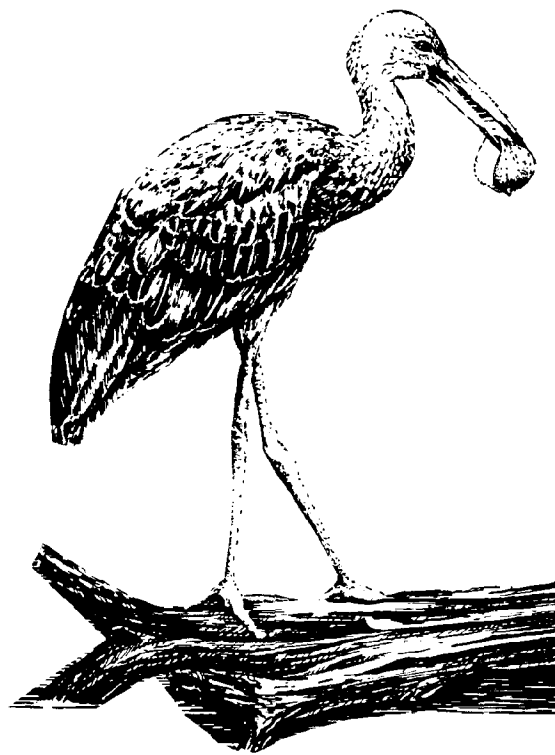


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RAINBOW SPRINGS

AQUATIC PRESERVES MANAGEMENT PLAN



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December 1989

DEPARTMENT OF NATURAL RESOURCES

RAINBOW SPRINGS
AQUATIC PRESERVE MANAGEMENT PLAN
(DRAFT)
DECEMBER 1989

Tom Gardner
Executive Director
Department of Natural Resources

This plan was prepared by
The Division of State Lands

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Copies of the legal description of the Rainbow Springs Aquatic Preserve, as well as, copies of chapter 253 and 258, F.S., and Chapter 18-21, F.A.C., may be obtained from:

Bureau of Aquatic Preserves
Department of Natural Resources
3917 Commonwealth Boulevard
Mail Station 140
Tallahassee, Florida 32399-3000

CHAPTER I

INTRODUCTION

The Rainbow Springs Aquatic Preserve is located in southwest Marion County and represents one of the 42 aquatic preserves in Florida (figure 1). This preserve was designated by the Florida Legislature in 1986 for the purpose of maintaining the spring head and associated river run in an essentially natural condition. The preserve is approximately 4,000 acres in size and includes only the sovereignty submerged lands located below the ordinary high waterline. The preserve is some 6 miles in length and extends from the head springs to where the river run flows into the Withlacoochee River (figure 2).

The Rainbow Springs/River system has long been recognized as an exceptional water resource of the State. This area exhibits crystal clear spring waters, colorful aquatic vegetation, and an abundance of fish and wildlife. A recent survey estimates that roughly 220,000 people dive, swim, fish or boat along the Rainbow Springs and River annually. The adjacent uplands are largely used for residential, agricultural or recreational purposes. Such intense use, confirms the need for an integrated management program by state, regional, and local governments to accomplish a goal of long term resource protection for the preserve.

This management plan developed for Rainbow Springs Aquatic Preserve is only one of many steps that will be necessary to accomplish this goal. It is intended primarily to serve as a useful guide to the manager and others in maintaining the natural integrity of the preserve. As more information is learned about this preserve and ambient conditions analyzed, management strategies outlined in this plan may need to be adjusted.

The process of developing this management plan involved collecting an inventory of resource information, coordinating with other plans that have been developed for the area, and identifying resource problems and management issues relating to the present and future uses of the preserve and adjacent uplands. Supporting policies were developed to be consistent with statutory authority and the overall intent of the Aquatic Preserve Program for helping ensure that the submerged land resources of the spring/river run remain for future generations to enjoy.

Despite intense use, the preserve area remains largely natural in appearance and is in overall good condition. For





FIGURE 1. FLORIDA AQUATIC PRESERVE SYSTEM



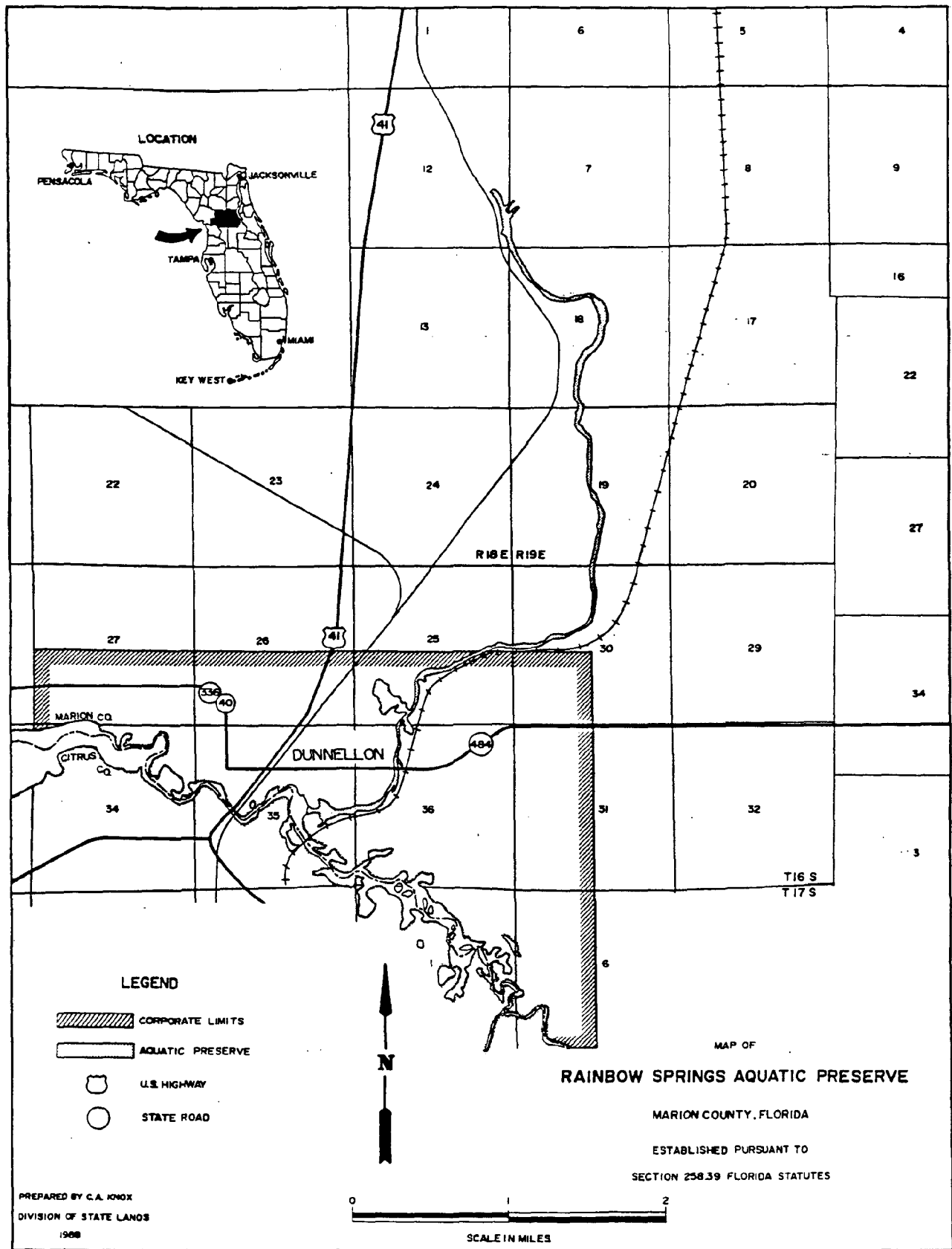


FIGURE 2. RAINBOW SPRINGS AQUATIC PRESERVE BOUNDARY MAP



this reason Rainbow Springs Aquatic Preserve will be granted the maximum protection allowable under the rules governing the use of the aquatic preserve.

Fourteen management plans, covering 21 of the 42 designated aquatic preserves in the state, have been adopted by reference into the existing aquatic preserves rule (Chapter 18-20, Florida Administrative Code). This management plan will be subsequently incorporated into rule following its approval by the Board of Trustees of the Internal Improvement Trust Fund. As such, the special criteria in this plan pertaining to use of submerged lands will carry the same authority as current rule criteria.

Specifically, this plan is divided into chapters according to their management application:

Chapter II cites the statutory authorities upon which this resource management program and plan are built.

Chapter III provides a description of the Rainbow Springs Aquatic Preserve and details the physical and biological components of the preserve as well as any cultural resources. Additional information includes the current and future uses of this preserve and use of the adjacent uplands.

Chapter IV delineates various management areas within the preserve. These areas are defined by taking into account the biological resources, the physical parameters, and the aesthetic values, in conjunction with the use of the adjacent uplands. Specific restrictive criteria are developed for each area, along with their effects and rationale.

Chapter V discusses specific needs and issues particular to the Rainbow Springs Aquatic Preserve. Policy directives have been developed in addressing each need and/or issue.

Chapter VI outlines site-specific goals, objectives, and tasks required to meet the management needs of the preserve for resource management, resource protection, research, and environmental education.

Chapter VII identifies local, regional, state, and federal agencies, their authorities and programs, and how they relate and assist in protection and management of this preserve. It also identifies non-governmental organizations, interest groups, and individuals that can assist in management.

Chapter VIII projects future staffing and fiscal needs necessary for providing effective management and protection of the preserve, as well as supporting research and environmental education.

Chapter IX outlines a monitoring program for recording and reporting resource changes, and establishes a tracking system for detailing the progress and accomplishments in resource management.

CHAPTER II

MANAGEMENT AUTHORITY

A. STATUTORY AUTHORITY

The fundamental laws providing management authority for the Rainbow Springs Aquatic Preserve are contained in Chapters 258 and 253, Florida Statutes (F.S.). These statutes establish the proprietary role of the Governor and Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund, as Trustees over all sovereignty submerged lands. In addition, these statutes empower the Trustees to adopt and enforce rules and regulations for managing all sovereignty submerged lands, including aquatic preserves.

In particular, Sections 258.35-258.42, F.S., enacted in 1975 by the Florida Legislature represent the Florida Aquatic Preserves Act. These statutes set forth a standardized set of management criteria for all designated aquatic preserves, and represent the primary laws governing use of sovereignty submerged lands within aquatic preserves.

The Legislative intent for establishing aquatic preserves is stated in Section 258.36, F.S.: "It is the intent of the Legislature that the state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value, as hereinafter described, be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations." This statement along with the other applicable laws clearly mark the direction for management of aquatic preserves. Management will emphasize the maintenance of essentially natural conditions, and will include only sovereign or state-owned submerged lands and lands leased by the State and specifically authorized for inclusion as part of a preserve.

Management responsibilities for aquatic preserves may be fulfilled directly by the Trustees or by staff of the Division of State Lands of the Department of Natural Resources through delegation of authority. Other governmental bodies may also participate in the management of aquatic preserves under appropriate instruments of authority issued by the Trustees. The Division staff, however, serve as the primary managers who implement provisions of the management plans and rules applicable to the aquatic preserves. Staff evaluate proposed uses or activities in the preserve, and assess the possible impacts on the natural resources. Project reviews are primarily evaluated in accordance with the criteria in Sections 258.35-42 F.S., and 18-20, F.A.C., (Rules of Florida Aquatic Preserves).

Staff comments on proposed uses are submitted for consideration in developing recommendations to be presented to the Trustees. This mechanism provides a basis for the Trustees to evaluate public interest and project merits within the context of potential environmental impacts upon the aquatic preserves. Any activity located on sovereignty submerged lands will require a consent of use, a lease or easement, or other approval from the Board of Trustees. Consent of use may be granted on small projects from the Division of State Lands in accordance with the authority delegated by the Board.

BACKGROUND

The laws supporting aquatic preserve management are the direct result of the public's awareness and interest in protecting Florida's aquatic environment. The rampant dredge and fill activities that occurred in the late 1960's had a stimulating effect on this widespread concern.

In 1967 the Florida Legislature passed the Randall Act (Chapter 67-393, Laws of Florida), which established procedures regulating previously unrestricted dredge and fill activities on state-owned submerged lands. That same year the legislature provided the statutory authority (Section 253.03, F.S.) for the Trustees to exercise proprietary control over state-owned lands. Also, in 1967, government focus on protecting Florida's productive waterbodies from development led to the Trustee's establishment of a moratorium on the sale of submerged lands to private interests. In the same year, an interagency advisory committee on submerged lands was created to develop strategies for protection and management of state submerged lands.

In 1968, the Florida Constitution was revised, declaring in Article II, Section 7, the State's policy of conserving and protecting the natural resources and scenic beauty. That constitutional provision also established the authority for the legislature to enact measures for the abatement of air and water pollution. Then, late in 1968, the committee issued a report recommending the establishment of twenty-six aquatic preserves.

On October 21, 1969 the Governor and Cabinet acted upon the recommendations of the Interagency Advisory Committee and adopted by resolution eighteen of the water bodies as aquatic preserves. Other preserves were individually adopted at various times through 1989, including Rainbow Springs in 1986.

B. ADMINISTRATIVE RULES GOVERNING AQUATIC PRESERVES

Chapters 18-20 and 18-21, Florida Administrative Code (F.A.C.), are the two administrative rules directly applicable

to the uses of aquatic preserves specifically, and submerged lands in general.

1. CHAPTER 18-20, F.A.C.

Chapter 18-20, F.A.C., specifically addresses aquatic preserves and derives its authority from Sections 258.35, 258.36, 258.37, and 258.38, F.S. The intent of this rule is contained in Section 18-20.01, F.A.C., which states:

- "(1) All sovereignty lands within a preserve shall be managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation including hunting and fishing where deemed appropriate by the board and the managing agency.
- (2) The aquatic preserves which are described in 73-534, Laws of Florida, sections 258.39, 258.391, 258.392, and 258.393, Florida Statutes, future aquatic preserves established pursuant to general or special acts of the legislature, and in Rule 18-20.002, Florida Administrative Code, were established for the purpose of being preserved in essentially natural or existing condition so that their aesthetic, biological and scientific values may endure for the enjoyment of future generations.
- (3) The preserves shall be administered and managed in accordance with the following goals:
 - (a) to preserve, protect, and enhance these exceptional areas of sovereignty submerged lands by reasonable regulation of human activity within the preserves through the development and implementation of a comprehensive management program;
 - (b) to protect and enhance the waters of the preserves so that the public may continue to enjoy the traditional recreational uses of those waters such as swimming, boating, and fishing;
 - (c) to coordinate with federal, state, and local agencies to aid in carrying out the intent of the Legislature in creating the preserves;
 - (d) to use applicable federal, state, and local management programs, which are compatible with the intent and provisions of the act and these rules, and to assist in managing the preserves;

- (e) to encourage the protection, enhancement, or restoration of the biological, aesthetic, or scientific values of the preserves, including but not limited to the modification of existing man-made conditions towards their natural condition, and discourage activities which would degrade the aesthetic, biological, or scientific values, or the quality, or utility of a preserve, when reviewing applications, or when developing and implementing management plans for the preserves;
- (f) to preserve, promote, and utilize indigenous life forms and habitats, including but not limited to: sponges, soft coral, hard corals, submerged grasses, mangroves, saltwater marshes, freshwater marshes, mudflats, estuarine, aquatic and marine reptiles, game and non-game fish species, estuarine aquatic, and marine invertebrates, estuarine, aquatic, and marine mammals, birds, shellfish and mollusks;
- (g) to acquire additional title interests in lands wherever such acquisitions would serve to protect or enhance the biological, aesthetic, or scientific values of the preserve;
- (h) to maintain those beneficial hydrologic and biologic functions, the benefits of which accrue to the public at large."

2. CHAPTER 18-21, F.A.C.

Chapter 18-21, F.A.C., controls activities conducted on sovereignty submerged lands in general and is predicated upon the provisions of Sections 253.03 and 253.12, F.S. These rules are supplemental to Chapter 18-20, F.A.C. in the regulation of activities in aquatic preserves. The stated intent of this administrative rule is:

- "(1) to aid in fulfilling the trust and fiduciary responsibilities of the Board of Trustees of the Internal Improvement Trust Fund for the Administration, management, and disposition of sovereignty lands;
- (2) to insure maximum benefit and use of sovereignty lands for all citizens of Florida;
- (3) to manage, protect, and enhance sovereignty lands so that the public may continue to enjoy traditional

uses including, but not limited to, navigation, fishing and swimming;

- (4) to manage and provide maximum protection for all sovereignty lands, especially those important to public drinking water supply, shellfish harvesting, public recreation, and fish and wildlife propagation and management;
- (5) to insure that all public and private activities on sovereignty lands which generate revenues or exclude traditional public uses provide just compensation for such privileges;
- (6) to aid in the implementation of the State Lands Management Plan."

C. RELATIONSHIP TO OTHER APPLICABLE PLANS AND PROGRAMS

The State Comprehensive Plan, established by Chapter 187, F.S., provides long-range policy guidance for the orderly social, economic and physical growth of the State. As such, the State Comprehensive Plan provides direction for the management of the physical resources within the state.

The goals, objectives and policies set forth in this aquatic preserve management plan are designed to be consistent with the goals and policies of the State Comprehensive Plan pertaining to the water resources, coastal and marine resources and natural systems.

The Conceptual State Lands Management Plan, adopted on March 17, 1981, and amended by the Trustees on July 7, 1981 and March 15, 1983, contain specific policies concerning spoil islands, submerged land leases, "Outstanding Native Florida Landscapes," unique natural features, seagrass beds, archaeological and historical resources, and endangered species. These policies provide some of the fundamental direction for formulating management plans and policies of the Aquatic Preserves Program.

The Local Government Comprehensive Plan (LGCP) for Marion County is required by the Local Government Comprehensive Planning Act of 1975 (Section 163.3161, F.S.), (as amended by Chapter 85-55, Laws of Florida, to the Local Government Comprehensive Planning and Land Development Regulation Act) to have a comprehensive management plan with elements relating to different governmental function (i.e., housing, physical facilities, conservation, land use, coastal zone protection, etc.). These plans, in effect, are intended to guide the future development of the county. Recent statutory amendments

require these plans to be updated and for cities and counties to adopt land development regulations and to conform to the criteria, policies, and practices of their comprehensive plan.

The intent of the Aquatic Preserve Program, and this plan, is to guide county governments during their planning process, towards developing local plan criteria and standards that will be consistent with the objectives of the program. Marion County's LGCP is not due for review by the state until 1991. Currently, staff from the Rainbow River Aquatic Preserve are working in cooperation with the Marion County Planning Department to develop specific policies for the land use and conservation elements reflecting the preservation of the preserve's resources. Policy statements that are developed and adopted by the county, and are consistent with the Aquatic Preserve Program, will be incorporated into this management plan at a later date.

CHAPTER III

RESOURCE DESCRIPTION

A. LOCATION/BOUNDARY

The Rainbow Springs Aquatic Preserve lies in the southwest corner of Marion County northeast of the City of Dunnellon. Also known as Blue Run, the Rainbow River serves as a tributary to the larger Withlacoochee River upstream from Lake Rousseau. The aquatic preserve boundary extends from the headwaters to where the Rainbow River joins the Withlacoochee near downtown Dunnellon, as described in Chapter 258.39 F.S. The preserve's watershed area is bounded by the Atlantic Coastline Railroad to the west and the abandoned Seaboard Railroad to the east. Beginning at the headwaters pool, the preserve includes four main spring vents with numerous smaller spring vents occurring along the entire 5.7 mile spring run.

B. PHYSIOGRAPHY/GEOLOGY

The Rainbow River is a narrow, winding river with an average depth of 10-12 feet and width of 150 feet. The headwaters is composed of a semicircular spring pool with 4 main boils in its 250 feet diameter headspring. In the headspring area the two deepest vents are 11.6 and 14.2 feet deep. This spring group combines with numerous other vents and sand boils in the first 3,000 yards downstream, including the flow from Indian Creek on the eastern side of the river. The water clarity at the headwaters area is crystal clear but diminishes somewhat as it moves downstream into the tea colored tannic waters of the Withlacoochee.

The Rainbow River's spring water flow occurs as a result of the Ocala Uplift, which is a geologic feature composed of limestone. Generally referred to as Karst topography, this limestone layer is prevalent throughout Marion County and in many instances is seen exposed at the surface at some of the larger spring vents.

Phosphate was discovered in 1890 and was mined extensively along Rainbow River, occasionally from the river bed itself. The last mining activity in Dunnellon took place in 1966.

C. HYDROLOGY

Of Florida's twenty seven first magnitude springs, Rainbow Springs is rated the fourth largest with an average flow of approximately 493 million gallons per day, and an average discharge of 100 cubic feet per second. In the first mile

downstream there are approximately eight other large spring vents in the river bed which contribute significantly to the total flow of the river.

Springs are visible evidence of discharge or leakage from aquifers. The total flow of Florida's numerous springs indicates the large capacity of the aquifer system, as well as the cavernous nature of the Florida Aquifer. The total discharges from spring vents forming the Rainbow River is thought to be almost totally derived from rainfall percolating into the aquifer from a drainage area covering approximately 750 square miles distributed mostly north and northeast of the springs.

The quantity of runoff received from the watershed (7.2 square miles) is small compared with that provided by the recharge area of the springs (estimated to be 750 square miles). Less than 1% of the water discharged by the Rainbow River is contributed by the topographic watershed (1987, SWIM plan).

Most of the large and many of the smaller springs in Florida are artesian; that is, they issue from a breach in the sediments that confine water under pressure in the aquifer. This complex system of underlining fractures and solution channels are comprised of limestone and dolomite, typical of Florida's karst topography. The thickness of the upper aquifer varies from less than 800 feet near Rainbow Springs to greater than 1500 feet in the northeast section of the Keystone Heights.

It has been determined that there is almost no net movement of either surface or groundwater across the peninsular from Cedar Key on the gulf to New Smyrna Beach on the Atlantic. This line is known as the Florida Hydrologic Divide. The Ocala Uplift runs diagonally across the peninsula just south of the hydrologic divide with the potentiometric high of 85 in the recharge area located near Keystone Heights and the low of 35 in the spring pool (see figure 3).

The water temperature of Rainbow Springs and Rainbow River is consistently between 23 and 24 degrees Centigrade (73-74 degrees Fahrenheit). Water from the headpool is considerably softer than water from the spring vents downstream of the headpool.

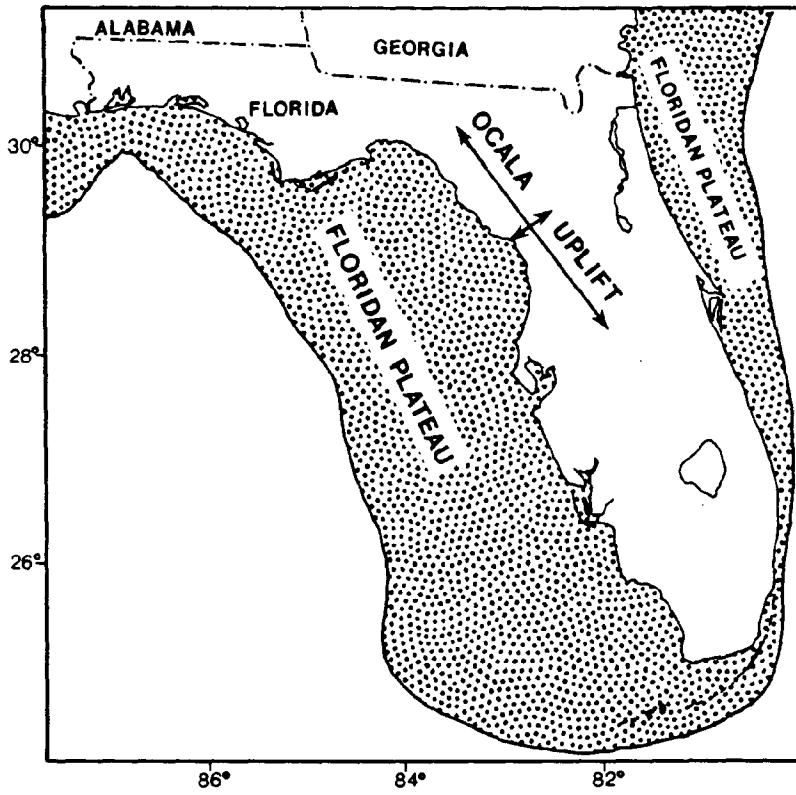


FIGURE 3. FLORIDAN PLATEAU-OCALA UPLIFT



D. WATER QUALITY

The volume and quality of waters discharged from the head springs are important to the overall health and quality of the riverine system. The U.S. Geological Survey has monitored the water quality of Rainbow Springs since 1927 and has rated the headwaters as excellent. Measurements for dissolved oxygen (DO) taken at the opening of the spring vents are consistently high, the average being 7.2 Mg/L. The bio-chemical oxygen demand (BOD) has been consistently 0 Mg/L.

Located approximately 800 feet inland, from the headwaters, a 90,000 GPD sewage package plant serves the Village of Rainbow Springs development. This plant receives little inflow at this time. An associated spray irrigation field is at 10% capacity and at this level of operation there are no reported impacts of this facility on the waters of the preserve.

Below the headwaters, manmade impacts on water quality are more apparent, particularly in waste water treatment systems. Information available on these systems is discussed below:

a) Single family homes on the west side of the preserve, beginning approximately 2,000 feet downstream from the headwaters extending to the Rio Vista subdivision, are served by septic systems. Several of these are reportedly not operating in an optimal manner and are suspect of discharge into the river. Included in this area is the K.P. Park, a Marion County public park leased to an individual operator. Reportedly, both the public water system and rest rooms are operating with an expired Department of Environmental Regulation (DER) permit.

b) Further downstream, the Rio Vista subdivision's sewer package plant is located in a low elevation area approximately 100 feet from the river. This plant releases its effluent into an adjacent single percolation pond. All other properties from this location extending downstream to the highway 484 bridge in Dunnellon, are on septic tank systems. It is not fully known how many of these systems are operating properly.

c) Homes located downstream from the highway 484 bridge, are connected to the Dunnellon sewer plant. This plant, however, releases effluent into the Rainbow River. According to the Department of Natural Resources this plant is currently in violation of waste water discharge and has been ordered by to build percolation ponds and cease releasing effluent into the river. In addition, this sewage treatment plant is reportedly in very poor condition.

d) On the east side of the aquatic preserve, the Rainbow River Campground has a small sewage treatment plant located adjacent to heavily forested swampland and Indian Creek tributary. In the past there have been breakdowns resulting in a source of pollution to the waterbody.

e) Between the Rainbow River Campground and Sateke Village, the waterfront land is undeveloped. The Sateke Village development is set back 300 feet from the waterfront and is served by a recently constructed package plant and spray irrigation. The original plant was located close to the river in an abandoned phosphate pit, but was moved in order to meet Department of Regulations restrictions.

f) Aikens Subdivision located downstream from Sateke village consists of approximately 15 private homes, most rely on mounded drain fields. The soil profile in this area is classified as not suitable for septic systems.

g) Surface water runoff from the area just south of Sateke Village and extending to the highway 484 bridge are believed to contribute excessive nutrients to the waterbody. This area includes the Rainbow River Ranch, which has cattle pastures along the river. Frequently cattle wander from the pasture into the river to feed.

h) The lower portion of the preserve, beginning just south of the K.P. County Park and extending to the Withlacoochee River, is heavily impacted by poor septic systems and pasture land surface water runoff.

In 1983, development and use of septic systems along the Rainbow River waterbody was shown to be a problem. All public swimming areas were closed as a result of high levels of coliform bacteria. The problem appeared to be the result of faulty septic systems.

On Jan 17, 1987, the Rainbow Springs and River were officially designated an Outstanding Florida Waters (OFW), with "Special Waters" classification for Class III waters. This step was taken to help reduce water quality impacts on the River by applying OFW standards provided in Chapter 17-3, F.A.C.

In addition, the 1988 session of the Florida Legislature passed Senate Bill 1433 which mandates construction of a central sewer system serving properties in the watershed area. As of yet, no date has been included for implementation.

E. PREDOMINANT VEGETATION SPECIES AND COMMUNITY TYPES

The aquatic plant communities in the Rainbow Springs headwaters represents one of the most beautiful habitats which includes a high diversity of submerged vegetation. These beneficial submerged aquatic plants were abundant along the entire spring run 40 years ago according to Dr. Archie Carr. However, today there is a distinct difference in the aquatic plant community. Beginning in the headwaters area south to the K.P. Park, the submerged vegetation is basically in excellent condition with the exception of areas damaged by prop dredging and excessive boating activities. From the K.P. Park south to confluence with the Withlacoochee River, the native aquatic vegetation bio-mass has been reduced and intermingled with exotic vegetation, the most prevalent being hydrilla, (see figure 4).

1. HYDRILLA

There is an abundance of hydrilla in the northwest side of the headwaters region. Approximately 1 & 1/4 mile downstream, south of the K.P. boat ramp, there is an abundance of hydrilla intermingled with sagittaria. Although there is scattered segments of hydrilla in many areas the heaviest infestation begins at the entrance to Blue Cove and extends downstream to the Withlacoochee River. This area has shown a dramatic increase in hydrilla growth during the past year due to increased nutrient loading and currently represents about 90% of the submerged vegetation.

2. SAGITTARIA

Sagittaria is probably the predominant beneficial aquatic plant in the preserve, however there has been a steady decrease in this community due to (a) uprooting grasses to create sand beaches by adjacent property owners, (b) scuba divers pulling themselves along the bottom by the grass, and (c) prop dredging.

3. VALLISNERIA

Commonly called tapegrass, this beneficial community is also one of the predominant grasses and provides excellent habitat.

4. MAIDENCANE

This very important spawning habitat has also shown a dramatic decline along the entire preserve because of (a) excessive boating activities, and (b) adjacent property owners uprooting the grass to create clear swimming areas. At this time efforts are underway to revegetate some of these areas through the water management district's SWIM plan.



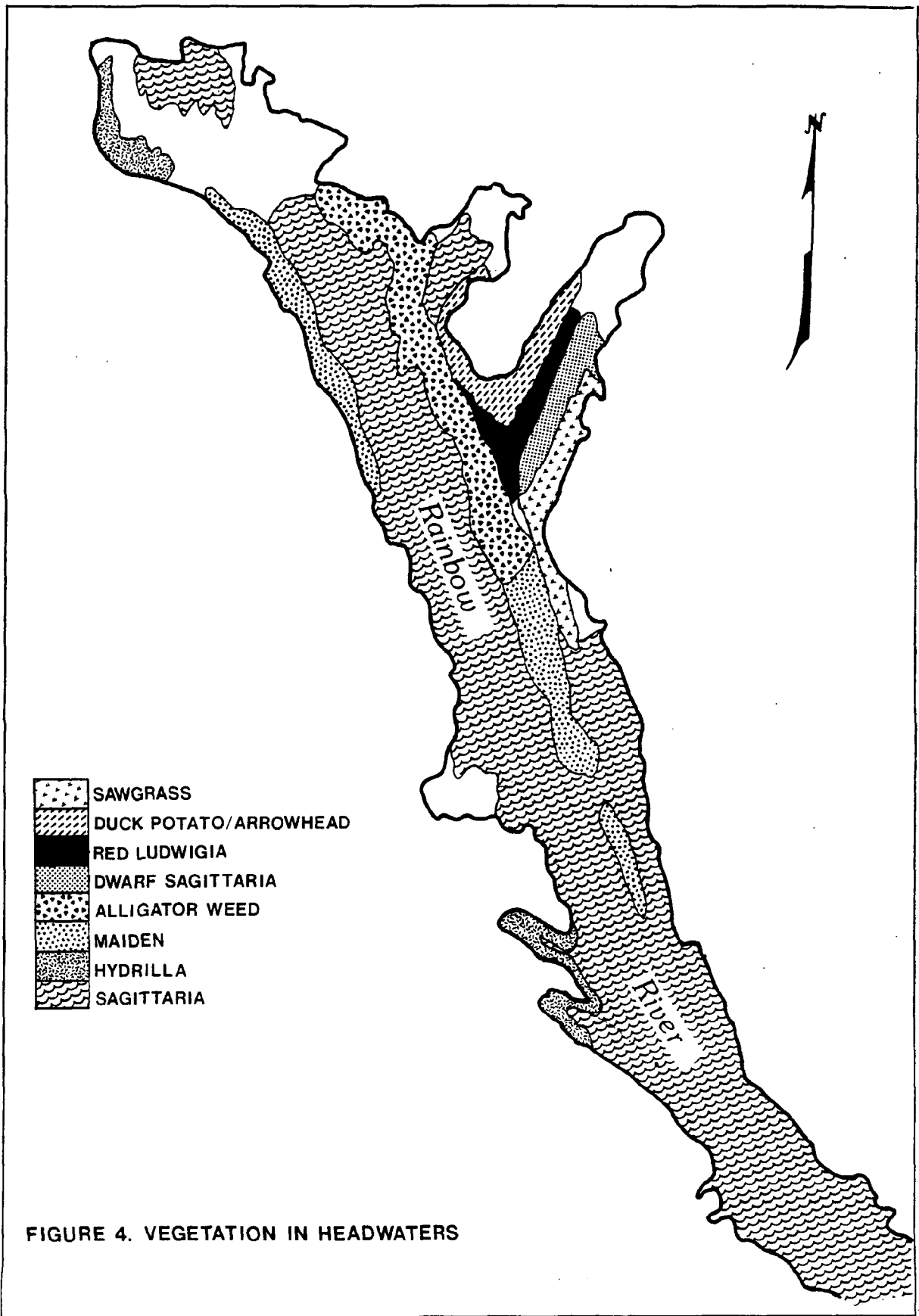


FIGURE 4. VEGETATION IN HEADWATERS



5. SHORELINE PLANTS

Probably the most predominant shoreline plants are bald cypress, sweetbay, wax myrtle, and elephant ear. Most vegetation along the eastern shore of the preserve are still in its natural state, however private development and associated shoreline clearing have shown a dramatic difference on the western shoreline.

F. PREDOMINANT FISH AND WILDLIFE SPECIES AND THEIR HABITATS

The many ecological systems associated with the preserve are floodplain forests, emergent marshes and upland communities. The wetlands and littoral areas are an integral part of the spring fed river system ecology. Riverine wetlands are a rich biotic resource with high habitat value. The first mile of the river system offers an unspoiled, aesthetic community that could lend itself towards teaching environmental ethics and natural values.

Both submerged and emergent aquatic plants extend the length of the spring run, occurring predominately on the undisturbed eastern shore. The only unspoiled area of any size on the western side is located southwest of the Rio Vista subdivision down to the northern city limits of Dunnellon.

The following is a partial list of some predominant fish and wildlife species found in the Rainbow Springs Aquatic Preserve.

FISH

Largemouth Bass
Sunfish
Bream
Mudfish
Gar
Shad
Catfish
Eel

WILDLIFE

West Indian Manatee
Green Heron
Great Blue Heron
Great Egret
White ibis
Osprey
Limpkin
Anhinga
Cormorant
Otter
Alligator
Suwannee Cooter
Red-Shouldered Hawk

G. DESIGNATED SPECIES

The state of Florida has recognized the importance of the resource with the Outstanding Florida Water (OFW) designation and Aquatic Preserve status. The exceptional ecological

significance of the resource is not only diverse in educational and scientific interest, it includes threatened, endangered, and species of special concern which should be protected for future generations to observe. Listed are some designated species that have been observed within the Rainbow River Aquatic Preserve.

<u>SPECIES</u>	<u>STATUS</u>
Southern Bald Eagle	Threatened
West Indian Manatee	Endangered
Suwannee Cooter	Special Concern
Limpkin	Special Concern

H. CULTURAL RESOURCES - ARCHAEOLOGICAL AND HISTORICAL

An archaeological evaluation survey was conducted in 1980 as part of the developers of the Village of Rainbow Springs seeking permission for a Development of Regional Impact (DRI). This included the 455 acres surrounding the springs headwaters which at this time is under consideration for state acquisition under the Conservation and Recreational Lands program.

Three prehistoric sites were identified by archaeologist Marsha A. Chance, including a large prehistoric Indian archaic village dated between 8000-1000 B.C. Of the three sites, one had no significance, however site #3 was subsequently recorded in the Florida master file as 8Mr166 and assessed by Ms. Chance as being a significant cultural resource.

Numerous artifacts and fossils have been found along the east side of the preserve and in the first mile of the submerged lands of the waterbody. Over the years most of these artifacts and fossils have been taken and today many swimmers and divers continue to search and dig in the submerged lands for artifacts. From an archaeological and historical standpoint this area should be protected. Many of the Indian artifacts and fossils in the Florida State Museum came from the Rainbow River and immediate area.

The first known white settlers came to the Rainbow Springs area as early as 1854. In the 1890's phosphate was discovered in the area and was mined extensively in the river bottom and adjacent uplands. When the phosphate market declined during the early 1900's, the Rainbow River became known as a recreational area. A tourist hotel was operated at the headsprings during the 1890's and in 1934, a new resort was built featuring glass-bottom boat and nature trails. At one time a floating raft was anchored in the headpool for swimmers

to enjoy. The commercial attraction was closed in 1973 and purchased by the Rainbow Springs Corporation. By the 1970's and 1980's the resource was so heavily used by such a wide variety of activities that it was being abused and dangerous. Given the width and winding course of the resource, combined with numbers using it, some recreational activities were conflicting from a safety and liability standpoint.

I. REGIONAL LAND USE - DEVELOPMENT AND ASSOCIATED IMPACTS

While the Rainbow River is generally in very good condition, future land use, especially development, is the single greatest activity that will impact the long-term health of the river (Henigar & Ray, 1987b). Only in recent years have we become aware of the problems and impact of development on the environment, particularly where development occurs on waterfront property. The Rainbow Springs Aquatic Preserve could be destroyed as an environmentally significant entity if further development takes place without proper attention to the environment.

1. Adjacent Land Uses - Current, (see figure 5)

Most of the adjacent land uses are zoned for single family residences. However, the use of setback lines and buffer zones could decrease the impact of upland activities. In some instances the riparian rights of adjacent properties are being violated by locating structures too close to the waterway, some actually projecting over the resource.

Currently, the Rainbow River Campground, the Ron da lay Trailer Park and the County K.P. Park are the only commercially zoned areas without adequate buffer zones. The Rainbow River Ranch on the eastern shore is zoned for agriculture and used for pastureland. This is a good example of the need to strengthen zoning laws for agriculture lands adjacent to waterway. (ref. Henigar & Ray Engineering 1987)

2. Planned Adjacent Land Use - 1989 to the year 2000 A.D

Present zoning densities and land uses in the watershed area should be strengthened under the conservation element of the Comprehensive Plan due 1991. The entire Rainbow Springs Aquatic Preserve is used for many diverse types of recreation, including swimming, canoeing, fishing, snorkeling, scuba diving and power boating. This small, fragile resource has no limit on boat or motor size. During the warm months the river is very crowded. A survey conducted in 1984 estimated 224,000 people use it annually and the use has increased as the population has increased. The acquisition of lands for public use, such as the CARL proposal adjacent to the headwaters,

could help to accommodate these large numbers of visitors in a more regulated fashion.

Public access to the preserve include a public boat ramp at the County K.P. Park, the commercially operated campground and by way of the Withlacoochee River. The preserve is entirely too small and fragile to support a marina. If this spring fed resource is to regain its pristine and biological integrity, this type of activity should be reduced.

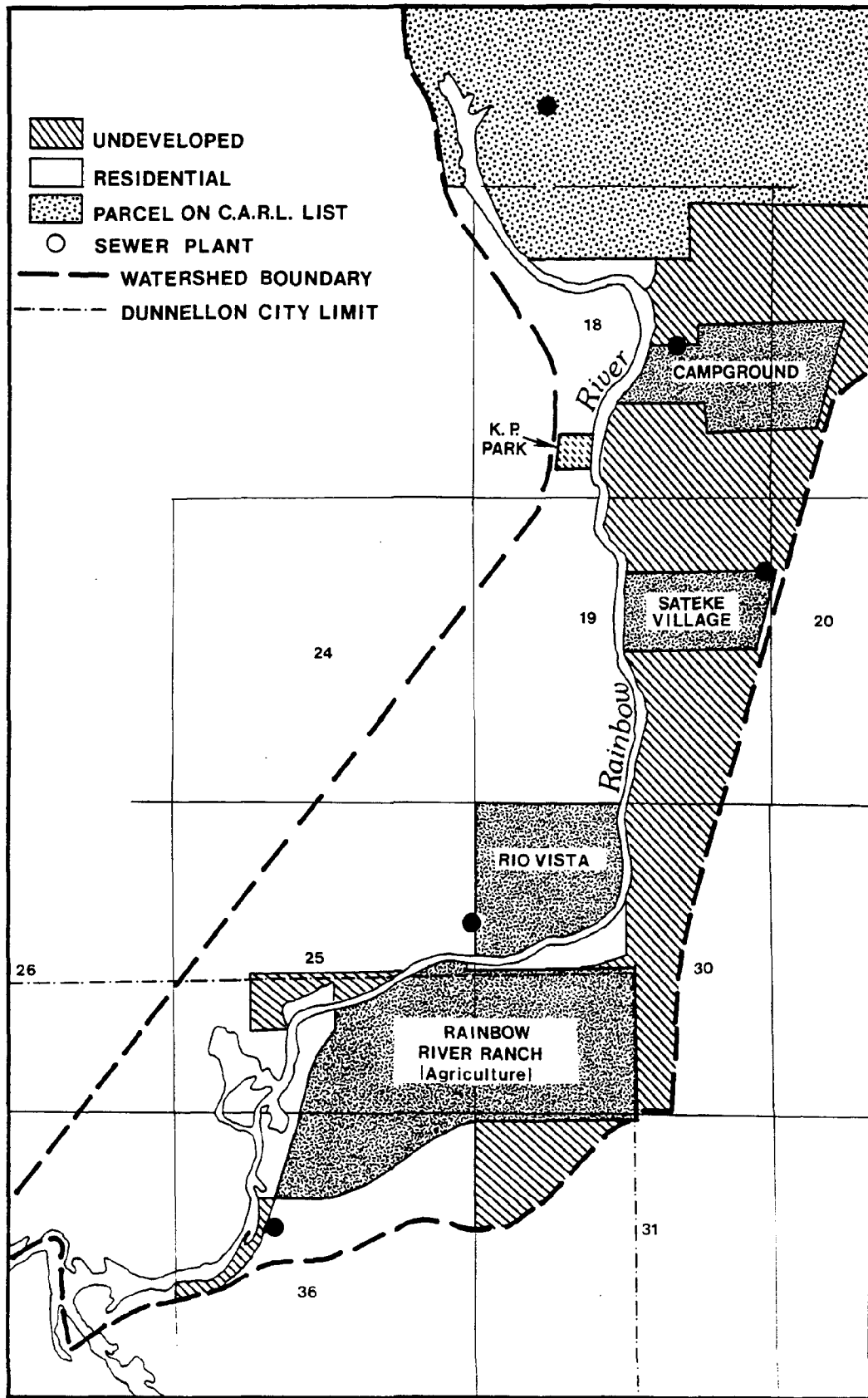


FIGURE 5. ADJACENT LAND USE MAP

CHAPTER IV

MANAGEMENT AREAS

A. INTRODUCTION

This chapter outlines the criteria and defines use designations for structures and activities occurring within the Rainbow River Aquatic Preserve. It provides management direction for aquatic preserve staff, other state agencies, local governments and the general public. This plan also provides an element of continuity and predictability for allowable public and private uses of the submerged sovereign lands in this aquatic preserve.

1. DEFINITION

The cornerstone for the management of all aquatic preserves is the division of each preserve into designated management areas. These management areas are determined by identifying and delineating relatively homogeneous areas of (1) resources in the aquatic preserve and (2) adjacent upland uses. By necessity, the delineation of the upland areas is often somewhat broader than is county and municipal zoning, which can be on a scale inappropriate from managing an open aquatic system. The management areas are simply geographic delineations, however each management area reflects different conditions. The number of management areas may vary among aquatic preserves, depending on the upland use and submerged resource conditions. Thus, the designation of management areas is considered to be preserve-specific.

2. USE DESIGNATIONS

The combination of biological and physical parameters within the preserve along with the upland activities determines the categories of use designated for each management area. "Public utilities," defined as a means by which the public is served amenities deemed necessary for comfortable, safe living conditions, can be considered as a designated use. The utilities include communication lines, such as telephone and television cables, water lines, and power cables. These cables, pipes, and lines may be subaqueous, embedded into the substrate, or they may be aerielly supported by poles or attached to bridges. Public utilities are generally deemed to be in the public interest; therefore, all management areas include public utilities as a designated use.

Other designated uses considered under the management areas are as follows:

Single-Family Use: This category is defined by single-family residences using the adjacent portion of the aquatic preserve solely for private, recreational activities. Structures constructed over state-owned land may include private residential single-family docks, and shoreline stabilization.

Multi-Family Use: This designation is defined as more than one private residence using a common adjacent portion of the aquatic preserve solely for private, recreational activities. Structures built over state-owned land may include private residential multi-slip docks, and shoreline stabilization.

Public: This category includes structures used by the public at no charge. The exceptions to this are federal, state, county or municipalities that charge a nominal fee. Structures associated with this category include single or multi-slip docks, boat ramps and shoreline stabilization.

Commercial Use: Commercial use is a broad category that covers structures whose use involves the charging of fees or generation of revenue. Exceptions to this are federal, state, and county parks that charge a nominal fee; these facilities are considered a public use. Structures associated with this category are limited to simple docks, boat ramps, designated swimming areas and shoreline stabilization.

3. MANAGEMENT AREA CRITERIA:

In each management area, designated uses are given specific criteria that should: (1) allow the structure or activity to occur with minimal impact on the biological, archaeological, and aesthetic value of the resource, and (2) provide riparian owners reasonable ingress and egress. These criteria take into account site-specific information and are intended to apply to any new structures or activities, to expansion of existing facilities, and to any repair that involves replacement of pilings.

Types of construction activities and structures that occur in the management areas of Rainbow Springs Aquatic Preserve are: shoreline stabilization at or below the ordinary high water line (OHWL) and/or planting of native vegetation; private residential single-family docks; and boat ramps at public access area.

4. RATIONAL FOR SPECIFIC CRITERIA:

(a) In all management areas the total length of the access walkway and terminal platform shall be limited to 20% of the width of the "navigable" waterway, or will not extend out from the shoreline further than to a maximum depth of -4 feet OLWL, whichever is less. This differs from the current rule criteria which allows 20% of the water body encompassing state ownership (i.e. from OHWL to OHWL on each side of the river). This restriction is added because in many areas, the OHWL is located well into the emergent vegetated littoral zone. Also in some areas this restriction is necessary because shallow water depths occur across the entire width of the preserve, and because the width of the preserve is very narrow.

(b) All management areas will be restricted to private residential single family docks as defined in 18-20.004 (5) (b), F.A.C., and will accommodate no more than 2 vessels, generally ranging in length from 8 to 16 feet for regular hulls and up to 24 feet for pontoon boats. No private residential multi-slip docks will be permitted in the preserve. The narrow and shallow physical features of this waterbody supports restrictive criteria on docks.

B. RESOURCE MANAGEMENT AREAS

Three management areas are delineated for the Rainbow Springs Aquatic Preserve as identified on accompanying maps. The following text details these areas from north to south, (see figure 6).

1. MANAGEMENT AREA A (MA-A)

Description and Delineation: MA-A begins at the headpool in Section 7 & 12, Township 16 south, Range 18 & 19 east. and extends downstream to the north boundary line of the public boat ramp at the County K.P. Park.

MA-A encompasses the area containing the majority of the spring vents which contribute nearly the entire flow of Rainbow Springs. This area represents the most pristine portion of the preserve reflecting the least amount of disturbance. The bottom of the river is characterized by a wide variety of aquatic vegetation and exceptionally clear water. Evidence of prop scarring from excessive boating activities is evident in this area. MA-A also comprises some of the widest portions of the preserve with large stands of emergent vegetation along the shoreline.

The uplands surrounding the headpool for nearly one mile to the south are currently under private ownership, but are under proposal for state acquisition through the Conservation & Recreation Lands

(CARL) program. There are some small parcels and a dense forest marsh between the proposed CARL acquisition area and the Rainbow River Campground to the south. Most of the western shore has been developed into individual private ownerships with R-1 zoning. The exception is one small parcel of waterfront part of the Ron Da Lay Trailer Park.

Designated Uses: Single family use; Public use

Specific Criteria: Restrictive criteria on structures and activities are as follows:

- (1) Proposed structures will comply with the current rule criteria for single family docks contained in sections 18-20.004 (5) (a) and (b) F.A.C. No commercial or private residential multi-slip docking facilities will be permitted in MA-A.
- (2) No dock, pier or other structure will extend more than 20% of the "navigable" width of the open water body, or will not extend out from the shoreline further than to a maximum depth of -4 feet OLWL, whichever is less.

Effect of Criteria: The combination of biological and physical conditions of the resources found in MA-A warrant the additional protection of the above restrictive criteria. The imposition of this criteria for docking structures will not result in changes to existing docks. However, this criteria will require new structural designs on future docks that may differ from those present.

2. MANAGEMENT AREA B (MA-B)

Description and Delineation: MA-B begins on the northside of the County K.P. Park boat ramp and extends along a narrow winding course to the northern city limits of Dunnellon. The northern city limits being the east-west center line of Sections 25 & 30, Township 16 south, Range 18 & 19 east.

This area contains large communities of native aquatic grasses (e.g. sagittaria, vallisneria) and outcroppings of limerock. These native plant communities are slowly being displaced by the exotic species, hydrilla.

The eastern littoral zone in MA-B consists mostly of forested wetlands. Two small residential R-1 developments which are part of the state's proposed CARL acquisition are excluded. The western shoreline is highly developed single family residential R-1 zoning. With the exception of two small wetland areas, the western shore is entirely developed.

Current impacts on this area include: erosion of beach sand from the County K.P. Park, which has resulted in artificial accretion of sand downstream; increase occurrence of organic debris and algae growing on the submerged vegetation; and prop scaring by boat motors.

Designated Uses: Single family use; Public use

Specific Criteria: Restrictive criteria on structures and activities are as follows:

- (1) Proposed structures will comply with the current rule criteria for single family docks contained in section 18-20.004 (5) (a) and (b) F.A.C. No commercial or private residential multi-slip docking facilities will be permitted in MA-B.
- (2) No dock, pier, or other structure will extend more than 20% of the "navigable" width of the open water body, or will not extend out from the shoreline further than to a maximum depth of -4 feet OLWL, whichever is less.

Effect of Criteria: The combination of biological and physical conditions of the resources found in MA-B warrant the additional protection of the above restrictive criteria. The imposition of this criteria for docking structures will not result in changes to existing docks. However, this criteria will require new structural designs on future docks that may differ from those present.

3. MANAGEMENT AREA C (MA-C)

Description and delineation: MA-C begins at the northern city limits of Dunnellon along the east/west center line of Sections 25 & 30, Township 16 south, Range 18 & 19 east, and continues to the confluence with the Withlacoochee River.

The uplands along the western shore of MA-C are presently dominated with single family homes and subdivisions, with a shoreline of numerous private residential docks, and boat homes. The eastern shoreline is mostly developed pasture land and forested wetlands.

The submerged land in this management area is substantially covered in native plant species. However, much of the vegetation is extensively coated with algae (*Lyngbya* sp.) and decaying organic matter. This organic matter is believed to be the result of various man-made impacts from property owners clearing shoreline vegetation, divers uprooting bottom plants, and boat props cutting vegetation. In the lower portion of MA-C, the river bottom is heavily infested with hydrilla, which is abundant beginning at Blue Cove and continues downstream to the Withlacoochee. The hydrilla appears to be rapidly spreading upstream.

The water quality of MA-C continues to diminish from the number of septic tank systems along the river, an adjacent development's sewer plant, and effluents from the City of Dunnellon's sewage treatment plant.

Designated uses: Single family use

Specific Criteria: Restrictive criteria on structures and activities are as follows:

- (1) Proposed structures will comply with the current rule criteria for single family docks contained in sections 18-20.004 (5) (a) and (b) F.A.C. No commercial or private residential multi-slip docking facilities will be permitted in MA-C.
- (2) No dock, pier or other structure will extend more than 20% of the "navigable" width of the open water body, or will not extend out from the shoreline further than to a maximum depth of -4 feet OLWL, whichever is less..

Effect of Criteria: The combination of biological and physical conditions of the resources found in MA-C warrant the additional protection of the above restrictive criteria. The imposition of this criteria for docking structures will not result in changes to existing docks. However, this criteria will require new structural designs on future docks that may differ from those present.

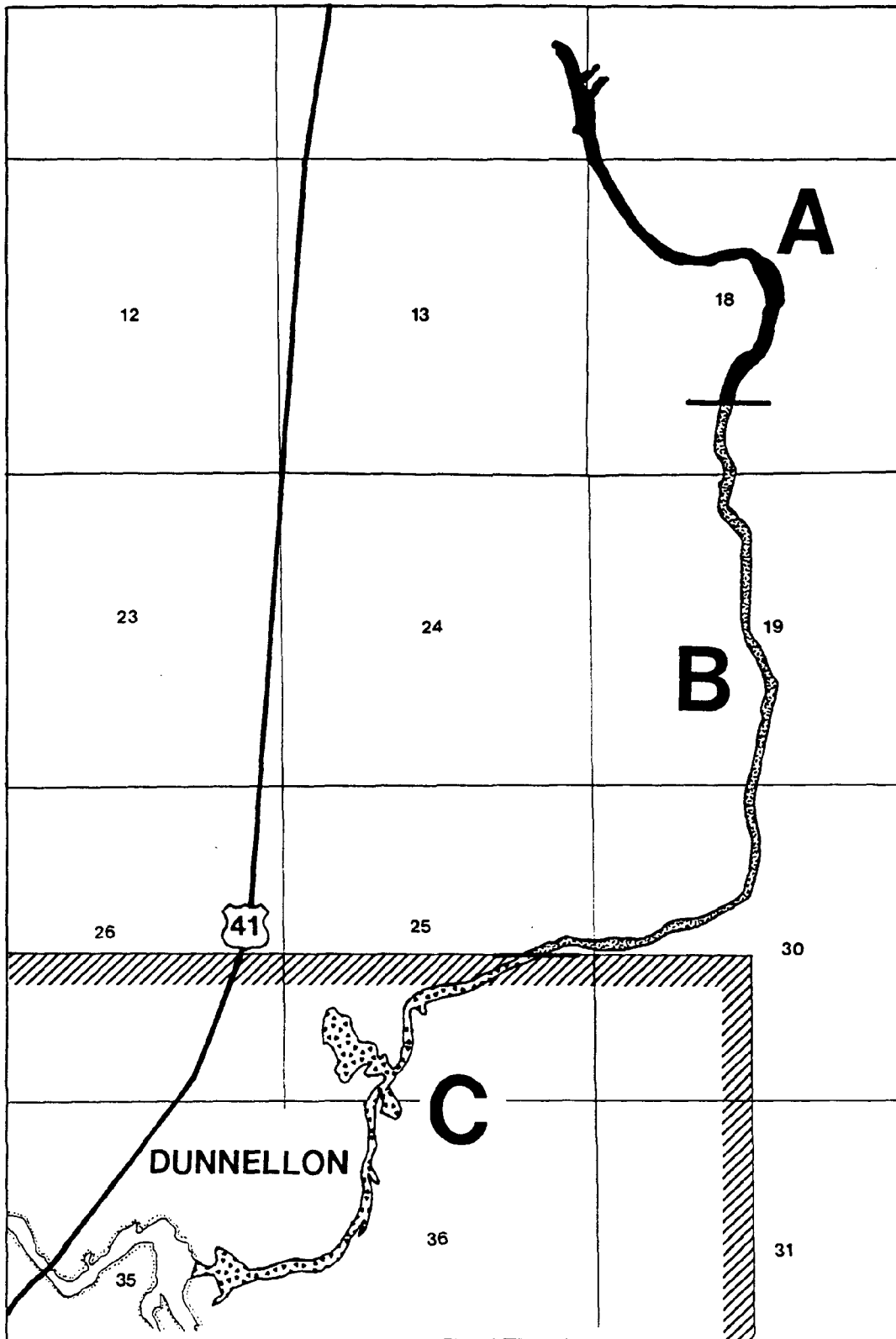


FIGURE 6. MANAGEMENT AREAS

CHAPTER V

SITE-SPECIFIC RESOURCE MANAGEMENT ISSUES AND NEEDS

This chapter addresses specific issues of concern affecting the ecological integrity, safe public use and management of the resources of the Rainbow Springs Aquatic Preserve. The issues discussed in this chapter go beyond the scope of the previous chapter which largely focuses on the delineation of management areas and special management criteria for construction activities and structures that directly impact the biological resources of the preserve.

The first part of this chapter focuses on certain user activities and growth and development related pressures causing detrimental impacts on resources of the preserve. Key issues of concern include: increased boating impacts (e.g., number, size, and horsepower of boats, and the use of internal combustion engines); diver impacts on vegetation and artifacts; increase development along the adjacent uplands; water quality degradation; and loss of fish and wildlife (particularly designated species) and their habitats. Issues specific to Management Area-A (MA-A) are especially vital to the protection of the artesian springs area, extending 3,000 yards downstream from the headpool. This area should be given the highest protection afforded under Chapter 253, F.S.

The second part of this chapter presents the specific management plan policies designed to address the issues of concern. These policies are intended to provide the additional management measures needed to protect resources of the preserve. Implementation of many of these policies can be carried out upon adoption of this plan as a rule, under Chapter 18-20, F.A.C., and through the applicable authorities of existing statutes, rules, local ordinances and codes. Other policies represent additional actions to be taken by the managing authorities, local governments and public supporters to resolve the issue of concern.

A. MANAGEMENT ISSUES AND SPECIAL NEEDS

1. INCREASING BOAT TRAFFIC

An increase in recreational boating on the preserve has created several issues of concern. These issues relate to the preservation of the associated resources and to boating safety.

The Department of Environmental Regulation's, Outstanding Florida Waters petition conducted in 1984, states that the recreational use of the preserve has continued to increase as a result of upland development. Along with an increase in swimming and fishing activities, boating too has become even more popular. Unfortunately, the size and horsepower of boats on the river today, has caused boating to become one of the more damaging forms of recreation. The damage to aquatic plant communities from prop dredging and turbidities; the disturbance and displacement of nesting and/or feeding wildlife; and the damaging effects of hydrocarbon residue from gas powered engines, all are directly linked to increased boating.

The physical features of the narrow, winding Rainbow River are not compatible for large, high powered, fast moving boats. Safety to other boaters, fishermen, swimmers, and divers is presently an issue due to the number of large, high powered boats that are increasing on the river. Although Marion County's ordinance 88-7 places a year round IDLE SPEED/NO WAKE restriction on the river, there are no restrictions placed on either boat or engine size. In addition jet skis which are not designed for operating in a IDLE SPEED/NO WAKE area are also increasing, adding to the potential safety problem. Canoeing, swimming, and snorkeling are encouraged because of the relatively low impacts they place on surrounding resources and other users of the preserve. However, both the jet skis and high powered boats are not considered compatible forms of recreation in areas where sensitive habitats and other more passive forms of recreation are found. (see policies 1,2,3)

2. DIVERS

The popularity of the clear springs of the Rainbow River is an enticing attraction for many recreational SCUBA divers. However, the number of divers visiting the springs have greatly increased causing harmful impacts to the aquatic resources of the preserve. Damage to submerged vegetation results from divers pulling themselves along the shallow depths of the river. This in turn limits the food, nesting, and sheltering habitat sought by numerous wildlife species. Divers also have caused turbidity problems by digging in the river bed in search for artifacts and fossils. Again this is damaging to not only the vegetative community but the wildlife that utilizes the habitat. The highly sensitive habitats found in the headsprings area require additional protection from diving and other man induced impacts. Safety to the divers in itself is an issue on this river. Due to the narrow channel, it is impossible to maintain a safe distance between divers and other boaters. Regulations controlling the number of divers and the areas where diving will be permitted needs to be enacted and strictly enforced. (see policies 4,5)

3. PROTECTION OF DESIGNATED SPECIES

Species whose existence is threatened are currently designated by four agencies: the Florida Game and Fresh Water Fish Commission (FGFWFC), the Florida Department of Agriculture and Consumer Services (DACS), the U.S. Fish and Wildlife Service (FWS), and the Convention of Trade in Endangered Species of Wild Fauna and Floras (CITES). Each agency has its own focus, and the regulations regarding what level of protection is given to which species reflects this orientation. For example, the FGFWFC does not designate plant species, whereas the DACS addresses plants only.

Many protected species inhabit the Rainbow Springs Aquatic Preserve, however two noteworthy species that are of particular concern and warrant special management needs are the limpkin and West Indian manatee. (see policies 3,6)

Limpkins: are listed as a species of special concern by the FGFWFC. Their present population on the Rainbow River appears to be considerably less than 2 or 3 years ago according to photographic inventories and visual accounts. Rational for their decline is not fully understood at this time, however it is suspected that hydrocarbon residue from gas powered boats are a contributing factor to their decline. A study conducted at the nearby Silver Springs tourist attraction concluded that the hydrocarbon residue from tour boats interrupted the reproduction cycle of the apple snail, a principal food source of the limpkin. The management at Silver Springs quickly converted all their tour boats to electric power in 1984, resulting a dramatic comeback in the limpkin population. Further research needs to be conducted on the Rainbow River to find if similar impacts from the gas powered boats are responsible for the limpkin population decline. If the hydrocarbon residue is responsible, steps need to be taken in the management of this protected species by placing restrictions on the use of gas powered boats within the preserve.

Manatees: although highly recognized as an endangered mammal, the West Indian manatee is limited in numbers within the Rainbow Springs Aquatic Preserve. Entrance into the preserve from the Gulf of Mexico is by way of the Withlacoochee River, north through Lake Rousseau and then into the Rainbow River. However, once reaching the Rainbow River, manatees are usually confined to the captive area due to manmade canal gates that restrict their return to the gulf. Listed as an endangered species by the FGFWFC and the FWS, the DNR has direct authority in protecting this species through Chapter 370, F.S. The Marion County government has also taken a role in protecting the manatee locally, by setting county ordinance

88-7, IDLE SPEED/NO WAKE restriction for the entire Rainbow River year round. Although the ordinance is in place, it is the enforcement of this ordinance that continues to be a concerning issue. It is a common known fact that the primary cause for the manatee's downfall is from deaths that result from collisions with fast moving boats. The strict enforcement of county ordinance 88-7 will help to provide a safe refuge for manatees entering the Rainbow Springs Aquatic Preserve.

3. PROTECTION OF NESTING AND FEEDING HABITAT

As previously stated, the Rainbow Springs Aquatic Preserve is a very narrow, winding stream, averaging only about 150 feet in width and 2-5 feet in depth. The higher noise levels generated from large horsepower boats have a potentially negative effect on wildlife. Wildlife are often frightened, disturbed and displaced from their nesting and feeding sites along the shoreline of the preserve by the larger powered boats. The emergent vegetation which provides vital wildlife habitat is often destroyed by the prop dredging from the deeper drafts of larger boats. The intent of the Legislature is to protect the aesthetic, biological and scientific value of these natural resources, therefore uses of the preserve should include restrictions on vehicles that are not conducive to protective management. Steps need to be taken that limits the use of large horsepower boats in the preserve. (see policies 2,3,7)

4. DREDGING AND FILLING

Dredging and filling are activities of utmost concern along the Rainbow Springs Aquatic Preserve. The digging out of vegetation from in front of private property, placing sand, dirt and other fill within the waters edge, and construction of seawalls and other shoreline stabilizing structures without proper Trustees authority occurs frequently along the river. Enforcement of violations have been largely unsuccessful and restoration has been unsatisfactory. Dredging and filling within the preserve is prohibited except when performed in accordance with Section 258.42 (a) and (b), F.S., and when in the public interest, and only with proper authorization.

Enforcement of this statute is necessary to ensure the continued protection of the river system and to curtail further violations. Waterfront vegetation must be preserved, and shoreline stabilization should be limited to native vegetation and riprap or both. (see policy 8)

5. ACQUISITION OF ADDITIONAL PROPERTY

The uplands surrounding the Rainbow River Aquatic Preserve contain important resources such as archaeological sites, endangered and threatened species habitat, as well as vital freshwater wetlands. The adjacent uplands surrounding the headsprings area of primary importance in maintaining the integrity of adjoining resources. Efforts are currently underway to acquire 600 acres located adjacent to the headsprings area, under the state's Conservation and Recreational Lands (CARL) program. This and additional lands bought through acquisition programs will help to ensure a protective buffer for the aquatic resources, prevent the development of sensitive areas, maintain species viability and diversity, and allow the removal of disruptive uses. (see policy 9)

B. POLICY DIRECTIVES

POLICY (1). Limit recreational activity in MA-A to swimming, snorkeling, canoeing and vessels powered by paddle, oar, or electric motors only. The Department of Natural Resources, upon adoption of this plan as a rule, shall establish MA-A as a restricted area to gas powered vessels, pursuant to Section 327.46, F.S., excepting law enforcement and emergency vessels.

POLICY (2). Restrict the horsepower size of gas powered motors in MA-B and MA-C in the preserve. The Department of Natural Resources, upon adoption of this plan as a rule, shall establish MA-B and MA-C as restricted areas to operating gas powered vessels in excess of ten (10) horsepower in size, pursuant to Section 327.46, F.S., excepting law enforcement and emergency vessels.

POLICY (3). Maintain and enforce the current Marion county ordinance 88-7 IDLE SPEED/NO WAKE restriction year round. This policy recommendation is supported by Henigar and Ray Engineering's special management study on the Rainbow River and by the Southwest Florida Water Management District's SWIM Plan, regarding boating impacts on the river.

POLICY (4). Enforce Special Act of the Legislature, House Bill No. 2546, Chapter 65-1904 Laws of Florida, which applies to diving activities in the Rainbow River. The Department of Natural Resources shall set aside a specially designated area for SCUBA diving as specified in MA-A; and establish limits on numbers of divers in this designated area. Any diving outside

this area would require a permit and adherence to regulations to be developed by the Department of Natural Resources. (see figure 7).

POLICY (5). Protect the living and non-living resources of in MA-A, by prohibiting their removal, except where otherwise permitted by applicable state laws or local regulations.

POLICY (6). Encourage private or public affiliated groups to conduct further research on the preserves declining limpkin population. If studies conclude that hydrocarbon residue from gas powered boats is the cause for their decline then steps should be taken in restricting the use of gas powered boats within the entire preserve.

POLICY (7). Designate MA-A as a "Resource Protection Area I" (RPA-I), and seek to reclassify waters in MA-A as "Class I Waters" by encouraging the Department of Environmental Regulation to review its water reclassification and upgrade the waters within MA-A to a drinking water status.

POLICY (8). Ensure the enforcement of Section 258.42 (a) and (b) F.S. concerning the restriction of any new dredging within the preserve.

POLICY (9). Encourage acquisition, where feasible, of privately owned uplands adjacent and bordering the aquatic preserve, through state or local government land acquisition programs.

POLICY (10). Promote environmental policies governing land use in the water shed area which impact the ecosystem of water body to minimize the adverse impacts of development.

POLICY (11). Create and acquire conservation easements for protection of wetlands along the river and its tributaries as per Statute 704.06 and also maintain the current conservation easement surrounding the headwaters pool.

POLICY (12). Request local governments to increase the current structural setback of 25 feet to 50 feet and create berms along the shoreline to prevent impacts of surface water run-off.

POLICY (13). Recommend that local government planning departments restrict land use to single family residences and limit densities according to soil types, topography, and environmental constraints.



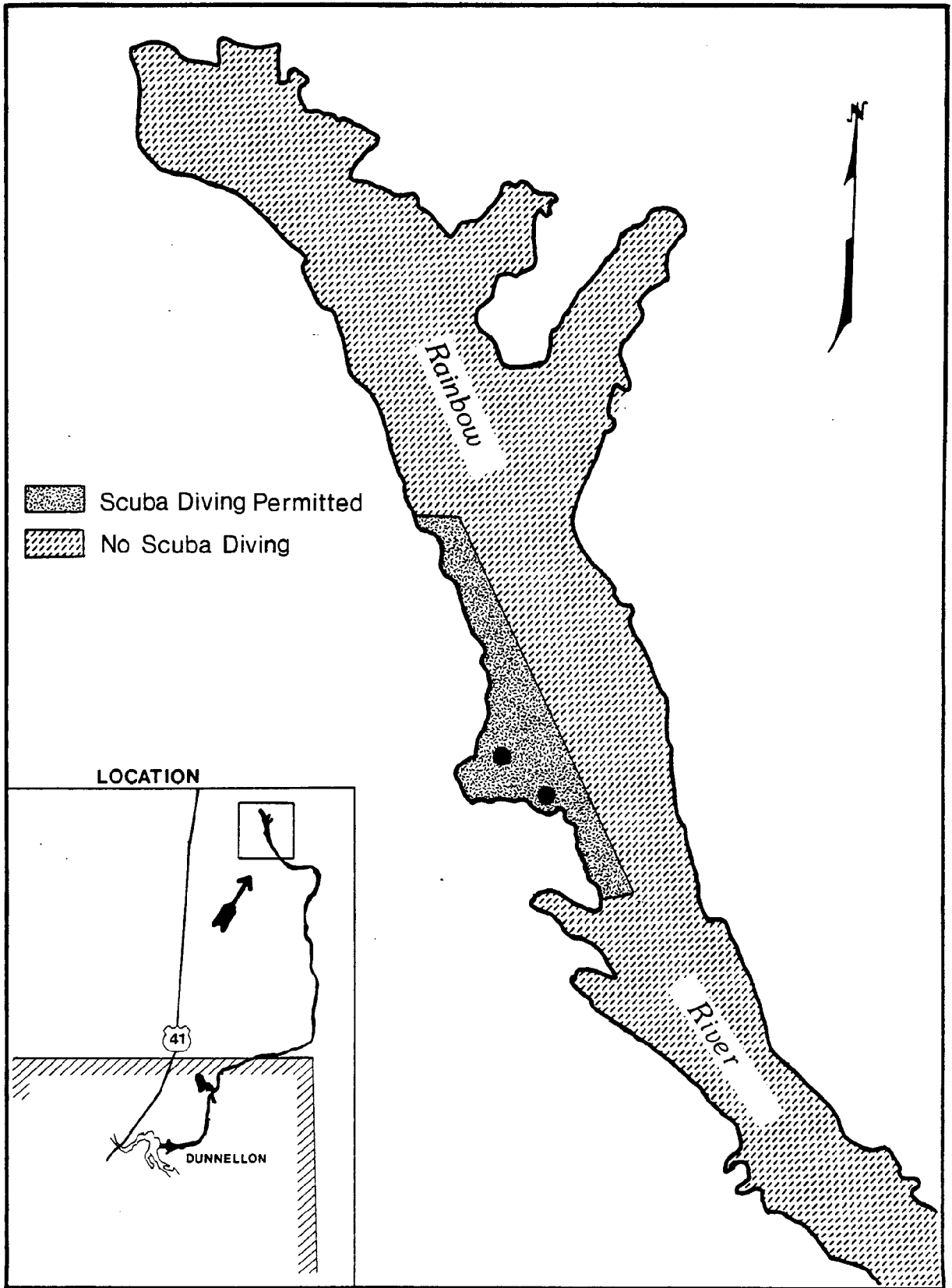


FIGURE 7. DIVING MAP



CHAPTER VI

MANAGEMENT ACTION PLAN

The objective of this chapter is to establish guidelines that allow for the management and protection of the resources within the Rainbow River Aquatic Preserve. Some of these guidelines have been updated from those previously used in other studies of the Rainbow River area, which will contribute greatly towards the development of an expanded action plan.

Before an effective program can be designed to manage and protect natural resources of the preserve, it is necessary to recognize the type of resources present, their location, function, and importance. Additional efforts should concentrate on identifying those activities or parameters that affect these resources, either positively or negatively. This information will form the foundation from which action will be initiated to manage and protect these resources. The strategies used in managing an aquatic preserve must consist of a variety of components such as resource management, resource protection, research, and environmental education.

A. RESOURCE MANAGEMENT

Despite the establishment of laws, rules, studies and data used in deriving reasonable policies, there still exists the necessity for a resource management plan to maintain and upgrade the integrity of the preserve in the future. The goals of resource management within the Aquatic Preserve Program are, (1) conducting and maintaining resource inventories, (2) assessing the impact of human activities on the resources, (3) cooperating with other agencies in habitat restoration and water quality improvement.

GOAL A.1: CONDUCT AND MAINTAIN RESOURCE INVENTORIES

Objective A.1.1: To update and maintain a resource inventory of submerged and emergent vegetation.

Task A.1.1.1: Using infra-red aerial photography and surface observation, conduct an inventory of submerged and emergent vegetation every 2 years.

Task A.1.1.2: Establish biological resource maps utilizing data of this inventory.

Objective A.1.2: To conduct an inventory of all animal species, including designated species, and their habitats.

Task A.1.2.1: Conduct an inventory of all animal species with emphasis on designated species, as well as their associated habitats, every 2 years.

GOAL A.2: Assess the Impact of Human Activities

Objective A.2.1: To inventory and assess the effects of human activities on the natural resources, considering biological and geological aspects.

Task A.2.1.1: Survey and record all dock structures to determine if there is a direct relationship between structures and the absence of natural vegetation. This survey shall include the following:

- a) the length of the structure waterward of the OHWL.
- b) the area of the terminal platform.
- c) the elevation of the structure above OHWL.
- d) the number of vessels using the structure.
- e) the water depth at the structure terminus at OLWL.
- f) the functional condition of the structure.
- g) accessory facilities and other associated uses of the structure.
- h) the structure category.
- i) inventory of biological resources within 25 feet of the structure.

Objective A.2.2: To inventory and assess cumulative impacts on the natural resources.

Task A.2.2.1: Survey and record all dredged areas and shoreline stabilization areas. This survey shall include the following:

For Dredged Areas

- a) length, width, and depth of area dredged.
- b) a description of the surrounding area.
- c) the traditional use of the area.
- d) inventory of biological resources.
- e) information on pre-existing resource conditions.

For Shoreline Stabilization Areas

- a) total length of riparian shoreline.
- b) total length of shoreline stabilization.
- c) type of stabilization and material used.

- d) existing and pre-existing natural conditions.

GOAL A.3: Coordinate With Other Agencies on Habitat Restoration and To Improve Water Quality

Objective A.3.1: To identify disturbed vegetation for restoration.

Task A.3.1.1: Continue to coordinate with the water management district's SWIM personnel on their revegetation project.

Objective A.3.2: To coordinate with DER and the water management district on improving water quality in the preserve.

Task A.3.2.1: Continue to coordinate with the water management district SWIM program and sediment analysis.

B. RESOURCE PROTECTION

Management areas have been identified, vegetation and habitat areas mapped and policies proposed that will help to protect the biological integrity of the resources. The goals of the Aquatic Preserve Program with regard to resource protection include, (1) protection of existing submerged vegetation, (2) protection of existing emergent vegetation, (3) protection of animal species, particularly designated species and their associated habitats.

GOAL B.1: Protection of Submerged Vegetation

Objective B.1.1: To preserve and/or revegetate submerged vegetation communities.

Task B.1.1.1: Continue to coordinate with water management district for revegetation under SWIM program.

Task B.1.1.2: Upon completion of revegetation projects, an inventory will be established for each management area and should include, but not limited to:

- a) description of the management area.
- b) a description of the aquatic vegetation by type and biomass.
- c) a description of bottom types and depth.

Objective B.1.2: Ensure that authorized structures are in compliance with permits.

Task B.1.2.1: Coordinate with regional DNR planner for letters of consent and lease agreements authorized.

Task B.1.2.2: Report violations to DNR enforcement agent.

Task B.1.2.3: Coordinate with other regulatory agencies when possible.

Objective B.1.3: Ensure that structures that have been built or are being built are authorized.

Task B.1.3.1: Report any activities that do not appear to have been authorized or does not appear to meet established criteria.

Objective B.1.4: Ensure that human use of the preserve does not degrade submerged vegetation.

Task B.1.4.1: Coordinate with other agencies to ensure that all projects such as dredge and fill or shoreline stabilization use turbidity controls.

GOAL B.2: Protection of Emergent Vegetation

Objective B.2.1: To preserve and/or revegetate emergent vegetation communities.

Task B.2.1.1: Develop a surface inventory of emergent vegetation in coordination with aerial photography.

Task B.2.1.2: Inventory data should include:
a) description of vegetation.
b) existing structures.
c) nesting and wading birds.
d) designated species.

Task B.2.1.3: Coordinate with DNR regional planner and other appropriate agencies.

GOAL B.3: Protection of Designated Species and Habitat

Objective B.3.1: To insure that these habitats receive maximum protection.

Tasks B.3.1.1: Discourage projects in designated species habitat areas, and monitor the affects of any legally authorized projects on the species of concern.

C. RESEARCH

The effective management of any biological system relies almost entirely on information relating to how a system functions. Research is the foundation upon which this information is based. The goal of the research program for the Aquatic Preserve Program is primarily geared towards applied research, rather than toward basic or theoretical research. The goal of the research program is to gain a better understanding of biological integrity of all resources within the aquatic preserve.

GOAL C.1: Integrity of the Resource

Objective C.1.1: To continue compiling research data relevant to the protection of the resource.

Task C.1.1.1: Continue using accumulated data and management studies as a basis to upgrade management areas and preserve sensitive natural systems.

Task C.1.1.2: Continue to coordinate with the water management district and the Florida Game and Fresh Water Fish Commission, to inventory and monitor wildlife and fish communities using surface observation and creel census.

D. ENVIRONMENTAL EDUCATION

As a general rule the public does not consider that each individual contributes a cumulative impact to the environment and assumes that nature will take care of itself. For those actively involved with protecting the natural environment, it seems irresponsible to assume that every detail of resource protection can be addressed by law. Certain regulations and standards must be established and enforced, however in the long run, education will play a major role in the effectiveness of the rules and standards. Therefore, the overall goal of the environmental education program is to instruct individuals as to the importance of preserving our

natural resources so that they may consider all issues prior to making decisions that affect these resources. In general, the intent of this element is to educate the public and make them responsible users of the preserve.

GOAL D.1: Public Education of the Environment

Objective D.1.1: To formulate programs using visual material and literature that demonstrate the importance of the natural environment.

Task D.1.1.1: Develop slide presentations, videos, and brochures designed to begin education at elementary school levels.

Task D.1.1.2: Develop brochures especially designed to educate riparian land owners of their responsibility and impact to the environment.

Objective D.1.2: To establish and conduct environmental education programs for public and private schools and organizations.

Task D.1.2.1: Produce programs that are interesting and draw attention to local environmental issues and concerns.

Task D.1.2.2: Where feasible, assist in establishing an educational center oriented to the preservation of the aquatic preserve and associated uplands.

CHAPTER VII

MANAGEMENT COORDINATION NETWORK

This chapter briefly presents a general overview of the various federal, state, regional, and local agencies that regulate or hold any interest in the management or use of the Rainbow Springs Aquatic Preserve. A quick reference matrix of specific jurisdictions is presented in Table 1. One of the goals and objectives of the aquatic preserve program is to coordinate with these agencies to achieve common goals relevant to the management and protection of resources in Rainbow Springs Aquatic Preserves.

A. FEDERAL AGENCIES

The U.S. Army Corps of Engineers (COE) have jurisdiction over inland navigable waters under the Rivers and Harbors Act of 1899. A revision of the Rivers and Harbors Act in 1968 extended the Corps jurisdiction allowing them to consider the fish and wildlife, conservation, pollution, aesthetics, ecology and other relevant factors of a project. The Corps regulatory program expanded in 1972 with the Federal Water Pollution Control Act Amendments, also known as the Clean Water Act (CWA). Section 404 of this act controls dredge and fill activities by the Corps and has since been extended to wetlands from Amendments to the CWA in 1977. The COE also contributes 50% of the funds reimbursed to the Water Management District by DNR for aquatic plant control.

Being a navigable waterway, the Rainbow River is monitored by the U.S. Coast Guard (USCG) for boating safety and navigational problems, and enforces maritime laws. In the inland waters a volunteer group called the Coast Guard Auxiliary performs boating safety inspections and search and rescue missions.

The U.S. Environmental Protection Agency (EPA) has jurisdiction over surface waters in the state. Enforcement authority was given under the Clean Water Act of 1972 and broadened under the 1977 revision. In general EPA is responsible for pollution control and abatement, including: air, water, noise, solid waste, toxic waste, and radiation. They review permits issued by DER for the treatment, disposal and storage of hazardous wastes. Authority is divided between EPA and the US Coast Guard in regarding the discharge of oil or hazardous substances into surface water.

The U.S. Geological Survey (USGS) monitors on a quarterly basis, the artesian spring flow, water levels and water chemistry.

The U.S. Fish and Wildlife Service (USFWS) has responsibility for fish and wildlife as authorized in the Coast Resources Barrier Act, National Environmental Protection Act, Migratory Bird Act, Endangered Species Act, and Fish and Wildlife Coordination Act. "Under provision of the Fish and Wildlife Coordination Act, the Fish and Wildlife Service must be consulted before the Corps of Engineers can submit a plan for Congressional approval. The Fish and Wildlife Service comments on the impacts of proposed projects on endangered species, migratory birds and other fish and wildlife and their habitats" (Barile et al. 1987). They are directed to prepare environmental impacts assessments or statements for proposed projects by the Corps, and are authorized to issue "Jeopardy Opinion" against any proposed project which will negatively effect an endangered species (Barile et al. 1987).

B. STATE AGENCIES

The Department of Natural Resources (DNR) jurisdiction include state lands, sovereignty submerged lands, and marine resources which include marine research projects, notably turtle and manatee protection. The Florida Marine Patrol regulates and enforces safe boating laws, and enforces all commercial and recreational fishing regulations.

Under Chapter 16C F.S., DNR has responsibility for various aquatic plant control programs, including permitting for mechanical, biological, and chemical control of aquatic plants. Permits are also necessary under Chapter 16C-52 F.S., "Aquatic Plant Importation, Transportation, Cultivation and Possession", for any persons cultivating, revegetating, or collecting aquatic plants.

Authority granted under Chapters 18-20 and 18-21 F.S., "Sovereignty Submerged Land Management", gives DNR responsibility to regulate commercial and residential docks and other structures and activities conducted on submerged lands.

Section 327.46 F.S. gives DNR authority to restrict gas powered vessels in areas of the Rainbow Springs Aquatic Preserve.

Other Department of Natural Resources management authorities applicable to the Rainbow Springs Aquatic Preserve management includes land acquisition programs conducted under the

Conservation and Recreation Lands (CARL) Program authorized by Chapter 253, F.S. Currently, the uplands surrounding the headwaters of the preserve are under negotiations for state purchase through the CARL acquisition program.

The Department of Environmental Regulation (DER) has a broad range of responsibilities and receives its authority from State Law and also some of the authorities delegated by the EPA. Generally, the DER responsibilities include water management, water quality, drinking water, hazardous and solid waste, coastal management, wetland protection and power plant locations.

These responsibilities are accomplished through the following regulatory mechanisms: establishment of standards designed to protect natural systems and prevent harmful pollutants from entering these systems; applying the standards through permitting of potential sources of pollution and monitoring pollution discharges for compliance with state standards; and, enforcement action for non-compliance with environmental standards.

The Department of Environmental Regulation's rules significant to the aquatic preserve management program are Chapters 17-3, 17-4, and 17-12, F.A.C. Authority for these rules is based in Chapter 403, F.S. Chapter 17-3, F.A.C. addresses water quality standards with the most stringent category being "Outstanding Florida Waters" (OFW). As an OFW, ambient conditions, instead of prescribed values, become the water quality standards for the waterbody. The Rainbow Springs waterbody received "special status" as an OFW in 1985. Chapter 17-4, F.A.C. addresses permit requirements, and Chapter 17-12, F.A.C. covers dredge and fill activities.

Section 253.77, F.S., as amended by the Warren S. Henderson Wetlands Protection Act of 1984, requires that any person requesting use of state-owned lands shall have prior approval of the Trustees. An interagency agreement between DNR and DER provides for DNR staff comments into the DER permitting process for environmental impacts in aquatic preserves.

The Department of Health and Rehabilitative Services (DHRS) has responsibilities to protect the public's health by overseeing functions that involve water supplies, onsite sewage disposal, septic tank cleaning, and solid waste control. Authority for these responsibilities are found in Chapter 154, 381, and 386, F.S. and in the 10D Series of F.A.C., known as the "Sanitary Code". The local county DHRS office (County Health Department), has jurisdiction overseeing these responsibilities.

Also affecting the public's health and the aquatic preserve management program is the arthropod (mosquito) control program, which is usually administered through the local mosquito control district. Each of these public health programs holds the potential to create significant impacts upon the aquatic preserves.

The Game and Fresh Water Fish Commission (GFWFC) authority is provided in the rules and regulations of Chapters 39.101 and 39.102 F.A.C. This authority involves the implementation of specific regulations and their enforcement, for all wildlife including the freshwater aquatic life found in the Rainbow River. They also oversee habitat restoration and fish restocking of freshwater rivers and lakes.

The Department of State, Division of Historical Resources (DHR) has the responsibility granted under Chapter 267, F.S., regarding the preservation and management of Florida's archeological and historical resources. This responsibility includes those cultural resources located on state-owned lands, including aquatic preserves.

The Department of Transportation (DOT) has responsibilities that include right of way and surface water run-off in the areas of roads, bridges and causeways. The DOT also updates a state-wide aerial photographic survey every four years, rotating on a district basis.

The Department of Community Affairs (DCA) and the Regional Planning Councils (RPC) are authorized under Section 380.06, F.S., for administering the Development of Regional Impact (DRI) program. The DRI process was established to provide a review and monitoring procedure for development projects potentially affecting the health, safety or welfare of citizens of more than one county. There is presently a DRI project for lands surrounding the headwaters of the Rainbow Springs Aquatic Preserve.

The Department of Community Affairs also oversees the development of Local Government Comprehensive Plans (LGCP) for both counties and municipalities, as required by the Local Government Comprehensive and Land Development Regulation Act, Chapter 163, Part II, F.S. Subsection 163.3202(5), F.S. provides that DCA shall adopt rules for the review of local government land development regulations. Local governments are required to adopt land development regulations which are consistent with the adopted local comprehensive plan within one year after submission of the local comprehensive plan for

review by the Department pursuant to subsection 163.3167(2), F.S.

The Office of Planning and Budgeting of the Executive Office of the Governor, in conjunction with the DER's Coastal Zone Management Section, is responsible for administering project reviews applicable to Florida's Coastal Management Program Federal Consistency evaluation process. This process includes all projects in the state that involve federal permitting, federal assistance or direct federal activities. Each project must undergo this additional review to determine if the project is consistent with established programs, policies and rules of the State. This includes projects affecting resources in aquatic preserves.

C. REGIONAL AGENCIES

The Southwest Florida Water Management District (SWFWMD) was created by Chapter 61-69, Laws of Florida, as a public corporation for carrying out Chapter 378 F.S. and operates under and is governed by provisions of Chapter 373 F.S. Chapters 40D-4 and 40D-40 were adopted to ensure continued protection of the water resources of the District including Wetlands and other natural resources. The rules in these Chapters are to implement the surface water management permit system mandated in part IV of Chapter 373 F.S. The statutes resulted from passage of Chapter 84-79 Laws of Florida, The Warren G. Henderson Wetland Protection Act of 1984.

SWFWMD has jurisdiction of permits for water use, well construction, storm water discharge, surface water management, groundwater withdrawals, water level control and provides control of exotic aquatic plants (primarily hydrilla and water hyacinths) in cooperation with the COE. Currently SWFWMD is implementing a district wide geographical information system (GIS), which when completed can zero in on any given area for geographic illustration.

It is the intent of the Florida Legislature through the Surface Water Improvement & Management (SWIM) Act (Chapter 87-97, Section 1-6, Laws of Florida), that the water management districts "design and implement plans and programs for the improvement and management of surface water". The SWIM plan for the Rainbow River was approved in March 1989 by the District's Governing Board.

The Withlacoochee Planning Council (WPC) serves as a regional planning body for local government of Marion County. Among its duties are: aids local governments with planning

expertise; is the regional representative for the DRI review process; serves as a regional clearinghouse for state and federal projects and programs; conveys information from the local governments to the state and federal levels; assists local governments in getting grant aids; and prepares and administers the Regional Policy Plan.

D. LOCAL AGENCIES

Marion County and the City of Dunnellon have areas of jurisdiction and authority concerning boating safety, as well as, rules and zoning regulations covering the waterbody and adjacent land uses. Appendix list ordinances and resolutions passed by the local governments that pertain to the Rainbow Springs Aquatic Preserve.

TABLE 1

RESPONSIBILITY

AGENCY	Resource Enforcement	Dredge & Fill	Water Quality Protection	Marine Species Management & Protection	Designated Species Management & Protection	Oil Spills	Solid/Hazardous Waste Enforcement	Emergency Management & Response	Land Development & Land Use Planning	Historical/Archaeological Resources	Environmental Education
	FEDERAL										
FWS		X		X	X						
COE		X	X	X							
USGS											
EPA							X				
Coast Guard		X				X		X			
NMFS				X	X						
STATE											
DER	X	X	X				X				
DCA					X						
MFC	X			X							
GFWFC		X		X	X			X			
DOT											
DAHRM										X	
HRS			X								
DNR	X	X		X	X			X		X	X
REGIONAL											
WMDs		X	X								
TCRPC											
FIND		X									
LOCAL											
County	X	X			X						X
Municipalities											



CHAPTER VIII

STAFFING AND BUDGETARY NEEDS

Management of the Rainbow Springs Aquatic Preserve hinges on adequate on-site staffing and equipment, to administer and facilitate the management strategies described in this plan. In view of the increasing pressures and impacts on the preserve, a stable and functional budget becomes an integral part of a comprehensive management program.

A proposed 2-year budget for this preserve is provided in Table 2. A temporary management position is presently operating with no office space and minimal equipment. This budget will reflect allocations for a serviceable office and permanent staff, along with operational expenses needed to promote the management of the preserve.



TABLE 2

ANTICIPATED BUDGET NEEDS FOR THE RAINBOW SPRINGS AQUATIC PRESERVE

<u>SALARY</u>	<u>1st YEAR</u>	<u>2nd YEAR</u>
Manager (with benefits)	\$28,000	\$30,000
Secretary (with benefits)	\$15,800	\$16,400
<u>subtotal</u>	<u>\$43,800</u>	<u>\$46,400</u>

OPERATING CAPITAL OUTLAY

Vehicle	\$12,000
Boat Trailer	\$ 300
Office Equipment	\$ 3,500
Computer	\$ 2,600
<u>subtotal</u>	<u>\$18,400</u>

OPERATING EXPENSES

Office Rent/Gas/Phone	\$13,500	\$15,000
Travel	\$ 600	\$ 800
Aerial Photography	\$ 4,000	
Education Material	\$ 1,000	\$ 1,200
<u>subtotal</u>	<u>\$19,100</u>	<u>\$17,000</u>

TOTAL COST.....\$81,300 \$63,400



CHAPTER IX

RESOURCE AND ACTIVITY MONITORING PROGRAM

In order for the Rainbow River Aquatic Preserve management plan to be effective in protecting the resources of the preserve, a continuous on-site staffing program is imperative. The position of preserve manager will institute programs targeted at (1) monitoring changes in the natural resources, (2) recording use activities, and (3) tracking the progress and accomplishments associated with the intent of the Aquatic Preserve Program.

A. RESOURCE MONITORING

It should be noted that a magnitude of data and studies, directly related to Rainbow Springs and the river, have been compiled over the past 20 years. These studies include accounts on wildlife populations, aquatic plant control, and recreation potentials.

In addition, current projects conducted by the Southwest Florida Water Management District's SWIM plan (Surface Water Improvement & Management), are directed at making significant improvements in the water quality of the Rainbow River.

Despite the numerous studies conducted on or near the Rainbow River, a complete and thorough inventory of all resources needs to be compiled before an effective monitoring program can be installed.

To monitor changes in the natural resources, a regional geographic information system (GIS) is highly recommended. A GIS is a computer-based system that captures, edits, displays, and analyses geographic information. The system has been used in utilities mapping, inventory management, and land use planning; however, it's most important function continues to be natural resource management.

Inter-agency cooperation would be a valuable asset in monitoring the natural resources of the preserve and adjacent uplands. The Florida Game and Fresh Water Fish Commission (FGFWFC) can be helpful with wildlife monitoring. The water management district's aerial mapping would be helpful in monitoring changes in vegetation patterns associated with upland development. Since the Rainbow River is a clear spring run, the aerial photography will also note aquatic plant changes. Another benefit of inter-agency networking, will be the elimination of costly duplication of data collection and projects.

B. ACTIVITY MONITORING

As human interaction in and around the Rainbow Springs Aquatic Preserve increases, additional pressures are anticipated in the form of recreation and development activities. Many of these activities are considered conflicting, dangerous or destructive to the aquatic resources, and need to be monitored and restricted. Only compatible recreational activities that do not create detrimental impacts to the environment should be permitted.

C. ACCOMPLISHMENTS AND PROGRESS MONITORING

The tracking and reporting of staff accomplishments and progress is vital to a programs success. Sharing this information with other agencies, will help develop a team approach to problem solving and implementing management strategies.

The field office should provide a yearly report to the central office, providing progress and effectiveness of the management plan. This information will go towards the development of a state-wide status report on the Aquatic Preserve Management Program focusing on resource deterioration, compatible and non-compatible use activities, and appropriate management strategies.

This field office annual information report should provide:

- (1) The state of the natural environment of the aquatic preserve.
- (2) Updated resource inventories of vegetation and wildlife, being specific as to species.
- (3) Updated development activities, authorized and unauthorized, action taken and possible impact to the resource.
- (4) The related status of tasks which have been listed in Chapter VI.
- (5) Whether or not staff and funding are sufficient.
- (6) Identify if tasks are sufficient or if others should be added.

REFERENCES

FLORIDA BUREAU OF GEOLOGY: 1977. Springs of Florida, Jack C. Rosenau, Glen L. Faulkner, Charles W. Hendry Jr. and Robert W. Hull.

FLORIDA INSTITUTE OF TECHNOLOGY: 1972. Rainbow Springs and Rainbow River Environment. Dr. K. B. Clark, Dr. E. H. Kalajian, Dr. J. A. Lasater.

FLORIDA GAME & FRESH WATER FISH COMMISSION: 1973-1985. Letters and observations, Rue S. Hestand III, biological scientist.

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION: 1984. Petition data for O.F.W. designation.

HENIGAR & RAY ENGINEERING, INC.: 1978. Rainbow River Watershed Area Management Plan Data. Joint comprehensive plan study for Marion County and City of Dunnellon.

LOCAL GROUNDWATER PROTECTION: 1987. American Planning Association, Martin Jafee and Frank Dinovo, Includes the Clean Water Act and the Safe Drinking Water Act.

SILVER SPRINGS: 1986. Cavanaugh, Article relating to Limpkin, a species of special concern, and its food supply chain along the Silver River.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT: 1987. Ground Water Resource Availability Inventory: Marion County.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT: 1989. Surface Water Improvement & Management Plan for Rainbow River.

U.S. ARMY CORPS OF ENGINEERS: 1973. Field Investigations Data of Rio Vista, Dr. K. B. Clark, Dr. E. H. Kalajian, Dr. J. A. Lasater.

UNIVERSITY OF FLORIDA: 1973. Department of Environmental Sciences. Observations of aquatic plants, algae and physical chemical data, Rainbow Springs.

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U.S. GEOLOGICAL SURVEY: 1984. Records of Spring Flows and Water Chemistry, 1898-1984.

U.S. DEPARTMENT OF AGRICULTURE: 1974. Soil Conservation Service, soil determinations for Marion County.

WATER & AIR RESEARCH, INC.: 1973. Water Supply and Waste Disposal at Rainbow Springs, H.E. Hudson Jr.

APPENDIX A

Relevant Legislation

V. 9, p. 692-20

(R. 3/87)

18-20.002

CHAPTER 18-20 FLORIDA AQUATIC PRESERVES

- 18-20.001 Intent.
- 18-20.002 Boundaries and Scope of the Preserves.
- 18-20.003 Definitions.
- 18-20.004 Management Policies, Standards and Criteria.
- 18-20.005 Uses, Sales, Leases, or Transfer of Interests in Lands, or Materials, Held by the Board. (Repealed)
- 18-20.006 Cumulative Impacts.
- 18-20.007 Protection of Riparian Rights. (Repealed)
- 18-20.008 Inclusion of Lands, Title to Which Is Not Vested in the Board, in a Preserve.
- 18-20.009 Establishment or Expansion of Aquatic Preserves.
- 18-20.010 Exchange of Lands.
- 18-20.011 Gifts of Lands.
- 18-20.012 Protection of Indigenous Life Forms.
- 18-20.013 Development of Resource Inventories and Management Plans for Preserves.
- 18-20.014 Enforcement.
- 18-20.015 Application Form. (Repealed)
- 18-20.016 Coordination with Other Governmental Agencies.
- 18-20.017 Lake Jackson Aquatic Preserve.

Library Reference: Riparian rights in navigable waters, I. Henry Dean, 55 Fla. Bar J. 247, 250 (Mar., 1981).

18-20.001 Intent.

(1) All sovereignty lands within a preserve shall be managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation, including hunting and fishing where deemed appropriate by the board, and the managing agency.

(2) The aquatic preserves which are described in 73-534, Laws of Florida, Sections 258.39, 258.391, 258.392 and 258.393, Florida Statutes, future aquatic preserves established pursuant to general or special acts of the legislature, and in Rule 18-20.002, Florida Administrative Code, were established for the purpose of being preserved in an essentially natural or existing condition so that their aesthetic, biological and scientific values may endure for the enjoyment of future generations.

(3) The preserves shall be administered and managed in accordance with the following goals:

(a) To preserve, protect, and enhance these exceptional areas of sovereignty submerged lands by reasonable regulation of human activity within the preserves through the development and implementation of a comprehensive management program;

(b) To protect and enhance the waters of the preserves so that the public may continue to enjoy the traditional recreational uses of those waters such as swimming, boating, and fishing;

(c) To coordinate with federal, state, and local agencies to aid in carrying out the intent of the Legislature in creating the preserves;

(d) To use applicable federal, state, and local management programs, which are compatible with the intent and provisions of the act and these rules, and to assist in managing the preserves;

(e) To encourage the protection, enhancement or restoration of the biological, aesthetic, or scientific values of the preserves, including but not limited to the modification of existing manmade conditions toward their natural condition, and discourage activities which would degrade the aesthetic, biological, or scientific values, or the quality, or utility of a preserve, when reviewing applications, or when developing and implementing management plans for the preserves;

(f) To preserve, promote, and utilize indigenous life forms and habitats, including but not limited to: sponges, soft coral, hard corals, submerged grasses, mangroves, salt water marshes, fresh water marshes, mud flats, estuarine, aquatic, and marine reptiles, game and non-game fish species, estuarine, aquatic and marine invertebrates, estuarine, aquatic and marine mammals, birds, shellfish and mollusks;

(g) To acquire additional title interests in lands wherever such acquisitions would serve to protect or enhance the biological, aesthetic, or scientific values of the preserves;

(h) To maintain those beneficial hydrologic and biologic functions, the benefits of which accrue to the public at large.

(4) Nothing in these rules shall serve to eliminate or alter the requirements or authority of other governmental agencies, including counties and municipalities, to protect or enhance the preserves provided that such requirements or authority are not inconsistent with the act and this chapter.

Specific Authority 120.53, 258.43(1) FS. Law Implemented 258.35, 258.36, 258.37, 258.39, 258.393 FS, Chapter 80-280 Laws of Florida. History—New 2-23-81, Amended 6-7-85, Formerly 16Q-20.01, Transferred from 16Q-20.001.

18-20.002 Boundaries and Scope of the Preserves.

(1) These rules shall only apply to those sovereignty lands within a preserve, title to which is vested in the board, and those other lands for which the board has an appropriate instrument in writing, executed by the owner, authorizing the inclusion of specific lands in an aquatic preserve pursuant to Section 2(2) of Chapter 73-534, Laws of Florida, Sections 258.40(1) and 258.41(5), Florida Statutes, future aquatic preserves established through general or special acts of the legislature, and pursuant to Rule 18-20.008, Florida Administrative Code. Any publicly owned and maintained navigation channel authorized by the United States Congress, or other public works project authorized by the United States Congress, designed to improve or maintain commerce and navigation shall be deemed to be excluded from the

provisions of this chapter, pursuant to Subsection 258.40(2), Florida Statutes. Furthermore, all lands lost by avulsion or by artificially induced erosion shall be deemed excluded from the provisions of this chapter pursuant to Subsection 258.40(3), Florida Statutes.

(2) These rules do not apply to Boca Ciega Bay, Pinellas County or Biscayne Bay Aquatic Preserves.

(3) These rules are promulgated to clarify the responsibilities of the board in carrying out its land management functions as those functions apply within the preserves. Implementation and responsibility for environmental permitting of activities and water quality protection within the preserves are vested in the Department of Environmental Regulation. Since these rules are considered cumulative with other rules, a person planning an activity within the preserves should also consult the other applicable department rules (Chapter 18-21, Florida Administrative Code, for example) as well as the rules of the Department of Environmental Regulation.

(4) These rules shall not affect previous actions of the board concerning the issuance of any easement or lease; or any disclaimer concerning sovereignty lands.

(5) The intent and specific provisions expressed in 18-20.001(e) and (f) apply generally to all existing or future aquatic preserves within the scope of this chapter. Upon completion of a resource inventory and approval of a management plan for a preserve, pursuant to 18-20.013, the type designation and the resource sought to be preserved may be readdressed by the Board.

(6) For the purpose of clarification and interpretation, the legal description set forth as follows do not include any land which is expressly recognized as privately owned upland in a pre-existing recorded mean high water line settlement agreement between the board and a private owner or owners. Provided, however, in those instances wherein a settlement agreement was executed subsequent to the passage of the Florida Coastal Mapping Act, the determination of the mean high water line shall be in accordance with the provisions of such act.

(7) Persons interested in obtaining details of particular preserves should contact the Bureau of State Lands Management, Department of Natural Resources, 3900 Commonwealth Blvd., Tallahassee, FL 32303 (telephone 904-488-2297).

(a) The preserves are described as follows:

1. Fort Clinch State Park Aquatic Preserve, as described in the Official Records of Nassau County in Book 108, pages 343-346, and in Book 111, page 409.

2. Nassau River — St. Johns River Marshes Aquatic Preserve, as described in the Official Records of Duval County in Volume 3183, pages 547-552, and in the Official Records of Nassau County in Book 108, pages 232-237.

3. Pellicer Creek Aquatic Preserve, as described in the Official Records of St. Johns County in Book

181, pages 363-366, and in the Official Records of Flagler County in Book 33, pages 131-134.

4. Tomoka Marsh Aquatic Preserve, as described in the Official Records of Flagler County in Book 33, pages 135-138, and in the Official Records of Volusia County in Book 1244, pages 615-618.

5. Wekiva River Aquatic Preserve, as described in Section 258.39(30), F.S.

6. Mosquito Lagoon Aquatic Preserve, as described in the Official Records of Volusia County in Book 1244, pages 619-623, and in the Official Records of Brevard County in Book 1143, pages 190-194.

7. Banana River Aquatic Preserve, as described in the Official Records of Brevard County in Book 1143, pages 195-198, less those lands dedicated to the U. S. A. prior to the enactment of the act, until such time as the U. S. A. no longer wishes to maintain such lands for the purpose for which they were dedicated, at which time such lands would revert to the board, and be managed as part of the preserve.

8. Indian River — Malabar to Sebastian Aquatic Preserve, as described in the Official Records of Brevard County in Book 1143, pages 199-202, and in the Official Records of Indian River County in Book 368, pages 5-8.

9. Indian River — Vero Beach to Fort Pierce Aquatic Preserve, as described in the Official Records of Indian River County in Book 368, pages 9-12, and in the Official Records of St. Lucie County in Book 187, pages 1083-1086.

10. Jensen Beach to Jupiter Inlet Aquatic Preserve, as described in the Official Records of St. Lucie County in Book 218, pages 2865-2869.

11. North Fork, St. Lucie Aquatic Preserve, as described in the Official Records of Martin County in Book 337, pages 2159-2162, and in the Official Records of St. Lucie County in Book 201, pages 1676-1679.

12. Loxahatchee River — Lake Worth Creek Aquatic Preserve, as described in the Official Records of Martin County in Book 320, pages 193-196, and in the Official Records of Palm Beach County in Volume 1860, pages 806-809.

13. Biscayne Bay — Cape Florida to Monroe County Line Aquatic Preserve, as described in the Official Records of Dade County in Book 7055, pages 852-856, less, however, those lands and waters as described in Section 258.165, F. S., (Biscayne Bay Aquatic Preserve Act of 1974), and those lands and waters within the Biscayne National Park.

14. Lignumvitae Key Aquatic Preserve, as described in the Official Records of Monroe County in Book 502, pages 139-142.

15. Coupon Bight Aquatic Preserve, as described in the Official Records of Monroe County in Book 502, pages 143-146.

16. Cape Romano — Ten Thousand Islands Aquatic Preserve, as described in the Official Records of Collier County in Book 381, pages 298-301.

17. Rookery Bay Aquatic Preserve, as described in Section 258.39(31), FS.
18. Estero Bay Aquatic Preserve as described in Section 258.39(28), Florida Statutes.
19. Pine Island Sound Aquatic Preserve, as described in the Official Records of Lee County in Book 648, pages 732-736.
20. Matlacha Pass Aquatic Preserve, as described in the Official Records of Lee County in Book 800, pages 725-728.
21. Gasparilla Sound — Charlotte Harbor Aquatic Preserve, as described in Section 258.392, F.S.
22. Cape Haze Aquatic Preserve, as described in Section 258.39(29), F.S.
23. Cockroach Bay Aquatic Preserve, as described in Section 258.391, F.S.
24. St. Martins Marsh Aquatic Preserve, as described in the Official Records of Citrus County in Book 276, pages 238-241.
25. Alligator Harbor Aquatic Preserve, as described in the Official Records of Franklin County in Volume 98, pages 82-85.
26. Apalachicola Bay Aquatic Preserve, as described in the Official Records of Gulf County in Book 46, pages 77-81, and in the Official Records of Franklin County in Volume 98, pages 102-106.
27. St. Joseph Bay Aquatic Preserve, as described in the Official Records of Gulf County in Book 46, pages 73-76.
28. St. Andrews State Park Aquatic Preserve, as described in the Official Records of Bay County in Book 379, pages 547-550.
29. Rocky Bayou State Park Aquatic Preserve, as described in the Official Records of Okaloosa County in Book 593, pages 742-745.
30. Yellow River Marsh Aquatic Preserve, as described in the Official Records of Santa Rosa County in Book 206, pages 568-571.
31. Fort Pickens State Park Aquatic Preserve, as described in the Official Records of Santa Rosa County in Book 220, pages 60-63, in the Official Records of Escambia County in Book 518, pages 659-662, less the lands dedicated to the U. S. A. for the establishment of the Gulf Islands National Seashore prior to the enactment of the act, until such time as the U. S. A. no longer wishes to maintain such lands for the purpose for which they were dedicated, at which time such lands would revert to the board and be managed as part of the preserve.
32. For the purpose of this section the boundaries of the Lake Jackson Aquatic Preserve, shall be the body of water in Leon County known as Lake Jackson in Sections 1, 2, 3, 5, 10, 11 and 14, Township 1 North, Range 1 West and Sections 11, 12, 13, 14, 15, 21, 22, 23, 26, 27, 28, 29, 32, 33, 34, and 35, Township 2 North, Range 1 West lying below the ordinary high water line. Such lands shall include the submerged bottom lands and the water column upon such lands, as well as all publicly owned islands, within the boundaries of the preserve. Any privately held upland within the boundaries of the preserve shall be deemed to be excluded therefrom; provided that the Board may

negotiate an arrangement with any such private upland owner by which such land may be included in the preserve.

33. Terra Ceia Aquatic Preserve, as described in Section 258.393, Florida Statutes.

34. Future aquatic preserves established pursuant to general or special acts of the legislature. *Specific Authority 120.53, 258.43(1) FS. Law Implemented 258.39, 258.391, 258.392, 258.393, 258.40, 258.41, 258.42, 258.43, 258.44, 258.45 FS. History—New 2-23-81, Amended 8-7-85. Formerly 16Q-20.02. Transferred from 16Q-20.002.*

18-20.003 Definitions. When used in these rules, the following words shall have the indicated meaning unless the context clearly indicates otherwise:

(1) "Act" means the provisions of Section 258.35 through 258.46, F.S., the Florida Aquatic Preserve Act.

(2) "Activity" means any project and such other human action within the preserve requiring board approval for the use, sale, lease or transfer of interest in sovereignty lands or materials, or which may require a license from the Department of Environmental Regulation.

(3) "Aesthetic values" means scenic characteristics or amenities of the preserve in its essentially natural state or condition, and the maintenance thereof.

(4) "Applicant" means any person making application for a permit, license, conveyance of an interest in state owned lands or any other necessary form of governmental approval in order to perform an activity within the preserve.

(5) "Beneficial biological functions" means interactions between flora, fauna and physical or chemical attributes of the environment, which provide benefits that accrue to the public at large, including, but not limited to: nutrient, pesticide and heavy metal uptake; sediment retention; nutrient conversion to biomass; nutrient recycling and oxygenation.

(6) "Beneficial hydrological functions" means interactions between flora, fauna and physical geological or geographical attributes of the environment, which provide benefits that accrue to the public at large, including, but not limited to: retardation of storm water flow; storm water retention; and water storage, and periodical release;

(7) "Biological values" means the preservation and promotion of indigenous life forms and habitats including, but not limited to: sponges, soft corals, hard corals, submerged grasses, mangroves, saltwater marshes, fresh water marshes, mud flats, marine, estuarine, and aquatic reptiles, games and non-games fish species, marine, estuarine, and aquatic mammals, marine, estuarine, and aquatic invertebrates, birds and shellfish.

(8) "Board" means the Governor and Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund.

(9) "Channel" means a trench, the bottom of which is normally covered entirely by water, with the upper edges of its sides normally below water.

(10) "Commercial, industrial and other revenue generating/income related docks" means docking facilities for an activity which produces income, through rental or any other means, or which serves as an accessory facility to other rental, commercial or industrial operations. It shall include, but not be limited to docking for: marinas, restaurants, hotels, motels, commercial fishing, shipping, boat or ship construction, repair, and sales.

(11) "Department" means the State of Florida Department of Natural Resources, as administrator for the board.

(12) "Division" means the Division of State Lands, which performs all staff duties and functions related to the administration of lands title to which is, or will be, vested in the board, pursuant to section 253.002, F.S.

(13) "Dock" means a fixed or floating structure, including moorings, used for the purpose of berthing buoyant vessels either temporarily or indefinitely.

(14) "Essentially natural condition" means those functions which support the continued existence or encourage the restoration of the diverse population of indigenous life forms and habitats to the extent they existed prior to the significant development adjacent to and within the preserve.

(15) "Extreme hardship" means a significant burden, unique to the applicant and not shared by property owners in the area. Self-imposed circumstances caused to any degree by actions of any person subsequent to the enactment of the Act shall not be construed as an extreme hardship. Extreme hardship under this act shall not be construed to include any hardship which arises in whole or in part from the effect of other federal, state or local laws, ordinances, rules or regulations. The term may be inherent in public projects which are shown to be a public necessity.

(16) "Fill" means materials from any source, deposited by any means onto sovereignty lands, either for the purpose of creating new uplands or for any other purpose, including spoiling of dredged materials. For the purpose of this rule, the placement of pilings or riprap shall not be considered to be filling.

(17) "Lease" means a conveyance of interest in lands, title to which is vested in the board, granted in accordance with specific terms set forth in writing.

(18) "Marina" means a small craft harbor complex used primarily for recreation.

(19) "Oil and gas transportation facilities" means those structures necessary for the movement of oil and gas from the production site to the consumer.

(20) "Person" means individuals, minors, partnerships, corporations, joint ventures, estates, trusts, syndicates, fiduciaries, firms, and all other associations and combinations, whether public or private, including governmental entities.

(21) "Pier" means a structure in, on, or over sovereignty lands, which is used by the public primarily for fishing, swimming, or viewing the preserve. A pier shall not include a dock.

(22) "Preserve" means any and all of those areas which are exceptional areas of sovereignty lands and the associated water body so designated in Section 258.39, 258.391, and 258.392, F.S., including all sovereignty lands, title to which is vested in the board, and such other lands as the board may acquire or approve for inclusion, and the water column over such lands, which have been set aside to be maintained in an essentially natural or existing condition of indigenous flora and fauna and their supporting habitat and the natural scenic qualities and amenities thereof.

(23) "Private residential single dock" means a dock which is used for private, recreational or leisure purposes for a single family residence, cottage or other such single dwelling unit and which is designed to moor no more than two boats.

(24) "Private residential multi-slip dock" means a docking facility which is used for private recreational or leisure purposes for multi-unit residential dwellings which shall include but is not limited to condominiums, townhouses, subdivisions and other such dwellings or residential areas and which is designed to moor three or more boats. Yacht clubs associated with residential developments, whose memberships or utilization of the docking facility requires some real property interest in the residential area, shall also be included.

(25) "Public interest" means demonstrable environmental, social, and economic benefits which would accrue to the public at large as a result of a proposed action, and which would clearly exceed all demonstrable environmental, social, and economic costs of the proposed action. In determining the public interest in a request for use, sale, lease, or transfer of interest in sovereignty lands or severance of materials from sovereignty lands, the board shall consider the ultimate project and purpose to be served by said use, sale, lease, or transfer of lands or materials.

(26) "Public navigation project" means a project primarily for the purpose of navigation which is authorized and funded by the United States Congress or by port authorities as defined by Section 315.02(2), F.S.

(27) "Public necessity" means the works or improvements required for the protection of the health and safety of the public, consistent with the Act and these rules, for which no other reasonable alternative exists.

(28) "Public utilities" means those services, provided by persons regulated by the Public Service Commission, or which are provided by rural cooperatives, municipalities, or other governmental agencies, including electricity, telephone, public water and wastewater services, and structures necessary for the provision of these services.

(29) "Quality of the preserve" means the degree of the biological, aesthetic and scientific values of the preserve necessary for present and future enjoyment of it in an essentially natural condition.

(30) "Resource management agreement" means a contractual agreement between the board and one

or more parties which does not create an interest in real property but merely authorizes conduct of certain management activities on lands held by the board.

(31) "Resource Protection Area (RPA) 1" — Areas within the aquatic preserves which have resources of the highest quality and condition for that area. These resources may include, but are not limited to corals; marine grassbeds; mangrove swamps; salt-water marsh; oyster bars; archaeological and historical sites; endangered or threatened species habitat; and, colonial water bird nesting sites.

(32) "Resource Protection Area 2" — Areas within the aquatic preserves which are in transition with either declining resource protection area 1 resources or new pioneering resources within resource protection area 3.

(33) "Resource Protection Area 3" — Areas within the aquatic preserve that are characterized by the absence of any significant natural resource attributes.

(34) "Riparian rights" means those rights incident to lands bordering upon navigable waters, as recognized by the courts of this state and common law.

(35) "Sale" means a conveyance of interest in lands, by the board, for consideration.

(36) "Scientific values" means the preservation and promotion of certain qualities or features which have scientific significance.

(37) "Shore protection structure" means a type of coastal construction designed to minimize the rate of erosion. Coastal construction includes any work or activity which is likely to have a material physical effect on existing coastal conditions or natural shore processes.

(38) "Sovereignty lands" means those lands including, but not limited to: tidal lands, islands, sandbars, shallow banks, and lands waterward of the ordinary or mean highwater line, to which the State of Florida acquired title on March 3, 1845, by virtue of statehood, and of which it has not since divested its title interest. For the purposes of this rule sovereignty lands shall include all submerged lands within the boundaries of the preserve, title to which is held by the board.

(39) "Spoil" means materials dredged from sovereignty lands which are redeposited or discarded by any means, onto either sovereignty lands or uplands.

(40) "Transfer" means the act of the board by which any interest in lands, including easements, other than sale or lease, is conveyed.

(41) "Utility of the preserve" means fitness of the preserve for the present and future enjoyment of its biological, aesthetic and scientific values, in an essentially natural condition.

(42) "Water dependent activity" means an activity which can only be conducted on, in, over, or adjacent to, water areas because the activity requires direct access to the water body or sovereignty lands for transportation, recreation, energy production or transmission, or source of

water and where the use of the water or sovereignty lands is an integral part of the activity.

Specific Authority 258.43(1) FS. Law Implemented 258.37, 258.43(1) FS. History—New 2-25-81. Amended 8-7-85. Formerly 16Q-20.03. Transferred from 16Q-20.003.

18-20.004 Management Policies, Standards and Criteria. The following management policies, standards and criteria are supplemental to Chapter 18-21, Florida Administrative Code (Sovereignty Submerged Lands Management) and shall be utilized in determining whether to approve, approve with conditions or modifications or deny all requests for activities on sovereignty lands in aquatic preserves.

(1) GENERAL PROPRIETARY

(a) In determining whether to approve or deny any request the Board will evaluate each on a case-by-case basis and weigh any factors relevant under Chapter 253 and/or 258, Florida Statutes. The Board, acting as Trustees for all state-owned lands, reserves the right to approve, modify or reject any proposal.

(b) There shall be no further sale, lease or transfer of sovereignty lands except when such sale, lease or transfer is in the public interest (see Section 18-20.004(2) Public Interest Assessment Criteria).

(c) There shall be no construction of seawalls waterward of the mean or ordinary high water line, or filling waterward of the mean or ordinary high water line except in the case of public road and bridge projects where no reasonable alternative exists.

(d) There shall, in no case, be any dredging waterward of the mean or ordinary high water line for the sole or primary purpose of providing fill for any area landward of the mean or ordinary high water line.

(e) A lease, easement or consent of use may be authorized only for the following activities:

1. a public navigation project;
2. maintenance of an existing navigational channel;
3. installation or maintenance of approved navigational aids;
4. creation or maintenance of a commercial/industrial dock, pier or a marina;
5. creation or maintenance of private docks for reasonable ingress and egress of riparian owners;
6. minimum dredging for navigation channels attendant to docking facilities;
7. creation or maintenance of a shore protection structure;
8. installation or maintenance of oil and gas transportation facilities;
9. creation, maintenance, replacement or expansion of facilities required for the provision of public utilities; and
10. other activities which are a public necessity or which are necessary to enhance the quality or utility of the preserve and which are consistent with the act and this chapter.

(f) For activities listed in paragraphs 18-20.004(1)(e)1.—10. above, the activity shall be

designed so that the structure or structures to be built in, on or over sovereignty lands are limited to structures necessary to conduct water dependent activities.

(g) For activities listed in paragraphs 18-20.004(1)(c)7., 8., 9. and 10. above, it must be demonstrated that no other reasonable alternative exists which would allow the proposed activity to be constructed or undertaken outside the preserve.

(h) The use of state-owned lands for the purpose of providing private or public road access to islands where such access did not previously exist shall be prohibited. The use of state-owned lands for the purpose of providing private or public water supply to islands where such water supply did not previously exist shall be prohibited.

(i) Except for public navigation projects and maintenance dredging for existing channels and basins, any areas dredged to improve or create navigational access shall be incorporated into the preempted area of any required lease or be subject to the payment of a negotiated private easement fee.

(j) Private residential multi-slip docking facilities shall require a lease.

(k) Aquaculture and beach renourishment activities which comply with the standards of this rule chapter and Chapter 18-21, Florida Administrative Code, may be approved by the board, but only subsequent to a formal finding of compatibility with the purposes of Chapter 258, Florida Statutes, and this rule chapter.

(l) Other uses of the preserve, or human activity within the preserve, although not originally contemplated, may be approved by the board, but only subsequent to a formal finding of compatibility with the purposes of Chapter 258, Florida Statutes, and this rule chapter.

(2) PUBLIC INTEREST ASSESSMENT CRITERIA

In evaluating requests for the sale, lease or transfer of interest, a balancing test will be utilized to determine whether the social, economic and/or environmental benefits clearly exceed the costs.

(a) GENERAL BENEFIT/COST CRITERIA:

1. any benefits that are balanced against the costs of a particular project shall be related to the affected aquatic preserve;

2. in evaluating the benefits and costs of each request, specific consideration and weight shall be given to the quality and nature of the specific aquatic preserve. Projects in the less developed, more pristine aquatic preserves such as Apalachicola Bay shall be subject to a higher standard than the more developed urban aquatic preserves such as Boca Ciega Bay; and,

3. for projects in aquatic preserves with adopted management plans, consistency with the management plan will be weighed heavily when determining whether the project is in the public interest.

(b) BENEFIT CATEGORIES:

1. public access (public boat ramps, boatslips, etc.);

2. provide boating and marina services (repair, pumpout, etc.);

3. improve and enhance public health, safety, welfare, and law enforcement;

4. improved public land management;

5. improve and enhance public navigation;

6. improve and enhance water quality;

7. enhancement/restoration of natural habitat and functions; and

8. improve/protect

endangered/threatened/unique species.

(c) COSTS:

1. reduced/degraded water quality;

2. reduced/degraded natural habitat and function;

3. destruction, harm or harassment of endangered or threatened species and habitat;

4. preemption of public use;

5. increasing navigational hazards and congestion;

6. reduced/degraded aesthetics; and

7. adverse cumulative impacts.

(d) EXAMPLES OF SPECIFIC BENEFITS:

1. donation of land, conservation easements, restrictive covenants or other title interests in or contiguous to the aquatic preserve which will protect or enhance the aquatic preserve;

2. providing access or facilities for public land management activities;

3. providing public access easements and/or facilities, such as beach access, boat ramps, etc.;

4. restoration/enhancement of altered habitat or natural functions, such as conversion of vertical bulkheads to riprap and/or vegetation for shoreline stabilization or re-establishment of shoreline or submerged vegetation;

5. improving fishery habitat through the establishment of artificial reefs or other such projects, where appropriate;

6. providing sewage pumpout facilities where normally not required, in particular, facilities open to the general public;

7. improvements to water quality such as removal of toxic sediments, increased flushing and circulation, etc.;

8. providing upland dry storage as an alternative to wetstop; and

9. marking navigation channels to avoid disruption of shallow water habitats.

(3) RESOURCE MANAGEMENT

(a) All proposed activities in aquatic preserves having management plans adopted by the Board must demonstrate that such activities are consistent with the management plan.

(b) No drilling of oil, gas or other such wells shall be allowed.

(c) Utility cables, pipes and other such structures shall be constructed and located in a manner that will cause minimal disturbance to submerged land resources such as oyster bars and submerged grass beds and do not interfere with traditional public uses.

(d) Spoil disposal within the preserves shall be strongly discouraged and may be approved only

structures shall be constructed and located in a manner that will cause minimal disturbance to submerged land resources such as oyster bars and submerged grass beds and do not interfere with traditional public uses.

(d) Spoil disposal within the preserves shall be strongly discouraged and may be approved only where the applicant has demonstrated that there is no other reasonable alternative and that activity may be beneficial to, or at a minimum, not harmful to the quality and utility of the preserve.

(4) RIPARIAN RIGHTS

(a) None of the provisions of this rule shall be implemented in a manner that would unreasonably infringe upon the traditional, common law and statutory riparian rights of upland riparian property owners adjacent to sovereignty lands.

(b) The evaluation and determination of the reasonable riparian rights of ingress and egress for private, residential multi-slip docks shall be based upon the number of linear feet of riparian shoreline.

(c) For the purposes of this rule, a private, residential, single docking facility which meets all the requirements of Rule 18-20.004(5) shall be deemed to meet the public interest requirements of Rule 18-20.004(1)(b), Florida Administrative Code. However, the applicants for such docking facilities must apply for such consent and must meet all of the requirements and standards of this rule chapter.

(5) STANDARDS AND CRITERIA FOR DOCKING FACILITIES

(a) All docking facilities, whether for a single or multi-slip residential or commercial, shall be subject to the following standards and criteria:

1. no dock shall extend waterward of the mean or ordinary high water line more than 500 feet or 20 percent of the width of the waterbody at that particular location whichever is less;

2. certain docks may fall within areas of special or unique importance. These areas may be of significant biological, scientific, historic and/or aesthetic value and require special management considerations. Modifications may be more restrictive than the normally accepted criteria. Such modifications shall be determined on a case-by-case analysis, and may include, but shall not be limited to changes in location, configuration, length, width and height;

3. the number, lengths, drafts and types of vessels allowed to utilize the proposed facility may also be stipulated; and

4. where local governments have more stringent standards and criteria for docking facilities, the more stringent standards for the protection and enhancement of the aquatic preserve shall prevail.

(b) Private residential single docks shall conform to the following specific design standards and criteria:

1. any main access dock shall be limited to a maximum width of four (4) feet;

2. the dock decking design and construction will insure maximum light penetration, with full consideration of safety and practicality;

3. the dock will extend out from the shoreline no further than to a maximum depth of minus four (- 4) feet (mean low water);

4. when the water depth is minus four (- 4) feet (mean low water) at an existing bulkhead the maximum dock length from the bulkhead shall be 25 feet, subject to modifications accommodating shoreline vegetation overhang;

5. wave break devices, when necessary, shall be designed to allow for maximum water circulation and shall be built in such a manner as to be part of the dock structure;

6. terminal platform size shall be no more than 160 square feet; and

7. dredging to obtain navigable water depths in conjunction with private residential, single dock applications is strongly discouraged.

(c) Private residential multi-slip docks shall conform to the following specific design standards and criteria:

1. the area of sovereignty, submerged land preempted by the docking facility shall not exceed the square footage amounting to ten times the riparian waterfront footage of the affected waterbody of the applicant, or the square footage attendant to providing a single dock in accordance with the criteria for private residential single docks, whichever is greater. A conservation easement or other such use restriction acceptable to the Board must be placed on the riparian shoreline, used for the calculation of the 10:1 threshold, to conserve and protect shoreline resources and subordinate/waive any further riparian rights of ingress and egress for additional docking facilities;

2. docking facilities and access channels shall be prohibited in Resource Protection Area 1 or 2, except as allowed pursuant to Section 258.42(3)(c)1., Florida Statutes, while dredging in Resource Protection Area 3 shall be strongly discouraged;

3. docking facilities shall only be approved in locations having adequate existing water depths in the boat mooring, turning basin, access channels, and other such areas which will accommodate the proposed boat use in order to insure that a minimum of one foot clearance is provided between the deepest draft of a vessel and the bottom at mean low water;

4. main access docks and connecting or cross walks shall not exceed six (6) feet in width;

5. terminal platforms shall not exceed eight (8) feet in width;

6. finger piers shall not exceed three (3) feet in width, and 25 feet in length;

7. pilings may be utilized as required to provide adequate mooring capabilities; and

8. the following provisions of Rule 18-20.004(5)(d) shall also apply to private residential multi-slip docks.

(d) Commercial, industrial and other revenue generating/income related docking facilities shall conform to the following specific design standards and criteria:

1. docking facilities shall only be located in or near areas with good circulation, flushing and adequate water depths;

2. docking facilities and access channels shall be prohibited in Resource Protection Area 1 or 2, except as allowed pursuant to Sections 258.42(3)(c)1., Florida Statutes; while dredging in Resource Protection Area 3 shall be strongly discouraged;

3. the docking facilities shall not be located in Resource Protection Area 1 or 2; however, main access docks may be allowed to pass through Resource Protection Area 1 or 2, that are located along the shoreline, to reach an acceptable Resource Protection Area 3, provided that such crossing will generate minimal environmental impact;

4. beginning July 1, 1986 new docking facilities may obtain a lease only where the local governments have an adopted marina plan and/or policies dealing with the siting of commercial/industrial and private, residential, multi-slip docking facilities in their local government comprehensive plan;

5. the siting of the docking facilities shall also take into account the access of the boat traffic to avoid marine grassbeds or other aquatic resources in the surrounding areas;

6. the siting of new facilities within the preserve shall be secondary to the expansions of existing facilities within the preserve when such expansion is consistent with the other standards;

7. the location of new facilities and expansion of existing facilities shall consider the use of upland dry storage as an alternative to multiple wet-slip docking;

8. marina siting will be coordinated with local governments to insure consistency with all local plans and ordinances;

9. marinas shall not be sited within state designated manatee sanctuaries; and

10. in any areas with known manatee concentrations, manatee warning/notice and/or speed limit signs shall be erected at the marina and/or ingress and egress channels, according to Florida Marine Patrol specifications.

(e) Exceptions to the standards and criteria listed in Rule 18-20.004(5), Florida Administrative Code, may be considered, but only upon demonstration by the applicant that such exceptions are necessary to insure reasonable riparian ingress and egress.

(6) MANAGEMENT AGREEMENTS

The board may enter into management agreements with local agencies for the administration and enforcement of standards and criteria for private residential single docks.

(7) In addition to the policies, standards and criteria delineated in subsections (1) through (6), the provisions of the following management plans apply to specific aquatic preserves and are incorporated herein by reference. Where regulatory criteria in 18-20, F. A. C., may differ with specific policies in the management plans listed herein, the general rule criteria shall prevail.

Date Adopted

Alligator Harbor September 23, 1986
Banana River September 17, 1985

Cockroach Bay	April 21, 1987
Estero Bay	September 6, 1983
Charlotte Harbor (Cape Haze, Gasparilla Sound-Charlotte Harbor, Matlacha Pass and Pine Island Sound)	May 18, 1983
Indian River-Malabar to Vero Beach	January 21, 1986
Indian River Lagoon (Vero Beach to Fort Pierce and Jensen Beach to Jupiter Inlet)	January 22, 1985
Loxahatchee River-Lake Worth Creek	June 12, 1984
Nassau River-St. Johns River Marshes and Fort Clinch State Park	April 22, 1986
North Fork of the St. Lucie River	May 22, 1984
St. Joseph Bay	June 2, 1987
St. Martins Marsh	September 9, 1987
Terra Ceia	April 21, 1987
Wekiva River	August 25, 1987
<i>Specific Authority 258.43(1) FS. Law Implemented 258.41, 258.42, 258.43(1), 258.44 FS. History—New 2-25-81, Amended 8-7-85, Formerly 16Q-20.004, Transferred from 16Q-20.004, Amended 9-4-88.</i>	

18-20.005 Uses, Sales, Leases, or Transfer of Interests in Lands, or Materials, Held by the Board.

*Specific Authority 258.43(1) FS. Law Implemented
253.02, 253.12, 258.42 FS. History—New 2-25-81,
Repealed 8-7-85, Formerly 16Q-20.05, Transferred from
16Q-20.005.*

18-20.006 Cumulative Impacts. In evaluating applications for activities within the preserves or which may impact the preserves, the department recognizes that, while a particular alteration of the preserve may constitute a minor change, the cumulative effect of numerous such changes often results in major impairments to the resources of the preserve. Therefore, the department shall evaluate a particular site for which the activity is proposed with the recognition that the activity may, in conjunction with other activities adversely affect the preserve which is part of a complete and interrelated system. The impact of a proposed activity shall be considered in light of its cumulative impact on the preserve's natural system. The department shall include as a part of its evaluation of an activity:

(1) The number and extent of similar human actions within the preserve which have previously affected or are likely to affect the preserve, whether considered by the department under its current authority or which existed prior to or since the enactment of the Act; and

(2) The similar activities within the preserve

which are currently under consideration by the department; and

(3) Direct and indirect effects upon the preserve and adjacent preserves, if applicable, which may reasonably be expected to result from the activity; and

(4) The extent to which the activity is consistent with management plans for the preserve, when developed; and

(5) The extent to which the activity is permissible within the preserve in accordance with comprehensive plans adopted by affected local governments, pursuant to section 163.3161, F.S., and other applicable plans adopted by local, state, and federal governmental agencies;

(6) The extent to which the loss of beneficial hydrologic and biologic functions would adversely impact the quality or utility of the preserve; and

(7) The extent to which mitigation measures may compensate for adverse impacts.

Specific Authority 258.43(1) FS. Law Implemented 258.36, 258.43, 258.44 FS. History—New 2-25-81, Formerly 16Q-20.06, Transferred from 16Q-20.006.

18-20.007 Protection of Riparian Rights.

Specific Authority 258.43(1) FS. Law Implemented 258.123, 258.124(8), 258.44 FS. History—New 2-25-81, Repealed 6-7-85, Formerly 16Q-20.07, Transferred from 16Q-20.007.

18-20.008 Inclusion of Lands, Title to Which Is Not Vested in the Board, in a Preserve.

(1) Lands and water bottoms which are within designated aquatic preserve boundaries, or adjacent thereto and which are owned by other governmental agencies, may be included in an aquatic preserve upon specific authorization for inclusion by an appropriate instrument in writing executed by the agency.

(2) Lands and water bottoms which are within designated aquatic preserve boundaries or adjacent thereto, and which are in private ownership, may be included in an aquatic preserve upon specific authorization for inclusion by an appropriate instrument in writing executed by the owner.

(3) The appropriate instrument shall be either a dedication in perpetuity, or a lease. Such lease shall contain the following conditions:

(a) The term of the lease shall be for a minimum period of ten years.

(b) The board shall have the power and duty to enforce the provisions of each lease agreement, and shall additionally have the power to terminate any lease if the termination is in the best interest of the aquatic preserve system, and shall have the power to include such lands in any agreement for management of such lands.

(c) The board shall pay no more than \$1 per year for any such lease.

Specific Authority 258.43(1) FS. Law Implemented 258.40, 258.41 FS. History—New 2-25-81, Formerly 16Q-20.08, Transferred from 16Q-20.008.

18-20.009 Establishment or Expansion of Aquatic Preserves.

(1) The board may expand existing preserves or establish additional areas to be included in the

aquatic preserve system, subject to confirmation by the legislature.

(2) The board may, after public notice and public hearing in the county or counties in which the proposed expanded or new preserve is to be located, adopt a resolution formally setting aside such areas to be included in the system.

(3) The resolution setting aside an aquatic preserve area shall include:

(a) A legal description of the area to be included. A map depicting the legal description shall also be attached.

(b) The designation of the type of aquatic preserve.

(c) A general statement of what is sought to be preserved.

(d) A statement that the area established as a preserve shall be subject to the management criteria and directives of this chapter.

(e) A directive to develop a natural resource inventory and a management plan for the area being established as an aquatic preserve.

(4) Within 30 days of the designation and establishment of an aquatic preserve, the board shall record in the public records of the county or counties in which the preserve is located a legal description of the preserve.

Specific Authority 258.43(1) FS. Law Implemented 258.41 FS. History—New 2-25-81, Formerly 16Q-20.09, Transferred from 16Q-20.009.

18-20.010 Exchange of Lands. The board in its discretion may exchange lands for the benefit of the preserve, provided that:

(1) In no case shall an exchange result in any land or water area being withdrawn from the preserve; and

(2) Exchanges shall be in the public interest and shall maintain or enhance the quality or utility of the preserve.

Specific Authority 258.43(1) FS. Law Implemented 258.41(5), 258.42(1) FS. History—New 2-25-81, Formerly 16A-20.10, Transferred from 16Q-20.010.

18-20.011 Gifts of Lands. The board in its discretion may accept any gifts of lands or interests in lands within or contiguous to the preserve to maintain or enhance the quality and utility of the preserve.

Specific Authority 258.43(1) FS. Law Implemented 258.42(5) FS. History—New 2-25-81, Formerly 16Q-20.11, Transferred from 16Q-20.011.

18-20.012 Protection of Indigenous Life Forms. The taking of indigenous life forms for sale or commercial use is prohibited, except that this prohibition shall not extend to the commercial taking of fin fish, crustacea or mollusks, except as prohibited under applicable laws, rules or regulations. Members of the public may exercise their rights to fish, so long as not contrary to other statutory and regulatory provisions controlling such activities.

Specific Authority 258.43(1) FS. Law Implemented 258.43(1) FS. History—New 2-25-81, Formerly 16Q-20.12, Transferred from 16Q-20.012.

18-20.013 Development of Resource Inventories and Management Plans for Preserves.

(1) The board authorizes and directs the division to develop a resource inventory and management plan for each preserve.

(2) The division may perform the work to develop the inventories and plans, or may enter into agreements with other persons to perform the work. In either case, all work performed shall be subject to board approval.

Specific Authority 258.43(1) FS. Law Implemented 253.03(7), 253.03(8) FS. History—New 2-25-81, Amended 8-7-85, Formerly 16Q-20.13, Transferred from 16Q-20.013.

18-20.014 Enforcement. The rules shall be enforced as provided in Section 258.46.

Specific Authority 258.43(1) FS. Law Implemented 258.46 FS. History—New 2-25-81, Formerly 16Q-20.14, Transferred from 16Q-20.014.

18-20.015 Application Form.

Specific Authority 253.43(1) FS. Law Implemented 258.43 FS. History—New 2-25-81, Repealed 8-7-85, Formerly 16Q-20.15, Transferred from 16Q-20.015.

18-20.016 Coordination with Other Governmental Agencies. Where a Department of Environmental Regulation permit is required for activities on sovereignty lands the department will coordinate with the Department of Environmental Regulation to obtain a copy of the joint Department of Army/Florida Department of Environmental Regulation permit application and the biological survey. The information contained in the joint permit application and biological assessment shall be considered by the department in preparing its staff recommendations to the board. The board may also consider the reports of other governmental agencies that have related management or permitting responsibilities regarding the proposed activity.

Specific Authority 253.43(1) FS. Law Implemented 258.43 FS. History—New 2-25-81, Formerly 16Q-20.16, Transferred from 16Q-20.016.

18-20.017 Lake Jackson Aquatic Preserve. In addition to the provisions of Rules 18-20.001 through 18-20.016, the following requirements shall also apply to all proposed activities within the Lake Jackson Aquatic Preserve. If any provisions of this Rule are in conflict with any provisions of Rules 18-20.001 through 18-20.016 or Chapter 73-534, Laws of Florida, the stronger provision for the protection or enhancement of the aquatic preserve shall prevail.

(1) No further sale, transfer or lease of sovereignty lands in the preserve shall be approved or consummated by the Board, except upon a showing of extreme hardship on the part of the applicant or when the board shall determine such sale, transfer or lease to be in the public interest.

(2) No further dredging or filling of sovereignty lands of the preserve shall be approved or tolerated by the Board of Trustees except:

(a) Such minimum dredging and spoiling as may be authorized for public navigation projects or for preservation of the lake according to the expressed intent of Chapter 73-534, Laws of Florida; and

(b) Such other alteration of physical conditions as may be necessary to enhance the quality or utility of the preserve.

(3) There shall be no drilling of wells, excavation for shell or minerals, and no erection of structures (other than docks), within the preserve, unless such activity is associated with activity authorized by Chapter 73-534, Laws of Florida.

(4) The Board shall not approve the relocations of bulkhead lines within the preserve.

(5) Notwithstanding other provisions of this act, the board may, respecting lands lying within the Lake Jackson basin:

(a) Enter into agreements for and establish lines delineating sovereignty and privately owned lands;

(b) Enter into agreements for the exchange and exchange sovereignty lands for privately owned lands;

(c) Accept gifts of land within or contiguous to the preserve.

Specific Authority 258.39(26) FS. Law Implemented 258.39(26), 258.43 FS. History—New 8-7-85, Formerly 16Q-20.017, Transferred from 16Q-20.017.

APPENDIX B

LOCAL ORDINANCES & RESOLUTIONS

MARION COUNTY

Ordinance 73-4: An emergency ordinance prohibiting dredging, filling, earth moving and land clearing...for a distance of 500 feet from the water's edge upon either mile of Rainbow River or Blue Run, between Rainbow Springs and the northern city limits of Dunnellon. (adopted June 14, 1973)

Ordinance 73-9: An ordinance regulating development in the unincorporated area of Marion County along and 500 feet upland of the Rainbow River. Establishes the need for a permit and the conditions of a permit for land clearing between the OHWL and the 25 year flood plain; and for construction, land clearing, and septic tank placement between the 25 year floor plain elevation and the 100 year flood plain elevation. (adopted November 13, 1973)

Ordinance 85-17: Section III: Prohibits food and non alcoholic beverages in disposable container on Rainbow River. Section IV: Makes possession of alcoholic beverages on Rainbow River unlawful. Section V: Established a twenty (20) miles per hour speed limit between October 16 of each year and April 14 of the following year. Section VI: Establishes a no wake-idle zone on Rainbow River from April 15 to October 15 of each calendar year. Section VII: Establishes a five miles per hour speed limit and a no wake-idle speed only zone for motorboats upon the headwaters of the Rainbow River and K.P. Hole at all times during the year. Section VIII: Prohibits the operation of motors on motorboats and other craft in designated environmentally sensitive areas. (adopted October 22, 1985)

Ordinance 86-10: Prohibits SCUBA diving in the headwaters of the Rainbow River.

Ordinance 88-4: Amends the zoning code of Marion County affecting waterfront properties along designated water bodies (including the Rainbow River). The ordinance established the waterfront side of the lot as the front yard. This in effect causes accessory structures with the exception of swimming pools, septic drain-fields and wells to be placed in either the side or back yards.

Ordinance 88-7: Because of recent sightings of manatee in the Rainbow River, this ordinance establishes a No Wake-Idle Speed only limit on the Rainbow River for the entire year.

Resolution 85-R-279: Creates a Rainbow River Advisory Committee for the Marion Board of County Commissioners on safety and environmental issues relevant to the Rainbow River.

Resolution by Governor & Cabinet, June 1973: Requesting the Marion County Commission to move swiftly to preserve the natural integrity of the Rainbow River.

CITY OF DUNNELLON

Ordinance 85-8: Similar in part to County Ordinance 85-17. Makes possession and consumption of alcohol illegal. Also prohibits food and non-alcoholic beverages in disposable containers on the Rainbow River.

Ordinance 85-9: Similar in part to County Ordinance 85-17, and establishes seasonal speed limits identical to those for the unincorporated county.

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