CONSERVATION ELEMENT

DATA INVENTORY AND ANALYSIS

PURPOSE

The purpose of the Conservation Element is to promote the conservation, use, and protection of natural resources in the County.

NATURAL ENVIRONMENT

Climate

For St. Lucie County, the Southeast Regional Climate Center has data collected from the City of Fort Pierce that identifies from 1901 to 2008, the average annual maximum temperature is 82.1 F° and the average annual minimum temperature is 64.7 F°. The average annual total precipitation is 52.68 inches. Precipitation is not distributed evenly throughout the year. Precipitation ranges from an average monthly low of 2.14 inches in December, to 7.89 inches in September. Precipitation is heaviest from June through September; with nearly half of the annual rainfall occurring during these four months. No snowfall has been reported during this recording period.

Thunderstorms are common during the summer months. Hurricanes, much less frequent occurrences, have the potential to occur from June through November; heavy rainfall, high winds, and widespread flooding may accompany these storms. Records, again tracked specific to Fort Pierce, identify that hurricanes have brushed or hit within 60 miles 24 times from 1871 through 2008. Major events occurred in 1928 and 1949. This was followed by a relatively inactive period during the 1950s when Hurricane King, a minor event, occurred. More recent occurrences were in 2004 when Hurricane Francis with 105 MPH winds made land fall on September 5th which was followed by Jeanne with 120 MPH winds on September 26th; both storms caused significant damage to the area. Hurricane Wilma, with 105 MPH winds, passed to the south on October 25, 2005, causing moderate damage. The most recent storm event occurred when tropical storm Fay passed to the northwest on August 20, 2008 with heavy rainfall causing flooding to many locations.

Soils

Map FLU-3a and 3b. Soils*,* provides the general distribution of soils in the County as presented in the 1990 National Cooperative Soil Survey conducted by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS). Table 6-1. Soils, provides a list of the soils mapped by the NRCS. Appendix 6-A. Soil Descriptions*,* provides a description, as provided by the Natural Resource Conservation Service (NRCS), of each of the soils represented in the County. Please note, the table and map do not include water bodies, frequently flooded areas, and urban lands or other areas where natural soil coverage is not evident or present.

Table 6-1. Soils	
ANCLOTE SAND	NETTLES AND OLDSMAR SANDS
ANKONA AND FARMTON SANDS	OLDSMAR SAND
ARCHBOLD SAND	PALM BEACH FINE SAND
ASTATULA SAND	PAOLA SAND
BASINGER SAND	PENDARVIS AND POMELLO SANDS
CANAVERAL FINE SAND	PEPPER AND EAUGALLIE SANDS
CHOBEE LOAMY SAND	PINEDA SAND
EAUGALLIE FINE SAND	POMPANO SAND
ELECTRA FINE SAND	POPLE SAND
FLORIDANA SAND	RIVIERA FINE SAND
HALLANDALE SAND	RIVIERA SAND
HILOLO LOAMY SAND	SALERNO AND PUNTA SANDS
HOBE SAND	SAMSULA MUCK
HONTOON MUCK	SATELLITE SAND
JONATHAN SAND	ST. LUCIE SAND
JUPITER FINE SAND	SUSANNA AND WAUCHULA SANDS
KALIGA MUCK	TANTILE AND POMONA SANDS
KESSON-TERRA CEIA COMPLEX	TERRA CEIA MUCK
KESSON MUCK	WABASSO FINE SAND
LAWNWOOD AND MYAKKA SANDS	WABASSO SAND
MALABAR FINE SAND	WAVELAND-LAWNWOOD COMPLEX
MCKEE SANDY CLAY LOAM	WINDER LOAMY SAND
MYAKKA FINE SAND	WINDER SAND

Physiography

St. Lucie is an Atlantic Ocean coastal County located slightly south of the middle of the Florida peninsula. The County is composed of a mainland component, an estuarine lagoon, and a barrier island that is intersected by the Fort Pierce inlet. The U.S. Fish and Wildlife Service (FWS) identifies the County as a part of an Upper East Coast sub-region, which includes Indian River, Martin and the northern portion of Palm Beach County. This sub-region covers approximately 2,174 square miles and has an average elevation of 20 feet. The rise and fall of changing sea levels formed this area which is characterized by three east to west physiographic zones: (1) the Atlantic Coastal Ridge, (2) the Eastern Valley, and (3) the Osceola Plain. The Atlantic Coastal Ridge, bordered on the east by the Atlantic Ocean and on the west by the Eastern Valley, consists of relic dune ridges formed by wind and wave action along the coastline. Paralleling the east coast, the Ridge varies in width from a few hundred yards to a mile or two, and ranges in elevation from sea level to approximately 100 feet in Jonathan Dickinson State Park, the highest coastal elevation within this sub-region. In general, U.S. Highway 1 and the F.E.C. Railway run along the Atlantic coastal ridge.

Map FLU-4 Topography, identifies the topography of the County. The County is relatively flat with elevations ranging from 0 to 30 feet. The vast majority of the County is at 20

feet. The lowest elevation is found along the coastlines and the St. Lucie River. The highest elevation is along the Atlantic Coastal Ridge and the westernmost lands.

Soil Erosion

Due to the relatively flat topography of the County, and the protection the Barrier Island provides, soil erosion from typical geophysical conditions is generally not a problem in the mainland component of the County. However, soil erosion and sedimentation can be a problem with large scale mining and agricultural operations if recommended Best Management Practices are not followed.

In the 1920's the headwaters of the North Fork the St. Lucie River were dredged for flood control and navigation. Spoil deposited along the newly-created channel isolated both floodplain habitat and oxbows from the original river course. This left canals with steep banks and narrow remains of floodplain habitats degraded by dense stands of non-native vegetation. These altered shorelines with diminished and degraded floodplain are susceptible to erosion and have created sedimentation problems along the North Fork of the St. Lucie River. Restoration projects along the North Fork are proposed within a component of the federal Comprehensive Everglades Restoration Program (CERP) identified as the *Indian River Lagoon - South Plan*.

Beach Erosion. A barrier island is by nature a migrating system and is subject to erosion, especially during storm events. Significant beach erosion occurred in 2004 with the land fall of two major hurricanes in St. Lucie County. The *Critically Eroded Beaches in Florida Report, 2009 Update*, produced by the Florida Department of Environmental Protection (FDEP) Bureau of Beaches and Coastal Systems, identifies 9.4 miles of critically eroded and 7.9 miles of non-critically eroded ocean shoreline in St. Lucie County. The St. Lucie County Summary from the DEP report states:

> There are four critically eroded areas (9.4 miles) and two non-critically eroded areas (7.9 miles) in St. Lucie County. The northern 1.8 miles of the county (R1-R10) is critically eroded threatening state Road A1A, limited development, and recreation interests and wildlife habitat at Avalon state Park. The 2.3 miles of Ft. Pierce Beach (R34-R46) extending south from Ft. Pierce Inlet is critically eroded threatening recreation and development interests. Most of this area is a beach restoration project.
>
> Along central Hutchinson Island is a 6.4-mile segment of non-critically eroded shoreline (R46-R80), which lacks any current threat. Immediately to the south is a 1.9-mile eroded segment (R80-R90.3) that threatens the St. Lucie Nuclear Power Plant facilities, limited development, and recreation interests at the Walton Rocks Park. Continuing to the south from this location is another 1.5-mile eroded segment (R90.3-R98) with no current threat. The southern 3.4 miles of the county shoreline (R98-R115+1000) is critically eroded with development interests threatened.

The Bureau defines critically eroded as 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. Critically eroded

areas may also include peripheral segments or gaps between identified critically eroded areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects.

The construction of the Fort Pierce Inlet and subsequent construction of the jetty interrupted the natural migration patterns of the barrier island and exacerbated soil erosion and accretion problems particularly within the City of Fort Pierce along Fort Pierce Beach. This portion of the shoreline is part of the ongoing beach nourishment program authorized by the US Army Corp of Engineers (USACE).

Commercially Valuable Minerals

Many areas of central and southern Florida have been utilized to mine sand and lime rock materials for road building and development activities. Other than sand or lime rock substrate, there are no commercially valuable minerals in the County. A July 2009 status report identifies there are eight (8) active, two (2) approved, four (4) pending, two (2) under application review, and thirty-two (32) inactive mining operations within the County.

Floodplains

The National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA) has identified the following flood zones within the County. Table 6-2. Federal Emergency Management Agency Flood Zones, identifies and describes the flood zones.

Table 6-2. Federal Emergency Management Agency Flood Zones

Zone	Description
A	An area inundated by 1% annual chance flooding, for which no base flood elevations (BFE's) have been determined.
AE	An area inundated by 1% annual chance flooding, for which BFEs have been determined.
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. Average flood depths derived from detailed analyses are shown within these zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
X	Areas determined to be outside the 500-year floodplain, determined to be outside the 1% and 0.2% annual chance floodplains. Areas of minimal flood hazard from the principal source of flood in the area.
X500	Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. An area inundated by 0.2% annual chance flooding.

Map FLU-5 Flood Zones*,* locates the boundaries of the flood zones within the County. Nearly all the mainland component of the County is an X zone, and the majority of the barrier island is an AE zone. Existing land uses found within the floodplain and flood zones are illustrated in the Future Land Use Element.

Land use as it relates to the discharge of stormwater and the use of natural drainage are regulated through the South Florida River Water Management District. The Florida Building Code regulates construction as it relates to flood zones.

Air

Based upon ambient air quality monitoring, conducted by the Florida Department of Environmental Protection (FDEP) and documented in the *2006 Florida Air Monitoring Report*, St. Lucie County, and now all of Florida, is an attainment area for the six major air contaminants: carbon monoxide (CO), lead (Pb), ozone (O_3), nitrogen dioxide (NO_2), particulate matter (PM), and sulfur dioxide (SO_2). The attainment area designation indicates that the concentrations of major pollutants are within the acceptable limits set by the Florida Department of Environmental Protection and the U.S. Environmental Protection Agency. Air quality is a matter that must be addressed at a regional level requiring the local, County and regional entities to coordinate air quality maintenance and improvement efforts.

Water Resources

Map FLU-6 Water Bodies*,* locates the significant natural water bodies within the County. The County has significant marine, estuarine and freshwater resources. Along the east coastline is the Atlantic Ocean.

Indian River Lagoon. Immediately interior to the coastal barrier island, located between the barrier island and the Atlantic Coastal Ridge, is the Indian River Lagoon (IRL). The IRL is a linear estuarine system that extends along more than a third of Florida's east coast, over 155 miles, from Ponce de Leon Inlet in Volusia County south to Jupiter Inlet in Palm Beach County. Numerous freshwater wetlands and sloughs undergo a transition into riverine systems that connect directly to the IRL. The lagoon interacts with the saline waters of the Atlantic Ocean through the inlets, providing tidal exchange with fresh water discharged into the lagoon from the inland rivers.

The IRL provides a higher species diversity than any other estuary in North America. Due to the distinct characteristics of this system, portions of the IRL have been designated as Aquatic Preserves. The *Vero Beach to Fort Pierce Aquatic Preserve* extends from the southern Vero Beach corporate limit (Indian River County) to the north A1A bridge at Fort Pierce (St. Lucie County), and the *Jensen Beach to Jupiter Inlet Aquatic Preserve* extends from the southern corporate limits of Fort Pierce (St. Lucie County) south (through Martin County) to Jupiter Inlet (West Palm Beach County). The *Vero Beach to Fort Pierce Aquatic Preserve* is 12 miles long and encompasses 11,000 acres. The *Jensen Beach to Jupiter Inlet Aquatic Preserve* is 37 miles long and encompasses 22,000 acres. Both Aquatic Preserves were adopted under Florida Statutes, Sections 258.35 – 258.46 by the State of Florida on October 21, 1969 and are managed by the Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed Areas. The Preserves are listed in the Aquatic Preserve Rule, Chapter 18-20 Florida Administrative Code, and have also been designated as Outstanding

Florida Water pursuant to Chapter 62.302.7 F.A.C. Additionally, a portion of the *Vero Beach to Fort Pierce Aquatic Preserve* designated as Class II waters afforded protection for shellfish propagation or harvesting. The IRL is one of only twenty-eight estuaries in the country in the Environmental Protection Agency's National Estuary Program.

A variety of organizations have monitoring and research underway in the IRL and its watershed. The Indian River Lagoon Surface Water Improvements and Management (SWIM) Program has been designed to develop and execute a combination of research and practical implementation projects to protect or restore the environmental resources of the Indian River Lagoon. This joint program, administered cooperatively through the St. John's River Water Management District (SJWMD) and the South Florida Water Management District (SFWMD), has three goals:

- Attain and maintain water and sediment of sufficient quality to support a healthy, seagrass-based estuarine ecosystem;
- Attain and maintain a functioning seagrass ecosystem which supports endangered and threatened species, fisheries and wildlife; and
- Achieve heightened public awareness and coordinated interagency management.

St. Lucie River. The St. Lucie River (SLR) is divided into four sections: North Fork, South Fork, Middle Estuary and Lower Estuary. The North Fork of the St. Lucie River falls almost exclusively within the St. Lucie County. The creation of St. Lucie Inlet in 1892 connected the Indian River Lagoon to the Atlantic Ocean at the mouth of the SLR. This project ultimately converted this freshwater tributary to a riverine estuary (freshwater in the upper reaches and saltwater in the middle and lower sections). This unique salinity gradient changed the natural resources found in the SLR. Because of its geographic location and tidal connection through the St. Lucie Inlet, the North Fork supports high species diversity and serves as an important nursery ground for a variety of fish and wildlife. The river now serves as an important brooding and nursery ground for migratory fish, such as snook (*Centropomus spp.*), snapper (*Lutjanus spp.*), and opossum pipefish (*Microphis brachyurus lineatus*) that require estuarine and freshwater to complete their lifecycle. The river is also especially important habitat for the juvenile phases of commercially important species such as blue crabs, snook, snapper, drum and shrimp. Rare tropical peripheral fish species, such as gobies, sleepers, and pipefishes, are also found in the upper reaches of the North Fork and the two headwaters - Five Mile Creek and Ten Mile Creek.

The North Fork St. Lucie River is part of Florida's Save ~~our~~ Our Rivers ~~program~~Program. Additionally a portion of the North Fork was designated as an aquatic preserve in 1972 and is also designated as Outstanding Florida Water pursuant to Chapter 62-302 F.A.C. The North Fork Aquatic preserve is bounded on the north by Midway Road and extends from Coconut Point in Stuart to Jenkins Point in Palm City just west of the Roosevelt Bridge in Martin County. The eastern and western boundaries of the preserve encompass the state-owned sovereign submerged lands occurring below the mean high water line to which the state holds title. The preserve is approximately 16 miles long through the natural riverbends and contains approximately 5,000 acres.

The North Fork is located in the Eastern Valley region which is composed of long, low narrow ridges ranging from 15 to 30 feet in elevation. The natural topography of the watershed is generally flat with few natural rises. The hydrology of the North Fork and its

headwaters was altered in the early to mid 1900s to support the growing demands of development and navigation. This began with a network of agricultural and residential canals and drainages. The canals were primarily designed to address flood control and drainage for land reclamation. Prior to these drainage efforts, the North Fork St. Lucie River (SLR) watershed encompassed 187 square miles. Construction of these drainage canals expanded the watershed to 821 square miles by diverting flows from other areas to the North Fork.

Another flood control and navigation project was conducted from the 1920s to the 40s to straighten portions of the North Fork. In the process of straightening the river, the dredged spoil was piled into berms (mounds) along the banks of the new channel. These spoil piles, which can measure up to 50 feet wide and 25 feet tall, block former river bends and oxbows as well as isolate a large portion of the North Fork floodplain. Historically, the slow and meandering path of the North Fork allowed suspended solids to settle out of the water and nutrients to be filtered by vegetation, but the direct river-course does not, which now effects the water quality and sediment loads reaching the estuary.

Drainage Canals. The County has three major primary drainage and flood control canals, the C-23, C-24 and C-25 which are part of the Central and South Florida Flood Control project and are managed by the South Florida Water Management District (SFWMD). In addition, the Fort Pierce Farms Water Control District and the St. Lucie River Water Control District manage numerous secondary canal systems. These canals are solely dependent on rainfall as a source of inflow and are important sources of agricultural irrigation water. Canals C-23, C-24 and the North Fork of the St. Lucie River Water Control District canals drain into the North Fork of the St. Lucie River and its major tributaries. The C-25 Canal and Fort Pierce Farms Water Control District (Basin 1) canals empty directly into the Indian River lagoon nearly opposite the Fort Pierce Inlet. At this time, all but a small area in southwestern and northeastern St. Lucie County is drained by these primary and secondary canal systems.

Alteration and expansion of the historic watershed coupled with ecologically-degrading land use practices have set the stage for the current impaired condition of the North Fork and most other SLR watershed basins. Prior to these manmade alterations, wet season rains pooled broadly across the SLR watershed and moved toward the naturally lower elevations surrounding the river. Historic wetland ecosystems facilitated dynamic watershed storage and sheet flow. Reduced movement through natural features kept wetlands flooded and provided for movement of groundwater to the river during the dry season. This made historic wetlands and estuaries less vulnerable to Florida's variable rainfall. Today, much of the watershed runoff from the North Fork drainage basins flows quickly from smaller, residential canals into large canals that cross the coastal ridge instead of being detained, evaporated, cleansed, and held by natural systems.

The Savannas. A unique freshwater ecosystem is located in a shallow catchment area between the steeper western slope of the Atlantic Ridge and the gentler slope to the eastern uplands. A large portion of this habitat is under public ownership and is referred to as The Savannas. The Savannas Leisure Recreational Area, located within the City of Fort Pierce, is utilized as an outdoor recreation area providing camping, boating, fishing, and picnic facilities. The area, managed by the St. Lucie County Parks and Recreation Department, covers 581 acres and contains five distinct biological communities: including pine flatwoods, wet prairie, marsh, freshwater lake and scrub. The 6,311 acre

Savannas Preserve State Park under the ownership and management of the State is adjacent to the recreational area. Outside of the Savannas, inland freshwater wetlands and swamps also occur throughout the County. Map FLU-7. Wetlands, locates the wetland habitat in the County.

Ten Mile Creek Water Preserve Area. Nearing completion of construct~~ed~~ion is a feature of the *IRL – SWIM Plan* referred to as the Ten Mile Creek Water Preserve Area (WPA). This is one of the largest stormwater and restoration improvement projects to impact the St. Lucie Estuary and River in advance of the federal Comprehensive Everglades Restoration Program (CERP) *IRL - South Plan* proposed projects. This project is situated at the headwaters of the North Fork of the St. Lucie River Aquatic Preserve and the total site is 910 acres. Ten-Mile Creek runs west to east across the northern portion of the site. This project involves the construction of an above ground reservoir with a pump station for filling the reservoir from Ten-Mile Creek and a gated water-level control structure for the release of water back to the creek. The total project will consist of a 500-acre reservoir, a polishing cell of roughly 110 acres and an adjoining natural preserve area consisting of scrub habitat and a borrow pit. Based upon existing topography, stored water depths in the reservoir will average ten feet. Total storage capacity will be approximately 5,000 acre-feet. The height of the reservoir levee will range from about 12 to 15 feet above surrounding natural ground.

The purpose of the Ten Mile Creek WPA is the seasonal or temporary storage of stormwater from the Ten-Mile Creek Basin. The Ten-Mile Creek Basin is the largest sub-basin and contributes the second largest volume of stormwater to the St. Lucie River Estuary. Stormwater will be captured in the reservoir and then passed through a polishing cell for additional water quality treatment before being released into the North Fork. Stored water can be released in the drier winter months to augment current insufficient flows.

Indian River Lagoon-South Plan. The component of the federal Comprehensive Everglades Restoration Program (CERP), referred to as the *IRL - South Plan* proposes the following projects within St. Lucie County. The IRL-South Final Project Implementation Report describes these projects as follows:

> **C-23/24 North Reservoir.** This feature is located on the west side of C-24 between control structures G-81 and G-79 and includes a 4,399-acre aboveground reservoir with a maximum depth of 12-feet. The total storage capacity of the reservoir is approximately 48,500 acre-feet. The purpose of this component is to capture local runoff from the C-23 and C-24 Basins. The pump station will be designed to provide up to 900-cubic feet per second (cfs) removal rate from C-24 canal. This water can then be routed to the C-23/24 STA or returned to C-23 or C-24 when there is a need to reclaim storage capacity or meet a water supply demand. The component is designed for stormwater attenuation to the estuary to control salinity and to provide an additional source of agricultural water supply. This component is also expected to provide incidental water quality benefits by reducing loads of nutrients, pesticides, and other pollutants.

C-23/24 South Reservoir. This feature is located north and west of C-23 between control structures G-78 and G-79 and includes a 4,155-acre aboveground reservoir with a maximum depth of 12-feet. The total storage capacity of the reservoir is approximately 43,400 acre-feet. This component functions very much like the C-23/24 North reservoir. The pump station will be designed to remove up to 900 cfs from the C-23 canal. Approximately 10,560 feet of Canal C-23 will be re-routed around the reservoir levee as part of the seepage canal system. The abandoned section of the canal will be left in place as an approach to the drawdown structure S-413 and as a fish refuge area.

C-23/24 Stormwater Treatment Area (STA). The STA is located east of C-24 between control structures G-81 and G-79. It is designed to remove 80% of the phosphorus from stormwater entering the C-23/24 reservoirs. This facility will be a multi-cell STA covering approximately four square miles. The primary discharge from the STA will be into the header canal of the North SLR Water Control District. A 250-cfs pump station will transfer water from the C-23/24 North Reservoir into the STA. It is expected that the STA will be operated to discharge primarily into the header canal and then directed toward Ten Mile Creek. Other discharge options include C-25 and C-24. Approximately one mile of Sneed Road (State Road 613) will be abandoned**.** This component of the recommended plan includes water quality features considered essential to Everglades restoration.

Cypress Creek Complex - Natural Storage and Treatment Area. The Cypress Creek Complex - Natural Storage and Treatment Area, is located in St. Lucie and Okeechobee Counties and includes 32,639 acres of primarily pastureland, along with some of the last remaining large tracts of forested wetland habitat in St. Lucie County. This land has been identified for use as alternative storage, rehydration, habitat restoration, and water quality improvements. The parcels consist primarily of the V-2 Ranch, lands around Cypress Creek and remnants of Bluefield Ranch. By rehydrating these drained pastures, large volumes of water will be attenuated on-site during the rainy season, providing a low cost alternative to reservoir storage.

C-25 Reservoir and Stormwater Treatment Area. This feature includes a 741-acre aboveground reservoir with a maximum depth of 8-feet and a 163-acre STA. The Reservoir will capture the first 0.4 inches of runoff from both the C-25 Basin and the Fort Pierce Farms Basin (approximately 147,225 acres). The STA was sized to treat 80% of the phosphorus load entering the STA from the reservoir. The total storage capacity of the reservoir and STA is approximately 5,392 acre-feet and is located north of and adjacent to C-25 at the S-99 structure. The purpose of this component is to capture and treat local runoff from the C-25 Basin and from the Fort Pierce Farms Water Control District (FPFWCD). Stormwater will be pumped into the reservoir from the C-25 Basin and from a new canal connection to the FPFWCD. The pump station will be designed to remove up to 250 cfs from the C-23 canal. Water will be released from the reservoir through the STA where sediment, nutrient and other

pollutant loads will be reduced. Water from the STA will be released into C-25, and from C-25 into the IRL. Water captured in the reservoir will also be available to augment water supply following the end of the summer rainy season

North Fork Floodplain Restoration The North Fork of the St. Lucie River was dredged during the 1920's as a part of early drainage improvements in the region. The dredging operation cut off many oxbows and created berms that disconnected the river channel from the adjacent floodplain. This feature includes acquisition and preservation of approximately 3,100 acres of floodplain and adjacent lands, which will receive an additional 64,500 acre-feet of flow via the northern diversion efforts. Preserving lands within the North Fork corridor provides significant environmental improvement in the health of this portion of the river by preventing such degradation as increased stormwater runoff, increased turbidity, and increased influence of exotic plants and animals from the surrounding areas that are under significant development pressure. The North Fork lands are extremely important in linking the estuary to the watershed. Preservation will provide such water quality and environmental benefits as removing nutrients, maintaining valuable wading bird habitat, and serving as a nursery for many of the recreationally and commercially important fish species that spend certain life stages in this area.

Muck Remediation. Muck remediation involves the removal of accumulated muck within the ~~SLE~~ St. Lucie Estuary from areas that are effectively "dead zones." Muck accumulation has covered substrate that once supported healthy submerged aquatic vegetation and oyster communities. Removal of this sediment would greatly improve estuarine conditions by exposing this substrate making it suitable for colonization by target species. Removing the muck would also improve water quality conditions for target species by improving the clarity of the water and reducing sunlight attenuation, especially critical for re-colonization and growth of submerged aquatic vegetation. Two of the four areas targeted for remediation are located in the North Fork.

LAND COVER

Map FLU-8 Habitats Map, locates the land coverage habitats of the unincorporated area of the County as recognized by the Florida Fish and Wildlife Conservation Commission (FFWCC). The following table identifies and provides the acreage and percentage of each of the land covers.

A variety of the historic native vegetative upland and wetland communities still exist throughout the County; these occupy nearly 30% of the County, but for the most part are relatively fragmented. More than 60% of the area is recognized as disturbed or agricultural with less that 8% urbanized. Appendix 6-B Habitat Descriptions, provides a description of the habitat coverage types mapped by the FWCC.

The land coverage can broadly be categorized into Agricultural, Disturbed/Developed, Native Habitats, and Water/Wetland. As mapped, roughly 58% of the area falls under the Agricultural category, 14% is Disturbed/Developed, 15% is Native Habitats and 13% is

Water/Wetlands. Agriculture comprises more area than the other coverage categories combined.

TABLE 6 - 3. HABITAT COVERAGE

Habitat	Category	Acreage	Percentage
Citrus	Agriculture	105,800.26	37.35%
Improved Pasture	Agriculture	52,645.34	18.59%
Other Agriculture	Agriculture	2,123.03	0.75%
Row/Field Crops	Agriculture	1,839.39	0.65%
Unimproved Pasture	Agriculture	438.45	0.15%
	Category Total	162,846.48	57.50%

Habitat	Category	Acreage	Percentage
Bare Soil/Clearcut	Disturbed/Developed	17,961.07	6.34%
Exotic Plants	Disturbed/Developed	159.28	0.06%
Extractive	Disturbed/Developed	471.72	0.17%
High Impact Urban	Disturbed/Developed	14,650.63	5.17%
Low Impact Urban	Disturbed/Developed	6,581.75	2.32%
	Category Total	39,824.45	14.06%

Habitat	Category	Acreage	Percentage
Coastal Strand	Native Habitats	131.76	0.05%
Cypress/Pine/Cabbage Palm	Native Habitats	135.55	0.05%
Dry Prairie	Native Habitats	13,861.32	4.89%
Grassland	Native Habitats	76.34	0.03%
Hardwood Hammocks and Forest	Native Habitats	4,016.80	1.42%
Mixed Pine-Hardwood Forest	Native Habitats	225.50	0.08%
Pinelands	Native Habitats	21,966.82	7.76%
Sand Pine Scrub	Native Habitats	979.44	0.35%
Sand/Beach	Native Habitats	298.50	0.11%
Shrub and Brushland	Native Habitats	1,957.62	0.69%
Xeric Oak Scrub	Native Habitats	317.92	0.11%
	Category Total	43,967.58	15.52%

Habitat	Category	Acreage	Percentage
Bay Swamp	Water & Wetlands	815.44	0.29%
Cypress Swamp	Water & Wetlands	2,619.03	0.92%
Freshwater Marsh and Wet Prairie	Water & Wetlands	10,581.98	3.74%
Hardwood Swamp	Water & Wetlands	6,149.20	2.17%
Mangrove Swamp	Water & Wetlands	4,309.97	1.52%
Mixed Wetland Forest	Water & Wetlands	1,551.25	0.55%
Open Water	Water & Wetlands	7,747.11	2.74%
Salt Marsh	Water & Wetlands	239.76	0.08%

Habitat	Category	Acreage	Percentage
Shrub Swamp	Water & Wetlands	2,579.99	0.91%
	Category Total	36,593.73	12.92%

Grand Total Coverage Acreage	283,232.23

The FFWCC map is not parcel based but looks at all habitats within the unincorporated County limits; it does not exclude lakes, roadways and public right of way lands. Therefore, it is important to note that the acreage identified by the FFWCC map may not directly correspond to the acreage totals established in the future or existing land use maps, which are parcel based. Additionally, on the FFWCC map an individual parcel may contain multiple habitats, such as urban, pineland and open water.

Natural Habitats

Listed and other animal species depend on native vegetative communities for refuge, foraging, nesting, and denning. The size, quality and connectivity of native communities all influence wildlife utilization. Appendix 6-C. Listed Wildlife Species*,* identifies those federal and state listed wildlife species that may be found within the County.

Appendix 6-D. Native Plant Species*,* provides a list of native plant species having the potential to occur in the County, and identifies those that are listed as either threatened or endangered by federal and State agencies.

Appendix 6-E. Invasive/Exotic Pest Plant Species*,* provides a list of the invasive exotic pest plant species that may occur in the County. Invasive exotic plant species have the capacity to disrupt, and disturb and displace native plant communities, and associated dependent wildlife.displace the wildlife that depend on the native communities. The FFWCC recognize and map areas of invasive coverage in their habitat land coverage mapping program. The mapped invasive coverage within the County is limited to such a degree that only 0.06% coverage appears on the FFWCC map.

Conservation Opportunities

Conservation opportunities are enhanced through the public ownership of land. In 1991, the St. Lucie Board of County Commissioners formed the Land Acquisition Selection Committee (LASC), which was charged with the task of preparing a proposal for public acquisition or protection of significant natural areas in the County. The LASC still serves as an advisory body to the Board of County Commissioners. In November, 1994, St. Lucie County voters approved a bond referendum authorizing issuance of ad valorem tax bonds, not to exceed $20 million, to participate in state and federal land acquisition programs targeting the protection of natural areas. The St. Lucie County Environmental Lands project began in 1994 with the passage of this local bond program. On December 7, 1995, Spruce Bluff, a 97-acre site along the North Fork of the St. Lucie River, was the first site acquired through the Environmentally Significant Lands program. Since that time, over 7,355 acres have been acquired and more land has been identified for protection through public acquisition.

The *IRL-South SWIM Plan* identifies that restoration of 2,984 acres along the North Fork St. Lucie River is proposed and that 1,600 acres were purchased and are managed by

local, state, and regional agencies. Since 1994, the Conservation and Recreation Lands Program, the SFWMD Save Our River's Program, Florida Communities Trust, and the County's Environmental Lands program combined have spent about $7 million on lands acquisition along the North Fork and over $1 million on removal of exotic plants. The Recreation and Open Space Element provides greater detail and lists the recreation and preservation lands within the County.

Less than 8% of the unincorporated County land is urbanized. Nearly 30% of the land is still recognized as historic native vegetative upland and wetland communities. The remaining +60% is agriculture, clear-cut, extractive or exotic coverage; which, under most circumstances, has the potential for reclamation or restoration. Therefore, a very significant portion of the County still has the potential for restoration of native communities.

WATER RESOURCES

Potable Water

On a regional level, St. Lucie County is located within the South Florida Water Management District (SFWMD). More specifically it is located in the Upper East Coast (UEC) Planning Area consisting of St. Lucie and Martin counties and eastern Okeechobee County with boundaries encompass over 1,230 square miles and generally reflecting the watersheds of the C-23, C-24, C-25 and C-44 canals. The *2004 Upper East Coast Water Supply Plan Update* (2004 UEC Plan Update) and the *2006 Upper East Coast Water Supply Plan Amendment* (2006 UEC Plan Amendment) provides details on the current and projected water supply for this planning area. The Executive Summary of the 2006 UEC Plan Amendment states:

> The UEC Planning Area's projected population growth over the next 20 years will significantly impact the region's public water demands, particularly in the urban sector. The UEC Region's total population is expected to increase from 320,664 in 2000 to about 584,927 residents by 2025. This estimate is 20 percent higher than the population estimate projected in the 2004 UEC Plan Update. Development of alternative water supplies will play a vitally important role in meeting water needs, as further development of traditional supplies becomes increasingly limited. While public water supply water withdrawal needs are projected to increase by 65 million gallons per day (MGD) with the region's projected rapid growth, and agricultural water demand is forecasted to decrease 7 percent, agriculture will remain the Upper East Coast Planning Area's largest water user. The largest percentage of change in urban water demand over the next 20 years will be in the thermoelectric power generation self-supply sector as three new power generation facilities are projected to be located in this region.
>
> As a result of this water supply planning process, new public water supply capacity is expected to exceed Year 2025 demands. The utilities have identified sufficient projects to meet the projected water needs for the Year 2025, and projects specific to each major public water supplier are included in this plan amendment. Forty-seven alternative water supply projects and one traditional water supply project were submitted by local utilities for this UEC Plan Amendment.

The Potable Water Sub-Element focuses on the public and domestic self-supply demand for the County and provides specific data on the public water sources, treatment and distribution systems. Detailed information can also be found in the St. Lucie County 10-Year Water Supply Facilities Work Plan. St. Lucie County also has an adopted Wellfield Protection Ordinance.

Ground Water

The South Florida Water Management District identifies that agriculture is the major land use in the Upper East Coast (UEC) Planning Area, with citrus being the dominant crop. Water for urban and agricultural uses in the UEC Planning Area comes from three main sources: the Floridan Aquifer System (FAS), the Surficial Aquifer System (SAS) and surface water. Surface water from the C-23, C-24, C-25 and C-44 canals is used primarily for agricultural irrigation, with the FAS used as a backup source during periods of low rainfall. The SAS has been the principal source for public water supply and urban irrigation. Withdrawals from the SAS have been maximized along the coast and alternative water supplies are being developed to meet the growing water needs. These include the FAS as a source of drinking water and reclaimed water for irrigation water. The SAS and surface water are dependent upon rainfall for recharge.

There are four primary drainage canals in the UEC Planning Area that are part of the Central and Southern Florida Flood Control Project. These canals (C-23, C-24, C-25 and C-44) have also become important sources of irrigation water within their respective drainage basins. The C-44 Canal was constructed as a navigable flood control outlet for Lake Okeechobee. The C-44 is the only one of the four canals that receives inflow from outside its drainage basin. The C-23, C-24 and C-25 canals, by contrast, are solely dependent on rainfall as a source of inflow. As a result of the large demand for this limited surface water supply, there are prohibitions for any new or expanded water supply uses of these three canals.

The Floridan Aquifer is used by growers as a supplemental source when surface water availability is limited, and as a primary irrigation source when surface water is not available. In most cases, water from the Floridan Aquifer has a high salinity (relative to surface water) and has to be blended with surface water or water from the Surficial Aquifer before it is used for irrigation.

Currently, most of the public water supply for the region comes from the shallower Surficial Aquifer as it has better quality water. The Floridan Aquifer in the UEC Planning Areas is a relatively unused water source for public water supply, as it located approximately 900 feet below land surface. However, the use of the Floridan Aquifer by utilities is increasing and most coastal utilities in the region plan to use the Floridan Aquifer to meet their future needs. Utilities either blend the Floridan water with fresh water or treat it using reverse osmosis.

Because of its diffuse and intermittent nature, stormwater is not generally considered a viable option for direct public-supply applications where reliability is a major consideration. Stormwater management practices that provide for increased soil infiltration and groundwater recharge opportunities should be considered as a means to protect and possibly enhance existing groundwater resources.

Following is a summary of water supply issues in the UEC Planning Area.

- Increased withdrawals from the Surficial Aquifer System are limited due to potential impacts on wetlands, as well as the increased potential for saltwater intrusion.
- Surface water availability in the C-23, C-24 and C-25 canals is not sufficient to meet existing and projected agricultural demands.
- Freshwater discharges (minimums and maximums) are affecting the health of the St. Lucie River and Estuary, southern Indian River Lagoon and the Northwest Fork of the Loxahatchee River.

Surface Water

Compared to most groundwater sources, surface water sources generally are of lower quality. Surface waters tend to contain silts and suspended sediments, algae, dissolved organic matter from topsoil, and chemical and microbiological contaminants from municipal wastewater discharges, stormwater runoff, and industrial and agricultural activities. The quality of surface water may vary seasonally with variation in flow rates or water levels. Traditionally, surface water has not been used for public supply in the SFWMD.

Pollutants

Waste generators, solid waste facilities, above and underground storage tanks, and dry cleaning facilities are licensed and regulated by the Florida Department of Environmental Protection (FDEP). Current information on these facilities is available through the Florida Department of Environmental Protection Division of Waste Management. Information on contaminated sites is also available through the U.S. Environmental Protection Agency (EPA) Resource Conservation Recovery Act (RCRA), Superfund, National Priorities List and Brownfield databases.

An October 2009 database search identifies that at this time there are no sites in the County listed on the U.S. Environmental Protection Agency's (EPA) Federal Superfund list or the National Priorities List (NPL). There ~~are no designated or candidate~~is one ~~Brownfields~~ brownfield in the County (BSE). Currently there are eight sites within the County registered in the State Dry Cleaning Solvent Clean-up Program. Map CON-1 DEP Licensed Facilities, identifies the facilities licensed by DEP within the County.

The County can discourage residential source contamination through close coordination with the Florida Department of Environmental Protection and by providing public information regarding the safe disposal of chemicals. Specifically, information can be made available on free disposal of household hazardous wastes, information on disposal contractors available to small businesses and the special waste programs available for landfill disposal of non-typical materials, such as spill clean-ups and contaminated soils.

Nuclear Power Plant. The Florida Power and Light (FPL) St. Lucie Nuclear Power Plant is located on South Hutchinson Island in the southern portion of the County. Nuclear energy production is monitored closely by the Nuclear Regulatory Commission, (NRC) a federal agency. Daily inspections are conducted at the St. Lucie Plant to guarantee compliance. Several identical safety systems are in place so that if one fails, others automatically go to work. In the unlikely event of an emergency, that could potentially result in the release of nuclear contamination, the environmental impacts could range from modest to catastrophic on a wide ranging, long term scale. Long term commitments at the federal level will be required in the event of the release of nuclear contaminants.

The Coastal Management Element provides details on evacuation and protection plans.

GREEN HOUSE GAS (GHG) REDUCTION STRATEGIES

St. Lucie County has a long, established history of leadership and strong public support for creating a sustainable community.

In 1995, the St. Lucie County Economic Development Base Study was completed and a subsequent visioning process resulted in a "Vision St. Lucie" document. The visioning process was a joint effort of government, business and local residents that charted a course for sustainable economic development. The synergy between the education, business and public sectors continues to flourish today.

The County has implemented a variety of sustainable land use programs and policies. The 2002 update of the County's Comprehensive Plan incorporated smart growth policies and an economic element to promote a sustainable tax base while protecting against loss of open space and natural systems. More recently, the board implemented a specific model of sustainable development in the North County area, called Towns, Villages and Countryside (TVC). The process included numerous public meetings and resulted in criteria consistent with smart growth and sustainable development, including transect-based neighborhood planning with grid transportation networks, interconnected greenways and blueways, and low impact development standards. The TVC regulations were approved by the Board of County Commissioners in May 2006.

In 2006, the Board of County Commissioners created an Environmental Resources Department and passed the Sustainability Resolution (06-272), establishing sustainability as a primary goal of the County. The Board also created the Sustainability Ad Hoc Committee, made up of citizens, and government and business representatives, to make policy recommendations on sustainable practices. The Sustainability Advisory Committee reviewed and approved the St. Lucie County Greenprint document.

The Board created the Smart Growth Committee and Environmental Advisory Committee to recommend changes to the County's Comprehensive Plan and Land Development Codes consistent with smart growth principles and environmental protection. Over the last few years, these committees have reviewed and made recommendations that foster sustainable practices on a variety of revisions to St. Lucie County's policies and regulations.

St. Lucie County became the catalyst for sustainability by hosting the Treasure Coast Green Conference in 2007 and 2008. The conference brought together representatives from a six-county area including the development community, state and local government entities, business leaders, and key stakeholders.

St. Lucie County adopted a Bicycle, Pedestrian, Greenways & Trails Master Plan in 2008 to develop alternative transportation systems and walkable, people-friendly communities. The County also completed the Evaluation and Appraisal Report, an 18-month evaluation of the Comprehensive Plan, which included numerous recommendations to strengthen the County's regulations in support of sustainable development and resource protection. In addition, the Land Development Code was updated to provide more stringent protection of native trees and other vegetation. The

County is currently commissioning a comprehensive study of wetlands to further protect and improve wetland functions.

Since 2008, the County has been working with the agricultural industry, landowners, and the public to identify strategies to preserve prime agricultural lands. A study is currently underway to develop a long-term strategy for enhancing agriculture and preserving habitat in western St. Lucie County, including a transfer of development rights program. Another outstanding example of the Board's vision for sustainability is the Treasure Coast Research Park. Situated on 1,650 acres, it is one of the largest research parks in the nation. The park is dedicated to aiding in the economic development of the Treasure Coast by supporting industries invested in innovation and commercialization of scientific research, with a special emphasis on "clean" alternative energies and agricultural biosciences. A neighborhood charrette process is also being initiated to identify land uses and transportation networks needed to support the Research Park.

St. Lucie County Government has incorporated sustainability by using industry approved green building standards in new construction. In 2008, the Havert L. Fenn Center was built to U.S. Green Building Council (USGBC) standards. This 62,575 square foot facility serves as a community center throughout the year but is specifically built and equipped to provide shelter from hurricanes for citizens with special needs. In addition, the new 57,000 square foot Clerk of Courts building was constructed to USGBC standards and includes a single-ply membrane roof, movable walls, low flow plumbing fixtures, and raised flooring for higher air conditioning efficiency.

The Board created the Office of Sustainability and Business Development in 2009 to assist with county-wide sustainability initiatives, energy conservation strategies, and climate protection program development. The Sustainability/Business Development Coordinator is also responsible for coordinating energy and green technologies with local business, green collar initiatives, and job growth incentives.

Finally, in the face of significant stress on its economic foundation and the resulting negative impact on the County's communities and citizens, the Board initiated its own local economic stimulus program. The program is projected to create more than 500 jobs for the local economy.

St. Lucie County Greenprint. In 2008, the St. Lucie County Board of County Commissioners unanimously approved the recommendation by the Sustainability Committee to pursue Green Local Government Certification through the Florida Green Building Coalition, Inc. (FGBC). The Florida Green Local Government Certification process provides a systematic way for local governments to assess its level of sustainability and to incorporate multiple environmental, ecological and sustainability features throughout its operations to reduce consumption and increase efficiency; saving taxpayer dollars and the environment.

The application for the "Green Local Government" adopted certification by the Board of County Commissioners in July 2009 has become St. Lucie County's 'Greenprint', defining and outlining the County's vision for a sustainable future. The St. Lucie County 'Greenprint' contains the following goals for achieving a sustainable community:

Goal I: Conserve, Protect and Restore Natural Resources;
Goal II: Implement Sustainable Development and Building Standards;
Goal III: Improve Community Transportation and Mobility;
Goal IV: Support Energy Conservation and Clean Energy Alternatives;
Goal V: Develop a Sustainable Green Economy
Goal VI: Promote Sustainable Communities and Social Equity;
Goal VII: Strengthen Green Government Policies and Practices

Specific actions as part of FGBC's Green Local Government certification, including:

- Establishing the U.S. Green Building Council (USGBC) Leadership in Energy Efficient Design (LEED), and the Florida Green Building Coalition (FGBC) standards as officially recognized 'green' standards within the County;
- Establishing policy to construct and renovate county buildings to USGBC or FGBC standards to the extent feasible;
- Utilizing Florida Friendly Landscaping™ standards, Integrated Pest Management principles, and Best Management Practices or similar/greater standard for all county owned and maintained properties;
- Requiring all county facilities have recycling programs in place;
- Utilizing street design standards such as "Street Design Guidelines for Healthy Neighborhoods" as described by Walkable Communities Inc.;
- Adopting Environmentally Preferred Purchasing policies to the extent feasible; and
- Adopting green cleaning and green maintenance techniques such as those described by the Florida Department of Environmental Protection to the extent feasible.

These practices and additional policies that enhance energy efficiency and reduced greenhouse gas emissions have been incorporated into the Future Land Use, Transportation, Conservation, and Housing Elements. In 2010, St. Lucie County was certified as a Florida Green Local Government (Gold Level).

Solar and Energy Loan Fund. In 2010, the County received a $2.9 million energy block grant from the U.S. Department of Energy to develop a $20 million solar and energy loan fund. The program is intended to reduce the upfront cost of installing energy efficiency and conservation measures as well as renewable energy technology in homes and businesses.

CONSERVATION ELEMENT
GOALS, OBJECTIVES AND POLICIES

Goal ~~8~~6.1: The natural resources of St. Lucie County shall be protected, appropriately used, or conserved in a manner which maximizes their functions, and values.

Objective ~~8~~6.1.1: Air quality within St. Lucie County shall meet or surpass National Ambient Air Quality Standards (NAAQS) for all pollutants measured by the Florida Department of Environmental Protection (FDEP).

Policy ~~8~~6.1.1.1 - Annually review existing air quality reports and confer with the FDEP on the source(s) of air quality violations and the proper abatement methods. If needed, ~~regulations will be developed~~ coordinate with the FDEP in their efforts to enforce clean air standards.

Policy ~~8~~6.1.1.2 - St. Lucie County shall facilitate development that maximizes energy efficiency and sustainability. This shall include implementing Land Development Code standards that promote the types of land use patterns and development techniques that will reduce the total fossil fuel energy required to build and maintain urban land uses. This shall include standards that promote mixed land use patterns, urban infill, public transit and provide non-motorized interconnections between land use types to reduce auto dependence and vehicle miles traveled.

Policy ~~8~~6.1.1.3 - Land Development Code shall incorporate performance standards which combat erosion and generation of fugitive dust particles. ~~The County land development regulations shall address requirements to reduce the amount of total suspended particulates from construction activities.~~ At a minimum, construction practices including but not limited to seeding, wetting, and mulching which minimize airborne dust and particulate emission generated by construction activities shall be undertaken within five working days of completion of clearing work.

Policy ~~8~~6.1.1.4 - ~~The County land development regulations shall address excessive dust and suspended particulates with regard to site clearing and stabilization, vegetation removal, and other factors associated with construction.~~The County shall continue to support, seek additional funding sources for, and implement the Greenways and Trails Master Plan to facilitate and encourage alternative transportation means.

Policy ~~8~~6.1.1.5 ~~- The County shall enact additional land development regulations which prevent air pollution if FDEP air quality report indicates that NAAQS are not being met.~~ The County shall review implementable measures that would effectively reduce greenhouse gas emissions, and as financially feasible, enact effective measure to reduce emissions generated by County government operations and by policies effecting community-wide functions.

Objective ~~8~~6.1.2: The County shall continue to enforce ~~land development regulations~~Land Development Code provisions which require the conservation, appropriate use, and protection of surface waters.

Policy ~~8~~6.1.2.1 - The County's ~~land development regulations~~Land Development Code shall address comprehensive stormwater management including the following:

a. The use of stormwater detention and/or retention;
b. Stream bank and shoreline buffer zones;
c. General design and construction standards for on-site stormwater management;
d. Best Management Practices for urban and agricultural development; and
e. Standards for new discharges to Outstanding Florida Waters.

Policy ~~8~~6.1.2.2 - St. Lucie County shall continue to implement stormwater improvement projects consistent with the Stormwater Management Plan and apply for state and federal funding programs to supplement local programs in the implementation and construction of stormwater management projects.

Policy ~~8~~6.1.2.3 - St. Lucie County shall evaluate the use of the following mosquito control techniques during the development of the new stormwater regulations:

a. Maintenance of any required littoral areas and upland buffers;
b. A one-foot or other appropriate buffer between the bottom of stormwater ponds and the water table; and
c. Fish ponds for use during low water periods.

Policy ~~8~~6.1.2.4 - St. Lucie County shall support the Indian River Lagoon (IRL) Surface Water Improvement and Management (SWIM) Plan, the Comprehensive Everglades Restoration Plan (CERP), the CERP IRL – South Projects, the IRL National Estuary Program Comprehensive Conservation and Management Plan, and any other ~~S~~state, ~~F~~federal or regional projects designed to achieve ~~request from the South Florida Water Management District with appropriate administrative and/or fiscal support, a project which evaluates the economic and environmental feasibility of a reservoir in the County. At a minimum, the project should consider~~ reductions of direct run-off ~~freshwater inputs~~ and stormwater pollutants to the surface waters within the County, as well as conservation of water resources.

Policy ~~8~~6.1.2.5 ~~–~~ Within one year of amending the Comprehensive Plan t~~T~~he ~~land development regulations~~Land Development Code stormwater management provisions shall be adopted to require a vegetated and functional littoral zone to be established as part of the surface water management system of upland water bodies occurring on development sites.

Policy ~~8~~6.1.2.6 - St. Lucie County shall encourage the preservation of natural scenic views of natural waterways through the site plan review process.

Policy ~~8~~6.1.2.7 - The County shall not support the reclassification of any surface water body within County boundaries to acknowledge lower water-quality conditions unless necessary to protect the public health, safety, or welfare. The County shall support any effort to reclassify surface water bodies to accommodate higher standards.

Policy ~~8~~6.1.2.8 - The County shall take an active role in supporting the ~~funding and~~ development of appropriate attenuation facilities and ecosystem restoration projects in the County in order to eliminate pollutant flows into the Indian River Lagoon National Estuary and the St. Lucie River.

Policy ~~8~~6.1.2.9 - St. Lucie County shall restrict the construction of artificial waterways (canals) which provide access to any of the rivers, streams, creeks, canals, or other waters of the State or their tributary systems for the purposes of navigation, aesthetics, recreation, and or enhancement of property.

Policy ~~8~~6.1.2.10 - The County shall maintain, and ~~where unacceptable,~~ improve, surface water quality within St. Lucie County according to South Florida Water Management and Florida Department of Environmental Protection regulations and standards.

Policy ~~8~~6.1.2.11 - St. Lucie County shall support and assist with projects that further the South Florida Ecosystem Restoration Initiative goals to restore and maintain ecosystem elements most resembling natural, healthy functions of a complex balanced aquatic system.

Policy 6.1.2.12 - The County shall support FDEP in monitoring activities in the Port of Ft. Pierce to ensure Best Management Practices (BMP) are implemented to avoid negative impacts to the lagoon and ocean water habitats.

Policy 6.1.2.13 was relocated

Policy 6.1.2.13 - The County shall support the reconnection of impounded wetlands to the Indian River Lagoon to improve the productivity of estuaries; and the implementation of adaptive management strategies for saltwater marshes and mangrove systems which are consistent with Best Management Practices for mosquito control.

Policy 6.1.2.14 – Ensure that surface water management systems be designed and operated consistent with state, federal and regional standards, and the County's adopted Level of Service Standard.

Policy 6.1.2.15 relocated from Policy 6.1.4.10

Policy 6.1.2.15 - No new untreated point source discharges into estuarine and coastal waters, for stormwater runoff, will be permitted.

Objective ~~8~~6.1.3: The County shall continue to enforce ~~land development regulations~~Land Development Code which require the protection and maintenance of the natural functions (flow and storage) of the 100-year floodplain.

Policy ~~8~~6.1.3.1 - The County's ~~land development regulations~~Land Development Code shall include the use of programs to protect or maintain floodplain, such as reduced parking, conservation easements, cluster site planning and micro-siting of buildings. The County shall continue to strictly enforce regulations that direct development away from floodplains and provide upland buffers along the floodplain.

Policy ~~8~~6.1.3.2 - The County shall continue to protect and ~~to~~ acquire floodplain through the Environmentally Significant Lands Program, ~~and~~ cooperative agreements with state and federal acquisition programs, and the recordation of conservation easements.

Policy ~~8~~6.1.3.3 - ~~Appropriate f~~Floodplain management initiatives for unincorporated areas which may impact or be beneficial to other jurisdictional areas within the watersheds shall be coordinated and developed in cooperation with all other affected jurisdictional entities.

Objective ~~8~~6.1.4: The County shall continue to enforce Wetland Protection Standards within the ~~land development regulations~~Land Development Code which require the preservation, creation and restoration of wetlands in a manner that results in no net loss of function and value within the County's jurisdiction.

Policy ~~8~~6.1.4.1 - The ~~land development regulations~~Land Development Code shall require the following information on site plans for new development:

a. The location and extent of wetlands located on the property;
b. Measures to assure that normal flows and quality of water will be provided to maintain wetlands after development; and
c. Measures to mitigate for any unavoidable wetland impacts proposed as part of the development.

Policy ~~8~~6.1.4.2 - The ~~land development regulations~~Land Development Code shall provide criteria for:

a. Project modification measures to reduce wetland loss and degradation. All projects shall be required to maximize design modifications to ensure wetland impacts are avoided or minimized to the maximum extent feasible;
b. The evaluation of proposed wetland alteration for permitted uses;
c. The mitigation of wetlands alteration which include, but are not limited to, the restoration of disturbed wetlands, creation of additional wetlands, or enhancement of functions and values provided by existing habitats.

Policy ~~8~~6.1.4.3 - The County shall continue to require a minimum 50-foot buffer zone of native upland and transitional vegetation along rivers, creeks, and estuaries, to be maintained from the landward extent of state waters or from Mean High Water of the rivers, creeks, and estuaries; whichever is greater. ~~However, setbacks for the North Fork of the St. Lucie River shall be governed by those set out in the Land Use Element policy 1.1.9.7.~~

Policy ~~8~~6.1.4.4 - The land development regulations shall require~~, a buffer zone of native upland edge (i.e., transitional) vegetation to be planted or maintained around wetland and deepwater habitats which are constructed or preserved on new development sites. The buffer zone may consist of preserved or planted vegetation but shall include canopy, understory, and ground cover of native species only. The edge habitat shall begin at the upland limit of any wetland or deepwater habitat. As a minimum ten square feet of such buffer shall be provided for each linear foot of wetland or deepwater habitat perimeter that lies adjacent to~~

~~uplands. This upland edge habitat shall be located such that no less than 50 percent of the total shoreline is buffered by a minimum width of ten feet of upland habitat~~. on all new development sites, the installation or preservation of a native vegetative buffer adjacent to all wetlands, submerged lands, or other surface waters, regardless of whether these be naturally occurring or manmade.

Policy ~~8~~6.1.4.5 - The County shall through the development review process and in cooperation with and coordination with the appropriate wetland and regulatory agencies, continue to conserve and protect wetlands from detrimental physical and hydrological alteration. The regulation of activities in, on or over wetlands or other surface waters and the management and storage of all surface waters shall be pursuant to applicable local, state and Federal requirements. All development will be directed away from wetlands through enforcing the most restrictive of these requirements.

The County standards shall, at a minimum, include the protection of wetlands in accordance with wetland classifications identified under Objective 8.1.14 of the Conservation Element. ~~Where required, the Wetland Rapid Assessment Procedure shall be utilized to evaluate and preserve wetlands, based upon their functional Characteristics including types, size, values, functions, conditions and location of those wetlands.~~

Policy ~~8~~6.1.4.6 - The ~~land development regulations~~Land Development Code shall include the use of programs to protect or maintain wetlands, such as reduced paving, conservation easements, cluster site planning and micro-siting of buildings.

Policy ~~8~~6.1.4.7 - The County shall provide appropriate administrative support in the acquisition of additional wetlands and uplands as part of the Savannas Preserve State ~~Reserve~~ Park.

Policy ~~8~~6.1.4.8 - The County shall support wetland mitigation programs by federal and state agencies that will not weaken local regulatory authority and will ensure no net loss of wetland function and provide for a measured increase in restored wetland function ~~and acreage~~. ~~Any wetland impact occurring within St. Lucie County shall be mitigated within St. Lucie County, unless waived by the Board of County Commissioners.~~

Struck language is now Policy 6.1.4.10.

Policy ~~8~~6.1.4.9 - The County shall continue to identify and inventory wetlands, and analyze wetland areas for those which could be considered high quality wetlands of high functional value.~~which should be considered environmentally sensitive.~~ The County shall provide for the protection, appropriate use and conservation of these areas based on criteria which consider the administrative and fiscal constraints of the County. Potential mechanisms shall include acquisition, restriction or prohibition of activities, and incentives to protect and maintain wetlands.

Original Policy 8.1.4.10 was relocated and renumbered as Policy 6.1.2.15.

Policy ~~8~~6.1.4.10 - ~~No new untreated point source discharges into estuarine and coastal waters, for stormwater runoff, will be permitted.~~ Any wetland impact occurring within St. Lucie County shall be mitigated within St. Lucie County, unless waived by the Board of County Commissioners.

Policy ~~8~~6.1.4.11 - The County shall require that setback requirements from jurisdictional wetlands ~~open bodies of water~~ are maintained by continued implementation of the ~~Land Development Regulations~~Land Development Code.

Policy ~~8~~6.1.4.12 - ~~The County shall require the identification of on-site wetlands for all new applications for development or construction.~~ Protection of wetlands and other surface waters is preferred to destruction and mitigation due to the temporal loss of ecological value and uncertainty regarding the ability to recreate certain functions associated with these features. Mitigation will be considered only after the applicant has complied with the land development code requirements regarding the avoidance and minimization of wetland impacts. ~~In certain cases, mitigation cannot offset impacts sufficiently to approve a project. Such cases may include activities which degrade Outstanding Florida Waters, adversely impact habitat for listed species, or impact wetlands or other surface waters not likely to be successfully recreated. The current condition and value of wetlands functions will be considered in determining if proposed adverse impacts and mitigation measures to off-set wetland impacts are reasonable.~~

Policy ~~8~~6.1.4.13 - ~~The County shall require that all on-site wetlands be preserved unless the applicant demonstrates that practicable use of the property cannot not otherwise occur. If wetland impacts are determined unavoidable, wetland mitigation shall first be provided on-site to the maximum extent possible prior to considering offsite mitigation~~. All wetlands and adjacent buffers ~~required to be~~ preserved on the development site shall be protected by a conservation easement that is dedicated to a government agency or other entity acceptable to the Board of County Commissioners. Said conservation easement shall provide for the protection and perpetual maintenance of the wetland and buffer. The proposed preservation area shall be designated on all site plans and application materials.

Policy ~~8~~6.1.4.14 - When it is determined that a wetland violation has occurred, restoration of the affected wetland shall be required and no permits for the development shall be issued, until the required restoration is completed. There shall be no off-site mitigation to compensate for illegally altered wetlands. When it is determined that a wetland violation has occurred, restoration shall be required before any development permits are issued, or within 90 days, whichever occurs first.

Policy ~~8~~6.1.4.15 ~~- The County shall by December 2004, conduct a study to identify wetland areas of special concern, and special protective measures to ensure that the biological, scenic qualities of these wetland areas are maintained.~~ All development applications that include wetland habitat shall be consistent with all applicable Federal, State and County regulations and the goals, objectives and policies of the County's Comprehensive Plan. The most restrictive of these regulations shall be enforced.

Objective ~~8~~6.1.5: The County shall continue to enforce ~~land development regulations~~Land Development Code which require the conservation, appropriate use, and protection of the quality and quantity of groundwater.

Policy ~~8~~6.1.5.1 - St. Lucie County shall enforce the Well~~f – F~~ield Protection program standards, including:

a. Assure adequate and safe water supplies to present and future citizens of the County;
b. Comply with Federal and State regulations in the best interests of the County and its future growth and development;
c. Avoid crisis water supply situations through careful groundwater resources planning and conservation;
d. Identify and protect the functions of public well-field areas, including recharge of those areas, and provide incentives to keep the present and future public well fields compatible with the needs expressed in a. above;
e. Ensure that new development is compatible with existing local and regional water supply capabilities; and
f. Protect present and future public well–fields against depletion and contamination through appropriate regulation, incentives, and cooperative agreements.

Policy ~~8~~6.1.5.2 - St. Lucie County shall cooperate with Federal, State, and local agencies in monitoring groundwater levels and quality.

Policy ~~8~~6.1.5.3 - ~~St. Lucie County shall request appropriate administrative and financial support from the SFWMD to identify potable water supply areas. Upon completion of such a study, identified areas shall be presented to the County Commission to be adopted as an amendment to the Land Development Code along with policies to protect the functions of these areas, such as maximizing stormwater retention to minimize drainage.~~ Activities and land uses known to adversely affect the quality and quantity of water sources and natural groundwater recharge areas shall be regulated to protect the quality and quantity of these resources.

Policy ~~8~~6.1.5.4 - St. Lucie County shall continue to cooperate with SFWMD to properly seal unpermitted active drainage wells and abandoned free- flowing artesian wells.

Policy ~~8~~6.1.5.5 - The County shall con~~tinue ~~duct a study~~~~ to identify existing and potential threats to the quality of waters within the ~~Taylor Creek~~ Well-field Protection Area~~s~~. ~~The study shall be forwarded to the Board of County Commissioners with recommendations for any corrective measures required to safeguard the Taylor Creek Well field Protection Area.~~

Policy 6.1.5.6 - The County shall provide for open space as a part of the requirements for all development and redevelopment to promote shallow water aquifer recharge and stormwater filtration.

Objective ~~8~~6.1.6: The County shall protect and conserve the natural functions of soils which includes, at a minimum, the following policies and regulations.

Policy ~~8~~6.1.6.1 - The County shall require through the ~~land development regulations~~Land Development Code the consideration of hydrologic, topographic, and vegetative cover factors in the site plan review process of proposed developments.

Policy ~~8~~6.1.6.2 – The Land Development Code shall include regulations to protect environmentally sensitive lands relating to destructive activities and uses such as off road vehicle use. ~~The County shall enforce regulations which prohibit the use of off-road vehicles in areas identified as environmentally sensitive pursuant to policies under Objective 8.1.12 or that are subject to soil erosion. For the purposes of this policy, the Savannas State Reserve, Atlantic Coastal Ridge, and dunes on Hutchinson Island shall be considered environmentally sensitive.~~

Policy ~~8~~6.1.6.3 - Assist the St. Lucie County Soil and Water Conservation District in those activities directed at minimizing soil erosion.

Policy ~~8~~6.1.6.4 - The County shall coordinate with other agencies and organizations which have ~~to~~ initiated ~~a~~ data collection programs to acquire water quality and turbidity information ~~at five year intervals,~~ as it relates to soil erosion.

Policy ~~8~~6.1.6.5 - Clearing of native vegetation on newly platted subdivision lots prior to the issuance of a building permit for construction on the single family lot shall be limited to that which is necessary for roads, utilities installation and drainage.

Policy 6.1.6.6 - Amend the Land Development Code within one year of adoption of this element to require new development activities to be consistent with the soil conditions in the area in which the activity is proposed. In those instances where soil modifications are necessary, all activities should utilize best management practices as identified by the Soil Conservation Service.

Objective ~~8~~6.1.7: The County shall continue to regulate mining to ensure the conservation, appropriate use, and protection of minerals in a manner that safeguards all of the County's remaining natural resources, including ground and surface waters and upland plant communities.

Policy ~~8~~6.1.7.1 - The ~~land development regulations~~Land Development Code shall include criteria developed as a result of a continuing monitoring and evaluation program of the County's drainage systems, wetlands, and other surface waters. Mechanisms to maintain the functioning of drainage systems, wetlands, and surface waters that existed prior to resource extraction shall be developed.

Policy ~~8~~6.1.7.2 - The ~~land development regulations~~Land Development Code shall include locally determined criteria for buffers which address sight, sound, and airborne particulate matter between resource extraction activities and adjacent existing and future land uses. The airborne particulate matter criteria shall also address trucking operations access points to be utilized as part of the mining operation.

Policy ~~8~~6.1.7.3 - The ~~land development regulations~~Land Development Code shall include locally determined criteria which specifies suitable conditions for reclamation. These criteria shall address the potential for land forms capable of supporting diverse and beneficial land uses, time limits on implementation of reclamation, revegetation to minimize wildlife habitat lost, and shoreline treatments for water bodies which address appropriate safety and environmental considerations.

Policy ~~8~~6.1.7.4 - The ~~land development regulations~~Land Development Code shall encourage the use of recycled materials for roadway construction, where practicable.

Policy ~~8~~6.1.7.5 ~~–~~ Within one year of amending the Comprehensive Plan, the ~~land development regulations~~Land Development Code shall be amended to identify that, a~~At~~ a minimum, mining shall not be permitted in the following environmentally sensitive areas:

a. The North and South Savannas;

b. Atlantic Coastal Ridge;

c. Within any identified environmentally sensitive area or within 200 feet of such an area;

d. Coastal High Hazard Area;

e. Hutchinson Island; or

f. Environmentally sensitive areas as defined in this element.~~under Objective 8.1.12.~~

g. Any area designated as a Category I or Category II wetland in this element. ~~under Policy 8.1.4.1.~~

Policy 6.1.7.6 - Enforce the County's ~~Land Development Regulations~~Land Development Code which require that a reclamation/restoration plan be submitted as part of the required application for an extractive use permit.

Objective ~~8~~6.1.8: The County shall protect native upland~~ habitats~~ vegetative communities, and shall protect ~~event the net loss of~~ listed species and their habitat. This shall be accomplished through the County Environmentally Significant Lands Acquisition program, ongoing natural resource protection programs and the implementation of ~~land development regulations~~Land Development Code.

Policy ~~8~~6.1.8.1 - The County shall require all nuisance and invasive exotic vegetation (e.g. Brazilian pepper, Australian pine and Melaleuca) be removed and eradicated at the time of development or redevelopment of a nonresidential use and residential site plan projects and, where appropriate, replaced with native or drought tolerant species that are adapted to existing soil and climatic conditions.

Policy ~~8~~6.1.8.2 - The County shall ~~require the~~ protect~~ion of endangered and threatened~~ state and federal listed plant and animal populations and ~~the conservation of~~ their native habitat, including intact canopy, understory and ground cover upon which these populations depend for survival. P~~rotection~~ossible mechanisms ~~would~~ include:

a. Assisting in the application of and compliance with Federal and State regulations;

b. Consulting with appropriate Federal and State agencies during development reviews when listed ~~endangered or threatened~~ species may be onsite;

c. Establishing management programs with incentives for private landowners to protect or conserve habitats, such as reduced parking,

landscaping, or credit for park and recreation impact fees;

d. Using guidelines in the Land Development Code regarding conservation easements, cluster site planning and micro-siting of buildings; ~~and~~

e. Assisting the state in developing an education program to promote the preservation of endangered and threatened species; and

f. Proposed site clearing activities within the known range of listed species or where such species are expected to occur based upon habitat suitability and species ranges shall be surveyed by qualified environmental consultants and/or government ecologists prior to approval and commencement of such activities to determine whether or not populations of listed plant and animal species occur.

Policy ~~8~~6.1.8.3 - Lands acquired through the County's Environmentally Significant Lands Program for preservation shall be preserved and managed for natural habitat, listed plant and animal species and passive resource recreational needs of the public.
(Ord. No. 07-018, § B.(Exh. A), 12-18-07)

Policy ~~8~~6.1.8.4 - The ~~land development regulations~~Land Development Code shall include criteria which allow utilization of Transfer of Development Rights (TDRs) or other flexible methods of land development transfer that would direct development from unsuitable lands to those most suitable for active use.

Policy ~~8~~6.1.8.5 - ~~The County shall require all development, to proceed in a manner compatible with the conservation of wildlife and natural systems.~~ Except as provided for in Policy 1.1.2.2 of the Future Land Use Element, all lands within development sites proposed as conservation and open space areas shall be held in single ownership by a homeowners' association or other entity approved by the County attorney that will be responsible for the ~~long-term~~ perpetual maintenance of the conservation or open space area. Except as provided for in Policy 1.1.2.3 of the Future Land Use Element open space and conservation areas shall not include lands utilized to meet the minimum lot size requirements.

Policy ~~8~~6.1.8.6 - The County shall require the use of native or drought tolerant vegetation adapted to existing soil and climatic conditions in landscaping.

Policy ~~8~~6.1.8.7 - St. Lucie County shall review as part of each Evaluation and Appraisal ~~Review~~ Report of the Comprehensive Plan~~, beginning in scheduled review of 2007~~, the existing criteria and standards for the protection of the remaining native plant communities within the County as identified by the Florida Natural Area Inventory. For the purpose of this plan, native plant communities ~~shall be preserved~~ shall include ~~viable condition with~~ intact ground cover, understory and canopy layers where applicable. ~~The criteria and standards shall include the preservation of viable native plant communities occurring within areas required to be maintained in order to meet other minimum development standards, such as setback, open space and landscaped areas.~~

Policy ~~8~~6.1.8.8 – St. Lucie County shall require the submission of an environmental impact report, which addresses concerns for habitat preservation and species protection for projects on parcels greater than ten acres, or that are located on the barrier island, the Atlantic Coastal Ridge, ~~or~~ are adjacent to public

conservation lands, or are otherwise considered Environmentally Sensitive Areas as defined in this Element. The County may provide a process ~~of the~~ for ~~[sic]~~ the consideration of a waiver of this requirement, subject to meeting standards as may be described in the County's Land Development Code.

Struck language in original Policy 8.1.8.9 was relocated to Policy 6.1.12.3.

Policy ~~8~~6.1.8.9 - ~~The County shall acquire and support the public acquisition of a diversity of natural habitat types to ensure maximum diversity of native wildlife species.~~The County shall continue to identify native upland vegetative communities ~~that could be considered high quality~~. The County shall provide for the protection, appropriate use and conservation of these areas based on criteria which consider the administrative and fiscal constraints of the County. Potential mechanisms shall include acquisition, conservation easements, restriction or prohibition of activities, and incentives to protect and maintain these areas.

Policy ~~8~~6.1.8.10 - Land use decisions shall consider the effects of development impacts on fish, wildlife and habitat and the cumulative impact of development and redevelopment upon wildlife habitat. In cases where Federal or State listed ~~rare, endangered, threatened or~~ species ~~of special concern~~ are known to be present, a condition of development approval will be that if habitat is preserved, a Preserve Area ~~m~~Management ~~p~~Plan be prepared by the applicant, and that it be approved by appropriate state and/or federal agencies ~~be completed~~ prior to initiation of development ~~approval~~. The management plan shall detail the schedule and management methods used to maintain or improve the habitat, the funding mechanism to properly implement the plan over the required period of time, and shall follow the Florida Fish and Wildlife Commission's recommendations for managing wildlife listed species when applicable. ~~Classification of listed fish, wildlife and habitat is defined by the Federal government, the State of Florida, including the Florida Fish and Wildlife Conservation Commission and the Florida Natural Areas Inventory.~~ In addition, this policy shall apply to any species or native habitat the Treasure Coast Regional Planning Council determines to be regionally rare, endangered or threatened with extinction. To ensure adequate protection, protected plants and animals, which cannot be provided with sufficient undisturbed habitat to maintain the existing population in a healthy, viable state on site, shall be effectively relocated in accordance with local, state and federal regulations and accepted best management practices.

Policy ~~8~~6.1.8.11 - The County shall continue to support the County Land Acquisition Selection Committee whose function is to utilize the 1992 Upland and Wetland Inventory and Federal, State, and local resources, to formulate a master acquisition list of lands having native upland habitat. The overall objective is to ensure the preservation of a minimum of 12,500 acres of the 1992 remaining native upland habitat, with the highest priority being those classified as endangered or threatened as well as those properties having habitats that are facing destruction as a result of urban development and which recognizes relationships to those areas of native habitat already under public and/or private preservation.

~~Policy 8.1.8.12 - The County shall, by July 1, 2001, reappoint a Land Acquisition Finance Committee whose function shall be to develop a recommendation as to how to fund the master acquisition list formulated pursuant to Policy 8.1.8.11.~~

~~The Committee may be organized as a subcommittee of the Land Acquisition Selection Committee. The Committee shall monitor the current and future finances of the Environmentally Significant Lands program~~.

Original Policy 8.1.8.13 was modified and added to Policy 6.1.12.6.

Original Policy 8.1.8.14 was relocated and renumbered as Policy 6.1.12.11.

~~Policy 8.1.8.13 - The County shall continue to request assistance in public acquisition of natural areas under federal, state and regional programs including, but not limited to Preservation 2000, Florida Forever, Florida Communities Trust, Conservation and Recreation Lands, and Save Our Rivers programs~~.

~~Policy 8.1.8.14 - The County shall provide multiple-use opportunities on County-owned natural preserve areas, consistent with natural resource protection and conservation, to provide for passive recreation, wildlife habitat, watershed protection, erosion control, maintenance or enhancement of water quality, aquifer recharge protection, or other such functions.~~

Policy ~~8~~6.1.8.1~~1~~5 - The ~~land development regulations~~Land Development Code shall provide that existing on-site native upland habitat be incorporated into required site plans as a part of open space areas~~,~~ ~~in lieu of the installation of new plant materials,~~ as required landscaping or as a part of minimum yard areas so that as much of the identified habitat as is practicable is maintained.~~to meet the minimum site plan requirements.~~

Policy ~~8~~6.1.8.1~~2~~6 - The County shall require clustering, micro-siting of structures or other protective mechanisms to preserve native vegetative communities or protected species habitats. ~~of dwelling units and/or open space for land development projects which contain environmentally sensitive lands and critical habitats within its project boundaries, in order to preserve these resources.~~

Policy 6~~8~~.1.8.1~~3~~7 - ~~Habitats supporting endangered and threatened species should be preserved, protected and managed so as to continue the value of the habitat to the endangered and threatened species found to be dependent on it.~~ The County shall, by December 2012, consider allowing fees in lieu of on-site preservation of upland native plant communities. Considerations, at a minimum, shall include the practicality of on-site preservation, the size and quality of the impacted community and the quality and distance to any surrounding vegetative community. Any fees collected shall be for the purpose of habitat acquisition/preservation that would be more environmentally beneficial and provide a net increase in area.

Policy ~~8~~6.1.8.1~~4~~8 - ~~The County shall consider the abundance, status, and distribution of endangered ecosystems and other environmentally sensitive lands when reviewing land use proposals and acquisitions.~~ Within one year of adoption of this element, St. Lucie County shall include within its Land Development Code criteria and standards for the protection and preservation of native upland vegetative communities as described by the Florida Natural Areas Inventory. The criteria shall include~~d~~, but not be limited to, the following:

a. Size of the property on which the development activity is to take place;

b. The type, quality and sensitivity of the native habitat including utilization by native and listed wildlife;

c. Methodologies to be employed in protecting and preserving habitat and diversity;

d. The presence or occurrence of listed species on-site;

e. The size and quality of similar habitat adjacent or in close proximity;

f. Provisions for clustering, micro-siting, density transfers or other mechanisms to avoid or minimize impacts; and

g. Mitigation measures designed to avoid a loss of habitat.

~~Policy 86.1.8.19 - St. Lucie County shall assist to prevent the destruction of Florida's Cypress Strands through Land Development regulations that prohibit the use of Cypress Mulch for any nonresidential landscaping areas or projects. The use of cypress mulch is also to be discouraged on all residential projects.~~

Objective ~~8~~6.1.9 - The County shall develop a hazardous waste management program for the proper recycling, storage, collection, and disposal or transfer of hazardous materials and wastes.

Policy ~~8~~6.1.9.1 - The County shall continue to provide a ~~establish a storage~~ transfer facility for household and small quantity generators of hazardous wastes.

Policy ~~8~~6.1.9.2 - The County shall develop emergency response plans to handle accidents involving hazardous materials or wastes.

Policy ~~8~~6.1.9.3 - The County shall continue the recycling program which includes public education on the beneficial use of hazardous wastes using publicized lists of approved recyclers and by subscription to the Southern Waste Information Exchange.

Policy ~~8~~6.1.9.4 - The County shall continue to support State-sponsored Amnesty Days to collect hazardous wastes in the County; and shall evaluate the need for scheduling local Amnesty Days.

Policy ~~8~~6.1.9.5 - The County shall implement an employee training program to properly identify and inspect wastes before they enter the landfill and implement an inspection or screening program to exclude hazardous items such as drums, tanks from unknown sources, waste pesticides, or chemicals from spill cleanups.

Policy ~~8~~6.1.9.6 - The County shall participate with the FDEP and other local governments in the region to develop a regional hazardous waste transfer and storage facility and collection network, if appropriate.

Policy ~~8~~6.1.9.7 - The County shall seek funding from FDEP's Local Hazardous Waste Collection Grants Program to manage hazardous wastes.

Policy ~~8~~6.1.9.8 - The County shall conduct a Countywide underground storage tank assessment and assist any owner in seeking funding to respond to any groundwater contamination resulting from leaking tanks.

Policy ~~8~~6.1.9.9 - The County shall continue a public education program regarding household hazardous wastes, the proper methods of their disposal and

alternative nonhazardous substitutes in cooperation with schools, news media, and civic organizations, and in conjunction with Amnesty Day awareness programs.

Objective ~~8~~6.1.10: The County ~~land development regulations~~Land Development Code shall require the conservation, appropriate use and protection of current and projected potable water sources.

Policy ~~8~~6.1.10.1 - ~~The County shall prepare and adopt an emergency water management conservation plan in cooperation with SFWMD~~. The County shall cooperate with the South Florida Water Management District to conserve water resources in emergencies and during declared water shortages.

Policy ~~8~~6.1.10.2 - ~~The land development regulations shall require wastewater reuse plans for new sewage treatment plants operating above 250,000 gallons per day. Any new reuse plan shall be approved by FDEP.~~ The County shall coordinate with the FDEP, the SFWMD, local municipalities and other appropriate agencies in alternative water supply planning efforts.

Policy ~~8~~6.1.10.3 - The County shall implement a public education program regarding various methods of water conservation at the household and small business level.

Policy 6.1.10.4 – The County shall coordinate with the SFWMD in the development and updates of the Regional Water Supply Plan.

Policy 6.1.10.5 - St. Lucie County shall continue to coordinate with the SFWMD and other appropriate agencies to identify potable water supply areas. Identified areas shall be protected through adoption of lands development regulations.

Objective ~~8~~6.1.11: St. Lucie County shall promote the protection of natural buffer areas to lessen the adverse effects which adjacent developments might have on ~~the~~ managed conservation areas, such as the Savannas State Preserve, Fort Pierce Inlet State Park, and lands purchased for preservation purposes through Federal, State and local land acquisition programs.

Policy ~~8~~6.1.11.1 - St. Lucie County shall cooperate with the FDEP and other applicable agencies in their management programs that provide for the protection of native habitats within the County.

~~Policy 8~~6.1.11.2 - ~~All appropriate land development regulations required by this Comprehensive Plan shall include the protection of native habitats, including those identified in the Recreation and Open Space Element.~~ The County shall enforce all landscape and buffer regulations to ensure the installation and preservation of all required landscape buffers.

Policy ~~8~~6.1.11.3 - Proposed land use activities adjacent to public natural area conservation and recreation lands, shall be limited to activities that will not degrade the natural physical, biological, aesthetic, or recreational functions of such lands.

Policy ~~8~~6.1.11.4 - Land ~~use~~ development applications~~, including site plan removal and construction permit application materials,~~ shall identify public and

semipublic conservation and recreation lands on or adjacent to the development site.

Policy 6.1.11.5 - The County shall continually evaluate the landscape and buffer standards in the ~~land development regulations~~Land Development Code and update any portion of the standards that do not adequately protect the County's natural resources.

Objective ~~8~~6.1.12: The biodiversity of the County's natural areas shall be protected and enhanced through public land acquisition, conservation easements, ~~land development regulations~~Land Development Code, and implementation of Management Plans prepared for public owned and managed natural areas. The County shall enact, enforce, and continually review and update land use regulations and land management plans that provide for the protection of natural resources.

Policy ~~8~~6.1.12.1 - The County shall continually evaluate the Resource Protection Standards section of the ~~land development regulations~~Land Development Code and update any portion of the standards that do not adequately protect the County's natural resources.

Policy 8~~6~~.1.12.2 - All appropriate ~~land development regulations~~Land Development Code required by this Comprehensive Plan shall include the protection of environmentally sensitive upland and wetland areas.

Struck language in Original Policy 8.1.12.3 was relocated and renumbered as Policy 6.1.13.11.

Policy ~~8~~6.1.12.3 - ~~St. Lucie County will continue to cooperate with adjacent local governments to conserve, appropriately use, or protect ecological greenways located within more than one jurisdiction.~~The County shall acquire and support the public acquisition of a diversity of natural habitat types to ensure maximum diversity of native wildlife species. The County shall continue to support the functions and recommendations of the County Land Acquisition Selection Committee.

Policy ~~8~~6.1.12.4 - ~~In addition to other conservation policies, any proposed development situated within~~ Imperiled and Critically Imperiled vegetative communities, as defined by the Florida Natural Areas Inventory, including but not limited to scrub, maritime hammock, or coastal dune; ~~and all jurisdictional~~ wetlands, the North and South Savannas, North and South Hutchinson Island and the Atlantic Coastal Ridge shall be considered Environmentally Sensitive Areas for conservation, appropriate use, and protection to further the goals, objectives, and policies of this Element and County ~~land development regulations~~Land Development Code. Development proposals within these areas shall adhere to the following conditions:

a. Proposed development projects within a defined Environmentally Sensitive Area, as identified ~~described~~ above, must submit as part of ~~the site plan~~ a development approval process an Environmental ~~Assessment~~ Impact Report. The report shall contain:

    1. An inventory of existing vegetation and wildlife based on a field survey;
    2. An identification of wildlife or vegetation present that is listed for protection by the state or federal government~~as endangered,~~

~~threatened or a species/plant of special concern;~~:

3. An assessment of the land that will identify the location of all environmentally sensitive habitat or vegetation and will contain a plan to protect the resource;

4. An analysis of the functional viability and quality of the various habitats;

5. A discussion of the impacts, both positive and adverse, on the resources;

6. A discussion of how the proposed development plan maximizes efforts to avoid and minimize adverse impacts to the environment;

7. A discussion concerning whether there is any potential for irreplaceable or irretrievable environmental damage; and

8. If reasonable use of the property cannot occur without adversely impacting on-site natural resources, a mitigation plan shall be required that describes actions to be taken that replace those functions and values of the resource as a result of impacting the resource.

b. Those Environmentally Sensitive Areas identified as containing habitat worthy of preservation may require a clustering of allowable density to more suitable areas for development to avoid and minimize impacts to highly sensitive habitat. ~~Only footpaths or entryways will be permitted in such areas.~~

c. Environmentally Sensitive Areas containing highly sensitive native habitat worthy of preservation may require the habitat be protected through a conservation easement or other method acceptable to the County as defined in the Land Development Code. Only footpaths or entryways will be permitted in such areas.

Struck language in original Policy 8.1.12.5 was relocated as item f under Policy 6.1.8.2.

Policy ~~8~~6.1.12.5 - ~~Proposed site clearing activities within the known range of endangered or threatened species or where such species are expected to occur based upon habitat suitability and species ranges~~ Environmental Impact Reports required by this Plan shall be conducted ~~surveyed~~ by qualified environmental professionals~~consultants and/or government ecologists prior to approval and commencement of such activities to determine whether or not populations of endangered, threatened or plant and animal species of special concern occur~~.

Policy ~~8~~6.1.12.6 - Where feasible, the County shall protect critical habitat through acquisition, establishment of public or private conservation easements, purchase of development rights, or through other available means as deemed appropriate. The County shall continue to request assistance in public acquisition of natural areas under federal, state and regional programs or other non-governmental organizations.

Policy ~~8~~6.1.12.7 ~~- No fill or regrading of property shall be allowed except to establish required road elevations for driveways, unless the environmental assessment shows that fill or regrading will not adversely affect the environment~~

~~and fill is available on site.~~ The County shall consider the abundance, status, and distribution of endangered ecosystems and other environmentally sensitive lands when reviewing land use proposals and acquisitions.

Policy ~~8~~6.1.12.8 - All native upland and wetland habitats, including those located within Environmentally Sensitive Areas as defined in this Element ~~Policy 8~~6.1.12.5~~4~~, that are required to be preserved as part of a development project shall be protected through a conservation easement or other method acceptable to the County. The proposed preservation areas shall be designated on all site plan and permit application materials.

Policy ~~8~~6.1.12.9 - St. Lucie County shall support nature based eco-tourism activities on public preserves that are primarily designed for appreciation of the County's native habitats and wildlife species that can be accomplished in a manner that does not disrupt wildlife or negatively impact their habitat. The type of recreational activity deemed appropriate for the County's public preserves will depend on the type of native vegetative community on the site. This includes, but is not limited to, hiking, wilderness camping, canoeing, swimming, and wildlife viewing. Activities centers, including, educational centers, museums, and botanical centers will be provided at suitable locations throughout the County. All eco-tourism facilities shall be operated in a manner that does not degrade or reduce the inherent natural functions and values of the natural resources utilized for the eco-tourism use. County owned or managed lands purchased through public land acquisition programs targeting the protection of the natural resources shall only provide access and recreational opportunities that can be provided without degradation of the native plant communities and listed plant and animal species values.

Policy ~~8~~6.1.12.10 - Lands purchased through the County's Environmentally Significant Lands program shall be monitored for visitor impacts which threaten natural areas. If impacts to natural areas are identified a plan shall be prepared to mitigate or eliminate the negative impacts.

Policy 6.1.12.11 - The County shall provide multiple-use opportunities on County-owned natural preserve areas, consistent with natural resource protection and conservation, to provide for passive recreation, wildlife habitat, watershed protection, erosion control, maintenance or enhancement of water quality, aquifer recharge protection, or other such functions.

Policy 6.1.12.12 - The County shall continue to monitor all credible climate change and sea level rise data and what direct and potential effects this has on natural resources. Based on this data the County shall evaluate and update the resource protection standards of the ~~land development regulations~~ Land Development Code and this plan as necessary.

Policy 6.1.12.13 - To ensure protection of the natural resources of the County identified in this Plan, the county shall direct all incompatible future land uses away from these natural resource systems.

Policy 6.1.12.14 - Through the Environmentally Significant Lands Program, the County shall continue the acquisition of properties for the preservation of and restoration of the Indian River Lagoon.

Objective ~~8~~6.1.13: The County shall implement the ~~develop a~~ 2008 St. Lucie County Bicycle, Pedestrian, G~~g~~reenways and Trails Master P~~p~~lan to facilitate the implementation of ecological and recreational greenways within its jurisdiction when funding is available. ~~At a minimum the plan shall include a map of existing and proposed greenways, identify gaps in the greenway network, and set forth strategies for the maintenance and expansion of the existing network.~~

Policy ~~8~~6.1.13.1 - The County shall coordinate with the state and federal land acquisition programs to encourage connectivity between privately and publicly owned recreational and conservation lands.

Policy ~~8~~6.1.13.2 - The County shall pursue grants from local, state, federal, and private organizations to plan and assemble the greenway network.

Policy ~~8~~6.1.13.3: The County shall encourage multiuse of greenways, as appropriate, to facilitate the development of shared recreation and wildlife corridor ecological greenways.

Policy ~~8~~6.1.13.4 - ~~The County shall establish guidelines within the Land Development Code that facilitate usable open space that is accessible to cyclists and pedestrians.~~ Nonpaved bicycle and pedestrian access shall be encouraged between uses where paved access would negatively impact existing habitats.

Policy ~~8~~6.1.13.5 - To the extent feasible, the County shall ~~develop a~~ beautify~~ication~~ and improve~~ment program for~~ areas used by the general public (e.g. roads, sidewalks, bicycle paths, pedestrian walkways, parks and open space areas) to enhance vehicular and nonvehicular movements. The program shall encourage planting standards that promote the use of appropriate native plants in road and utility rights-of-way to restore the original native plant community to the extent practicable.

Policy ~~8~~6.1.13.6 - The County shall utilize, where possible, existing rights-of-way as wildlife corridors and pedestrian areas.

Policy ~~8~~6.1.13.7 - The County shall coordinate with appropriate state and federal agencies to identify natural area greenways and wildlife corridors to link existing public parks, preserve areas and similar areas for conservation and habitat preservation purposes.

Policy ~~8~~6.1.13.8 - The County shall consider incentives that encourage the granting of conservation easements for natural linear greenways and/or scenic drives.

Original Policy 8.1.13.9 language was relocated and renumbered as Policy 6.1.2.13.

Policy ~~8~~6.1.13.9 - ~~The County shall support the reconnection of impounded wetlands to the Indian River Lagoon to improve the productivity of estuaries; and the implementation of adaptive management strategies for saltwater marshes and mangrove systems which are consistent with Best Management Practices for mosquito control.~~ The County shall continue to map existing and proposed greenways, identify gaps in the greenway network, and set forth strategies for the

maintenance and expansion of the existing network.

Policy ~~8~~6.1.13.10 - The County shall promote the preservation and maintenance of native plant communities in a contiguous manner to provide wildlife corridors and pedestrian pathways.

Policy 6.1.13.11 - St. Lucie County shall continue to cooperate with adjacent local governments to conserve, appropriately use, or protect ecological greenways located within more than one jurisdiction.

Objective ~~8~~6.1.14: St. Lucie County shall~~, by December 2004, amend its land development regulations to include a locally developed and regulated~~ use a wetland classification system for purposes of protecting wetland functions and values within the unincorporated areas of St. Lucie County ~~based upon a wetland classification survey of all areas in the unincorporated areas of St. Lucie County to be completed by July 2004,~~ consistent with the Policies cited below.

Policy ~~8~~6.1.14.1 - ~~As a part of the locally developed and regulated wetland classification system described in Objective 8.1.14.~~ St. Lucie County shall use the following general classification system for the purposes of protecting wetland functions and values within the unincorporated areas of St. Lucie County. ~~This classification system is to include a qualitative assessment of the value of the wetlands and shall be based upon the standard WRAP analysis methods employed by the State of Florida.~~

a. Category I wetlands--shall include any wetlands having hydrological connection to natural surface water bodies; any isolated wetland 20 acres or larger; or wetlands containing Strategic Habitat Conservation Areas as identified by the Florida Wildlife Conservation Commission.

b. Category II wetlands--shall include any isolated wetlands which have been connected to other surface water drainage and are greater than or equal to five acres, or are less than 20 acres and do not qualify as Category I wetlands;

c. Category III wetlands--shall include isolated wetlands less than five acres that do not qualify as Category I or II wetlands.

St. Lucie County shall require identification of Category I, II, and III wetlands prior to staff review of all land development proposals, including future land use, zoning, site plan or construction applications. Except for those development proposals seeking a Final Development Order approval, as defined under Policy ~~11.1.3.6~~9.1.4.4, a formal jurisdictional line determination shall not be required as part of this review.
~~St. Lucie County shall, by December 2004, amend its land development regulations to provide for the implementation of standards and regulations to enforce this policy.~~

Policy ~~8~~6.1.14.2 - The County shall not permit development in a Category I or II wetland or any wetland buffer associated with these wetlands, except as follows:

a. Clearing and /or constructing of walking trails;

b. Construction of boardwalks/catwalks for direct access to water bodies;

construction of wildlife management shelters, footbridges, observation desks and similar structures not requiring a dredge or fill for their placement; and

c. Clearing and/or construction of electric/ cable utility, stormwater management, water or wastewater infrastructure as needed to provide public service that does not impair the long term viability of the wetland system.

d. Alteration is permissible within Category I and II wetlands, and the required wetland buffer as necessary for the above activities if:

    1. No other reasonable alternative exists and avoidance cannot be achieved;

    2. Such activity is consistent with other policies of the Comprehensive Plan;

    3. Such activity complies with the requirements of all Federal, State and local agencies claiming jurisdiction over wetland alteration and adequate mitigation of any adverse hydrological and physical alterations is provided.

    4. No more than one percent of any Category I wetland is impacted, except as noted in Policy ~~8~~6.1.14.3;

    5. No more than 15 percent of any Category II wetland is impacted, except as noted in Policy ~~8~~6.1.14.3;

    6. Appropriate mitigation is provided.

Policy ~~8~~6.1.14.3 - In addition to the alteration provisions of Policy ~~8~~6.1.14.~~3~~2(c), alteration of a Category I or II wetland may be allowed when no other reasonable alternative exists and avoidance and minimization of impacts cannot otherwise be achieved. Any provision of this Comprehensive Plan or the land development code related to the preservation of a Category I or II wetland that precludes all reasonable economically viable use of the property or would prohibit a reasonable public use of the property and which if applied would result in a compensable taking of the property may be waived to the extent necessary to provide the minimum reasonable use, public or private, of the property. These provisions shall only be waived following the review and approval of the Board of County Commissioners, or their designee, in a manner set forth in the Land Development Code. The standards for the granting of any waiver shall be set forth in the Land Development Code and shall be consistent with the general standards and intent of the Comprehensive Plan.

Policy ~~8~~6.1.14.4 - Alteration of a Category III wetland may be allowed when no reasonable alternative exists and avoidance and minimization of impacts cannot be achieved. Any provision of this Comprehensive Plan or the land development code related to the preservation of a Category III wetland that precludes all reasonable economically viable use of the property or would prohibit a reasonable public use of the property and which if applied would result in a compensable taking of the property may be waived to the extent necessary to provide the minimum reasonable use, public or private, of the property. These provisions shall only be waived following the review and approval of the Board of

County Commissioners, or their designee, in a manner set forth in the Land Development Code. The standards for the granting of any waiver shall be set forth in the Land Development Code and shall be consistent with the general standards and intent of the Comprehensive Plan.

Policy ~~8~~6.1.14.5 - The County shall require a minimum 50-foot buffer between Category I or II wetlands and new development activity in order to protect water quality, preserve natural functions, and preserve wildlife habitat. The buffer, as measured landward from the approved jurisdictional line, shall be maintained in a natural vegetative state and be free of exotic and nuisance species as defined by the Florida Pest Council.

Policy ~~8~~6.1.14.6 - All new development on lots less than five acres and not containing a Category I or II wetland shall provide a minimum 25-foot buffer between the wetland jurisdictional line and the area of development. The buffer, as measured landward from the approved jurisdictional line, shall be maintained in a natural vegetative state and be free of exotic and nuisance species as defined by the Florida Pest Council. No development shall occur within the wetland buffer except as identified in ~~8~~6.1.14.2.

Policy ~~8~~6.1.14.7 - St. Lucie County shall assess the specific and cumulative impacts of all proposed new development or redevelopment activities, including single family building permits, on all wetlands that may be located on the property in order to ensure that the natural functions of the wetlands are protected and conserved through the implementation of wetland protection standards which shall include consideration of the types, values, functions, sizes, conditions, and locations of wetlands.

Policy ~~8~~6.1.14.8 - Removal, encroachment, or alternation of Category III wetlands may be allowed with the extent of such activities being determined on a case-by-case basis in conjunction with applicable regulatory agencies and in the interest of public benefit.

Objective 6.1.15. The Board of County Commissioners shall consider the Wetland Inventory and Evaluation Study expected to be completed by June 2011, and designed to facilitate the development of policies and procedures to improve the protection of the existing wetlands in the County.

Policy 6.1.15.1 - The Wetland Inventory and Evaluation Study shall at a minimum:

a. Develop a GIS tool to assist County staff engaged in ongoing wetland management and evaluation of proposed impacts,

b. Indentify, inventory and classify wetlands by the functions performed and describe the geographic extent of wetland classes; and

c. Identify gaps in the existing federal, state and county regulatory mechanisms through which the County might lose certain types of wetland resources and functions.

Policy 6.1.15.2 – Within one year after completion of the Wetland Inventory and Evaluation Study the County shall amend its Land Development Code to adopt wetland protection measures that will incorporate a classification system

inclusive of wetland functionality and address gaps in the existing regulatory mechanisms.

Policy 6.1.15.3 – Within two years after the completion of the Wetland Inventory and Evaluation Study the County shall amend its Comprehensive Plan to include the updated wetland protection measures developed as a result of the Study.

Policy 6.1.15.4 – Through the development review process the County shall continue to update the wetland inventory and mapping tools.