Introduction

Southeast Florida (Fig. 1) has more than 50 percent of the region in conservation lands, which includes the Everglades, the largest and most well known wetland ecosystem in Florida (Table 1). Despite these protective measures, few natural areas remain in coastal areas of Dade, Broward, and Palm Beach counties where coastal populations are concentrated. Wetlands in the region have been significantly altered to meet the needs of agriculture and the sprawling urban areas that dominate this region.

Included in this region are the unique Florida Keys, the most tropical of Florida's environments. Tropical hardwood hammocks in the Keys are home to a number of endangered plant and wildlife species. The Keys is also one of the most exciting locations in the country to watch the annual migration of raptors, including falcons.

This document summarizes major rivers, lakes and estuaries, featured natural areas, and cultural aspects of Florida's southeast region. For information on other regions in Florida refer to "The Florida Environment: An Overview", and the other seven regional profiles available online (http://edis.ifas.ufl.edu).

Figure 1. Southeast Florida region with counties. Credits: UF/IFAS
**Major Rivers, Lakes, Wetlands, and Estuaries**

The *Everglades* ecosystem is one of the largest and most unique wetland ecosystems on Earth. Described by Florida writer and environmentalist Marjorie Stoneman Douglas as a “river of grass” due to the vast expanses of saw grass through which surface water traveled to the Gulf of Mexico, the Everglades is far more ecologically complex than this metaphor suggests.

Historically, the Everglades was connected ecologically to the Kissimmee River and Lake Okeechobee and the ecosystem encompassed more than 4,000 square miles. In geologic terms the Everglades is young. It was formed approximately 5,000 years ago when rising sea levels created sufficient pressure to contain freshwater within the shallow bedrock trough in south Florida. For more than 5,000 years seasonal flooding flowed southward through the Everglades in a slow moving sheet up to three feet deep and 50 miles wide, stretching from Lake Okeechobee to the Gulf of Mexico. However, during the last century drainage projects, agriculture, and urban development reduced the extent of the Everglades and modified seasonal flooding critical to the ecosystem. Today, the Everglades is undergoing the largest ecological restoration project ever attempted to restore natural cycles of flooding and drying.

Everglades National Park (ENP) was created in 1934 in response to public pressure to preserve “an untouched example of the Everglades of Florida.” At approximately 1.5 million acres, the ENP is the largest subtropical wilderness in the continental United States, and in the top ten of the nation’s largest national parks. The ENP is also of international significance, having been designated as a World Biosphere Reserve, a World Heritage Site, and a Wetland of International Importance. It is the only wetland in the western hemisphere to receive these multiple designations.

The Everglades ecosystem includes both the temperate and tropical flora in a widely shifting collection of habitats within a vast wetland landscape that includes smaller upland features. Most of the freshwater area is dominated by saw grass, saw marsh and deeper sloughs, but also includes wet prairies, ponds, and cypress wetlands. Upland habitats include pine rockland communities on shallow lime rock soils, tropical hardwood hammocks, and tree islands. Tree islands are a unique feature in the Everglades and provide important upland habitats in the wetland landscape. The Everglades drains into Florida Bay along Florida’s southern coast, which is dominated by mangroves. Many small islands occur throughout the area.

The Everglades has over 350 species of birds and 50 reptiles. It is home to a variety of mammals, including the endangered Florida panther and American crocodile. Plant life is diverse in the Everglades, with more than 1,000 seed-bearing plants, some of which are found nowhere else.

A number of marshes are hydrologically linked to the Everglades and Lake Okeechobee; the Allapattah Marsh, the Loxahatchee Marsh, the Hungryland Slough, and the Hillsborough Lakes Marsh, together covering over 200,000 acres, all drain into the northern Everglades.

**Loxahatchee Marsh**, in Palm Beach County, is in the northeastern portion of the Everglades (Fig. 2). As many as 250 species of birds use the Loxahatchee for breeding, foraging, or migratory habitat, including the endangered Everglades snail kite.

The **Big Cypress Swamp** is on the western boundary of the Everglades. Big Cypress is topographically higher than the Everglades, and much of its water historically flowed west into the Everglades. Big Cypress National Preserve (729,000 acres) was created in 1974 to protect the cypress swamps, wet prairies, pine flatwoods, and tropical hardwood hammocks found there. Big Cypress stretches into southwest Florida.

**Lake Okeechobee** is the only major lake in the southeast region and is the lifeblood for all of south Florida. Lake Okeechobee is approximately 700 mi² and is the largest lake in Florida and one of the largest freshwater ecosystems in North America. It is unique because of its shallowness (average depth < 15 feet) and expansive littoral zone (shoreline) of
Figure 2. Southeast Florida’s major conservation lands
Credits: UF/IFAS

approximately 170 mi². Essentially, Lake Okeechobee is a large shallow depression that receives water primarily from the Kissimmee River, Taylor Creek, and Fisheating Creek basins to the north and northwest. Lake Okeechobee is also a part of the central east region of Florida.

Lake Okeechobee was formed over 6,000 years ago and was historically the liquid heart of the Everglades, providing the primary source of water that fueled the sheet flow that sustained the Everglades and nourished Florida Bay and coastal estuaries. During the late 19th and early 20th centuries, canals and dikes built for flood protection altered the hydrology of the lake, resulting in a much shallower lake with increased nutrients and a littoral zone choked with invasive exotic plants. Despite these challenges, Lake Okeechobee still provides important habitat and foraging opportunities for a wide range of species including bald eagles, wading birds, diving birds, migratory waterfowl, shorebirds, and other species such as river otters and an abundance of reptiles, amphibians, and fish. During wintering periods, hundreds of thousands of migrating waterfowl, shorebirds, and swallows may be observed at Lake Okeechobee.

There are few major rivers in the southeast Region of Florida. Those that do exist have been radically altered by humans. Many rivers have been straightened and made into canals to move water to or from developed and agricultural areas more efficiently. In fact, southeast Florida has one of the most extensive canal systems in the world designed to drain and manage the Everglades and Lake Okeechobee.

The Loxahatchee River drains the Loxahatchee Slough, which is north of and disconnected from the Loxahatchee Marsh. The river drains to the north and runs into the Loxahatchee River Aquatic Preserve and Jupiter Inlet on the Atlantic coast. The Loxahatchee River was designated as Florida’s first National Wild and Scenic River. Although it has been extensively diked, channeled, and drained, it still is one of Florida’s most beautiful rivers.

The New River is more of a canal than a river for most of its course, from the southeast side of Lake Okeechobee in Palm Beach County to Ft. Lauderdale in Broward County. Only five miles of the river remains in a semi-natural state. The New River was channelized to carry agricultural runoff from the Lake Okeechobee region to the Atlantic Ocean. Many rare and endangered plants and animals historically occurred along the river; most are now gone due to urban development. Manatee, wood storks, and American crocodiles are a few of the larger animals of note remaining in the river basin.

**Featured Natural Areas**

(see Table 2 for detailed list of natural areas)

**Everglades National Park** encompasses approximately 1.5 million acres (Fig. 2). Despite this, the park is only a small component of the historical area that formed the greater Everglades ecosystem, which extended from the Kissimmee River to Florida Bay.

**Key Largo Hammock Botanical State Park** covers 2,304 acres and is one of the largest contiguous tracts of tropical hardwood hammock found in the United States. The hammock is home to 84 protected species of plants and animals. The threatened white-crowned pigeon, unique to south
Florida's Environment - Southeast Region

Florida, feeds on tropical fruits such as pigeon plum. Other unusual species include rare tree snails, giant land crabs, and the endangered Key Largo Wood rat.

DuPuis Reserve State Forest encompasses 21,875 acres and represents a remnant of the northern portion of the Everglades. Pine flatwoods, cypress swamps, wet prairies, and freshwater marshes occur on the reserve.

Florida Key Deer National Wildlife Refuge was established on Big Pine Key to protect the endangered Florida Key deer. Upland forests encompass 2,400 acres and include tropical hardwood hammock and pine rockland habitat. The refuge supports 22 federally listed endangered and threatened species of plants and animals, 5 of which are found nowhere else in the world.

Biscayne National Park is in Biscayne Bay and the offshore waters along the Atlantic coast south of Miami in Miami-Dade County, Florida. The park is 95 percent underwater and encompasses almost 173,000 acres, containing about 72,000 acres of coral reefs. Nearly 20 threatened and endangered species live in the park. These species include sea turtles, crocodiles, and manatees.

Florida Keys National Marine Sanctuary includes 3,674 square miles of ocean surrounding the archipelago formed by the Florida Keys. The waters include the world’s third largest barrier coral reef system, thousands of acres of seagrasses, and hundreds of miles of mangrove forests, favored habitat of the endangered American crocodile.

John Pennekamp Coral Reef State Park was the first undersea park in the United States. The Park extends 3 miles into the Atlantic Ocean and is approximately 25 miles in length, and was established to protect coral reef, mangrove swamp, and tropical hammock habitat.

### Cultural History

The history of southeast Florida is intertwined with the history of the Everglades. The history of the Everglades can be divided into 5 periods:

- **Paleo-Indian Period (10,000 BC to 8000 BC)** — During this period humans lived with and depended on mammoths and bison to survive. The climate was arid.

- **Archaic Period (8000 BC to 750 BC)** — During the Post Glacial period, the sea level rose and diminished Florida’s land base, and the climate began to change. About 5000 years ago, cypress swamps and hardwood forests characteristic of subtropical terrain began to develop. The people of this period increasingly relied on coastal resources.

- **The Glades Period (ca. 750 BC to AD 1500)** — The Glades I, II, and III periods are dated and characterized by pottery types. During the Glades II and III periods, a thriving trade network is evidenced by a variety of exotic resources, such as lithic tools and ornaments.

- **Historic Contact Period (ca. AD 1500 to AD 1750)** — This period includes the arrival of the Europeans. Early Europeans encountered a thriving population of at least five separate tribes: the Tequesta in southeast Florida, the Calusa in the southwest, and the Jeaga and Ais along the east coast north of the Tequesta, and the Mayaimi near Lake Okeechobee. At the time of Spanish contact the Calusa maintained political dominance over these groups. It has been estimated that there were approximately 20,000 Indians in South Florida when the Spanish arrived during the 1500s. By 1763, when the English gained control of Florida, the

### Table 2. Recreational and cultural opportunities in natural areas in southeast Florida. (NWR = National Wildlife Refuge, Ntl = National)

<table>
<thead>
<tr>
<th>County</th>
<th>Natural area</th>
<th>Phone</th>
<th>Web site</th>
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<tr>
<td>Broward/ Palm Beach/ Hendry</td>
<td>Big Cypress Seminole Indian Reservation</td>
<td>(800) 617-7516</td>
<td><a href="http://www.abfla.com/1tocf/seminole">http://www.abfla.com/1tocf/seminole</a></td>
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<tr>
<td>Broward</td>
<td>Cypress Creek/ C14 Canal</td>
<td>(850) 488-4676</td>
<td><a href="http://www.myfwc.com/RECREATION/WMASites_CypressCreek_index.htm">http://www.myfwc.com/RECREATION/WMASites_CypressCreek_index.htm</a></td>
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</table>
Florida's Environment - Southeast Region

Table 2. Recreational and cultural opportunities in natural areas in southeast Florida. (NWR = National Wildlife Refuge, Ntl = National)

<table>
<thead>
<tr>
<th>County</th>
<th>Natural area</th>
<th>Phone</th>
<th>Web site</th>
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<tr>
<td>Broward</td>
<td>Crystal Lake Hillsborough Pineland Woodmont Fern Forest</td>
<td>(954) 968-3890 (954) 698-1200 (954) 968-3890 (954) 970-0150</td>
<td><a href="http://www.broward.org/Parks/FindAPlace/Pages/NaturalAreas.aspx">http://www.broward.org/Parks/FindAPlace/Pages/NaturalAreas.aspx</a></td>
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<tr>
<td>Broward</td>
<td>Everglades Buffer Strip North Mgmt. Area</td>
<td>(800) 432-2045</td>
<td><a href="https://my.sfwmd.gov/portal/page?_pageid=2236,4746587&amp;_dad=portal&amp;_schema=PORTAL">https://my.sfwmd.gov/portal/page?_pageid=2236,4746587&amp;_dad=portal&amp;_schema=PORTAL</a></td>
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<td>Broward</td>
<td>Graves Museum of Archaeology &amp; Natural History</td>
<td>(954) 925-7770</td>
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<td>Broward</td>
<td>Hugh Taylor Birch State Park</td>
<td>(954) 564-4521</td>
<td><a href="http://www.floridastateparks.org/hughtaylorbirch/">http://www.floridastateparks.org/hughtaylorbirch/</a></td>
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<tr>
<td>Broward</td>
<td>Sawgrass Recreation Park</td>
<td>(800) 457-0788</td>
<td><a href="http://www.evergladestours.com">http://www.evergladestours.com</a></td>
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<tr>
<td>Broward</td>
<td>West Lake Park</td>
<td>(305) 357-8100</td>
<td><a href="http://www.broward.org/Parks/FindAPlace/Pages/NaturalAreas.aspx">http://www.broward.org/Parks/FindAPlace/Pages/NaturalAreas.aspx</a></td>
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<td>Dade</td>
<td>Arcola Lakes Park</td>
<td>(305) 836-5095</td>
<td><a href="http://www.co.miami-dade.fl.us/parks/parks/arcola_lakes.asp">http://www.co.miami-dade.fl.us/parks/parks/arcola_lakes.asp</a></td>
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<td>Dade/</td>
<td>Biscayne Bay Aquatic Preserve</td>
<td>(305) 395-3485</td>
<td><a href="http://www.dep.state.fl.us/coastal/sites/biscayne/">http://www.dep.state.fl.us/coastal/sites/biscayne/</a></td>
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<td>Monroe</td>
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<td>Dade</td>
<td>Biscayne National Park</td>
<td>(305) 230-7275</td>
<td><a href="http://www.nps.gov/bisc/index.htm">http://www.nps.gov/bisc/index.htm</a></td>
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<td>Dade</td>
<td>Charles Deering Estate</td>
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<td><a href="http://www.deeringestate.org">http://www.deeringestate.org</a></td>
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<td>Dade</td>
<td>Dade County Natural areas</td>
<td>(305) 665-5475</td>
<td><a href="http://www.miamidade.gov/parks/library/NAM06-07VolunteerCalendar.pdf">http://www.miamidade.gov/parks/library/NAM06-07VolunteerCalendar.pdf</a></td>
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<td>Dade</td>
<td>Historical Museum of Southern Florida</td>
<td>(305) 375-1492</td>
<td><a href="http://www.hmsf.org/">http://www.hmsf.org/</a></td>
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<td>Dade</td>
<td>John Pennekamp Coral Reef Park</td>
<td>(305) 451-6322</td>
<td><a href="http://www.pennekamppark.com/">http://www.pennekamppark.com/</a></td>
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<tr>
<td>Dade</td>
<td>Southern Glades Trail</td>
<td>(305) 740-9007</td>
<td><a href="https://my.sfwmd.gov/portal/page?_pageid=2236,4746633&amp;_dad=portal&amp;_schema=PORTAL">https://my.sfwmd.gov/portal/page?_pageid=2236,4746633&amp;_dad=portal&amp;_schema=PORTAL</a></td>
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<tr>
<td>Dade</td>
<td>Tamiami (C4) Canal</td>
<td>(850) 488-4676</td>
<td><a href="http://www.myfwc.com/RECREATION/FW_forecasts_sor.htm">http://www.myfwc.com/RECREATION/FW_forecasts_sor.htm</a></td>
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<td>Dade</td>
<td>Vizcaya Museum &amp; Gardens</td>
<td>(305) 250-9133</td>
<td><a href="http://www.vizcayamuseum.org/">http://www.vizcayamuseum.org/</a></td>
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<tr>
<td>Martin</td>
<td>Hobe Sound NWR</td>
<td>(561) 546-6141</td>
<td><a href="http://www.fws.gov/hobesound/index.html">http://www.fws.gov/hobesound/index.html</a></td>
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<tr>
<td>Martin</td>
<td>Jensen Beach / Jupiter Inlet Aquatic Preserve</td>
<td>(561) 873-6590</td>
<td><a href="http://www.dep.state.fl.us/coastal/sites/jensen/">http://www.dep.state.fl.us/coastal/sites/jensen/</a></td>
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<tr>
<td>Palm Beach/Martin</td>
<td>Loxahatchee River- Lake Worth Creek Aquatic Preserve</td>
<td>(561) 873-6590</td>
<td><a href="http://www.dep.state.fl.us/coastal/sites/loxahatchee/">http://www.dep.state.fl.us/coastal/sites/loxahatchee/</a></td>
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<tr>
<td>Martin</td>
<td>St. Lucie Inlet St. Park</td>
<td>(561) 744-7603</td>
<td><a href="http://www.floridastateparks.org/stlucieinlet/">http://www.floridastateparks.org/stlucieinlet/</a></td>
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<td>Monroe</td>
<td>Bahia Honda Key State Park</td>
<td>(305) 872-2353</td>
<td><a href="http://www.floridastateparks.org/bahiahonda/">http://www.floridastateparks.org/bahiahonda/</a></td>
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<td>Monroe</td>
<td>Big Cypress Ntl Preserve</td>
<td>(941) 695-4111</td>
<td><a href="http://www.nps.gov/bicy/">http://www.nps.gov/bicy/</a></td>
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<td>Monroe</td>
<td>Bill Baggs Cape State Park</td>
<td>(305) 361-8779</td>
<td><a href="http://www.floridastateparks.org/capeflorida/">http://www.floridastateparks.org/capeflorida/</a></td>
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<tr>
<td>Monroe</td>
<td>Coupon Bight Aquatic Preserve</td>
<td>(305) 289-2336</td>
<td><a href="http://www.dep.state.fl.us/coastal/sites/coupon/">http://www.dep.state.fl.us/coastal/sites/coupon/</a></td>
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population of Native Americans had been reduced to several hundred.

- Historic Period (ca. AD 1750 to AD 1930) — There is little information on any pre-19th century activities in the area south of Lake Okeechobee. With the demise of indigenous people in south Florida, and white settlement occurring to the north, increasing migrations of Creek Indians moved southward. The Creeks and proto-Seminoles were in the area as early as the eighteenth century. During the Seminole Wars (1817–18, 1835–42, 1855–58) independent
bands of Florida Indians established themselves in the Everglades to avoid removal from Florida.

Early colonial settlers and land developers viewed the Everglades as a worthless swamp in need of reclamation. The dream of draining the Everglades was initiated in the mid 1800s and by the 1880s developers started digging drainage canals. The town of Flamingo was established in 1893. Early tradesman were charcoal makers (charcoal was sold in 100 pound sacks at Key West), boatman, or sugar cane haulers. Supplies were shipped from Key West, Fort Myers or Tampa, and cane syrup, fish, and produce were traded in return. Most residents also fished and hunted for money and food. Heron and egret plume hunting was a major source of cash income at the dawn of the 20th century.

Efforts to drain the region continued and between 1905 and 1910 large tracts of wetlands were transformed into agricultural land. This abundance of "new" land stimulated the first of several south Florida land booms. Railroads constructed by entrepreneurs like Henry B. Plant and Henry M. Flagler made the region more accessible and attractive to tourists. By the 1920s visitors and new residents flocked to blossoming towns like Fort Lauderdale, Miami, and Palm Beach. As they arrived, developers cut more canals, built new roads and removed the natural buffer of mangroves from the shorelines.

In 1948 Congress authorized the Central and South Florida Project, an elaborate system of roads, canals, levees, and water-control structures stretching throughout the region. Constructed by the Army Corps of Engineers, the projects purposes were to supply water and flood protection for urban and agricultural lands, water supply for Everglades National Park, preservation of fish and wildlife habitat, navigation and recreation, and prevention of salt water intrusion. While the project still provides many of the intended benefits, the alteration of regional wetlands, estuaries, and bays coupled with increasing population pressures significantly degraded the natural system.

**Additional Sources of Information**

**Published Material**


**Online Resources**


Florida Division of Historical Resources, http://www.flheritage.com/


Florida State Parks, http://www.floridastateparks.org

Florida Natural Areas Inventory, http://www.fnai.org


Florida’s Environment - Southeast Region

Touring the Georgia-Florida Coast,
http://www.nps.gov/history/nr/travel/geo-flor/g-fintro.htm

P.K. Yonge Library of Florida History,
http://web.uflib.ufl.edu/spec/pkyonge/index.html

South Florida Water Management District,
http://www.sfwmd.gov/

The Seminole Tribe of Florida,
http://www.semtribe.com/

Visit Florida,
http://www.visitflorida.com

Table 1. Conservation land acreage in Florida’s southeast region

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<thead>
<tr>
<th>County</th>
<th>Conservation Land</th>
<th>% of Total</th>
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<tr>
<td>Broward</td>
<td>428,880</td>
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<tr>
<td>Dade</td>
<td>823,830</td>
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<td>Martin</td>
<td>78,870</td>
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<tr>
<td>Monroe</td>
<td>588,640</td>
<td>92%</td>
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<tr>
<td>Palm Beach</td>
<td>448,660</td>
<td>34%</td>
</tr>
<tr>
<td>Region Total</td>
<td>2,368,880</td>
<td>55%</td>
</tr>
</tbody>
</table>

Based on 2006 Florida Natural Areas Inventory
Managed Conservation Land. Florida State University.

Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.