Chapter Three



Natural Resources

I. BACKGROUND

The East Central Florida Regional Planning Council (ECFRPC) is dedicated to the protection and enhancement of our natural communities and resources. To facilitate environmental planning and natural resource management the ECFRPC has prepared a series of datasets and policies that focus on the protection of "Natural Resources of Regional Significance" and environmental corridor connectivity.

Indicators of Environmental Stress:

- In 2006, the SJRWMD and the SFWMD declared ground water supplies were decreasing rapidly, causing damage to the Floridan aquifer and natural springs.
- Major hurricanes in 2004 and Tropical Storm Fay in 2008 caused significant flooding of roadways and homes, demonstrating the need for natural floodplain and wetlands protection.
- In 2007, the US Environmental Protection Agency declared three counties in central Florida, Orange, Osceola and Seminole, were at risk for being named non attainment in air quality

The rapid growth of the East Central Florida region since the end of World War II has resulted in an alarming amount of environmental damage, much of which has had a permanent impact on the region's natural landscape. In total, 394 square miles of habitat have been destroyed in the six county East Central Florida region plus Polk County.[1]

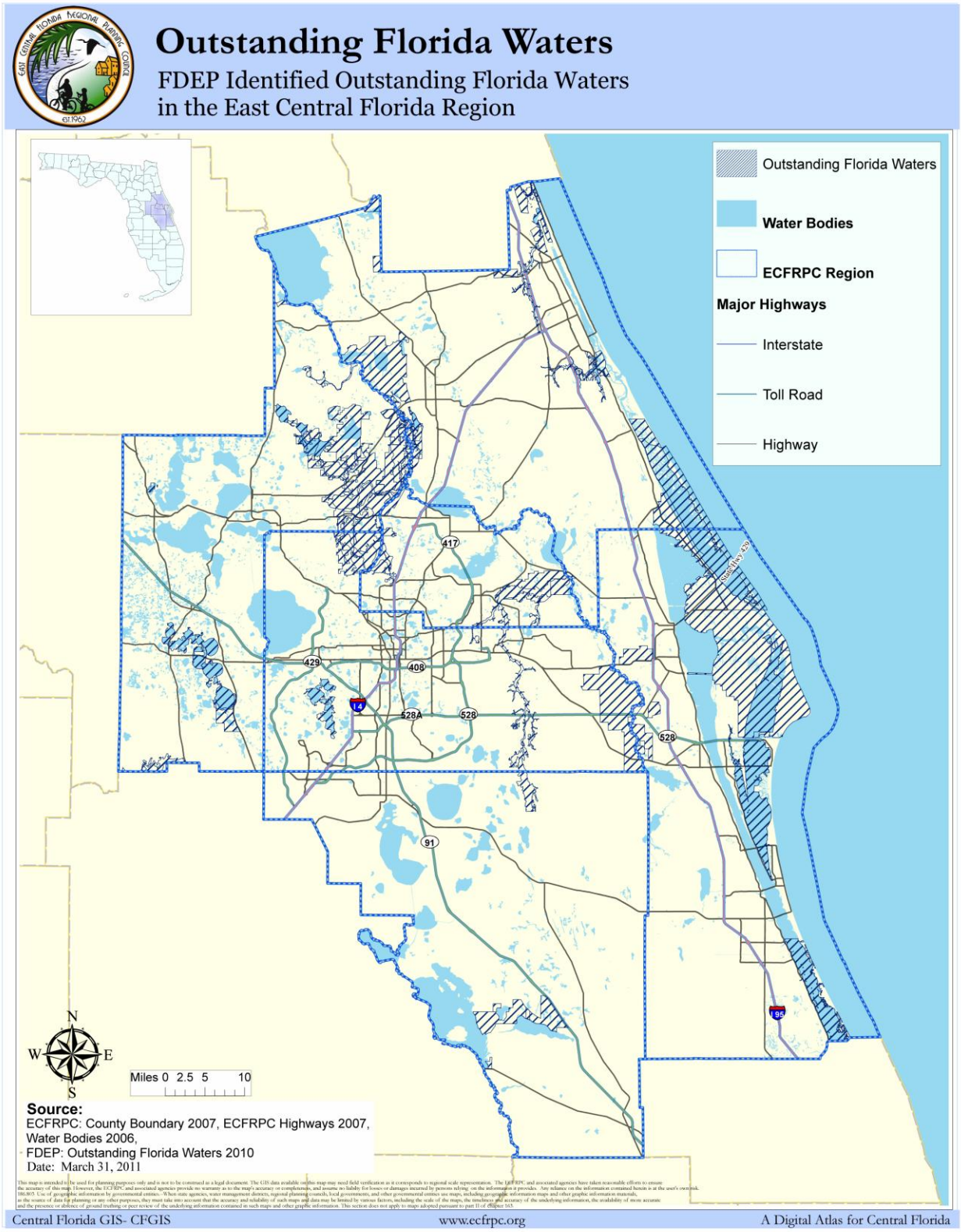
Significant natural resource areas that were once considered less valuable are now understood to be some of our most treasured lands deserving of protection. Today approximately one quarter of the region is in some form of conservation (acquisition or conservation easement) through initiatives at the federal, state and local level, including Florida's renowned Preservation 2000 and Florida Forever Programs. Although

[1] *Polk County was included in the "How Shall We Grow?" Regional Visioning Project. However, Polk Count is not within the boundaries of the ECFRPC*

important natural lands have been protected through these efforts, it is clear that the public purchase of environmentally sensitive areas alone will not be sufficient to ensure the long-term integrity of the region's natural resources and complex network of connected ecosystems.

In addition to the protection of natural lands, environmentally sensitive marine waters, estuarine waters, rivers, lakes, and other high quality bodies of water are found throughout East Central Florida. Many of these sensitive waters are worthy of special protection because of their natural attributes. Many have been classified as 'Outstanding Florida Waters'. This designation offers additional protections to assure water quality is maintained and enhanced. Most Outstanding Florida Waters are located within areas managed by the state or federal government and include wildlife refuges, preserves, marine sanctuaries, wild and scenic rivers such as the Wekiva River, aquatic preserves, and state or national forests. (See Figure 1. *Source: FDEP*).

Figure 1.


Outstanding Florida Waters
FDEP Identified Outstanding Florida Waters
in the East Central Florida Region
Outstanding Florida Waters
Water Bodies
ECFRPC Region
Major Highways
Interstate
Toll Road
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Source:
ECFRPC: County Boundary 2007, ECFRPC Highways 2007,
Water Bodies 2006,
FDEP: Outstanding Florida Waters 2010
Date: March 31, 2011
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Public and private open space is essential for the health and sustainability of our wildlife, water, air, soils, vegetative communities, water recharge areas, wetlands, and human environment. In addition to promoting a regional approach to land preservation, it is important to develop creative sustainable ways to protect, enhance and utilize natural resources. Smarter decision making about where and how development occurs and protecting working agricultural landscapes that complement the protection of natural resources will be critical to achieving a successful regional vision for the future.

Connection to the Central Florida 2050 Regional Vision

The "How Shall We Grow?" Regional Visioning Project, completed in August 2007, identified community values that should guide future growth and development. Preserving and enjoying the region's natural resources is the foundation of the shared vision for Central Florida, supported by more than 86% of residents surveyed. It was the number one priority for the majority of Floridians surveyed. This preferred shared future connects centers of development with corridors of multi-modal transit, preserving natural lands and protecting valuable countryside.

This chapter will discuss the following topics:

- The "Seven Environmental Jewels"
- Coastal Natural Resources
- Conservation Areas and Connectivity
- Natural Resource Partnerships
- Economic Benefits of Natural Resources
- Natural Resources of Regional Significance

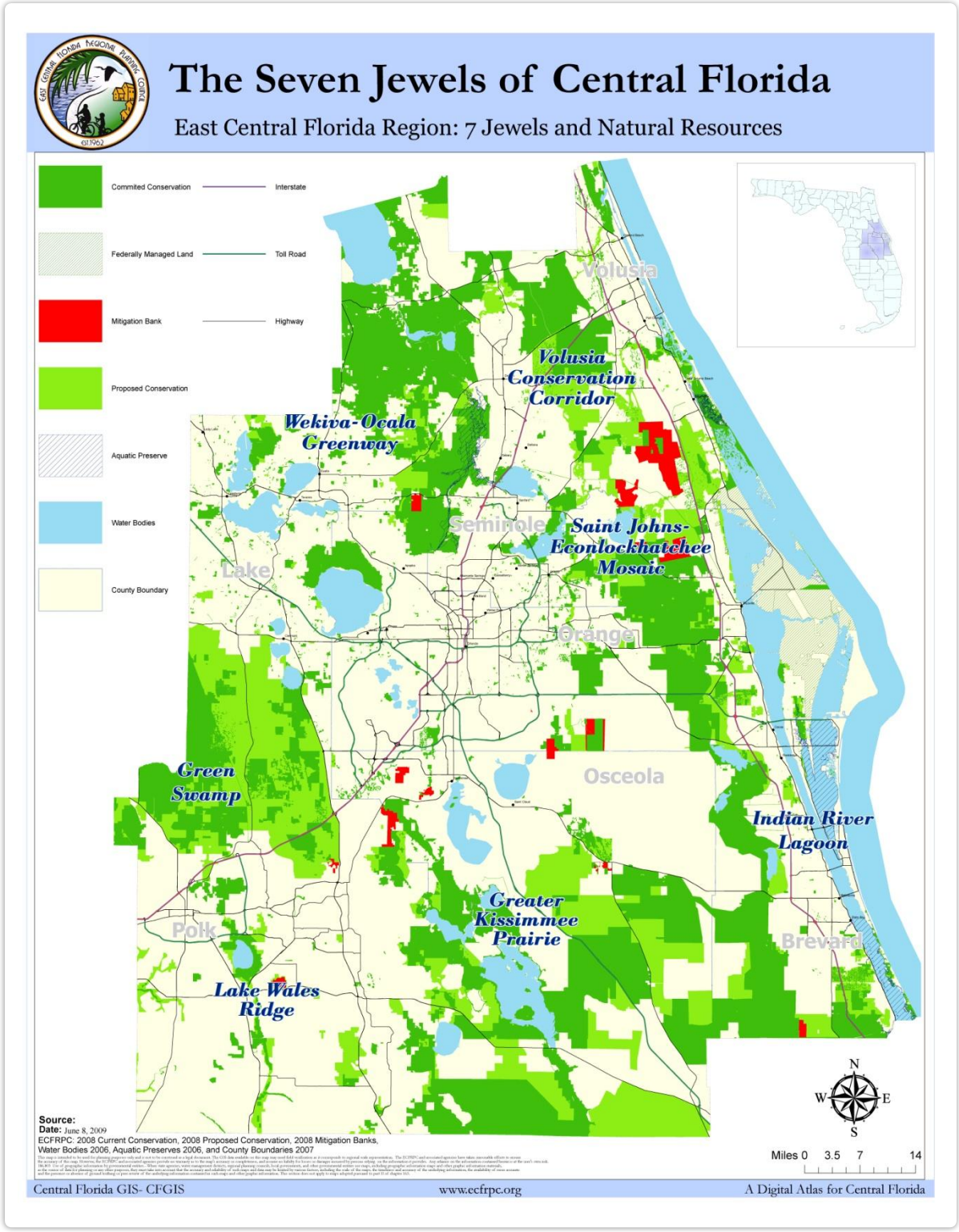
Critical natural resource questions are:

- What natural resource lands are most critical to protect the health and connectivity of functional ecosystems?
- How do we identify such lands?
- What policies should be used to avoid encroachment and to guide appropriate development when it may infringe on critical natural resources lands?

II. THE SEVEN ENVIRONMENTAL "JEWELS" IN CENTRAL FLORIDA

A holistic planning approach is necessary to maintain the integrity of significant natural resources within the region at both the large landscape level and within the context of specific site development. In 2004, Naturally Central Florida (a regional partnership initiative between *myregion.org* and the University of Central Florida Metropolitan Center for Regional Studies) conducted an evaluation of the most significant natural assets in the Central Florida region. The result identified seven environmental "jewels", or broadly described ecosystems, deserving of our most valuable preservation and protection efforts. No parcel-based map of the seven jewels was created, but a general acceptance of these seven broadly described ecosystem areas is shown in Figure 2.

These systems represent an interconnected green network of natural areas offering significant environmental and economic value to the region. Each of these "jewels" is associated with one or more land acquisition projects along with complementary land conservation efforts. In addition to these seven "jewels", the region contains other natural resources of significance that are important to the viability of species and ecosystems at a smaller scale or connectivity between ecosystems.


The Seven Jewels of Central Florida
East Central Florida Region: 7 Jewels and Natural Resources
Commited Conservation
Federally Managed Land
Mitigation Bank
Proposed Conservation
Aquatic Preserve
Water Bodies
County Boundary
Interstate
Toll Road
Highway
Volusia
Volusia Conservation Corridor
Wekiva-Ocala Greenway
Seminole
Saint Johns-Econlockhatchee Mosaic
Lake
Orange
Osceola
Green Swamp
Indian River Lagoon
Greater Kissimmee Prairie
Polk
Brevard
Lake Wales Ridge
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Miles 0 3.5 7 14
Source:
Date: June 8, 2009
ECFRPC: 2008 Current Conservation, 2008 Proposed Conservation, 2008 Mitigation Banks, Water Bodies 2006, Aquatic Preserves 2006, and County Boundaries 2007
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Figure 2.

St. Johns Mosaic & Econlockhatchee River

This system consists of basin lands surrounding the principle water course of the St. Johns River and the Econolockhatchee River. The St. Johns River is designated as an American Heritage River and is Florida's longest river at 310 miles. It flows north from a large marsh area in Indian River County to the Atlantic Ocean in Jacksonville, Florida. Its waters have been a rich source of history dating back to the native Timucua and Mayaca that settled upon its shores, followed by Florida pioneers who used the river as a corridor for travel and trade.

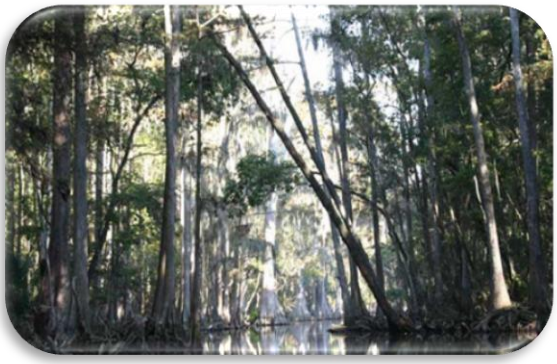


Photo courtesy of St. Johns River Alliance

Along the way, the river passes through the valley of an ancient lagoon and a delicate regional system of interconnected lakes. This broad river system is fueled by numerous creeks, springs, and swamps that encompass a drainage area of more than 9,415 square miles of land. The Econlockhatchee originates from cypress swamps in south Orange and north Osceola counties and is part of a 280-mile watershed designated an Outstanding Florida Water.

The Indian River Lagoon

Atlantic Salt Marsh Snake, photo courtesy of Fish and Wildlife Service

The Indian River Lagoon ecosystem is one of the most biologically diverse estuarine ecosystems in North America. It is a complex and unique geological and ecological ecosystem with historical, social, economic, and environmental significance. Together with the Banana River and Mosquito Lagoon, the Indian River Lagoon is part of a larger system of interconnected estuaries stretching 156 miles along Florida's east central coast.

The Indian River Lagoon is home to more than 4,300 different species of plants and animals. The Atlantic Salt Marsh Snake is endemic to the lagoon; the green and loggerhead sea turtles nest and forage in the area; and the West Indian Manatee uses the lagoon's warm shallow waters for calving and feeding. Over 92,000 acres of coastal mangrove, wetland, and seagrass habitat support commercial and sport fishing industries in Volusia and Brevard counties.

> Shellfish harvesting contributes to the Indian River Lagoon's more than $3 billion per year in economic value to the region (IRL Estuary Program)

The Kissimmee Prairie

Courtesy of Naturally Central Florida (Harold Malde)

The Greater Kissimmee Prairie comprises open stretches of prairie, marshes, oak hammocks, cypress domes, rivers, wetlands, lakes and pine flatwoods extending south from Orlando and encompassing the Kissimmee River basin through Osceola County. A myriad of lakes, creeks, and sloughs feed southward into Lake Kissimmee. Along with the Osceola Plain, this large landscape contributes to the headwaters of both the St. Johns River and the Kissimmee River, forming the basis of the freshwater and wildlife habitat that extends southward to the Everglades and Florida Bay.

The Volusia Conservation Corridor

The Volusia Conservation Corridor is the 'wild heart' of Volusia and Flagler Counties. By design, this corridor connects more than one million acres of publicly managed and protected conservation lands that stretch from the Everglades to the Okeefonokee Swamp. On a statewide scale, the corridor is an important linkage in Florida's system of migratory wildlife greenways. To the south are the headwaters of the St. Johns River and a series of important conservation areas. To the north, the corridor links conservation lands including Heart Island Conservation Area, Lake Woodruff National Wildlife Refuge, and Lake George State Forest, which span the eastern shore of the St. Johns. On the opposite shore are wilderness areas of the Ocala National Forest.

The Green Swamp

The 'liquid heart' of Florida lies in the backcountry between Tampa and Orlando. Encompassing 870 square miles, the Green Swamp contains the state's second largest wetland system. This unique and fragile ecosystem is a mosaic of pine flatwoods, hardwood forests, cypress swamps, prairies and sand hills. The swamp is geologically distinguished by its large, raised plateau of limestone resting just underneath or at the soil's surface over the Floridan Aquifer. The Green Swamp's highest elevation rises 132 feet above mean sea level, and like an underground water tower provides pressure for a multitude of springs, the base flow of five major rivers, and hydrologic support for countless lakes, ponds, seeps, and wetlands. This pressure system serves as an important supply of fresh water and curbs coastline salt-water-intrusions into the aquifer. In 1974, nearly 300,000 acres within the Green Swamp of Lake and Polk Counties were designated as an Area of Critical State Concern, thereby providing for greater oversight of development by the State.

The Wekiva-Ocala Greenway

Derived from Seminole words meaning "flowing water," the Wekiva River begins its meandering journey at Wekiva Springs State Park and is joined by the spring-fed waters of Rock Springs Run, the Little Wekiva River, and Seminole Creek. Blackwater Creek, named for its darker tannic color, flows from Lake Norris and merges with the Wekiva near its confluence with the St. Johns. The basin is part of a greater ecological corridor extending north into the Ocala National Forest, which encompasses half a million acres of federally managed woods and wetlands. The Wekiva-Ocala Greenway boasts dozens of natural springs, the greatest expanse of sand pine scrub in the world, and the largest black bear population in Florida.

The Wekiva River system has received various protective designations, including recognition as a Federal Wild and Scenic River and an Outstanding Florida Water. In 1988, the Florida legislature adopted the Wekiva River Protection Act to ensure protection of the waters, wetlands, and wildlife. In 2004, the Wekiva Parkway and Protection Act was passed to further safeguard natural resources including groundwater, while providing for the completion of a beltway around Orlando. One outcome of this act was ultimately the formation of the Wekiva Commission, which was established as an oversight committee to protect the natural resources of the Wekiva Basin as the beltway is developed.

The Lake Wales Ridge

The Lake Wales Ridge includes the oldest chain of historic paleo-islands that existed more than a million years ago when ocean levels were higher and the rest of the peninsula was submerged. That ancient emergence has crafted unique and diverse ecosystems 295 feet above sea level today, which include species of plant and animal life found nowhere else in the world.

While scrub habitat dominates the Lake Wales Ridge, other habitats are found along the 150 mile long ridge, such as sand hills, pine flatwoods, and sinkhole lakes. Approximately forty species of threatened and endangered plants and animals call the Ridge home, including the Florida Scrub Jay, the Gopher Tortoise, and the Sand Skink.

III. COASTAL NATURAL RESOURCES

East Central Florida's coastal counties, Brevard and Volusia, contain 119 miles of coastline with significant sensitive environmental lands and strategic habitat. Brevard County has the largest collection of endangered wildlife and plants in the continental United States, including manatees, sea turtles, and other marine and coastal life. The Archie Carr National Wildlife Refuge is home to the most important sea turtle nesting beaches in the western hemisphere. Volusia County is renowned for its world-class beaches including Daytona Beach, a major economic driver for the county and region. Acquisition efforts through Florida Forever have conserved more than 70,000 acres in coastal watersheds and 6,600 acres of significant coastal resources (TNC, 2009).

According to the Central Florida Regional Indicators Report (myregion.org 2005), nesting areas for aquatic birds can help to provide a long term indicator of marine and terrestrial habitat health.

Halifax River (Wikepedia-Gemcam)

The quality of coastal habitats is important to the overall environmental health of the region. Coastal and estuarine water quality and aquatic habitat affects local commercial aquatic industries. Additionally, coastal tourism is vital to the regional economy, making the protection of the area's coastal resources, beaches, dunes, reefs, mangroves, and estuaries of critical importance. In 2007, Volusia County experienced 5 Contamination Advisories, up to 8 days each, due to elevated bacterial levels and adversely affecting wildlife. Brevard County beaches experienced no "beach actions" due to water quality.

Courtesy of Ryan Hagerty, USFWS

Coastal features also provide a natural buffer to storm surge from tropical systems. Beach erosion is a multi-faceted problem for communities along the coast, affecting coastal habitat and turtle nesting grounds, property structures and value, infrastructure, and the economy. A Critically Eroded beach is a segment of the shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat or important cultural resources are threatened or lost (*myregion.org*). Thirty-seven (37) miles of the Brevard County coastline is classified as Critically Eroded (Canaveral, Indialantic, and Melbourne Beaches). Volusia County's shores comprise twenty-one (21) miles of Critically Eroded beaches and Ponce de Leon Inlet North is classified as a Critical Inlet Shoreline. It is apparent that development and infrastructure have impacted delicate coastal resources and habitats.

IV. CONSERVATION AREAS AND CONNECTIVITY

Various public and private conservation efforts protect critical habitat and ecological corridors throughout the region. This includes lands that have been acquired and are managed for conservation by public agencies such as the U.S. Forest Service, Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, Water Management Districts, or local governments. Environmental lands have also been protected through mitigation banks, land trusts, and the work of private conservation organizations. The Trust for Public Lands, the Nature Conservancy, and the Conservation Trust for Florida are examples of expert organizations focusing on efforts to conserve and preserve natural resources through partnerships, acquisition funding and other techniques and resources.

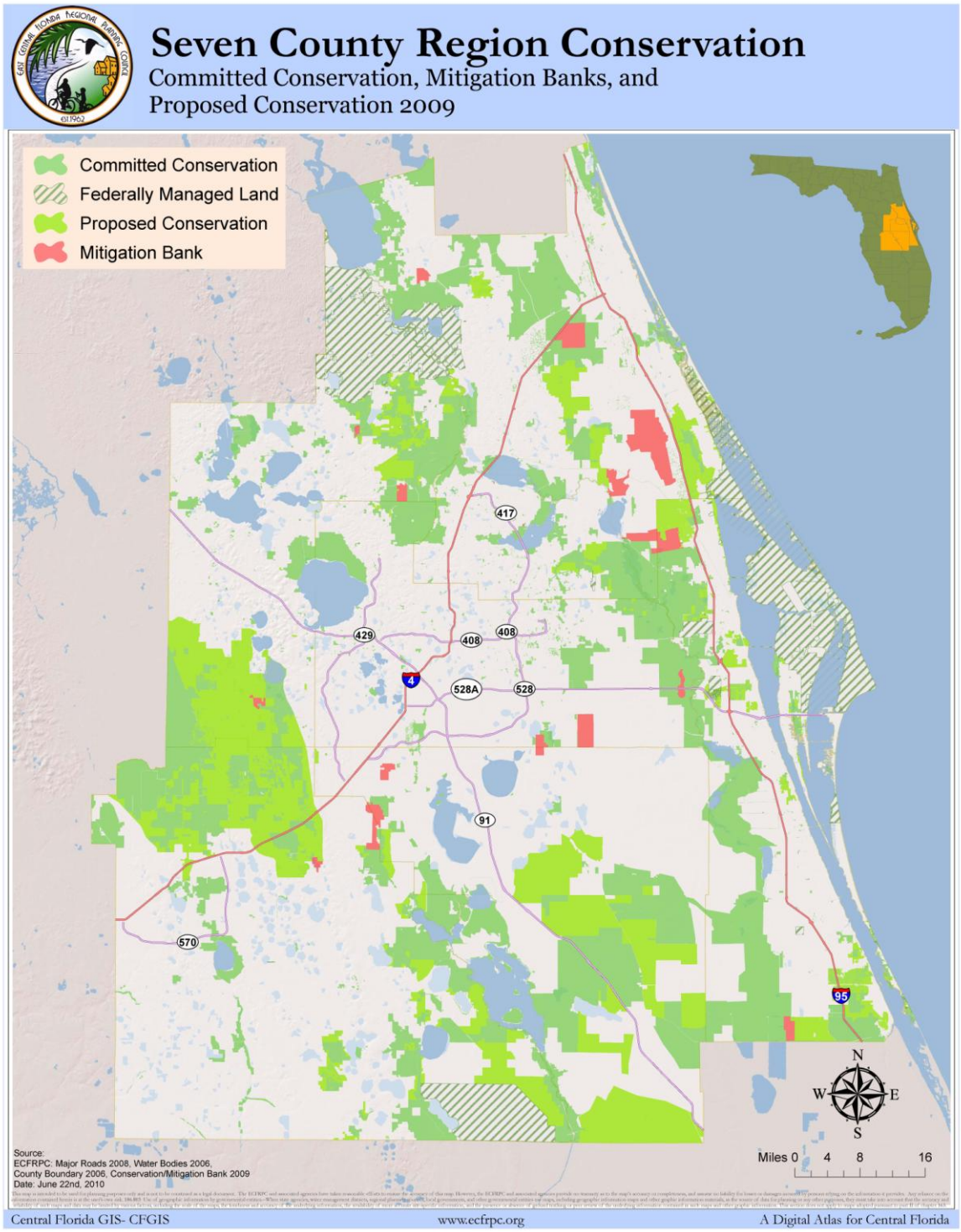
There are nine CoBRA areas in the East Central Florida Region:

- Canaveral (5 separate areas)
- Ponce Inlet
- Ormond by the Sea
- Spessard Holland Park
- Coconut Point

In addition to outright acquisition, conservation easements provide a tool to permanently preserve private land and reduce or extinguish development rights. In this case, the property owner is typically responsible for managing the land to maintain its conservation value. Conservation easements that allow farmers and ranchers to remain in production while protecting valuable natural resources can be a win for private landowners, the economy, and the environment. The Coastal Barrier Resources Act (CoBRA), administered through the U.S. Fish and Wildlife Service, is one avenue of protecting ecologically sensitive land, geologically vulnerable land, and the aesthetic and recreational values of barrier islands. The CoBRA areas in this region are generally undeveloped, except for the southern CoBRA areas of Brevard County, which are partially developed. Acquisition efforts are not always sufficient to protect valuable resources and habitat, therefore, to conserve critical habitat and deflect development away from sensitive areas, creative design is essential.

As development occurs throughout the region and connectivity takes place between counties and cities, critical ecosystem corridors are often crossed by infrastructure such as roadways. It is important to prevent the isolation of habitats from one another. The use of bridges and wildlife crossings and underpasses can help to preserve migration corridors and large home ranges for animals such as panthers and black bears. Fragmentation also makes land management efforts such as prescribed burning more difficult for land managers.

According to Florida Natural Areas Inventory's (FNAI) report on Conservation Lands by County (October 2008), there are approximately 938,570 acres of conservation lands in the East Central Florida Region. This acreage consists of both public and privately owned lands. The largest single holding is the Ocala National Forest with 383,643 acres.


Seven County Region Conservation
Committed Conservation, Mitigation Banks, and
Proposed Conservation 2009
Committed Conservation
Federally Managed Land
Proposed Conservation
Mitigation Bank
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Source:
ECFRPC: Major Roads 2008, Water Bodies 2006,
County Boundary 2006, Conservation/Mitigation Bank 2009
Date: June 22nd, 2010
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Figure 3.

Table 1 illustrates the breakdown of county conservation lands by Lead Managing Agency, as indicated in the FNAI October 2008 Conservation Lands by County summary.[2]

Table 1: Conservation Lands in the East Central Florida Region by Lead Managing Agency in 2008

County	Local Acres	State Acres	Federal Acres	Private Acres	Total Acres	% of County in Conservation
Brevard	15,410	146,220	92,140	0	253,770	39%
Lake	8,590	103,900	85,260	360	198,110	32%
Orange	8,700	83,090	0	350	92,140	16%
Osceola	4,680	159,310	0	5,110	169,100	20%
Seminole	6,850	27,680	490	660	35,680	18%
Volusia	37,320	119,020	33,230	150	189,770	27%

(FNAI, 2008)[3]

[2] *The numbers indicated in Table 1 do not include open water on Florida Managed Area (FLMA) boundaries.*

[3] *As per FNAI (http://www.fnai.org/pdf/MA_acres_counties.pdf): "Conservation lands include public and some privately owned lands managed for conservation of their natural resources; public lands that are not managed for conservation (e.g., schools and prisons) are not considered conservation lands and are not included in this data set. Conservation lands acreages are tabulated by county from the FNAI FLMA GIS data layer. These totals do not include open water on FLMA boundaries. Additional acres of managed areas, tracked in FNAI's database with no GIS boundaries, are added for the final total. FNAI tracks some additional managed areas without definitive acreage-by-county information. Those acreages are not reflected in this table. Recent acquisitions may not yet be reflected in acreage totals. County areas are derived from the National Association of Counties. "State" includes lands managed by state agencies and water management districts."*

Archie Carr National Wildlife Refuge

This 20-mile stretch of barrier island oceanfront represents one of the most essential sea turtle nesting areas in the world and is one of the most important coastal conservation initiatives in America. It reshaped coastal development patterns on a Florida east coast barrier island by integrating with coastal settlements in Brevard and Indian River Counties.

This conservation network:

- protects natural habitats and species;
- creates valuable green space for local communities;
- attracts visiting scientists from around the world;
- is the planned location for construction of a world-class marine and coastal research center;
- offers exceptional beach and water access opportunities for recreation and tourism;
- limits development density in a fragile, high-hazard coastal community.

While some conservation lands are wholly located within the ECFRPC six-county region, other managed areas extend beyond regional boundaries. Including properties both partially and entirely located in the ECFRPC region, there are more than 1.6 million acres of land in conservation. These lands have significant regional importance as ecological corridors for statewide ecosystem connectivity extending beyond the East Central Florida Region. Regardless of size, all conservation properties play an important role in creating a system of linked natural areas that aid in maintaining long-term, viable, and diverse populations of plant and animal species.

Current modeled development trends, as noted in Chapter 1, suggest that by the year 2050, over 600,000 additional acres of environmentally sensitive land may be lost to development. Recognizing that today only about one quarter of the region is protected in some form of conservation and the uncertain future of existing land acquisition programs, this underscores the critical need to plan for a form of growth that is more compact and environmentally sustainable, requiring the protection of environmentally-sensitive lands as a condition for development and developing methods of ensuring the long-term viability of rural agricultural landscapes that are compatible with conservation.

V. NATURAL RESOURCE PARTNERSHIPS

Natural Resource protection is often the result of numerous partnerships forged not only for the acquisition process, but management purposes as well. In many cases, a number of agencies partner to make a project successful and pull together financial, administrative, management and other resources. For example, Shingle Creek Regional Park in Osceola County brought together eight partners necessary for the project's acquisition and management.

Archie Carr National Wildlife Refuge, photo courtesy of NWS

The Archie Carr National Wildlife Refuge regional partnership demonstrates the potential economic value of an expanded green space network strategically located and designed for the East Central Florida region. The Archie Carr National Wildlife Refuge in Brevard and Indian River Counties exemplifies a regional conservation project with global ecological and economic significance, with over $100 million in public funds (federal, state and local) being invested in the conservation initiative, together with significant private conservation funding from the Richard King Mellon Foundation American Land Conservation Program (over $40 million).

VI. ECONOMIC BENEFITS OF NATURAL RESOURCES

Open space and conservation lands are vital in the protection of ecosystems and species, but they also play an essential role in the economy of the state and the health of the environment. Since 1979, Florida has led the nation by purchasing 3.8 million acres of conservation lands through the state programs of Conservation and Recreational Lands (CARL), Preservation 2000, and Florida Forever. It is important to realize the economic and environmental benefits of these large conservation areas and supporting nature based activities.

Natural resource areas stimulate the local economy through job creation, tax revenues and direct/indirect economic impacts. According to The Nature Conservancy, $43,400 of direct local economic impact is generated for every 1000 people visiting a state park.

A statewide estimate on direct recreation expenditures on retail sales, taxes, and jobs for 2007 indicates a total of over $11 billion in positive economic impacts and almost 120,000 jobs.

Table 2: Statewide Economic Impacts of Conservation Areas in Florida

Category	Retail Sales	State and Local Taxes	Economic Impact	Jobs
Hunting	$411,861,741	$44,615,542	$719,06,045	10,313
Freshwater Fishing	$1,415,175,234	$132,376,942	$2,423,337,458	23,480
Saltwater Fishing	$3,067,387,722	$318,522,000	$5,243,450,735	51,588
Wildlife Viewing	$1,895,916,551	$210,357,192	$3,226,164,233	34,523
Total	**$6,790,341,24848**	**$705,871,676**	**$11,612,018,471**	**119,904**

(Defenders of Wildlife, 2008)

Protected public lands attract visitors and often increase the value of surrounding properties. According to a study for the Trust for Public Lands single family homes found within 100 feet of natural areas were worth $14,400 (Leon County) and $8,200 (Alachua Counties) more than other homes (TNC, 2009).

Quantifying the total value of benefits provided to people by natural ecosystems, such as water purification, flood control, or carbon sequestration is commonly referred to as a measurement of "ecosystem services". Although society has historically considered these services to be "free", it may be necessary to identify means of compensating private landowners who maintain functioning ecosystems in a natural state to ensure the services provided by natural systems will endure in the future.

In 2008, it was estimated that the system benefits of the 10 conservation areas, noted in table 3, exceeded $5.6 billion/year, or over $5,000/acre/year on average. Hydric Hammock and shrub swamp have the highest ecosystem value on a statewide basis (Defenders of Wildlife, 2008). These same benefits are available on rural private lands; therefore retention of rural and agricultural lands is important for their benefit and the health and economy of the region. Furthermore, a 2008 study examined the value of coastal wetlands for hurricane protection and found these wetlands average more than $11 billion/year in storm protection by reducing the effects of hurricanes on coastal communities (TNC, 2009).

Shingle Creek Canoe Ride (Photo courtesy of the City of Kissimmee)

Table 3: Conservation Areas' Economic Impacts

Conservation Area	Total Acres	Ecosystem Service Value/Acre/Year	Total Ecosystem Service Value
Aucilla WMA	42,581	$5,833	$248,354,767
Babcock-Webb	75,260	$1,310	$98,572,325
Big Bend	69,112	$2,589	$178,923,074
Caravelle Rance	24,869	$4,451	$110,699,251
Fisheating Creek	18,272	$5,729	$104,689,114
Florida Keys	2,269	$3,049	$6,919,360
Guana River	9,815	$3,154	$30,951,899
Lake Wales Ridge	12,601	$1,053	$13,274,594
Topsail Hill	1,626	$4,170	$6,782,341
Pinhook Swamp	122,251	$8,383	$1,024,843,077

(Defenders of Wildlife, 2008)

Throughout the world, the World Wildlife Fund, and other conservation organizations have implemented "Payment for Environmental Services" programs to provide financial incentives for conservation by compensating landowners for the numerous environmental benefits people obtain from their property (Florida Planning Toolbox, CUES FAU, 2009). Similar programs may warrant consideration in East Central Florida. In the context of new development, local governments could consider establishing an Ecological Level of Service, encouraging the preservation of natural areas and functionality of ecosystems whenever new development is proposed. As a rule, this would encourage non-conventional conservation designs (see Chapter 10) focused on compact development that protects significant areas of connected open space and creates "green infrastructure" through clustering.

The citizens of the region have shown overwhelming support for the protection of natural areas. Voters in 78 of 96 local governments approved open space acquisition funding measures such as taxation. Throughout the state, Amendment 4 passed overwhelmingly with over 65% of the vote. Amendment 4 provided for an ad valorem tax exemption for real property dedicated in perpetuity of conservation purposes.

VII. CLIMATE CHANGE

Climate change will threaten natural resources throughout the region from the coastline and wetlands, to ecosystem functions and communities. Planning for the effects of climate change such as sea level rise, salt water intrusion, global warming and wildlife migrations is essential. Many solutions for ecosystem sustainability in the face of climate change can be found in nature based

adaptations which are also more cost effective and sustainable than engineered responses. Chapter 8 goes into more detail concerning climate change and its effects on the East Central Florida region.

VIII. NATURAL RESOURCES CONCLUSION

1. The combined inventory of natural land and water assets in the region serves as the foundation for many economic opportunities and holds the potential to become a cornerstone economic engine.

2. The Central Florida Region must identify and protect its fragile ecosystems. A stronger regional approach is imperative to safeguard our regionally significant areas, not just as individual stretches of land and water, but as a tightly knit and linked mosaic.

3. Regional support and creative partnerships at the local, state, and federal levels will be necessary to preserve the integrity of these extraordinary ecosystems. Developing and advancing that strategy is the ongoing purpose of these Council policies.

IX. "NATURAL RESOURCES OF REGIONAL SIGNIFICANCE" (NRORS)

Florida Administrative Code 27E-5.003 (10) states that Regional Planning Councils, through their Strategic Regional Policy Plans, must "identify and protect natural resources of regional significance."

According to F.A.C 27 E-5.002 (4), "Natural Resource of Regional Significance" (NRORS) is a "natural resource or system of interrelated natural resources, that due to its function, size, rarity or endangerment retains or provides benefit of regional significance to the natural or human environment, regardless of ownership."

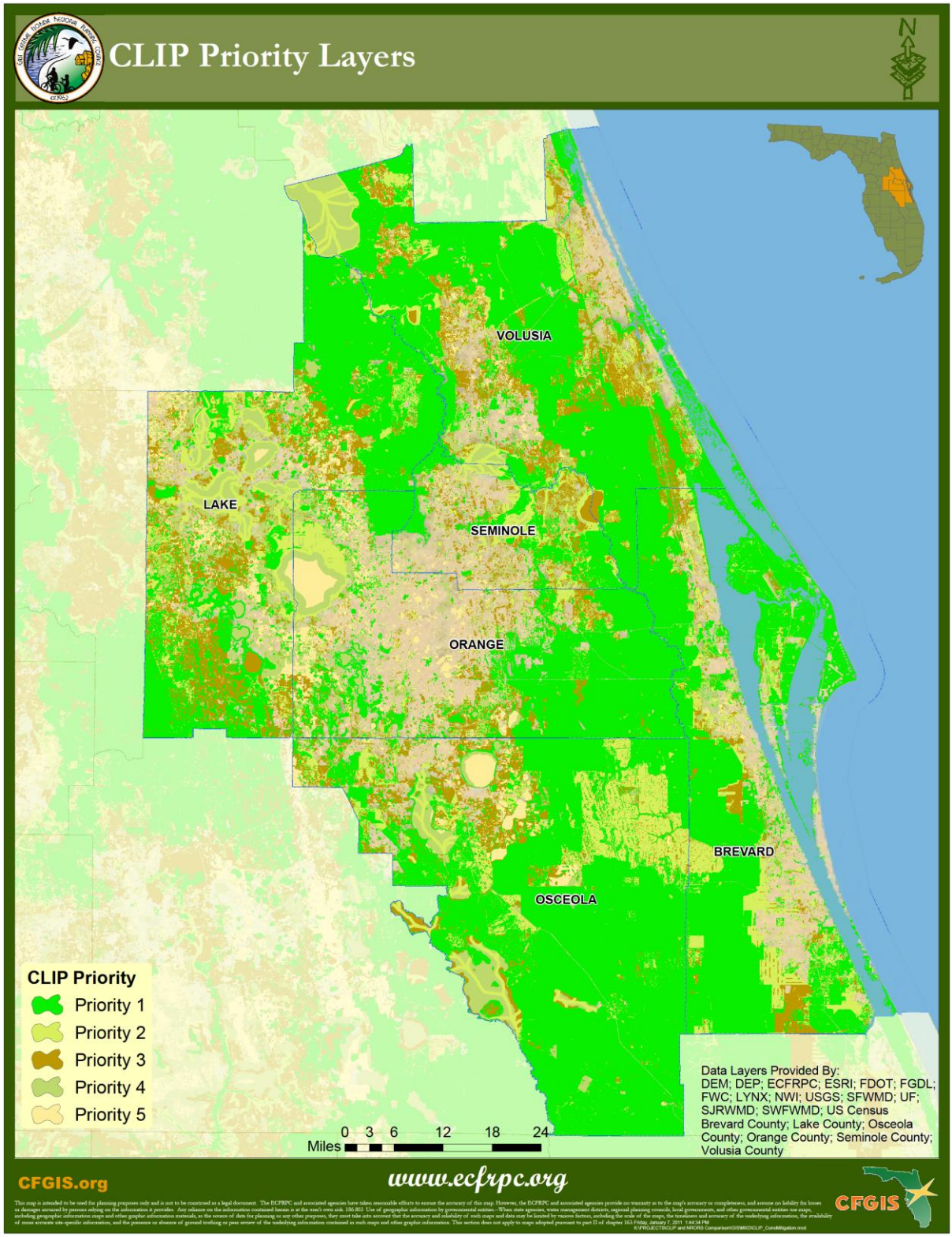
The NRORS definition applies generally, but the RPC makes the determination specifically about which natural resources are regionally significant and should be protected.

Ideally, the regional planning council's NRORS policies will become the model for natural resource protection planning by their adoption into each of 74 jurisdictions local comprehensive plans.

Dataset Background

The Century Commission for a Sustainable Florida (CCFSFL) was created by the legislature in 2005 to recommend policies that will assure Florida's development over the next 100 years is a sustainable balance between man-made environment and retained or restored natural areas.

Figure 4: CLIP Priority Layers 1 through 5 – East Central Florida Region



In August 2008 the Century Commission completed and published its Critical Lands and Waters Identification Project (CLIP). The research and staff work was principally performed by Dr. Tom Hoctor of the University of Florida Geo Plan Center in Gainesville. The CLIP study produced a series of state and regional scale natural resource Geographic Information System (GIS) data layers.

These CLIP layers were specifically intended to help both the state's environmental land acquisition programs (such as Florida Forever) and Regional Planning Councils answer two questions:

- Which natural resource lands are most deserving of protection?
- How do we identify such lands?

Since regional planning councils must use their discretion in determining and mapping what they consider to be natural resources of regional significance, the CLIP layers were used to inform that effort. These data have been derived from well-vetted scientific peer review as part of the CLIP process by a Technical Advisory Group (TAG). The TAG was made up of representatives from the Florida State University's Florida Natural Area Inventory, the University of Florida Geo Plan Center, the Florida Fish and Wildlife Conservation Commission, the US Fish and Wildlife Service, and many others.

Since CLIP maps are current and vetted consistent with statewide environmental datasets, their usage by the ECFRPC for its 2009 NRORS update is defensible and desirable. However, CLIP maps and NRORS datasets are not intended to and should not be used as a blanket map series to regulate or forbid development. They are intended to inform development and promote sustainable development design.

To help the ECFRPC determine what natural resources are regionally significant in 2009, citizen input was solicited, and as a result the ECFRPC created a 75-member Natural Resources Sounding Board. This group of conservationists, biologists, environmental land acquisition specialists, land use attorneys, farmers, ranchers, planners, and consultants have an interest in providing a balance of natural resource identification and protection. The policies and maps adopted by the ECFRPC will hopefully guide the region toward sustainability.

The Sounding Board met twice in 2008 and by consensus agreed upon a series of natural resource GIS data layers to signify the Natural Resources of Regional Significance. These NRORS GIS layers are listed in the following section. These datasets may be updated at the dataset developing agency's discretion. To obtain the most current dataset being used in the NRORS Datasets, contact the East Central Florida Regional Planning Council.

Overarching Goals for Regional Natural Resource Protection comes from F.A.C. 27E-5.003(10):

a. Regional Planning Councils must identify (in their Strategic Regional Policy Plan) Natural Resources of Regional Significance and promote the protection of these resources.

b. Ideally, the regional planning council's policies will become the model for local natural resource protection planning.
c. Regional Significance means evaluation of natural resources in the context of their functional relationship to each other.

Definition of NRORS - For the purposes of the ECFRPC 2009 Strategic Regional Policy Plan, "Significant Regional [Natural] Resource or Facility" means a resource identified by the ECFRPC Council as being of regional importance and meeting the following criteria:

a. A resource that due to its uniqueness, functions, benefit, service delivery area, or importance is identified as being of regional concern (F.A.C. 27E-5.002 (7)(a)).
b. A functionally intact ecosystem that depends upon connectivity over statewide or regional landscapes to maintain long term, viable and diverse populations of plant and wildlife communities.

Natural Resource Maps and Data Sets

a. NRORS datasets and maps are identification tools to help guide natural resource policies, and are not considered regulatory instruments.
b. The identification of certain natural resource areas as regionally significant in NRORS datasets and maps should not preclude development, but rather identify potentially valuable natural resources for protection.
c. NRORS is a series of datasets and maps; layers can be added over time after proper public notice and comment.
d. By statute NRORS maps scale = 1:100,000 (F.A.C. 27E-5.004)
e. Natural Resource policies take priority over NRORS datasets and maps.
f. NRORS datasets and maps are descriptive, not determinative of NRORS.
g. NRORS must be evaluated in context to the regional landscape.
h. NRORS datasets and maps represent indicators of where regionally significant natural resources may exist, in addition to identifying regional connectivity of natural resource corridors.
i. Objective, on-site, field verification of natural resources takes precedence over NRORS datasets and maps when evaluating their individual significance.

The following GIS Data Sets/Layers represent potential Natural Resources of Regional Significance to be governed by the Natural Resources Goals and Policies

a. Regional Committed Conservation (ECFRPC - 2007, Figure 3)
b. Mitigation Banks (ECFRPC – 2007, Figure 4)
c. Hydrography (USGS – 2006, Figure 5)
d. Hydrographic Flowlines (USGS – 1999, Figure 6)
e. Wetlands (NWI - 1998 and FLUCCS – 2004, Figures 7 & 8)
f. Bald Eagles Nests (FWC - 2008 , Figure 9)
g. Biodiversity Hot Spots Priority One, 8 - 13 Species (CLIPv1.0 – 2008, Figure 10)

h. Ecological Greenways Network - Priorities One and Two (FDEP Reprioritization Layer – 2005, Figure 11)
i. 100 year Floodplain - Q3 and DFIRM (FEMA – 2007, Figure 12)
j. Ground Water Recharge Areas (SJRWMD - 2005, SFWMD - 2008, SWFWMD – 2002, Figure 13)
k. Spring Sheds (SJRWMD – 2008, Figure 14)
l. FNAI Rare Species Habitat Conservation Priorities 1-3 (FNAI/CLIP v1.0 – 2008, Figure 15)

[Note: Data sets 5-12 are based on physical characteristics, not parcel boundaries.]

MAPPING THE NRORS DATA SETS

Regional Committed Conservation

The Figure 4 map is derived from several agencies and data sources representing current conservation lands. The Merritt Island Refuge Area is included in this layer but is not identified as Brevard County Conservation Lands. Each of the six counties' environmental and/or land acquisition departments reviewed and accepted the data. This dataset represents committed conservation lands for the purposes of creating regionally connected greenways and ecosystems and the protection of critical habitat.

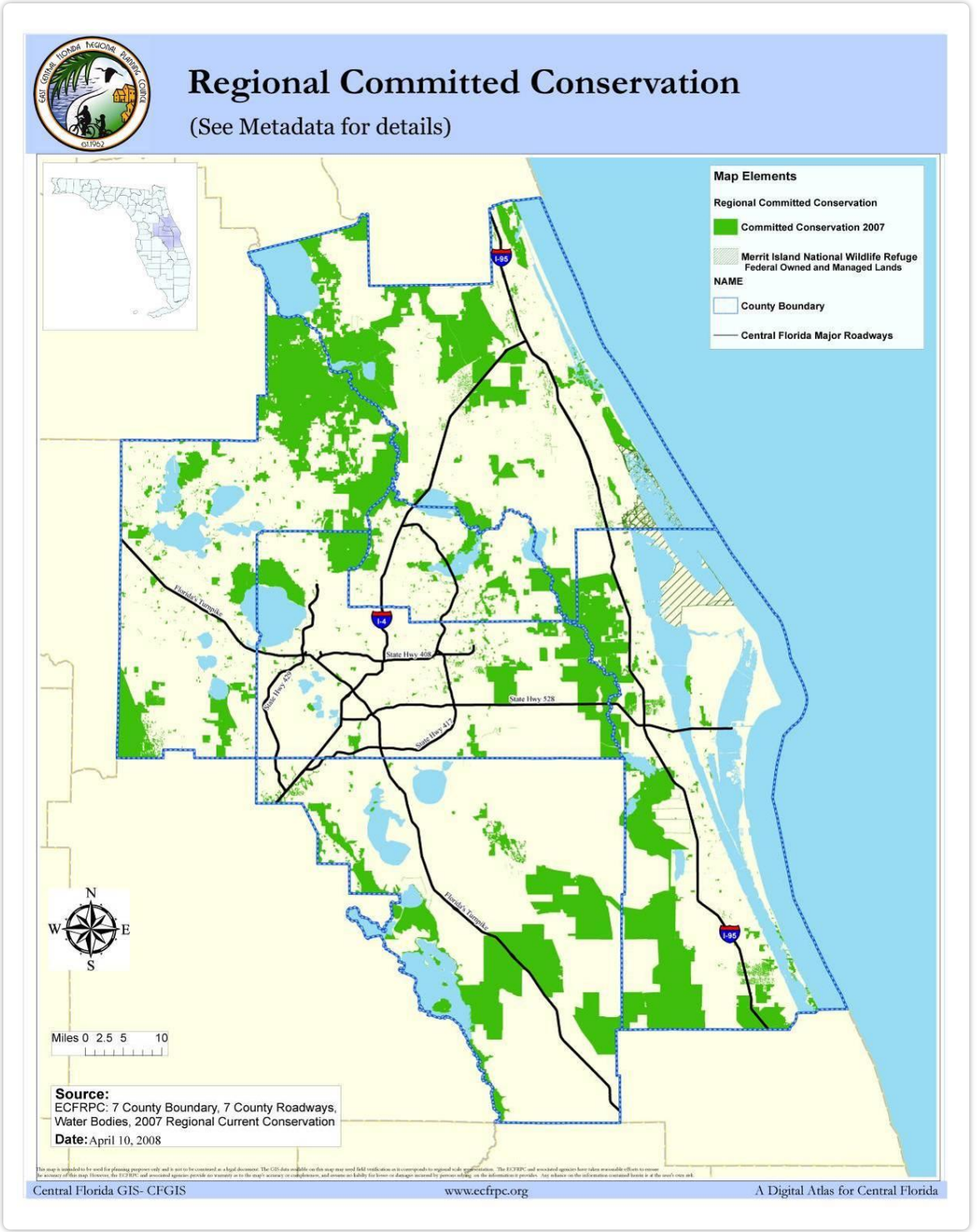


Figure 5.

Source 1: ECFRPC Current Conservation) Source 2: (Brevard County Eel lands) Source 3: (Lake County Current Conservation) Source 4: (Orange County Current Conservation) Source 5: (Osceola County Current Conservation) Source 6: (Polk County Conservation) Source 7: (Seminole County Natural Lands) Source 8: (Volusia County Conservation Land) Source 9: (SJRWMD lands) Source 10: (SWFWMD current conservation) Source 11: (Lake County Acquired lands) Source 12: (SJRWMD Cons Easements) Source 13: (SWFWMD district acquired lands) Source 14: (FNAI FLMA) Source 15: (Brevard Co Additions Dec 2007) Source 16: (Orange County additions 1-15-2008) Source 17: (South Florida Water Management District)

Mitigation Banks

This is a consolidated file, created with data from several agencies and data sources, representing mitigation banks, which are conservation areas established to mitigate development impacts. Each of the region's six counties provided input and reviewed the 2007 Regional Mitigation Banks.

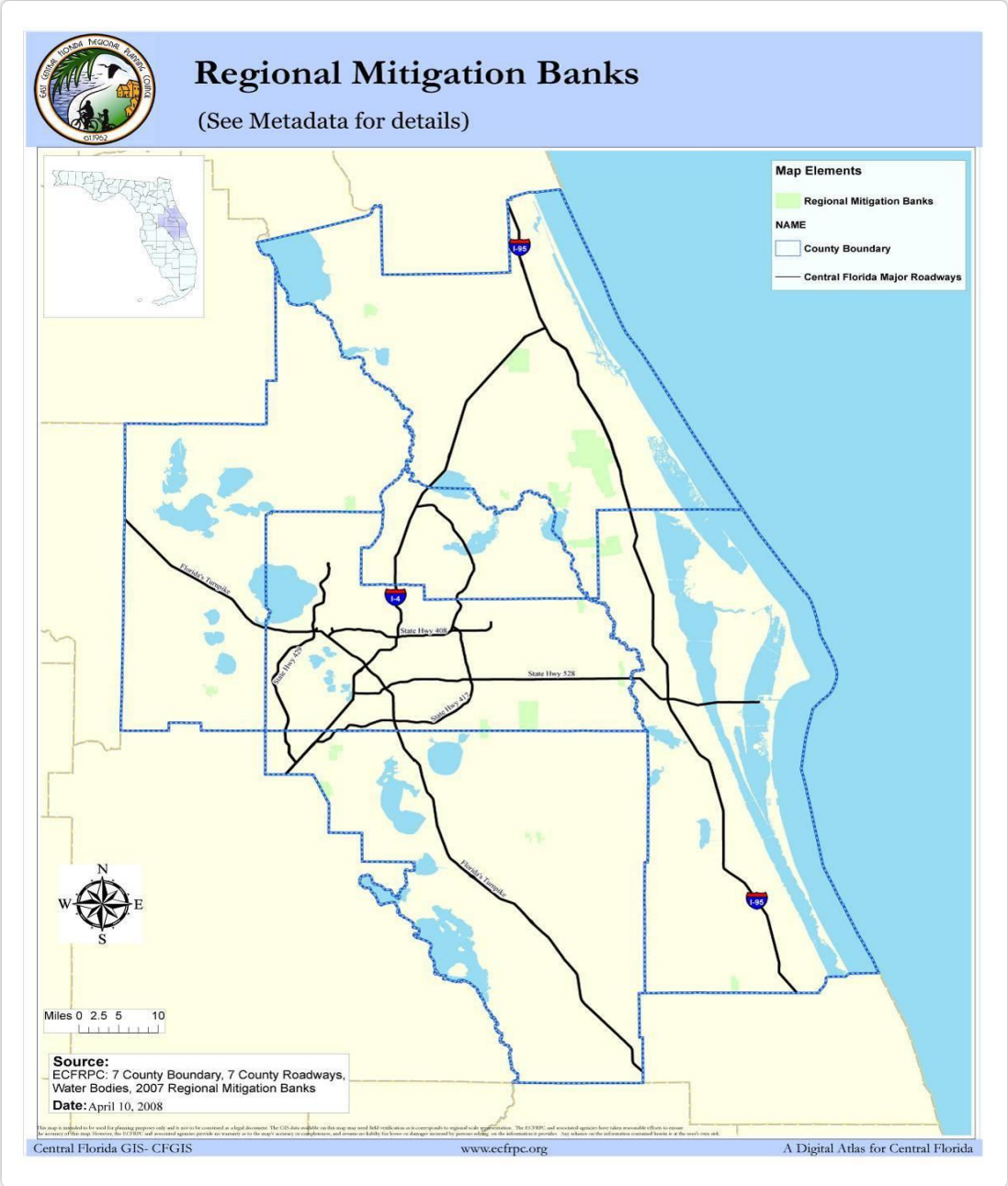


Figure 6.

Sources: Source 1: (ECFRPC Mitigation Banks),Source 2: (FDEP Mitigation Banks), Source 3: (Osceola County Mitigation Banks), Source 4: (SFWMD mitigation banks), Source 5: (Volusia County Mitigation Banks), Source 6: (FNAI's FLMA

Hydrography

This is represented by the National Hydrography Dataset (NHD), a comprehensive database identifying the stream segments or reaches that make up the nation's surface water drainage system. It encodes information about naturally occurring and constructed bodies of water, paths through which water flows, and related entities, such as industrial discharges, drinking water supplies, fish habitat areas and wild and scenic rivers. The NHD data was originally created by the United States Geological Survey (USGS) and Environmental Protection Agency (EPA) along with other federal, state, and local agencies.

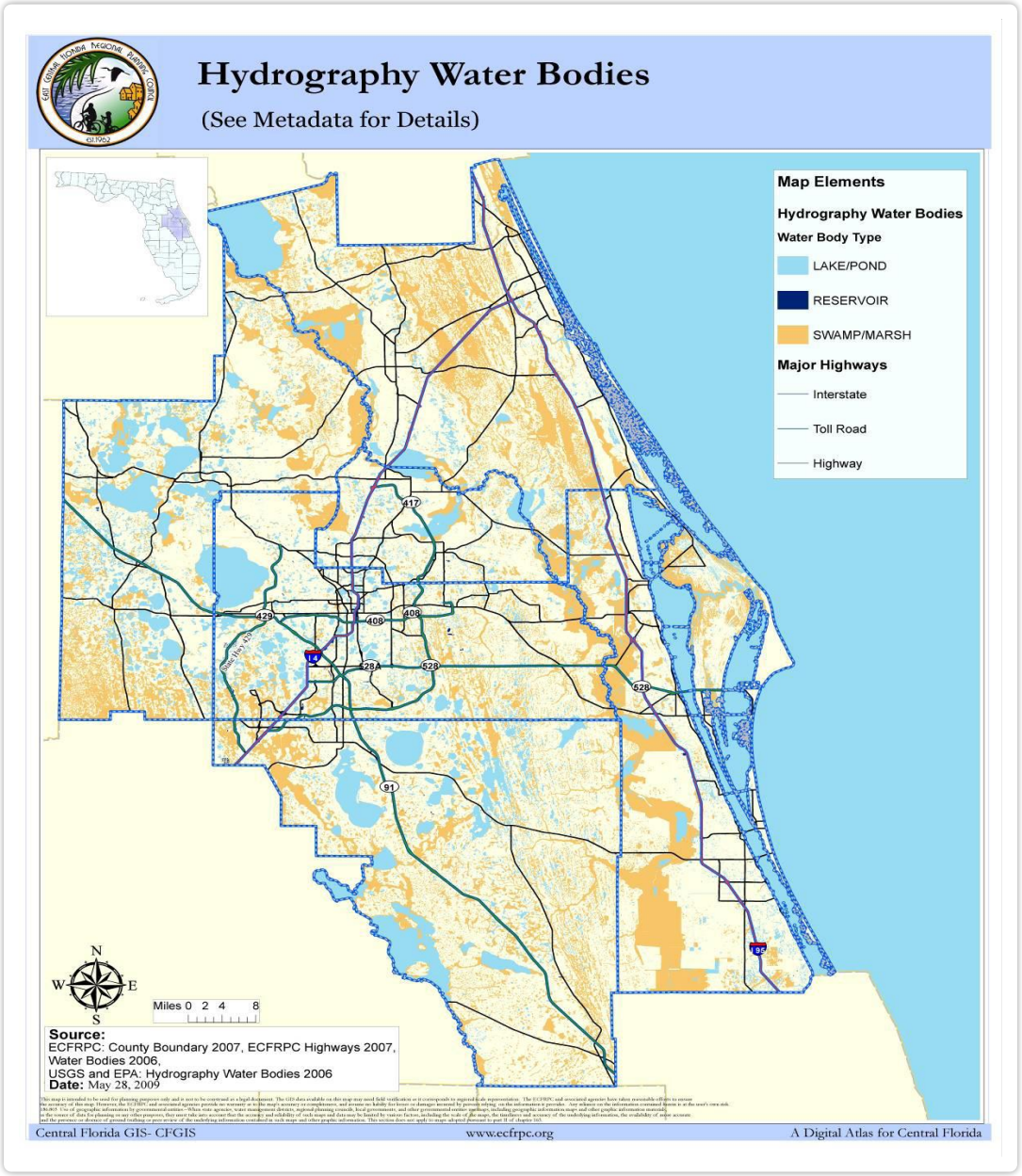


Figure 7. - *Source: USGS*

Hydrographic Flowlines

This is represented by the National Hydrography Dataset (NHD), a comprehensive, feature-based database that interconnects and identifies the stream segments or reaches that comprise the nation's surface water drainage system. The dataset encodes information concerning naturally occurring and constructed bodies of water, water flow paths and related entities such as industrial dischargers, drinking water supplies, fish habitat areas, wild and scenic rivers.

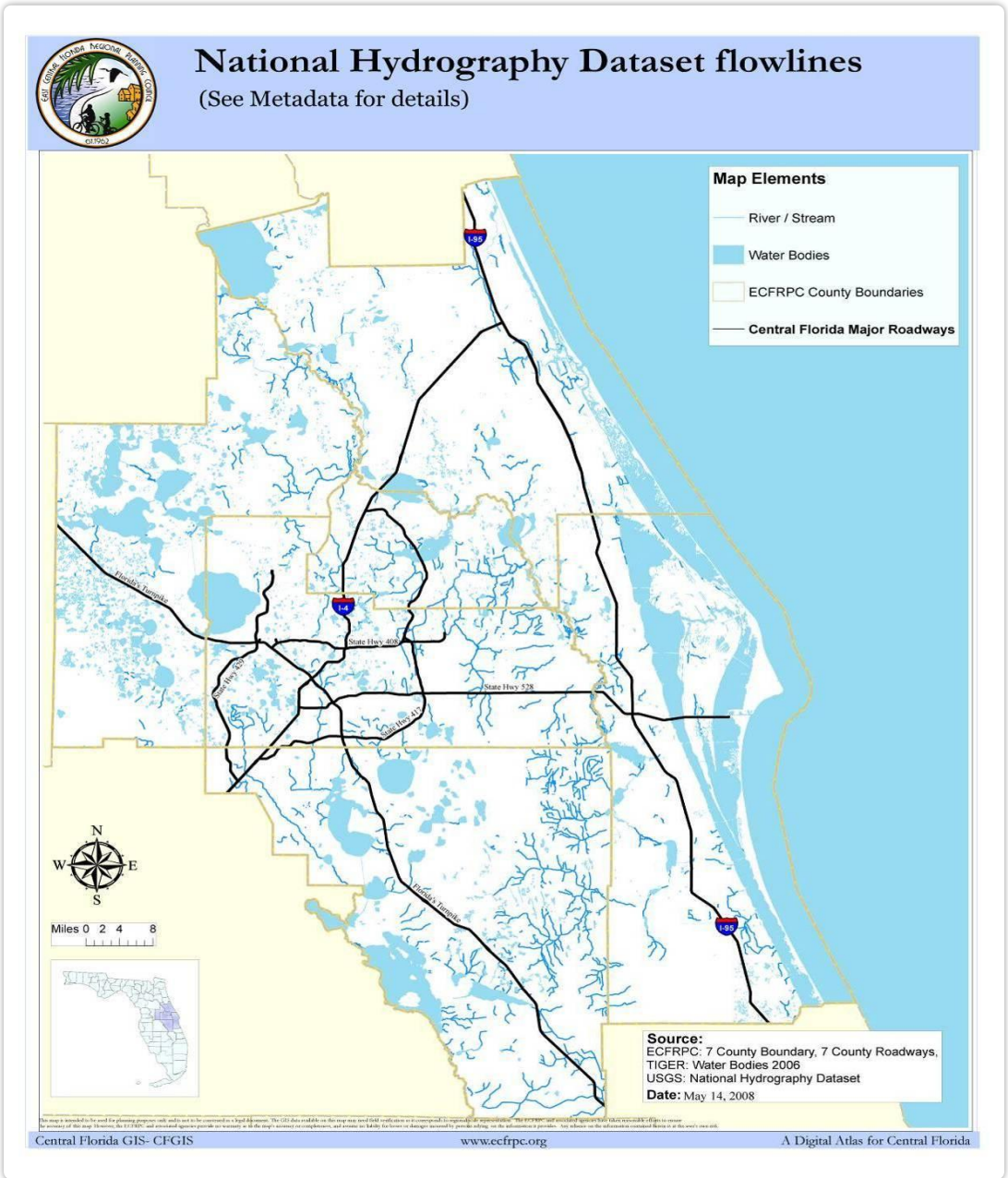


Figure 8. - *Source: USGS*

Wetlands

This dataset is created from a combination of National Wetlands Inventory (NWI) identified wetlands and multiple data sets of land use/ land cover updated by the water management districts in Florida. The NWI files are records of wetland location and classification as developed by the U.S. Fish & Wildlife Service. In 1996, the classification system was adopted as a national classification standard by the Federal Geographic Data Committee. Florida Land Use, Land Cover Classification System (FLUCCS) data was compiled from the South Florida Water Management District, Saint Johns Water Management District, and Southwest Florida Water Management District. Both the FLUCCS and the NWI were used to create a comprehensive wetlands layer because the purpose of the NWI dataset was not to map all wetlands and deepwater habitats of the United States, but rather to use aerial photo interpretation techniques to produce thematic maps. Therefore, boundaries are generalized in most cases and the quality of the wetland data is variable mainly due to source photography, ease or difficulty of interpreting specific wetland types, and survey methods.

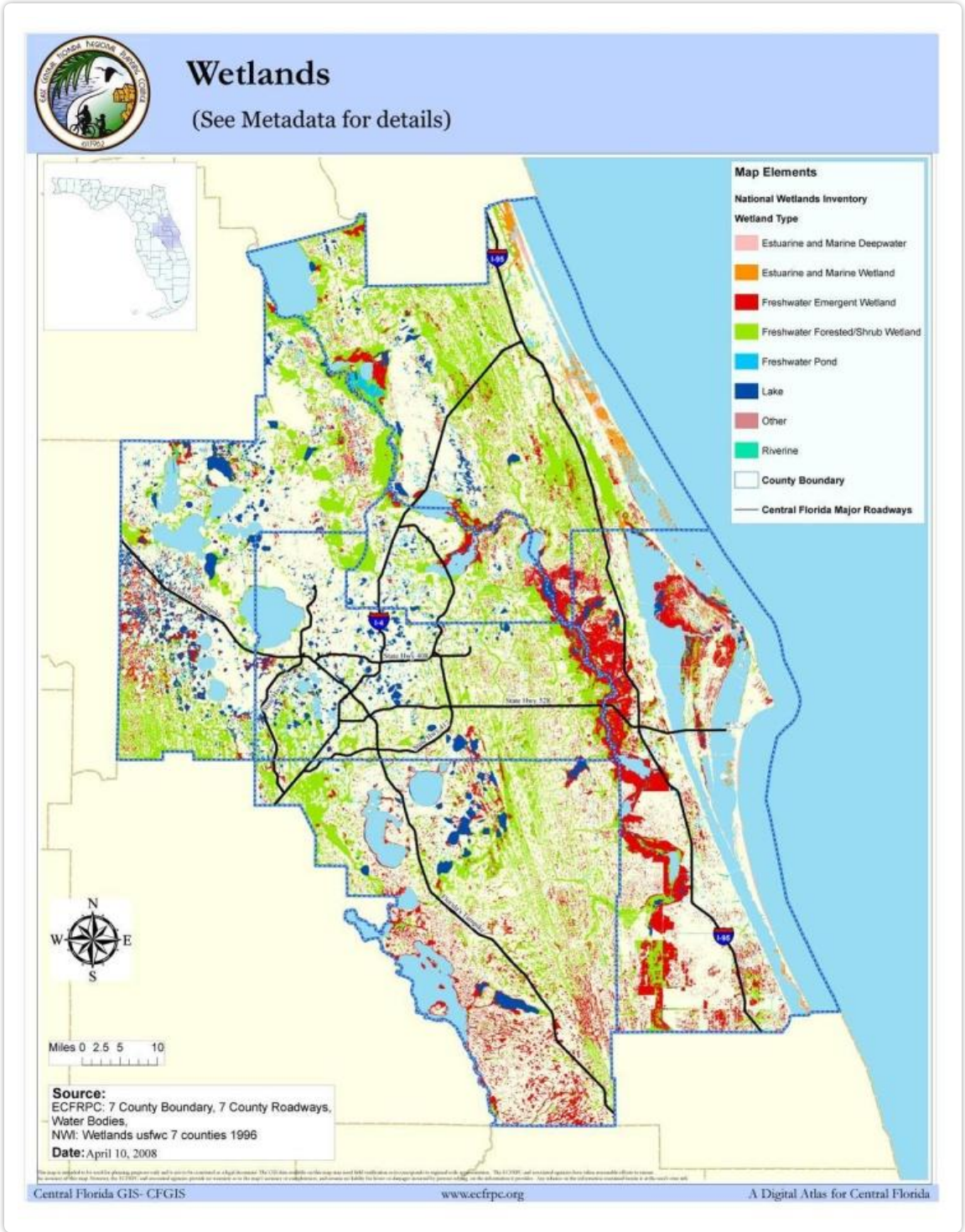


Figure 9.

Sources: U.S. Fish & Wildlife Service, National Wetlands Inventory, Water Management Districts; Saint Johns River Water Management District, South Florida Water Management District, and South West Florida Water Management District.

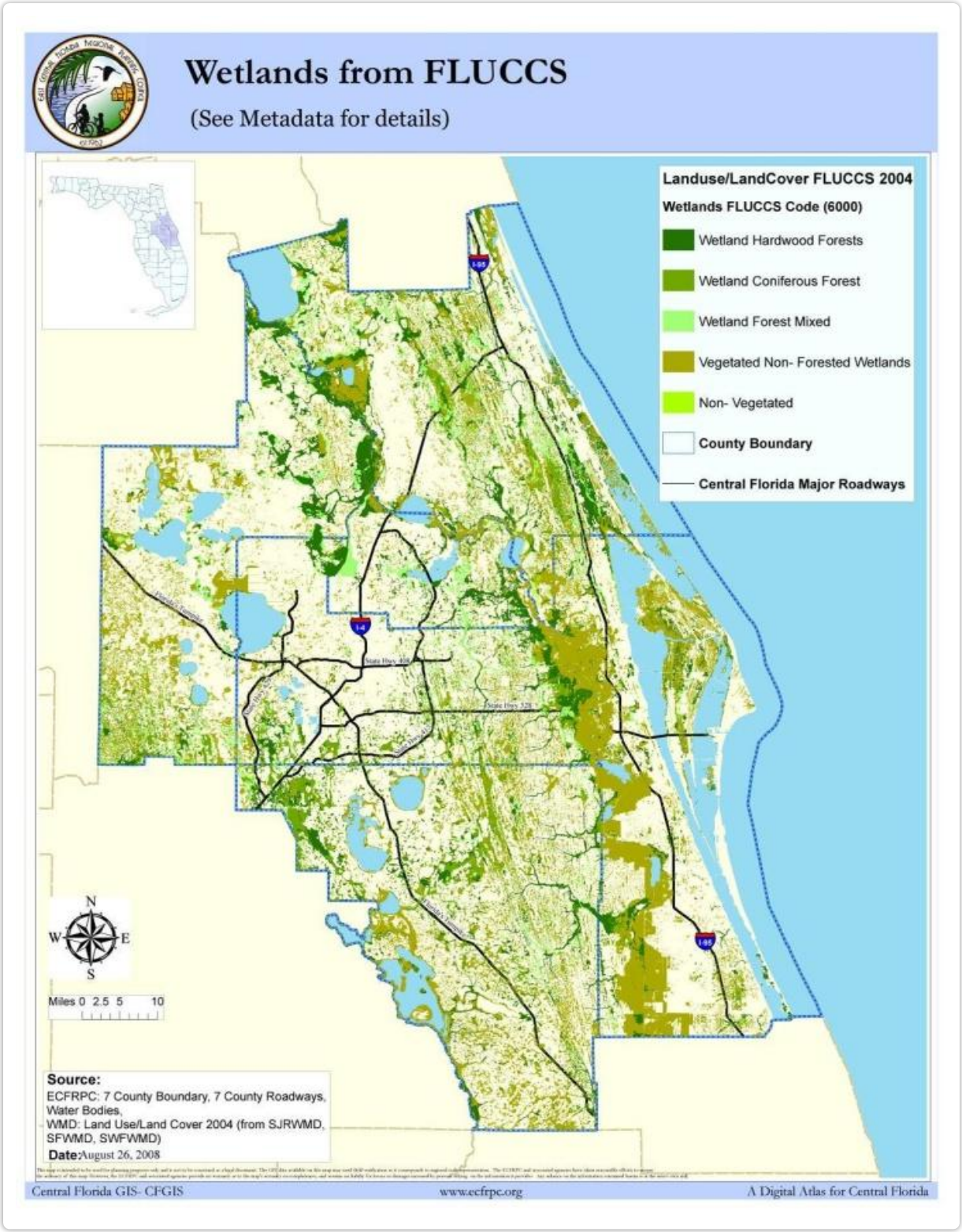


Figure 10.

Sources: U.S. Fish & Wildlife Service, National Wetlands Inventory, Water Management Districts; Saint Johns River Water Management District, South Florida Water Management District, and South West Florida Water Management District.

Bald Eagles Nests

This represents known bald eagle nesting territories within the state of Florida which were surveyed by the Florida Fish and Wildlife Conservation Commission (FWC) during the 2006 and 2007 nesting season. Nest locations were determined with the use of aircraft-based Global Positioning System (GPS) units. Accuracy of locations is estimated to be within 0.1 miles of the true location. This file includes a 660 foot radius around each bald eagle nest. Bald Eagles are protected by law and the National Bald Eagle Management Guidelines (USFWS 2007b), which place regulations upon activity within 330 and 660 feet of nests.

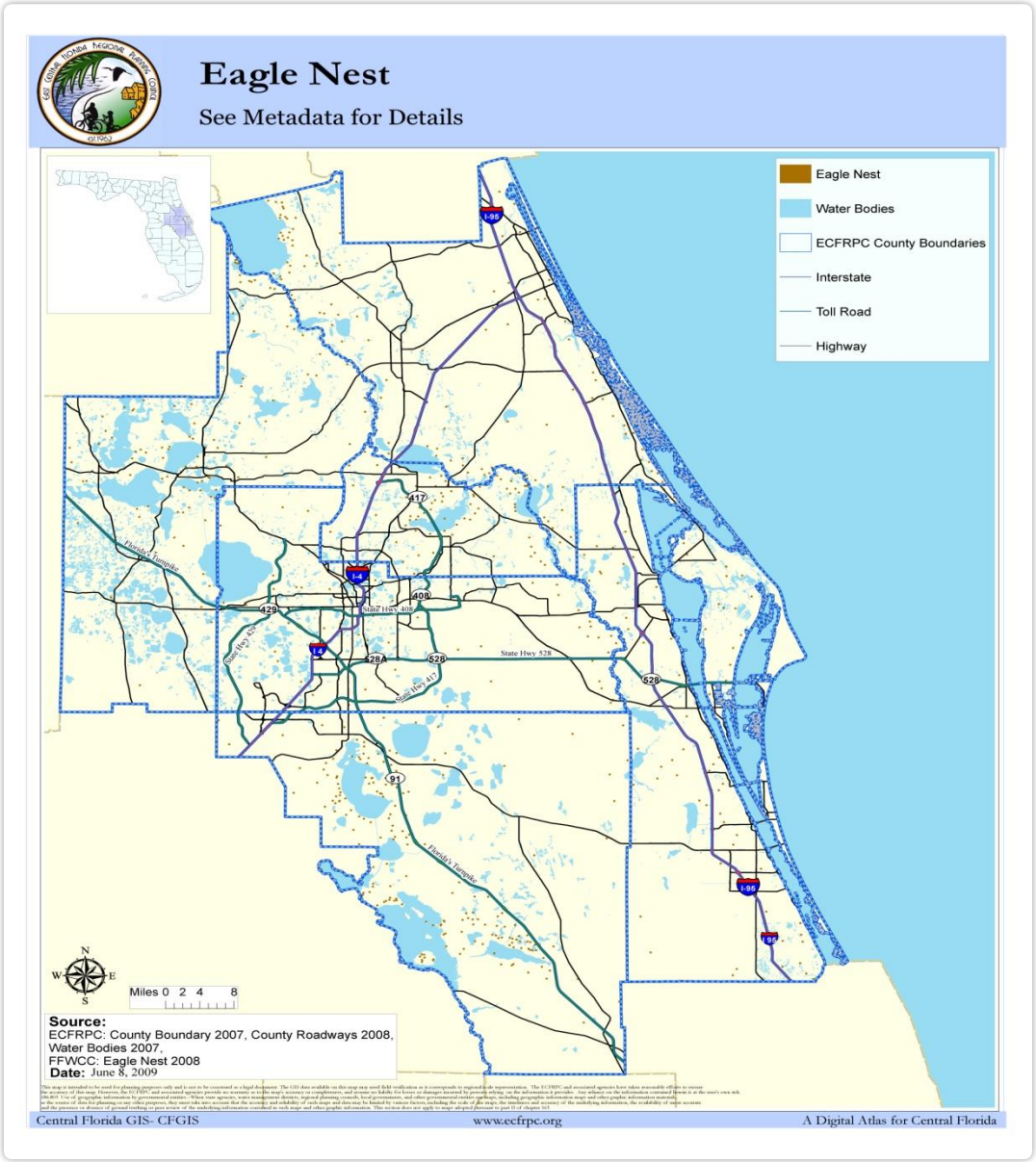


Figure 11. - *Source: Florida Fish and Wildlife Conservation Commission - Habitat and Species Management*

Biodiversity Hotspots Priority One, (8-13 species)

This identifies areas of overlapping vertebrate species habitat which indicates high species richness based upon the statewide potential habitat model created by The Florida Fish and Wildlife Conservation Commission. The Biodiversity Hotspots layer includes the entire potential habitat model for each species and provides a count of the number of species habitat models occurring at each location. In some cases only a portion of the potential habitat was ultimately designated as Species Habitat Conservation Areas for each species. The highest number of focal species co-occurring at any location in the model is 13. For Critical Lands and Water Identification Project (CLIP), Biodiversity Hotspots are prioritized by the species count, with higher species counts given higher priority over lower species counts.

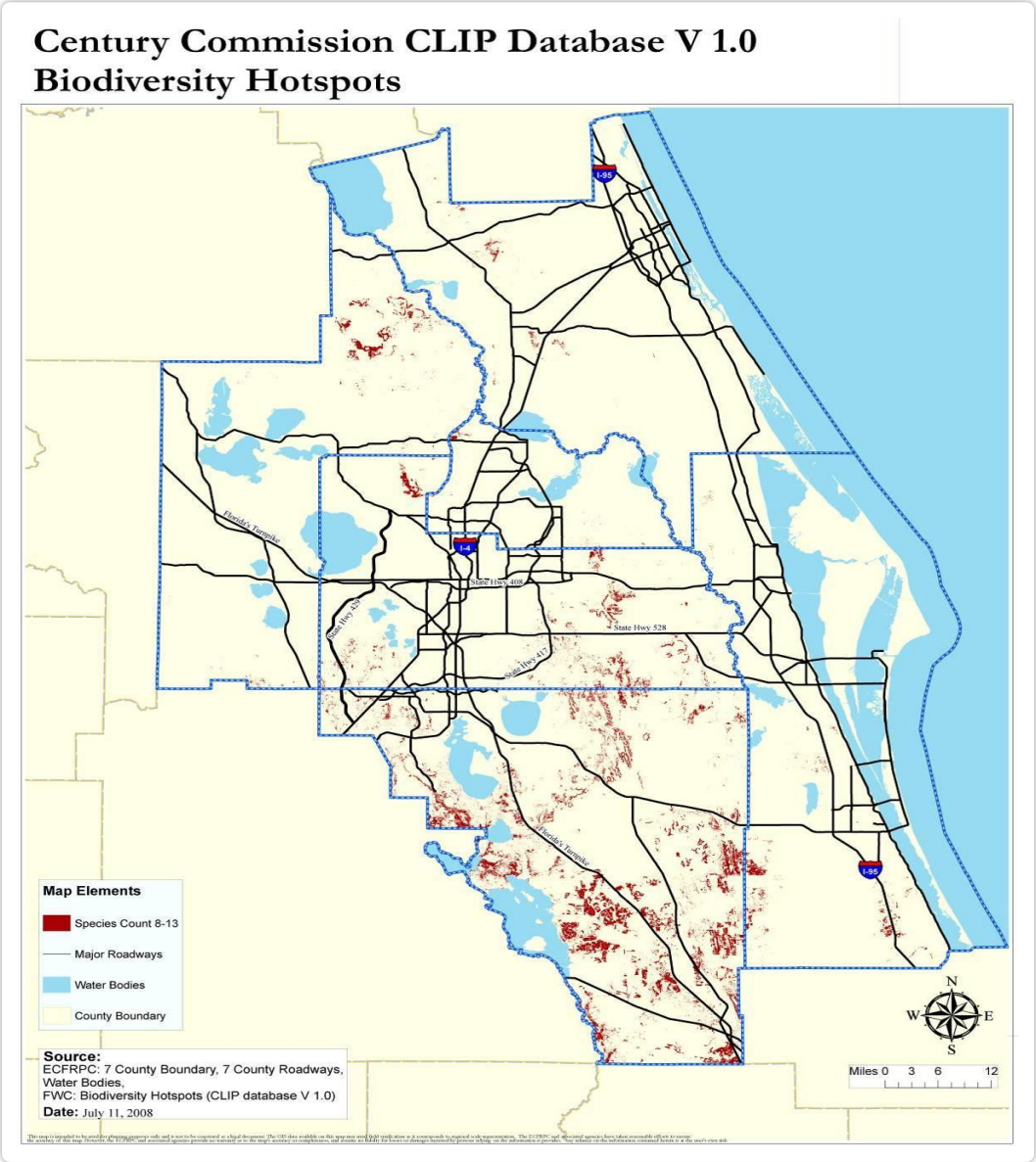


Figure 12. - *Source: Florida Fish and Wildlife Conservation Commission – Habitat and Species Management (CLIP V 1.0)*

FDEP Ecological Greenways Network Priorities One and Two

This contains the Florida Ecological Greenways Network and Critical Linkages Prioritization Results approved by the Florida Greenways and Trails Council in November 2005. The Florida Ecological Greenways Network identifies opportunities to protect large, intact landscapes important for conserving the biodiversity and ecosystem services of Florida. Ranking is from 1 to 6, with 1 representing the highest priority areas and 6 representing the lowest. These priorities represent the most essential areas for protecting large connected landscapes in Florida.

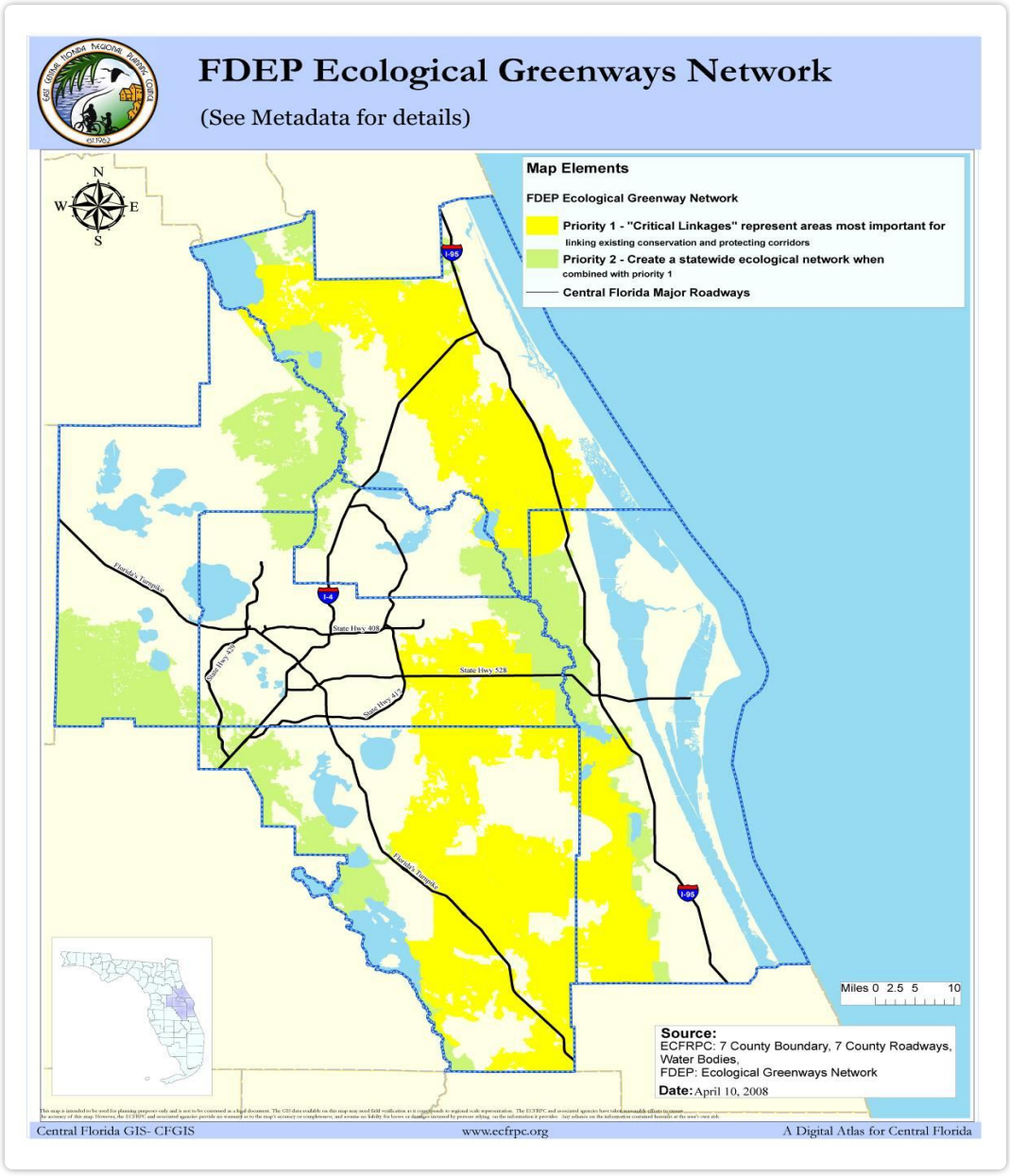


Figure 13. - *Source: University of Florida GeoPlan Center (FDEP)*

100 Year Flood Plain

This dataset contains information about the flood hazards indicating zones, used by the Federal Emergency Management Agency (FEMA) to designate the Special Flood Hazard Areas (SFHA) and for insurance rating purposes. This data represents the flood hazard areas that are or will be depicted on the Flood Insurance Rate Map (FIRM). The FIRM is the basis for floodplain management, mitigation and insurance activities for the National Flood Insurance Program (NFIP). Development and infrastructure constructed in the 100 year flood plain could be very costly to replace or repair following a catastrophic flood event or storm.

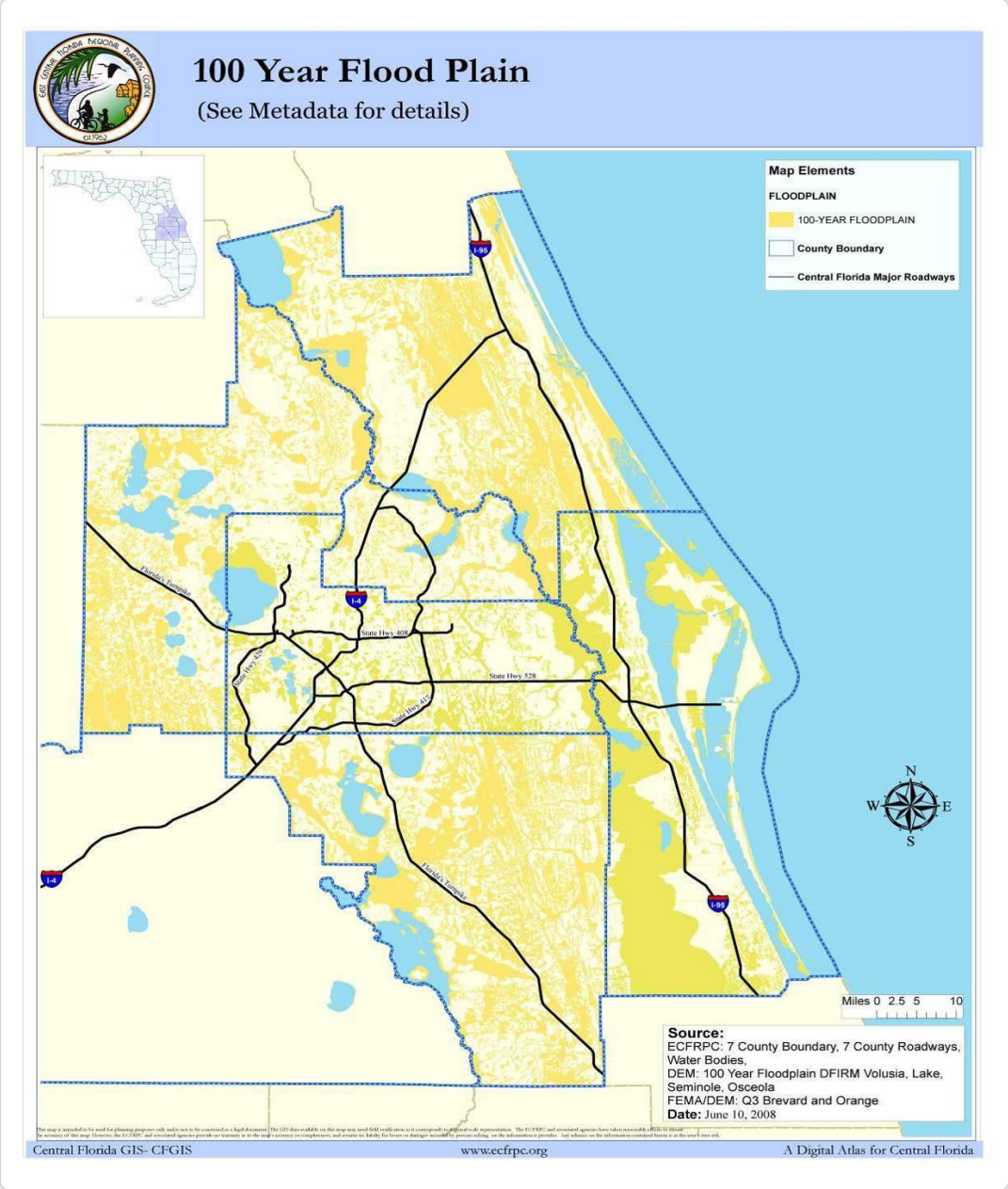


Figure 14. - *Source: Federal Emergency Management Agency*

Ground Water Recharge Areas of the Floridian Aquifer

Figure 15 represents the results of numerical models used to stimulate the regional groundwater flow system in peninsular Florida, specifically, the recharge/discharge rate to and from the Floridan aquifer system and to provide a regional assessment of recharge to the Floridan aquifer. Groundwater recharge to the Floridan aquifer is the addition of water to the aquifer from the overlying surficial aquifer or from rainfall in areas where the surficial aquifer is thin or absent and the limestone of the Floridan aquifer is at or near land surface. Local recharge may also occur where sinkholes have breached the upper confining unit.

Sections 373.0391, 373.0395, and 373.0397, Florida Statutes, direct the water management districts to provide recharge area information to local governments and planning agencies. These data sets are intended to be used as regional planning aids for groundwater resource management and not intended for site-specific assessments. Maps of ground water recharge areas are useful planning tools for groundwater resource management and development planning as these areas play a vital role in the water quality and quantity in the region.

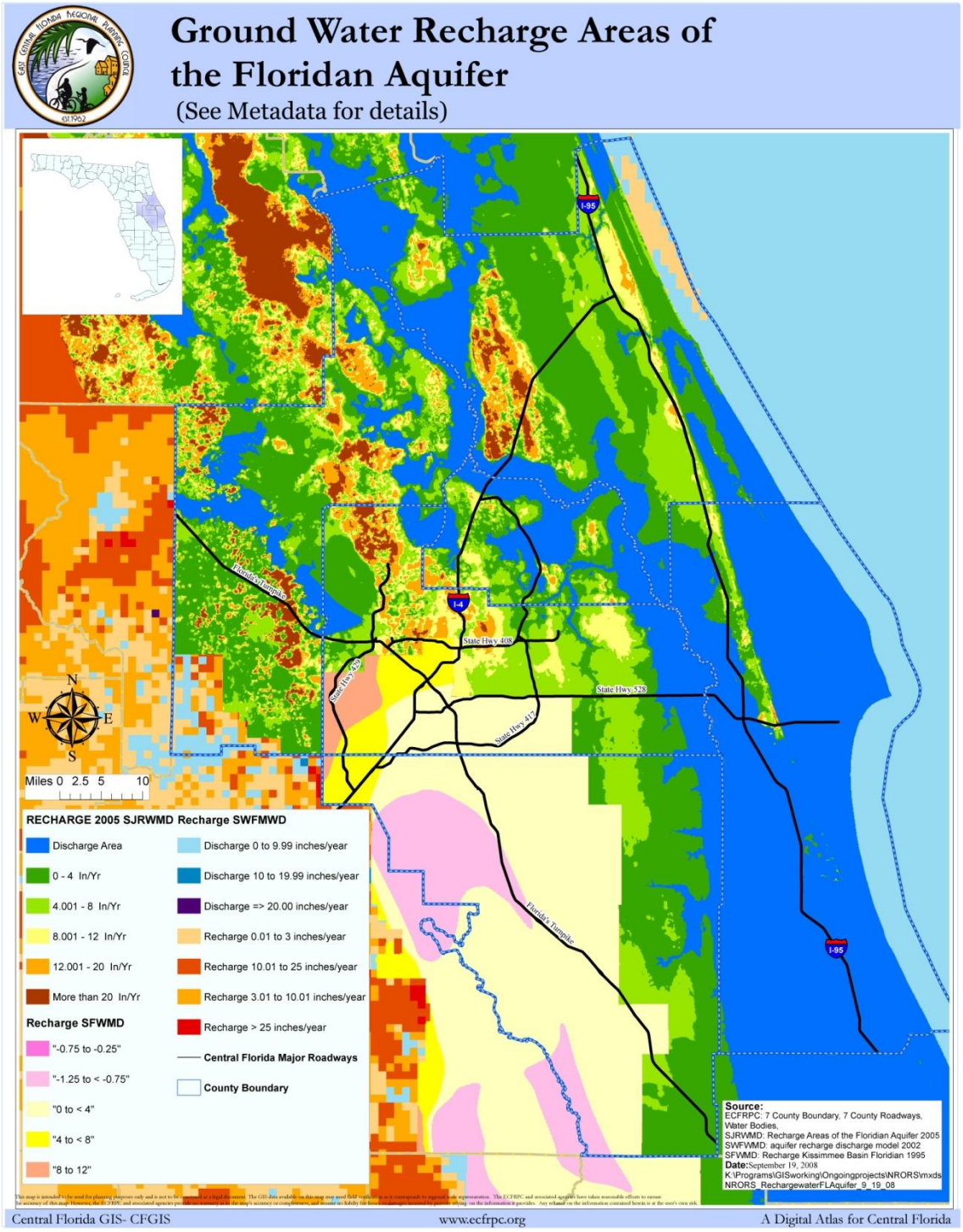


Figure 15. - *Source: St. Johns River Water Management District, South West Florida Water Management District, South Florida Water Management District.*

Spring Sheds

Individual shapefiles compose the larger springshed delineation coverage from the SJWMD. The capture zones delineate areas where greater protection may be needed in order to protect the flow, recharge, and quality of the spring sheds.

Data compiled for this dataset include:

- 5-Year Capture Zones and Spring Recharge areas are delineated for First Magnitude Springs.
- Springshed Delineation for Blue Springs, Florida: 100-Year Capture Zone
- Geneva Freshwater Lens (Geneva Bubble) Boundary
- Springshed Delineation for Ponce de Leon Springs, Florida: long-term steady-state analysis
- Silver Springs 2-Year Capture Zone
- Silver Springs Springshed Boundary (1000-Year Capture Zone, MODPATH Delineated + Interpretation of GW Flow Direction: Manual Edit)
- Silver Springs 100-Year Capture Zone
- Silver Springs 10-Year Capture Zone
- Wekiva Basin Capture Zone

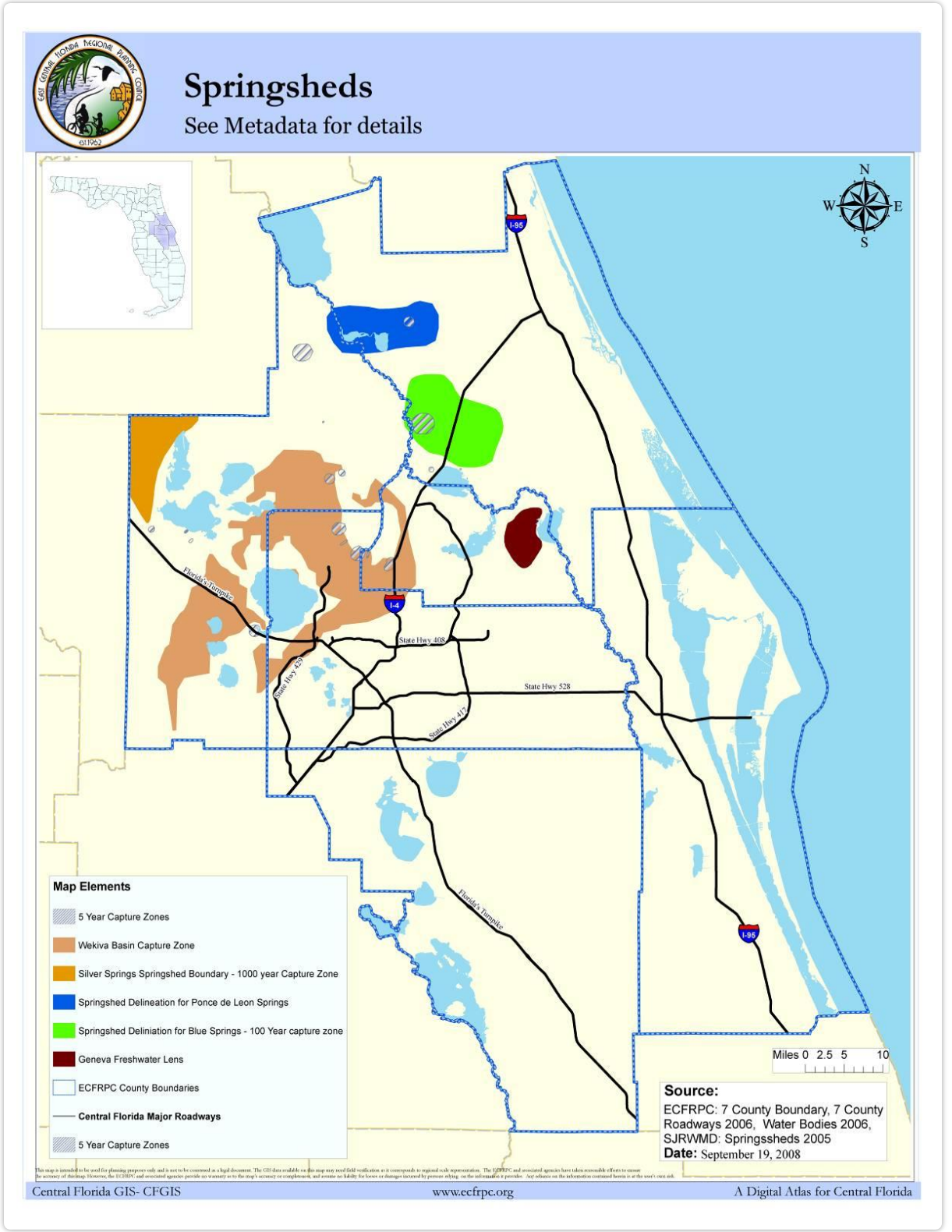


Figure 16. - *Source: St. Johns River Water Management District*

FNAI Rare Species Habitat Conservation Priorities 1-3

Florida Natural Areas Inventory (FNAI) created this file specifically for the Florida Forever statewide environmental land acquisition program. It is intended to show areas that have a high statewide priority for the protection of habitat for Florida's rarest plant and animal species. FNAI mapped occurrence-based potential habitat for 248 species of plants, invertebrates, and vertebrates, including aquatic species, which were included according to their need for additional habitat in conservation. Species include all federally listed species, many state listed species, and several other unlisted species. Suitable habitat was mapped in the vicinity of known occurrences only and each species received a Conservation Needs score based on rarity (FNAI Global rank), total habitat area, and percent of habitat protected through existing conservation lands. Species were then grouped into five Conservation Needs Weighting Groups (A through E). Priority 1 includes high suitability habitat for any G1S1 species, plus areas of overlap of multiple less-rare species. Priority 2 includes high suitability habitat for any G2S1 or G3S1 species, plus areas of overlap of multiple less-rare species. Priority 3 includes high suitability habitat for any G2S2, G3S2, G4S1, or G5S1 species, plus areas of overlap of multiple less-rare species.

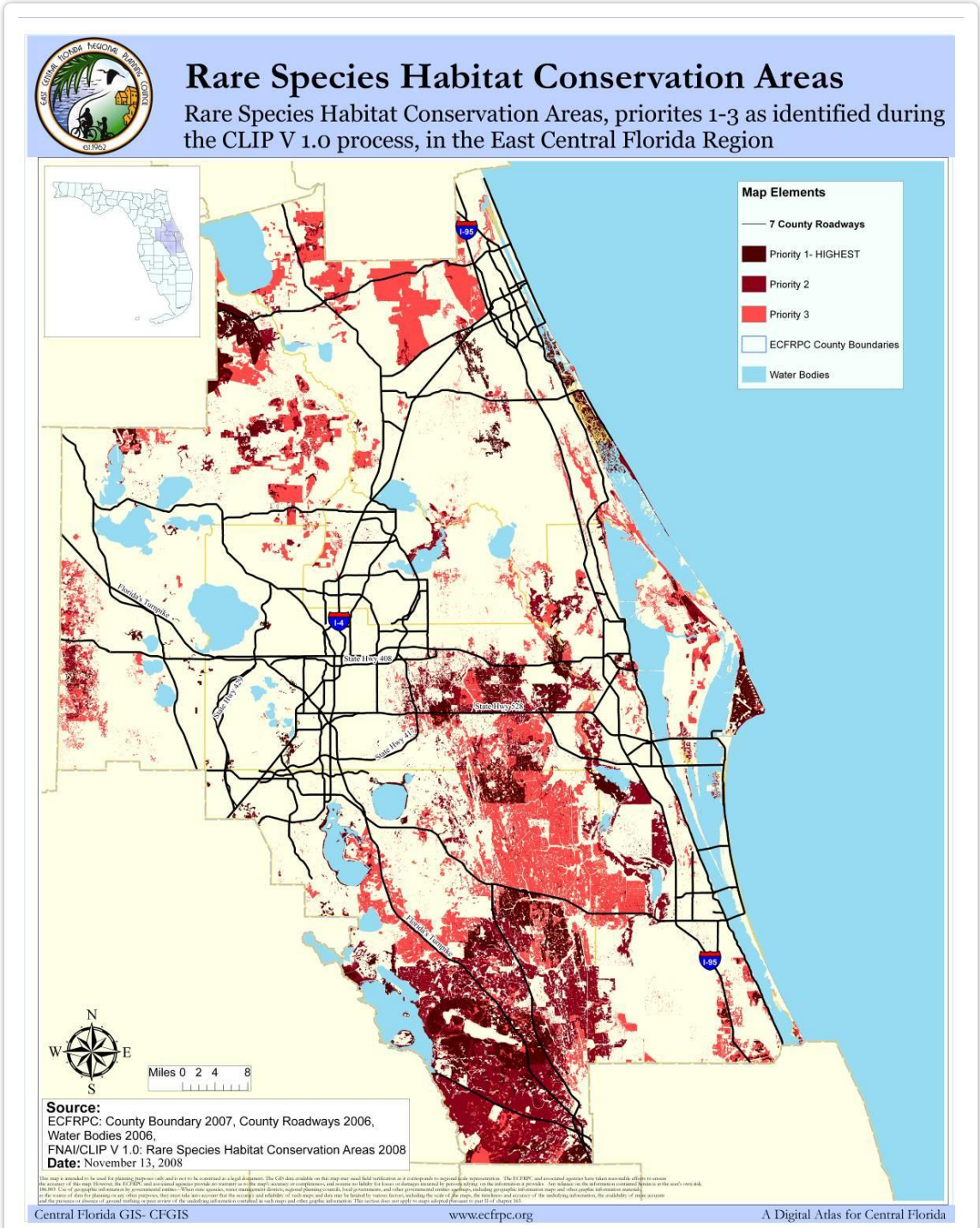


Figure 17. - *Source: CLIP V 1.0/FNA*

Figure 18. *Wekiva Springs Protection Area*

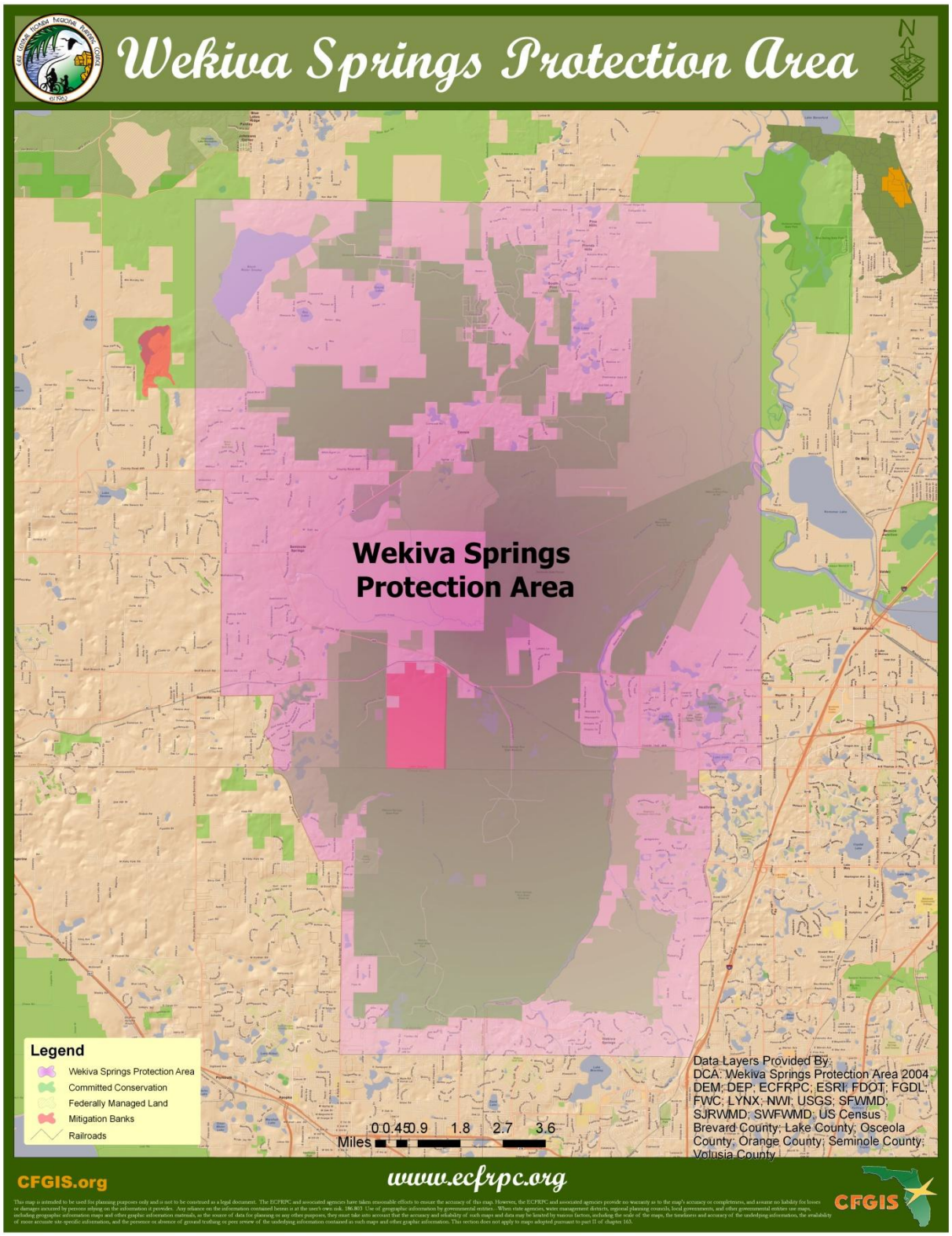
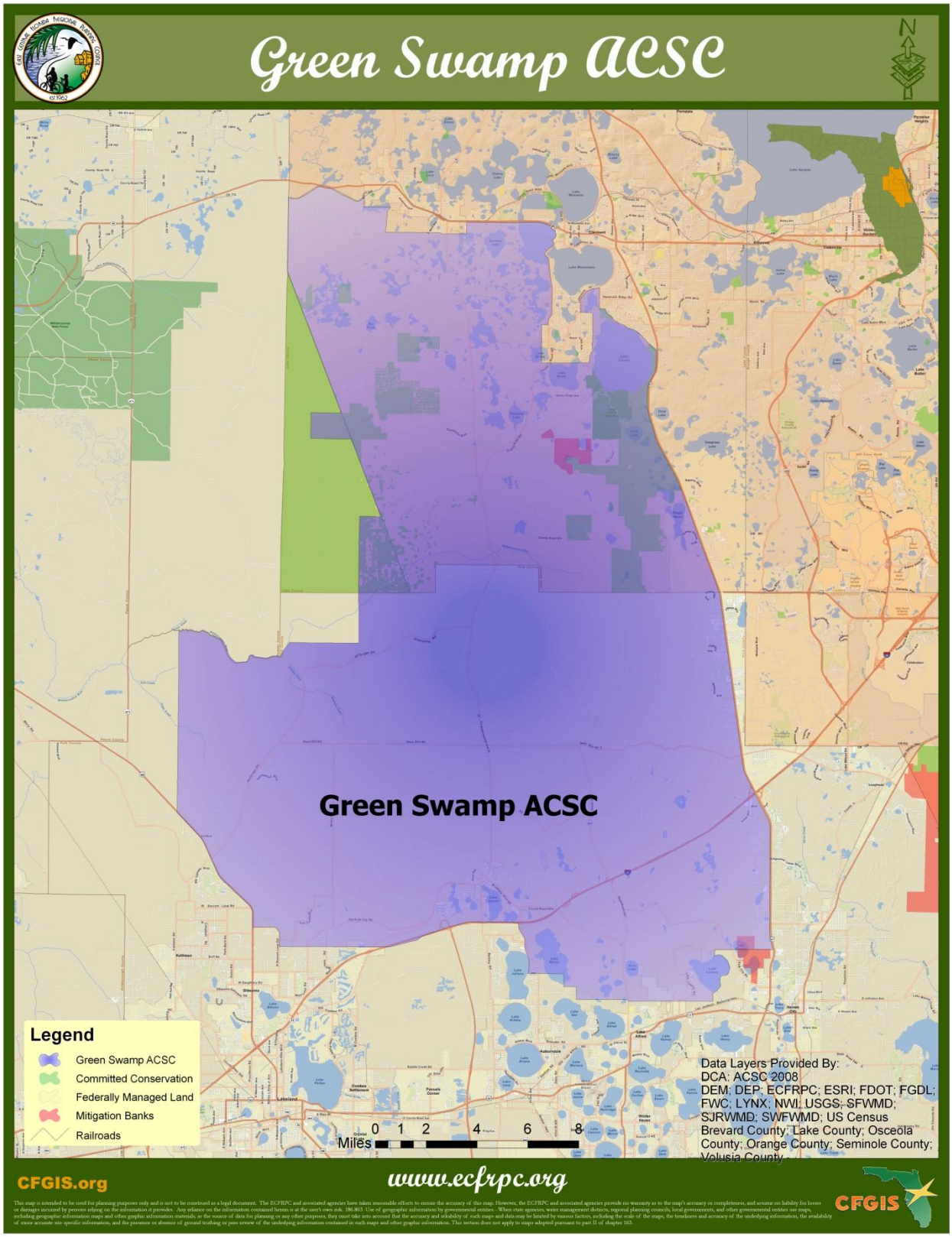


Figure 19. *Green Swamp Area of Critical State Concern*



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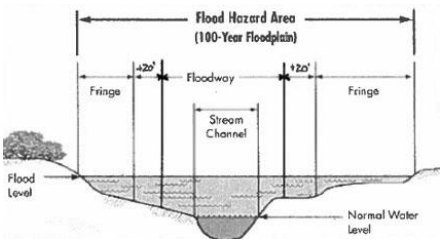
Buch, Ramesh. February/March 2009.The Case for an Ecological Level of Service. CitiesGoGreen.com.

CHAPTER 3: NATURAL RESOURCES	
F.A.C. 27E.5.003(10)	Regional Planning Councils must identify (in their Strategic Regional Policy Plan) Natural Resources Of Regional Significance (NRORS) and promote the protection of these resources. "Significant Regional [Natural] Resource or Facility" means a resource identified by the ECFRPC as being of regional importance and meeting the following criteria: a. A resource that due to its uniqueness, functions, benefit, service delivery area, or importance is identified as being of regional concern (F.A.C. 27E-5.002 (7)(a)). b. A functionally intact ecosystem that depends upon connectivity over statewide or regional landscapes to maintain long term, viable and diverse populations of plant and wildlife communities. By statute NRORS maps scale = 1:100,000 (F.A.C. 27E-5.004).
Goal	The regional planning council's policies should become the model for local natural resource protection planning.
Policy	
Policy 3.1	Natural Resources of Regional Significance (NRORS) Policy 3.1.1 NRORS datasets and maps are identification tools to help guide natural resource policies, and are not considered regulatory instruments. Policy 3.1.2 The identification of certain natural resource areas as regionally significant in NRORS datasets and maps should not preclude development, but rather identify potentially valuable natural resources for protection. Policy 3.1.3 NRORS is a series of datasets and maps; layers can be added over time after proper public notice and comment. Policy 3.1.4 Natural Resource policies take priority over NRORS datasets and maps. Policy 3.1.5 NRORS datasets and maps are descriptive and not determinative. Policy 3.1.6 NRORS must be evaluated in context to the regional landscape.

	Policy 3.1.7 NRORS datasets and maps represent indicators of where regionally significant natural resources may exist, in addition to identifying regional connectivity of natural resource corridors. Policy 3.1.8 Objective, on-site, field verification of natural resources takes precedence over NRORS datasets and maps when evaluating their individual significance. Policy 3.1.9 The following GIS Data Sets/Layers geographically describe Natural Resources of Regional Significance to be governed by the Natural Resources Goals and Policies, which include field verification to determine the actual NRORS extent: a. Regional Committed Conservation (ECFRPC - 2007, Figure 3) b. Mitigation Banks (ECFRPC – 2007, Figure 4) c. Hydrography (USGS – 2006, Figure 5) d. Hydrographic Flowlines (USGS – 1999, Figure 6) e. Wetlands (NWI - 1998 and FLUCCS – 2004, Figures 7 & 8) f. Bald Eagles Nests (FWC - 2008 , Figure 9) g. Biodiversity Hot Spots Priority One, 8 - 13 Species (CLIPv1.0 – 2008, Figure 10) h. Ecological Greenways Network - Priorities One and Two (FDEP Reprioritization Layer – 2005, Figure 11) i. 100 year Floodplain - Q3 and DFIRM (FEMA – 2007, Figure 12) j. Ground Water Recharge Areas (SJRWMD - 2005, SFWMD - 2008, SWFWMD – 2002, Figure 13) k. Spring Sheds (SJRWMD – 2008, Figure 14) l. FNAI Rare Species Habitat Conservation Priorities 1-3 (FNAI/CLIP v1.0 – 2008, Figure 15)
Policy 3.2	Prevent the incremental severing of regional ecosystems and ecological corridors by identifying and protecting natural resources of regional significance.
Policy 3.3	Promote innovative design for development in harmony with natural resources.
Policy 3.4	Promote compact form and the aggregation of developments to conserve corridors containing natural resources of regional significance.
Policy 3.5	Dredge and fill activities should be minimized to ensure the least possible adverse environmental, social, and economic impacts to the region's estuaries.
Policy 3.6	Development and redevelopment for higher densities should be discouraged in Coastal High Hazard Areas, defined as the Category 1 storm surge area.
Policy 3.7	Development causing the destruction of natural protective features such as beaches, dune systems, wetlands, and barrier islands should be discouraged.

Policy 3.8	To prevent adverse effects in Storm Surge Areas for Category 1-5 Hurricanes, planning for natural and geologic hazards and sea level rise should be incorporated in any development or redevelopment efforts and comprehensive plan amendments.
Policy 3.9	Development should avoid or properly mitigate adverse impacts to listed species.
Policy 3.10	Wildlife management and conservation areas should be protected from encroachment.
Policy 3.11	Native vegetative and aquatic communities should be protected to the maximum extent possible.
Policy 3.12	Support Best Management Practices (BMP's), such as wildlife underpasses, that protect ecological corridors when development and infrastructure improvements occur.
Policy 3.13	Establish buffer zones landward of regionally significant wetlands and surface waters in order to protect surface water quality and quantity and to provide habitat for aquatic, semi-aquatic, or water dependent terrestrial wildlife.
Policy 3.14	Local governments and agencies within the Wekiva River Protection Area and Wekiva River Study Area should ensure that land use and development plans comply with the Wekiva Parkway and Protection Act (State Statute 369.314-369.324), the Wekiva River Protection Act (State Statute 369.301-369.309), and the associated regulatory measures of state and regional agencies.
Policy 3.15	Local governments within the Green Swamp Area of Critical State Concern (GSACSC) should ensure that land use and development plans comply with the GSACSC Principles for Guiding Development per F.A.C. s. 28-26.003.
Policy 3.16	The function of significant wetlands or wetland habitat should not be degraded if identified as a NRORS.
Policy 3.17	Adequate upland buffers surrounding preserved wetlands should be provided based on scientific evaluation of site specific conditions.
Policy 3.18	Development in the 100 year floodplain should be discouraged. ***Source:*** *www.dublin.oh.us* 

CHAPTER 3: NATURAL RESOURCES INDICATORS	
Acreage of conserved land	Baseline: 938,570 acres Source: FNAI, October 2008
Lands protected by Florida Forever funds	Baseline: 55,965 acres over 929 projects Source: FDEP, 2008
Land designated as rare species habitat (priority 1 – 3)	Baseline: 1.7 million acres Source: CLIP 2008
Warning or closures due to substandard water quality	Baseline: Brevard: 0 actions Volusia: 23 actions Source: EPA 2007
Open space as a percentage (conservation, wetlands, agriculture, forest, all undeveloped land)	Baseline: 68.5% Source: ECFRPC
Beach Erosion	Baseline: Brevard: 37 miles critically; 13 miles non-critically Volusia: 21 miles critically; 1 mile of non-critically Source: FDEP, Bureau of Beaches and Coastal Systems 2008 Coastal Erosion Lines
Land in mitigation banks	Baseline: 61,000 acres Source: ECFRPC

The ECFRPC would like to extend a special thanks to all those who participated in developing this chapter including those listed below:

NATURAL RESOURCES SOUNDING BOARD (July 21, 2008 and September 29, 2008)	
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Ted Brown	Baker Hostetler
Ernie Brown	Brevard County
Susan Caswell	Orange County
Scott Catasus	Lake County
Jennifer Cercsa	Lowndes, Drosdick, Doster, Kantor & Reed, PA
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Jeffrey Collins	Army Corp of Engineers
Penny Cople	BDA, Inc.
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Duane DeFreese	University of Central Florida
Dennis Michael	BDA, Inc.
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Mary Stewart Droege	City of Orlando
Jim Duby	Seminole County Natural Areas Program
Don Fisher	Osceola County
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Vivian Garfein	Florida Department of Environmental Protection
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Susan Gosselin	Brevard County Natural Resources Management Office
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Katrina Kinnard Rini	East Orlando Chamber of Commerce
Steve Kitner	Volusia County
Matt Klein	Florida Department of Environmental Protection
Steve Lau	Florida Fish and Wildlife Conservation Commission
Charles Lee	Audubon of Florida
Louis Ley	Florida Department of Environmental Protection
Randy Mathews	Osceola County
Rose Meehan	Orange County
Darla Miller	MSCW
Michele Moen	Volusia Soil and Water Conservation District
Charles Pattison	1000 Friends of Florida
James Payne	Deseret Ranch
Dan Pennington	1000 Friends of Florida
Keith Ray	D.R. Horton, Inc.
Elaine Renick	Lake County
Wayne Rich	Broad and Cassel
Dwight Saathoff	Akerman Senterfitt, PA
Susan Sadighi	Florida Department of Transportation
Keith Schue	The Nature Conservancy
Carolyn Schultz	Advanced Ecological Solutions, Inc.
James Sellen	Urban Land Institute and MSCW
Douglas Shaw	University of Florida
Chelsea Siefert	Central Florida Sustainable Communities Initiative
Lew Snyder	Greenberg Traurig, PA
Douglas Sphar	Sierra Club
Mary Sphar	Sierra Club
Chris Stapleton	Citizen
Bruce Stephenson	Rollins College
Alison Stettner	Seminole County
Glenn Storch	Glenn Storch, PA
Gregory Stubbs	Volusia County
Steve Swanke	Brevard County
Mary Thomison	Century 21 Real Estate
Walt Thomson	The Nature Conservancy

Wand Van Dam	Citizen
Karina Veaudry	Florida Native Plant Society
Kevin Vetelino	TQNT
Joseph Walsh	Florida Fish and Wildlife Conservation Commission
Austin Watkins	Seminole County
Allen Watts	Cobb and Cole
Gregg Welstead	Lake County
Bob Whidden	RJ Whidden & Associates
Sandeep Wilkhu	NASA Kennedy Space Center
Lisa Ford	Ford Properties