	500	40	190	20	**750**
Warea carteri	Carter's warea	G1	S1	Y	79%	500	40	50	20	**610**
Xyris isoetifolia	Quillwort yellow-eyed grass	G2	S2	N	32%	166	30	140	0	**336**
Xyris longisepala	karst pond xyris	G2	S2	N	50%	166	30	100	0	**296**
Xyris louisianica	Louisiana yellow-eyed grass	G2	S1	N	85%	166	40	40	0	**246**
Xyris panacea	St. Marks yellow-eyed grass	G1	S1	Y	92%	500	40	20	20	**580**
Zale perculta	Okefenokee Zale Moth	G2	S2	N	95%	166	30	10	0	**206**
Zanthoxylum coriaceum	Biscayne prickly ash	G3	S1	N	91%	50	40	20	0	**110**
Zanthoxylum flavum	satinwood	G3	S1	N	65%	50	40	70	0	**160**
Zephyranthes simpsonii	redmargin zephyrlily	G2	S2	N	99%	166	30	10	0	**206**
Ziziphus celata	scrub ziziphus	G1	S1	Y	44%	500	40	120	20	**680**

Appendix H

Meetings of the Florida Forever Technical Expert Advisory Group and Expert Sub-groups

The following is a record of dates, goals and participants of meetings held by FNAI to review methods and results of data, analysis, and reporting related to the Florida Forever Conservation Needs Assessment. In addition to these formal meetings, FNAI has consulted with many individuals throughout the FFCNA process that are documented elsewhere in this or other reports.

August 17, 2000

Water Resources Expert Workshop

Review and provide feedback on how best to define and represent the Florida Forever measures related to water.

Participants: Jon Arthur (FGS), Eric Brockwell (DEP/Bureau of Information Systems), Ruark Cleary (DEP/Division of State Lands/Bureauof Invasive Plant Management), Mark Dietrich (DEP/Division of Water Resource Management [DWRM]), Amy Knight (FNAI), Gary Knight (FNAI), Karl Kurka (DEP/DWRM), Gary Mahon (USGS), Larry Nall (DEP/ Coastal and Aquatic Managed Areas [CAMA]), Jon Oetting (FNAI), Earl Pearson (DEP/CAMA), Kathleen Swanson (DEP/DWRM), Terry Bengtsson (SFWMD),Jacque Rippe (SFWMD),Jeff Herr (SFWMD), Don Boniol (SJRWMD),David Reed (SJRWMD),Gene Kelly (SWFWMD),Cheryl Hill (SWFWMD)

April 18, 2001

Florida Forever Workshop with National Center for Ecological Analysis and Synthesis (NCEAS)

Goal: Review the datasets and analyses of Florida Forever Conservation Needs Assessment

Participants: Sandy Andelman (UC Santa Barbara-NCEAS), Hilary Swain (Archbold Biological Station), Randy Kautz (FWC), Greg Brock (DEP), John Barrow (DEP), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI)

February 4-5, 2002

Florida Forever Technical Expert Advisory Group: Data Analysis Workshop

Goal: To design a scientifically supported method of integrating a diverse set of place-based natural resource data and synthesizing the resulting large, unwieldy amount of information into a practical format to help guide decision-makers and ensure progress toward meeting the goals of the Florida Forever program.

Participants: David Stoms (UC Santa Barbara), Hilary Swain (Archbold Biological Station), Jora Young (TNC), Doria Gordon (TNC), Richard Hilsenbeck (TNC), Fran James (FSU), Randy Kautz (FWC), Tom Hoctor (UF), Jim Cox (Tall Timbers Research Station), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI).

Duane Meeter (FSU), Sandy Andelman (UC Santa Barbara) and Steve Bohl (Div. Forestry) were unable to attend but are still part of the work group.

May 8, 2002

Florida Forever Technical Expert Advisory Group: Data Analysis Review Workshop for ARC

Goal: 1) Review the recommendations and results of an expert workshop held in February 2002 to develop a practical, scientifically sound evaluation method for Florida Forever projects based on Conservation Needs Assessment data; 2) Receive feedback from work group and ARC members on workshop results and final revisions to be made prior to June 6 ARC meeting; 3) Preview future analyses and discuss long-term application of the Conservation Needs Assessment data to the Florida Forever process.

Participants : ARC members & staff: Jack Moller, Paula Sessions, Hilary Swain*, Doug Bailey (FWC), Steve Bohl* (DOF), John Barrow (DEP/OES), Greg Brock* (DEP/OES), Mark Glisson (DEP/OES), Scott Sanders (FWC); FF Data Analysis Work Group: Fran James (FSU), Randy Kautz (FWC), Amy Knight (FNAI), Gary Knight (FNAI), Jon Oetting (FNAI); Others: Samantha Browne (DEP/OGT), Larry Nall (DEP/CAMA), Ellen Stere (DEP/CAMA), Suzanne Walker (DEP/OGT)

October 16, 2002

Florida Forever Technical Expert Advisory Group: Florida Forever Sites Workshop

Goal: Discuss the Sites reserve design model and receive input on setting acquisition targets for the Florida Forever program based on the legislative goals and measures.

Participants: David Stoms (UC Santa Barbara), Hilary Swain (Archbold Biological Station), Jora Young (TNC), Doria Gordon (TNC), Richard Hilsenbeck (TNC), Reed Noss (UCF), Randy Kautz (FWC), Tom Hoctor (UF), Duane Meeter (FSU), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI). (Note: final participant list could not be confirmed and may inadvertently exclude some participants)

October 22, 2002

Recreation Expert Workshop

GOAL: Discuss development of recreation data layer based on recommended criteria from recreation subgroups.

Participants: Suzanne Walker (OGT), Samantha Browne (OGT), Jerrie Lindsey (FWC), John Waldron (DOF), Greg Brock (DSL), Gary Knight (FNAI), Jon Oetting (FNAI), Amy Knight (FNAI)

April 16, 2003

Florida Forever Technical Expert Advisory Group: Florida Forever Sites Analysis Workshop II

Goal: To review iterative site selection analyses for both statewide planning and Florida Forever project evaluation. The work group will provide feedback on different model scenarios and how to interpret and present model results.

Participants: Hilary Swain (Archbold Biological Station), Jora Young (TNC), Doria Gordon (TNC), Fran James (FSU), Randy Kautz (FWC), Tom Hoctor (UF), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI), Steve Bohl (Div. Forestry), John Browne (Div. Forestry), Reed Noss (UCF), Greg Brock (DEP)

October 21, 2003

Florida Forever Expert Technical Advisory Group Workshop

Goal: To provide continued review and feedback of iterative site selection analysis, single resource ranking analysis, Florida Forever project evaluation, and presentation format for ARC.

Participants: Hilary Swain (Archbold Biological Station), Doria Gordon (TNC), Randy Kautz (FWC), Tom Hoctor (UF), Amy Knight (FNAI), Jon Oetting (FNAI), Reed Noss (UCF), Greg Brock (DEP)

April 24, 2006

Groundwater Recharge Expert Meeting

Participants: Amy Knight (FNAI), Jon Arthur (FGS), Tom Greenhalgh (FGS), Harley Means (FGS), Rick Copeland (FGS), David Anderson (FGS)

October 25, 2007

Groundwater Recharge Expert Meeting (via WebEx)

Participants: Amy Knight (FNAI), Terry Bengtsson (SFWMD), Chris Sweazy (SFWMD), Emily Richardson (SFWMD)Chris Richards (NWFWMD), Mark Barcelo (SWFWMD), Doug Munch (SJRWMD), David Hornsby (SJRWMD)

December 9, 2009

Florida Forever Expert Technical Advisory Group Workshop

Goal: Address potential revisions to Florida Forever data and analyses in light of new measures and a new project ranking scheme proposed in rule. Work group will provide feedback on data prioritization, project scoring methods, and overall analysis guidance.

Participants: Heather Pence (FDEP/OGT), Jim Wood (FDEP/OGT), Greg Brock (FDEP/Div. State Lands),Vickie Larson (Ecospatial Analysts; ARC), Paul Thorpe (NWFWMD), Robert Christianson (SJRWMD), Peter Frederick (UF; ARC), Dennis Hardin (DOF), Randy Kautz (Breedlove, Dennis & Associates), Hilary Swain (Archbold Biological Station), Tom Hoctor (UF), George Willson (The Conservation Fund), Jim Muller (Muller & Associates), Beth Stys (FWC), Joe North (FDEP/Watershed Data Services), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI) , Alicia Newberry (FNAI)

March 2010

Water Resource Expert Meeting

Goal: Review and provide input on proposed revisions to base map and prioritization for natural floodplain data layer.

Participants: Amy Knight (FNAI), Jon Oetting (FNAI), Robert Christianson (SJRWMD), Karen Kebart (NWFWMD), Tom Hoctor (UF), Joe North (DEP)

October 28, 2010

Florida Forever Expert Technical Advisory Group Workshop

Goal: Address potential revisions to Florida Forever data and analyses. Work group will provide feedback on data prioritization, project scoring methods, and overall analysis guidance.

Participants: Hilary Swain (Archbold Biological Station), Tom Hoctor (UF), Doria Gordon (The Nature Conservancy), Jim Muller (Muller & Associates), Robert Christianson (SJRWMD), Gary Cochran (FWC), Mike Hallock-Solomon (FFWC), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI). WebEx Participants: Greg Brock (FDEP/Div. State Lands), Dennis Hardin (DOF), Randy Kautz (Breedlove, Dennis & Associates), Beth Stys (FWC), Joe North (FDEP/Watershed Data Services), LuAnne Wilson (SJRWMD).

May 2, 2011

Florida Forever Expert Technical Advisory Group Workshop

Goal: Review and provide feedback on proposed Florida Forever Benchmarks analyses.

Participants: Jim Muller (Muller & Associates), Mike Hallock-Solomon (FFWC), Greg Brock (FDEP/Div. State Lands), Randy Kautz (Breedlove, Dennis & Associates), Paul Thorpe (NWFWMD), Carol Bert (NWFWMD), Amy Knight (FNAI), Jon Oetting (FNAI), Gary Knight (FNAI). WebEx Participants: Hilary Swain (Archbold Biological Station), Doria Gordon (The Nature Conservancy), Vickie Larson (Ecospatial Analysts), Beth Stys (FWC), Heather Pence (FDEP/Office of Greenways and Trails).

September 7, 2011

Florida Forever Expert Technical Advisory Group Workshop

Goal: Review and provide feedback on Florida Forever Benchmarks results.

Participants: Jim Muller (Muller & Associates), Mike Hallock-Solomon (FFWC), Greg Brock (FDEP/Div. State Lands), Randy Kautz (Breedlove, Dennis & Associates), Amy Knight (FNAI), Jon Oetting (FNAI). WebEx Participants: Doria Gordon (The Nature Conservancy), Robert Christianson (SJRWMD)

November 1, 2011

Florida Forever Expert Technical Advisory Group Workshop

Goal: Review and provide feedback on revisions to FFCNA data layers including prioritized natural communities, species for F-TRAC, natural floodplain, large landscapes, sea level rise and Greenways for F-TRAC.

Participants: Randy Kautz (Breedlove, Dennis & Associates), Greg Brock (DEP), Tom Hoctor (UF), Jim Muller (Muller & Associates), Amy Knight (FNAI), Jon Oetting (FNAI)

August 21, 2014

Florida Forever Expert Technical Advisory Group Workshop

Goal: Review and provide feedback on revisions to FFCNA data layers and proposed revisions to product formats and F-TRAC methods.

Participants: Larame Ferry (FFS), Brian Camposano (FFS), Dennis Hardin, Marianne Gengenbach (DEP), Janis Morrow (DEP), David Alden (FWC), Lance Jacobson (FWC), Peter van de Burgt (FWC), Beth Stys (FWC), Tom Hoctor (UF), J. B. Miller (SJRWMD), Doria Gordon (TNC), Jim Muller (Bay County), George Willson (TCF), Nathan Pasco (FNAI), Amy Knight (FNAI), Jon Oetting (FNAI), Hilary Swain (ABS), Karen Cummins (FFS)

April 28, 2015

Groundwater Recharge FGS Meeting

Goal: Review and provide recommendations for updates to prioritized Aquifer Recharge data layer.

Participants: Alan Baker (FGS), Jim Cichon (FGS), Tom Greenhalgh (FGS), Frank Rupert (FGS), Harley Means (FGS), Amy Knight (FNAI), Jon Oetting (FNAI), Nathan Pasco (FNAI)

May 11, 2015

Management Feasibility Agencies Meeting

Goal: To develop an approach for evaluating Florida Forever projects based on how well acquisition could enhance management of existing managed lands.

Participants: Marianne Gengenbach (DEP/DSL); David Clark (DEP/DSL); Larame Ferry (FFS); John Browne (FFS); Todd Knapp (FFS); Parks Small (DEP/DRP); Sine Murray (DEP/DRP); David Alden (FWC); Tom Houston (FWC); Gary Knight (FNAI); Jon Oetting (FNAI); Amy Knight (FNAI)

August 24, 2022

Florida Forever Expert Advisory Group Meeting

Goal: Refresh new and existing members on background of FFCNA; discuss issues and proposed revisions to F-TRAC analysis.

Participants: Deborah Burr (DEP/DSL); Sine Murray (DEP/DSL); Joe Noble (Tall Timbers); Joshua Daskin (Archbold); Reed Noss (FL Inst for Conservation Science); Kristen Nelson Sella (FWC/FWRI); Sarah Lockhart (UF CLCP); Tom Hoctor (UF CLCP); Larame Ferry (FWC); Jim Muller (Muller & Associates); Kathy Freeman (TNC); Hilary Swain (Archbold); Ear Pearon (DEP/Coastal); Keith Rowell (FFS); Brian Camposano (FFS); Brian Emanuel (SJWMD); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI); Nathan Pasco (FNAI)

October 5, 2022

Florida Forever Expert Advisory Group Meeting

Goal: Detailed review of alternative revisions to F-TRAC/Marxan analysis.

Participants: Deborah Burr (DEP/DSL); Sine Murray (DEP/DSL); Karen Cummins (Tall Timbers); Joshua Daskin (Archbold); Reed Noss (FL Inst for Conservation Science); Kristen Nelson Sella (FWC/FWRI); Sarah Lockhart (UF CLCP); Larame Ferry (FWC); Jim Muller (Muller & Associates); Kathy Freeman (TNC); Hilary Swain (Archbold); Earl Pearson (DEP/Coastal); Keith Rowell (FFS); Brian Emanuel (SJWMD); Kevin Coyne (DEP); Paul Lang (USFWS); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI); Nathan Pasco (FNAI).

April 18, 2023

Florida Forever Expert Working Group Meeting

Goal: This workshop focused primarily on reviewing existing Targets and Weights for the F-TRAC analysis and proposing new Targets & Weights.

Participants: Deborah Burr (DEP/DSL); Sine Murray (DEP/DSL); Joshua Daskin (Archbold); Reed Noss (FL Inst for Conservation Science); Kristen Nelson Sella (FWC/FWRI); Larame Ferry (FWC); Jim Muller (Muller & Associates); Kathy Freeman (TNC); Hilary Swain (Archbold); Earl Pearson (DEP/Coastal); Brian Emanuel (SJWMD); Charlie Houder (UF); Scott Sager (UF); Joanna Reilly-Brown (Alachua Conservation Trust); Moira Homann (FDEP); Parks Small (FDEP); Julie Wraithmell (Audubon); Beth Stys (USFWS); Tom Hoctor (UF CLCP); Joe Noble (Tall Timbers); Andrew du Moilin (Trust for Public Land); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI); Nathan Pasco (FNAI).

May 15, 2023

Forestry Experts Subgroup Meeting

Goal: Discuss revisions to the Sustainable Forestry layer.

Participants: Brian Camposano (FFS); Alan Davis (FFS); Christie Utt (FFS); Cat Ingram (FFS); Scott Sager (UF); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI).

August 14, 2023

Species Experts Subgroup Meeting

Goal: Review the Species input data for F-TRAC, especially the division of the standard vs wide-ranging species.

Participants: Deborah Burr (DEP/DSL); Kristen Nelson Sella (FWC/FWRI); Larame Ferry (FWC); Charlie Houder (UF); Cat Ingram (FFS); Julie Wraithmell (Audubon); Paul Gray (Audubon); Beth Stys (USFWS); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI); Nathan Pasco (FNAI).

May 15, 2024

Forestry Experts Subgroup Meeting

Goal: Review and finalize revisions to the Sustainable Forestry layer.

Participants: Brian Camposano (FFS); Alan Davis (FFS); Scott Sager (UF); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI).

August 20, 2024

Florida Forever Expert Working Group Meeting

Goal: To review and confirm final revisions to Species, Sustainable Forestry, and F-TRAC/Marxan cost threshold approach.

Participants: Sine Murray (DEP/DSL); Meghan Lauer (DEP/DSL); Kenneth Weaver (DEP); Joshua Daskin (Archbold); Reed Noss (FL Inst for Conservation Science); Kristen Nelson Sella (FWC/FWRI); Larame Ferry (FWC); Mark Barrett (FWC/FWRI); Kathy Freeman (TNC); Hilary Swain (Archbold); Earl Pearson (DEP/Coastal); Brian Emanuel (SJWMD); Charlie Houder (UF); Cat Ingram (FFS); Scott Sager (UF); Beth Stys (USFWS); Tom Hoctor (UF CLCP); Shane Wellendorf (Tall Timbers); Will Abberger (Trust for Public Land); Susan Carr (Alachua Conservation Trust); Amy Knight (FNAI); Jon Oetting (FNAI); Carly Voight (FNAI); Ashley McKelvy (FNAI).

APPENDIX I

Recharge Potential Report from Advanced Geospatial, Inc.

FNAI - Recharge Component

Prepared For:
Florida Natural Areas Inventory
In fulfillment of FNAI FSU Subcontract No. R00914

Prepared by

Advanced GeoSpatial Inc., Raymond Diehl Rd., Ste D, Tallahassee, Florida 32308

March 2009

Professional Geologist Certification

I, Alan E. Baker, P.G., no. 2324, agree with the findings in this map and brief summary titled "**FNAI – Recharge Component"** and do hereby certify that I currently hold an active professional geology license in the state of Florida. The model and report were prepared by Advanced GeoSpatial Inc., a State of Florida Licensed Geology Business (GB491), and have been reviewed by me and found to be in conformance with currently accepted geologic practices, pursuant to Chapter 492 of the Florida Statutes.

Alan E. Baker, P.G.
Florida License No. 2324

April 7, 2009
Date

Introduction

Advanced GeoSpatial Inc. (AGI) was retained by the Florida Natural Areas Inventory (FNAI) to come up with a recharge model component to incorporate and enhance the way the agency represents aquifer recharge and hydrogeologic data in its spatial modeling process. After several meetings it was decided that AGI would simplify the process and come up with a layer (raster) that could be used in the models and was not biased towards any one aquifer. The inputs that were used were consistent with the Florida Aquifer Vulnerability Assessment (FAVA) developed by the Florida Geological Survey, part of the Florida Department of Environmental Protection (FDEP). The model layers or inputs were combined using a spatial analysis called Fuzzy Logic. To gather more information on the topic of Fuzzy Logic you look at the following websites.
http://www.seattlerobotics.org/encoder/Mar98/fuz/flindex.html
http://www.fuzzy-logic.com/

As stated in the previous paragraph the input layers used in the model were derived from the FAVA model (http://www.dep.state.fl.us/geology/programs/hydrogeology/fava.htm). These layers were; overburden (Fig 1), depth to water or thickness of the unsaturated zone (Fig 2), soil hydraulic conductivity (Fig 3) and karst or topographic depressions (Fig 4). Because the model was not aquifer specific a general map of recharge was desired. The layers were combined in a logical fashion based on observations derived from the FAVA model.

The final product was the delineation of areas in the state that are more likely to be active recharge areas based on available information at the time of this project. Likewise, this map of probable recharge does not attempt to "quantify" the amount of recharge in a particular area it merely sets out to designate areas that have the potential to be recharging the underlying aquifer(s). Areas delineated on the map as not likely recharging should not be excluded completely. The goal of this project was to set out and define the most probable areas. Some areas outside the range may actually be recharging, however, there is less confidence in these areas when compared to others based on the data available. These areas also may be recharging at a slower rate that is not related to quantity but more a factor of time. To clarify, the areas with higher confidence in recharge should be seen as areas that have a shorter timeframe for water at land surface reaching the aquifer. In areas with low confidence that have been identified as recharging by previous studies it could be implied that water reaches the aquifer in a much longer timeframe.

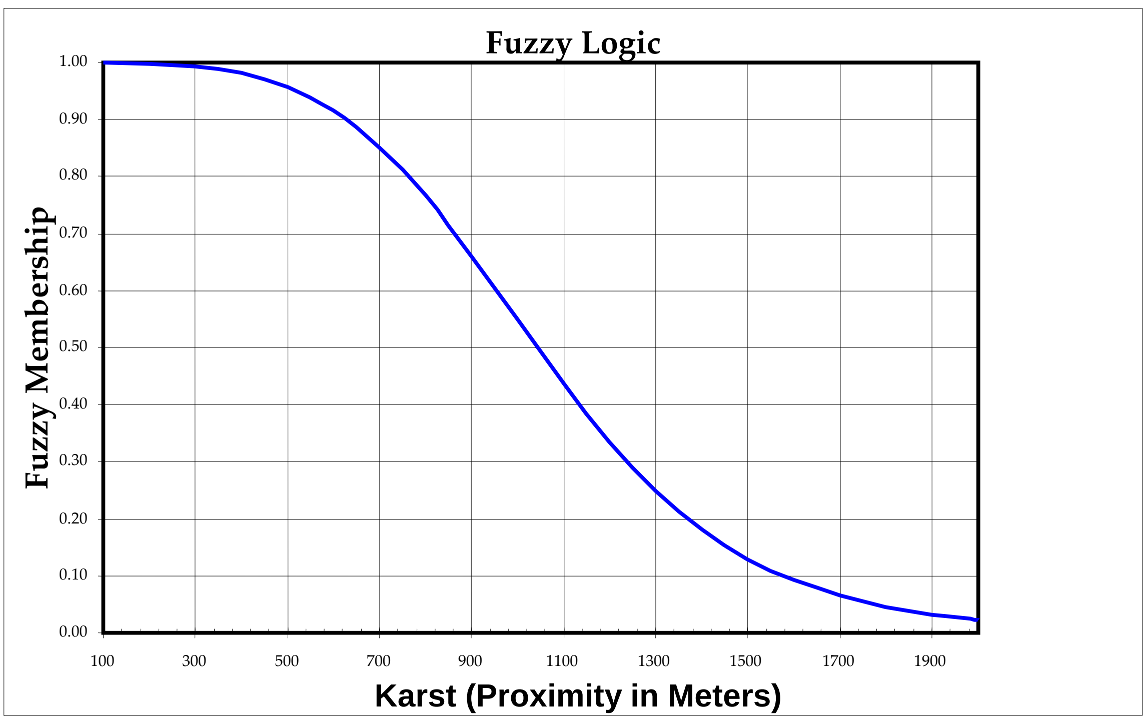
Methods

The maps were created by combing the individual map layers using fuzzy logic. Fuzzy logic is another way to combine weighted maps that is more flexible then index and overlay methods. This method is used to quantify conceptual processes because it emulates the flexibility of human reasoning by drawing conclusions from imprecise and incomplete information (Fang, 1997). This modeling technique is particularly useful when applied to evaluate fuzzy inputs because they tolerate imprecision and uncertainty and show marked reduction in information loss (Burrough et al., 1992).

The following text was taken from the Florida Aquifer Vulnerability Assessment or (FAVA): Contamination potential of Florida's principal aquifer systems, see references:

Fuzzy logic is a model that takes into account expert scientific knowledge to relate datasets and their relative level of importance with respect to the desired output. Fuzzy set theory uses gradational membership values to characterize continuous data, where the membership values reflect the degree of truth of some pre-position.

Fuzzy logic is comparable to Boolean logic (e.g., "and" and "or") because it addresses the concept of partial truths. The fuzzy logic model can be described as the process of assigning values to events using a gradational or continuous scale between 1 and 0, which represent true and false respectively. Fuzzy logic is an expert-driven progression in which the developer of the model assigns membership values based on their experience and knowledge of the data. Fuzzy set theory or fuzzy memberships address partial truths where 1 is full membership and 0 is full non-membership. For example, a partial truth using this method to define its membership can have a value of 0.8.



Graph 1. Fuzzy membership values relative to "proximity to karst" where areas within 100 m of a karst feature represent full membership and areas located 2,000 m from a karst feature is full non-membership. Figure for informational purposes only, data not used in FAVA results.

As an example, fuzzy membership assignment to the FAVA input data layer, "proximity to closed topographic depressions" is provided. An area's proximity to a karst feature is an important factor in determining its relative vulnerability. Distance to karst, for example, can be categorized into 100-m intervals and fuzzy logic can be used to assign values to those intervals. A value of 1 representing full membership would be assigned to areas closest to a karst feature. Areas that are farthest away from a karst feature would be given a value of 0 to represent full non-membership. Values between would then be interpolated from 1 and 0 (Graph 1).

Two or more maps with fuzzy memberships can be combined using a variety of fuzzy operators. They can be combined in a relational sense using Boolean operators to calculate the new data layer. The operators include: AND, OR, ALGEBRAIC and GAMMA. Each one of these operators has very different effects on a set of values.

Fuzzy Operator AND

The fuzzy operator AND is used to combine input data layers resulting in a new data layer which is controlled by the smallest fuzzy membership value occurring at a given location. The AND operation is appropriate where two or more pieces of evidence for a hypothesis must be present together for the hypothesis to be true (Bonham-Carter, 1994). This conservative operation involves the intersection of a set of values for which only the smallest of the membership values for a particular location are considered:

Fuzzy AND operator

Minimum (value 1, value 2)

Minimum (0.8, 0.45) = 0.45

Fuzzy Operator OR

The fuzzy operator OR involves the union of a set of values where maximum input data layer values control the output. The membership value in this case is limited by the best of the input data layers. It should be noted that both the operators AND and OR assign values for the new data layer from only one of the input data layers:

Fuzzy operator OR

Maximum (value 1, value 2)

Maximum (0.8, 0.45) = 0.8

Fuzzy Operator ALGEBRAIC (SUM & PRODUCT)

The fuzzy ALGEBRAIC operator comprises SUM and PRODUCT (PRD) functions. The fuzzy ALGEBRAIC operator SUM is an increasing association between two input data layers where two pieces of evidence that favor a hypothesis strengthen each other. The combined evidence is more supportive than the input data layers are individually and the new data layer is greater or equal to the largest contributing membership value:

Fuzzy SUM operator

$$1 - [(1 - \text{value } 1) * (1 - \text{value } 2)]$$

$$1 - [(1 - 0.8) * (1 - 0.45)]$$

$$1 - [(0.2)(0.55)]$$

$$1 - (0.11) = 0.89$$

The fuzzy ALGEBRAIC operator PRD is the decreasing association between two input data layers and is calculated by multiplying the fuzzy values to produce a new data layer. Because fuzzy input data layer values will be between 1 and 0, when these values are multiplied to produce a new data layer, their product will be equal to or lesser than the input data layer values. An example is below:

Fuzzy PRD operator

$$(\text{value } 1 * \text{value } 2)$$

$$(0.8 * 0.45) = 0.36$$

Fuzzy Operator GAMMA (γ)

The gamma operation is a combination of the ALGEBRAIC PRD and the ALGEBRAIC SUM where the γ is a parameter in the range of (0, 1). The function is defined as the fuzzy ALGEBRAIC SUM factored by γ, multiplied by the fuzzy algebraic PRD factored by 1- γ.

$$\text{GAMMA} = (\text{Fuzzy algebraic SUM})^{\gamma} * (\text{Fuzzy algebraic PRD})^{1-\gamma}$$

When the $\gamma = 1$ the outcome of the operation is the same as the ALGEBRAIC SUM, when $\gamma = 0$ the outcome is the same as the ALGEBRAIC PRODUCT. A γ value between 0 and 1 allows for variable compromises between the SUM and PRODUCT outputs. For example, if $\gamma = 0.7$ with the combination of (0.8, 0.45), the result equals 0.677. In this example the combination of the two grids decreases the output. Conversely, using a $\gamma = 0.9$ to combine the two layers using (0.8, 0.45) yields 0.813, which increases the association between the two layers. These examples are shown below:

If $\gamma = 0.7$,

and results from Fuzzy SUM and Fuzzy PRD

calculated above (0.89 and 0.36) are used, then:

$$[(0.89)^{0.7} * (0.36)^{1-0.7}]$$

$$[(0.92) * (0.74)] = 0.677$$

If $\gamma = 0.9$, then

and results from Fuzzy SUM and Fuzzy PRD

calculated above (0.89 and 0.36) are used, then:

$$[(0.89)^{0.9} * (0.36)^{1-0.9}]$$

$$[(0.90) * (0.90)] = 0.813$$

The first step was to combine the depth to water layer with the overburden layer. Overburden is defined for this analysis as the thickness of sediments overlying the Floridan aquifer system (FAS). Areas where the overburden was absent or thin were weighted heavier than areas that were thick. Likewise, areas where the depth to water table or vadose zone were thin was weighted heavier than thicker areas. The two map layers were then combined using an "or" statement where the best available evidence from the two layers is retained (Fig 5).

Next we took the Overburden/Depth to Water layer that was created and combined it with two other layers, soil hydraulic conductivity (Fig 3) and proximity to karst (Fig 4). Six different scenarios were evaluated using the fuzzy operators "OR" and "GAMMA". For the purposes of this submittal we will only talk about test 2 (Fig's 6 & 7) which is the combination of all fuzzy layers using a gamma value of 0.7. This is a value that slightly decreases the output from combining all of the other evidence. Other values were tested that over exaggerated the results and didn't do a good job of discerning between probable areas and non probable recharge areas.

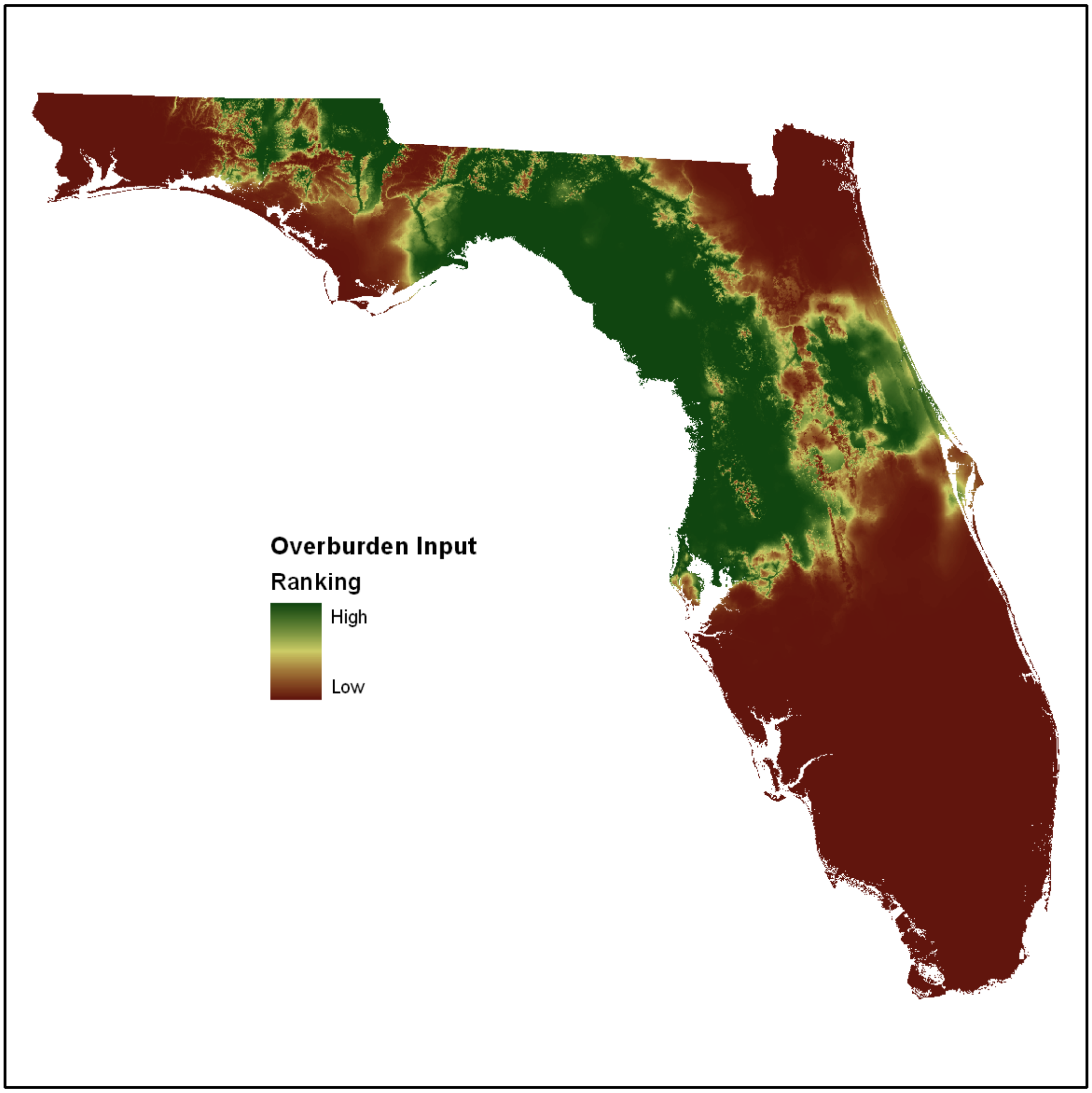


Figure 1, Overburden or thickness of sediments overlying the Floridan aquifer system. The layer is created by subtracting the modeled surface of the top of the Floridan aquifer from the digital elevation model for the state. Areas where the overburden is thin or absent were weighted higher than areas where the overburden was thick.

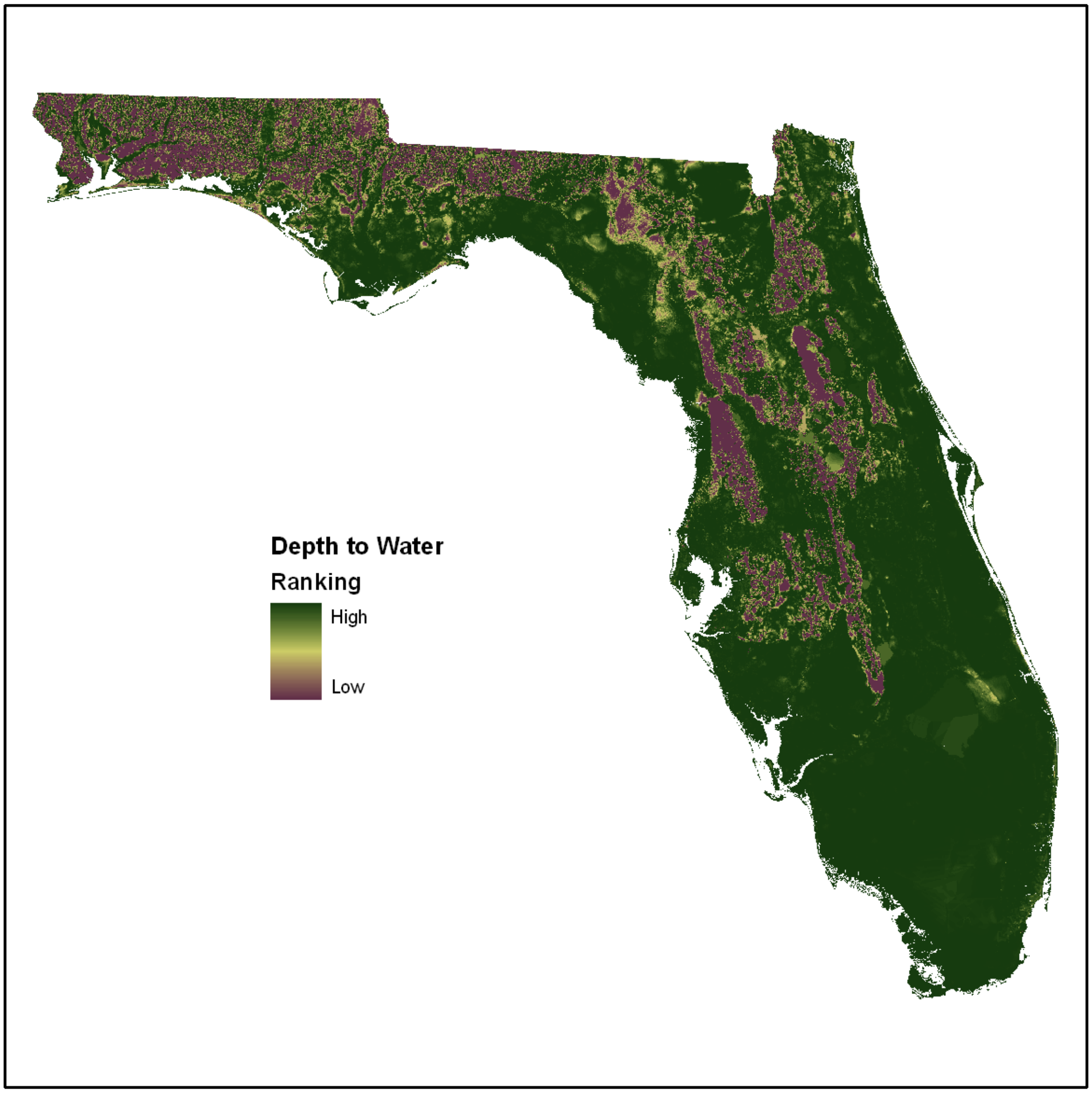


Figure 2. Depth to water. Layer was developed and used in the FAVA Surficial aquifer system model. This layer represents the thickness of unsaturated surficial sediments measured in feet. Thinner areas were assigned a higher value than thicker areas. Values ranged from 0 ft thick to a maximum thickness of approximately 100 ft.

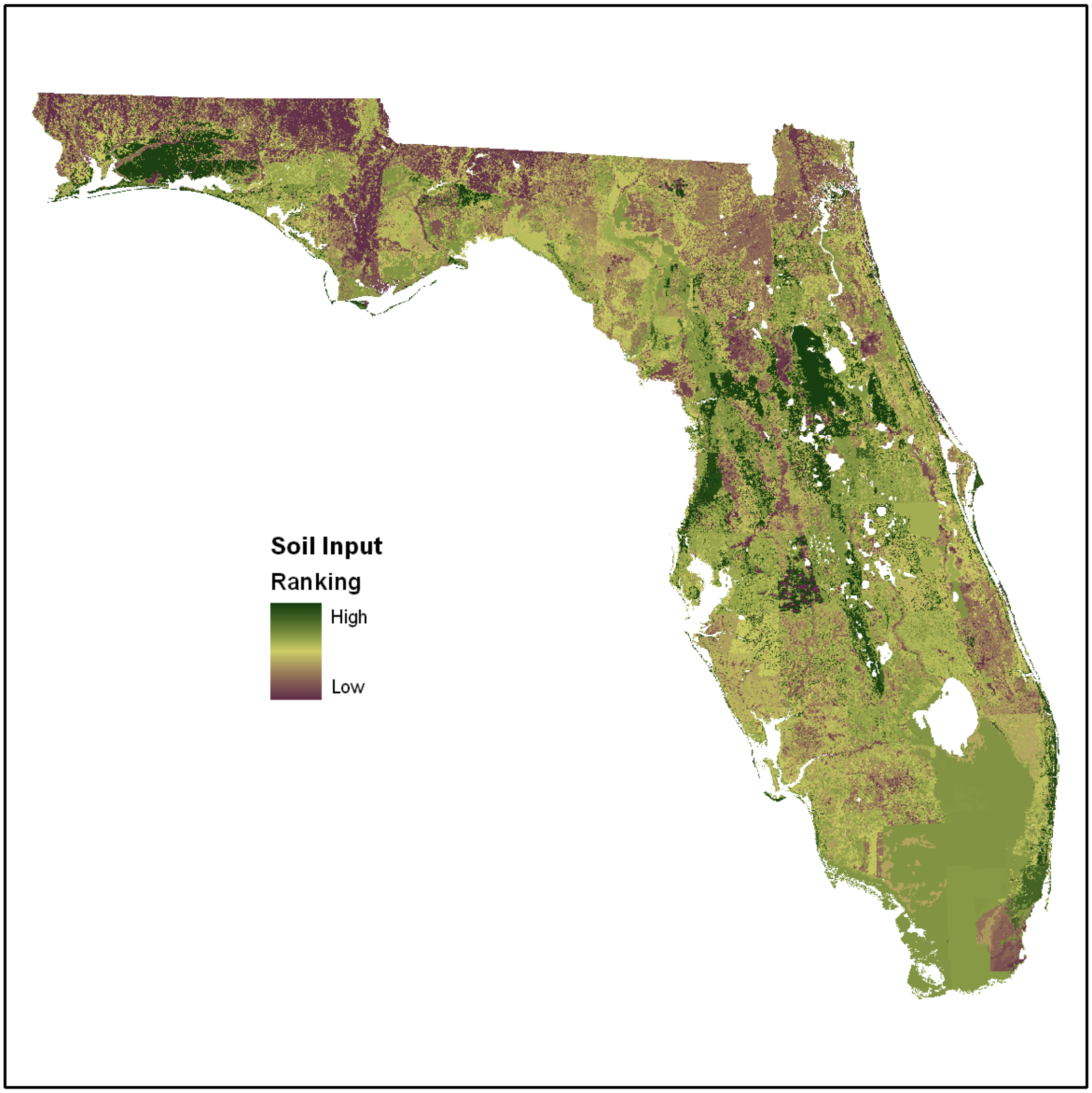


Figure 3, Soil Hydraulic Conductivity measured in inches per hour. This layer is derived from the USGS Soils coverages and their corresponding data tables were obtained from two sources: Florida Geographic Data Library [FGDL (2003)] and U.S. Department of Agriculture (USDA) NRCS. Average soil permeability values were calculated for each soil horizon layer using STATSGO and SSURGO permeability values. Then, based on soil horizon thicknesses, weighted-average permeability values were calculated for the entire soil column. This allowed the generation of a statewide data coverage of soils containing a single permeability value per soil polygon. Average weighted soil permeability values calculated for the State of Florida range from 0.1 in/hr to 59.6 in/hr. High permeability soils were given a higher value than lower permeability soils.

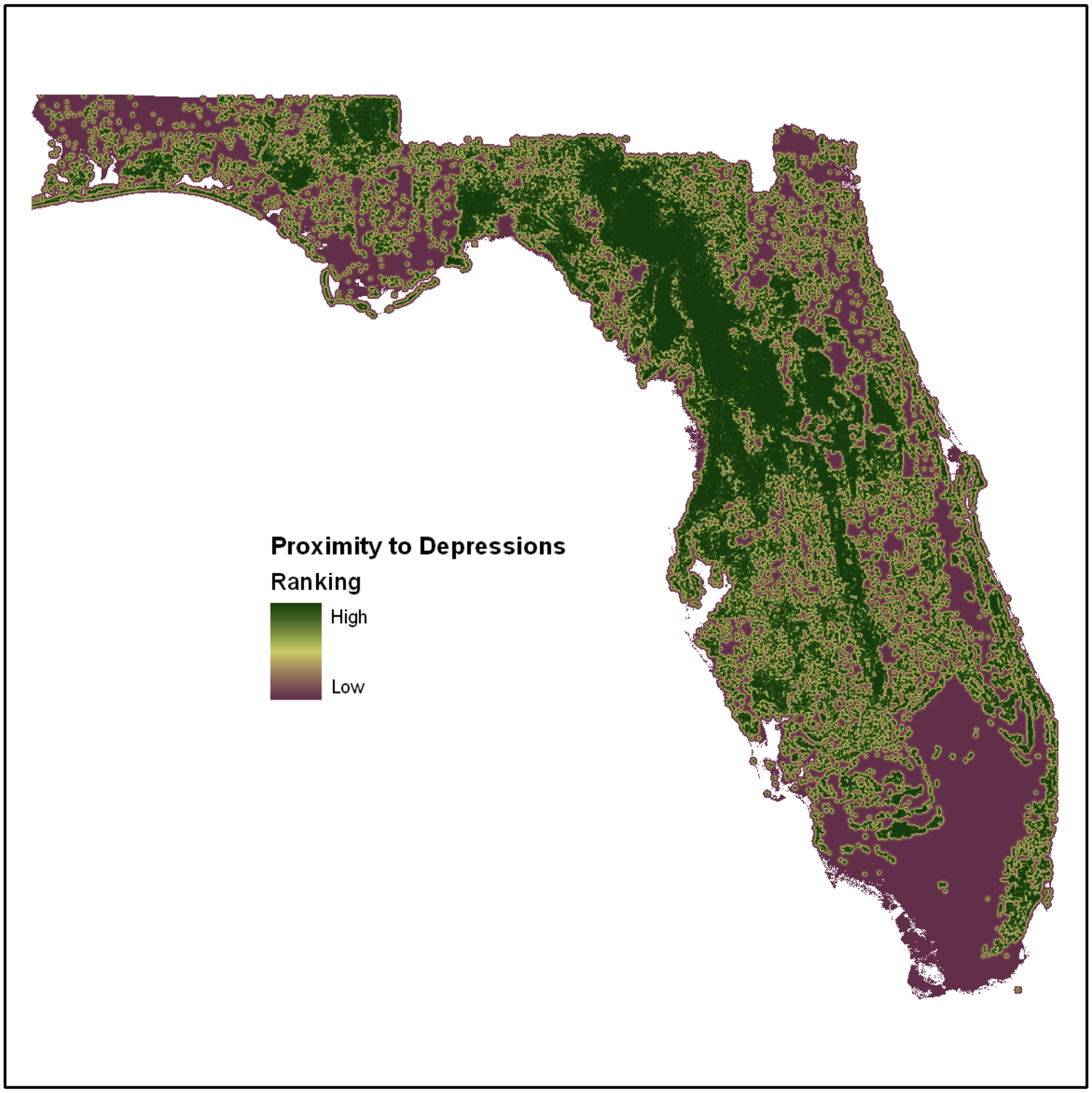


Figure 4, Proximity to karst features. This layer represents every topographic depression taken from the USGS 1:24,000 topographic maps. Each feature is buffered in 300m intervals up to a distance of 3,000m. The layer was weighted so that areas nearer to a closed depression were stronger than areas farther away. Areas over 3,000m away were given a value of zero.

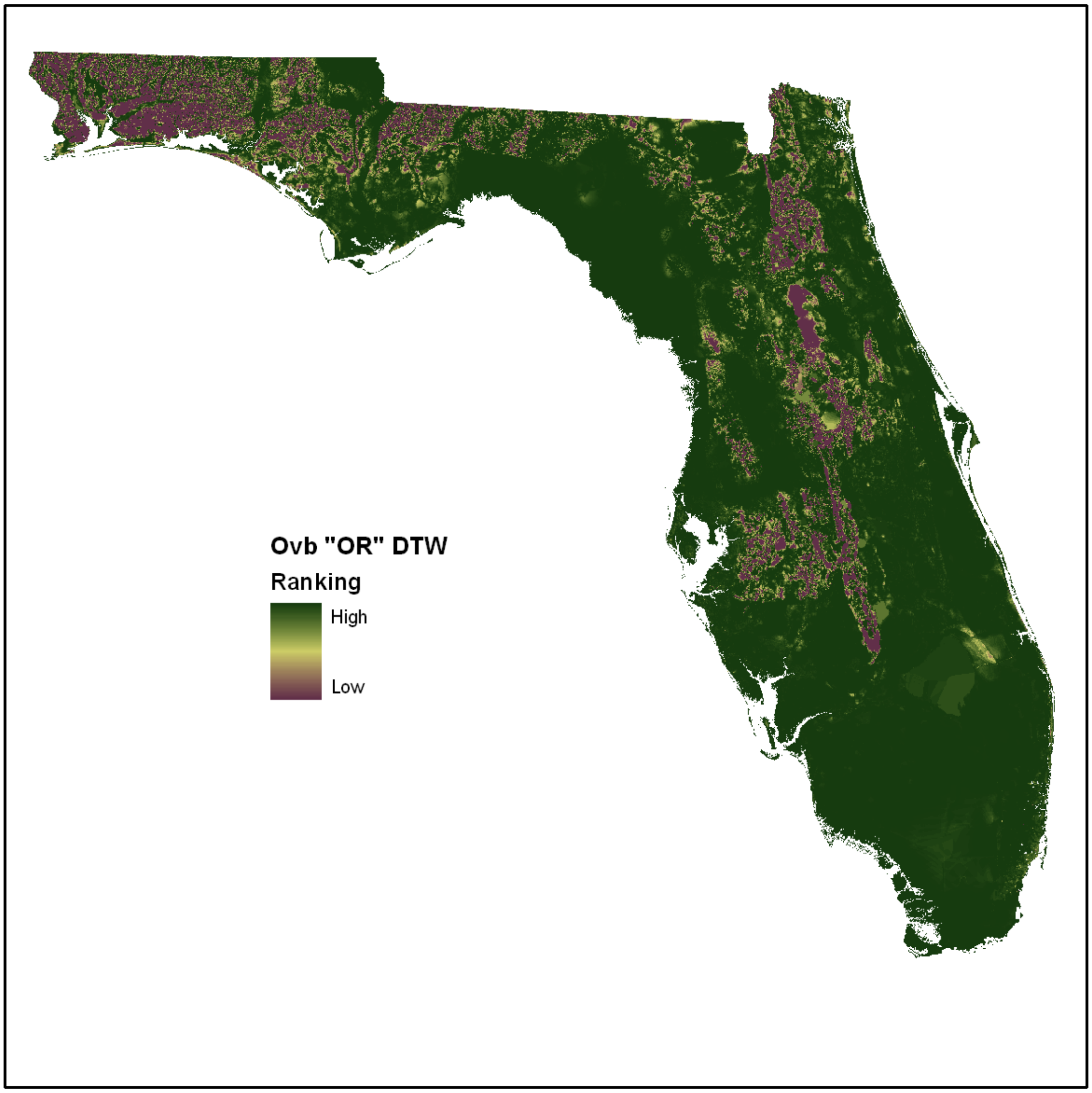


Figure 5, Depth to water "OR" overburden. The input layers overburden and depth to water were combined using an "OR" statement. By combining the two layers in this way we are taking the higher values of each layer where they overlap. This was done to remove any advantage of adding one more layer to the model that would bias the recharge component toward the Floridan aquifer system.

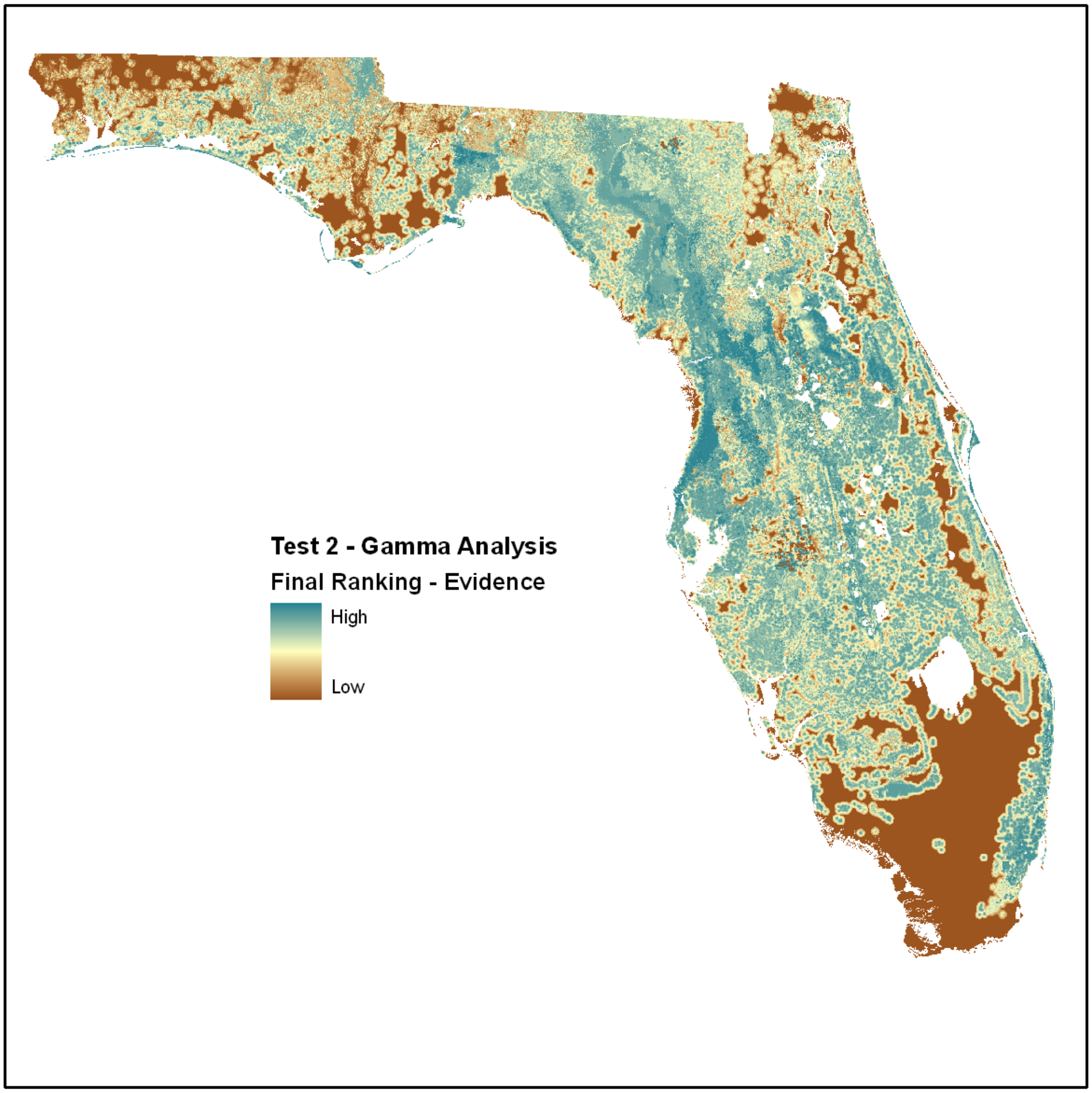


Figure 6, Test 2 – Gamma analysis represents the combination of the overburden-depth to water layer, the closed topographic depression proximity layer and the soils layer into a single map. Dark brown areas are less likely to be recharge areas and the darker green areas are more likely.

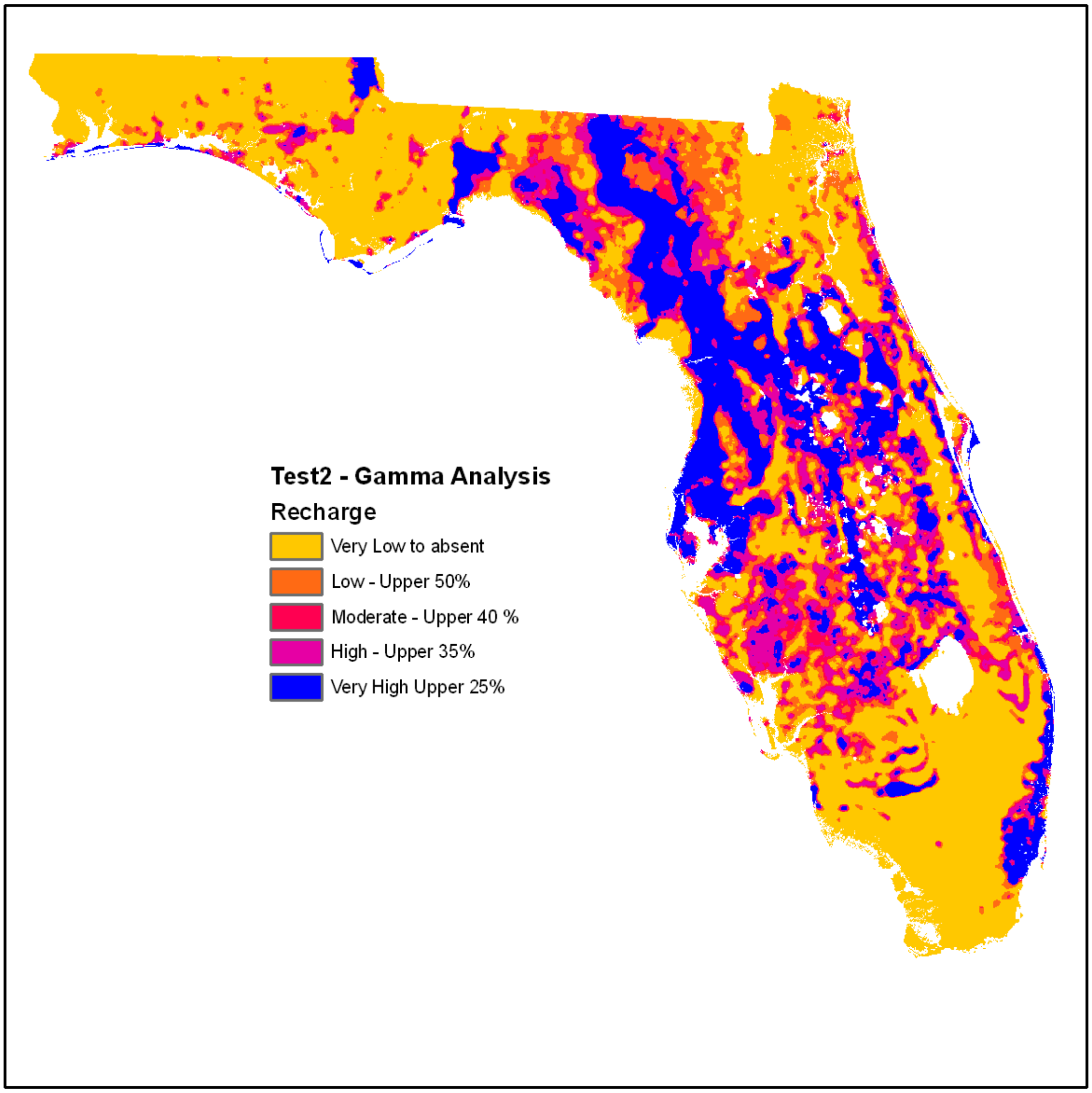


Figure 7, Test 2 – Gamma analysis symbolized by percentage of area. The orange areas are in the last 50% or area and are less likely to be recharge areas. Dark blue areas are more likely to be recharge areas and represent the upper 25%.

After comments received from SFWMD and SWFWMD AGI attempted to revise the maps and remove areas where recharge is not happening based on ground-water flow direction as in up, discharge or down, recharge. To do this AGI mapped the areas where the potentiomentric surface of the FAS is greater than the land surface elevation. The results were combined and a final map (Fig 8 & Fig 9) was created.

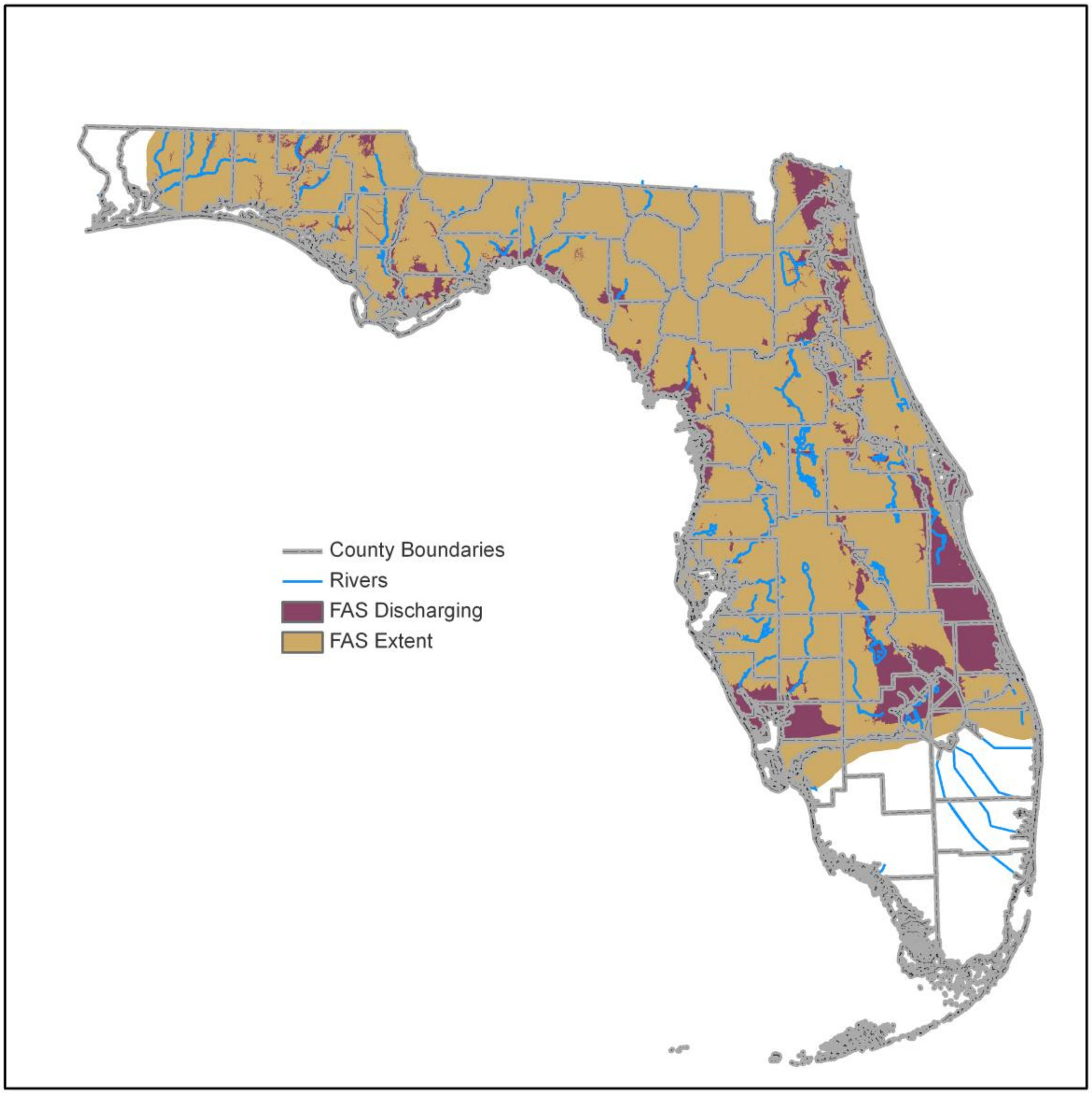


Figure 8. Discharge areas for the Floridan Aquifer System. Areas calculated by finding locations where the USGS 2000 FAS potentiometric surface map exceeds land surface. These areas should be combined with the results from the recharge potential map on a site by site basis.

Figure 9, Discharge areas for the Surficial Aquifer Systems. Areas calculated by finding locations where the simulated water table surface map exceeds land surface. These areas should be combined with the results from the recharge potential map on a site by site basis.

These discharging areas should be used as a separate overlay when using the recharge layer in evaluating a site for it's potential to be recharging. It should be noted that the spatial accuracy of the FAS potentiometric surface can be off by as much as 10 feet which is equal to the contour interval used to develop this surface.

REFERENCES

Arthur, J.D., Baker, A.E., Cichon, J.R., Wood, H.A.R., and Rudin, A., 2005, Florida Aquifer Vulnerability Assessment (FAVA): Contamination potential of Florida's principal aquifer systems: Report submitted to Division of Water Resource Management, Florida Department of Environmental Protection, 148 p

Bonham-Carter, G. F., 1994, Geographic Information Systems for Geoscientists, Modeling with GIS: Oxford, Pergamon, 398 p.

Burrough, P.A., MacMillan, R.A. and Van Deursen, W., 1992, Fuzzy classification methods for determining land suitability from soil profile observations: Journal of Soil Science, v. 43, p. 193-210.

Fang, J.H., 1997, Fuzzy Logic and Geology: Geotimes: News and Trends in Geoscience, v. 42, no. 10, p. 23-26.

Comments from Water Management District and Florida Department of Environmental Protection Staff

South Florida Water Management District - Terry Bengtsson

The analysis is an interesting approach. The text portion suggests (Figures 8 and 9) that results from Test 6 represents the Everglades better than Test 2. These results indicate that potential recharge is more likely south of Lake Okeechobee than in most areas of Collier County. I disagree with that. Test 2 results are more consistent for south Florida, though suggests very low likelihood of recharge in the central Collier County as well. I think there is a significant component that is overlook in the analysis, and it is related to how recharge is defined. Looking at recharge from a flow direction point of view, you have areas with a downward or upward flow component; recharge and discharge areas. Following classic work by Toth (1963) and Freeze and Witherspoon (1967), regional, intermediate and local flow patterns create local and regional recharge and discharge areas. The abundance of closed-circular depressions (karst) in central highlands is likely to define a recharge area, while karst areas along the coast are likely discharge areas. The Withlacoochee River Basin in West-Central Florida has karst and is likely a discharge area from an intermediate flow pattern. The Silver Bluff area in Dade County has a micro-karst and is a significant local recharge area. Can the approach accommodate another gamma analysis using a data layer with up and down ground-water flow directions?

AGI Response:

Hi Terry thanks for your input. The model can certainly accommodate another analysis. The only dilemma I see is the availability of a layer that is statewide depicting upward/downward movement. I have looked at this issue before while working on projects that were regional and aquifer specific but never using multiple aquifers from very different regions. I suppose one approach may be to locate areas that have an upward signal and remove those areas from the analyses. This could be done by compiling the regional potsurface maps and then locating all areas where the potsurface or water table exceeds or is very near land surface. Might you have any other suggestions on how to approach this concept?

Florida Geological Survey - Tom Greenhalgh

printed attachment and gave it a cursory review. I don’t know if you could include but very significant recharge occurs via swallets at the margins of low permeability soils that border and are topographically higher in elevation than high permeability soils, overburden thickness abrupt changes, scarps or scarplets.

Southwest Florida Water Management District - Dave DeWitt

I've looked over the chapter on recharge analysis a few times now, and I've also read Terry Bengtsson's reply (Terry used to work here at the SWFWMD so he's familiar with the Withlacoochee River area and the ridge hydrogeology also). I'm not sure if you can test his suggestion regarding upward or downward flow potentials, it may be too complicated and beyond the purpose of your immediate task, or conversely too over-simplified if you would use old existing generalized maps showing regions of groundwater discharge. I do agree that Test 6 appears to rank the northern Everglades region too high, but there is some pretty complex hydrostrat in the southeastern peninsula.

I think the west coastal area does exibit high localized recharge, even though regionally it is considered a discharge zone (for the Upper Floridan aquifer) so the Test 2 results with emphasis on proximity to karst or closed topo depressions makes sense to me. That area doesn't change much in Test 6 and I suppose it's from both the shallower depth to water (or thinner overburden, which can be the reason for the shallower water table in some areas). I do get Terry's meaning about the Withlacoochee corridor too, but for purposes of the FNAI report, it may not be that significant.

Northwest Florida Water Management District - Chris Richards

As you will note in my comments, the active recharge occurring in Santa Rosa and Escambia counties was not identified by the criteria and methods applied. Stream base flow and the susceptibility to contamination (and known contamination) show this to be an area of active recharge. As you know, the aquifer being recharged is also a sole source aquifer.
Figures 7, 9 and 10 essentially eliminate the probability that this is as area of active recharge, when in fact; it is a known area of active recharge.

AGI Response:

Thank you for your response and comments. I agree that the Sand & Gravel is not well represented here and your point about high base flow in the streams in the area is a great point. That part of the state does not fare well in modeling efforts when we compare those areas with ones further south in those counties. The main factors driving the model in those areas, as you suggest is depth to water and soil hydraulic conductivity. I will admit that the soils data available from the USDA implies more precision than there really is. Do you have any information on recharge rates in that region? I would like to research it a little further and see if there is something we can add to the model.

I may not have stated this clearly in my introduction but this component will be used in the FNAI model that helps them identify and secure vulnerable land. That being said, I don't want to make the statement that recharge is not happening in certain areas. Rather that we have high confidence that recharge is happening in these areas based on the input into the model. The main reason for the poor confidence in that region is that the soils in that area are not as conductive as in other parts of the county. With that being said, we realize that this is not a catchall for recharge and in no way should these results be used in place of Water Management District specific information. This was more of a broad attempt to locate vulnerable/higher recharge areas. We were also aiming to remove any bias there may be with specific aquifers.

Northwest Florida Water Management District Response 2 - Chris Richards

I did get the point that you were not saying recharge was not happening. However, a previous draft document (Aug 2007) noted the model results will be used to further prioritize important recharge areas by incorporating additional data related to springs and public water supply. It would be unfortunate if this area is not properly represented.
Two of the data layers bias the results to the Floridan Aquifer. The Floridan Aquifer overburden layer and the karst layer work well identify important (or likely important) recharge areas for the Floridan Aquifer, but serve to greatly reduce the probability that important recharge areas will be identified where the Floridan Aquifer is deeply buried and hence, karst not well developed. This bias favors Floridan Aquifer recharge. Unfortunately, unlike in south Florida, this bias is not overcome by the various applications of soil hydraulic conductivity and/or depth to water.

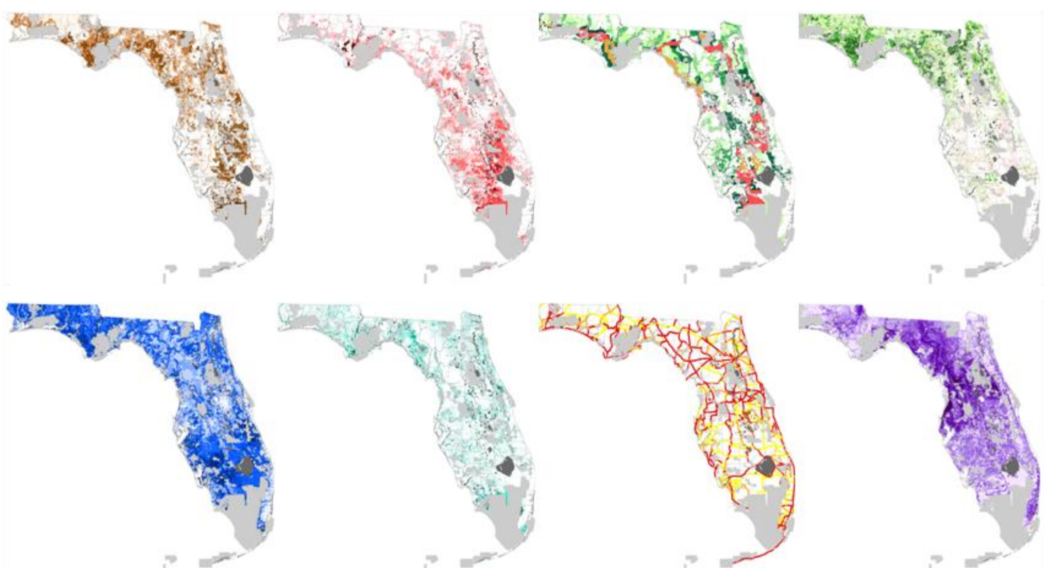
Yes, information regarding recharge rates to the Sand-and-Gravel Aquifer is available. I recommend you review two USGS reports which evaluate Sand-and-Gravel Aquifer recharge rates using stream base flow separation techniques. These provided good data and information regarding recharge rates for the Sand-and-Gravel Aquifer. The two reports are:

Water Resources Investigations Report 90-4195
http://pubs.er.usgs.gov/usgspubs/wri/wri904195
Water Resources Investigations Report 94
http://pubs.er.usgs.gov/usgspubs/wri/wri944179

Florida Forever Conservation Needs Assessment
Overview Maps

Prepared by Florida Natural Areas Inventory, November 2025

The maps in this document are derived from the Florida Forever Conservation Needs Assessment, an analysis of the geographic distribution of certain natural resources and resource-based land uses that have been identified in the Florida Forever Act (F.S. 259.105) as needing increased conservation attention. Data for the Needs Assessment are maintained and updated by Florida Natural Areas Inventory under contract to the Florida Department of Environmental Protection and in collaboration with many partners. The data represent a statewide view of resource distributions and are intended to inform state conservation priorities and measure progress of the Florida Forever program in protecting these resources.



Florida Natural Areas Inventory

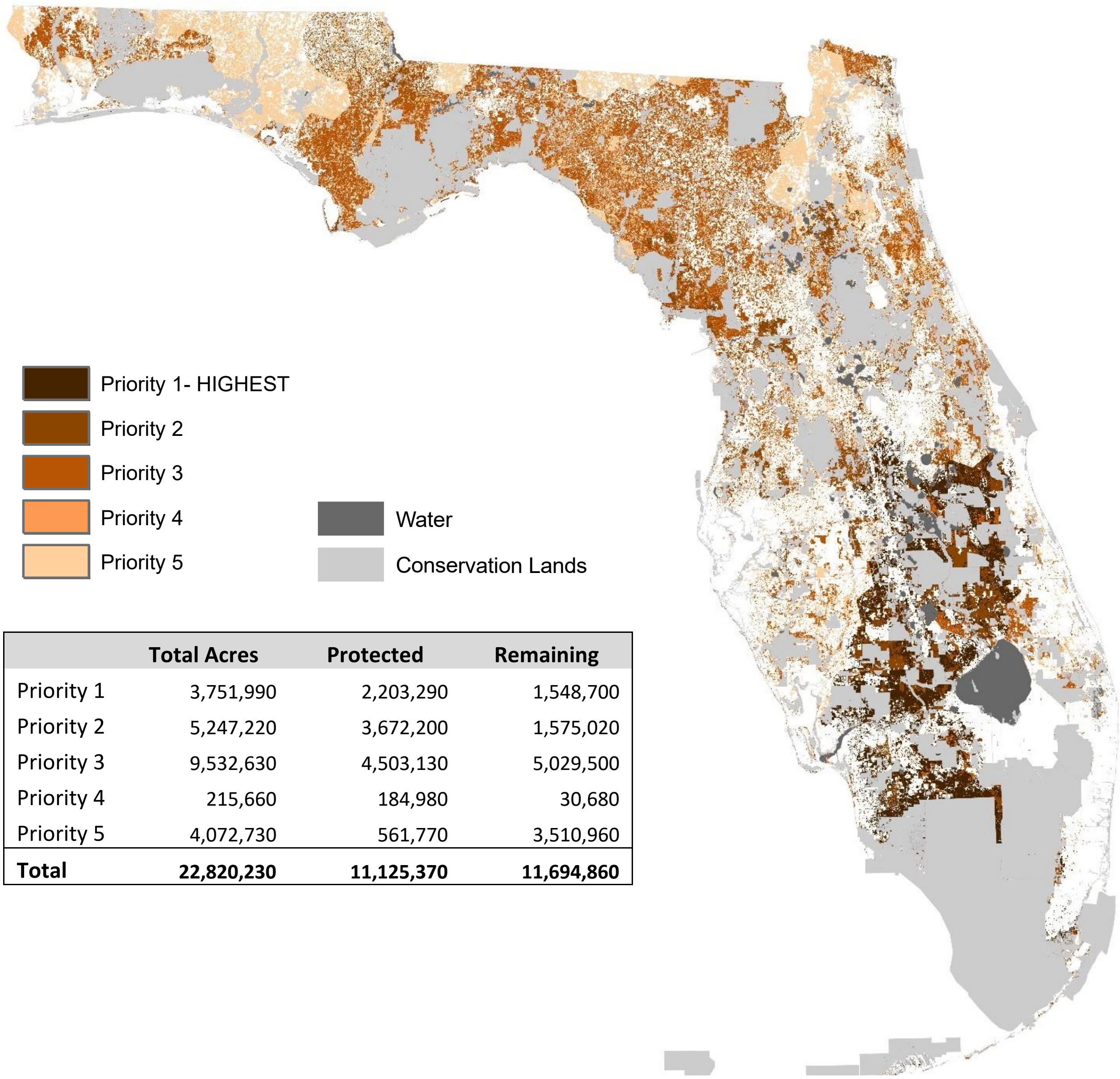
DEPARTMENT OF ENVIRONMENTAL PROTECTION FLORIDA

Florida Forever Conservation Needs Assessment Overview Maps

Conservation Needs Assessment Maps

Decision Support Combined Maps

Strategic Habitat Conservation Areas ***(modified for Florida Forever Conservation Needs Assessment)***



	Total Acres	Protected	Remaining
Priority 1	3,751,990	2,203,290	1,548,700
Priority 2	5,247,220	3,672,200	1,575,020
Priority 3	9,532,630	4,503,130	5,029,500
Priority 4	215,660	184,980	30,680
Priority 5	4,072,730	561,770	3,510,960
Total	**22,820,230**	**11,125,370**	**11,694,860**

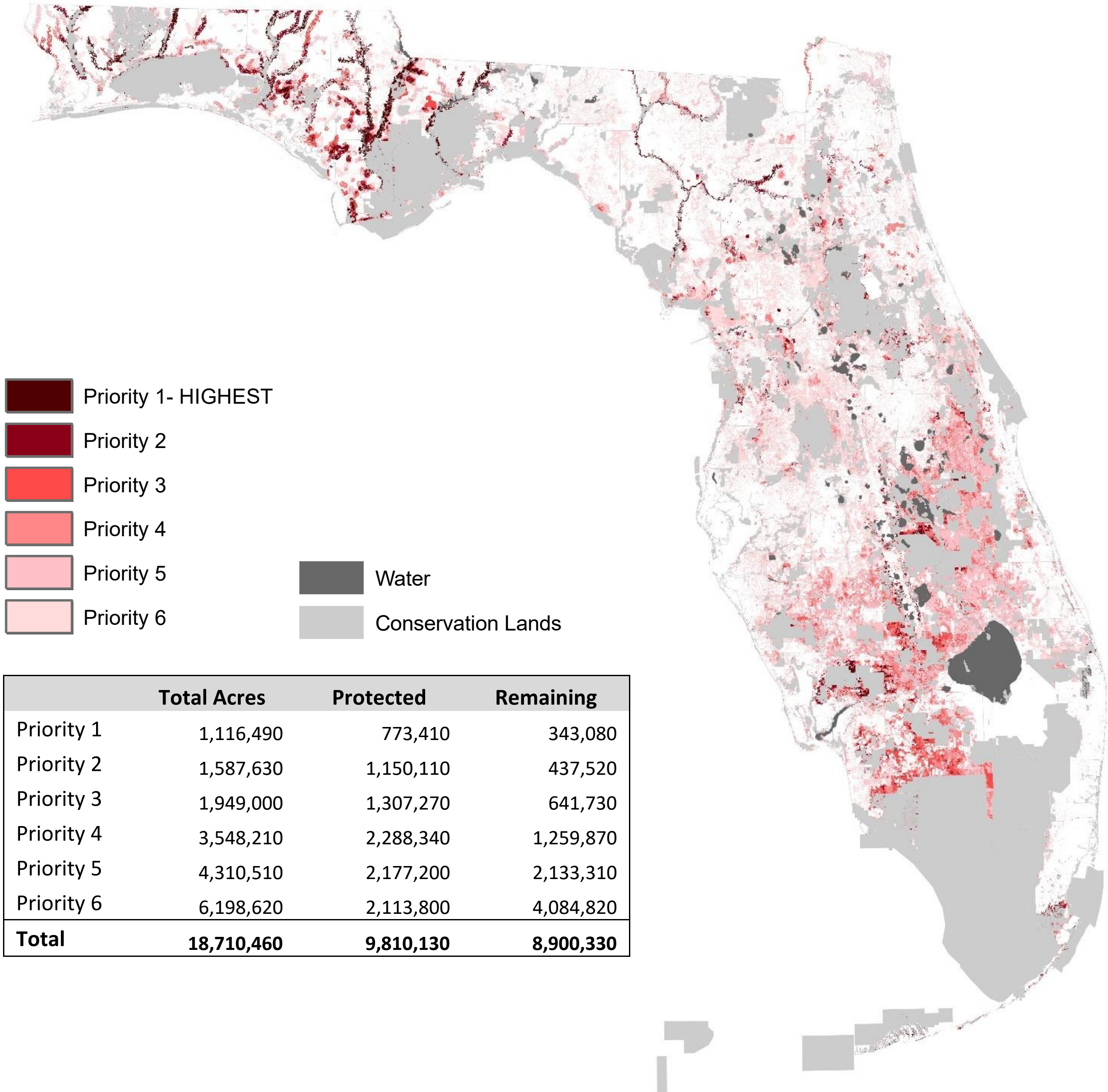
The information displayed on this map was developed or provided to address specific performance measures of the Florida Forever program. The data may not be appropriate for general use and are not intended for use in a regulatory decision-making process.

November 2025

Source: Florida Fish and Wildlife Conservation Commission

Description: The 2009 SHCAs, developed by Florida Fish and Wildlife Conservation Commission (FWC), identify areas of habitat on private lands that are essential to sustain a minimum viable population for focal species of terrestrial vertebrates that are not adequately protected on existing conservation lands. In 2020, FNAI worked with FWC to update the SHCAs based on more recent habitat models developed by FWC since 2009, including the addition of potential habitat within existing conservation lands for all 62 focal species. The 2020 SHCAs include habitat data for 62 terrestrial vertebrate species and are prioritized into five priority classes based on rarity (FNAI State and Global ranks). For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever

Rare Species Habitat Conservation Priorities



	Total Acres	Protected	Remaining
Priority 1	1,116,490	773,410	343,080
Priority 2	1,587,630	1,150,110	437,520
Priority 3	1,949,000	1,307,270	641,730
Priority 4	3,548,210	2,288,340	1,259,870
Priority 5	4,310,510	2,177,200	2,133,310
Priority 6	6,198,620	2,113,800	4,084,820
Total	**18,710,460**	**9,810,130**	**8,900,330**

November 2025

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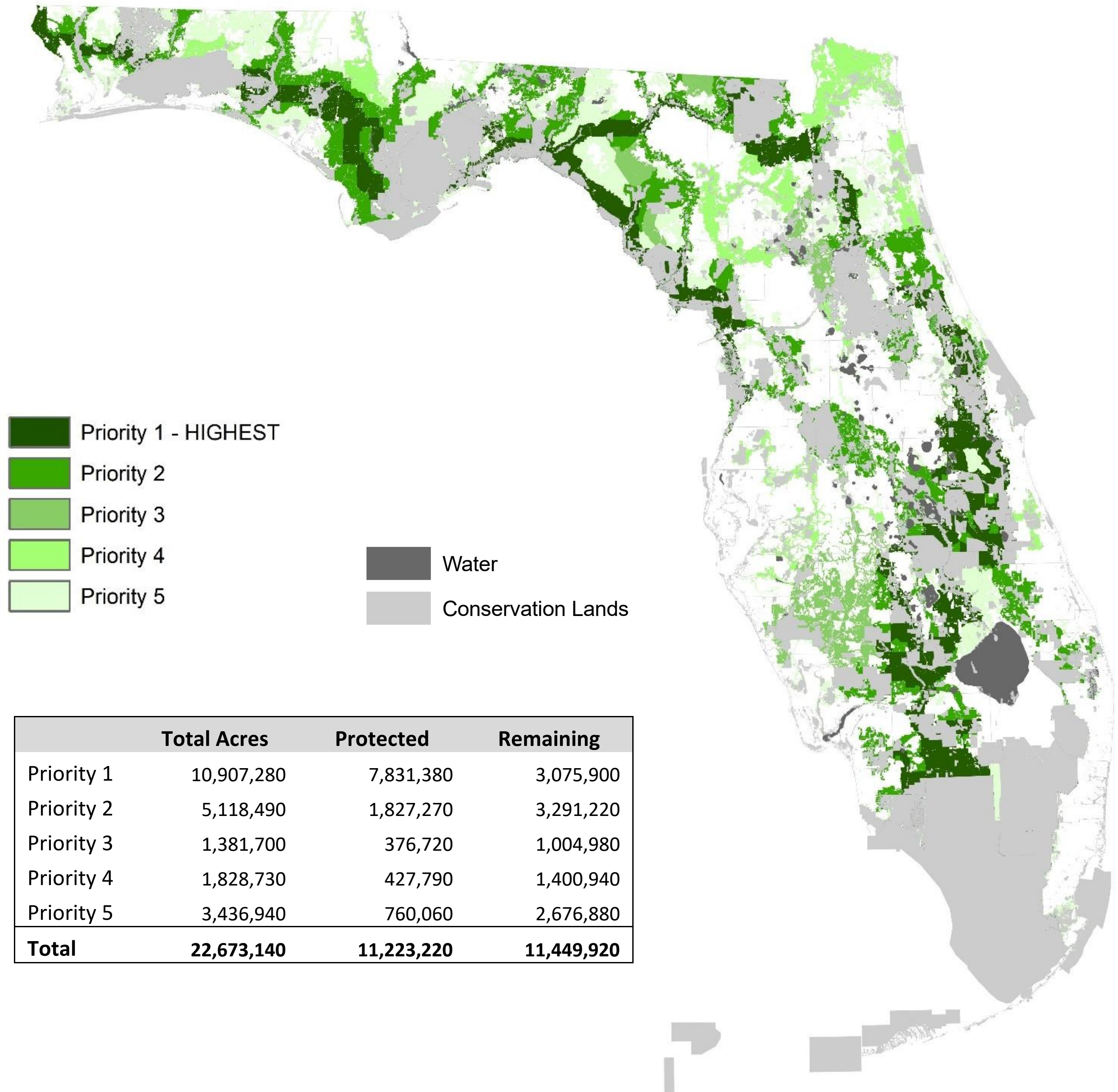
Primary Source: Florida Natural Areas Inventory

Description: The Rare Species Habitat Conservation Priorities data layer includes occurrence-based habitat for 634 species with a high conservation need including plants, invertebrates, and vertebrates. Individual species maps are weighted according to conservation need and overlaid to reflect values for both rarity and richness. The final layer prioritizes places on the landscape that would protect both the greatest number of rare species and those species with the greatest conservation need. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Landscape Linkage



	Total Acres	Protected	Remaining
Priority 1	10,907,280	7,831,380	3,075,900
Priority 2	5,118,490	1,827,270	3,291,220
Priority 3	1,381,700	376,720	1,004,980
Priority 4	1,828,730	427,790	1,400,940
Priority 5	3,436,940	760,060	2,676,880
Total	**22,673,140**	**11,223,220**	**11,449,920**

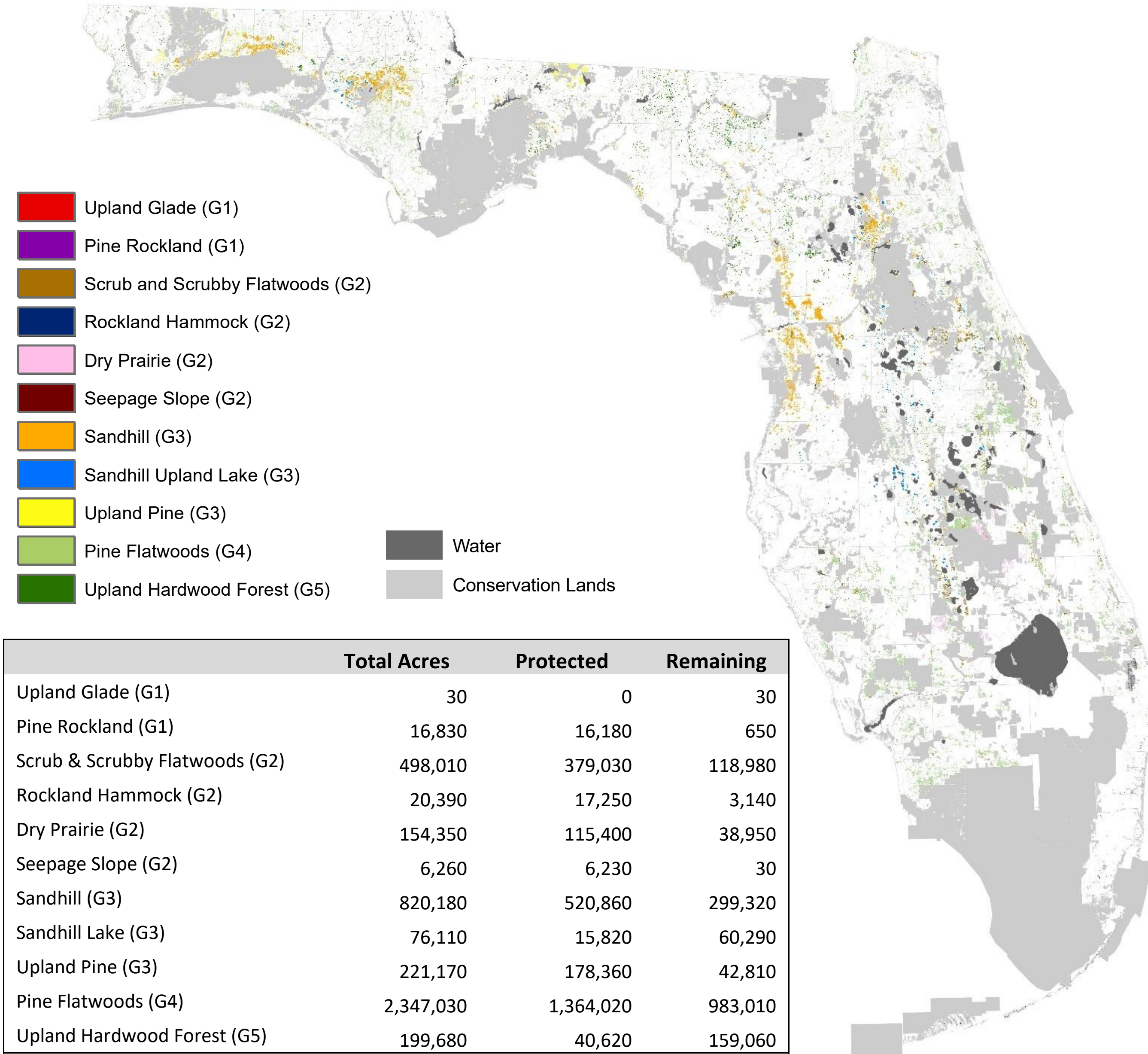
November 2025

The information displayed on this map was developed or provided to address specific performance measures of the Florida Forever program. The data may not be appropriate for general use and are not intended for use in a regulatory decision-making process.

Primary Source: University of Florida; FDEP/Office of Greenways and Trails

Description: Landscape Linkages is represented by the Florida Ecological Greenways Network as revised in 2021, a statewide system of landscape hubs, linkages, and conservation corridors. Prioritization is based on factors such as importance for wide-ranging species, importance for maintaining a connected reserve network, and riparian corridors. Priority 1 areas are considered most important for completing a statewide ecological network of public and private conservation lands.

Under-represented Ecosystems



	Total Acres	Protected	Remaining
Upland Glade (G1)	30	0	30
Pine Rockland (G1)	16,830	16,180	650
Scrub & Scrubby Flatwoods (G2)	498,010	379,030	118,980
Rockland Hammock (G2)	20,390	17,250	3,140
Dry Prairie (G2)	154,350	115,400	38,950
Seepage Slope (G2)	6,260	6,230	30
Sandhill (G3)	820,180	520,860	299,320
Sandhill Lake (G3)	76,110	15,820	60,290
Upland Pine (G3)	221,170	178,360	42,810
Pine Flatwoods (G4)	2,347,030	1,364,020	983,010
Upland Hardwood Forest (G5)	199,680	40,620	159,060
Total	**4,412,110**	**2,273,610**	**1,706,270**

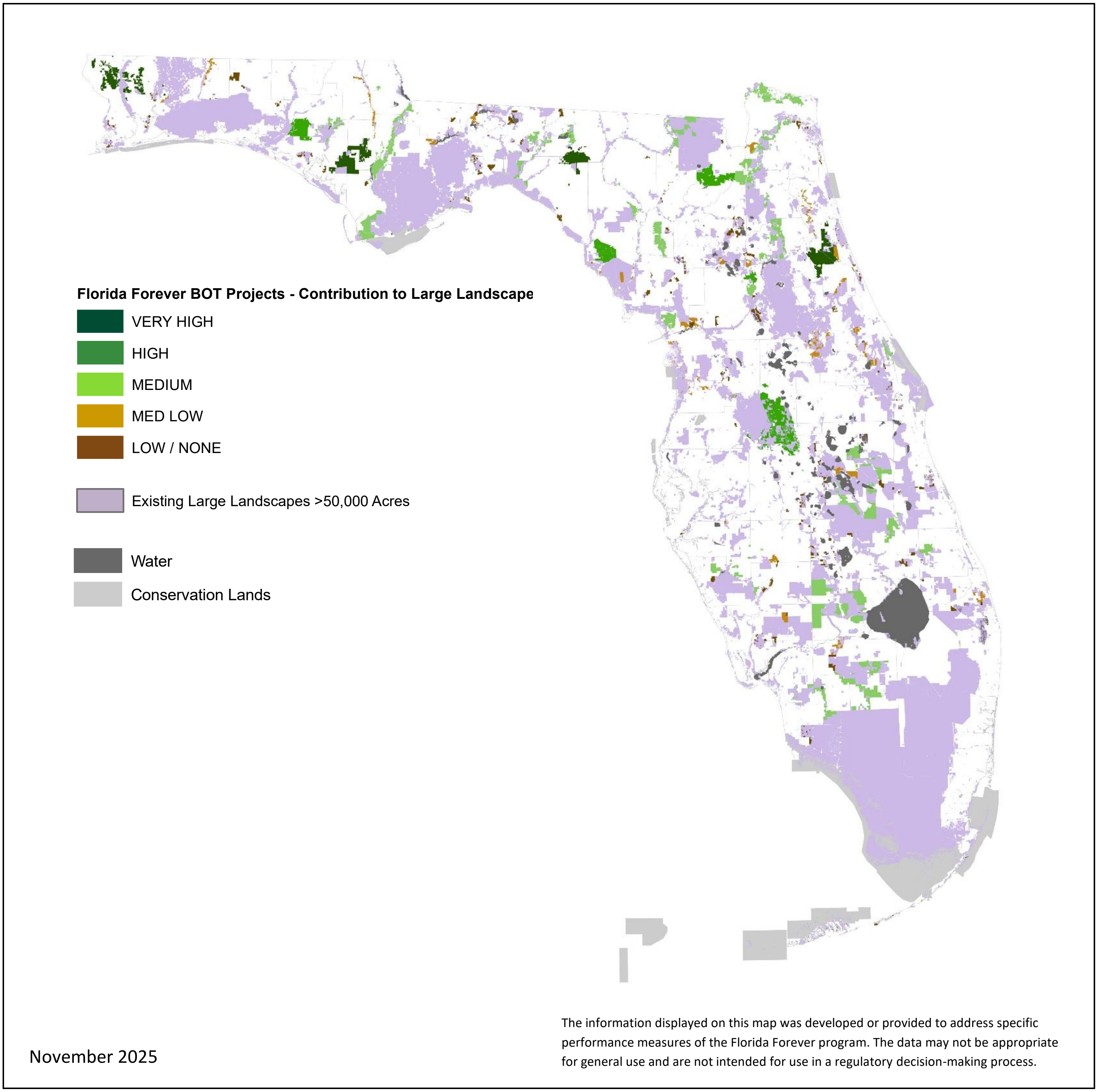
November 2025

The information displayed on this map was developed or provided to address specific performance measures of the Florida Forever program. The data may not be appropriate for general use and are not intended for use in a regulatory decision-making process.

Primary Source: Florida Natural Areas Inventory

Description: This data layer includes natural communities that are inadequately represented on conservation lands. A natural community generally is considered under-represented if less than 15% of the original extent of that community in Florida is currently found on existing conservation lands. The natural communities are prioritized by rarity (FNAI Global rank). For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

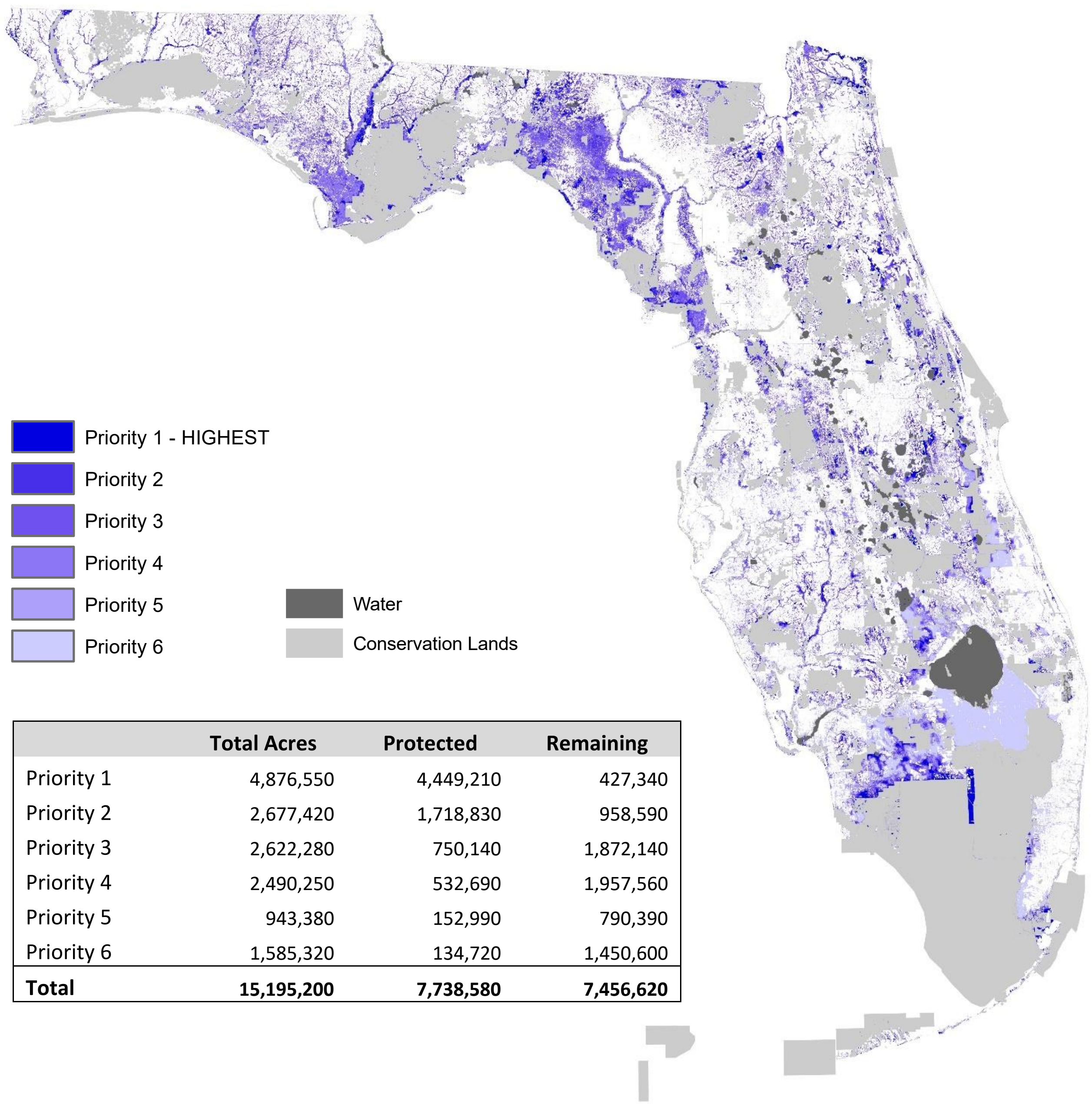
Large Landscapes



Primary Source: Florida Natural Areas Inventory

Description: The Large Landscapes dataset depicts existing conservation land complexes that comprise contiguous areas of >50,000 acres. Current Florida Forever BOT Projects are prioritized based on their potential contribution to large landscapes >50,000 acres. Protection of these areas would contribute to maintenance of ecosystem processes on a landscape level. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Natural Floodplain Function



	Total Acres	Protected	Remaining
Priority 1	4,876,550	4,449,210	427,340
Priority 2	2,677,420	1,718,830	958,590
Priority 3	2,622,280	750,140	1,872,140
Priority 4	2,490,250	532,690	1,957,560
Priority 5	943,380	152,990	790,390
Priority 6	1,585,320	134,720	1,450,600
Total	**15,195,200**	**7,738,580**	**7,456,620**

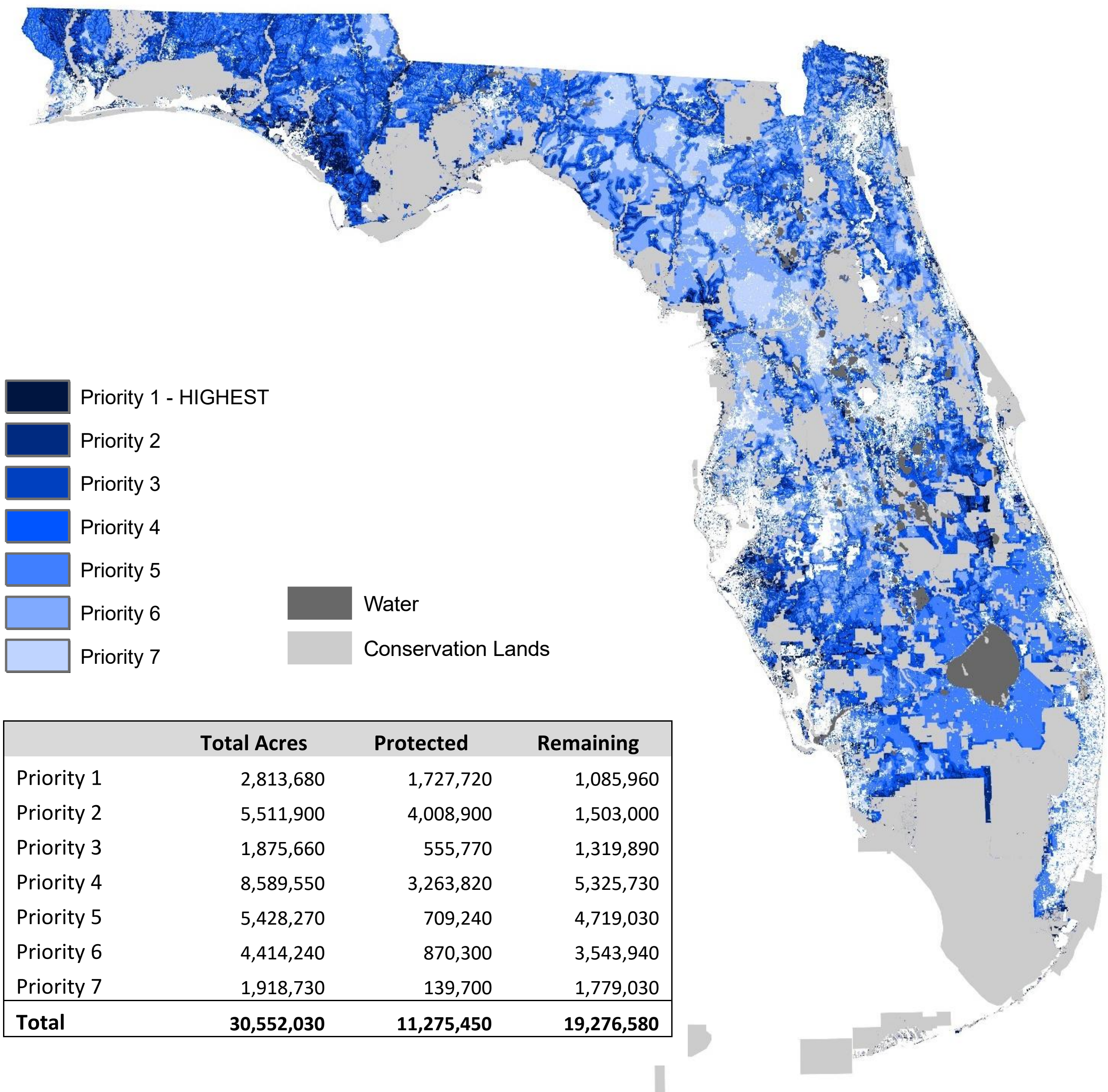
November 2025

The information displayed on this map was developed or provided to address specific performance measures of the Florida Forever program. The data may not be appropriate for general use and are not intended for use in a regulatory decision-making process.

Primary Source: Florida Natural Areas Inventory

Description: This data layer identifies natural features within the 100-year floodplain as determined by from three primary sources: 1) FEMA Digital Flood Insurance Rate Map database 2001-2017 (DFIRM) for 63 counties; 2) FEMA Digital Q3 Flood Data 1996 for 4 counties; and 3) a surrogate floodplain dataset based on overlap of wetlands and hydric soils for gaps in FEMA data. The data were prioritized based on the degree of "naturalness" of the floodplain, which was estimated based on overlap with Land Use Intensity index and FNAI Potential Natural Areas. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Surface Water Protection



	Total Acres	Protected	Remaining
Priority 1	2,813,680	1,727,720	1,085,960
Priority 2	5,511,900	4,008,900	1,503,000
Priority 3	1,875,660	555,770	1,319,890
Priority 4	8,589,550	3,263,820	5,325,730
Priority 5	5,428,270	709,240	4,719,030
Priority 6	4,414,240	870,300	3,543,940
Priority 7	1,918,730	139,700	1,779,030
Total	**30,552,030**	**11,275,450**	**19,276,580**

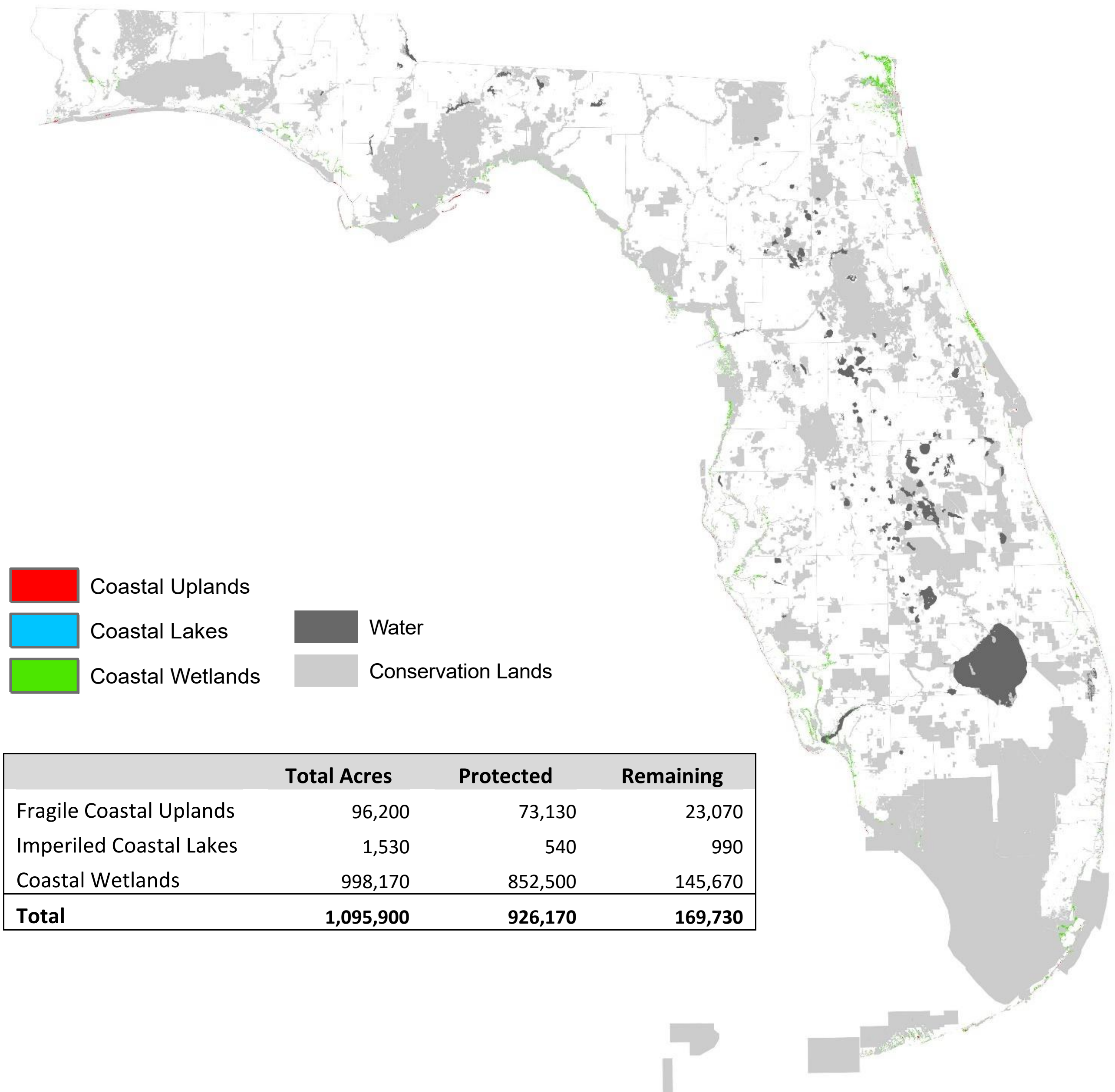
November 2025

The information displayed on this map was developed or provided to address specific performance measures of the Florida Forever program. The data may not be appropriate for general use and are not intended for use in a regulatory decision-making process.

Primary Source: Florida Natural Areas Inventory in collaboration with water resource experts

Description: The surface water data identifies significant high quality surface waters of the state, which include the following: Outstanding Florida Waters, National Scenic Waters and National Estuaries, shellfish harvesting areas, seagrass beds, springs, water supply and waters important for imperiled fish. The data are prioritized based on proximity to a water body, stream order, downstream length, basin size and other factors. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Fragile Coastal Resources



	Total Acres	Protected	Remaining
Fragile Coastal Uplands	96,200	73,130	23,070
Imperiled Coastal Lakes	1,530	540	990
Coastal Wetlands	998,170	852,500	145,670
Total	**1,095,900**	**926,170**	**169,730**

November 2025

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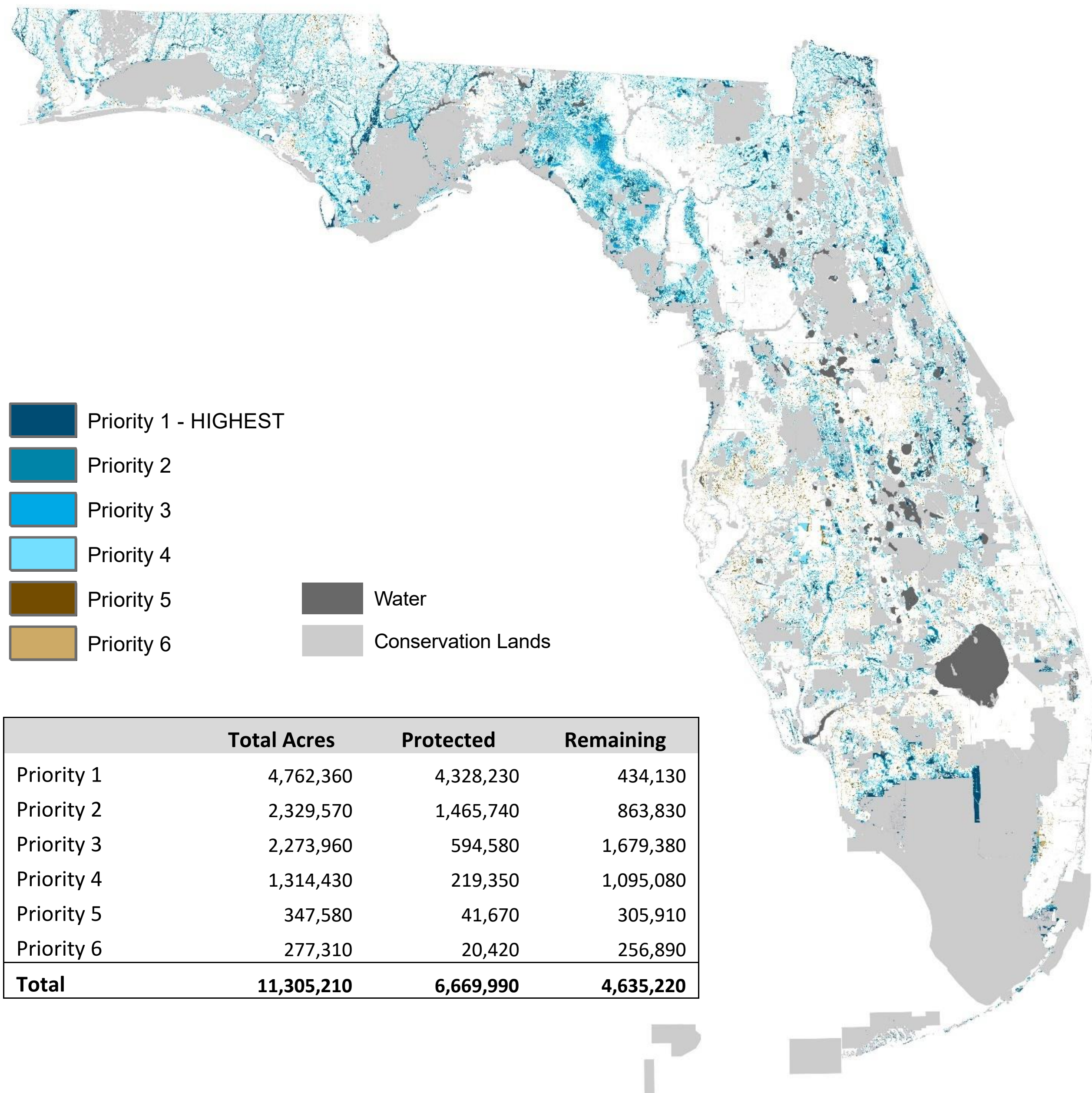
Primary Source: Florida Natural Areas Inventory

Description: The fragile coastal resources data layer identifies natural communities within one mile of the coast that are most vulnerable to disturbance or development including beach dune (G3), coastal scrub (G2), coastal grasslands (G3), coastal strand (G2), maritime hammock (G3), shell mound (G2), coastal dune lake (G2), coastal rockland lake (G2), mangrove wetlands (G5) and salt marsh (G5). For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Functional Wetlands



	Total Acres	Protected	Remaining
Priority 1	4,762,360	4,328,230	434,130
Priority 2	2,329,570	1,465,740	863,830
Priority 3	2,273,960	594,580	1,679,380
Priority 4	1,314,430	219,350	1,095,080
Priority 5	347,580	41,670	305,910
Priority 6	277,310	20,420	256,890
Total	**11,305,210**	**6,669,990**	**4,635,220**

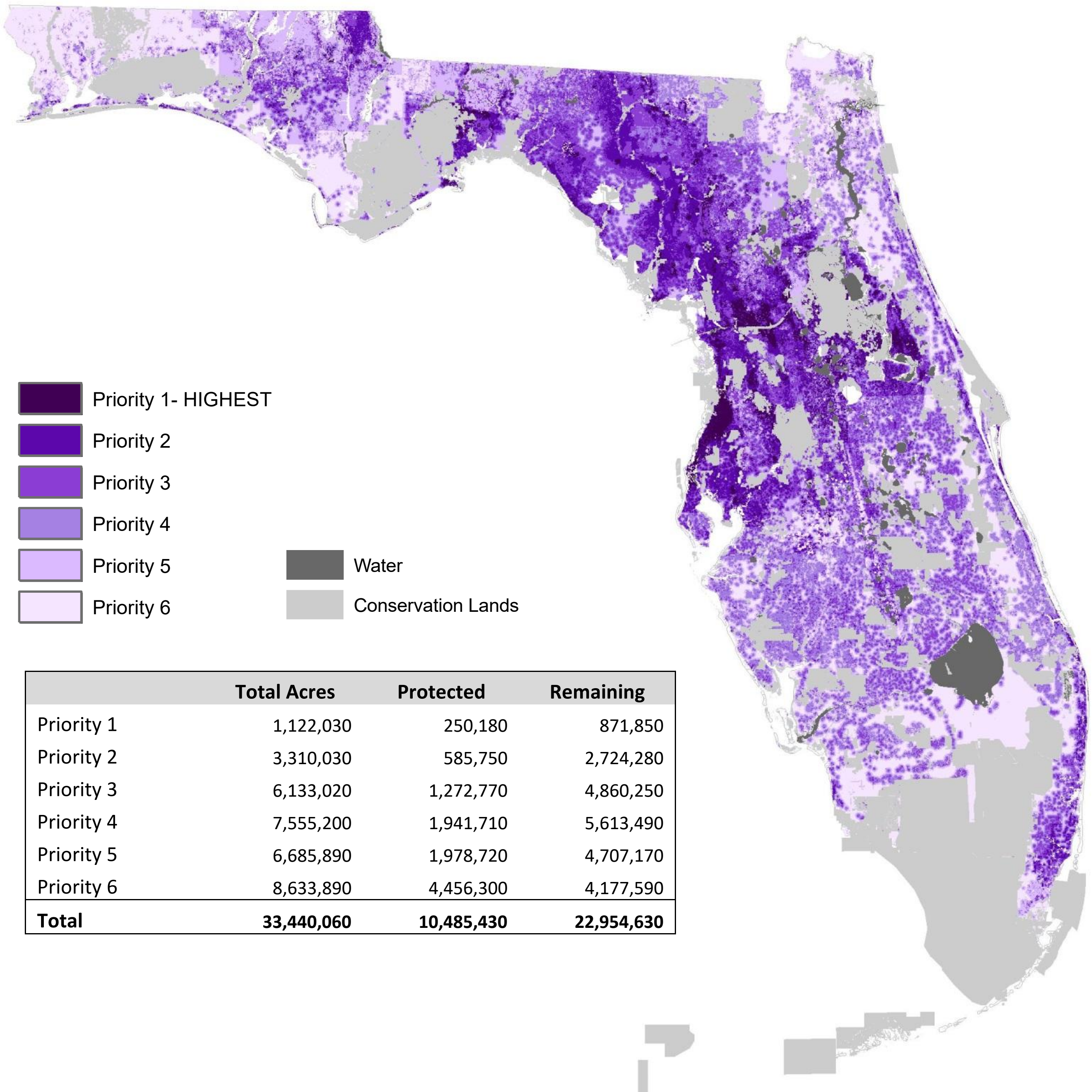
November 2025

The information displayed on this map was developed or provided to address specific performance measures of the Florida Forever program. The data may not be appropriate for general use and are not intended for use in a regulatory decision-making process.

Primary Source: Florida Natural Areas Inventory

Description: The Functional Wetlands data layer is based on wetlands identified in the Cooperative Land Cover Map v3. Functional wetlands are defined as those in a more natural state and the prioritization is based on overlap with Land Use Intensity index and FNAI Potential Natural Areas. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Groundwater Recharge



	Total Acres	Protected	Remaining
Priority 1	1,122,030	250,180	871,850
Priority 2	3,310,030	585,750	2,724,280
Priority 3	6,133,020	1,272,770	4,860,250
Priority 4	7,555,200	1,941,710	5,613,490
Priority 5	6,685,890	1,978,720	4,707,170
Priority 6	8,633,890	4,456,300	4,177,590
Total	**33,440,060**	**10,485,430**	**22,954,630**

November 2025

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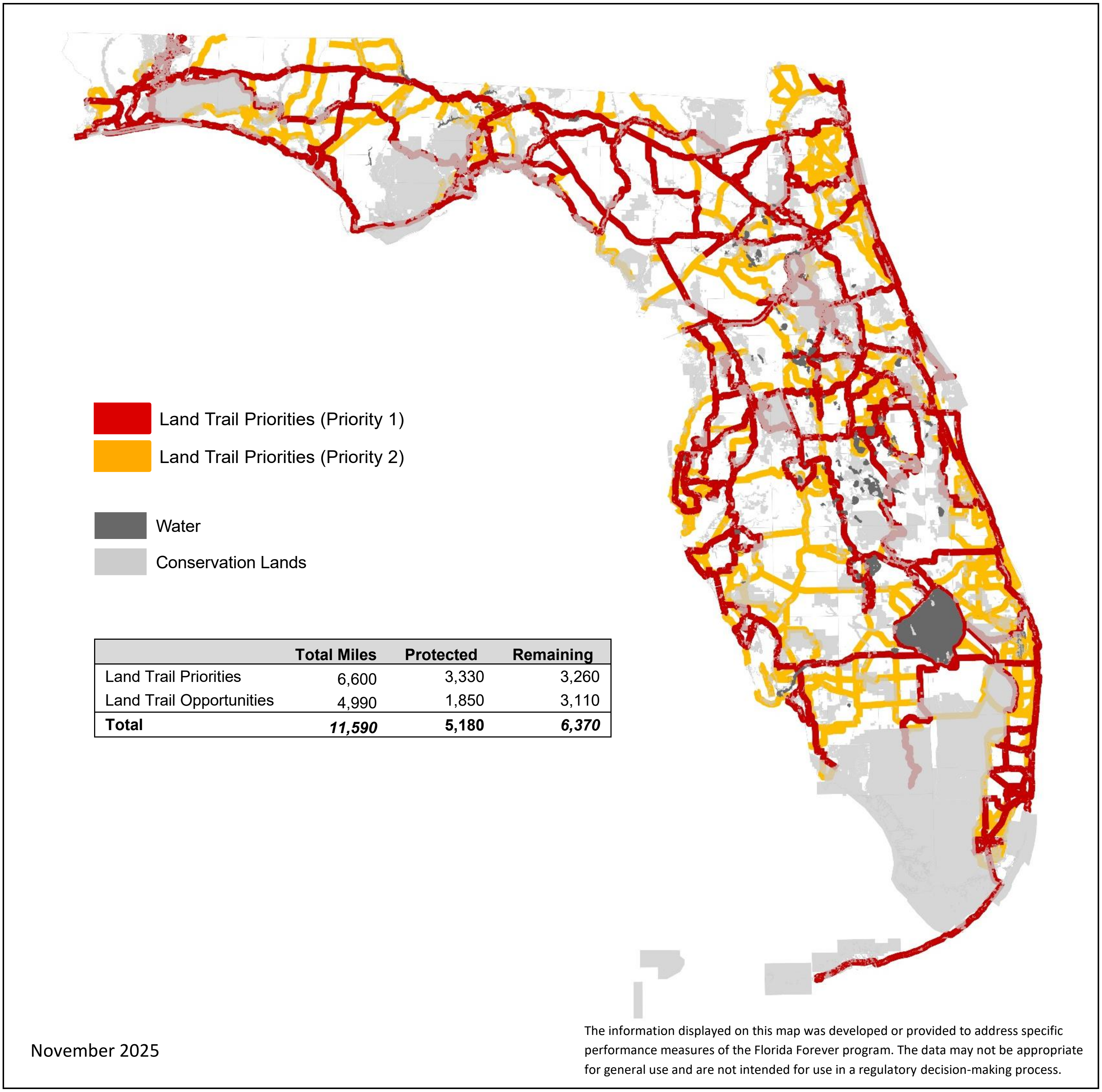
Primary Source: Advanced Geospatial, Inc; Florida Natural Areas Inventory

Description: The ground water recharge data layer identifies areas of potential recharge important for natural systems and human use. The data are prioritized 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. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Recreational Trails

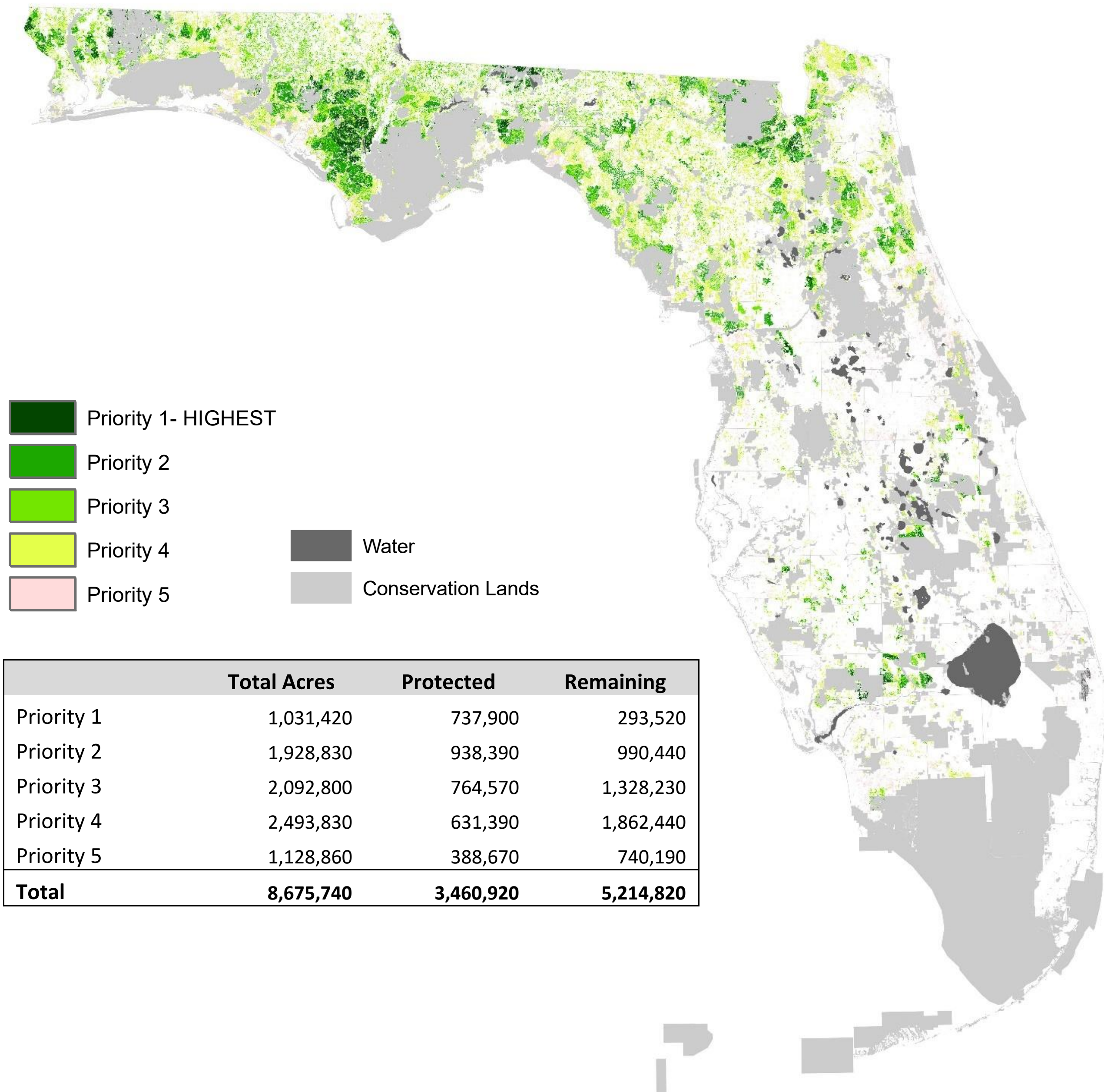


	Total Miles	Protected	Remaining
Land Trail Priorities	6,600	3,330	3,260
Land Trail Opportunities	4,990	1,850	3,110
Total	***11,590***	**5,180**	***6,370***

Primary Source: DEP/Office of Greenways and Trails

Description: The Recreational Trails data layer is based on land trail priorities and opportunities, including those for the Florida National Scenic Trail, identified in the Florida Greenways and Trails System Plan (2018 update). These trails are made up of existing, planned and conceptual non-motorized trails that form a connected set of linear recreational opportunities statewide. For more information: http://www.dep.state.fl.us/gwt/FGTS_Plan/default.htm.

Sustainable Forestry



	Total Acres	Protected	Remaining
Priority 1	1,031,420	737,900	293,520
Priority 2	1,928,830	938,390	990,440
Priority 3	2,092,800	764,570	1,328,230
Priority 4	2,493,830	631,390	1,862,440
Priority 5	1,128,860	388,670	740,190
Total	**8,675,740**	**3,460,920**	**5,214,820**

November 2024

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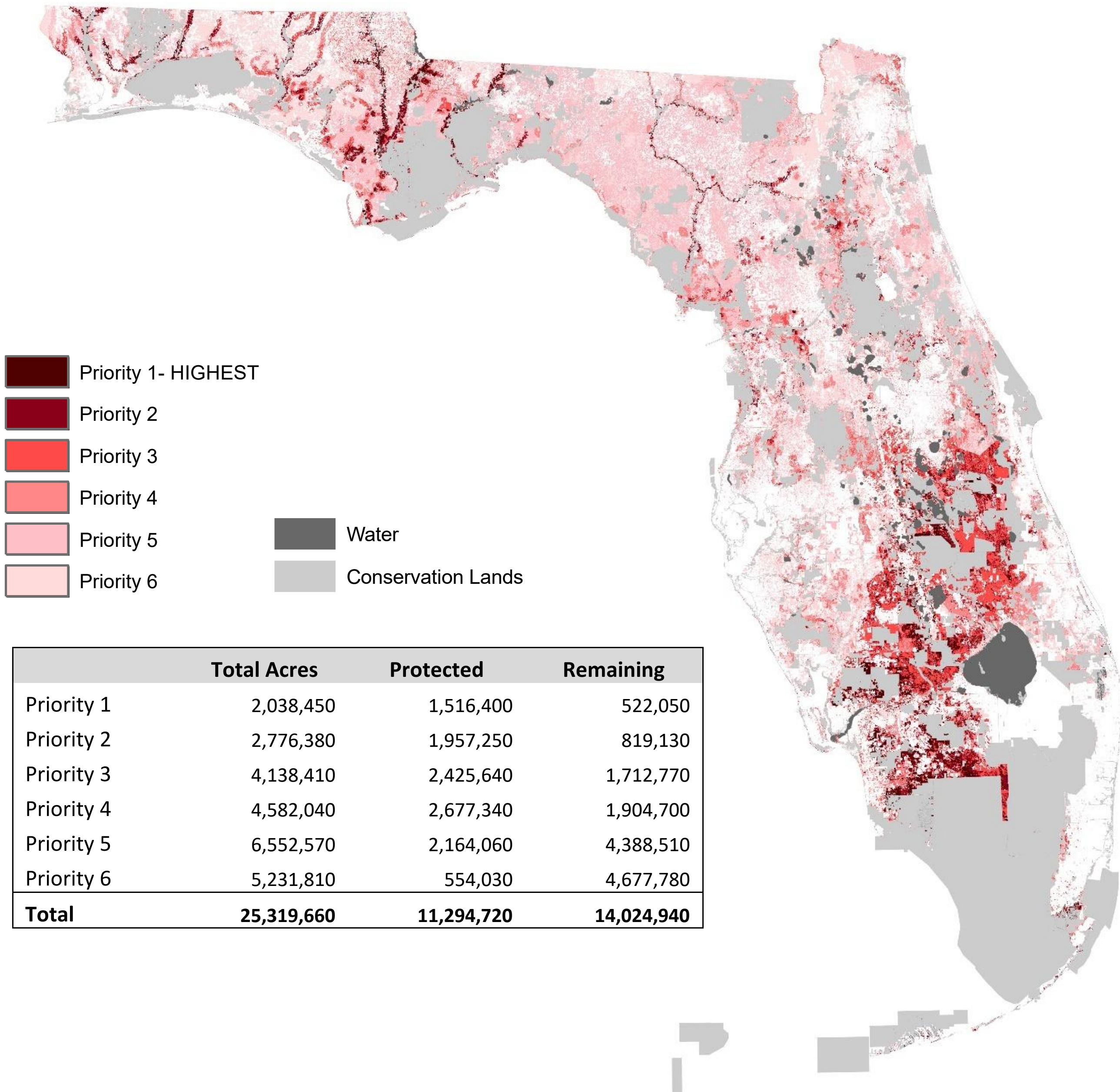
Primary Source: Florida Forest Service; Florida Natural Areas Inventory

Description: The Sustainable Forestry data layer identifies existing pinelands that are potentially available for forest management. Prioritization is based on 8 criteria set by the Florida Forest Service: whether trees are natural or planted, size of tract, distance to market, site index (average total height that dominant and codominant pine trees obtain), access and operability, burn frequency, years since last burn, and landscape integrity. For more information see the Conservation Needs Assessment Technical Report: https://www.fnai.org/conslands/florida-forever.

Species

Combined Strategic Habitat Conservation Areas and Rare Species Habitat Conservation Priorities



	Total Acres	Protected	Remaining
Priority 1	2,038,450	1,516,400	522,050
Priority 2	2,776,380	1,957,250	819,130
Priority 3	4,138,410	2,425,640	1,712,770
Priority 4	4,582,040	2,677,340	1,904,700
Priority 5	6,552,570	2,164,060	4,388,510
Priority 6	5,231,810	554,030	4,677,780
Total	**25,319,660**	**11,294,720**	**14,024,940**

November 2025

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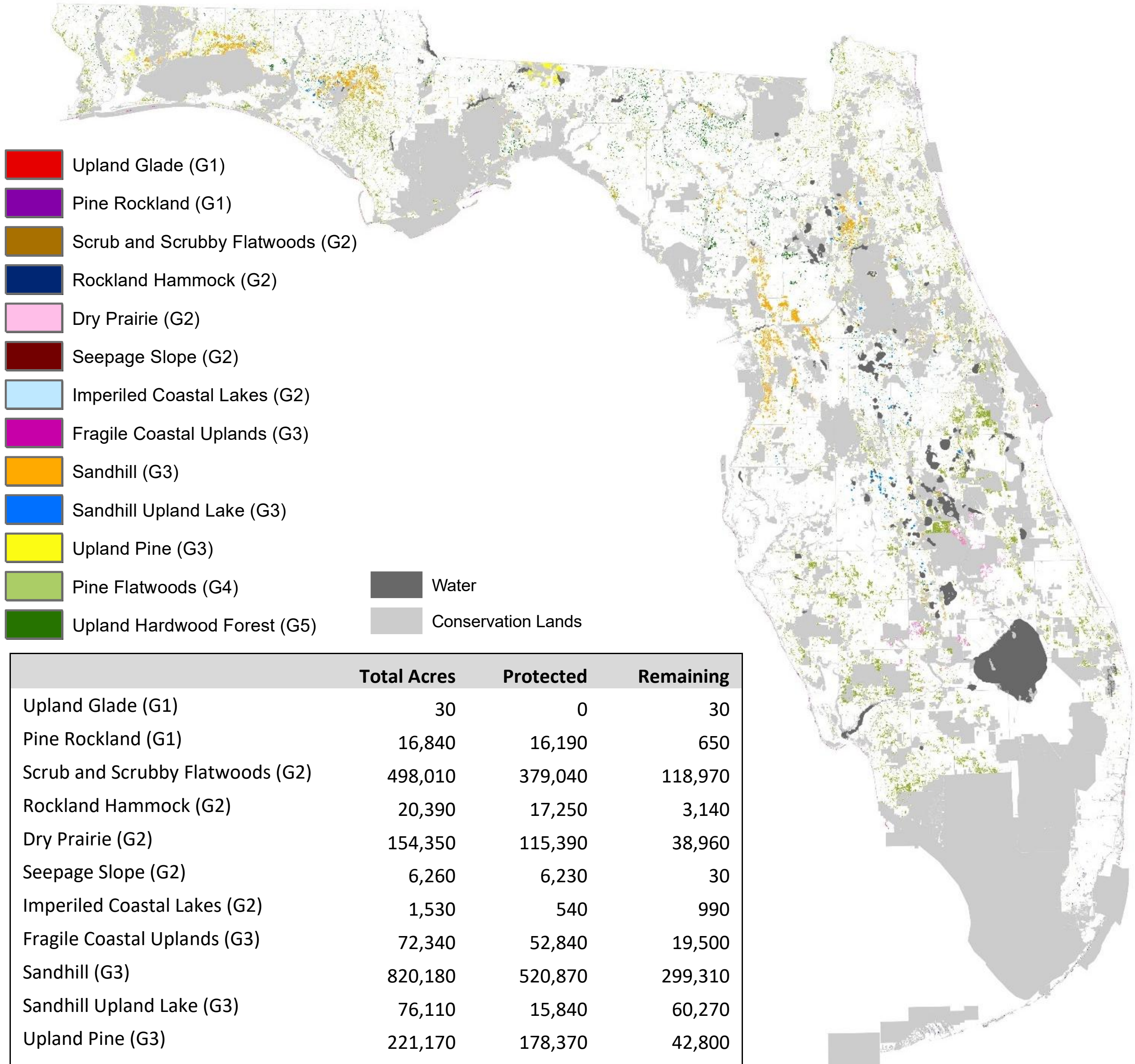
Primary Sources: Florida Fish and Wildlife Conservation Commission; Florida Natural Areas Inventory

Description: The Strategic Habitat Conservation Areas for Florida Forever and FNAI Habitat Conservation Priorities identify habitat for some of the same species. Twenty-eight species were included in both the final SHCA and FNAI habitat analyses. In order to minimize this redundancy, the Species data layer combines information from these two layers. Please refer to the Decision Support Data Documentation (https://www.fnai.org/conslands/florida-forever) for an explanation of how priority classes were assigned in the combination of the two data layers.

Natural Communities

Combined Under-represented Ecosystems and Fragile Coastal Resources (Uplands)



	Total Acres	Protected	Remaining
Upland Glade (G1)	30	0	30
Pine Rockland (G1)	16,840	16,190	650
Scrub and Scrubby Flatwoods (G2)	498,010	379,040	118,970
Rockland Hammock (G2)	20,390	17,250	3,140
Dry Prairie (G2)	154,350	115,390	38,960
Seepage Slope (G2)	6,260	6,230	30
Imperiled Coastal Lakes (G2)	1,530	540	990
Fragile Coastal Uplands (G3)	72,340	52,840	19,500
Sandhill (G3)	820,180	520,870	299,310
Sandhill Upland Lake (G3)	76,110	15,840	60,270
Upland Pine (G3)	221,170	178,370	42,800
Pine Flatwoods (G4)	2,347,050	1,364,010	983,040
Upland Hardwood Forest (G5)	199,680	40,620	159,060
Total	**4,433,940**	**2,707,190**	**1,726,750**

November 2025

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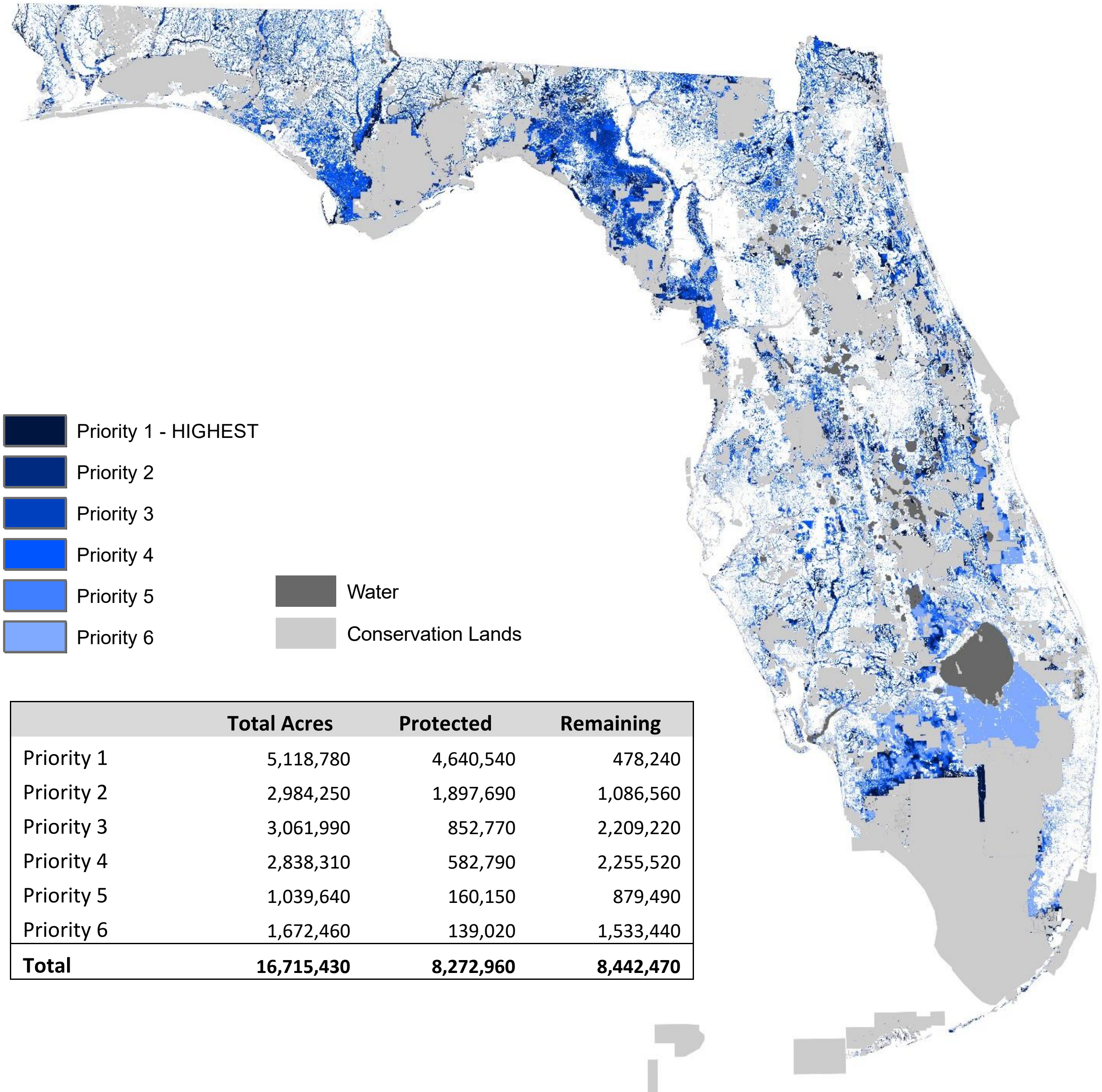
Primary Source: FNAI

Description: The Natural Community data layer is made up of natural communities under-represented on conservation lands, and fragile coastal resources, which include fragile coastal uplands and imperiled coastal lakes. Mangrove and Salt Marsh (G5) are included in the Functional Wetlands data layer. This data layer is prioritized based on the Global Rank of the natural communities. Please refer to the Decision Support Data Documentation (https://www.fnai.org/conslands/florida-forever) for an explanation of how this dataset is used in Florida Forever analyses.

Wetlands/Floodplain

Combined Functional Wetlands and Natural Floodplain



	Total Acres	Protected	Remaining
Priority 1	5,118,780	4,640,540	478,240
Priority 2	2,984,250	1,897,690	1,086,560
Priority 3	3,061,990	852,770	2,209,220
Priority 4	2,838,310	582,790	2,255,520
Priority 5	1,039,640	160,150	879,490
Priority 6	1,672,460	139,020	1,533,440
Total	**16,715,430**	**8,272,960**	**8,442,470**

November 2025

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Primary Source: FNAI

Description: The Wetlands/Floodplain data layer identifies lands that protect both functional wetlands and natural floodplain. Prioritization is based on overlap with Land Use Intensity index and FNAI Potential Natural Areas. Please refer to the Decision Support Data Documentation (https://www.fnai.org/conslands/florida-forever) for more detailed explanation of how priority classes were assigned in the combination of the wetlands and floodplain layers.

Appendix K

FNAIHAB Custom Species Model Methods

Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

This model is based on the 2012 gulf sturgeon FNAIHAB model produced using the standard aquatic modeling method at that time (FNAI 20xx). The model was updated by removing lands classified as developed in the CLC v3.4 5-class land cover layer.

Florida Grasshopper Sparrow (*Ammodramus savannarum floridanus*)

Following the standard buffering method we applied a buffering radius of 2000 meters to establish Primary and Maximum Buffers around element occurrences for Florida grasshopper sparrow. We initially selected all dry prairie within the Maximum Buffer then modified the habitat to include only those areas identified by Delany et al. 2007 as occupied. HQI was scored using the standard method. This model was originally developed in 2011. It was reviewed in 2021 against CLC developed lands and no changes were needed.

Cape Sable Seaside Sparrow (*Ammospiza maritima mirabilis*)

This model started with US Fish & Wildlife Service proposed Critical Habitat for the species as of 2011. We selected CLC v1.1 marl prairie, glades marsh, and sawgrass within the proposed Critical Habitat. For the FNAIHAB22 update we removed CLC v3.4 classes 4, 5, and 6 (intensive agriculture, developed, and water) from the existing model.

Florida Sandhill Crane (*Antigone canadensis pratensis*)

<u>Occurrence Data</u>

- Fleo sources from June 2022 – all 88 records were included.
- FWC WildObs records from 2015 – 170 records were used, buffered by 50m

<u>Range Extent</u>
We calculated Primary and Maximum buffers following the Standard method using a radius of.12,000m.

<u>Primary Habitat</u>
Primary habitat is the marsh habitats used by sandhill cranes. Table K-1 lists the CLC classes that were included wherever they occur within the range extent.

SITE Class	Name
1340	Palmetto Prairie
2111	Wet Prairie
2113	Marl Prairie
2120	Marshes
2410	Impounded Marsh
2430	Grazed Wetlands
21112	Cutthroat Seep
21121	Shrub Bog
21211	Depression Marsh
21212	Basin Marsh
22212	Hydric Pine Savanna

Table K-1. Site classes included as Primary Habitat for sandhill crane.

Secondary Habitat

Sandhill cranes are found in additional land cover types to a limited extent. We selected the CLC classes listed in Table K-2 if they were located within 500m of Primary habitat, or within 500m of fleo sources with Rep Accuracy of High or Very High; or WildObs records with confirmed breeding.

SITE Class	Name
1330	Dry Prairie
1630	Coastal Grassland
1831	Rural Open
1875	Reclaimed Lands
2112	Mixed Scrub-Shrub Wetland
2122	Coastal Interdunal Swale
2123	Floodplain Marsh
2124	Slough Marsh
2125	Glades Marsh
2131	Sawgrass
2141	Slough
2440	Clearcut Wetland
182132	Golf courses
183312	Field Crops
183313	Improved Pasture
183314	Unimproved/Woodland Pasture
183315	Other Open Lands - Rural
183342	Sod Farms
183351	Feeding Operations
183352	Specialty Farms
1833151	Fallow Cropland

Table K-2. Site classes included as Secondary Habitat for sandhill crane.

Primary and Secondary habitat selections were combined to form the base habitat layer for sandhill cranes. Note that secondary class polygons found within the Lake Okeechobee impoundment were excluded as they are considered too deep for use by sandhill cranes.

Habitat Quality Index
We used the Landscape Integrity Index to score HQI for sandhill crane, as follows:

- LSI of 9-10 = HQI 10
- LSI of 7-8 = HQI 8
- LSI of 5-6 = HQI 6
- LSI of 1-4 = HQI 3

Florida Scrub-Jay (*Aphelocoma coerulescens*)

Occurrence Data
- Fleo sources: exclude QC Fail, EORank = H, and/or RepAcc = VL. Also excluding all with LastObs older than 1991 (30 years). 282 of 582 remain.
- 2013 occurrence data: compiled occurrence file used for the 2013 update. We will include all of these unless current fleo indicates a source is obsolete/extirpated/etc.

Buffers
Radius is 800m as with 2012 model. All non-FLEO points will receive full 800m primary buffer. Fleo source polys will follow standard primary buffering procedure. Both groups will receive standard max buffer for limited use (see below).

We needed a smaller selection of CLC to dissolve for habitat selection purposes that was larger than max buffer. We created an 8000m buffer of primary buffers to serve as a range extent for selection.

Selecting Land Cover
We identified two tiers of land cover for scrub-jays. Tier 1 is the primary habitat used by scrub-jays and includes the CLC classes: scrub, scrubby flatwoods, coastal scrub, oak scrub, rosemary scrub, and sand pine scrub. Tier 2 is additional habitat used by scrub-jays primarily if it is in the vicinity of Tier 1 habitat. Tier 2 includes the CLC classes: coastal strand, dry prairie, dry flatwoods, mesic flatwoods, shrub and brushland, and unimproved/woodland pasture (Tier 2 also includes improved pasture within Seminole State Forest.)

Habitat is divided into five categories based on Tier and location:

- **Primary Core:** Tier 1 land cover intersecting Primary buffers.
- **Secondary Core:** Tier 2 land cover within 50m of Primary Core polygons.
- **Primary Nearby:** Tier 1 land cover within 50m of Primary or Secondary Core polygons.
- **Primary Outlying:** Tier 1 land cover within 1000m buffer of Primary Core polygons.
- **Secondary Outlying:** Tier 2 land cover intersecting Primary buffers but not selected as Secondary Core.

<u>Habitat Quality Index</u>
Primary Core habitat was categorized into High, Medium, and Low areas based on the 2012 scrub-jay model. These areas were given HQI scores of 10, 6, and 4 respectively. Secondary Core habitat was all assigned HQI of 2. Primary Nearby habitat polygons were assigned the HQI score of the nearest Primary Core habitat (10, 6, or 4). Primary Outlying habitat polygons were assigned one point less than the HQI score of the nearest Primary Core habitat (9, 5, or 3). Finally, Secondary Outlying habitat was all given HQI score of 1.

Crested Caracara (*Caracara cheriway*)

<u>Occurrence Data</u>

- FLEO sources with LastObs < 40 years (1982)
- Additional caracara records from the FNAI backlog database as of 201109

<u>Range Extent</u>
We started with standard method Maximum buffers using a radius of 3000m. We then ran a convex hull of caracara maximum buffers grouped into four regions. We next ran a kernel density of caracara occurrences. We found that a combination of the maximum buffer and kernel density contours produced the most satisfactory range extent for caracara. CLC land cover was clipped by this range extent for use in the model.

<u>Selecting Land Cover</u>
We identified two tiers of habitat for caracara. Primary habitat includes: prairie mesic hammock, dry prairie, improved pasture, unimproved/woodland pasture, wet prairie, cutthroat seep, marsh, isolated freshwater marsh, depression marsh, basin marsh, floodplain marsh, slough marsh, glades marsh, and slough. Secondary habitat includes: mesic hammock, mesic flatwoods, hydric pine flatwoods, rural open, and grass.

All Primary habitat that intersected the convex hull of the standard Primary buffer was included. Secondary habitat was included only within a 200m buffer of selected Primary habitat, or if intersecting a source feature.

<u>Habitat Quality Index</u>
The bulk of caracara habitat was assigned High (10) with the exception of three outlying areas. A small isolated portion of habitat located just west of the Loxahatchee River was assigned and HQI of Low (3). An extension of habitat at the south end of the species' range in the Everglades was assigned Medium (6). Another extension of habitat at the extreme northwest of the species' range into Manatee County was also assigned Medium (6).

Sea Turtles

These modeling methods apply to the following marine turtle species:

- Loggerhead (*Caretta caretta*)

- Green (*Chelonia mydas*)
- Leatherback (*Dermochelys coriacea*)
- Hawksbill (*Eretmochelys imbricata*)
- Kemp's Ridley (*Lepidochelys kempii*)

All models are based on habitat models FNAI produced for the Florida Beaches Habitat Conservation Plan project in 2014. CLC v3.4 Developed lands were removed from each model. The Kemp's Ridley model was further updated by adding saltmarsh polygons north of Ochlocknee Bay.

Habitat Quality Index
For most species, nest density classes were used as HQI scores (High = 10, Medium = 6, Low = 3). For Kemp's Ridley and Hawksbill no density data is available, so presence/absence data were used. Absence was scored as HQI 3. Presence along highly developed beaches was scored HQI 6. Presence along relatively natural beach was scored HQI 10. If no presence/absence data, developed beaches scored 3 and natural scored 6.

Piping Plover (*Charadrius melodus*)

This model is based in part on the custom FNAIHAB model created in 2011:

> We supplemented FNAI occurrence data with additional data from the following sources: International Piping Plover Census; USFWS Critical Habitat; and location data from Patrick Leary for northeast Florida. Habitat in the vicinity of all sources was delineated from aerial photography based on expert judgment. Suitability was scored using the standard method.

For the current model, we combined the 2011 model with a new model following the Standard FNAIHAB method.

Habitat Quality Index
We kept existing HQI scores for the 2011 portions of the model. For the new Standard additions, we assigned the same HQI value as adjacent 2011 polygons. If no nearby 2011 polygons, we based scoring on EO source attribute information.

Snowy Plover (*Charadrius nivosus*)

This model is based on the 2014 Beaches Habitat Conservation Plan model for snowy plover. We removed CLC v3.4 developed lands for the current model. HQI scores are based on the original 2000 snowy plover model where located nearby. Unassigned polygons were assigned manually based on nearest source feature attribute information.

Sandbar Tiger Beetle (*Cicindela blanda*)

This species is found on small riverine sandbars and beaches that are not typically mapped in CLC. We started with a standard Primary buffer based on the typical invertebrate radius of 1000m. We manually mapped all riverine sandbars located within these Primary buffers. Due to the dynamic nature of these sandbars, we referred to both 2013 and 2020 high resolution aerial imagery to map sandbars. All areas were scored HQI = 10 except one location occurring on a sandy road scored HQI=6.

White-sand Tiger Beetle (*Cicindela wapleri*)

This species follows the same method described for *C. blanda* above.

American Crocodile (*Crocodylus acutus*)

This model is largely based on the custom FNAIHAB model developed in 2014:

> FNAI element occurrences were considered insufficient as a starting point for the extent of crocodile occurrence, so we relied on the Priority Amphibian and Reptile Conservation Areas (PARCA) polygon identified for crocodile by JJ Apodaca and The Orianne Society (Sutherland and deMaynadier 2012) as our reference range extent. Within that polygon we selected suitable land cover polygons (coastal wetlands, open waters, and coastal hammock, grassland, beach, and berm). Several selected land cover polygons extended far beyond the PARCA boundary so were cut off by reviewing aerial photography for reasonable break points in the vicinity of the PARCA boundary. Some additional areas near the boundary were added based on known suitability and/or use by crocodiles. All mapped habitat was scored as High Suitability (10 points).

For 2022 we have additional crocodile occurrence data located among the 10,000 islands and in the Lower Keys. We extended the model range extent to those areas and selected the following CLC land cover classes:

113 - Rockland Hammock
163 - Coastal Grassland
167 - Sand Beach (Dry)
1811 - Vegetative Berm
186 - Utilities
1872 - Sand & Gravel Pits
1877 - Spoil Area
2112 - Mixed Scrub-Shrub Wetland
21121 - Shrub Bog
2113 - Marl Prairie
212 - Freshwater Marshes
2125 - Glades Marsh
221 - Cypress/Tupelo(incl Cy/Tu mixed)
2214 - Strand Swamp
22312 - South Florida Bayhead
31 - Natural Lakes & Ponds
326 - Industrial Cooling Pond
41 - Natural Rivers & Streams
416 - Tidally-influenced Stream
42 - Canal/Ditch
421 - Canal
5 - Estuarine

522 - Tidal Flat
524 - Saltwater Marsh
525 - Mangrove Swamp
526 - Unconsolidated Substrate
8 - Open Water

Habitat Quality Index
The PARCA extend captures the primary conservation priorities for crocodile, and the outlying occurrences have an EO rank of D. Therefore, all habitat polygons intersecting the PARCA and extending to a limit of 250m beyond the PARCA were scored HQI=10; all remaining areas scored HQI = 6.

Eastern Indigo Snake (*Drymarchon couperi*)

Occurrence Data

- Fleo source features from April 2021: using only LastObs < 20 years (2000-2021), EO Rank <> X or H, Rep Accuracy <> Very Low. 137 records included
- Occurrence data from Kevin Enge obtained in 2013. Only using <20 years (2000-2012). Using Verified or reliable sources only (fed, state agencies, TNC, universities). 395 records included.
- New occurrence data from Kevin Enge obtained in 2021. Using Verified or reliable sources only (fed, state agencies, TNC, universities). Ranges from 2000-2020 but different from previous dataset. 137 records included.

Range Extent and Buffers
We created standard Primary and Max buffers for indigo snake using a radius of 5000m. We also developed “supplementary buffers”, based on a combination of convex hulls of primary buffers along with kernel density of occurrences. A larger contour of the same kernel density analysis was used for supplemental max buffers.

Suitable Habitat Classes
We classified habitat for indigo snake into Primary and Secondary categories. We also identified a Northern zone and a Peninsula zone where different CLC classes were considered Primary or Secondary. This is based on the north Florida frost line, above which indigo snakes are considered restricted primarily to sandhill habitats where they can use gopher tortoise burrows for shelter. Suitable classes are as follows:

North Zone, Primary: sandhill

North Zone, Secondary: all 1100s, 1200s (excluding sandhill), 1300s, 1400s, 1500s, 1600s, 1700s, 1800, 1811, 1831, 18311, 183111, 18312, 183314, 183315, 183331, 183332, 1833321, 2100s, 2200s, 2300, 5200s (excluding 5200, 5230), 5300

Peninsula, Primary: 1100s, 1200s, 1300s, 1400s, 1600s, 1700s, 2232, 22321, 22322, 22323

Peninsula, Secondary: 1500s, 1800, 1811, 1831, 18311, 183111, 18312, 183314, 183315, 183331, 183332, 1833321, 2100s, 2200s, 2300, 5200s (excluding 5200, 5230), 5300

Habitat Selection

Primary habitat polygons were clipped by the supplemental Max Buffer. Secondary habitat was then clipped to a 100m buffer of the selected Primary habitat. Additional CLC classes 1-4 polygons were selected if intersecting fleo sources with high or very high Rep Accuracy. A modified selection process occurred in south Florida south of I-75: Secondary habitat was selected within a 300m buffer of Primary in that region.

Habitat Quality Index

Habitat was assigned to discrete patches in order to assign each patch to “Core” or “Supplemental” habitat, and to assign a size class of 10+ acres, 500+ acres, 1000+ acres, and 5000+ acres. Habitat intersecting the original Primary buffers was assigned Core, while outlying habitat was assigned to Supplemental. Additional polygons of at least 10 acres that were >25m but <50m away from larger patches (500+ acres) were assigned “Adjacent”. Final Habitat Quality Index was scored using the Landscape Integrity Index as follows:

		Landscape Integrity Index			
Habitat	**Patch Acres**	**9-10**	**7-8**	**5-6**	**1-4**
Core	5,000+	10	8	6	3
	1,000-4,999	8	6	4	2
	500-999	4	3	2	1
Supplemental	5,000+	9	7	5	2
	1,000-4,999	7	5	3	1
	500-999	3	2	1	1
Adjacent	10+	2	1	1	-

Red-cockaded Woodpecker (*Dryobates borealis*)

We used a modified standard model method for this species. FLEO sources were used with the following exceptions:

- Sources 71839 and 71840 were omitted – K NeSmith indicated they were no longer extant
- Additional source locations were added on Corbett WMA and Goldhead Branch WMA at the suggestion of K NeSmith.

Buffer radius was set at 5km. Suitable land cover classes were generally limited to flatwoods, sandhill, and upland pine. Additional classes were included selectively, as follows:

- Plantation was included but clipped to the primary buffers of High/Very High Rep Accuracy sources only, and further clipped to only be included within Managed Area boundaries.
- Upland coniferous was included in the Osceola National Forest only, and clipped to primary buffers of High/Very High RA sources.
- Woodland pasture and cypress/pine/cabbage palm class were included in south Florida only (south of I-4).

Habitat Quality Index
We determined that HQI scores from the previous model update in 2012 were generally still appropriate, so current habitat was assigned the HQI score of the nearest habitat from the 2012 model. One exception was habitat in Tate's Hell State Forest – this area was changed from a value of 3 (low) to 6 (medium) to reflect ongoing habitat restoration.

Johnson's Seagrass (*Halophila johnsonii*)

This is a modified version of the Aquatic model method. FLEO sources and USFWS Critical Habitat were used as occurrence data. Because coastal HUC12s are elongated compared to more typical inland HUCs, we instead used a 10km buffer of occurrences. All CLC estuarine polygons were clipped to the 10km buffers. The CLC polygons were then buffered by 300m and 1 mile. All Natural/Seminatural uplands were clipped to the 300m buffer, and all Wetlands were clipped to the 1 mile buffer. Wetlands were only included if they intersected the 300m buffer or intersected other such wetland polygons.

We decided to base the Habitat Quality Index scores on USFWS Critical Habitat. All modeled habitat within 1km of Critical Habitat (to a maximum of 4km) was scored 10 (High); all remaining habitat scored 6 (Medium).

Gholson's blazing star (*Liatris gholsonii*)

This is one of the few plant species that merited custom modeling, due to its preference for slopes. We categorized Primary habitat as CLC classes: slope forest, mixed hardwood-coniferous, mixed hardwood coniferous swamps, and upland hardwood forest. Those classes correspond to the primary sloped areas occupied by the species in its range. A few occurrences are located up to 100m beyond these sloped areas, so we identified Secondary habitat as CLC classes: coniferous plantation, fallow cropland, field crops, hydric pine flatwoods, mesic flatwoods, oak scrub, rural open, sand pine scrub, sandhill, unimproved/woodland pasture, upland coniferous, and upland pine. These areas were clipped to a 100m buffer of Primary habitat. Habitat Quality Index was scored following the Standard method.

Florida Long-tailed Weasel (*Mustela frenata peninsulae*)

FLEO sources were the occurrence data used for this model. Of the 65 FLEO sources, four were omitted due to large size and low Rep Accuracy, and five were omitted due to LastObs dates more than 100 years old.

Range Extent
Due to limited occurrence locations relative to the species' range, we chose to develop a full range extent and include all suitable habitat within that extent. We used a combination of convex

hull around occurrences and kernel density contours to define the extent, using the following rules:

- Exclude within convex hull ONLY IF density < 0.000066256 contour
- Include everything else within convex hull
- Include beyond convex hull ONLY IF density >= 0.000626416 contour

Suitable Habitat

We classified habitat for this species into Primary and Secondary habitat. Primary includes all forested classes, plus scrub and scrub-shrub wetlands:

Austrailian Pine	Impounded Swamp	Rural Open Pine
Basin Swamp	Isolated Freshwater Swamp	Sand Pine Scrub
Bay Swamp	Live Oak	Sandhill
Baygall	Mangrove Swamp	Shrub Bog
Brazilian Pepper	Maritime Hammock	Strand Swamp
Cabbage Palm	Melaleuca	Successional Hardwood Forest
Cabbage Palm Flatwoods	Mesic Flatwoods	Unimproved/Woodland Pasture
Cabbage Palm Hammock	Mesic Hammock	Upland Coniferous
Coastal Hydric Hammock	Mixed Hardwood-Coniferous	Upland Hardwood Forest
Coniferous Plantations	Mixed Hardwood Coniferous Swamps	Urban Open Forested
Cutthroat Grass Flatwoods	Mixed Scrub-Shrub Wetland	Urban Open Pine
Cypress	Mixed Wetland Hardwoods	Wet Coniferous Plantation
Cypress/Pine/Cabbage Palm	Oak - Cabbage Palm Forests	Wet Flatwoods
Cypress/Tupelo(incl Cy/Tu mixed)	Other Coniferous Wetlands	Xeric Hammock
Dome Swamp	Other Hardwood Wetlands	Coastal Scrub
Floodplain Swamp	Pond Pine	Oak Scrub
Hydric Hammock	Rockland Hammock	Scrub
Hydric Pine Flatwoods	Rural Open Forested	Scrubby Flatwoods

Secondary habitat includes open grasslands, fields, and marshes:

Basin Marsh	Floodplain Marsh	Pecan
Beach Dune	Grazed Wetlands	Reclaimed Lands
Citrus	Impounded Marsh	Rural Open
Coastal Grassland	Improved Pasture	Salt Marsh
Coastal Strand	Isolated Freshwater Marsh	Sand Beach (Dry)
Cutthroat Seep	Marl Prairie	Sawgrass
Depression Marsh	Marshes	Shrub and Brushland
Dry Prairie	Orchards/Groves	Slough
Fallow Cropland	Other Open Lands - Rural	Sod Farms
Fallow Orchards	Palmetto Prairie	Wet Prairie
Field Crops		

All Primary habitat intersecting the Range Extent was selected. Secondary habitat was clipped to a 100m buffer of selected Primary habitat. Certain areas were manually removed, including:

island polygons within waterbodies, habitat on coastal barrier islands, scattered small patches in urban areas.

Habitat Quality Index

HQI was scored based on proximity to recent occurrences, and the Landscape Integrity Index. We created Maximum buffers of EOs using the standard method with a 1,000m radius.

FL long-tailed weasel HQI Scoring

	Landscape Integrity Index			
EO Status	**9-10**	**7-8**	**5-6**	**1-4**
intersect Max Buffer of EO <=40yrs (81-21)				
1000+ acres	10	9	8	7
100-999 acres	8	7	6	5
<100 acres	6	5	4	3
other				
1000+ acres	8	7	6	5
100-999 acres	6	5	4	3
<100 acres	4	3	2	1

Wood Stork (*Mycteria americana*)

The latest model is based on the 2013 model for this species (described below). We removed CLC v3.4 5-class Developed lands for this update.

For the 2013 model we supplemented FNAI occurrence data for rookeries with additional rookery data compiled by Tsai et al. (2011). Because foraging habitat is a primary limiting factor (Ogden 1990) we selected appropriate foraging wetlands within a 25 kilometer radius of rookery sites. The buffer distance was chosen following Tsai et al. (2011) based on foraging distances from the nesting colony. Wood storks will feed in almost any shallow wetland depression where fish tend to be concentrated (Ogden 1990). Ogden (1990) also emphasizes the importance of protecting many different wetlands, with both long and short annual hydroperiods, in order to maintain the wide range of feeding site options required by wood storks.

Nesting colonies (and associated feeding habitat) were prioritized based on 3 factors recommended by Tsai et al. (2011): colony size, colony longevity, and isolation from mainland. Colonies were assigned points for each factor as follows:

Points	Size	Longevity	Mainland Isolation*
3	>=300 nests	>10 years	Islands best
2	50-299 nests	2-10 years	↓
1	1-49 nests	1 year	Mainland worst

*Index assigned by Tsai et al. (2011)

Habitat Quality Index was determined by summing the points across criteria for each colony and factoring in the year of last observation. Final HQI scores were assigned as follows:

Criteria Points Sum	HQI Score
7 - 9	10
4 - 6	6
<4 OR if Last Year observed was pre-1990	3

Gray Bat (*Myotis grisescens*)

Based on the foraging and roosting patterns of gray bats, we defined two categories of habitat: "core" areas surrounding source caves, and "foraging" areas along forested riparian and lucustrine corridors. Both categories used the same set of CLC suitable classes: 1100s, 1220s-1320s, 1400s, 1650s, 18311s, 18312s, 183314s, 183330s, 2200s, 2420s, 5250s, 7400s.

For Core areas we used a radius of 500m to create Standard Primary and Max buffers. Suitable land cover classes intersecting the Primary buffer were selected and clipped to the Max buffer, following the Standard method.

For Foraging areas we used a radius of 3000m. All waterbodies and NHD flowlines within the buffer were selected and buffered by 1000m. Suitable CLC polygons were clipped by this waterbody buffer.

For Habitat Quality Index, we identified three distinct regions of habitat. The Apalachicola habitat region was assigned 10 (High), the western and eastern populations were both assigned 6 (Medium).

Beach Mice

These modeling methods apply to the following beach mice subspecies:

- Choctawhatchee beach mouse (*Peromyscus polionotus allophrys*)
- Santa Rosa beach mouse (*Peromyscus polionotus leucocephalus*)
- Southeastern beach mouse (*Peromyscus polionotus niveiventris*)
- St. Andrews beach mouse (*Peromyscus polionotus peninsularis*)

- Anastasia Island beach mouse (*Peromyscus polionotus phasma*)
- Perdido Key beach mouse (*Peromyscus polionotus trissyllepsis*)

These models are based on habitat models created for the Florida Beaches Habitat Conservation Plan (FBHCP) project. Occupied habitat for all 6 sub-species of beach mice was mapped in 2012 for the FBHCP and these maps were incorporated directly into FNAIHAB. Mapping methods relied on input from beach mouse experts through a series of workshops. The final maps are based on current best available survey information. For the current update, CLC v3.4 5-class developed lands were removed from the models. Habitat Quality Index was unchanged at 10 (High) for all mapped habitat.

Florida Panther (*Puma concolor coryi*)

Range Extent

We started with zones used in 2013 update: Primary, Secondary, Dispersal, and North Zones. For current update we wanted to include additional areas north of the North Zone where radio telemetry shows a relatively active panther corridor along the west side of Lake Wales Ridge.

We used a combination of panther telemetry points, Tom Hoctor's panther corridor modeling for 2021 FEGN update, and Dave Shindle's panther random forest habitat model to delineate a boundary called "Central Florida Extension" running from North Zone along west side of Lake Wales Ridge to Polk County. This extension identifies a migration corridor connecting Fisheating Creek to Avon Park AFB.

Habitat Selection

Within the new range extent we used the same method as our 2013 model to select habitat. We selected CLC v3.4 5-class Natural, Seminatural, and Improved Pasture/Field Crop classes. We did not include Intensive Agricultural classes despite occasional telemetry points in those areas.

Habitat Quality Index

We scored HQI based on the panther zones and Landscape Integrity Index, as follows:

PANTHER HQI MATRIX					
	ZONE				
LSI	Primary	Dispersal	Secondary	North	CFL Extens
9-10	10	9	8	8	7
7-8	10	8	6	6	5
4-6	8	7	5	5	4
1-3	6	5	4	4	3

Big Cypress Fox Squirrel (*Sciurus niger avicennia*)

Occurrence Data

- FLEO sources, using 11 of 14 sources, omitting three LOW Rep Accuracy sources

- Michelle Eisenberg, UCF survey data from 2005-2007, 75 occurrences (100m buffer as in 2013)
- Koprowski & Hefty 2020 survey data, All BCFS Detections (29) and All BCFS Sign (93), 121 occurrences total (10m buffer)

Total of 207 occurrences.

Suitable Land Cover

We are using Primary and Secondary habitat categories for this species. Primary includes:

- Rockland Hammock
- Dry Flatwoods
- Mesic Flatwoods
- Scrubby Flatwoods
- Mixed Hardwood/Coniferous
- Maritime Hammock
- Hydric Hammock
- Golf Courses
- Unimproved/Woodland Pasture
- Cypress/Tupelo
- Cypress/Hardwood Swamps
- Cypress
- Cypress/Pine/Cabbage Palm
- Isolated Freshwater Swamp
- Dome Swamp
- Wet Flatwoods
- Hydric Pine Flatwoods

Secondary includes: 1100s, 1200s, 1300s, 1400s, 1821s, 1831s, 183324, 18333s, 2200s, 5200s

We created Standard Primary and Maximum buffers using a radius of 5,000m.

Habitat Selection

Selected all Primary habitat within the Max Buffer. Included any CLC polygons (if <50acres) intersecting high-precision occurrences. Clipped Secondary habitat to a 100m buffer of Primary. Selected all resulting Primary and Secondary habitat intersecting the Primary buffer.

The Standard method was used for Habitat Quality Index scoring.

Lower Keys Cotton Rat (*Sigmodon hispidus exsputus*)

We defined the range extent as the collection of keys from which the species is known: Sugarloaf, Cudjoe, Knockemdown, Little Knockemdown, Summerland, Ramrod, Big Torch, Middle Torch, Little Torch, Howe, Big Pine, and No Name (along with smaller unnamed keys found within this extent).

Within the extent, all polygons of the following CLC classes were selected: glades marsh, keys tidal rock barren, pine rockland, low density residential, rockland hammock, rural structures, urban open forested, and urban open land.

All habitat for this species received an HQI score of 10 (High).

Roseate Tern (*Sterna dougallii***)**

We created a Standard max buffer for this species using a radius of 500m.We selected all suitable habitat that intersected the max buffer (did not clip to buffer). Suitable CLC classes are: mud, sand, tidal flat, unconsolidated substrate, sand beach (dry), beach dune, coastal uplands, coastal grassland, coastal berm, keys cactus barren, keys tidal rock barren, spoil area.

For HQI scoring, we scored locations manually. Habitat situated in a natural setting was scored 10 (High), and habitat surrounded by development scored 6 (Medium).