

# Biodiversity in Forests of Exceptional Conservation Value



Florida Master Logger Lunch

Ann Duff, Fiber Sustainability Manager, WestRock

Florida SFI Implementation Committee

August 31, 2023

# Are these rare?



Gopher tortoise



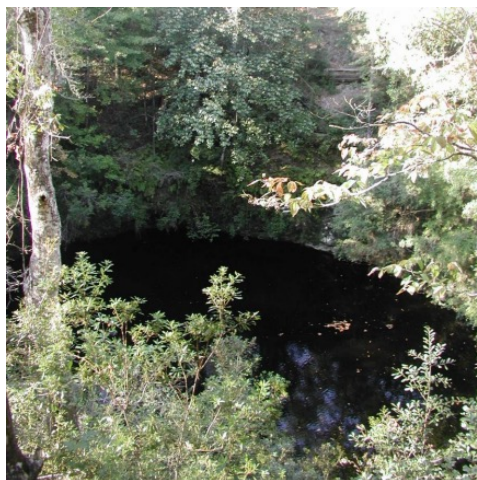
American bald eagle



Suwannee alligator snapping turtle



Eastern diamondback rattlesnake



Sinkhole



Bartram's ixia



American alligator



Sherman fox squirrel



Florida black bear



Florida toothache grass

# 2022 Sustainable Forestry Initiative (SFI) Standard

- SFI 2022 Fiber Sourcing Standard (wood procurement) promotes responsible forestry based on

- 13 Principles
- 11 Objectives
- 29 Performance Measures
- 59 Indicators

[www.forests.org](http://www.forests.org)



- Requirements include measures to broaden the protection of biodiversity, use forestry BMPs to conserve water quality, provide outreach to landowners, and utilize the services of trained forest management and harvesting professionals.

bio = life  
diversity = variety

biodiversity

Variety of  
life or living  
organisms

# How do We Conserve Biodiversity?

- Forest plants and animals
- Aquatic species
- Threatened and endangered species
- Forests with Exceptional Conservation Value
- Old-growth forests
- Ecologically important sites

# 2022 SFI Fiber Source Standard - Objective 1

## 1.6 SFI 2022 FIBER SOURCING REQUIREMENTS

### Objective 1. *Biodiversity in Fiber Sourcing.*

To address the practice of *sustainable forestry* by conserving *biological diversity*.

#### Performance Measure 1.1. Promotion and *conservation of biological diversity.*

Indicators:

1. *Certified Organizations* shall address *conservation of biodiversity*, *individually and/or through cooperative efforts involving SFI Implementation Committees*, through a *program* that *includes one or more of the following*:
  - a. *promotion of biological diversity* concepts utilizing information from organizations such as the World Resources Institute, The Nature Conservancy, NatureServe, Conservation International, State Wildlife Action Plans, State Forest Action Plans and assessments;
  - b. conducting local and regional level *landscape* assessments;
  - c. involvement with local or regional *conservation* efforts;
  - d. *use of relevant information on biological diversity* from credible sources (such as those noted above) in approved training and education *programs*; and
  - e. other credible approaches.

#### Performance Measure 1.2. Promotion and *conservation of Forests with Exceptional Conservation Value.*

Indicators:

1. *Certified Organizations* shall conduct an assessment, *individually and/or through cooperative efforts involving SFI Implementation Committees*, of *Forests with Exceptional Conservation Value*, *defined as critically imperiled and imperiled species and ecological communities*, within their *wood and fiber supply area(s)* and make the summary of the assessment available to *wood producers*.
2. *Program* to address *Forests with Exceptional Conservation Value* (*critically imperiled and imperiled species and ecological communities*) *for all harvest operations* through *fiber sourcing* activities such as:
  - a. *use of qualified logging professionals*, *certified logging companies* (where available), and *qualified resource professionals*; or
  - b. *training program for qualified logging professionals* on how to recognize and *protect Forests with Exceptional Conservation Value*; or
  - c. through in-the-forest verification by *certified logging companies*; or
  - d. *forest landowner outreach*; or
  - e. *SFI Implementation Committee involvement in the assessment of Forests with Exceptional Conservation Value*, and development of *recommendations for conservation*.
3. *Certified Organizations* shall conduct and incorporate the results of a *Forests with Exceptional Conservation Value* (*critically imperiled and imperiled species and ecological communities*) assessment to promote *conservation of Forests with Exceptional Conservation Value* for *purchased stumpage*.

# SFI Fiber Sourcing - Objective 1 Resources

- SFI certified organizations must demonstrate collaborative and/or individual support for biodiversity conservation.
- The FL SIC has completed an FECV assessment for 300+ species and communities in Florida for SFI certified organizations to utilize.
- The FL Master Logger training program offers FECV modules in the core and continuing education courses.
- State Natural Heritage Program - Florida Natural Areas Inventory (FNAI) and NatureServe databases

*G2 natural community – Spring-run stream  
Ichetucknee River, Suwannee County, FL*



# What does FECV, G1 and G2 mean?

- Forests of Exceptional Conservation Value (FECV) are places where globally **critically imperiled (G1)** and globally **imperiled (G2)** species and communities exist.
- G1 plant, animal or community is globally extremely rare and vulnerable to extinction
  - 5 or fewer occurrences or populations remain; < 1,000 individuals; < 2,000 acres exist
- G2 plant, animal or community is globally rare and vulnerable to extinction
  - 6 to 20 occurrences or populations remain; 1,000 – 3,000 individuals; 2000 10,000 acres exist
- May or not be protected by law or regulations
  - US Endangered Species Act – Endangered and Threatened listed status

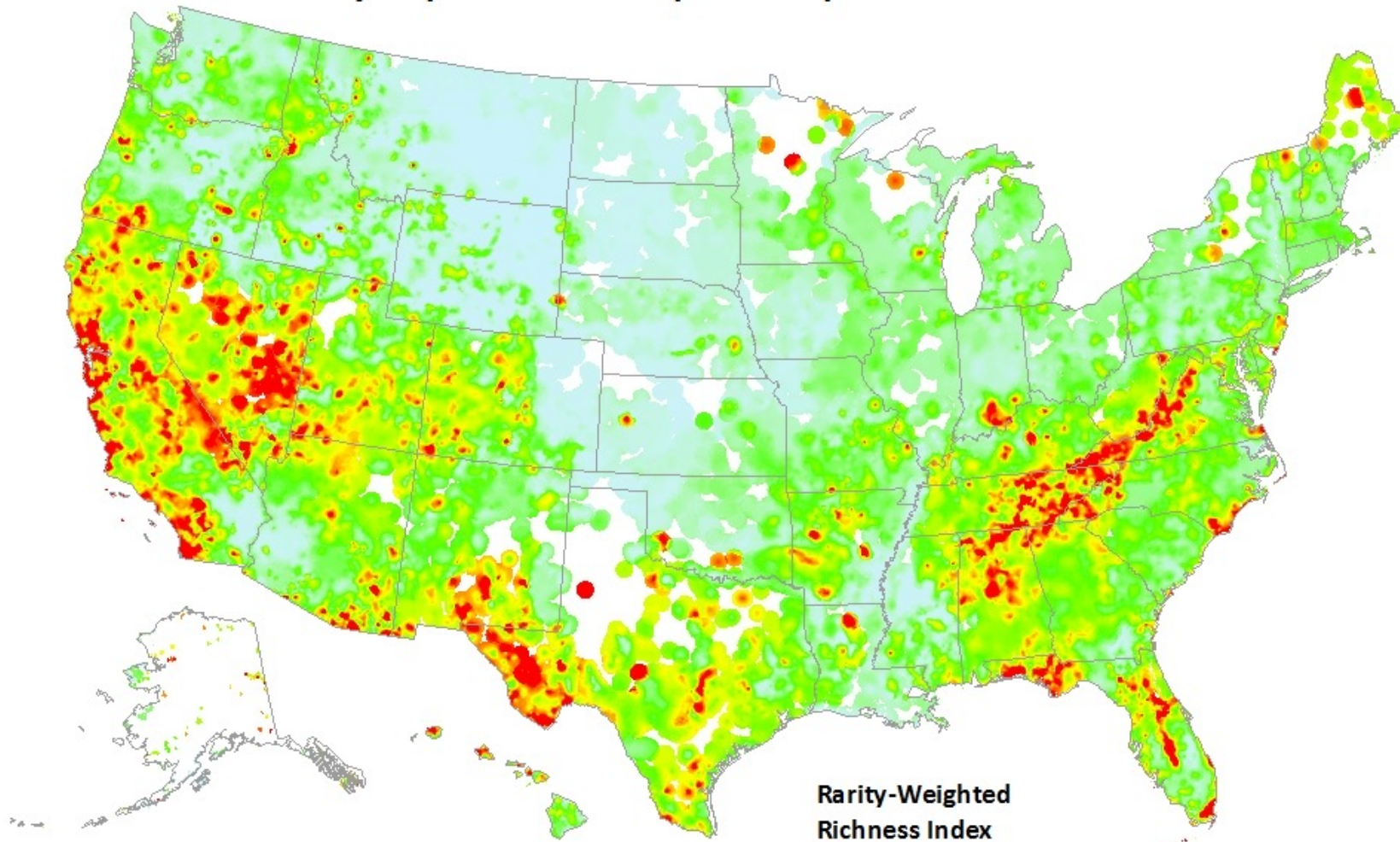


# Florida Natural Areas Inventory (FNAI)

- FNAI is Florida's Natural Heritage Program and is a member of the NatureServe network.
- Manage the database of current information on Florida's rarest species and natural communities.
  - Conduct surveys, support land management
- Based at Florida State University.
- Are not a law enforcement agency, just keep track of where species and communities occur.



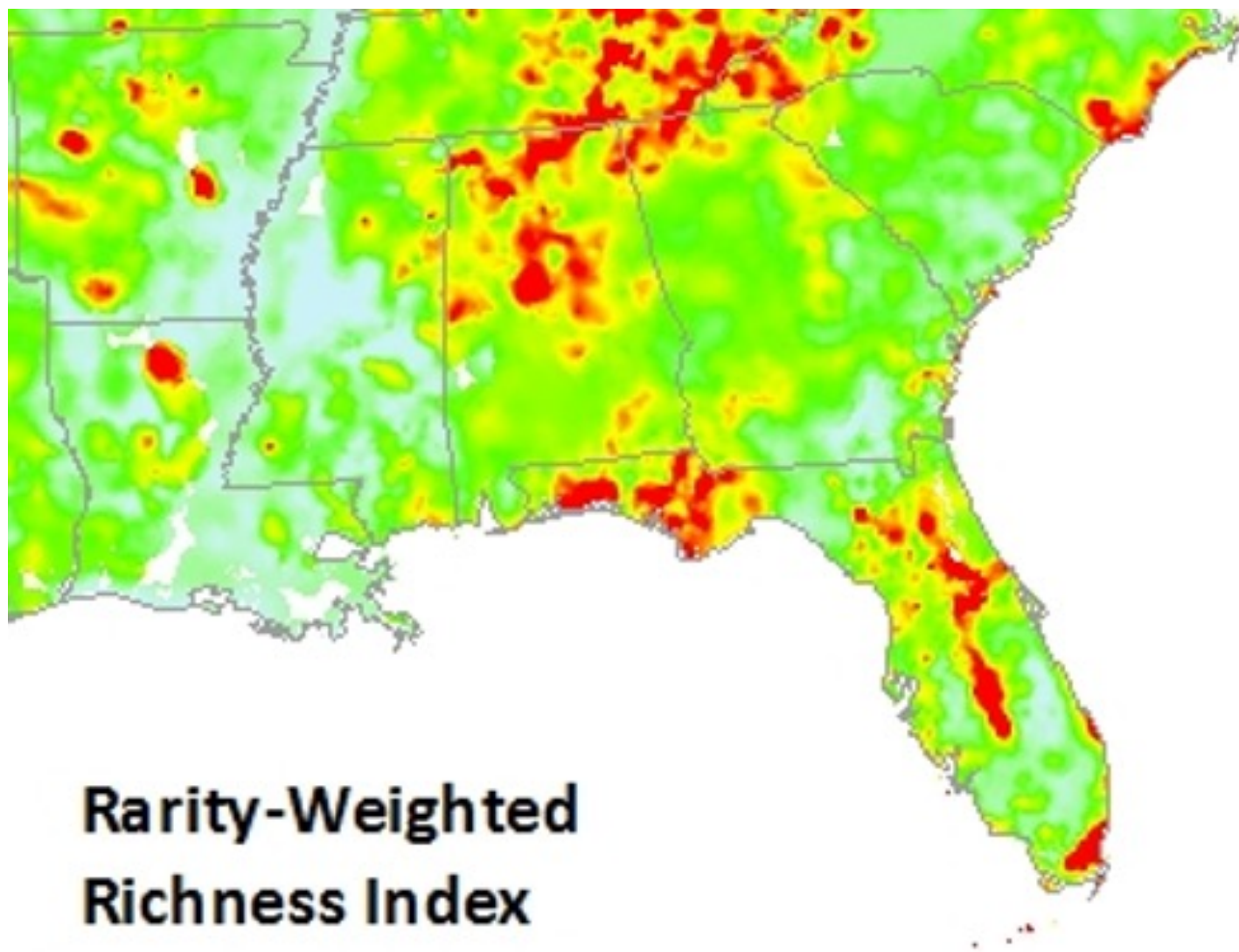
## NatureServe Rarity-Weighted Richness Model of Critically Imperiled and Imperiled Species in the United States



The continuous surface model representation of Rarity-Weighted Richness (RWR) of critically imperiled (G1) and imperiled (G2) species provides a picture of areas that represent concentrations of limited-range species and highlights locations with species composition different from adjacent areas. By combining overall species richness and the relative rarity (based on restricted distributions) of the species, this analysis points to locations that are essentially irreplaceable, and which present conservation opportunities that are found in very few other places.



Source: NatureServe and its Natural Heritage member programs 2013  
Produced by NatureServe, October 2013

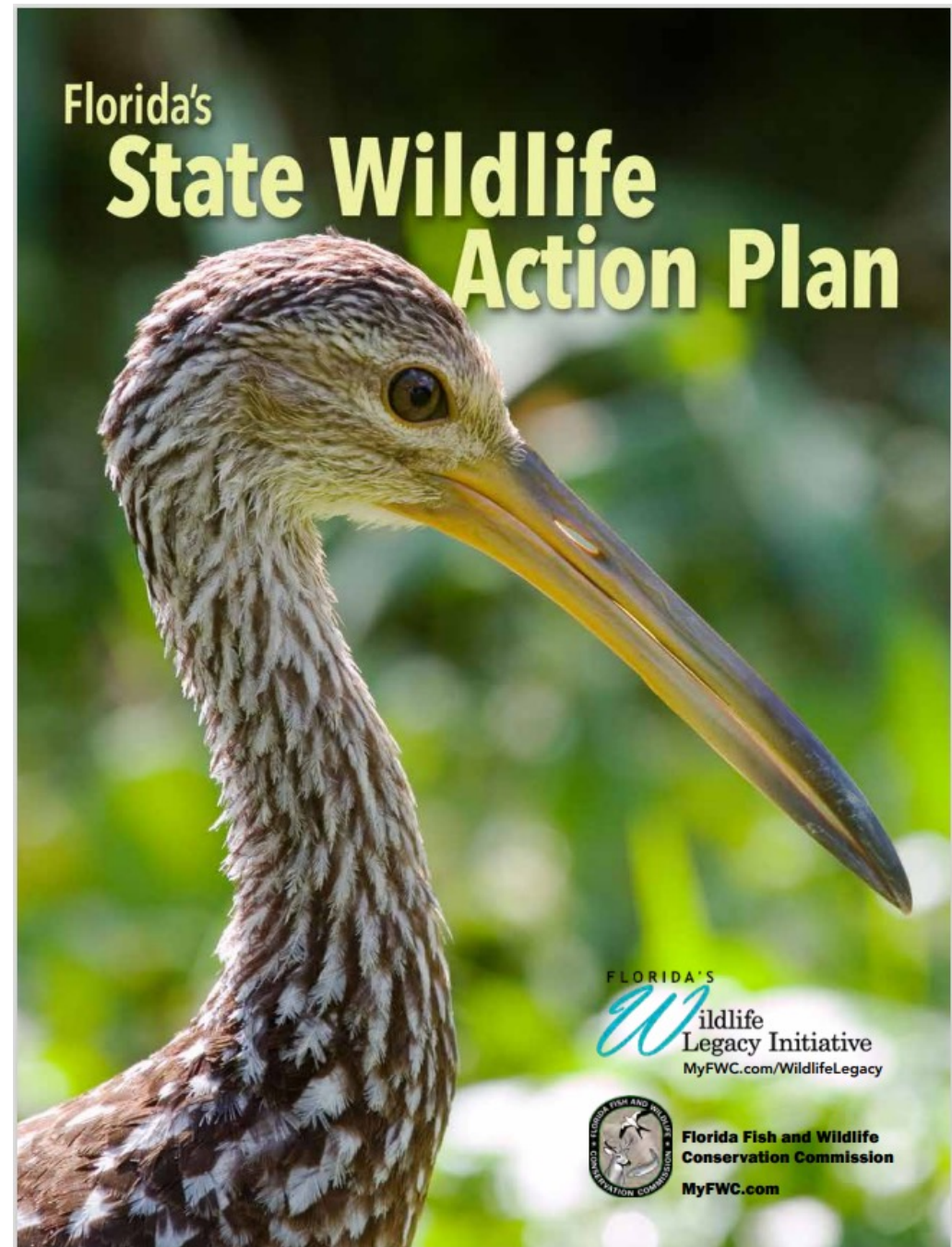


## Rarity-Weighted Richness Index



## Other Designations, Programs and Concerns in Florida:

- US Federal Threatened & Endangered Species List
- State ranking designations S1 through S5
- Florida State Wildlife Action Plan (SWAP)
- Species of Greatest Conservation Need (SGCN)
- Conservation Lands
- Florida Forever Program
- Florida Longleaf Pine Ecosystem Database
- Florida Forestry Wildlife BMPs for State Imperiled Species
- Invasive species



# Spring-run stream

## Natural community

- Status
  - FNAI rank G2
- Description
  - Aquatic
- Distribution
  - Counties – Alachua, Columbia, Jefferson, Levy, Madison, Suwanee, Gilchrist
- Threats
  - Water quality and water levels
- Forest Practice Recommendations
  - Implement BMPs, maintain SMZs



# Suwanee Moccasinshell (*Medionidus walker*)



- Status
  - FNAI Ranks: G1/S1
  - US Status: Threatened
- Description
  - Small bivalve mollusk, reaches a length of 2.1 inches. Shell is olive brown to brownish black.
- Habitat
  - Small creeks and rivers where current is slow to moderate. Prefers stable muddy sand and woody material such as embedded logs.
- Distribution
  - Suwanee River system, including the Santa Fe River.
  - Counties - Columbia, Dixie, Levy, Madison, Suwanee, Union
- Threats
  - Water quality and water levels
- Forest Practice Recommendations
  - Implement BMPs, maintain SMZs.



# Southern Hognose Snake (*Heterodon simus*)



- Status
  - FNAI Ranks G2/S2
  - US Status None
- Description
  - A relatively small (up to 20 inches) but very stocky snake with a sharply upturned, pointed snout. Not a rattlesnake.
- Habitat
  - Sandy uplands, scrub, old fields. Ephemeral wetlands that serve as breeding areas for toads upon which it feeds.
- Distribution
  - Northern two-thirds of Florida
  - Counties – Levy, Suwanee, Taylor
- Threats
  - Threatened by loss of upland habitat.
  - Fire ants
- Forest Practice Recommendations
  - Management of uplands, including use of prescribed fire.



The **Florida Natural Areas Inventory** is Florida's Natural Heritage Program and state member of the NatureServe network. We are housed within the Florida Resources and Environmental Analysis Center at Florida State University. We manage a database of current information on Florida's rarest species, maintain an inventory of the state's conservation land holdings, and conduct ecological surveys and analyses to support conservation planning and land management. Our program is entirely supported by projects developed in cooperation with agency partners.

[www.fnai.org](http://www.fnai.org)



### Vegetation Monitoring

FNAI monitors the structure and composition of vegetation on FWC wildlife management areas to guide land management, particularly the application of prescribed fire. [Find out more about this program here!](#)





## Rare Species and Communities We Track

FNAI maintains and continues to build the Natural Heritage database for the state of Florida. This database is the single most comprehensive compilation of records documenting the location and ecological status of rare plant and animal species in the state. Staff ecologists, botanists and zoologists, contract staff, volunteers and cooperating agencies, conduct the ongoing research and field inventory work, which populates the database. We derive records from historical reports, herbarium and museum specimens, agency records, in addition to precise field observations.

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### Biodiversity Matrix

The Biodiversity Matrix Map Server is a screening tool from FNAI that provides **immediate, free access** to rare species occurrence information statewide. This tool allows you to zoom to your site of interest and create a report listing documented, likely, and potential occurrences of rare species and natural communities.

The FNAI Biodiversity Matrix offers **built-in interpretation** of the likelihood of species occurrence for each 1-square-mile Matrix Unit across the state. The report includes a site map and list of species and natural communities by occurrence status: Documented, Documented-Historic, Likely, and Potential.

[Biodiversity Matrix Map Server Here](#)



### Searchable Field Guides & Tracking List

You can search our tracking list or download it as a pdf using the links below. You can obtain our Element Occurrence data by submitting a [data request](#). If you have observations of tracked species that you would like to share with us please see our [data submission](#) page. Search by element type and/or county. Choose "All Elements" and "Statewide" to view the full tracking list.

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Element Type

All Elements ▾

Location

Statewide ▾

Only include results with field guides?

No ▾

Include non-tracked species?

No ▾

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Element Type:  ▾
    
 Location:  ▾
    
 Only include results with field guides?:  ▾
    
 Include non-tracked species?:  ▾



Please use the tabs below to navigate the results. Example: clicking on "Plants" will show the plants results. More information about the data can be found in "Metadata" tab.

[Plants & Lichens](#)
[Invertebrates](#)
[Vertebrates](#)
[Natural Communities](#)
[Metadata](#)

#### Plants & Lichens

Group	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Tracked?
Plants and							

Element Type

All Elements ▾

Location

Lafayette ▾

Only include results with field guides?

No ▾

Include non-tracked species?

No ▾

Search

Please use the tabs below to navigate the results. Example: clicking on "Plants" will show the plants results. More information about the data can be found in "Metadata" tab.

Plants & Lichens

Invertebrates

**Vertebrates**

Natural Communities

Metadata

### Vertebrates

Group	Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status	Tracked?
Fishes	<i>Acantharchus pomotis</i> ⓘ	Mud Sunfish	G4G5	S3		N	Y
Fishes	<i>Acipenser oxyrinchus desotoi</i> ⓘ	Gulf Sturgeon	G3T2T3	S2?	T	FT	Y
Fishes	<i>Alosa alabamae</i> ⓘ	Alabama Shad	G2?	S1S2		N	Y
Fishes	<i>Ameiurus serracanthus</i> ⓘ	Spotted Bullhead	G3	S3		N	Y
Fishes	<i>Cyprinella leedsii</i> ⓘ	Bannerfin Shiner	G4	S3		N	Y
Fishes	<i>Enneacanthus chaetodon</i> ⓘ	Blackbanded Sunfish	G3G4	S1S3		N	Y

Reptiles	<i>Clemmys guttata</i> 🌐	Spotted Turtle	G5	S2S3	UR	N	Y
Reptiles	<i>Crotalus adamanteus</i> 🌐	Eastern Diamondback Rattlesnake	G3	S3	UR	N	Y
Reptiles	<i>Drymarchon couperi</i> 🌐	Eastern Indigo Snake	G3	S2?	T	FT	Y
Reptiles	<i>Gopherus polyphemus</i> 🌐	Gopher Tortoise	G3	S3		ST	Y
Reptiles	<i>Heterodon simus</i> 🌐	Southern Hognose Snake	G2	S2S3		N	Y
Reptiles	<i>Lampropeltis getula</i> 🌐	Eastern Kingsnake	G5	S1S2		N	Y
Reptiles	<i>Macrochelys suwanniensis</i> 🌐	Suwannee Alligator Snapping Turtle	G2	S2	PT	ST	Y
Reptiles	<i>Pituophis melanoleucus</i> 🌐	Pine Snake	G4	S3	UR	ST	Y
Reptiles	<i>Pseudemys concinna suwanniensis</i> 🌐	Suwannee Cooter	G5T3	S3		N	Y
Birds	<i>Aramus guarauna</i> 🌐	Limpkin	G5	S3		N	Y
Birds	<i>Athene cunicularia floridana</i> 🌐	Florida Burrowing Owl	G4T3	S3		ST	Y
Birds	<i>Dryobates villosus</i> 🌐	Hairy Woodpecker	G5	S3		N	Y
Birds	<i>Egretta caerulea</i> 🌐	Little Blue Heron	G5	S4		ST	Y

**SUWANNEE ALLIGATOR SNAPPING  
TURTLE**

*Macrochelys suwanniensis*

**Order:** Testudines  
**Family:** Chelydridae  
**FNAI Ranks:** G2/S2  
**U.S. Status:** none  
**FL Status:** Threatened



**Description:** This species, separated in 2014 from the widespread (western) alligator snapping turtle (*M. temminckii*), is similar to the latter in most respects. It reaches immense proportions: adult males as large as 30 in. (76 cm) and more than 200 lbs. (90 kg), with females somewhat smaller (to 24 in. = 60 cm). Like all snapping turtles (Chelydridae), it has a rough brown shell and very long tail, nearly as long as the body. Both currently recognized species of alligator snapping turtles are characterized by three sharp ridges or keels that run the length of the carapace, an exceptionally large head that is roughly triangular from above, a strongly hooked beak, laterally placed eyes, and an extra row of scales near the edge of the carapace between the outer marginals and inner costals. The caudal notch (posterior edge of carapace over the tail) is very wide and lunate (like a portion of a semicircle).

**Similar Species:** The two species of alligator snapping turtles are genetically distinguishable but also show minor morphological differences, the most obvious being the shape of the caudal notch (that of *M. temminckii* tending to be narrower and triangular or U-shaped); other minor skull and shell differences exist. Both are often confused with the common snapping turtle (*Chelydra serpentina*), which can also reach large size (to 18 in. = 46 cm). Although common snappers may have low keels on the carapace, especially when young, these are never as pronounced as those of alligator snappers. Also, the common snapping turtle has more dorsally situated eyes, a less strongly hooked beak, more rounded head in dorsal aspect, considerably longer neck, and no extra scale rows on the carapace between the marginals and costals. The long neck of *Chelydra* allows it to strike more rapidly and viciously than its larger cousins (*Macrochelys*), a character that is almost invariably demonstrated in the field.

**Suwannee Alligator Snapping Turtle**

*Macrochelys suwanniensis*

**Habitat:** Strictly a turtle of rivers and their tributaries, though utilizing backwater swamps and oxbow lakes. Presumably released animals have been reported from inland lakes.

**Seasonal Occurrence:** Present year-round but rarely observed because of secretive, bottom-dwelling habits. Females nest from mid-April through much of May, with young presumably emerging in August and September.

**Florida Distribution:** This species is endemic to the Suwannee River system and occurs from the river's mouth on the Gulf of Mexico upstream into all major tributaries.

**Range-wide Distribution:** Restriction to the Suwannee River system makes this turtle nearly endemic to Florida. However, it is expected to occupy stretches of the Alapaha and Withlacoochee rivers that extend into southernmost Georgia.

**Conservation Status:** The species may have been reduced by commercial and private trapping in past decades, but apparently less than *M. temminckii*, though this threat has been ameliorated by recent state rules prohibiting take. Important portions of the floodplain of the Suwannee River system in Florida have been protected by state and federal land acquisition, but water quality in at least part of the system remains threatened by pollution. Global warming (which could reduce numbers of male offspring produced) and coincident sea level rise (inundating the lower river) are expected to impact the species' long-term viability negatively, particularly in Florida.

**Protection and Management:** Take or possession of this species (statutorily included with *M. temminckii*) from the wild, as well as purchase, sale, or possession of turtles, eggs, or parts, is prohibited by Florida Fish and Wildlife Conservation Commission rules, except as authorized by agency permit. Enforcement requires continued vigilance by Commission law enforcement personnel. Management should focus on publicly acquiring remaining unprotected floodplains and immediately adjacent uplands within the Suwannee River system, as well as protection of water quality and flow throughout the drainage. Remove illegal or unattended trotlines, setlines, bush hooks, and traps, and consider prohibiting such methods in inhabited waters.

Suwannee Alligator Snapping Turtle

*Macrochelys suwanniensis*

**References:** Enge et al. 2014, Ewert et al. 2006, Moler 1996, Pritchard 2006, Thomas et al. 2014.



© Kevin Enge



Florida Natural Areas Inventory, January 2023

Suwannee Alligator Snapping Turtle

*Macrochelys suwanniensis*

caudal notch © Travis Thomas



juvenile © Kevin Enge

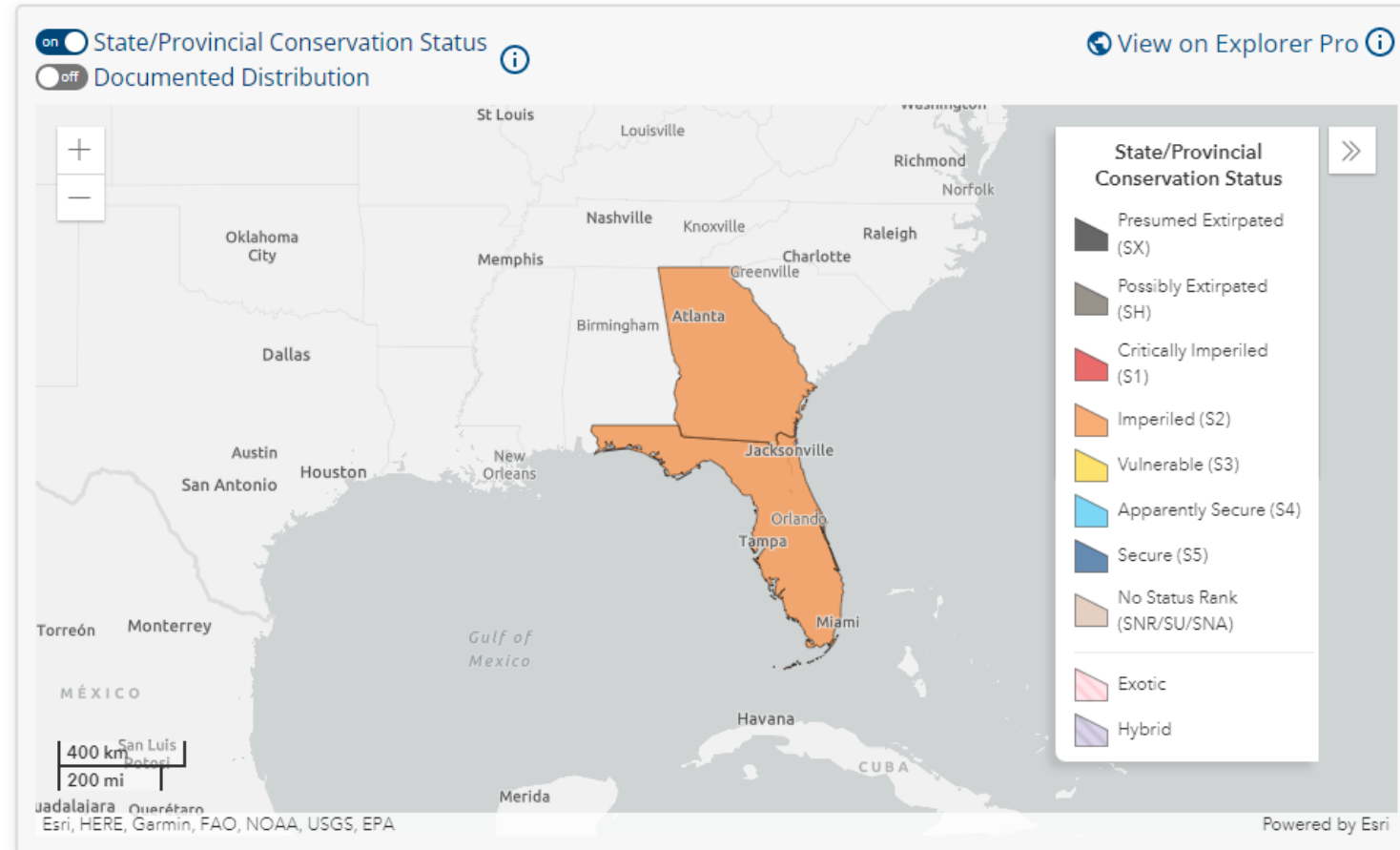
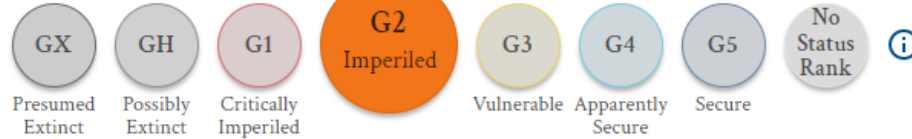
Florida Natural Areas Inventory, January 2023

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*Macrochelys suwanniensis*

[↻ New Search](#)

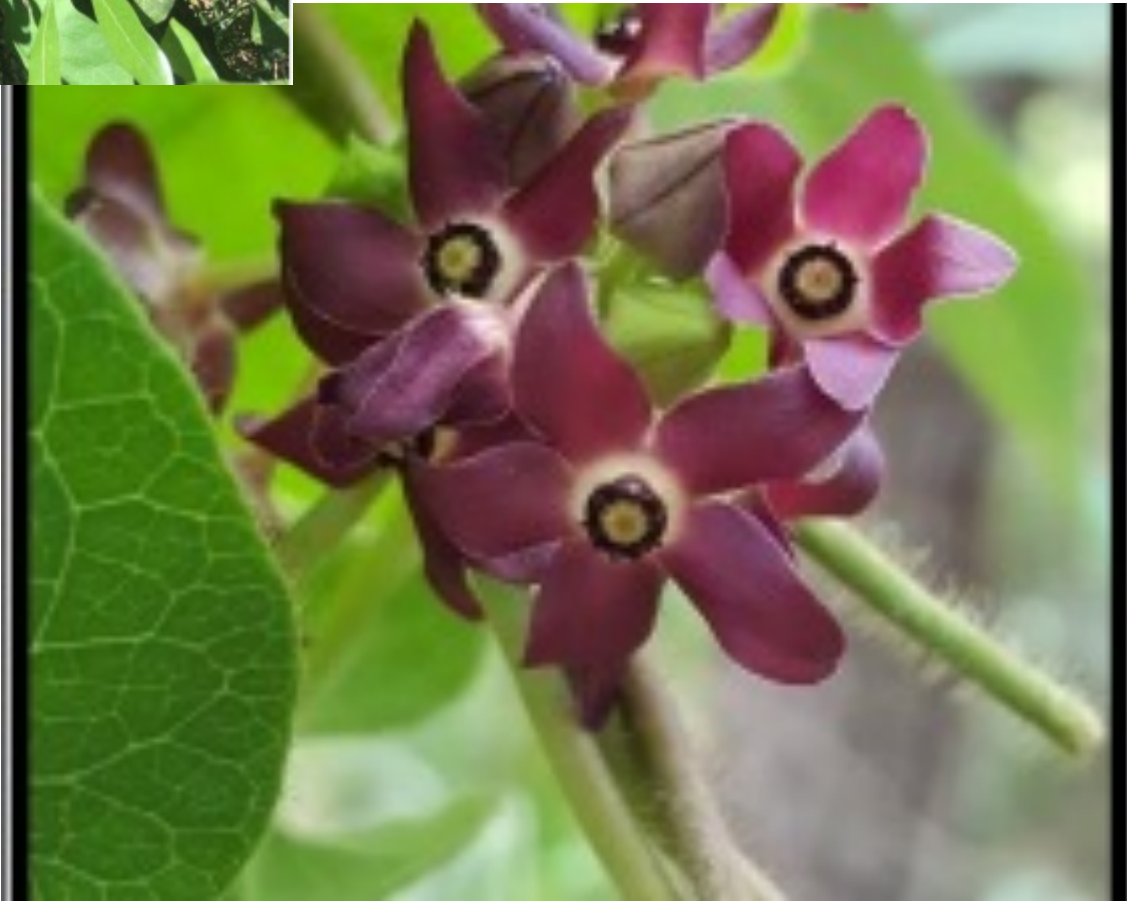
## Suwannee Alligator Snapping Turtle





# Florida spiny-pod (*Matelea floridana*)

- Status
  - FNAI Ranks G2/S2
  - US Status None (is FL Endangered)
- Description
  - Plant with spiny fruit capsules, has purple-black flowers
- Habitat
  - Sandhill, upland pine and dry hammocks
- Distribution
  - Endemic to Florida
  - Counties – Clay, Columbia, Levy, Madison, Suwanee
- Threats
  - Equipment can damage plants
- Forest Practice Recommendations
  - Prefer sunlight, use prescribed fire to maintain open forest
  - Protect from hogs
  - Use care maintaining roads/trails





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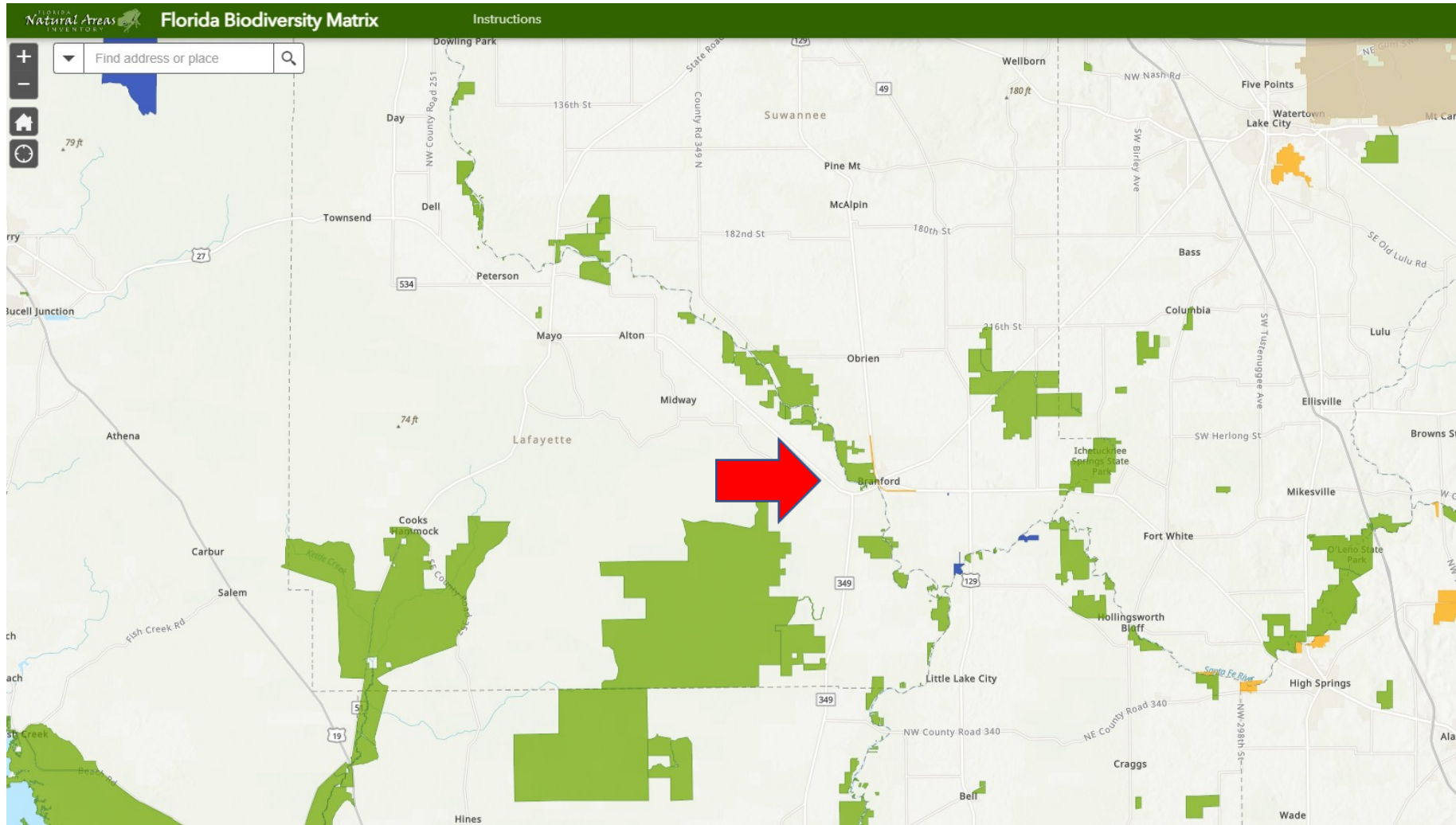


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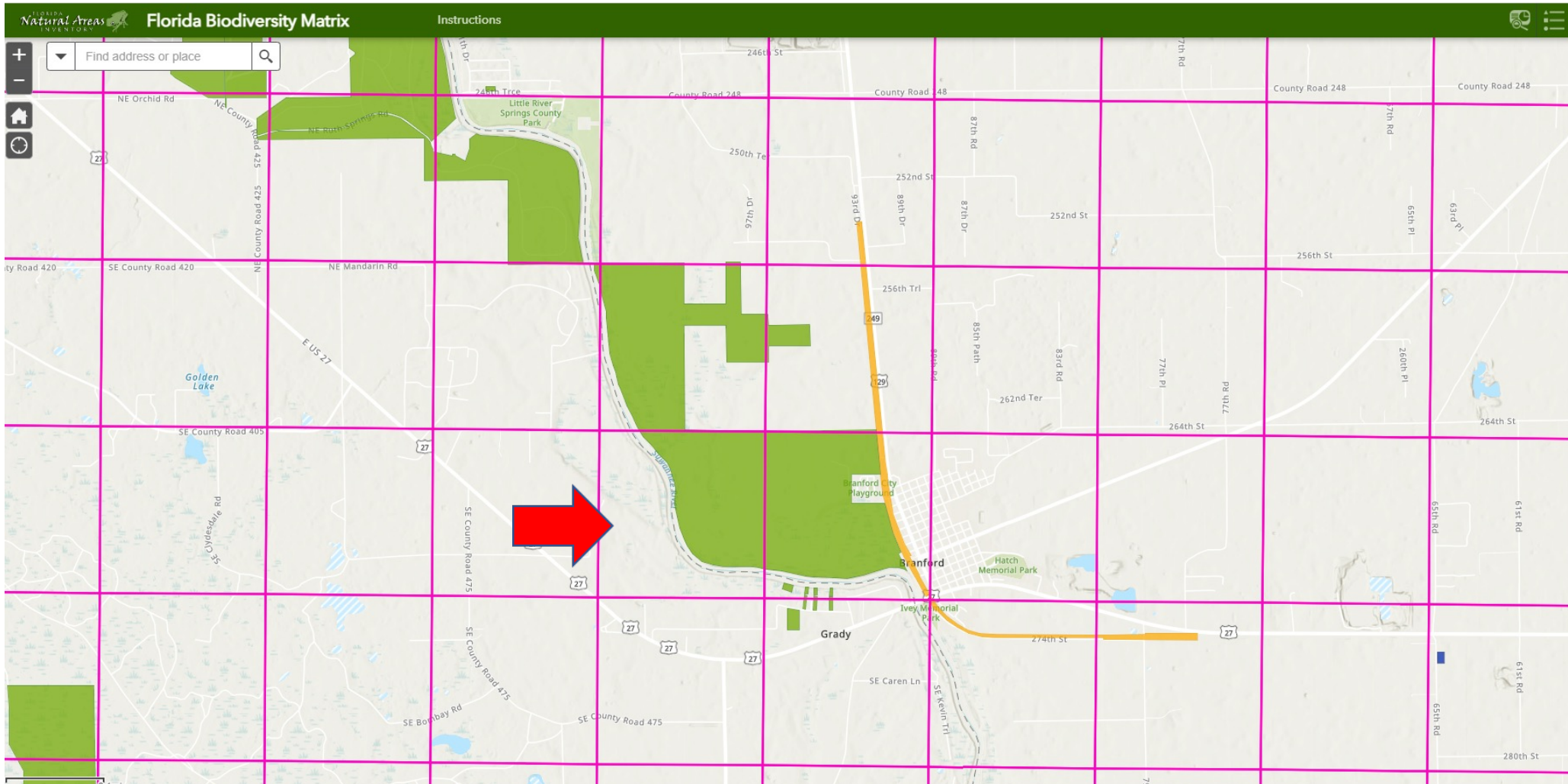
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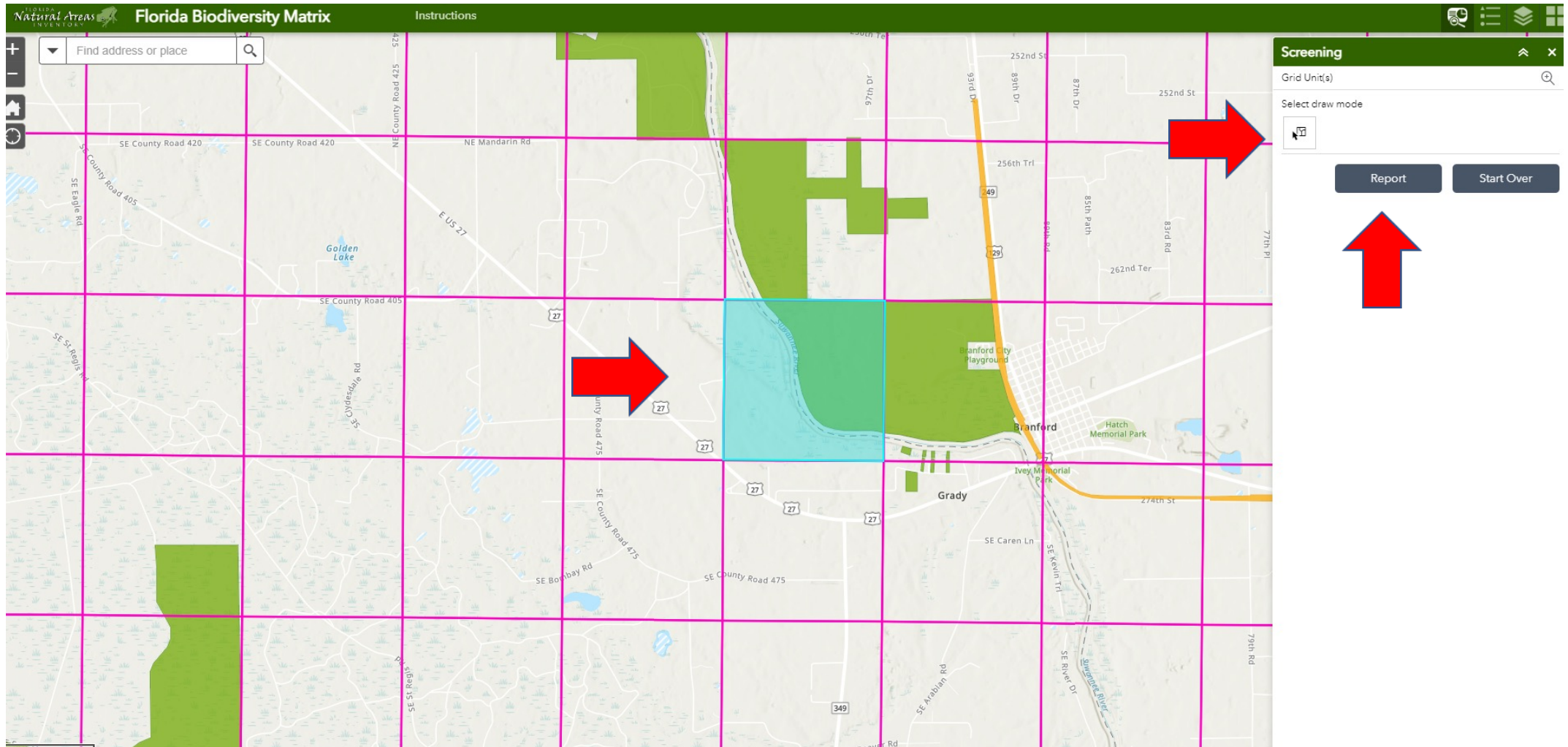
# FNAI Biodiversity Matrix – likelihood of species occurrence in 1 square mile unit



# FNAI Biodiversity Matrix – likelihood of species occurrence in 1 square mile unit



# FNAI Biodiversity Matrix – likelihood of species occurrence in 1 square mile unit



# FNAI Biodiversity Matrix – likelihood of species occurrence in 1 square mile unit



NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 1 Matrix Unit: 18815



**Descriptions**

**DOCUMENTED** - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

**DOCUMENTED-HISTORIC** - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

**LIKELY** - The species or community is known to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; or
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

**POTENTIAL** - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 18815

2 Documented Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<a href="#">Medionidius walteri</a> Suwannee Moccasinshell	G1	S1	T	FT
<a href="#">Pseudemys concinna suwanneensis</a> Suwannee Cooter	G5T3	S3	N	N

0 Documented-Historic Elements Found

6 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<a href="#">Acheilichthys oxyrinchus desotoi</a> Gulf Sturgeon	G3T2T3	S27	T	FT
<a href="#">Drymarchon couperi</a> Eastern Indigo Snake	G3	S27	T	FT
<a href="#">Gopherus polyphemus</a> Gopher Tortoise	G3	S3	C	ST
<a href="#">Nyctereis americana</a> Wood Stork	G4	S2	T	FT
<a href="#">Quadrula kleinhiana</a> Florida Mapleleaf	G2G3	S2	N	N
<a href="#">Upland hardwood forest</a>	G5	S3	N	N

Matrix Unit ID: 18815

22 Potential Elements for Matrix Unit 18815

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<a href="#">Desmoria incisa</a> incised groove-bur	G3	S2	N	T
<a href="#">Amphispoma tigrinum</a> Eastern Tiger Salamander	G5	S3	N	N
<a href="#">Amelurus serracanthus</a>	G3	S3	N	N

# FL SIC FECV Assessment – Published May 1 – Available to All FL SIC Certificate Holders

Figure 1: Florida Affected G1/G2 Species & Ecosystems				
Species	Classification		Ecosystems	Classification-Natural Communities
Impacted	Amphibians	7	Impacted	Scrub
	Beetles	15		Scrubby flatwoods
	Birds	1		Seepage slope
	Butterflies and Moths	5		Shell mound
	Clams and Mussels	1		Sinkhole
	Crabs, Crayfishes, and Shrimps	5		Slope forest
	Flies	1		Spring-run stream
	Mammals	3		Strand swamp
	Plants and Lichens	92		Upland glade
	Reptiles	5		Upland mixed woodland
	Springtails	1		Wet prairie
Possible Impact	Ants, Bees, and Wasps	9	Possible Impact	Classification-Natural Communities
	Beetles	40	1	Rockland Hammock
	Birds	1		
	Butterflies and Moths	4		
	Caddisflies	16		
	Clams and Mussels	10		
	Crabs, Crayfishes, and Shrimps	3		
	Dragonflies and Damselflies	1		
	Fishes	1		
	Flies	5		
	Grasshoppers and Allies	13		
	Mammals	2		
	Mayflies	2		
	Millipedes	3		
	Plants and Lichens	33		
	Reptiles	3		
	Snails and Allies	3		
Spiders	3			
Stoneflies	1			
True Bugs and Allies	1			

FL SIC FECV Assessment reveals forest practices may have an impact/possible impact on over 300 species and communities within 52 wood procurement counties in Florida.

# FL SIC FECV Assessment – Published May 1 – Available to All FL SIC Certificate Holders for Field Use

SCIENTIFIC_NAME	COMMON_NAME	COUNTY	Determination of Forest Management Impact (No Impact, Potential Impact, Impact)	BMP Implementation Coverage of Impact (Yes, No)	Forest Practice Recommendations to Benefit Species	FEDERAL	G_RANK	SWAP_SGC	TAX_GROUP	HABITAT
Eutrichota gopheri	Gopher Tortoise Burrow Fly	Lake County	Impact		6 Avoid gopher tortoise burrows		G2G3	N	Flies	abandoned field, pine plantation
Eutrichota gopheri	Gopher Tortoise Burrow Fly	Pasco County	Impact		6 Avoid gopher tortoise burrows		G2G3	N	Flies	abandoned field, pine plantation
Eutrichota gopheri	Gopher Tortoise Burrow Fly	Santa Rosa County	Impact		6 Avoid gopher tortoise burrows		G2G3	N	Flies	abandoned field, pine plantation
Eutrichota gopheri	Gopher Tortoise Burrow Fly	Wakulla County	Impact		6 Avoid gopher tortoise burrows		G2G3	N	Flies	abandoned field, pine plantation
Forestiera godfreyi	Godfrey's swampprivet	Alachua County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Citrus County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Dixie County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Duval County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Gadsden County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Gilchrist County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Jackson County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Jefferson County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Leon County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Levy County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Liberty County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Marion County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Forestiera godfreyi	Godfrey's swampprivet	Sumter County	Impact	No	7 Other		G2	N	Plants and Lichens	Upland hardwood forests with limestone
Geomysaprinus floridae	Equal-clawed Gopher Tortoise Hister Beetle	Hamilton County	Impact	No	6 Avoid gopher tortoise burrows		G2	Y	Beetles	pine plantation
Geomysaprinus floridae	Equal-clawed Gopher Tortoise Hister Beetle	Pasco County	Impact	No	6 Avoid gopher tortoise burrows		G2	Y	Beetles	pine plantation
Glandularia tampensis	Tampa vervain	Citrus County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Collier County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	DeSoto County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Hardee County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Hernando County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Hillsborough County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Indian River County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Lee County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Levy County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Orange County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Pasco County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Glandularia tampensis	Tampa vervain	Volusia County	Impact	No	3 Restore fire, prescribed burning		G2	N	Plants and Lichens	Openings in moist hammocks, live oak-ca
Hamamelis ovalis	Leonard's witch hazel	Jackson County	Impact	No	4 Very little known, species study needed		G2G3	N	Plants and Lichens	Well-drained sandy soils on mid-slopes (A
Hamamelis ovalis	Leonard's witch hazel	Santa Rosa County	Impact	No	4 Very little known, species study needed		G2G3	N	Plants and Lichens	Well-drained sandy soils on mid-slopes (A
Harperocallis flava	Harper's beauty	Bay County	Impact	Yes	3 Restore fire, prescribed burning	E	G2	N	Plants and Lichens	Wet prairies and pitcherplant bogs, espec



# How to Use FNAI Website Tools

Florida Natural Areas Inventory (State Natural Heritage Program) website  
[www.fnai.org](http://www.fnai.org)

**Tab:** Species & Natural Communities

**Dropdown:** Rare Species and Communities We Track

**Tool:** Searchable Field Guides and Tracking List – select County

*Plants & Lichens; Invertebrates; Vertebrates; Natural Communities*

**Tool:** Biodiversity Matrix Map Server – 1 square mile units across the state

*Generate report of potential occurrences of species/communities in selected area.*

*Can print a paper copy of report for stumpage tract file and/or landowner outreach.*

## 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** = - An infraspecific taxon or population has federal status but the entire species does not - status is in only a portion of the species range.  
**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.  
**DL** = Delisted.  
**UR** = Under review.

### 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.

# Are these rare?



Gopher Tortoise – G3/NR



Bald eagle – G5



Suwannee alligator snapping turtle – G2/PT



Eastern diamondback rattlesnake – G3/UR



Sinkhole – G2



Bartram's ixia – G2



American alligator – G5, SAT



Sherman's fox squirrel – G5



Florida black bear – G5



Florida toothache grass – G2