

NATURAL RESOURCES

Introduction

Southwest Florida contains an abundance of natural resources that, along with a favorable climate, creates economic opportunities, recreational opportunities and a quality of life that is important to the citizens and visitors to the region. The protection of these resources creates a challenge to planners, managers and decision makers in a rapidly growing region that must utilize these resources for economic reasons and to create housing for our population.

➤ PROBLEMS, NEEDS, AND OPPORTUNITIES

Problems

The main problem in dealing with the protection of natural resources is the competition for these resources among the many users of them. Some examples are; not only are urban areas competing for water use with agricultural and industrial users, but our natural systems must also compete with these other users; the Florida Panther requires large areas of habitat which are being converted to agriculture then to urban uses which are not compatible for panther use; plans are created for the panther that illustrate that large areas of the region are needed to maintain the panther, however, no monies are allocated to purchase lands or development rights. Private landowners cannot be expected to dedicate their lands and investments to sit idle or unused for overall public benefit, without an expectation that they will be economically compensated.

Another major problem for resource managers are the need for solid information on systems that are constantly changing due to constantly changing baseline conditions. Typical examples include beach erosion, rainfall levels, sea level rise, seasonal changes and ground water levels. Finally, natural systems are complicated and the science needed to make sound conclusions may not exist or be reliable.

Needs

The most obvious need for certain resources is space. Species such as black bear and red cockaded woodpeckers need wide ranging areas that are currently in private ownership. The obvious need for obtaining space is money. Even once these lands are acquired, monies are needed for maintenance and management. Monies and research are needed to control exotic species that rapidly spread into once pristine areas.

Opportunities

In spite of the challenges of protecting natural resources while providing for the needs of our population, there are opportunities that exist to assist us. Land acquisition programs such as Florida Forever, which include; the Conservation and Recreational Lands (CARL) Program; Save Our Rivers (SOR) Program; Rails to Trails Program; Florida Communities Trust Program; State Park Additions; Department of Forestry Lands Additions and Game and Freshwater Fish Commission

Lands Additions. Local governments also have land acquisition programs and mitigation options that include land acquisition. Other opportunities include designations to programs such as the Aquatic Preserve and State Buffer Reserve Program, Outstanding Florida Waters, Surface Water Improvement and Management Program (SWIM), National Estuary Program and the National Estuarine Research Reserve Management Program.

Opportunities exist in the form of planning such as the Strategic Regional Policy Plan, District Water Management Plans and Florida Fish and Wildlife Conservation Commission Planning. Finally, it is obvious that new opportunities must be found that can accommodate the needs of our natural systems and the private landowners. Programs that need further investigation include the Farmlands Trust Program that can assist landowners to continue to utilize their lands in a manner that is sensitive to our natural systems and remain economically feasible in the face of rising property values and rising taxes.

➤ **ISSUES**

❖ **PUBLIC AWARENESS**

Goal 1: The Region's environmental awareness educational programs will be modernized and directed to all citizens of the region.

One of the basic principals of any proactive or strategic plan is the education of the public on the issues. With respect to Natural Resources, it is important to teach the public since we are a rapidly growing area, with persons unfamiliar with the Southwest Florida environment and the role that natural resources play in our economy and quality of life. The education process needs to not only be directed at the youth but also to these newcomers. Educational programs should also consider ecosystems and their management, which includes both man and nature.

Strategy: Provide technical assistance to the Region's various public awareness programs.

Action:

1. The Southwest Florida Regional Planning Council will assist School Boards and Environmental Education Centers in the design of awareness programs.
2. The SWFRPC shall work with the Florida Gulf Coast University in the design of a planning program, if requested, and serve as a planning resource to any environmental program.
3. The SWFRPC shall make presentations on issues concerning the Region at the request of various entities.
4. Local, regional and state agencies should establish non-regulatory, educational urban non listed wildlife programs, which include:
 - a. The identification of wildlife living in urban areas;
 - b. Public education concerning the behavior and needs of urban wildlife, and the benefits of maintaining urban wildlife;

- c. Measures to avoid conflicts between urban wildlife species and man, and the means to resolve such conflicts.

Indicators:

- Number of educational programs concerning our environment.
- Percentage of middle and high schools offering environmental education programs.

❖ **NATURAL RESOURCES PROTECTION**

Goal 2: The diversity and extent of the Region's protected natural systems will increase consistently beyond that existing in 2001.

The Southwest Florida Region has a variety of natural systems that range from open water marine and freshwater systems to upland sandhill forest systems. These systems together provide a solid base of economic, environmental, spiritual, aesthetic and recreational values and functions that serve the permanent and seasonal residents of the Region.

Sustainability and ecosystem management are the latest approaches that are being considered today for management of our natural resources. This approach to management not only considers the natural resource, but also how man and nature interact with each other. For example, it is well known that our local economy relies on our natural resources not only to provide a product or resource (i.e. fishing, shellfish) but a quality of life.

Regionally significant natural resources are depicted on Map 1. Identification of named proposed reserves/preserves is solely for planning purposes and not for regulatory purposes. Better, site-specific data (if available) for any feature or resource shown on this map should be used to identify whether any natural resource of regional significance is in fact present on that site for preparation of local comprehensive plans and for consideration of site specific land use requests.

Strategy: To identify and include within a land conservation or acquisition program, those lands identified as being necessary for the sustainability of Southwest Florida, utilizing all land preservation tools available.

Actions:

1. To help eliminate possible duplication or competition on a tract of land between entities, provide a clearinghouse and inventory of lands included in all land acquisition programs in a central location so various entities can see if any other entities were involved in a specific location. A future Web Site would be a useful tool and provide easy access.
2. Support continued acquisition of lands targeted for conservation and recreation by Public Land Acquisition Programs including CARL, SOR, Florida Communities Trust, Lee County CLASAC, CREW, WRDA and other efforts in the Region.
3. Assist Florida Communities Trust staff to evaluate projects that have been submitted for consideration under the Florida Forever program, as requested by Trust staff on an application-by-application basis.

4. Support continued preservation of lands targeted for conservation and recreation by Private Environmental Land Trust Programs in the Region.
5. Facilitate and assist in the coordination of all land acquisition programs in the Southwest Florida Region by sponsoring periodic meetings of all public and private initiatives.
6. Create a map depicting land that has been set aside for conservation purposes within approved developments (existing conservation easements).
7. Create a map depicting regionally significant lands that private landowners agree will be voluntarily managed to maintain their environmental value, yet still provide them with economic benefits, without the need for public acquisition consideration (such lands would be candidates for future conservation easements).
8. Working with the various entities and utilizing the following Criteria and Guidelines, create a non-regulatory gaps planning map of land needed for recreation, hunting/fishing, flood control, forestry activities, etc.; to provide support for future populations and to protect existing ecosystems. Potential gaps may include lands which are not included in any current acquisition/conservation /preservation program, have not already been set aside as conservation areas within approved development or lands which may be within private ownership and may be potentially proposed for future agricultural or urban intensification, which would preclude their environmental value.
9. Workings with the various acquisitions programs identified in this Plan and working with Local Governments and private landowners, develop a strategy to protect gaps lands identified in the above action, using the Tools outlined in this plan.
10. Assist in the preparation of applications of existing programs for funding of land acquisitions for gaps lands shown on the above-mentioned planning map.
11. Investigate the potential of forming a new Programs, Land Trusts, or encourage existing Land Trusts, to focus on land acquisition, and on other land conservation techniques within portions of Southwest Florida not currently within a program and depicted on the above mentioned gaps map.
12. Working with the various entities, encourage the establishment of management funding at the time of acquisition and refine existing Management Strategies to insure that the lands acquired are maintained in the natural condition that led to their preservation status. Management strategies should include provisions for fire management.

Indicators:

- Acres of protected natural systems, terrestrial and aquatic.
- Net change in wetland acreage as a result of permitted activities.
- Net change in wetland viability as a result of permitted activities.

Resources: Outstanding Florida Waters; beaches and dunes; wetlands; aquatic preserves and state buffer preserves; and other natural areas owned by local governments, water management districts,

other local, regional, state, and federal agencies; privately held natural preserve areas, depicted on Map 1.

❖ **WATER RESOURCE MANAGEMENT**

Goal 3: Water Management Districts and local governments must have programs based on scientific modeling to protect surface water, potable water wells, wellfields and contributing areas from contamination.

The management and control of water quality and quantity has long been an issue of concern for Southwest Florida. It is important that urban and agricultural users, and natural systems all have water sources of sufficient quantity, quality, timing, and duration to supply their needs. Recent winter and spring droughts, coupled with inadequate summer rains, have led to year-long water use restrictions for portions of the region. More extensive use restrictions, more efficient management of water resources, and the need to utilize poorer quality sources of water (with greater treatment costs) can be expected in the future.

The volume of water needed for natural systems is hard to estimate. Natural systems in Southwest Florida are geared to an annual cycle of alternating wet and dry periods. The yearly water cycle for a particular natural system is referred to as its hydroperiod. When a system's hydroperiod is altered it can become stressed. Stressed natural systems are subject to invasion from exotic (non-native) vegetation, or plants from other types of natural systems. When invasion occurs, and remains unchecked (either by a resumption of the natural hydroperiod, or by human intervention) the stressed system will eventually disappear. Much of the acreage in the Region which was formerly dominated by wetlands, and even some dryer areas, have succumbed to the cycle of stress, invasion and disappearance, due to the impacts of nearby development or agricultural projects.

In the future, as the impacts of competing surface and ground water uses on natural systems become better understood, and as water sources become more difficult to locate, and more expensive to utilize, local governments will begin to institute water management rules and water quality controls to protect existing and future water supplies. This has already occurred to some extent. Local agencies have recently begun enforcing water use restrictions imposed by the water management districts.

Because of our region's geology, our surface water systems and ground water systems are linked. There is a very close relationship between surface waters and the shallow aquifer system. There is evidence statewide of lakes and wetland systems that have lowered water levels due to extensive ground water usage. Conversely we also have evidence of lowered water table levels and aggravated saltwater intrusion caused by over drainage of surface waters.

Strategy: To resolve this land planning and water management disjunct, all entities need a common, readily accessible, understandable water resource modeling tool.

Actions:

1. Working with the Water Management Districts and local governments, assist in the creation of a modeling tool to evaluate current resource conditions based on alternative rainfall scenarios. The modeling tool needs to be able to predict and evaluate future resource

conditions based on alternative land use and rainfall scenarios. The tool needs to be able to address the likelihood of success of different management responses to the alternatives forecasted.

2. Work with the WMDs and local governments to insure that the resource condition evaluation addresses surface and groundwater, quantity and quality, flow, volume, direction, and the hydro period cycle.
3. Work with the WMDs and local governments to insure a better provide land use/water linkage and provide for consideration that the land use scenarios recognize the land use patterns of urban, agricultural, and natural system coverage, and the social/economic factors that guide change to land use.
4. The different communities and agencies in a given natural basin area need a common forum and coordinated planning framework to pursue a shared response to the selected management system needed for the basin. In lieu of another entity serving that function, the Regional Planning Council should serve that function.
5. Where economic/political units are divided by Water Management District boundaries (i.e., metropolitan areas or cohesive rural food and fiber production areas), assist in the coordination between districts and the political units that emphasizes the planning for water resource development and improvements (and expected results), not on the permitting process.
6. Work with the State to reestablish the intent of the State and Regional Planning Act of 1984 and Growth Management Act of 1985, and lobby for Water Management District Board Members to be included among the Governor's Voting appointments to Regional Planning Councils.

Indicators:

- Reduction in per capita water use; Percentage of groundwater monitoring wells showing a deterioration in quality or water levels.
- Number of local wellhead protection programs; Change in the permitted volume of water withdrawals; Surface and Ground Water Quality.
- Improved natural systems hydroperiods.

❖ **LIVABLE COMMUNITIES**

Goal 4: Livable communities designed to improve quality of life and provide for the sustainability of our natural resources.

Economic prosperity is key to our Region's future. Growing according to our values is critical to our quality of life. Livable communities embrace both values. In livable communities, young and old can walk, bike, work and play together.

Livable communities are places where we not only protect historic old neighborhoods, but where farms, green spaces, and forests add vigor, context and beauty to the newest of suburbs; places where we work competitively, but spend less time in traffic and more time with our families, friends, and neighbors.

Each community faces different challenges and will find its own solutions. Strategies to create more livable communities may include efforts to: Preserve green space. Secure safe streets. Strengthen local economies. Reduce traffic and air pollution. Provide transportation choices. Create community-centered schools. Foster citizen and private sector cooperation. Promote collaboration among neighboring communities.

Strategy: Promote through the Council’s review roles community design and development principles that protect the Region’s natural resources and provide for an improved quality of life.

Actions:

1. Working in cooperation with agencies and local governments provide for the disposal of man's liquid and solid wastes in a manner that will not lead to long-term degradation of air, ground, and water resources.
2. Working in cooperation with agencies and local governments insure that beaches and inlets that have been damaged by human activity are replaced/renourished and/or managed in order to have the total system function naturally.
3. Working in cooperation with agencies and local governments provide for Air quality improvement and maintenance as our population and urban areas increase.
4. Working in cooperation with agencies and local governments insure that all mining and borrow operations prepare and implement reclamation programs that restore and ensure long-term sustainability of their watersheds and native habitats.
5. Working in cooperation with agencies and local governments insure that agricultural operations are compatible with our identified natural resource protection areas.
6. Working in cooperation with agencies and local governments insure that new public facilities, facility expansions and additions avoid designated natural resource protection areas.
7. Working with all levels of government within Southwest Florida actively plan and prepare for the potential long-term impact of sea level rise upon the Region’s natural systems.
8. Working with all levels of government within Southwest Florida actively plan for lands that have been acquired for natural resource purposes to be maintained and managed to preserve their environmental integrity.
9. Insure that opportunities for governmental partnerships and public/private partnerships in preserving wildlife habitats are maximized.

Indicators:

- Drinkable swimmable water; Clean air; wildlife biodiversity; public access to natural resources; acres of natural and restored wetlands.
- Number of environmental education programs for the community; acres of environmentally sensitive areas preserved.

❖ **REGIONAL COOPERATION**

Goal 5: Effective resource management is maintained across the borders of sovereign public agencies.

When viewing the Regionally Significant Natural Resources Map and other information, it is clear that only a partnership between public agencies and private organizations and land owners can implement this level of management, especially on lands that are not currently owned by the public, or that are not listed on current land acquisition programs or included in designated aquatic preserves.

Strategy: All plans concerning the same resource shall have as objectives the same effective results.

Actions:

1. Assist in the creation of proactive boating siting and management programs that will protect the West Indian Manatee, seagrass areas, sanctuaries, fisheries habitat and other necessary natural features and at the same time identify and maximize the use of available land most suitable for public access to the natural resource.
2. The Region shall continue to support the Southwest Florida Regional Harbor Board non-regulatory resource protection program for boating facilities and provide technical assistance in the development of a regional waterway management plan.
3. The SWFRPC will play an active role on the Management Conferences for the Charlotte Harbor and Sarasota Bay National Estuary Programs.
4. The SWFRPC will promote State, regional and local agencies to consider lands identified as priority one habitat south of the Caloosahatchee River and areas formally designated as critical habitat for the Florida Panther to be incorporated in their agency's natural resource management programs and provide intergovernmental coordination for the implementation of management practices that, based on existing data, would be expected to result in maintaining habitat conditions for the panther.
5. The SWFRPC will continue to support the regional management of the Region's Beaches and Shores through the Southwest Florida Beaches and Shores Convocation.
6. The SWFRPC will continue to support the Estero Bay Agency on Bay Management consistent with the Settlement Agreement for the permitting of Florida Gulf Coast University and in coordination with the signatories of the Settlement Agreement.

7. The SWFRPC will continue to coordinate with the entities of the South Florida Ecosystem Restoration Task Force Working Group in their restoration efforts.
8. The SWFRPC will continue to support the Local Emergency Planning Committee for Southwest Florida and their training for Hazardous Materials handling, storage, management, emergency response and disposal.
9. The SWFRPC will continue to serve on and support natural resource advisory committees such as the Charlotte Harbor SWIM TAC and Myakka River Coordinating Council.
10. The SWFRPC will take a lead role in the planning for Sea Level Rise in Southwest Florida.

Indicators:

- Number of listed species remaining throughout the Region.
- Number of adopted marina siting plans.
- National Estuary Program Comprehensive Conservation and Management Plans effectively implemented.
- Proper disposal and management of hazardous materials; progress toward the restoration of South Florida.

➤ **IMPLEMENTATION**

The following matrix shows the ways in which SWFRPC will interact with other organizations to implement the goals listed in the plan.

Agency	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5
County	A	A,I,G	A,I,R	A,I, R,G	A,I
City	A	A,I,G	A,I,R	A,I, R,G	A,I
FDEP	A,R	A,I,R,G	A,I,R	A,I,R	A,I
DCA	A,R	A,I,G	A,I,G	A,I, R,G	A,I,R,G
FWC	A,I	A,I	A,I	A,I	A,I
HRS	A		A	A	A,I
WMD	A,R,I	A,R,I,G	A,R,I	A,I,R	A,I,R
RPC	A,I	A,I	A,I	A,I	A,I
EPA	A	A,I	A,R,I,G	A,I, R,G	A,I
USFWS	A	A,I,G	A,R,I,G	A,I	A,I
ORGs	A	A,I	A,I	A,I	A,I
Private	A,R,I	A,I,G	A,I,G	A,I,G	A,I

A = advise or inform.

R = review or regulate.

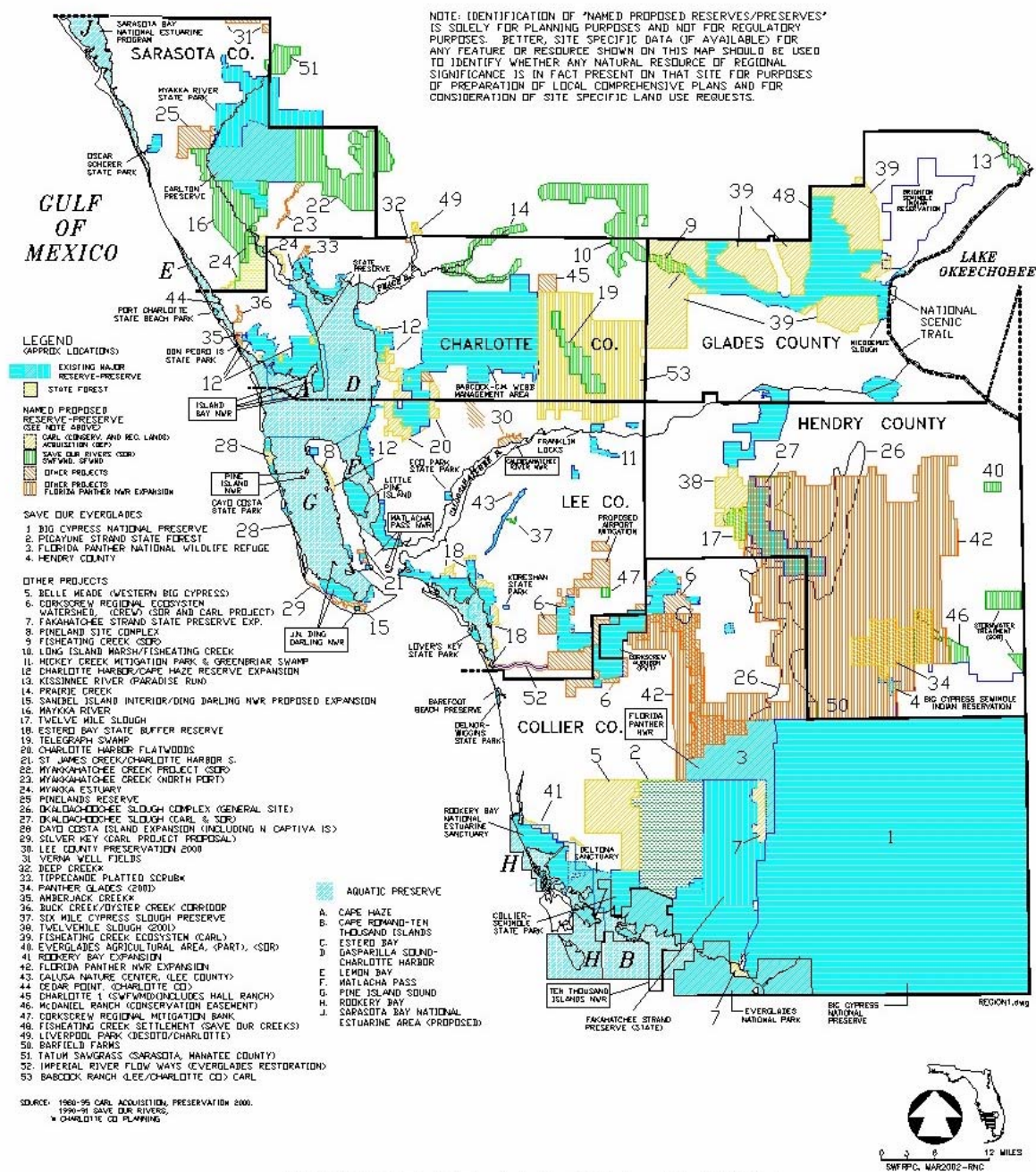
I = implement or coordinate.

G = assist in grant application either to or for the entity listed.

AGENCY ABBREVIATIONS

- FDEP: Florida Department of Environmental Protection
- DCA: Department of Community Affairs
- FCW: Florida Fish and Wildlife Conservation Commission
- HRS: Department of Health and Rehabilitative Services
- WMD: South and Southwest Florida Water Management Districts
- RPC: Regional Planning Councils
- EPA: U.S. Environmental Protection Agency
- USFWS: U.S. Fish and Wildlife Service
- ORGs: Private Organizations formed for the purpose of Environmental Management

Natural Resources Element



SOUTHWEST FLORIDA REGION REGIONALLY SIGNIFICANT NATURAL RESOURCES

APPENDIX 1

NATURAL RESOURCES OF REGIONAL SIGNIFICANCE*

Please refer to the Regionally Significant Natural Resources Map

Aquatic Reserve-Preserves and Proposed Estuarine Areas

- A. Cape Haze
- B. Cape Romano-Ten Thousand Islands
- C. Estero Bay
- D. Gasparilla Sound-Charlotte Harbor
- E. Lemon Bay
- F. Matlacha Pass
- G. Pine Island Sound
- H. Rookery Bay

Existing and Proposed Public Acquisition Lands

Save Our Everglades

1. Big Cypress National Preserve
2. Picayune Strand State Forest
3. Florida Panther National Wildlife Refuge
4. Hendry County

Other Projects

5. Belle Meade (Western Big Cypress)
6. Corkscrew Regional Ecosystem Watershed, (Crew) (SOR and CARL Project)
7. Fakahatchee Strand State Preserve Exp.
8. Pineland Site Complex
9. Fisheating Creek (SOR)
10. Long Island Marsh/Fisheating Creek
11. Hickey Creek Mitigation Park
12. Charlotte Harbor Reserve Expansion
13. Kissimmee River (Paradise Run)
14. Prairie Creek
15. Sanibel Island Interior/Ding Darling NWR Proposed Expansion
16. Myakka River
17. Twelve Mile Slough
18. Estero Bay State Buffer Reserve
19. Telegraph Swamp
20. Charlotte Harbor Flatwoods
21. St James Creek/Charlotte Harbor S.
22. Myakkahatchee Creek Project (SOR)
23. Myakkahatchee Creek (North Port)
24. Myakka Estuary
25. Pinelands Reserve
26. Okaloachoochee Slough Complex (General Site)

27. Okaloachoochee Slough (CARL & SOR)
28. Cayo Costa Island Expansion (Including N. Captiva Is.)
29. Silver Key (Carl Project Proposal)
30. Nature Conservancy Preserve (Also CARL Project)
31. Verna Well Fields
32. Deep Creek
33. Tippecanoe Platted Scrub
34. East & West Branch, Coral Creek
35. Amberjack Creek
36. Buck Creek/Oyster Creek Corridor
37. Six Mile Cypress Slough Preserve
38. Cape Haze, Charlotte Harbor (6/96)
39. Hall Ranch
40. Everglades Agricultural Area, (Part), (SOR)
41. Rookery Day Expansion
42. Caloosahatchee Ecoscape
43. Calusa Nature Center,(Lee County)
44. Cedar Point, (Charlotte Co.)
45. Greenbriar Swamp Preserve
46. Mcdaniel Ranch (Conservation Easement)
47. Corkscrew Regional Mitigation Bank
48. Nicodemus Slough
49. Liverpool Park (Desoto/Charlotte)
50. Barfield Farms
51. Tatum Sawgrass (Sarasota, Manatee County)
52. Fisheating Creek Settlement (Save Our Creeks)
53. Lee County Preservation 2000
54. Charlotte 1 (SWFWMD)(Includes Hall Ranch)
55. Fisheating Creek Ecosystem (CARL)

Other Lands and Waters

Parks and State Recreation Areas

1. Myakka River State Park
2. Oscar Scherer State Park
3. Cayo Costa State Park
4. Caloosahatchee River State Park
5. Koreshan State Park
6. Collier-Seminole State Park
7. Everglades National Park
8. Eco Park (Cape Coral)
9. Lover's Key (S.R.A.)
10. Delnor Wiggins Pass (S.R.A.)
11. Port Charlotte Beach (S.R.A.)
12. Barefoot Beach State Preserve
13. Don Pedro Island State Park

14. Gasparilla Island State Park
15. Fakahatchee Strand Preserve State Park

National Wildlife Refuges

1. Island Bay NWR
2. Pine Island NWR
3. Matlacha Pass NWR
4. J.N. Ding Darling NWR
5. Caloosahatchee River NWR
6. Florida Panther NWR

Barrier Islands

Depicted on Map I-5 in Volume One of the Description of the Region.

Shellfish Harvesting Areas

Depicted on Map? in Volume One of the Description of the Region.

Other Projects

1. Carlton Preserves
2. C.M. Webb - Babcock Wildlife Management Area
3. Nicodemus Slough
4. Lake Hicpochee
5. S.W. Florida International Airport Mitigation Lands
6. Corkscrew Swamp Sanctuary (Audubon)
7. Deltona Sanctuary
8. Fakahatchee Strand State Preserve
9. Big Cypress National Preserve
10. Rookery Bay National Estuarine Sanctuary
11. Picayune Strand State Forest
12. Sarasota Bay NEP Water Bodies
13. Charlotte Harbor NEP and SWIM Water Bodies

Florida Greenways By County

Charlotte

1. Cape Haze Pioneer Trail
2. Gasparilla Island Rail Trail

Collier

1. Big Cypress National Preserve Florida National Scenic Trail
2. Corkscrew Regional Ecosystem Watershed Greenway
3. Florida Trail System

Glades

1. Florida National Scenic Trail/Florida Trail System

Hendry

1. Florida National Scenic Trail/Florida Trail System

Lee

1. Corkscrew Regional Ecosystem Watershed Greenway
2. Hickey Creek Greenway/Canoe Trail
3. Sanibel Island Greenway
4. Six Mile Cypress Slough Preserve Greenway
5. Estero River Canoe Trail

Sarasota

1. Florida National Scenic Trail/Florida Trail System
2. Myakkahatchee Creek

Official Lists

1. Florida's Endangered Species, Threatened Species And Species of Special Concern, *Official Lists*, August 1, 1997 by the Florida Fish and Wildlife Conservation Commission.
2. Critically Imperiled, Imperiled, and Rare Natural Communities, as identified by the Florida Natural Areas Inventory.

- * Note: Identification of "Proposed Public Acquisition Lands" is solely for planning purposes and not for regulatory purposes. Better, site specific data (if available) for any feature or resource shown on this list should be used to identify whether any natural resource of regional significance is in fact present on that site for purposes of preparation of local comprehensive plans and for consideration of site specific land use requests.

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