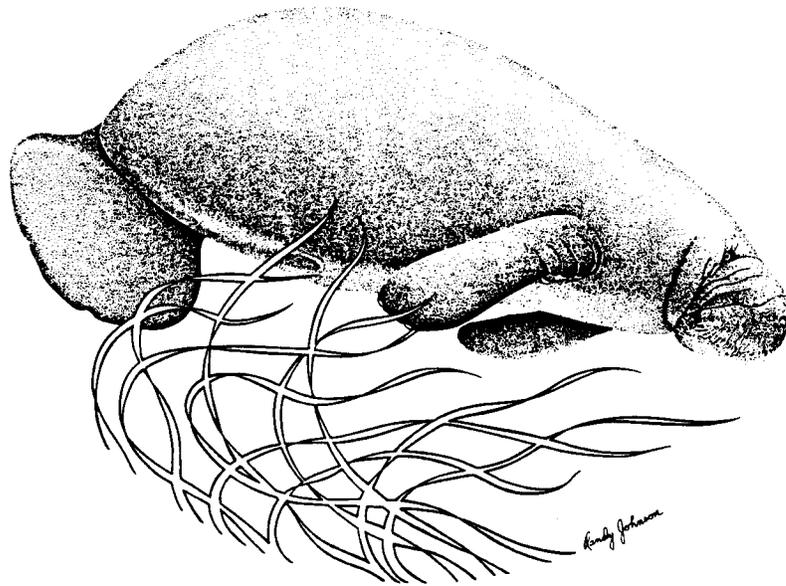


JENSEN BEACH TO JUPITER INLET

AQUATIC PRESERVE MANAGEMENT PLAN

PHASE I



1990

DEPARTMENT OF NATURAL RESOURCES

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Executive Summary

The Indian River Lagoon is an extensive ecosystem spanning two biogeographic zones characterized by diverse land and water body formations. It possesses wide shallow lagoons and narrow tidal creeks. The lagoon is bordered by intertidal mangrove fringes and salt marshes many of which are sectioned by man-made impoundments and ditches. Much of its open waters are dotted by oyster bars, clam beds and man-made spoil islands. The submerged lands are a mosaic of seagrass and algae beds, bare sandy areas and deep water sites. All of these features combine to create an ecosystem which supports one of the richest and most productive faunas within the continental United States. The lagoon is important in this region for its value to recreational and commercial fishing, boating, and prime residential development.

The Indian River Lagoon contains three aquatic preserves. The Jensen Beach to Jupiter Inlet section was designated an aquatic preserve in 1973 for the primary purpose of preserving the biological resources in the area and maintaining these resources in an essentially natural condition. The Jensen Beach to Jupiter Inlet Aquatic Preserve comprises an area of approximately 26,000 acres of submerged lands spanning three counties: St. Lucie, Martin and Palm Beach. This plan focuses on the Hobe Sound to Jupiter Inlet section of the Jensen Beach to Jupiter Inlet Aquatic Preserve. This 8.5 mile segment of the preserve, located in southeastern Martin County and northeastern Palm Beach County, encompasses 1242 acres of submerged lands.

The main objective of the resource management program for the Jensen Beach to Jupiter Inlet Aquatic Preserve is to protect the lagoon's natural resources for the benefit of future generations. The management of the preserve will be directed toward the maintenance of existing or essentially natural conditions, and toward the restoration of degraded areas. On site management activities include actions by field personnel to protect plant communities, animal life, geological features, archaeological sites, and water resources of the preserve. Management activities will also focus on cumulative impacts and encroachments.

The Hobe Sound to Jupiter Inlet section of the aquatic preserve has been divided into several management areas. The classification of each management area is based upon the resource value of submerged lands associated with existing and future land uses on the adjacent uplands. The intent of these management areas is to make potential development activities and uses of the preserve compatible with resource protection goals. The major uses of this section of the lagoon are recreational fishing, boating, commercial navigation, adjacent

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land uses and their attendant facilities (e.g., docks, marinas, etc.). Maintaining the continued health of the preserve involves minimizing adverse impacts from all uses within and adjacent to the preserve on the estuarine system.

This management plan outlines the relationship between the Department of Natural Resources' central office and field staff. Criteria for the review of specific development proposals within the preserve's boundaries are also provided. Public, private, and commercial uses that are allowable pursuant to statutory direction and other applicable authorities of the aquatic preserve are discussed. These uses are subject to the approval of the Board of Trustees or their designee. Approval is normally predicated upon demonstration that the proposed use is environmentally sound, and in the opinion of the Board, necessary for the public.

Various federal, state, regional, and local organizations oversee laws and regulations which apply to all of the lands and waters within the aquatic preserve and the Indian River Lagoon basin; therefore, the aquatic preserve management program's objective is to compliment agency programs whenever it is in the preserve's interest. Both field personnel and central office staff will coordinate extensively with many agencies to assure effective management and protection.

To enhance management and protection of the aquatic preserve, research and education programs will also be developed. These programs will operate in close coordination with similar programs established in the area. Research and education needs for the aquatic preserve are defined.

The management of the preserve and protection of the resources included within its boundaries will be enhanced by continually identifying and resolving specific program needs. Meeting these needs, which may include legislative support, administrative rule changes, resource protection capabilities, and funding and staffing needs, will relieve some stress on the resources or personnel involved in management of the preserve. In the future, the field staff will develop and submit a status report that summarizes the program's needs and suggests measures to be taken to resolve these needs.

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INDIAN RIVER LAGOON
AQUATIC PRESERVE MANAGEMENT PLAN

VERO BEACH TO FORT PIERCE
and
JENSEN BEACH TO JUPITER INLET

ADOPTED
NOVEMBER 15, 1990

Tom Gardner
Executive Director
Department of Natural Resources

This plan was prepared by
The Bureau of Submerged Lands and Preserves
Division of State Lands

Funds for this management plan were provided by the Department of Environmental Regulation, Office of Coastal Management using funds made available through the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972, as amended.

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AQUATIC PRESERVE

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CHAPTER I

INTRODUCTION

The Indian River Lagoon contains three areas designated as aquatic preserves. One of these areas, the Jensen Beach to Jupiter Inlet Aquatic Preserve, extends from central St. Lucie County through Martin County into north Palm Beach County and includes approximately 22,000 acres of submerged lands (Figures 1 and 2). The Jensen Beach to Jupiter Inlet Aquatic Preserve, which represents one of 42 aquatic preserves in Florida, was designated in 1973 as a "wilderness preserve" by resolution of the Board of Trustees for the purpose of maintaining this area of the lagoon in an essentially natural condition. Because of the size and complexity of this aquatic preserve, the overall management plan is divided into two parts, or phases. This document represents Phase I of the management plan and encompasses the submerged lands from Hobe Sound south to Jupiter Inlet (Figure 3).

The Indian River Lagoon is a biogeographic transition zone which makes the lagoon an exceptional estuarine system, rich in habitats and species. With approximately 2200 identified species, the Indian River Lagoon has the highest species diversity of any estuary in North America (Gilmore, 1985). This diversity includes a wide variety of economically important species, both commercial and recreational. In 1984, the commercial fisheries harvest in this region had a total primary economic impact in excess of \$67 million (Yingling, 1987). Another \$47 million was generated in direct expenditures on recreational saltwater fishing.

The extent of the economic value associated with the lagoon can be traced through the marine services sector. In 1985, the total economic impact of the marine industry was estimated at \$210 million (Laventhol and Horwath, 1987).

Historically, the lagoon has been subjected to two major impacts; water quality degradation and loss of habitat. The decline in water quality is attributed to an increase in nutrient input, sedimentation and turbidity. The elimination and/or alteration of habitat is the result of shoreline development, navigational improvements, and antiquated mosquito control practices. Such impacts require an integrated management program by federal, state, regional, and local governments to accomplish a goal of long term resource protection for the preserves.

Implementation of a management plan for the Jensen Beach to Jupiter Inlet Aquatic Preserve is only one of many steps that will be necessary to accomplish this goal. The plan is intended primarily to serve as a useful guide to the aquatic

preserve field staff and others in maintaining the integrity of the preserves. As more information concerning the preserve is obtained and analyzed, management strategies outlined in this plan may need to be adjusted accordingly.

Development of this phase of the management plan required collecting an inventory of resource information, coordinating with other management plans that have been developed for the area, and identifying resource problems and management issues related to the present and future uses of the preserve and the adjacent uplands. Supporting policies were developed to be consistent with statutory authority and the overall intent of the Aquatic Preserve program for ensuring that the submerged resources of the lagoon remain for future generations to enjoy.

Fourteen management plans, covering 21 of the 42 designated aquatic preserves in the state, have been adopted by reference into existing aquatic preserves rule (Chapter 18-20, Florida Administrative Code). Eventually, this phased management plan will be incorporated into rule following its approval by the Board of Trustees of the Internal Improvement Trust Fund. As such, the criteria in this plan pertaining to the use of state-owned 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 area included in Phase I of the Jensen Beach to Jupiter Inlet Aquatic Preserve Management Plan. This chapter also details the physical and biological components of this segment of the preserve as well as any cultural resources.

Chapter IV identifies the current usage of the adjacent uplands in this same area of the preserve and outlines the future land use of these uplands.

Chapter V delineates various management areas within this section of the preserve. These areas are defined by taking into account the biological resources, physical parameters, and the aesthetic value in conjunction with the use of the adjacent uplands. Where necessary, specific restrictive criteria are developed for each area and their effects and rationale are discussed.

Chapter VI discusses specific needs and issues of the area included in Phase I of the management plan. Policy guidelines have been developed in addressing each need and/or issue.

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

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

Chapter IX projects future staffing and fiscal needs necessary for providing effective management and protection of Phase I of this preserve as well as supporting research and environmental education.

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

This plan was written by staff of the Department of Natural Resources, Division of State Lands, Bureau of Submerged Lands and Preserves.

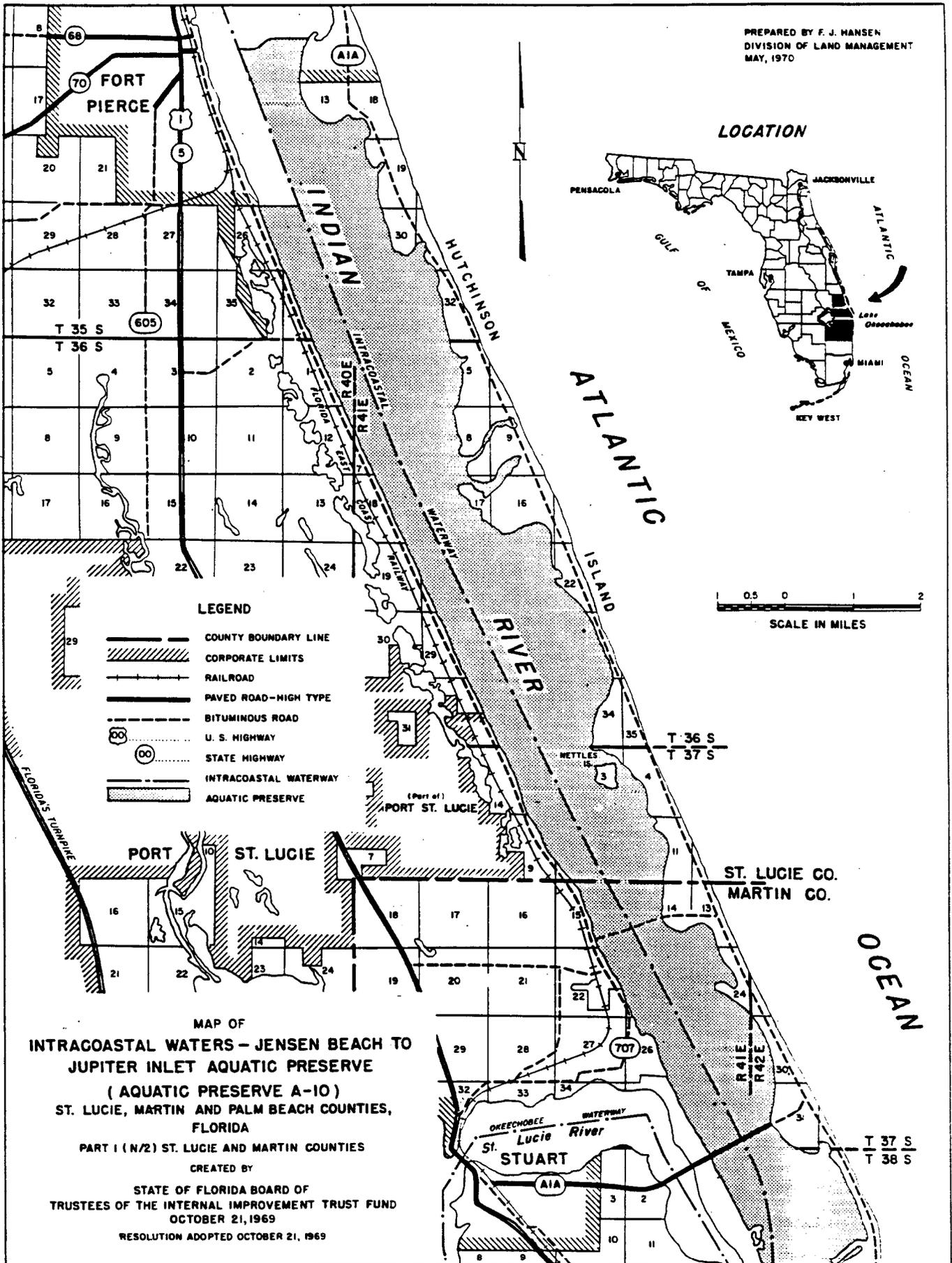


FIGURE 1

PREPARED BY F. J. HANSEN
 DIVISION OF LAND MANAGEMENT
 JUNE, 1970

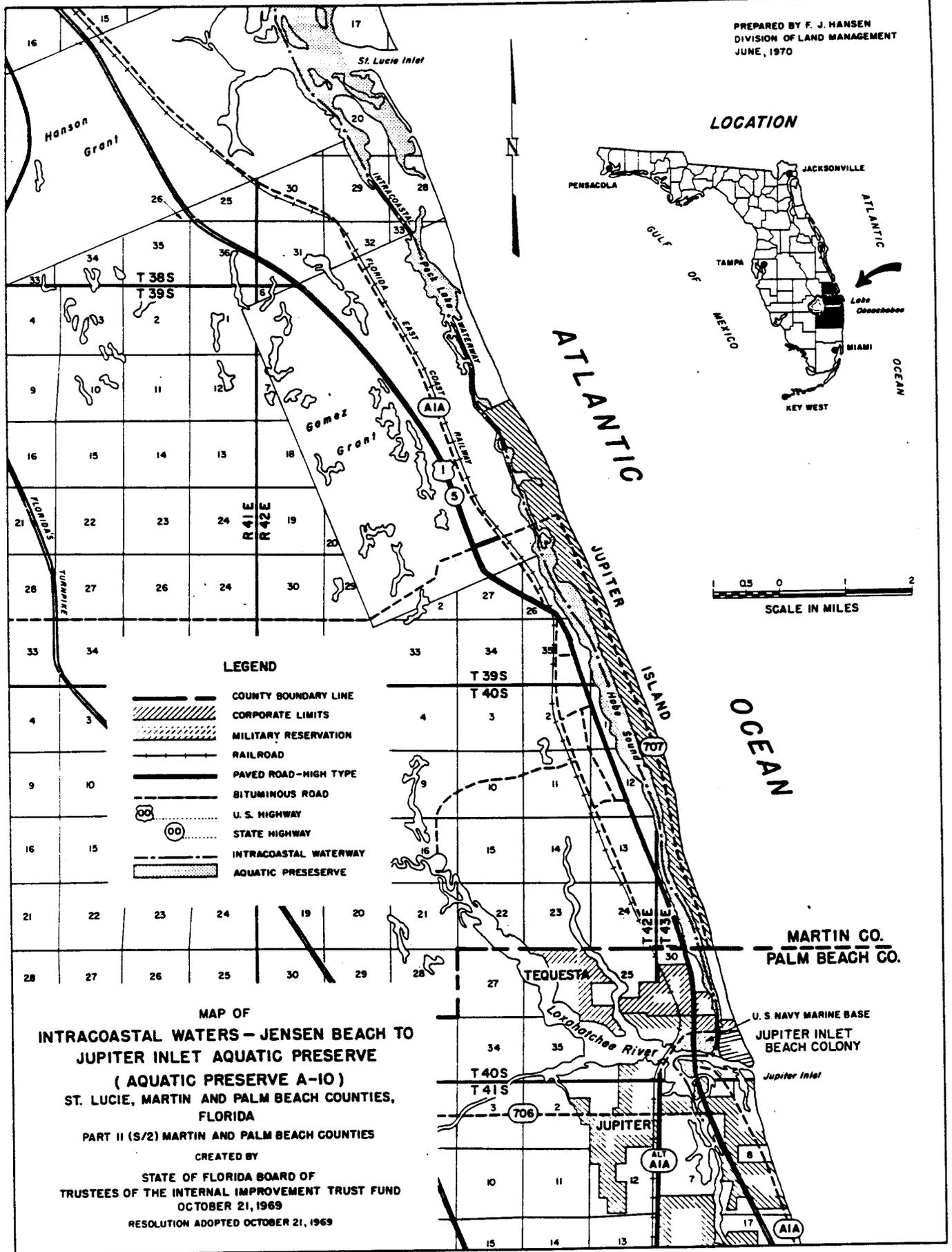


FIGURE 2

STUDY AREA MAP HOBE SOUND TO JUPITER INLET

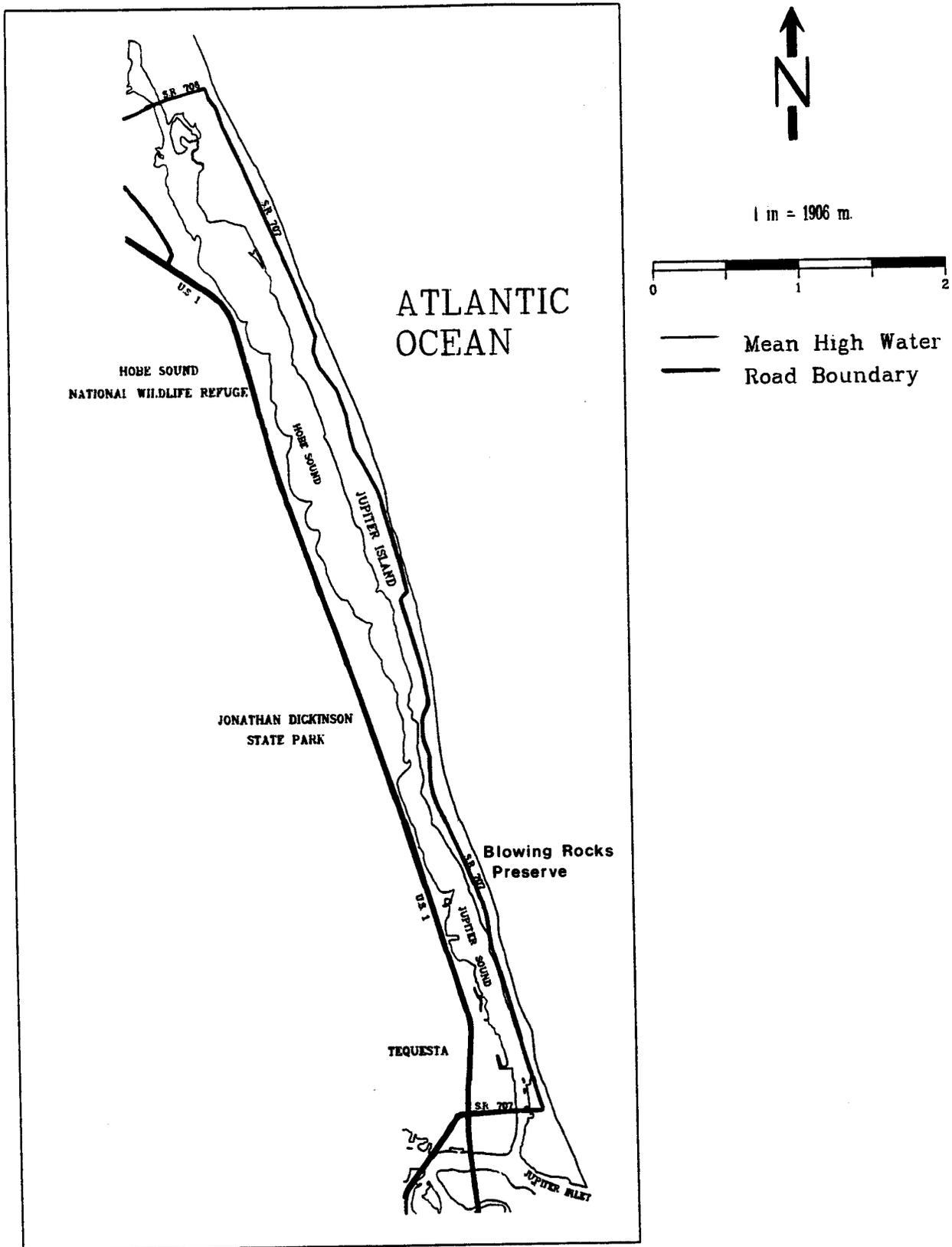


FIGURE 3

CHAPTER II

MANAGEMENT AUTHORITY

A. STATUTORY AUTHORITY

The fundamental laws providing management authority for the Jensen Beach to Jupiter Inlet 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 Preserve 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 Board of 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 Board of Trustees. The Division staff 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. (Florida Aquatic Preserves Act), Chapter 18-20, Florida Administrative Code (Rules of Florida

Aquatic Preserves), and in accordance with the policies set forth in this plan.

Staff comments on proposed uses are submitted for consideration in developing recommendations to be presented to the Board of Trustees. This mechanism provides a basis for the Board of Trustees to evaluate public interest and the merits of any project while also considering 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 fostered 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 Board of Trustees to exercise proprietary control over state-owned lands. Also, in 1967, government focus on protecting Florida's productive water bodies from development led to the Board of Trustees' establishment of a moratorium on the sale of submerged lands to private interests. That same year, an Interagency Advisory Committee (IAC) was created to develop strategies for the protection and management of state-owned submerged lands.

In 1968, the Florida Constitution was revised to declare in Article II, Section 7, the State's policy of conserving and protecting 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. Later that same year, the IAC 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 IAC and adopted, by resolution, eighteen of the water bodies as aquatic preserves, which included the Vero Beach to Fort Pierce Aquatic Preserve and the Jensen Beach to Jupiter Inlet Aquatic Preserve. Other preserves were individually adopted at subsequent times through 1989.

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. The general rules in Chapter 18-20, F.A.C., are supplemental to the rules in Chapter 18-21, F.A.C., in the regulation of activities in aquatic preserves.

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 18-20.001, 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 Chapter 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, 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 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. 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 those in the State Comprehensive Plan that pertain 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 Board of Trustees on July 7, 1981 and March 15, 1983, contains 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 Plans (LGCP) for Martin and Palm Beach counties are required by the Local Government Comprehensive Planning and Land Development Regulation Act to have a comprehensive management plan with elements relating to different governmental functions (e.g., housing, physical facilities, conservation, land use, coastal zone protection, etc.) Each plan, in effect, is intended to guide the future development of each respective county. Cities and counties are to adopt land development regulations and conform to the criteria, policies, and practices of their comprehensive

plans, which must be updated periodically as required by recent statutory amendments.

The intent of the Aquatic Preserve program is to guide county governments during their planning process towards developing local planning criteria and standards that will be consistent with the objectives of the program. Martin and Palm Beach counties' LGCP have been submitted to the state for review and should be implemented in 1990.

CHAPTER III

RESOURCE DESCRIPTION

A. LOCATION AND BOUNDARIES

This chapter details the biological and physical resources of the Hobe Sound to Jupiter Inlet segment of the Jensen Beach to Jupiter Inlet Aquatic Preserve. This 8.5 mile segment of the preserve is located in southeastern Martin County and northeastern Palm Beach County. Specifically, the Hobe Sound to Jupiter Inlet segment of the preserve is composed of two narrow sounds bordered by the County Road 708 bridge to the north and Jupiter Inlet to the south. The municipalities that border this specific segment are the Village of Tequesta and the Town of Jupiter on the mainland, and Jupiter Island and Jupiter Inlet Colony on the barrier island. Figure 3 (page 9) represents the gross boundary of this segment of the preserve; the actual preserve includes only those state-owned submerged lands located waterward of the mean high water line (MHWL) within this boundary.

B. PHYSIOGRAPHY

The Indian River Lagoon is a long, wide, shallow estuarine lagoon bounded on the west by the Florida mainland and on the east by a chain of barrier islands. For the Hobe Sound to Jupiter Inlet segment, the estuarine environment is created by the mixing of saline Atlantic Ocean water, introduced through Jupiter Inlet, with fresh water from the Loxahatchee River. Salinity regimes in this segment range from 28 to 36 parts per thousand (ppt), with a mean of 32 ppt. Although the Atlantic Intracoastal Waterway (a federal navigation channel) has been dredged to a depth of 10 to 12 feet, the average depth of the lagoon in this segment is five feet at mean low water. The shallow configuration of the entire lagoonal system makes it particularly vulnerable to adverse effects from stormwater runoff, siltation, and chemical and heavy metal contamination. The climate in this region is subtropical, with an average annual rainfall of 58 inches, most of which falls between May and October (Treasure Coast Regional Planning Council, 1979).

The Indian River Lagoon is important in this region for its value to recreational and commercial fishing, boating, and prime residential development. It is located in a rapidly growing area that is in transition from agricultural use to residential and commercial development. Much of the shoreline was vegetated by a mangrove fringe, which has been altered in many places for single-family residences, condominiums, and commercial development. South of Hobe Sound, those natural

shorelines of the lagoon that have had little or no disruption are under the protection of the U.S. Fish and Wildlife Service (Hobe Sound National Wildlife Refuge) and the Nature Conservancy (Blowing Rocks Preserve).

C. GEOLOGY

The rise and fall of sea level has played a continuing role in the condition of the region and the present lagoon. In the late Pleistocene, the sea level was higher than it is today, with the present chain of barrier islands existing as offshore sand bars. The Atlantic Coastal Ridge functioned as a barrier island that protected a shallow lagoon (Eastern Valley), thereby creating a situation analogous to the present system of barrier islands bordering the lagoon. The sea level dropped at the beginning of the glacial age (~125,000 years ago) and exposed the site of the current lagoon and barrier islands. These barrier islands had partially lithified through the precipitation of calcium carbonate (CaCO_3). As the sea level rose during the deglaciation of the continent (30,000 - 35,000 years ago), the Indian River Lagoon became brackish through partial inundation by oceanic water. Between 6,000 and 30,000 years ago, there was yet another retreat of the sea level, and the site of today's lagoon was exposed again. Deposition of sediments through wind and fresh water transport partially filled the lagoon until the last great ice sheets melted (5,000 - 6,000 years ago), and the sea level rose to form what is today's Indian River Lagoon (White, 1970).

The long, narrow chain of barrier islands provides protection to the mainland from storm surges. Inlets have formed along these islands during storms, forming temporary shallow inlets that later closed due to siltation. Human intervention through dredging and stabilization of the existing inlets has allowed saline water to mix with fresh water, creating the estuarine environment that now exists (Florida Oceanographic Society, 1982; Almasi, 1983).

D. HYDROLOGY

Water is the one resource whose quality most directly affects the plants and animals naturally adapted to living in the Indian River Lagoon. The watersheds for most of the lagoon have been modified by agricultural drainage and residential development. Agricultural areas west of the lagoon represent the earliest stage of these alterations. Alterations include the construction of major drainage networks that allow larger amounts of fresh water to flow into the lagoon more quickly than natural drainage patterns would have allowed. The natural patterns include freshwater input via creeks and

rivers; sheet flow, where surface water is slowed and filtered as it flows through natural wetland vegetation; and groundwater seepage. Added to the freshwater impacts are pesticides, herbicides, bacteria, and nutrients transported by these waters as they run off from agricultural, residential, and urban lands.

Many of the deep water areas within the Indian River Lagoon play a critical role in tidal mixing/dilution and, thus, in maintaining a productive estuarine environment. These deep water areas include inlets, channels, rivers, and creeks. The deeper waters also allow predator fish, turtles, bottle-nose dolphin, and manatees access to the lagoon.

The Atlantic Intracoastal Waterway (completed in 1941) and the maintained inlets have reduced flushing, increased dilution, and altered the natural circulation patterns within the lagoonal system. Other major changes include; mosquito impoundments, which have isolated large tracts of wetlands from the lagoon, finger canals, causeways, and other lands created by dredge and fill activities.

E. WATER QUALITY

In the Hobe Sound to Jupiter Inlet segment, there are no wastewater treatment facilities nor package plants that discharge into the lagoon; however, most of the area's residences are connected either to septic tanks or a central sewer system. Septic tank leachates represent a potential non-point source of pollution.

Other potential sources of pollution include seven marinas, several multi-slip facilities, and a number of liveaboard vessels associated with two open water sites in Jupiter Sound.

Despite these problems, this segment of the Indian River Lagoon is still a relatively productive system when compared to more populated areas to the south and on the west coast of Florida. The presence of good water quality is largely a function of Jupiter Inlet, one of two natural inlets along the east coast of Florida. As evidenced by the implementation of the Indian River Lagoon Surface Water Improvement Management (SWIM) Plan, the growth experienced in past decades has now reached a level where water quality considerations have become critical.

F. BIOLOGICAL COMMUNITIES

The fisheries of the Indian River Lagoon are a major reason for its designation as an aquatic preserve. The lagoon is a valuable nursery area for fishes, shrimps, and crabs caught

commercially and recreationally in the Atlantic Ocean. Other species not directly important to commercial fishing but necessary to its ultimate food chain also depend on the lagoon and the diversity of habitats within. For resident and transient species, habitat communities, such as seagrass beds, mangrove fringes, algal beds, marshes, tidal flats, and deep-water areas provide refuge from predation and from extremely adverse environmental conditions, such as drought, storms, and the effects of development-related activities. Other habitat benefits include sites for feeding, resting, and mating.

The Hobe Sound to Jupiter Inlet segment is utilized by over 50 species of fish, including snook and redfish, as well as manatees, marine turtles, porpoises, wading birds and ospreys. This is largely due to the diversity and availability of a number of biological communities contained in this segment: seagrasses (six species), mangroves, marine macroalgae, salt marsh, and tidal flats. Each community that follows is presented separately, although in reality these communities are interdependent.

1. SEAGRASS BEDS

Seagrasses are submerged vascular plants that perform many valuable functions within the estuary. They stabilize sediments, entrap silt, recycle nutrients, and provide shelter, habitat, and substrate for animals and other plant forms. They also function as nursery areas for juvenile forms of shellfish, provide a food source for the endangered West Indian manatee (Trichechus manatus) and serve as a substrate for the many species of epiphytic algae eaten by invertebrates, which are in turn eaten by fish (Wood et al., 1969; Odum, 1974). Many commercially and recreationally important fishes spend at least part of their lives in these beds (Zieman, 1982), and seagrass patches near inlets may be especially important in keeping larval and juvenile fish from being passively washed back into the ocean during the falling tides. The invertebrate fauna and algal flora associated with seagrass beds are rich and diverse, and collectively form an intricate biotic complex central to the ecology of the lagoon.

The most common species of seagrass found in the Hobe Sound to Jupiter Inlet portion of the lagoon are manatee grass (Syringodium filiforme) and Cuban shoal grass (Halodule wrightii). Other seagrasses found in this segment include turtle grass (Thalassia testudinum), Johnson's seagrass (Halophila johnsonii), paddle grass (Halophila decipiens), and star grass (Halophila engelmannii) (Thompson, 1976; Eiseman and McMillan, 1980). One of these species, Johnson's seagrass, has been recommended by the Florida

Natural Areas Inventory (FNAI) for designation as a rare and endangered native plant.

The dense seagrasses are usually found in areas with a fairly constant salinity and water depths averaging less than seven feet (Thompson, 1976); hence, the more extensive seagrass beds in the Hobe Sound to Jupiter Inlet segment are closer to the inlet and along both shorelines. Seagrass coverage, density, and diversity vary seasonally, yearly, and possibly in longer cycles. Seagrasses are negatively affected both directly and indirectly from dredge and fill operations, water quality degradation and, to some extent, boating activities. Recent research throughout the Hobe Sound segment has been conducted to assess the sensitivity of seagrasses to the various disturbances associated with boating activities (Kenworthy et al., 1987).

Seagrass beds are an extremely important vegetative community and will be used as a key indicator in measuring the biological condition of the aquatic preserve. Since there has already been an estimated 30% loss of seagrass in the Indian River Lagoon since the 1950's (Haddad and Harris, 1985), protection of seagrasses will be a major consideration in the field and administrative review of use proposals. Maps of the seagrass beds are contained in Appendix B.

2. MANGROVES

Mangroves perform a variety of ecological roles. Two species form specialized above-ground root structures (the prop roots of red mangroves and the pneumatophores, or aerating root spikes, of black mangroves) which form extensive tangles that stabilize and accrete sediments along the shoreline and limit erosion. The underground roots of all mangrove species also serve to stabilize the shoreline. The leaves contribute an important detrital component in the nutrient cycle in tropical and subtropical marine systems (Heald and Odum, 1970; Odum et al., 1982; Lewis et al., 1985). The above-ground "prop" roots of the red mangrove function as habitat for a variety of invertebrates and vertebrates (Savage, 1972), while the mangrove canopy functions as a bird rookery.

Four species of mangrove are found in Florida's marine environment: red mangrove (Rhizophora mangle), black mangrove (Avicennia germinans), white mangrove (Laguncularia racemosa), and buttonwood (Conocarpus erectus). All four species are represented in this segment of the preserve. In general, red mangroves, which occur both in and near the water at the low-tide level, are dominant in this area. Black mangroves tend to occur just landward of the red mangroves, while white mangroves and buttonwoods are found

upland of the black mangroves. While there is some evident zonation among mangrove species, it is important to bear in mind that the zones can and do overlap. There are four major factors that limit the distribution of mangroves: temperature, salinity, tidal fluctuation, and substrate (Odum et al., 1982). In the Hobe Sound to Jupiter Inlet segment, these factors have allowed mangroves to establish as the dominant shoreline vegetation, especially along the eastern side of this segment. Other plant species associated with the mangroves in the preserve include smooth cordgrass (Spartina alterniflora), salt grass (Distichlis spicata), sea purslane (Sesuvium portulacastrum), sea daisy (Borrchia frutescens), and sea lavender (Limonium carolinianum).

Existing and establishing mangroves are susceptible to both natural and human-induced disturbances. The natural disturbances can be in the form of freezing temperatures, hurricanes, the formation of new inlets, and changes in sea level. Human-induced changes include the conversion of extensive mangrove wetlands into mosquito impoundments, dredge and fill activities, shoreline alteration through the construction of seawalls, trimming or removal in order to access or view the adjacent waterway, and erosion attributable to human activities (i.e., boat wakes). Impacts to mangrove systems resulting from alteration of upland drainage patterns are not well understood and require additional studies.

It is estimated that there has been an 86% loss of mangroves in the Indian River Lagoon since the 1950's, primarily through the creation of mosquito impoundments (Haddad and Harris, 1985). Protection of the extensive mangrove communities in the preserve will, therefore, be a major task of this plan's management activities. The specific objectives and tasks regarding this resource are addressed in Chapter VII.

3. ALGAE

Algae represent the non-vascular vegetation in the Indian River Lagoon. There are over 60 species of red, brown, and green algae that grow in the sediment, attached to seawalls or rip-rap, or attached to seagrasses. Some of these algal species can begin as attached forms and eventually break off to form drifting algal mats that become substrata for numerous invertebrates, associated algae, and fish. The drift algae communities may provide better refuge for many organisms than do seagrasses (Eiseman and Benz, 1975; Benz et al., 1979; Gore et al., 1981; Kulczycki et al., 1981; Virnstein and Howard, 1987).

The common algal species in the Hobe Sound to Jupiter Inlet segment of the lagoon include: Dictyota bartayresii, Padina sanctaegrucis, Acetabularia crenulata, Caulerpa sertularioides, C. racemosa, C. prolifera, Penicillis capitatus, Gracilaria spp., and Halimeda spp.

Because aggregates of attached algae exhibit many of the ecological attributes associated with seagrasses (Nelson et al., 1989), this community should be afforded a similar level of protection. Chapter VII addresses the specific objectives and tasks toward this end.

4. MARSHES

The term "marsh" covers a variety of habitats, the species composition of which is largely determined by small differences in elevation. Two major categories of marsh are high marsh and low marsh. High marshes represent areas that receive the least amount of tidal inundation and are characterized by salt grass, sea purslane, sea daisy, saltwort (Batis maritima), and glasswort (Salicornia virginica). Low marshes are more frequently inundated, and the dominant vegetation is smooth cordgrass.

In the Hobe Sound to Jupiter Inlet segment of the preserve, marsh habitats are generally small in size and patchy in distribution. Marsh habitat development may be minimized by the small tidal range for this segment of the lagoon which averages approximately one foot with greater elevations occurring nearer the inlet. The only significant amount of high marsh is located in the Hobe Sound National Wildlife Refuge, where there has been no upland development. The low marsh habitats, when present, are in small, discrete patches on both shorelines.

Marsh communities recycle nutrients, contribute to estuarine productivity, function as a natural filtration system for runoff, and provide shelter and habitat for a variety of animal life. Protection of the remaining marshes will be outlined in Chapter VII.

5. TIDAL FLATS

Tidal flats describe a wide variety of shallow habitats. They may consist of lagoonal beaches, areas waterward of the mangroves, spoil areas, and natural shoals. These tidal areas are utilized by a variety of shore birds which feed on the numerous invertebrate species inhabiting the flats. Such birds often form extensive nesting colonies in adjacent upland areas. Successful breeding may be linked to both the vitality of the flats and to their undisturbed access. In addition to using the flats as feeding sites, many birds use them as resting or "loafing" areas (Barnett et al., 1980).

Tidal flats are a conspicuous and important component of the lagoonal system, although the small tidal range minimizes their development as habitat. The focus for protection of tidal flats is their use as habitat by the bird population. Specific implementation of the appropriate management objectives is addressed in Chapter VII.

G. DESIGNATED SPECIES

The combination of a subtropical climate and diverse habitats in the Indian River Lagoon has resulted in the survival of many species of plants and animals designated for protection by the U.S. Fish and Wildlife Service, the Florida Game and Fresh Water Fish Commission, the Florida Department of Natural Resources, and the Florida Natural Areas Inventory. Some representatives, like Johnson's seagrass and the common snook (Centropomus undecimalis), are found throughout the Hobe Sound to Jupiter Inlet segment.

The Indian River Lagoon system is considered an important developmental habitat for juvenile and subadult green turtles (Chelonia mydas) and loggerheads (Caretta caretta), two species commonly found throughout the lagoon. In addition, there are several recent records of Kemp's ridley (Lepidochelys kemp) from the northern segment of the lagoon (Brevard/Volusia counties). Leatherbacks (Dermodochelys coriacea) are not believed to purposefully enter the lagoon system, though dead or injured specimens have been found in close proximity to ocean inlets. There are no known records of hawksbill turtles (Eretmodochelys imbricata) from the lagoon system.

Within the Hobe Sound to Jupiter Inlet segment, marine turtles have been documented by the Florida Sea Turtle Stranding and Salvage Network (STSSN). A review of the database revealed ten reported sightings in this segment since 1980 (six since 1988). It is important to note that data collection efforts have improved greatly since 1980, although inshore areas are still patrolled infrequently and carcasses are generally less visible there. Of the ten turtles reported to the STSSN, there were six loggerheads, two green turtles, one leatherback, and one unidentified turtle. Six of the ten strandings sustained propeller/boat collision injuries.

Comprehensive studies of marine turtles in this specific segment of the preserve have not been conducted; however, data from the STSSN, undocumented sighting reports, and data from more northerly segments of the lagoon suggest that this segment is important to juvenile and subadult marine turtles. Seagrasses and algae are the principal sources of food for the herbivorous green turtle. Both of these resources are prevalent throughout this segment of the lagoon. Loggerheads

are principally feeding on various invertebrates found throughout the lagoon.

Another designated species utilizing this segment of the lagoon is the West Indian manatee. A 1988 report by the Marine Mammal Commission has identified both Hobe Sound and Jupiter Sound as important manatee habitat. Specifically, these two areas provide feeding and resting habitat for overwintering manatees (Packard, 1981; Packard, 1984). Other portions of the Hobe Sound to Jupiter Inlet segment are used as corridors by these mammals as they travel along the Atlantic Intracoastal Waterway (AIW). In the interest of manatee protection, Chapter 16N-22, F.A.C., (the Florida Manatee Sanctuary Act) establishes a slow-speed zone for November 15 to March 31 that extends from the St. Lucie Inlet south to Jupiter Inlet. This zone does not include the AIW.

H. ARCHAEOLOGICAL AND HISTORICAL RESOURCES

The Indian River Lagoon area has a long history of Indian activity. The main Indian occupants were the Ais tribes. The Jeaga Indians, considered to be cousins of the Ais, occupied a few scattered villages in the area. These Indians were primarily hunter-gatherers, taking advantage of the rich fishery resources of the Indian River and Atlantic Ocean. The demise of these early tribes in the 1700's led to speculation that they had been replaced by the Spanish and by the Seminole Indians migrating into the area from the north. From the 1880's on, early settlers used many of the Ais Indian shell mounds for road construction; today, few artifacts are left in the area (Rights, 1982). Most of the remaining material is located in the Hobe Sound National Wildlife Refuge.

Fort Jupiter, near Pennock Point, is just one in a chain of forts established by the U.S. Army during the Seminole Wars. General Thomas Jessup and Lt. Benjamin Pierce battled the Seminole Indians in the area, eventually forcing many of them to take refuge in the Everglades (Tebeau, 1972).

CHAPTER IV

REGIONAL LAND USE AND DEVELOPMENT

A. ADJACENT UPLAND USES

Based on existing development conditions, the adjacent upland uses in this segment of the preserve are categorized as follows: single-family residences, multi-family residences, commercial, public recreation, and preservation. These broad categories identify the general upland use adjacent to state-owned submerged lands and do not reflect county and municipal zoning terminology.

Single-family residential: There are two single-family residential communities located on the barrier island. The Town of Jupiter Island, from County Road 708 south to the Martin/Palm Beach county line, is characterized by residential development in the form of single-family houses on lots ranging from one to five acres. The Town of Jupiter Inlet Colony is located at the southern end of Jupiter Island. This single-family residential community is completely developed along the waterfront. On the mainland, there are two single-family residential areas in this segment of the lagoon. One area consists of a group of homes at the northern end of Hobe Sound; the other area is located between the Hobe Sound National Wildlife Refuge and Conch Bar. As with both municipalities on the barrier island, these areas are at or close to development completion.

Multi-family residential: There are two multi-family residential areas present at the southern end of this segment of the preserve. One area is located on the barrier island between the Martin/Palm Beach county line south to State Road 707. The other area is located on the mainland between the Martin/Palm Beach county line south to the Coast Guard station. As with the single-family areas, these multi-family residential areas are at or close to development completion.

Commercial: There are two commercial areas located in this segment of the preserve. One is a large commercial/mixed use area on the mainland located between Conch Bar south to the Martin/Palm Beach county line. This area is currently composed of several marinas, yacht brokers, retail shops, trailer parks, and single-family residences. It is the one upland parcel in this segment of the preserve anticipated for further development. The other area consists of a small marina located on the barrier island between State Road 707 and the Town of Jupiter Inlet Colony.

Public Recreation: This category includes upland usage by the general public at no charge as well as federal, state, county, or municipal parks that charge a nominal fee. This category also includes military property since the buildings and grounds are designated as public facilities by the local governments in this region.

Coral Cove Park, a 4.6-acre county park located on Jupiter Island, is primarily an oceanside recreation area with no structures on the lagoon side. Recently, Palm Beach County has added two parcels to Coral Cove Park. These additional parcels, totaling 28.2 acres in size, were purchased by the state through Save Our Coasts funds and subsequently leased to the county. With increasing population and further development in this region, this area will probably receive heavier use in the future.

The Jupiter Inlet U.S. Coast Guard Station, located on the mainland, is bordered on the east by the Indian River Lagoon and on the south by the Loxahatchee River. The eastern shoreline is comprised of a high bluff, with no ready access to water. The southern shoreline, which is not in the aquatic preserve, has an existing docking structure. According to a Coast Guard representative, it is unlikely that the status of this parcel will change before the year 2000.

Preservation: There are two undeveloped tracts of land designated as preservation that abut this segment of the preserve. The Hobe Sound National Wildlife Refuge, located of the mainland, has an extensive natural shoreline. The refuge is under management by the U.S. Fish and Wildlife Service. Blowing Rocks Preserve, located on the barrier island, also has an extensive natural shoreline. The preserve, owned and managed by the Nature Conservancy, is primarily an oceanside preservation area that receives over 100,000 visitors annually.

B. USES OF THE PRESERVE

The uses of the Hobe Sound to Jupiter Inlet segment of the preserve can be divided into five general categories: private, commercial, public utilities, public recreation, and open water.

Private: Private uses are reflected in the many docks associated with single-family residences, several condominiums, two trailer parks, community fishing piers, and one private yacht club located on Jupiter Island.

Commercial: There are six marinas and a dive shop located in the commercial area along Jupiter Sound. Other commercial uses include the Outboard Marine Corporation (OMC), an outboard motor company based in Stuart, that test-drives their engines throughout the Indian River Lagoon, including this segment of the preserve. There is very little commercial fishing in this area. Since this segment of the lagoon is classified as "unclassified" for harvesting oysters or clams, there are no shellfish leases approved under Chapter 370, F.S., nor can any oyster or clam aquaculture leases be issued under Chapter 253, F.S.

Public utilities: In providing utility services from the mainland to Jupiter Island, there are at least seven subaqueous cables and/or pipes that cross this segment of the preserve.

Public recreation: The Hobe Sound to Jupiter Inlet segment of the lagoon is almost entirely used for recreational boating and fishing, jet skiing, and water skiing. Public access points consist of one boat ramp located in Hobe Sound. The Atlantic Intracoastal Waterway (AIW) is heavily used by boats as a navigation route to access other portions of the lagoon as well as inlets located to the north and south.

Open Water: There are two open water areas used for mooring within Jupiter Sound (Martin County) that are currently occupied by vessels, some of which are liveaboards. Each site has a deep water basin (~8' at MLW) bordered by shallow sand bars or tidal flats. This configuration protects the moored vessels by dampening wave action generated from boats traveling in the AIW.

C. PLANNED USE

Most of the residential and commercial parcels are developed and their current use is not expected to change substantially by the year 2000. The Local Government Comprehensive Plans (LGCP) deal specifically with the projected upland use, but as this region's population increases, there will be a concomitant increase in the public and private usage of this segment of the preserve.

The U.S. Census population figures for Martin and Palm Beach counties reflect an increase in total numbers from 1970 to 1980. Annual population estimates are produced by the Bureau of Economic and Business Research (University of Florida) for the state's counties and municipalities. The estimated 1989 information for Martin and Palm Beach counties, provided by the Treasure Coast Regional Planning Council, is as follows:

Total Resident Population

<u>County</u>	<u>1970</u>	<u>1980</u>	<u>1989</u>
Martin	28,035	64,014	96,636
Palm Beach	348,993	576,758	865,507

Percent Increase in Total Population

<u>County</u>	<u>1970-1980</u>	<u>1980-1989</u>
Martin	+128.3%	+51.0%
Palm Beach	+ 65.3%	+50.1%

These dramatic increases in population growth affect water resources and wildlife habitat and, generally, increase the potential for environmental degradation. Once adopted, Martin and Palm Beach counties Local Government Comprehensive Plans (LGCP) will guide the future development of each respective county, thereby, preventing these potential problems.

The Aquatic Preserves Program reviewed the LGCP for both counties to determine if the local governments were proposing environmental safeguards with regard to the development of boating services (e.g., ramps, marinas). Though both counties recognize shortages in boating facilities to adequately serve their respective needs, the LGCPs include environmental constraints that are designed to preserve and protect natural resources.

CHAPTER V
MANAGEMENT AREAS

A. INTRODUCTION

This chapter divides the Hobe Sound to Jupiter Inlet segment of the aquatic preserve into separate management areas and delineates the general or special rule criteria for allowable uses (e.g., activities and structures) associated with each area. Each management area is classified by the value of natural and cultural resources (e.g., types, occurrence) on submerged lands adjacent to the differing types of upland use (e.g., residential, commercial).

The purpose of this chapter is four-fold: (1) to provide a better understanding of the general and special rule criteria designed to preserve and protect resources and habitat, (2) to identify the types of allowable uses on state-owned submerged lands within a preserve, (3) to provide local planners with a guide for land use decisions, and (4) to provide both the staff of the Bureau of Submerged Lands and Preserves and other agencies a continuity of direction in the management of this segment of the lagoon. As such, this intent will afford habitat protection while lending some measure of predictability for allowable public and private uses in the aquatic preserve.

Prior to providing the criteria for specific resource management areas, it is important that the intent, jurisdiction, and limitations of Florida's Aquatic Preserve Program be reiterated. Section 258.36, F.S., states that "It is the intent of the Legislature that the state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value...be set aside forever as aquatic preserves or sanctuaries for the benefit of future generations." The program has jurisdiction over the use of state-owned submerged lands within the boundaries of a given preserve. Activities which occur outside the boundaries of an aquatic preserve or which do not directly affect state-owned submerged lands are not within the jurisdiction of the Aquatic Preserve Program (e.g., adjacent upland uses, regulation of commercial fishing).

There are a number of differences between the rules governing uses of state-owned submerged lands within an aquatic preserve relative to those not within an aquatic preserve. The principal difference is that submerged lands within an aquatic preserve are managed with the intent of protecting them for future generations. Consequently, any proposed use or activity must be shown to be in the public interest and must demonstrate that no other alternative exists which would allow

the proposed use or activity to be constructed or undertaken outside the boundaries of an aquatic preserve.

B. MANAGEMENT AREA CLASSIFICATIONS

A key component of the management program for any aquatic preserve is the division of the preserve into management areas. The classification of management areas in an aquatic preserve is based upon the resource value of submerged lands within the preserve associated with existing and future land uses on the adjacent uplands as designated in the local government comprehensive plan(s). As in the delineation of upland uses through zoning, the delineation of a preserve into management areas is two-fold: (1) to identify areas of public and private uses, and (2) to provide standards with which proposed uses and activities must comply. The intent of these management area classifications is to make potential development activities compatible with resource protection goals.

Designated land uses are incorporated into the classification of management areas because use of the adjacent uplands has a direct bearing on the intensity of demand for uses of state-owned submerged lands. The Aquatic Preserve Program has no jurisdiction over the designated use of the adjacent uplands. The incorporation of a designated land use into the management area classification is simply an acknowledgement of a local government's decision as to how a specific upland area can be developed. Specific land uses to be incorporated in the classification of management areas include:

Agriculture (AG): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as agriculture. It is intended to include sparsely populated areas used primarily for agricultural and/or forestry purposes.

Single-Family (SF): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as single-family residential. It is intended to include areas using the adjacent portion of the preserve solely for private recreational activities.

Multi-Family (MF): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as multi-family residential. It is intended to include areas where more than one private residence are using the adjacent portion of the preserve solely for private recreational activities. The associated residences include townhouses, trailer parks, condominiums, apartments, and any other group of multi-

family dwellings. This category also includes a group of single-family property owners (i.e., homeowners association) that proposes to use state-owned submerged lands for the mutual benefit of the group.

Commercial-Industrial (CI): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as commercial or industrial. The category is also intended to incorporate uses associated with structures that charge fees or generate revenue. Examples of commercial uses include: marinas, restaurants, fish houses, and yacht clubs that charge membership fees.

Public Recreation (PR): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as public recreation/preservation and is utilized for the purposes of public recreation. It is intended to include (1) areas where structures are used by the general public at no charge and (2) federal, state, and municipal parks that charge a nominal fee. Military property, while not always open to the public, is included in this category since the buildings and grounds are often designated as public facilities.

Preservation (P): This category represents state-owned submerged lands adjacent to land designated on a future land use map for a county and/or municipality as preservation. Upland ownership can be either public or private.

Each of the land use classifications listed above is assigned an appropriate number to identify the resource value of the adjacent submerged lands. The methodology used to determine this resource value shall be consistent with the latest methodology approved by the Bureau of Submerged Lands and Preserves.

If an area within the preserve is identified as a **Primary Resource Protection Area (PRPA)**, then it will be assigned a resource value of "1". A PRPA essentially combines Resource Protection Areas 1 and 2, as defined in Sections 18-20.003(31), and 18-20.003(32), F.A.C. Resource attributes which determine a PRPA include:

1. non-exotic and non-invasive aquatic/wetland vegetation (e.g., marine and fresh water grasses, attached algae, mangroves, marsh vegetation, cypress, and mixed hardwoods) that covers more than 1% of the surveyed area;
2. harvested bivalves (e.g., hard clams and oysters) with a clam frequency of 20% or greater within the surveyed area

or oyster bars with a total surface area greater than five square meters;

3. unvegetated soft-bottom communities (i.e., infaunal invertebrates) with a Shannon-Weaver Diversity Index greater than 1.00;
4. hard-bottom communities (e.g., corals, worm reefs, rock outcrops) that have a frequency greater than 5% within the survey area;
5. species designated as endangered, threatened, or of special concern (as contained in the latest updates of the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service) that use the area for habitat (e.g., feeding, refuge, mating, breeding, or nesting);
6. nesting sites for solitary or colonial birds.

Submerged areas that are characterized by the absence of the above resource attributes will be identified as a **Secondary Resource Protection Area (SRPA)** and assigned a resource value of "2". A SRPA is a Resource Protection Area 3 as defined by Section 18-20.003(33), F.A.C.

As stated previously, resource values are to be incorporated into the classification of management areas. For instance, if a submerged area within the preserve is determined to have a resource value of 1 and the adjacent uplands is zoned as single-family residential (SF), then this management area would be classified as **SF/1**.

In the following section of this chapter, minimum criteria are outlined for a number of uses and activities that can occur in this segment of the preserve. These minimum criteria, provided by Chapter 18-20, F.A.C., apply to the uses and activities designated for each management area.

C. MINIMUM CRITERIA FOR ALLOWABLE USES

Chapter 18-20, F.A.C., provides the minimum standards with regard to the utilization of state-owned submerged lands within an aquatic preserve. The minimum standards for each allowable use are detailed below.

All Dock Structures: Section 18-20.004(5)(a), F.A.C., states that all docking facilities within an aquatic preserve shall meet 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 % of the width of the waterbody at that particular location, whichever is less;

2. areas of significant biological, scientific, historic, and/or aesthetic value require special management considerations. Modifications to docks in these areas may be more restrictive and shall be determined on a case-by-case basis;
3. the number, lengths, drafts, and types of vessels allowed to utilize the proposed facility may be stipulated;
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.

Additional policies include all docking structures to access a depth of -4 feet at mean low water (MLW) and a reduction in the width of a terminal platform to 4 feet wide if the platform is over seagrasses. This reduction will not affect the overall area of the terminal platform.

Private Residential Single Docks: Section 18-20.004(5)(b), F.A.C., states that private residential single docks, as defined by Section 18-20.003(23), F.A.C., shall conform to the following specific design standards and criteria:

1. any main access pier shall be limited to a maximum width of four feet;
2. must be designed and constructed to ensure maximum light penetration;
3. can extend from the shoreline to a maximum depth of -4 feet at (MLW);
4. when the water depth is -4 feet MLW 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 shall be designed to allow for maximum water circulation and built in such a manner as to be part of the dock structure;
6. the maximum size of the terminal platform shall be 160 square feet;
7. dredging to obtain navigable water depths is strongly discouraged.

In the interests of clarification, the term "private residential single docks" refers to those docks associated with single-family residences that are used for private recreational purposes.

Private Residential Multi-Slip Docks: Section 18-20.004(5)(c), F.A.C., states that private residential multi-slip docks, as defined by Section 18-20.003(24), F.A.C., shall conform to the following 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 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 Areas 1 and 2 (= PRPA), except as allowed pursuant to Section 258.42(3)(e)1, F.S., while dredging in Resource Protection Area 3 (= SRPA) shall be strongly discouraged;
3. water depths adjacent to and within the proposed mooring area shall have a minimum clearance of one foot between the deepest draft vessel and the submerged bottom at MLW;
4. main access piers and connecting walks shall not exceed six feet in width;
5. terminal platforms shall not exceed eight feet in width;
6. finger piers shall not exceed three feet in width and 25 feet in length;
7. pilings may be utilized as required to provide adequate mooring capabilities;
8. specific provisions of Section 18-20.004(5)(d), F.A.C., for commercial, industrial, and other revenue generating/income related docking facilities shall also apply to private residential multi-slip docks.

Commercial-Industrial Docking Facilities and Marinas: Section 18-20.004(5)(d), F.A.C., states that commercial, industrial, and other revenue generating/income related docking facilities, as defined by Section 18-20.003(10), F.A.C., shall conform to the following specific design criteria and standards:

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

2. docking facilities shall not be located in Resource Protection Areas 1 and 2 (= PRPA); however, main access piers may be allowed to pass through Resource Protection Area 1 or 2 that are located along the shoreline to reach an acceptable Resource Protection 3 (= SRPA), provided that such crossing will generate minimal environmental impact;
3. the siting of docking facilities shall take into account the access of boat traffic to avoid marine seagrass beds or other aquatic resources in the surrounding area;
4. the siting of new facilities within the preserve shall be secondary to the expansion of existing facilities when such expansion is consistent with other standards;
5. 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;
6. marina siting will be coordinated with local governments to ensure consistency with local plans and ordinances;
7. marinas shall not be sited within state designated manatee sanctuaries;
8. 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.

Exceptions to the standards and criteria for any docking facility may be considered, but only upon demonstration that such exceptions are necessary to ensure reasonable riparian ingress and egress.

Sale, Lease, or Transfer of Lands: Section 18-20.004 (1)(b), F.A.C., states that there shall be no further sale, lease, or transfer of sovereignty lands within an aquatic preserve unless such transaction is in the public interest. Section 18-20.004(2), F.A.C., specifically defines the public interest test (see Appendix A for a copy of Chapter 18-20, F.A.C.). Section 18-20.004(1)(e), F.A.C., states that 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 navigation channel; (3) installation or maintenance of approved navigational aids; (4) creation or maintenance of a commercial/industrial dock, pier, or marina; (5) creation or maintenance of private docks; (6) minimum dredging of navigation channels attendant to docking facilities; (7) creation or maintenance of shore protection structures; (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 and quantity of the preserve and which are consistent with the Florida Aquatic Preserves Act (Sections 258.35 - 258.46, F.S.). Section 18-20.004(1)(f), F.A.C., states that structures to be built in, on, or over sovereignty lands are limited to those necessary to conduct water-dependent activities.

Utility Easements: Section 18-20.004(3)(c), F.A.C., states that utility cables, pipes, and other such structures shall be constructed and located in a manner that will cause minimal disturbance to submerged resources (e.g., seagrass beds, oyster bars) and do not interfere with traditional uses. It will be the policy to place additional utilities into designated corridors or existing easements within the Hobe Sound to Jupiter Inlet segment of the aquatic preserve if no other reasonable alternative exists.

Spoil Disposal: Section 18-20.004(3)(d), F.A.C., states that spoil disposal within an aquatic preserve shall be strongly discouraged and may be approved only where the applicant has demonstrated that there is no other reasonable alternative and that the spoiling activity may be beneficial to, or at a minimum, not harmful to the quality or utility of the preserve. It will be the policy to prohibit spoil disposal onto a PRPA within the Hobe Sound to Jupiter Inlet segment of the aquatic preserve.

Piers: Piers shall be constructed in accordance with the minimum criteria provided by Section 18-20.004(5)(b), F.A.C. In addition, the following conditions apply to all piers: (1) the entire structure will be elevated to a minimum of 5 feet above the MHWL, (2) hand rails will be installed around the perimeter of the structure, (3) at least one "Docking Prohibited" sign will be posted and maintained on each side of the pier, (4) no temporary or permanent mooring of vessels will be permitted, and (5) dredging is prohibited when associated with pier construction and maintenance.

Ramps: Boat ramps will be reviewed on a case-by-case basis. Determining factors to be reviewed include: (1) the elimination or alteration of natural resources or habitat (e.g., seagrasses, shoreline vegetation, nesting areas), (2) the amount of dredging and/or filling of submerged lands, and (3) accessibility to the ramp from water and land routes.

Additional criteria for the repair, replacement, and expansion of existing structures are provided for in Chapter 18-21, F.A.C. Replacement and expansion of structures must comply with the minimum criteria provided for in Chapter 18-20, F.A.C.

Criteria more restrictive than those listed in Chapter 18-20, F.A.C., will be used if the biological and physical conditions of an area warrant it. As an example, docks may be limited in size to protect seagrasses. Areas requiring more stringent criteria will be referred to as special management areas and such areas will be labeled with the additional letter "a". Again, as an example, if management area SF/1 requires more restrictive criteria, then this special management area would be classified as SF/1a.

D. MANAGEMENT AREAS

In this section, each management area is delineated with boundaries, descriptions, and allowable uses. Specific criteria and supporting rationale for each special management area are also provided. Due to changes that may occur from the rezoning of adjacent uplands and altering biological conditions on submerged lands, the final decision on approving, modifying or denying uses of the submerged lands within the preserve will be made based on field surveys and assessments of project sites. Figure 4 (page 47) is a map of all management areas within this segment of the preserve. The purpose of providing this map is to give some general guidance and an understanding of where the management areas lie within this segment. Appendix C provides detailed maps of each designated management area.

For the purposes of this plan, the following conditions will apply: (1) the Atlantic Intracoastal Waterway (AIW) is exempt from aquatic preserve rules and regulations, pursuant to Section 258.42, F.S., and functions only as a boundary between management areas; and (2) certain activities are generally permissible in all management areas. These activities include shoreline stabilization, maintenance dredging, and maintenance of channel markers.

Some management areas may have a specific activity occurring within that is not reflective of the overall upland use. As an example, an upland parcel consists of a marina surrounded by single-family homes adjacent to extensive seagrasses. The marina may have preceded residential development and the aquatic preserve designation; therefore, it would be unreasonable to remove the facility. Marina expansion and new commercial-type activities, however, will not be allowed in this management area because of the presence of seagrasses and/or the upland zoning restrictions. In such cases, the specific activity will be recognized as a "non-conforming use". This term simply recognizes the specific activity as such and is not to be interpreted as a termination of vested rights should a change in ownership occur nor does it imply that future non-conforming uses will be allowed.

MANAGEMENT AREA SF/1

(Single-Family/Primary Resource Protection Area)

There are two designated areas in this category.

Boundaries: From the western MHWL and along County Road 708 proceed east across the AIW to the eastern MHWL, continue south along the eastern MHWL to the Blowing Rocks Preserve's northern boundary, follow the extension of the preserve's northern boundary west to the AIW, continue north along the AIW to the intersecting extension of U.S.1 and Conch Bar Road, follow this extension west to the western MHWL, proceed north along the western MHWL to the extension of the Hobe Sound National Wildlife Refuge's southern boundary, follow the extension east to the AIW, continue north along the AIW to the extension of the refuge's northern boundary, follow this extension west to the western MHWL, and thence north along the MHWL to the Point of Beginning (POB).

Boundaries: From the AIW and along the extension of the Blowing Rocks Preserve's southern boundary proceed east to the MHWL, continue south along the MHWL to the Martin/Palm Beach county line, follow the county line west to the AIW, and thence north along the AIW to the POB.

Description: This area is characterized by sparse to dense seagrass beds in association with varying shoreline conditions (e.g., natural, riprap, seawalls). Coverage by Halophila is much greater in Hobe Sound than in other areas to the south. According to a two-year seagrass/manatee study conducted by National Marine Fisheries Service/U.S. Fish and Wildlife Service/DNR, the Hobe Sound area represents ephemeral habitat for Halophila which covers 60% - 80% of the remaining substrate not covered by the other seagrass species. This area has also been documented as feeding and resting habitat for the West Indian manatee. The adjacent uplands consist of low-density, single-family residences, many of which are zoned as "estate" residences. The majority of these upland parcels have single-family docks while other properties have nonwater-dependent structures (i.e., boathouses) associated with them. At the northwest end of this area is an unmanaged mosquito impoundment and a shallow water cove adjacent to the AIW. Non-conforming use features include two residential community fishing piers, one marina associated with the Jupiter Island Club, and one public boat ramp. There are also four utility crossings in this management area.

Allowable uses: Private residential single docks; piers; utility easements

MANAGEMENT AREA SF/2

(Single-Family/Secondary Resource Protection Area)

Boundaries: From the AIW and along the State Road 707 bridge proceed east to the MHWL, continue south along the MHWL to the intersection of Jupiter Inlet and the Indian River Lagoon, follow this intersecting segment west to the AIW, and thence north along the AIW to the POB.

Description: This area is characterized by a few small patches of seagrass and clumps of mangroves and marsh grass south of the State Road 707 bridge. The sparse seagrass coverage may be due to the strong currents associated with nearby Jupiter Inlet. The shoreline varies from natural unaltered areas to seawalls and riprap. The adjacent uplands is the Town of Jupiter Inlet Colony, a single-family residential community completely developed along its waterfront. This designated area also includes a commercial marina and a utility corridor located south of the bridge. The marina will be considered a non-conforming use. This narrow area of the lagoon represents a manatee travel corridor. The installation of water-dependent structures will be limited primarily by the proximity of the AIW. It is unlikely that this area will be developed further for the following reasons: (1) all the single-family residences have docks, (2) the only commercial facility is restricted in size by the conditions of its submerged land lease and the close proximity of the AIW, and (3) the Town of Jupiter Inlet Colony's Comprehensive Plan does not propose future land use changes that differ from current conditions.

Allowable uses: Private residential single docks; piers; utility easements

MANAGEMENT AREA MF/1

(Multi-Family/Primary Resource Protection Area)

There are two designated areas in this category.

Boundaries: From the AIW and along the Martin/Palm Beach county line proceed east to the MHWL, continue south along the MHWL to Coral Cove Park's northern boundary, follow the extension of this boundary west to the AIW, thence north along the AIW to the POB.

Boundaries: From the AIW and along Coral Cove Park's southern boundary proceed east to the MHWL, continue south along the MHWL to the State Road 707 bridge, follow the bridge west to the AIW, thence north along the AIW to the POB.

Description: These areas are characterized by dense seagrasses in shallow water. The northern area's shoreline is relatively undisturbed (clumps of mangroves and marsh grass) while the southern area's shoreline consists of a vertical seawall. Parallel to the seawall is an extensive tidal flat, two mangrove islands and one spoil island. Attached to the seawall is a multi-slip marginal dock. Between these tidal flats and the docking facility is a mooring basin connected to the AIW by a marked navigation channel. The basin contains several species of seagrass. The adjacent uplands for both areas consist of several condominium units, a number of which have existing structures. These designated areas represents a narrow portion of the lagoon and a manatee travel corridor. The installation of water-dependent structures will be limited by the presence of resources and/or the proximity of the AIW.

The submerged lands along the eastern shoreline may be privately-owned. If so, then the management criteria for allowable uses within the aquatic preserves would not apply.

Allowable uses: Private residential docks (a single two-slip dock built in accordance with standards and criteria for private residential single docks); piers

MANAGEMENT AREA SF-MF/1
(Multi-Family - Single-Family
/Primary Resource Protection Area)

Boundaries: From the MHWL and along the Martin/Palm Beach county line proceed east to the AIW, continue south along the AIW to the southern line of Section 30, proceed west along this section line to the MHWL, thence north along the MHWL to the POB.

Description: This area is characterized by dense seagrass beds in shallow water. An extensive tidal flat/sand bar parallels the AIW, making most of the northern portion of this area difficult to access by boat. Between the tidal flat and the shoreline is a shallow area covered with dense seagrass beds. Though most of the shoreline has been altered and replaced with vertical bulkheads, there is an extensive fringe of mangroves as well as some clusters of marsh grass present at the southern portion of this area. The waterway has been identified as a manatee travel corridor. The adjacent uplands are a mixture of condominiums and medium- to high- density, single-family residences. Many of the single-family residences have docks or piers. There are two man-made canals associated with this area.

Note: This management area classification combines the two upland categories because of a number of single-family and multi-family residences intermixed throughout this area.

Allowable uses: Private residential docks (a single two-slip dock built in accordance with standards and criteria for private residential single docks); piers

MANAGEMENT AREA CI/1

(Commercial-Industrial/Primary Resource Protection Area)

Boundaries: From the intersection of U.S. 1 and Conch Bar Road follow a line east to the AIW (the segment from the MHWL to the AIW forms the northern boundary); then continue south along the AIW to the Martin/Palm Beach county line, proceed west along the county line to the MHWL, and thence north along the MHWL back to the POB.

Description: This area of Jupiter Sound is characterized by extensive seagrasses and some relatively deep water areas. The shoreline is largely unvegetated with some areas either bulkheaded or riprapped or both. Seagrasses are present in both shallow and deep water. There are extensive tidal flats/sand bars paralleling the AIW. Between the flats and the shoreline are deep water areas that support several species of seagrass and algae. This system of sand bars appears to provide some level of protection to these areas by acting as a wave buffer and a barrier from boat traffic. This area has also been identified as feeding, resting, and cavorting habitat for manatees. The adjacent uplands are multi-zoned to account for existing commercial activities as well as private residences. Several revenue-generating facilities include five marinas and one dive shop. Additional commercial ventures include antique shops and real estate businesses (one with a helicopter pad/dock) along the waterfront. Residences include a number of single-family homes, one trailer park and one trailer park/marina.

Allowable uses: Private residential docks (a single two-slip dock built in accordance with standards and criteria for private residential single docks); piers

MANAGEMENT AREA PR/1

(Public Recreation/Primary Resource Protection Area)

There are two designated areas in this category; Coral Cove Park and the U.S. Coast Guard Station.

1. Coral Cove Park

Boundaries: From the AIW and along an extension formed by the park's northern boundary proceed east to the MHWL, continue south along the MHWL to the park's southern boundary, follow the extension of this boundary west to the AIW, and thence north along the AIW to the POB.

Description: This area is characterized by extensive seagrass beds inshore and a mangrove-fringed shoreline with several patches of marsh grass. The adjacent waterway represents a manatee travel corridor. Coral Cove Park is a county-owned park that includes two county-managed parcels known as the Coral Cove Park Additions. These two recent additions were purchased by the state with Save Our Coasts funds and subsequently leased to Palm Beach County. The county has recently submitted a plan to manage the existing park and the additions as a single unit. According to the management plan, the county proposes to construct a dock in order to provide waterfront access to the park. Non-conforming uses include two condominiums contained within the park boundaries. Aside from one existing multi-slip private residential dock, there are no other water-dependent structures.

Palm Beach County owns submerged land adjacent to Coral Cove Park. The two condominiums, one of which has an existing multi-slip dock, may own the submerged land adjacent to their parcels. If the county chooses to construct water-dependent structures on their submerged property, then the aquatic preserve rules would not apply. The same may be true for the condominium parcels. Should these submerged parcels be state-owned, then they would be subject to the provisions of Section 18-20.004(5)(c), F.A.C.

Allowable uses: Public docks (a single two-slip dock built in accordance with standards and criteria for private residential single docks); piers

2. U.S. Coast Guard, Jupiter Inlet Station

Boundaries: From the MHWL and along the northern line of Section 31 proceed east to the AIW, continue south along the AIW to its intersection with Jupiter Inlet, follow this intersecting segment west to the MHWL, and thence north along the MHWL to the POB.

Description: This area is characterized by patchy seagrasses north of the State Road 707 bridge and no seagrasses south of the bridge. The adjacent upland property, which is owned by the federal government (U.S. Coast Guard, Jupiter Inlet Station), is bisected by State Road 707. The entire shoreline is undeveloped with the area north of the bridge vegetated by

a narrow mangrove fringe and some marsh grass. This narrow portion of the lagoon represents a manatee travel corridor. There are no existing water-dependent structures in this management area; however, because of the narrow waterway, such structures represent a potential hazard to coastal navigation and an impediment to migrating manatees. The installation of water-dependent structures will be limited by the close proximity of the Atlantic Intracoastal Waterway (AIW).

Allowable uses: Pier

MANAGEMENT AREA P/1

(Preservation/Primary Resource Protection Area)

There are two designated areas within this category; the Blowing Rocks Preserve and the Hobe Sound National Wildlife Refuge. Each of these preservation areas are detailed below.

1. The Blowing Rocks Preserve

Boundaries: From the AIW and along the extension formed by the preserve's northern boundary proceed east to the MHWL, continue south along the MHWL to the preserve's southern boundary, follow the extension of this boundary west to the AIW, and thence north along the AIW to the POB.

Description: This area is characterized by extensive seagrass beds and dense mangroves fringing the shoreline. Additional submerged features include several rock ledges paralleling the shoreline. Associated with these ledges are a number of coral heads unique to the Indian River Lagoon. Normally, the ivory bush coral, *Oculina* spp., occurs offshore; however, the combination of clear oceanic water and suitable substrate allow these coral heads to establish and maintain themselves in the lagoon. Since this area is within Jupiter Sound, it is also manatee habitat. The Blowing Rocks Preserve is an oceanside preserve owned and managed by the Nature Conservancy. Located on Jupiter Island, the upland parcel extends from the Atlantic Ocean to the Indian River Lagoon. Currently, 95% of the low-impact activity associated with the preserve (e.g., tours, habitat restoration) is confined to the oceanside area. The Nature Conservancy's potential long-term plans include the establishment of an interpretive center and a native plant nursery west of the oceanside preserve. Though there are no existing water-dependent structures within the lagoon, the Nature Conservancy may construct a pier in order to conduct water-related activities such as skin diving field trips.

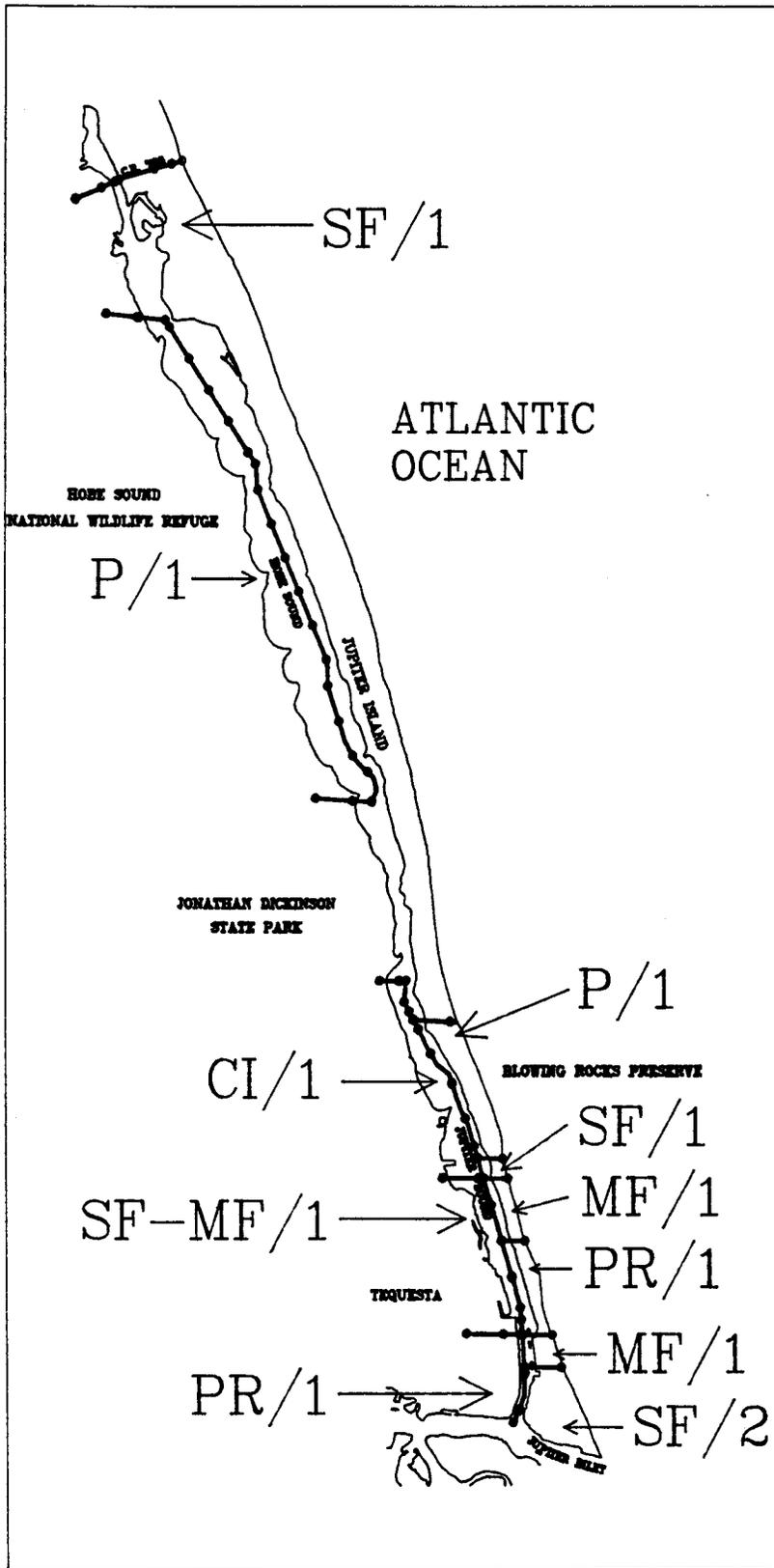
Allowable uses: Pier

2. The Hobe Sound National Wildlife Refuge

Boundaries: From the MHWL and along an extension of the refuge's northern boundary proceed east to the AIW, continue south along the AIW to the extension of the refuge's southern boundary, follow this extension west to the MHWL, and thence north along the MHWL to the POB.

Description: This area is characterized by relatively undisturbed habitat, both in the aquatic preserve and on the adjacent uplands. The submerged biological resources are represented by several species of seagrass and algae and the area has been documented as feeding and resting habitat for the West Indian manatee. The shoreline is primarily a sandy intertidal beach with some mangroves and high marsh. The Hobe Sound National Wildlife Refuge (HSNWR), located on the mainland, is managed by the U.S. Fish and Wildlife Service (FWS). There is an existing dock associated with the refuge.

Allowable uses: A single two-slip dock rebuilt in accordance with the standards and criteria for private residential single docks.



1 in = 1926 m.



— Mean High Water
 ●— Management Areas

- CI Commercial-Industrial
- MF Multi-Family
- P Preservation
- PR Public Recreation
- SF Single Family
- /1 Primary Resource Protection Area
- /2 Secondary Resource Protection Area

FIGURE 4 MANAGEMENT AREAS

CHAPTER VI

SITE-SPECIFIC MANAGEMENT ISSUES

The first part of this chapter deals with management issues involving specific activities, as opposed to permitted structures, that directly affect the biological integrity of the Hobe Sound to Jupiter Inlet segment of the Jensen Beach to Jupiter Inlet Aquatic Preserve. The issues that are specific to this area include, but are not limited to, increasing boat and jet ski traffic, the protection of designated species and their habitat, the protection of bird rookery habitat, and dredging. Other issues may arise as future use intensifies, and these will be identified as they develop. The second part establishes policy guidelines for these issues. These policy guidelines are intended to provide additional management direction and supplement those already set forth in Chapter 258, F.S., Chapter 18-20, F.A.C., or Chapter V of this plan.

A. MANAGEMENT ISSUES AND SPECIAL NEEDS

1. INCREASING BOAT AND JET SKI TRAFFIC

To some extent, all of the issues defined in this chapter involve the increasing boat traffic in the Hobe Sound to Jupiter Inlet segment of the lagoon. This entire segment of the lagoon is used intensively by boaters. Jet skis, which have become popular in recent years, also have their impact. As the population of Florida grows, the traffic from boats and jet skis is expected to increase.

This trend poses a number of problems, both from the standpoint of the expected impacts on the biological resources and from related safety issues. The biological aspects include: (1) an increase in turbidity, with the resultant loss of seagrasses sensitive to lowered levels of incident light penetration, (2) increasing risk of collisions with manatees, and (3) increasing disturbance of existing and potential roosting bird populations. The first of these issues is being addressed in a cooperative study conducted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service and DNR (Kenworthy et al., 1987). The other two issues are addressed separately below.

Safety issues primarily revolve around the dramatic increase in jet ski use in recent years. By their very nature, jet skis are fast and highly maneuverable, making them a potential hazard for boats, which are not as responsive.

2. PROTECTION OF DESIGNATED SPECIES

Species whose existence is threatened are currently designated by four agencies: the Florida Game and Fresh Water Fish Commission (GFWFC), 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 the level of protection given to various individual species reflects this orientation. For example, the GFWFC does not designate plant species, whereas the DACS addresses plants only.

Designated species are afforded some protection by other agencies as well. These measures do overlap and, thus, reinforce each other. The DNR is actively involved in protecting manatees and sea turtles, both of which are designated by the GFWFC and the FWS. The Marine Fisheries Commission (MFC) regulates the taking of certain salt water species which include the Florida lobster (Panulirus argus), the stone crab (Menippe mercenaria), snapper (Lutjanus spp.), yellowtail snapper (Ocyurus chrysurus), grouper (Epinephelus spp.), redfish (Sciaenops ocellatus), and snook. All of these species are present in this segment of the preserve. Some of the protected species are detailed in the following:

Manatees: The most recognizable, and perhaps the best known, of the designated animal species found in Hobe Sound and Jupiter Sound is the West Indian manatee. According to Chapter 16N-22, F.A.C., DNR affords the manatee some level of protection by imposing boat speed restrictions in certain areas of the coastal waters of Florida. The stretch of the lagoon from State Road 707 to County Road 708 has been classified as a "Slow Speed Zone, Channel Exempt Seasonally," which means that boats in this segment must travel at slow speeds outside the Atlantic Intracoastal Waterway (AIW) from November 15 to March 31. Boats traveling within the AIW are exempt from these restrictions. South of State Road 707 to the southern border of the aquatic preserve, the entire waterway is an "Idle Speed Zone" throughout the year. This classification restricts all boats to a minimum speed that still allows for maneuverability, either inside or outside the AIW.

Manatees are present year-round in the Hobe Sound to Jupiter Inlet section of the preserve; thus, the current seasonal slow speed zone outside the AIW is insufficient to protect them. The two documented manatee feeding sites, Jupiter Sound and Hobe Sound, are connected by a narrow waterway through which the AIW runs [between channel markers "46" and "49" on NOAA Nautical Chart #11472] (Marine Mammal

Commission, 1988). Manatees must travel through this waterway to access either sound. The entire Hobe Sound to Jupiter Inlet segment of the lagoon is used intensively by boaters and, since the AIW is exempt from speed restrictions, a large number of these boats travel very fast through this narrow waterway. Many of these fast-traveling boats motor outside of the AIW itself in order to pass slower vessels. Within this section, there are a number of structures (e.g., docks, piers) that extend from the shoreline which force passing manatees to swim closer to the AIW. The result is an increased potential for manatee-boat collisions.

Additional manatee protection will be forthcoming through the state and local levels. On October 24, 1989, the Governor and Cabinet approved a number of recommendations from DNR designed to improve manatee protection and boating safety. It is DNR's goal to coordinate with local governments toward effectively implementing these recommendations. One recommendation dealt with the development of rules to implement speed zones in 13 counties identified as having significant manatee activity. Both Martin and Palm Beach counties are designated as "key" manatee protection counties. DNR has requested that each of these "key" counties either select one of DNR's speed zone options or develop their own site-specific manatee protection speed zones. Both counties have elected to develop their own manatee protection plans. Palm Beach and Martin counties have submitted their proposed plans to DNR for review. If accepted, these plans will be recommended for rulemaking.

Marine Turtles: Boating speed restrictions implemented for manatee protection would also benefit marine turtles. Marine turtle stranding data indicate that propeller/boat collision caused mortality is a serious problem in this segment of the lagoon.

Johnson's Seagrass: The Florida Natural Areas Inventory (FNAI) recommends that Johnson's seagrass (Halophila johnsonii), a native plant, be recognized as a **designated species**. Like other species of Halophila, H. johnsonii grows in water too deep for other seagrass species. In Jupiter Sound, H. johnsonii co-occurs in dense beds with H. decipiens at water depths ranging from six to eight feet, with scattered patches present as deep as 14 feet at MLW. In Hobe Sound, Johnson's seagrass is present at water depths between five and eight feet, with patches present as deep as 10 feet at MLW. Like all species of seagrass, the portion of the Halophila plant that grows above ground decreases in growth and biomass during the winter months; therefore, an inventory of the seagrass beds in this area is incomplete if performed during this period. Overlooking

this seasonality in any resource management issue can have significant consequences. In Hobe Sound, for example, it has been estimated that approximately 60 - 80% of the submerged bottom represents ephemeral habitat for both species of Halophila (W. J. Kenworthy, National Marine Fisheries Service, pers. comm.).

3. PROTECTION OF BIRD ROOKERY HABITAT

The Hobe Sound National Wildlife Refuge (HSNWR) and the Blowing Rocks Preserve are undisturbed upland areas that represent potential rookery habitat for a number of bird species. This preserve status for both parcels is not expected to change from any alterations in upland use; however, both areas are subject to increasingly active boating traffic, especially during the months when the slow-speed zone is not in effect. The high level of use by recreational boaters, test boats, and jet skiers in the adjacent waters currently precludes both areas as a fully functional rookery, frightening birds from potential nesting sites and disturbing shallow areas essential for feeding.

4. DREDGING

Dredging is an activity that is briefly discussed in Chapter V and is directly related to the increase in boat traffic. Since this segment of the lagoon supports large beds of seagrass, there are few sites suitable for new dredging; however, it is possible that the increasing boat use in this area will result in an increase in dredging applications in order to obtain water deep enough to accommodate large boats.

B. POLICY GUIDELINES

This section of the plan contains a number of management policies that address the issues identified as being particular to the Hobe Sound to Jupiter Inlet segment of the Jensen Beach to Jupiter Inlet Aquatic Preserve. Adoption of these policies will provide specific direction for managing those issues not addressed directly by statute or rule. The major policy guidelines for these issues include:

1. Promote recognition of the fact that seagrasses provide valuable habitat and a food source for manatees as well as for other organisms essential to the biological integrity of the lagoon. This biological integrity translates into a significant economic fisheries value to this region.
2. Protect manatees from boat collisions and protect seagrasses from increases in turbidity caused by boat

traffic by seeking to designate the entire narrow waterway including the AIW between channel markers "46" and "49" as a year-round idle-speed zone.

3. Promote the use of the HSNWR as a bird rookery and increase the protection afforded to manatees by seeking to designate the area west of the AIW, north of channel marker "46" and south of channel marker "34" as a year-round idle-speed zone.
4. Promote the use of the HSNWR and the Blowing Rocks Preserve as a bird rookery by prohibiting the operation of jet skis in these management areas (P/1).
5. Protect all biological resources and water quality by prohibiting fueling facilities in the lagoon, except at commercial docks and marinas that have been approved as fueling sites and which incorporate procedures and equipment for spill prevention and clean-up.
6. Protect all biological resources and water quality by identifying and designating unvegetated, deep-water areas as open water mooring sites. Vessels registering to use these sites will be required to have Coast Guard approved marine sanitation devices.
7. Promote the revegetation of shorelines by stipulating in the permit review process that native wetland vegetation be used for shoreline stabilization either alone or in conjunction with riprap.
8. Reduce the impact of turbidity on seagrasses by prohibiting new dredging for the sole purpose of accommodating boats with drafts greater than the mooring or general operational capabilities of a given site.

CHAPTER VII

MANAGEMENT ACTION PLAN

This chapter establishes the guidelines which allow for the management and protection of the Hobe Sound to Jupiter Inlet segment of the Jensen Beach to Jupiter Inlet Aquatic Preserve's natural and cultural resources for the benefit of future generations (Section 258.35, F.S.).

Before an effective program can be designed to manage and protect natural resources, the function, importance, and location of the resources must be defined. Additional efforts will consist of 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 management strategies for an aquatic preserve program must consist of a variety of components such as resource management, resource protection, research, and environmental education.

In general, the role of the management program for this segment of the preserve includes: (1) providing information on the ecological functions and economic importance of the natural resources within the lagoon, (2) overseeing those activities that affect the natural resources within the lagoon, (3) ensuring that accurate biological and physical information is considered in permit-related issues and planning decisions, (4) ensuring that all statutes and rules regarding the lagoon's natural resources are followed and that violations are enforced by the appropriate authorities, (5) conducting site surveys for specific activities, (6) coordinating with other resource management and enforcement agencies, (7) educating the public on the inherent and economic values associated with natural resources, (8) conducting or cooperating with other entities to conduct pertinent research projects, and (9) developing a comprehensive management program that can be periodically updated.

A. RESOURCE MANAGEMENT

The overall goals of resource management within aquatic preserves are: (1) maintaining current, detailed resource inventories, (2) assessing the impact of human activities on the resources, (3) establishing habitat restoration programs, and (4) cooperating with other agencies in water quality improvement.

GOAL A.1: MAINTAIN RESOURCE INVENTORIES

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

Task A.1.1.1: Conduct an inventory of seagrasses, attached algae, mangroves, marsh grasses, and other shoreline vegetation by using available satellite imagery (e.g., LANDSAT, SPOT, etc.), aerial photography, Loran coordinates, and groundtruthing efforts.

Task A.1.1.2: This inventory shall be conducted once every three years.

Task A.1.1.3: The database generated from this inventory will be used to create biological resource maps through the use of pcARC/INFO.

Objective A.1.2: To conduct an inventory of designated species and their habitats.

Task A.1.2.1: Conduct an inventory of designated species and their habitats by using data from existing literature and current research studies, if available.

Task A.1.2.2: This inventory shall be conducted once every three years.

Objective A.1.3: To conduct an inventory of wading birds and their habitats for this segment of the lagoon.

Task A.1.3.1: Conduct an inventory of coastal birds that feed, roost, loaf, and nest throughout this segment of the lagoon by using existing literature and, if any, current research studies.

Task A.1.3.2: This inventory shall be conducted once every three years.

GOAL A.2: ASSESS THE EFFECT OF HUMAN ACTIVITIES AND CUMULATIVE IMPACTS

Objective A.2.1: To inventory and assess the effects of human activities on the natural resources.

Task A.2.1.1: Conduct a survey of all dock/pier structures to determine if there is a direct relationship between the presence of structures and the absence of natural resources. This survey shall contain at a minimum:

- a) the length of the structure waterward of the MHWL;
- b) the size of the terminal platform, if applicable;

- c) the height (elevation) of the structure above the MHWL;
- d) the water depth at the structure's terminus;
- e) the number, size, and drafts of boats using the structure;
- f) the functional condition of the structure;
- g) any accessory facilities and ancillary uses associated with the structure;
- h) the structure's use category (e.g., single-family, commercial); and
- i) an inventory of the biological resources within 25' of the identified structure.

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

Task A.2.2.1: A survey of all docks/piers, dredged areas, shoreline stabilization, and other applicable human uses will be made. These surveys shall be conducted as follows:

- a) the docks/piers inventory will be conducted done in accordance with Task A.2.1.1.
- b) a survey of all dredged areas will be made and include at a minimum:
 - 1) the length, width, and depth of the dredged area;
 - 2) depth profiles of the surrounding area;
 - 3) traditional use of the area;
 - 4) biological resources in the dredged and surrounding area; and
 - 5) review of information on pre-existing resource conditions, if available.
- c) a survey of all shoreline stabilization projects will be done and include at a minimum:
 - 1) the total length of riparian shoreline,
 - 2) the length of shoreline stabilization,
 - 3) the technique and materials used in stabilizing the shoreline, and
 - 4) review of existing and pre-existing biological resources, if available.

GOAL A.3: RESTORE ESTUARINE HABITAT

Objective A.3.1: To identify suitable unvegetated and disturbed shoreline areas as restoration sites.

Task A.3.1.1: All suitable shoreline areas will be revegetated with mangrove and/or marsh grass plantings.

Objective A.3.2: To coordinate with the Department of Environmental Regulation (DER) and the water management districts in restoring estuarine habitat in the lagoon.

Task A.3.2.1: Enter into a mutual agreement with DER to utilize Pollution Recovery Trust Funds to conduct demonstration projects that restore estuarine habitat.

Task A.3.2.2: Enter into a mutual agreement with the St. Johns River and/or South Florida Water Management Districts in order to accomplish habitat restoration elements of the Indian River Lagoon SWIM Plan.

Objective A.3.2: To coordinate with the local mosquito control districts in identifying unmanaged or breached mosquito impoundments as suitable habitat restoration sites.

Task A.3.1.2: Reintroduce unmanaged or breached mosquito impoundments as estuarine habitat by removing dikes to re-establish natural tidal flow.

GOAL A.4: IMPROVE WATER QUALITY

Objective A.4.1: To coordinate with DER, the water management districts, and local governments toward improving water quality in the lagoon.

Task A.4.1.1: Enter into a mutual agreement with DER to utilize Pollution Recovery Trust Funds to conduct demonstration projects that improve water quality.

Task A.4.1.2: Coordinate with the St. Johns River and/or South Florida Water Management Districts and local governments toward improving the management of surface water and stormwater discharges into the aquatic preserve.

Task A.4.1.3: Coordinate with local mosquito control districts to review arthropod control management plans submitted in compliance with Section 388.4111, F.S.

GOAL A.5: COORDINATE WITH LOCAL GOVERNMENTS ON LAND USE PLANNING

Objective A.5.1: To coordinate with local planning departments, regional planning councils, and the Department of Community Affairs to develop/revise/evaluate local government comprehensive plans and amendments.

Task A.5.1.1: Establish role as field representative for DNR Aquatic Preserves with local governments.

Task A.5.1.2: Contact local planners to assist in the development of policies and ordinances that regulate activities affecting state-owned submerged lands.

B. RESOURCE PROTECTION

In order to maintain the biological integrity of the aquatic preserve, it is imperative to protect the resources that comprise the system. Since it is not feasible to target all of the organisms adequately, the primary thrust of the resource protection element is the protection of the various habitats that make up the preserve. The goals of the aquatic preserve program with regard to resource protection therefore include (1) protection of the existing submerged vegetation (e.g., seagrass beds, attached algae), (2) protection of emergent vegetation (e.g., mangroves, marsh grass), and (3) protection of habitat of designated species.

GOAL B.1: PROTECTION OF SUBMERGED AND EMERGENT VEGETATION

Objective B.1.1: To minimize potential damage to submerged and emergent vegetation through the review of applications for use of state-owned land in the aquatic preserve.

Task B.1.1.1: Field staff will develop a written policy describing a scientifically based, standardized method to inventory the submerged and emergent biological resources at the proposed project site. At a minimum, this policy will contain the following information:

- a) The area to be surveyed:
 - 1) will be described as a polygon, and
 - 2) will include the proposed location of the activity/structure and the adjacent area surrounding the project. The size of this adjacent area shall be determined by the methods described in the written policy.

- b) How the survey is to be performed:
 - 1) Two areas within the survey area will be assessed:
 - i. the submerged bottom, including:
 - * a description of all communities/habitats,
 - * a description of the bottom type,
 - * depth profiles,
 - * tidal amplitude and stage (where appropriate), and
 - * a physical description of the surrounding waterbody;

 - ii. the shoreline (where appropriate), including:
 - * a description of the vegetation,
 - * a description of any existing structures,
 - * notation of any nesting birds, and
 - * notation of any designated species.

- c) A definition of a Primary Resource Protection Area. This definition will be used to determine if significant resources exist within the expected area of impact. It will consider, but is not limited to:
- 1) seagrasses and algae,
 - 2) mangroves and marsh grass,
 - 3) harvested bivalves,
 - 4) unvegetated soft-bottom communities,
 - 5) hard-bottom communities,
 - 6) designated species, and
 - 7) nesting sites for solitary or colonial birds.

Task B.1.1.2: Coordinate with the appropriate regional DNR planner in order to process the field staff comments in a timely manner.

Task B.1.1.3: Coordinate, when possible, with other appropriate agencies that have regulatory authority for these projects.

Objective B.1.2: To ensure that structures and projects that have been authorized are in compliance with the authorized conditions.

Task B.1.2.1: Coordinate with the appropriate regional DNR planner to receive copies of all letters of consent, easement agreements, lease agreements, and other forms of authorizations.

Task B.1.2.2: Report variations from the authorized conditions to the appropriate DNR enforcement agent.

Task B.1.2.3: Coordinate, when possible, with other appropriate agencies that have regulatory authority for these projects.

Objective B.1.3: To ensure that structures and projects that have been built or are occurring have been authorized.

Task B.1.3.1: Report activities that do not appear to have been authorized to the appropriate DNR enforcement agent.

Task B.1.3.2: Coordinate, when possible, with other appropriate agencies that have regulatory authority for these projects.

Objective B.1.4: To ensure that human use of the preserve does not create turbidity levels that adversely affect submerged vegetation.

Task B.1.4.1: Seek to establish an ordinance to reduce the speed of boats traveling outside the AIW.

Task B.1.4.2: Require that all dredge and fill projects use effective turbidity control practices.

GOAL B.2: PROTECTION OF DESIGNATED SPECIES HABITAT

Objective B.2.1: To comply with Objective C.2.1 through the implementation of Tasks C.2.1.1 and C.2.1.2.

Objective B.2.2: To ensure that these habitats are given maximum protection through the permit-review process.

Task B.2.2.1: Recommend modifications to proposed projects in order to take into account known habitat of designated species—over state-owned submerged land.

Task B.2.2.2: Field staff will coordinate with the Florida Game and Fresh Water Fish Commission when designated species habitat or "significant use areas" could be affected by proposed activities.

C. RESEARCH

Effective management of any biological system relies almost entirely on information as to how that system functions, and research is the foundation upon which this information is based. Estuarine/lagoonal systems are incompletely understood, and it is essential that some of the gaps in this understanding are filled. Therefore, the goals of the research program within the Bureau of Submerged Lands and Preserves are primarily directed toward applied research, rather than toward basic, or theoretical, research.

The goals of the research program are: (1) to gain a better understanding of those factors that are essential to the continued biological integrity of the major habitats (beds of submerged vegetation, mangrove fringes, marshes, and tidal flats) within the aquatic preserve, and (2) to gain a better understanding of those factors that govern the continued survival and propagation of designated species that use the aquatic preserve for any portion of their life cycle.

GOAL C.1: DETERMINE THE FACTORS THAT AFFECT THE INTEGRITY OF ESTUARINE HABITATS

Objective C.1.1: To determine the primary factors that affect the survival of seagrass and algal beds.

Task C.1.1.1: Pursue, at the bureau level, funding to conduct research on the life cycles of algal and seagrass species present, especially that of Halophila.

Task C.1.1.2: Pursue, at the bureau level, funding to conduct research on the effects of dock/pier shading on the various species of seagrass present. This will include a study of light levels as measured in Photosynthetically Active Radiation (PAR) units.

Task C.1.1.3: Whenever possible, participate in research on the biology and ecology of the seagrass and algal species present.

Objective C.1.2: To determine the primary factors that affect the survival of mangrove species.

Task C.1.2.1: Whenever possible, participate in research on the biology and ecology of the mangrove species present.

Task C.1.2.2: Pursue, at the bureau level, funding to conduct research on the effects of mangrove trimming.

Task C.1.3.2: Pursue, at the bureau level, funding to conduct research on the colonization rates of mangroves.

Objective C.1.3: To determine the primary factors that affect the survival of marsh plant species.

Task C.1.3.1: Whenever possible, participate in research on the biology and ecology of the marsh plant species present.

Task C.1.3.2: Pursue, at the bureau level, funding to conduct research on the colonization rates of all marsh plant species.

Objective C.1.4: To determine the primary factors that affect the functioning of tidal flats.

Task C.1.4.1: Whenever possible, participate in compiling an inventory of the benthic infauna present in tidal flats.

Task C.1.4.2: Whenever possible, participate in research on the changes in tidal flat configurations.

Task C.1.4.3: Whenever possible, participate in research on the rates of colonization by submerged and emergent vegetation on tidal flats.

GOAL C.2: DETERMINE THE FACTORS WHICH AFFECT SURVIVAL AND PROPAGATION OF DESIGNATED SPECIES

Objective C.2.1: To determine which portions of the preserve serve as habitat for designated species.

Task C.2.1.1: Coordinate with the Florida Game and Fresh Water Fish Commission, the U.S. Fish and Wildlife Service, the Florida Audubon Society, and any other relevant group to determine which designated species use what portion of the aquatic preserve for various aspects of their biology and ecology.

Task C.2.1.2: If additional information is necessary, establish a system of seasonal monitoring sites to determine this segment of the preserve's use by designated species, particularly by birds.

Objective C.2.2: To determine the patterns and trends in manatee use of the aquatic preserve.

Task C.2.2.1: Whenever possible, participate in research on the factors that affect the continued survival of manatees.

Task C.2.2.2: Coordinate with and, if necessary, lend assistance on a local level to the Division of Marine Resources' manatee research and protection program.

Objective C.2.3: To determine the species composition, distribution, abundance, seasonality, and size classes of marine turtles that utilize the aquatic preserve.

Task C.2.3.1: Whenever possible, participate in research on the biology and life history of marine turtles and the factors affecting their recovery in the aquatic preserve.

Task C.2.3.2: Coordinate with and, if necessary, lend assistance on a local level to the Division of Marine Resources' marine turtle research and conservation program.

D. ENVIRONMENTAL EDUCATION

The integrity of the biological system within this segment of the Indian River Lagoon can be affected, both directly and indirectly, by the public's enjoyment of the preserve. Without a biologically "healthy" lagoon, water quality will deteriorate, fisheries will fail due to loss of habitat, and many species of wading birds will disappear. One of the primary aims of the aquatic preserve program, therefore, is to educate the public as to the importance of the factors that affect the integrity of the preserve. This public is composed

of a number of segments: (1) students [e.g., elementary, college]; (2) waterfront property owners; (3) visitors and new residents; (4) user groups [e.g., developers and marine contractors]; (5) special interest groups (e.g., Audubon Society, boating clubs); and (6) local, regional, and state government agencies that are involved in making decisions regarding the lagoon.

The overall goal of the environmental education element is to instruct individuals as to the importance of preserving natural and cultural resources so they may consider all issues prior to making decisions that affect these resources. In general, the purpose of this element is to educate the public hoping they become responsible users of the preserve. Two DNR publications, Environmental Education in Florida: Needs and Goals, and A Guide for Environmental Education, are available references to aid in accomplishing this goal.

GOAL D.1: EDUCATE THE PUBLIC TOWARD WISE RESOURCE USE

Objective D.1: To provide information to existing environmental education programs at public and private schools and to coordinate with other local educational centers.

Task D.1.1: Notify the county School Boards of the aquatic preserve's environmental education efforts and the availability of its staff to assist or provide guidance for their existing educational programs.

Task D.1.2: Coordinate with and assist the Hobe Sound Nature Center on their scheduled interpretive talks.

Objective D.2: To establish and conduct educational programs in those counties where such programs do not currently exist.

Task D.2.1: Notify the county School Boards of the field staff's intent to establish environmental education programs in their jurisdictional area.

Task D.2.2: Conduct off-site classroom instruction and field trips in the lagoon.

Task D.2.3: Conduct or assist in informal seminars, classes, workshops for public discussion of current resource management issues, resource utilization, and regulatory activities. Public forums such as these should involve private and public interests.

Objective D.3: To produce educational literature and materials that inform the public of the lagoon's natural and cultural resources and the importance of preserving and protecting these resources.

Task D.3.1: Develop brochures, pamphlets, and/or booklets that describe to the public; (1) the purpose of and activities conducted at the local aquatic preserve office and (2) general information on the preserve's ecosystem. If feasible, this task will include video presentations.

Task D.3.2: Upon approval from DNR Office of Communication, submit newspaper articles or radio announcements designed to educate the general public about the ecological functions and economic importance of the natural resources within a preserve. This approach may be the vehicle with which to disseminate the findings of recent research efforts to the public.

Objective D.4: To provide informal workshops to instruct other environmental educators on the lagoon's natural resources.

Task D.4.1: Schedule biannual instructional workshops designed to teach other environmental educators.

Objective D.5: To establish an on-site environmental education center.

Task D.5.1: Pursue, at the bureau level, the necessary funds to construct an environmental learning center adjacent to the preserve.

CHAPTER VIII

MANAGEMENT COORDINATION NETWORK

This chapter 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 Hobe Sound to Jupiter Inlet segment of the Jensen Beach to Jupiter Inlet Aquatic Preserve. A reference matrix of these regulatory programs and their jurisdictions is presented in Table 3. One function of the aquatic preserve program is to coordinate with these agencies to achieve common goals relevant to aquatic preserve management.

A. FEDERAL AGENCIES

A number of federal agencies have property interests, construction activities, regulation programs, research activities, and land/wildlife management programs that deal either directly or indirectly with the aquatic preserves. These federal agencies include: U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service.

The U.S. Army Corps of Engineers (COE) has 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 the agency 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 requires the Corps to control dredge and fill activities. In 1977, amendments to the CWA extended this jurisdictional responsibility to wetlands. The Corps also contributes 50% of the funds reimbursed to the Water Management Districts by the Department of Natural Resources for aquatic plant control.

The Indian River Lagoon is monitored by the U.S. Coast Guard (USCG) for boating safety (including search and rescue operations) and navigational problems, and to enforce maritime laws. The Coast Guard Auxiliary, an organization of volunteers, performs boating safety inspections, conducts boating classes and assists in search and rescue operations.

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 1968 and broadened under the 1977 revision. In general, the EPA is

responsible for pollution control and abatement, including: air, water, noise, solid waste, toxic waste, and radiation. The agency reviews permits issued by the Department of Environmental Regulation for the treatment, disposal, and storage of hazardous wastes. Authority is divided between EPA and USCG regarding the discharge of oil or hazardous substances into surface water.

The U.S. Geological Survey (USGS) performs surveys and research pertaining to topography and geology as well as monitoring the mineral and water resources of the Indian River Lagoon region.

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

The National Marine Fisheries Service (NMFS), under the Department of Commerce, is involved with fisheries management.

In accordance with the federal consistency review process, the Bureau of Submerged Lands and Preserves reviews the federal programs and activities as to how they affect the objectives of the aquatic preserve management program. This review is coordinated through the Florida Department of Environmental Regulation's Office of Coastal Management in order to enforce the provisions of the Federal Coastal Zone Management Act of 1972, as amended.

B. STATE AGENCIES

Eight state agencies have programs that affect the resources or regulate activities within the aquatic preserves: Department of Natural Resources, Department of Environmental Regulation, Department of Health and Rehabilitative Services, Game and Freshwater Fish Commission, Department of Community Affairs, Marine Fisheries Commission, Department of State, and the Department of Transportation.

Although not a state agency, the Office of Planning and Budgeting of the Governor's Executive Office, in conjunction

with the DER's Office of Coastal Management, 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 control 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, including aquatic preserves.

The Department of Natural Resources' (DNR) areas of responsibility include state lands, sovereignty submerged lands, and marine resources (e.g., marine research projects, sea turtle and manatee protection). The Florida Marine Patrol enforces safe boating laws as well as commercial and recreational fishing regulations. Authority granted under Chapters 18-20, and 18-21, F.A.C., gives DNR responsibility to regulate commercial and residential docks and other structures and activities conducted on submerged lands. Under Chapter 16C, F.S., DNR has responsibility for various aquatic plant control programs, including permit review 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.

The Department of Environmental Regulation (DER) has a broad range of responsibilities and receives its authority from State Law and some delegated from EPA. Generally, the DER responsibilities include water management, water quality, potable water, air quality, coastal management, wetland protection, power plant siting, hazardous and solid wastes.

These responsibilities are accomplished through the following regulatory mechanisms: (1) establishment of state standards designed to protect natural systems and prevent harmful pollutants from entering these systems; (2) application of these standards through the permitting of potential sources of pollution and monitoring discharges for compliance; and (3) initiation of enforcement action for non-compliance with these standards.

The DER's rules significant to the aquatic preserve management program are Chapters 17-301, 17-302, 17-4, and 17-312, F.A.C. Authority for these rules is based in Chapter 403, F.S. Chapter 17-301 and 17-302, F.A.C., addresses water quality standards with the most stringent category being "Outstanding Florida Waters" (OFW). The Jensen Beach to Jupiter Inlet Aquatic Preserve became an OFW upon its designation as an aquatic preserve in 1973. Chapter 17-4, F.A.C., addresses permit requirements and Chapter 17-312, 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 the use of state-owned lands shall have prior approval of the Trustees. As a result of this amendment, an interagency agreement between DNR and DER provides for comments from DNR staff, on behalf of the Board of Trustees, into the DER permitting process for proposed activities in aquatic preserves.

The Department of Health and Rehabilitative Services (HRS) has responsibilities to protect the public's health by overseeing functions that involve water supply, onsite sewage disposal, septic tank cleaning, solid waste control, and hazardous wastes. Authority for these responsibilities is found in Chapters 154, 381, and 386, F.S., and in the 10D Series of F.A.C., known as the "Sanitary Code." Within each county, HRS functions as the county's health department and oversees these jurisdictional responsibilities.

Also affecting the public's health and the aquatic preserve 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 protecting all wildlife and their habitats. As such, the GFWFC is the state coordinator for species designated for protection in Florida.

The Department of Community Affairs (DCA) and the Regional Planning Councils are authorized under Section 380.06, F.S., for administering the Development of Regional Impact (DRI) review 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.

Additionally, the DCA designates Areas of Critical State Concern (ACSC). These designations are intended to protect the areas of the state where development has endangered or may endanger resources of regional or statewide significance. Under an ACSC designation, the local governments are required to submit new or existing land development regulations to DCA for review and approval. According to Section 380.05, F.S., the entire land development process will require the state's supervision until that local government modifies its land development practices to conform to the principles guiding development within an ACSC.

The DCA also oversees the development of Local Government Comprehensive Plans (LGCP) for both counties and municipalities, as required by the Local Government Comprehensive Planning and Land Development Regulation Act, Chapter 163, Part II, F.S. Subsection 163.3203(5), F.S., provides that DCA shall adopt rules for the review of local government land development regulations. Within one year of submission for review by DCA, local governments are required to adopt land development regulations which are consistent with their comprehensive plans, pursuant to Subsection 163.3167(2), F.S. The two elements within these plans that bear most directly on the aquatic preserve program are the Coastal Zone Management Element and the Conservation Element.

The Marine Fisheries Commission (MFC) was established as a rulemaking authority pursuant to Section 370.027, F.S. The seven members appointed by the Governor are delegated full rulemaking authority over marine life (subject to approval by the Trustees), with the exception of endangered species. This authority covers the following areas: (a) gear specifications, (b) prohibited gear, (c) bag limits, (d) size limits, (e) species that may not be sold, (f) protected species, (g) closed areas, (h) quality control codes, (i) open/closed seasons, and (j) special considerations related to egg-bearing individuals, and (k) relaying of clams and oysters. The MFC is also instructed to make annual recommendations to the Trustees regarding marine fisheries research priorities.

The Department of State (DOS), Division of Historical Resources (DHR) has the responsibility granted under Chapter 267, F.S., regarding the preservation and management of Florida's archaeological 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 runoff 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.

C. REGIONAL AGENCIES

At the regional level, the management coordination network includes the South Florida Water Management District, the Treasure Coast Regional Planning Council, and the Florida Inland Navigation District. These organizations conduct activities that are on a broader scale than those of local governments.

The South Florida Water Management District (SFWMD) was created by Chapter 61-69, Laws of Florida, as a public corporation for carrying out Chapter 378, F.S., 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 Wetlands Protection Act of 1984.

SFWMD has jurisdiction over and administers the permitting program for water use, well construction, stormwater discharge, surface water management, groundwater withdrawals, water level control and provides control of exotic plants (primarily hydrilla and water hyacinths) in cooperation with the COE.

It is the intent of the Florida Legislature (Chapter 87-97, Section 1-6, Laws of Florida) through the Surface Water Improvement Management (SWIM) Act, that the water management districts "design and implement plans and programs for the improvement and management of surface water." Since the Indian River Lagoon spans the SFWMD and the St. Johns River Water Management District (SJRWMD), both Districts were directed to develop a management plan which mandates restoration and protection for this priority water body. The Indian River Lagoon SWIM Plan was approved by the Governing Board's of both Districts in September 1989.

The Treasure Coast Regional Planning Council (TCRPC) serves as a regional planning body for county and municipal governments. Its many functions include: (1) providing assistance to local governments with planning expertise, (2) serving as the regional representative for the DRI review process, (3) serving as a regional clearinghouse for state and federal projects and programs, (4) assisting local governments in securing grants, (5) conveying information from the local governments to the state and federal levels, and (6) preparing and administering the Regional Comprehensive Policy Plan.

The Florida Inland Navigation District (FIND) is a multi-county district created by the Legislature to provide spoil sites for maintenance of the Atlantic Intracoastal Waterway. Presently, FIND holds spoil easements over 137 spoil islands within the Indian River Lagoon, none of which are present in this segment of the preserve.

D. LOCAL AGENCIES

The Hobe Sound to Jupiter Inlet segment of the preserve spans two counties (Martin and Palm Beach) and four municipalities, all of which have areas of jurisdiction within the Indian River Lagoon and zoning regulations over the adjacent uplands. The municipalities include: Town of Jupiter Island, Village of Tequesta, Jupiter, and Town of Jupiter Inlet Colony. Appendix D lists those ordinances, both proposed and passed by these local governments, that relate to the management and protection of resources within the aquatic preserve.

TABLE 1: MANAGEMENT COORDINATION NETWORK

LOCAL AGENCIES	REGIONAL AGENCIES
LGT Local Governments (Cities, Towns, Municipalities)	RPC Regional Planning Council
CGT County Governments	WMD Water Management Districts
LDD Local Drainage Districts	FIN Florida Inland Navigation District
MCD Mosquito Control Districts	
ICD Inlet Commissions/Districts	
SWC Soil and Water Conservation Districts	
STATE AGENCIES	
DCA Florida Department of Community Affairs	CG United States Coast Guard
DER Florida Department of Environmental Regulation	COE United States Army Corps of Engineers
DNR Florida Department of Natural Resources	EPA United States Environmental Protection Agency
GFC Florida Game and Freshwater Fish Commission	FWS United States Fish and Wildlife Service
DOS Florida Department of State	NMF National Marine Fisheries
DOT Florida Department of Transportation	GS United States Geological Survey
FMP Florida Marine Patrol	
FSG Florida Sea Grant	
MFC Marine Fisheries Commission	
DAC Florida Department of Consumer and Agricultural Services	
HRS Florida Department of Health and Rehabilitative Services	
FEDERAL AGENCIES	

Source: modified from the Indian River Lagoon Joint Reconnaissance Report, 1987

CHAPTER IX

STAFFING AND FISCAL NEEDS

This chapter is to address the staffing and fiscal needs required to provide effective management, protection, and education of the Hobe Sound to Jupiter Inlet segment of the Jensen Beach to Jupiter Inlet Aquatic Preserve. The overall staffing and funding needs for the preserve will be addressed in phase II of the management plan, since this segment represents only 25% of the entire aquatic preserve. The second phase will detail the remaining segment of the aquatic preserve from Jensen Beach to Hobe Sound.

The information that follows is the current staffing level for the Indian River Lagoon Aquatic Preserves Program based in Fort Pierce, Florida. This program oversees the management objectives of four aquatic preserves in the region: Jensen Beach To Jupiter Inlet, Vero Beach to Fort Pierce, North Fork St. Lucie River, and Loxahatchee River - Lake Worth Creek. Currently, there are three permanent (FTE) and six temporary (OPS) positions in the program and these are assigned as follows:

Resource Management/Protection	=	2	FTE
	=	2	OPS
Environmental Education	=	1	FTE
	=	3	OPS
Secretary Specialist	=	1	OPS

Total Positions	=	9	

CHAPTER X

RESOURCE AND PROGRESS MONITORING PROGRAM

To ensure that Phase I of the management plan is effectively implemented, it will be necessary to institute two programs that will: (1) monitor changes in the biological resources over time, and (2) record any accomplishments achieved by the Jensen Beach to Jupiter Inlet Aquatic Preserve Program. These monitoring programs will consist of the following:

A. RESOURCE MONITORING

To monitor changes in the natural resources, a geographic information system (GIS) will be required. A GIS is a computer-based system that is used to capture, edit, display, and analyze geographic information. The first GIS programs were developed about 20 years ago to manage large collections of natural resource and environmental information. Since their development, they have been used in other areas such as utilities mapping, inventory management, and land use planning; however, their most important function continues to be natural resource management.

The Jensen Beach to Jupiter Inlet Aquatic Preserve Program first became involved with GIS technology in 1987 while submitting a grant to the Florida Inland Navigation District (FIND). The purpose of this grant was to conduct a resource inventory of all the spoil islands within the Indian River Lagoon and, with this information, create a management plan that would provide some direction as to the utility of these islands by the general public.

Future use of the GIS system will include the periodic inventory, compilation, and analysis of temporal and spatial data concerning the present state of the natural resources within the preserve. Historical aerial photography will be computerized for comparison with later data to conduct a temporal analysis of resource abundance. Detailed monitoring of revegetation/restoration efforts can also be computer analyzed. The on-line access to these natural resource databases will facilitate informed management decisions concerning the use and protection of submerged lands and their resources. Cooperation and file sharing is possible with other agencies handling such data with identical and similar systems.

B. PROGRESS MONITORING

For this phase of the management plan to be effectively implemented, it is necessary to monitor the accomplishments and progress of the Jensen Beach to Jupiter Inlet Aquatic Preserve Program on a regular basis. The purpose of this element is to detail the program's accomplishments in its pursuit of the objectives outlined in Chapter VII. This information, to be submitted in a report once every three years to the Bureau Chief, will include an update of the biological resources' status within the preserve as well as identifying current human activities. This report will detail the following:

1. The state of the natural environment of the aquatic preserve.
 - a. Through the use of resource inventories and the GIS system, document the status of each biological resource (e.g., seagrass loss or gain).
 - b. Identify the current number of structures/activities either started or completed in the preserve. These structures/activities will be categorized as follows:
 - 1) authorized projects (e.g., private residential single docks, multi-family fishing piers),
 - 2) unauthorized projects, and
 - 3) projects not in compliance with the original authorization.
2. A list of accomplishments of those tasks outlined in Chapter VII.
 - a. Each task will be listed and the activities required to complete that task will be detailed. If the task was not done or not completed, an explanation will be given. If the explanation was due to insufficient funding/staff, then this fact will be detailed so that an update of Chapter IX can be made.
3. Any new goals and/or objectives will be reflected in an update of Chapter VII.

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APPENDIX A

Relevant Legislation

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 to 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 8-7-85, 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), F.S.

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) F.S. Law Implemented 258.39, 258.391, 258.392, 258.393, 258.40, 258.41, 258.42, 258.43, 258.44, 258.45 F.S. 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 wet slip; 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.

(c) 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

Specific Authority 258.43(1) FS. Law Implemented 258.41, 258.42, 258.43(1), 258.44 FS. History—New 2-25-81, Amended 6-7-85, Formerly 16Q-20.004, Transferred from 16Q-20.004, Amended 9-4-88.

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 6-7-85, 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;

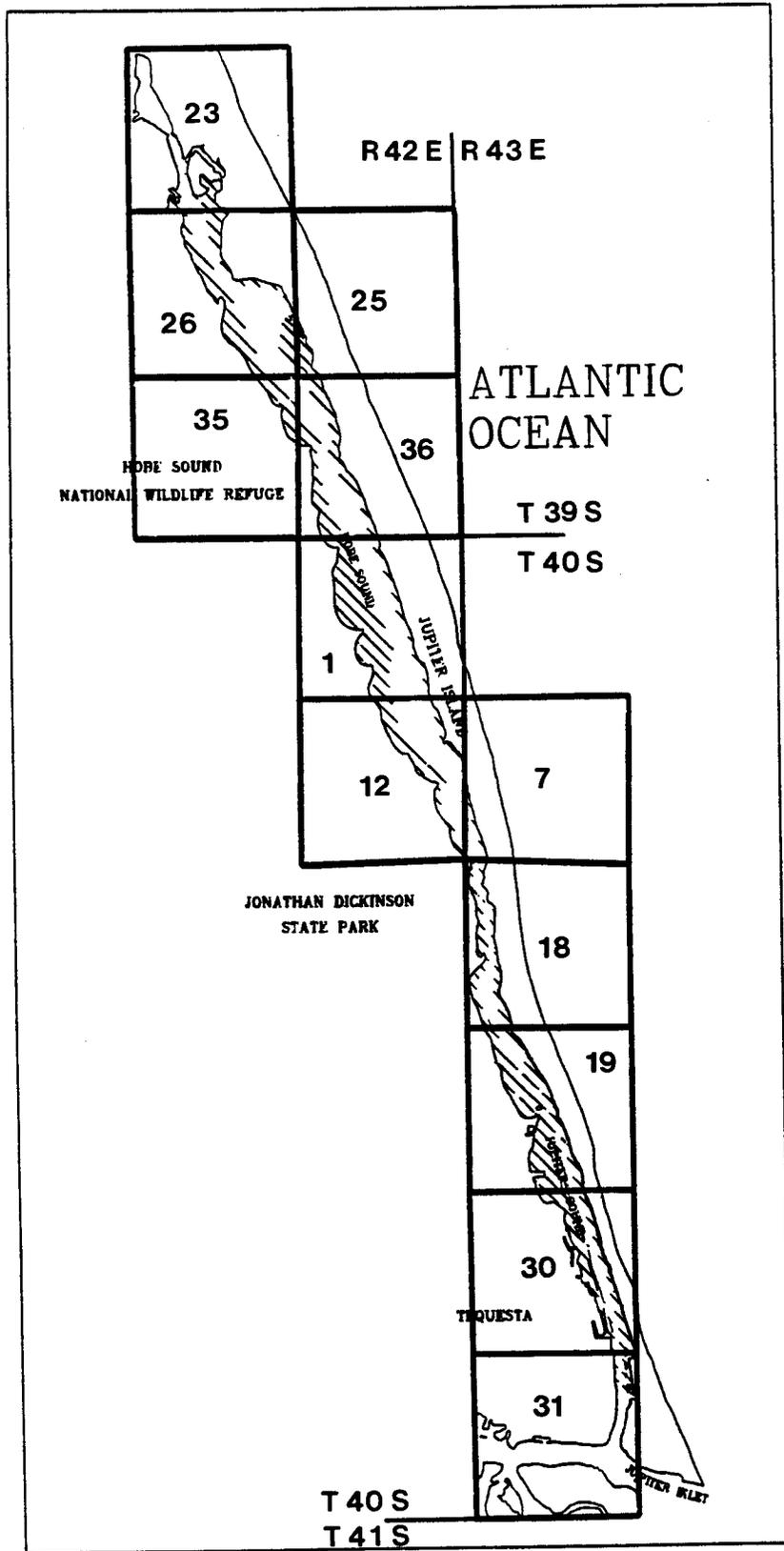
(c) Accept gifts of land within or contiguous to the preserve.

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

Biological Community Maps

INDEX MAP



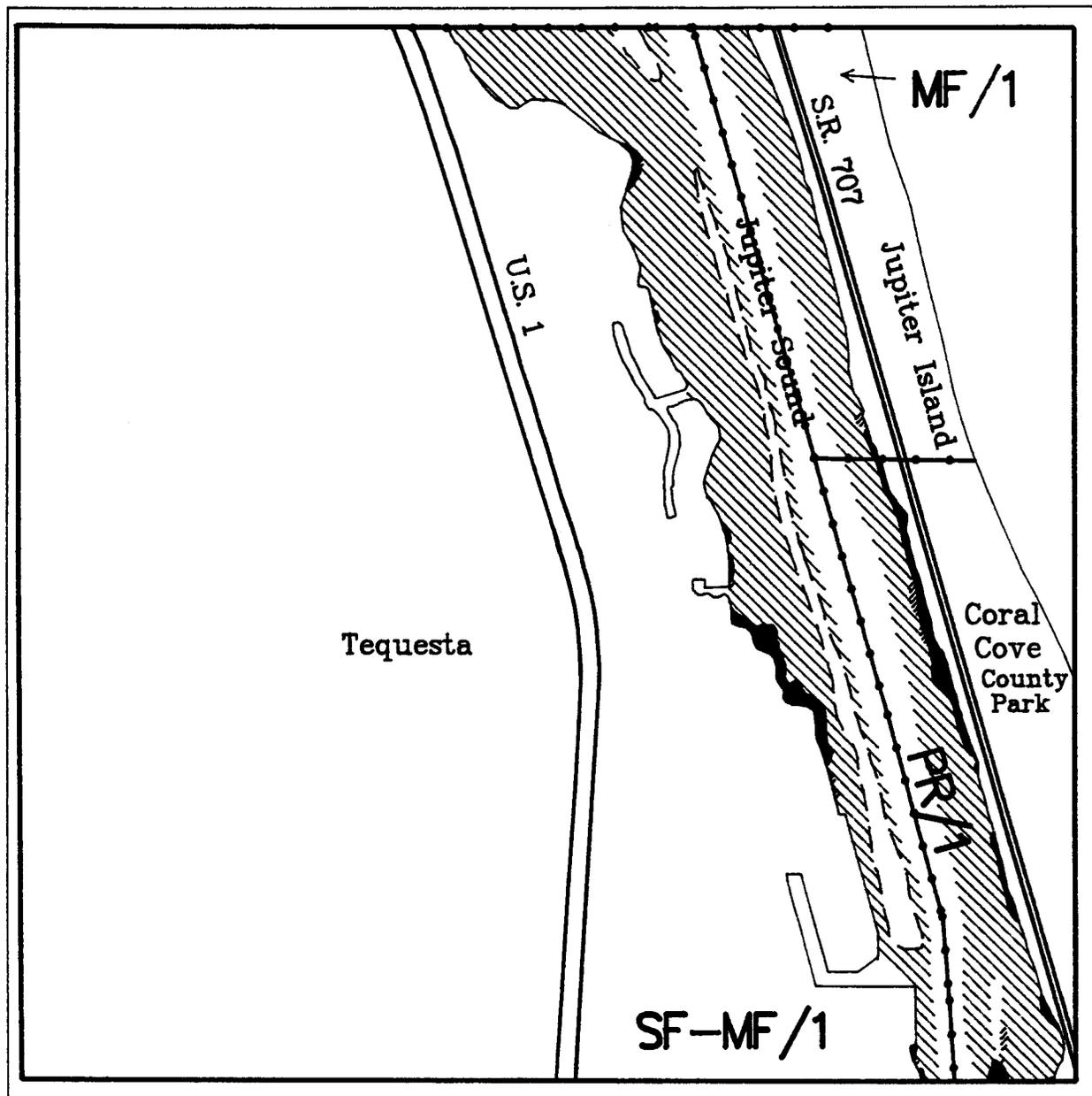
1 in = 1917 m.



THE FOLLOWING MAPS SHOW THESE SECTIONS ENLARGED. THE SECTIONS ARE ORDERED FROM SOUTH TO NORTH AND WEST TO EAST.

-  Seagrass
259,856 hectares
-  Mangroves
5,691 hectares
-  Spartina
0.267 hectares
-  Mean High Water

SECTION 30, T 40S, R 43E



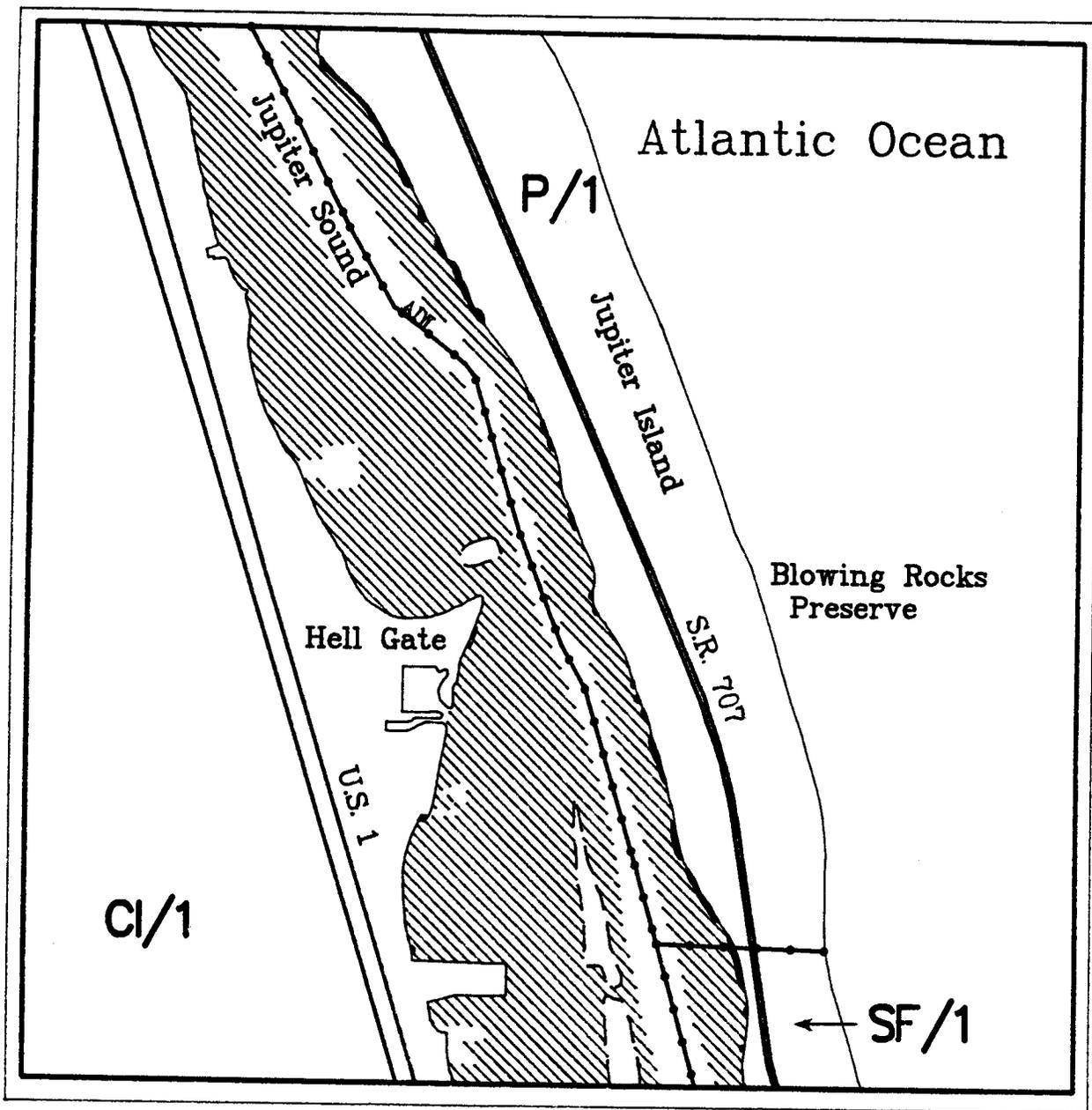
1 in = 257 m.



-  **Seagrass**
26.805 hectares
-  **Mangroves**
1.361 hectares
-  **Spartina**
0.167 hectares



SECTION 19, T 40S, R 43E



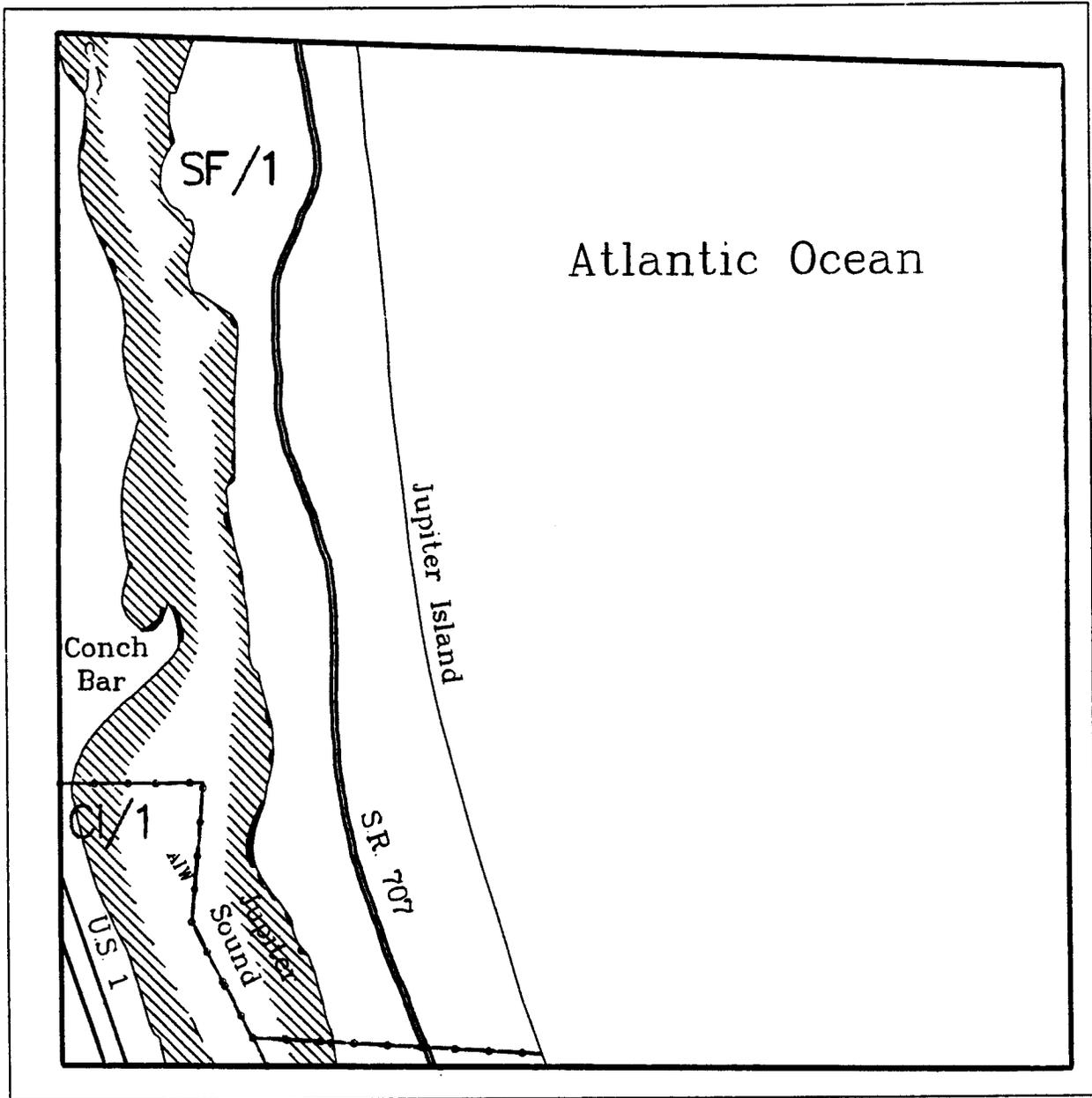
1 in = 258 m.



-  Seagrass
44.552 hectares
-  Mangroves
0.487 hectares
-  Spartina
0.0 hectares



SECTION 18, T 40S, R 43E



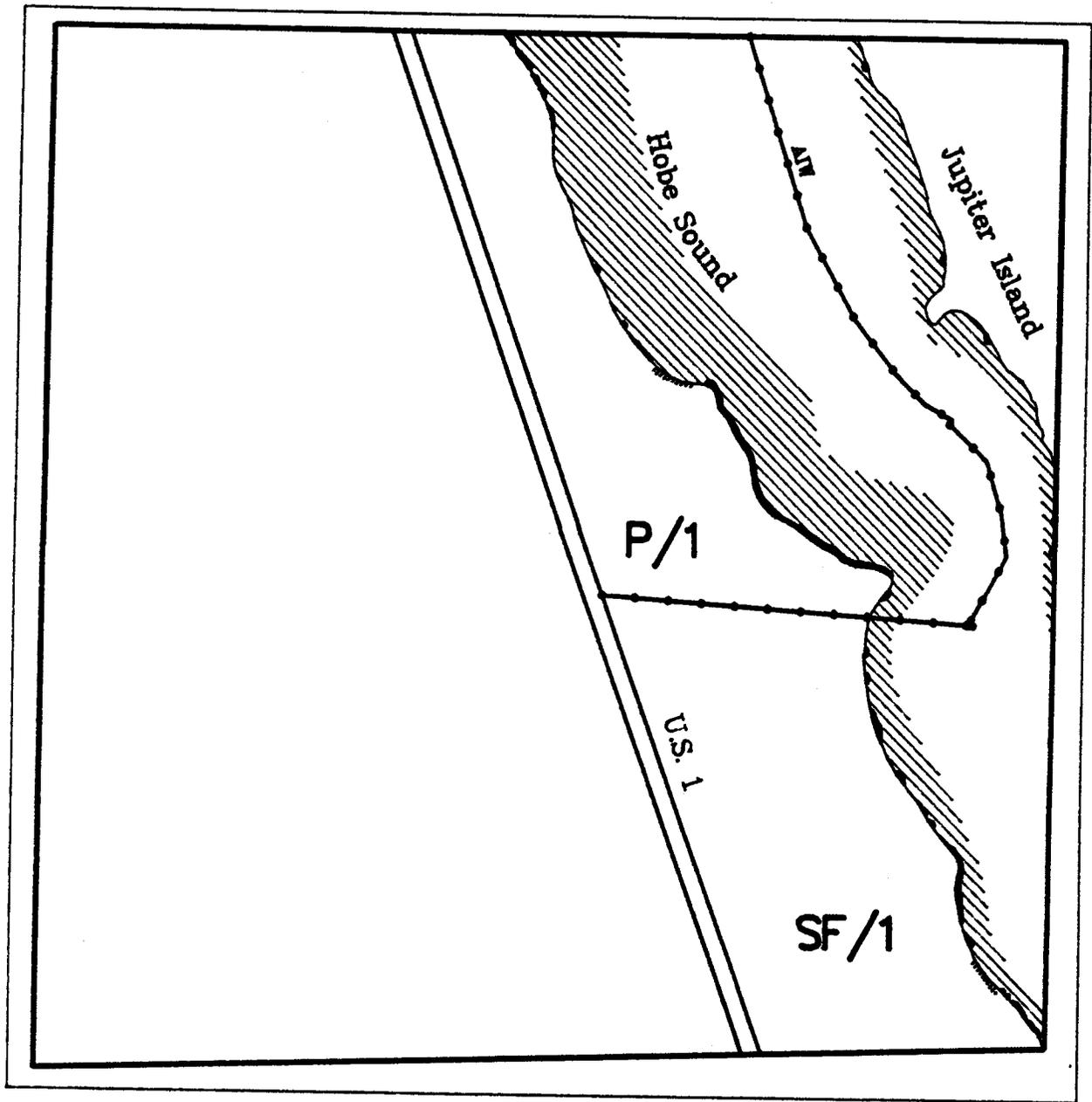
1 in = 269 m.



-  Seagrass
17.331 hectares
-  Mangroves
0.344 hectares
-  Spartina
0.0 hectares



SECTION 12, T 40S, R 42E



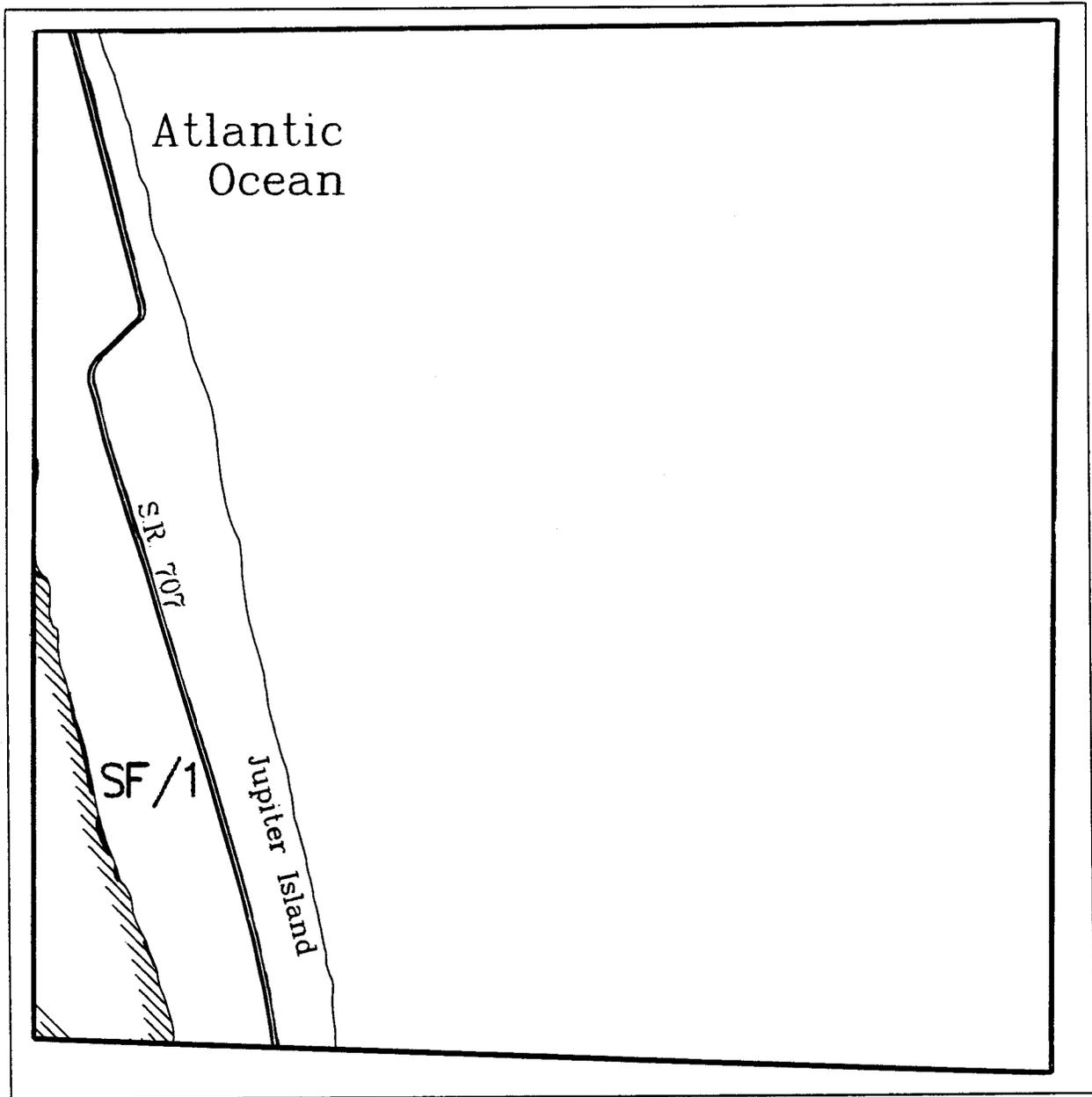
1 in = 263 m



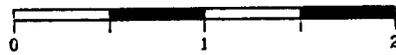
-  Seagrass
20.650 hectares
-  Mangroves
0.603 hectares
-  Spartina
0.050 hectares



SECTION 7, T 40S, R 43E



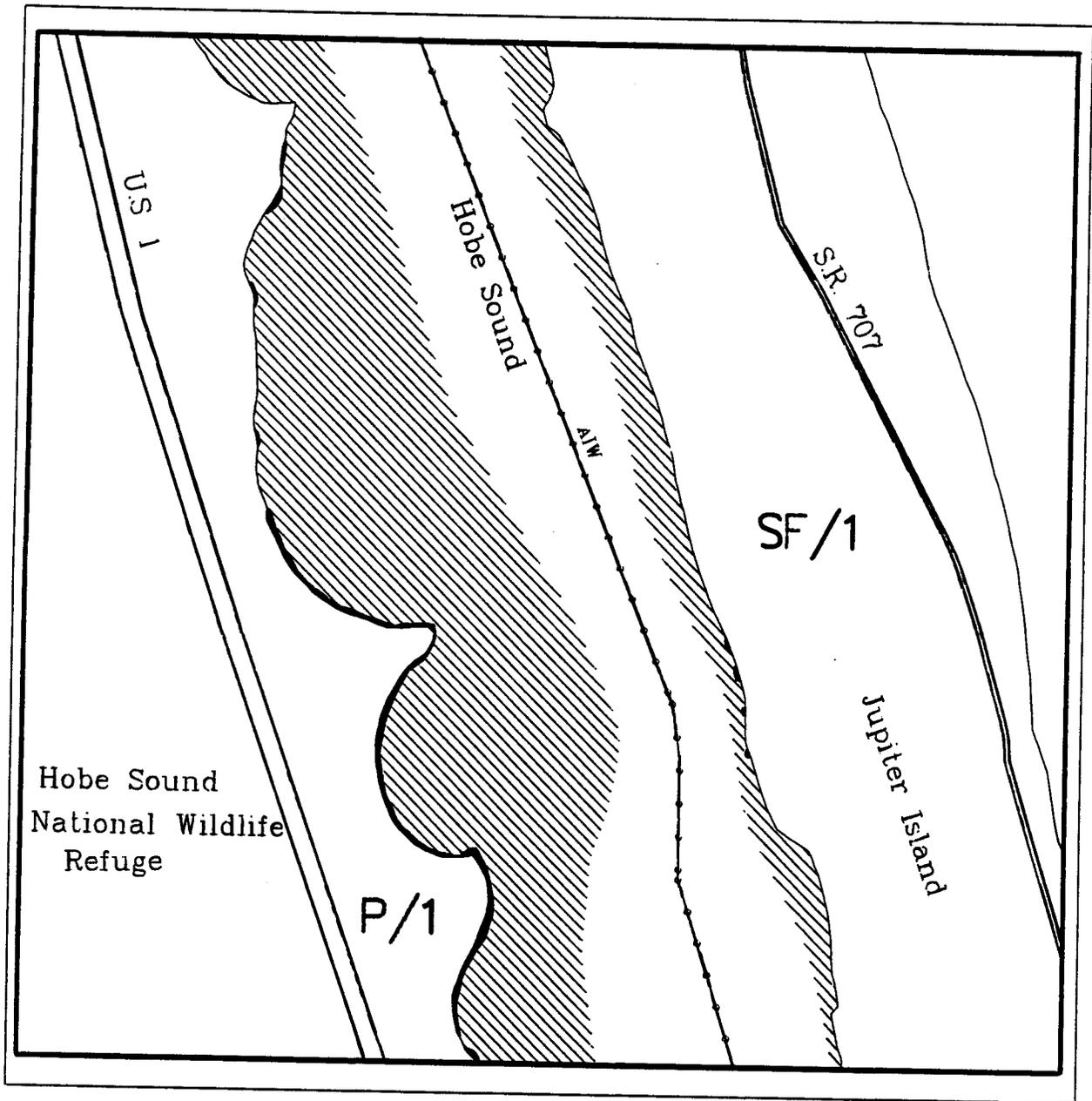
1 in = 265 m.



-  Seagrass
2.380 hectares
-  Mangroves
0.144 hectares
-  Spartina
00 hectares



SECTION 1, T 40S, R 42E



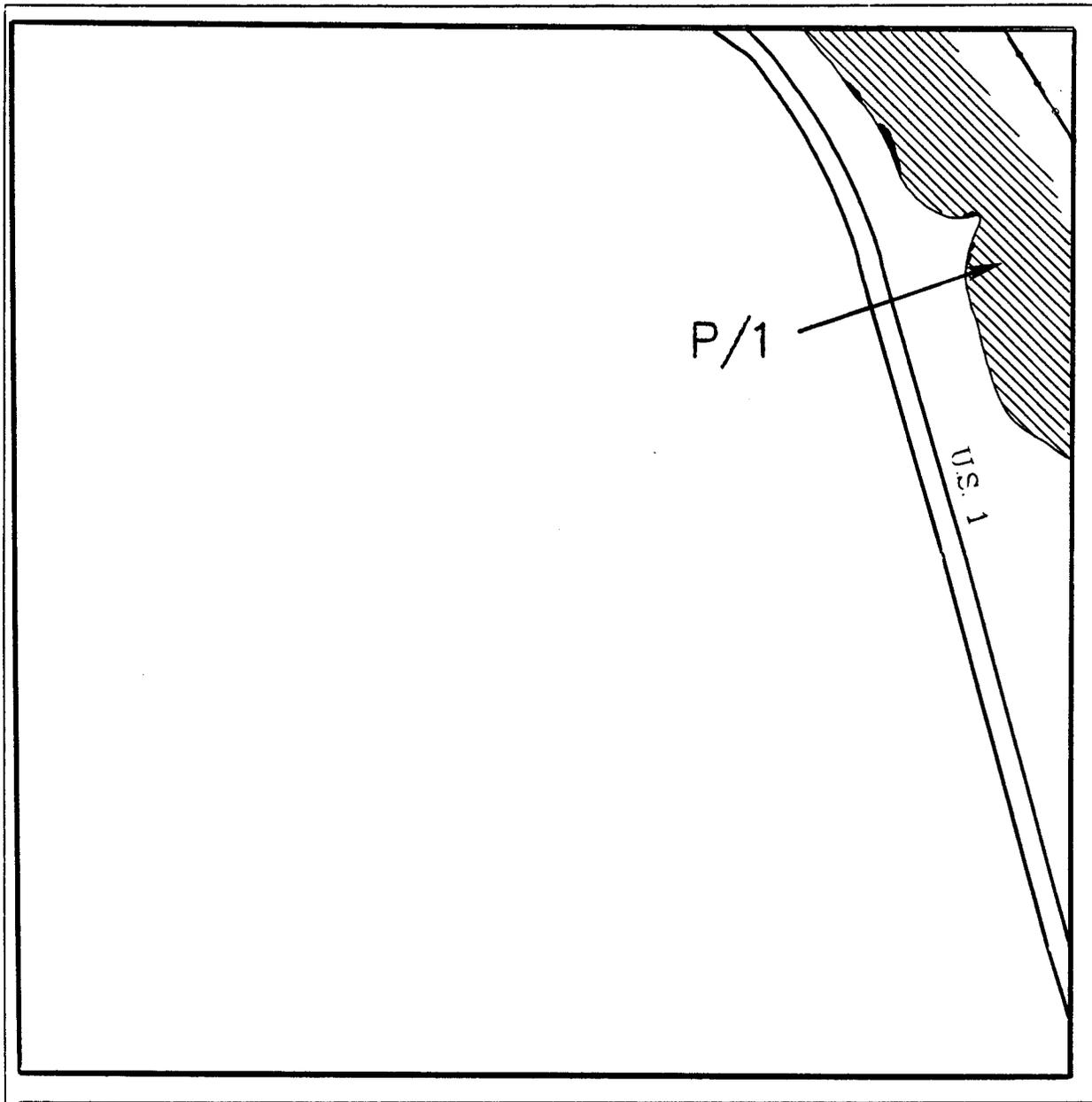
1 in = 255 m



-  Seagrass
47.423 hectares
-  Mangroves
0.858 hectares
-  Spartina
0.0 hectares



SECTION 35, T 39S, R 42E



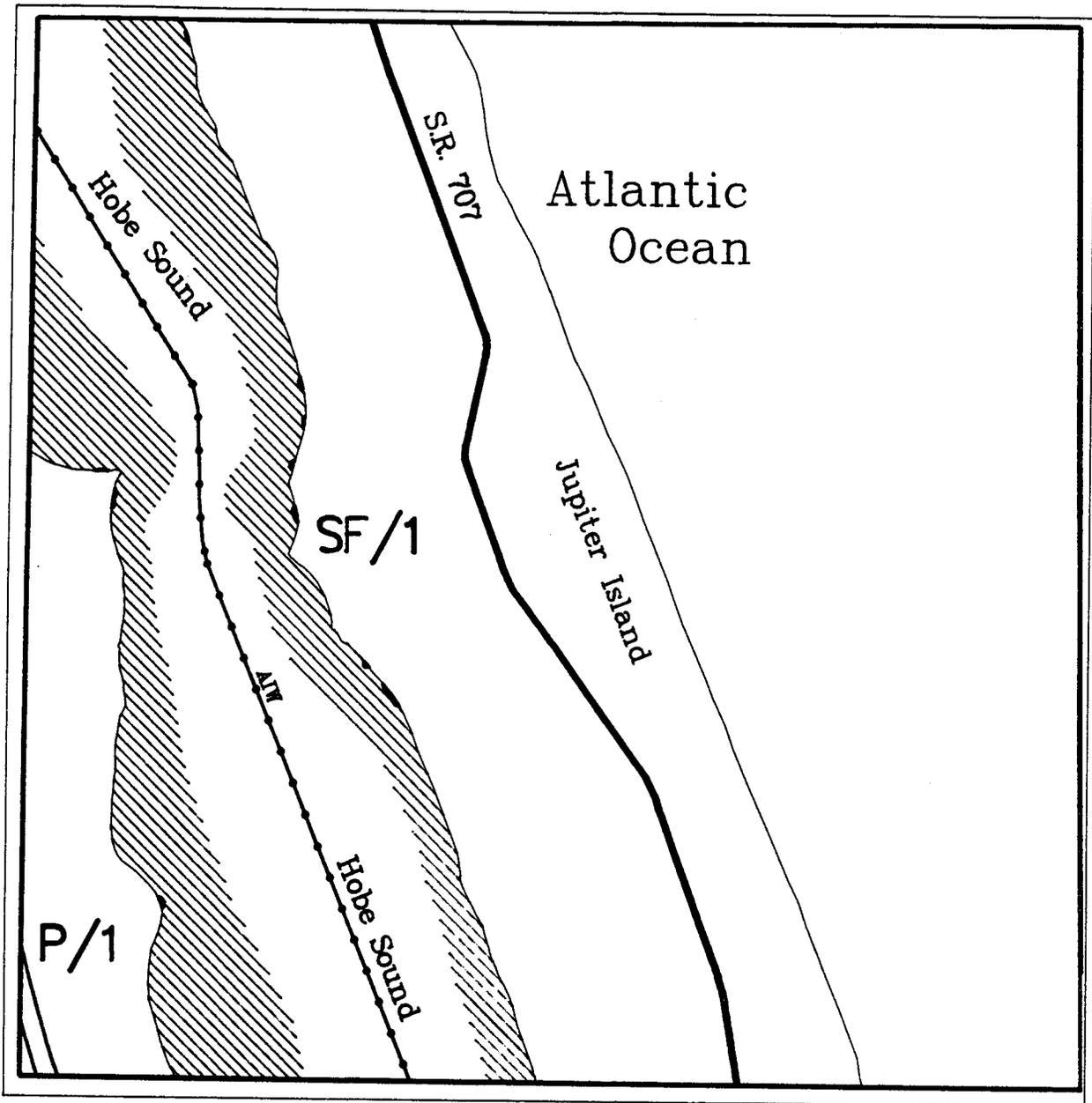
1 m = 257 m.



-  Seagrass
10.444 hectares
-  Mangioves
0.090 hectares
-  Spartina
0.0 hectares

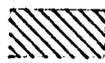


SECTION 36, T 39S, R 42E



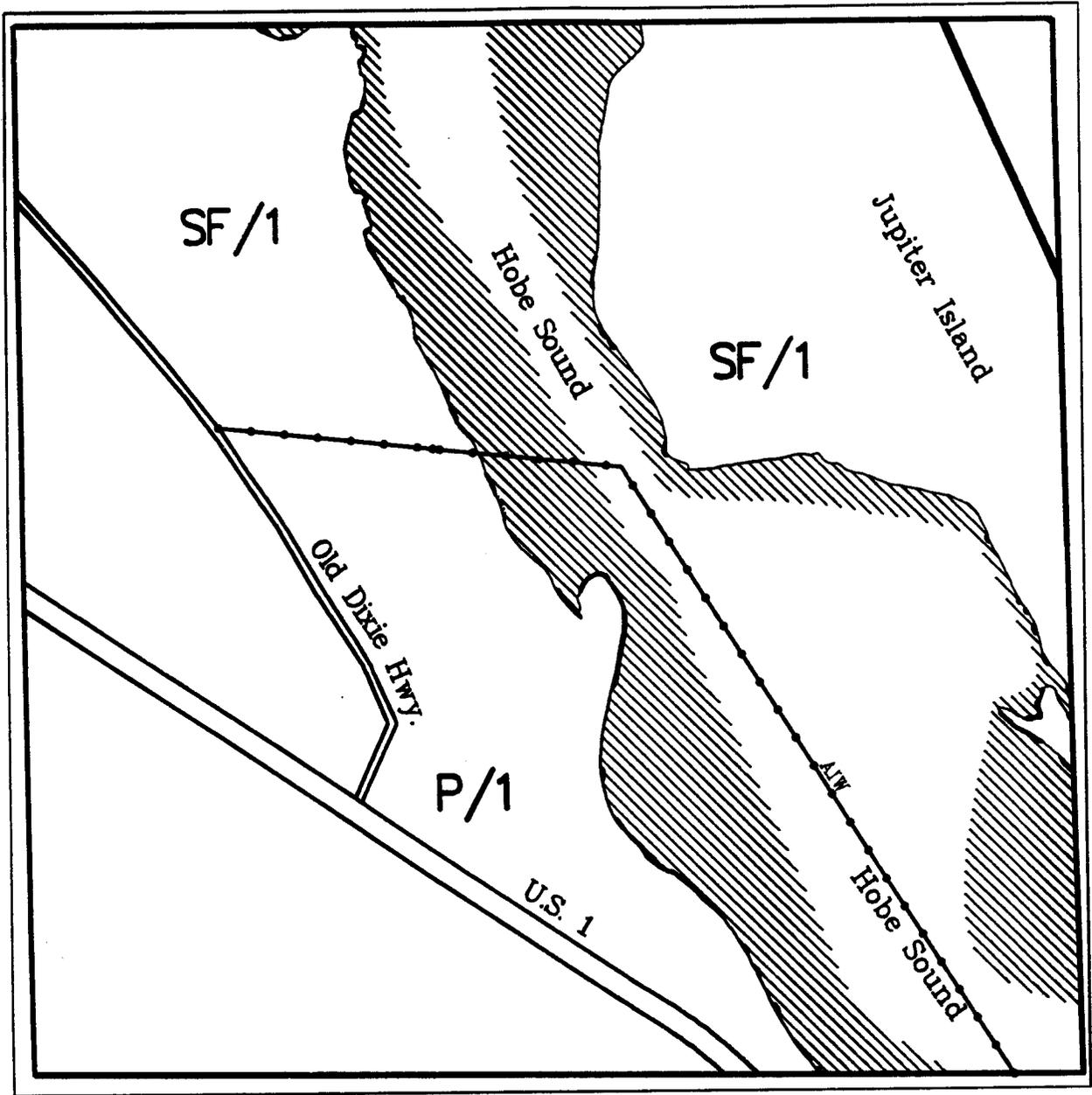
1 in = 253 m



-  Seagrass
29.140 hectares
-  Mangroves
0.101 hectares
-  Spartina
0.0 hectares



SECTION 26, T 39S, R 42E



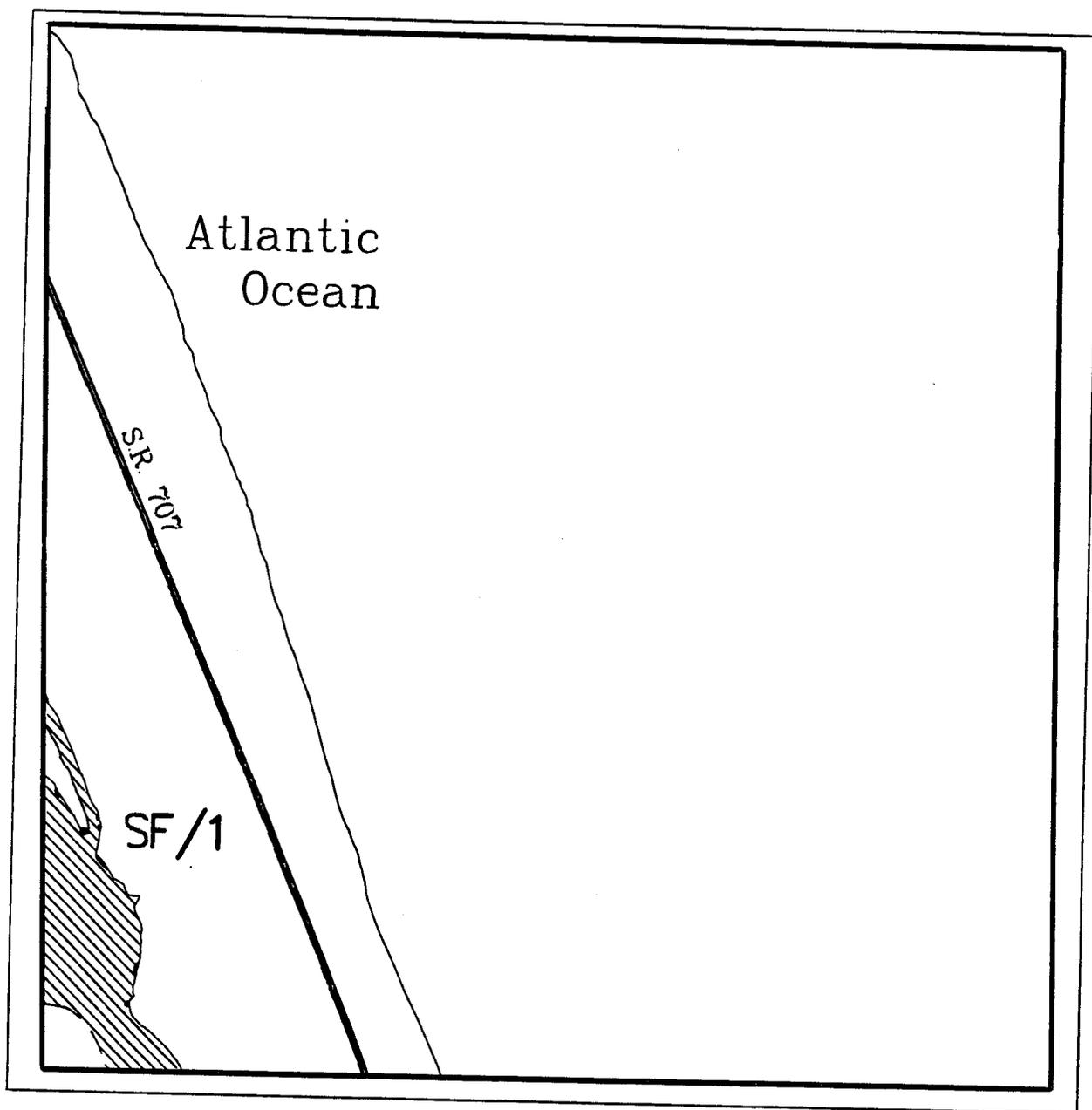
1 in = 250 m



-  Seagrass
40.099 hectares
-  Mangroves
1.051 hectares
-  Spartina
0.015 hectares

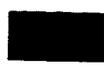


SECTION 25, T 39S, R 42E



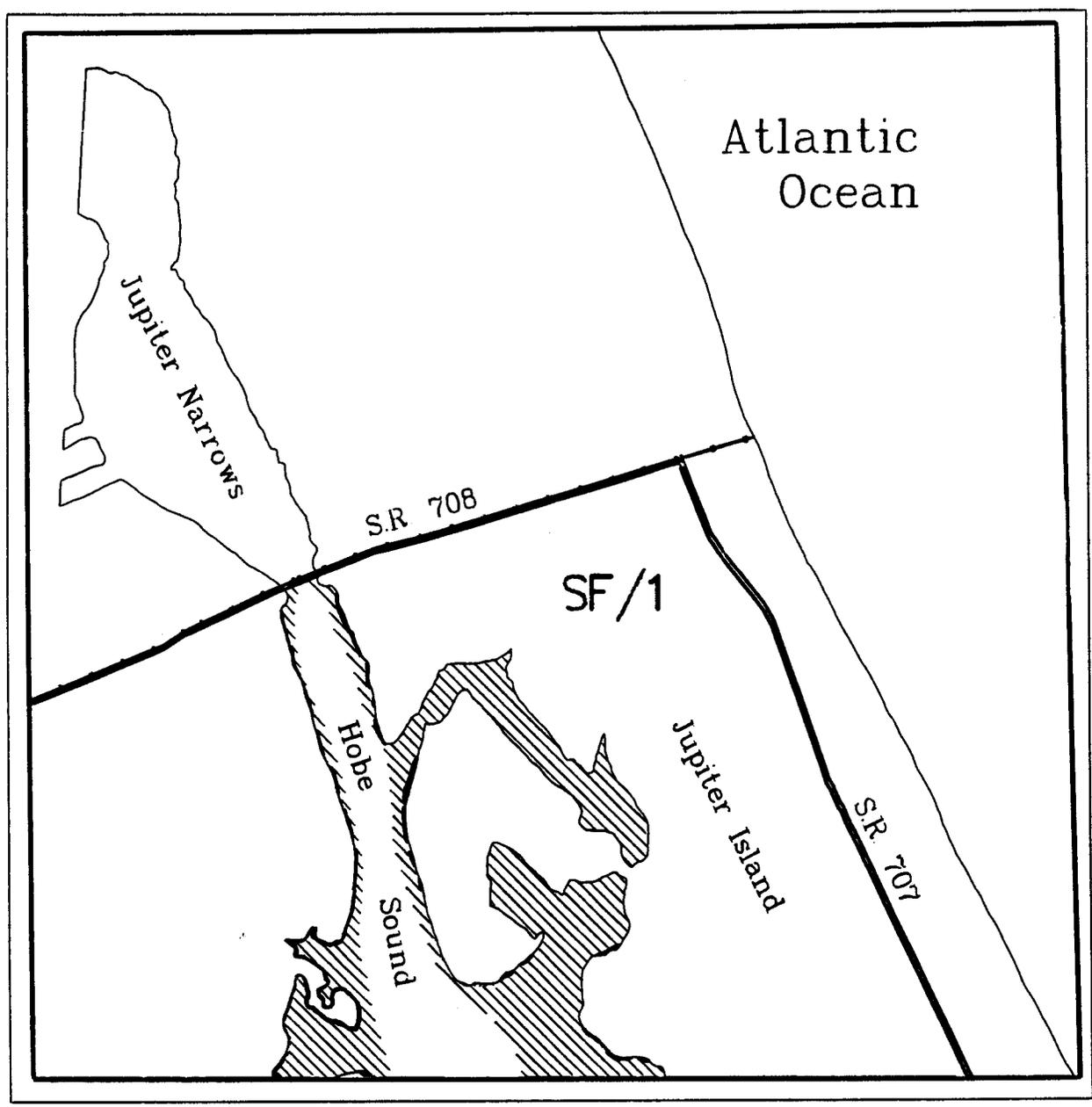
1 in = 259 m



-  Seagrass
5.215 hectares
-  Mangroves
0.438 hectares
-  Spartina
0.0 hectares



SECTION 23, T 39S, R 42E



1 in = 258 m



-  Seagrass
11 905 hectares
-  Mangroves
0.630 hectares
-  Spartina
0.024 hectares



APPENDIX C

Local Ordinances

PALM BEACH COUNTY ORDINANCES:

Palm Beach County Wetlands Protection Ordinance #90

An ordinance of the Board of County Commissioners of Palm Beach County, Florida, enacted to protect wetlands in the county, to be known as the Palm Beach County Wetlands Protection Ordinance; providing for the protection and preservation of wetlands; providing for a permit application review process; providing for an appeal process; providing for certain prohibitions; providing for enforcement remedies; providing for repeal of laws in conflict, including Palm Beach County Ordinance No. 81-18, as amended; providing for severability; providing for authority; providing for inclusion in code of laws and ordinances; providing for an effective date.

Manatee Protection Speed Zone Recommendations

On October 24, 1989 the Governor and Cabinet approved a number of recommendations made by DNR designed to improve manatee protection and boating safety. One of the recommendations dealt with developing state rules to implement speed zones to protect manatees in 13 counties where significant manatee activity and boat/barge related mortalities occur including Palm Beach County. Based upon available information, the Palm Beach County Department of Environmental Resources Management developed draft site specific manatee protection speed zones.

MARTIN COUNTY ORDINANCES:

Martin County Dock Ordinance #266

An ordinance amending Chapter 33, zoning, of the code of laws and ordinances of Martin County, Florida, by adding Section 33-74 to Article IV, general provisions, thereby creating regulations for the siting and construction of docking facilities in Martin County; providing for title purpose and intent, definitions, general provisions, non-commercial single docking facility standards, non-commercial multiple docking facility standards, commercial docking facility standards, waivers, procedures for issuance of development orders, conflicts, severability, applicability, filing with the Department of State, filing with the Department of Community Affairs, filing with the Treasure Coast Regional Planning Council, effective date, penalties and codification.

Purpose: to implement those sections of the Martin County Comprehensive Plan which pertain to shoreline construction and use within and adjacent to the estuaries and waterways of Martin County by providing guidelines and standards for the siting and construction of docking facilities.

Intent: to provide waterfront property owners with reasonable boat ingress and egress to the estuaries and waterways of Martin County, to protect the environmental integrity and function of the estuaries and waterways of Martin County, and to assure that the siting and construction of docking facilities will not pre-empt other public interests and uses of the estuaries and waterways of Martin County.

Martin County Mangrove Protection Ordinance #280

An ordinance amending Chapter 12, code of laws and ordinances of Martin County, Florida, by adding Article VI, thereby creating regulations for the protection of mangroves in Martin County; providing for title, policy and intent, definitions, prohibitions, approval procedures, standards for approval or denial or an application, exempting, enforcement, conflicting provisions, severability, applicability, filing with the Department of State, filing with the Department of Community Affairs, filing with the Department of Environmental Regulation, filing with the Treasure Coast Regional Planning Council, effective date, and codification.

Intent: to protect mangroves and their vital role in the economy and ecology of the county by establishing a procedure for evaluating and minimizing the impacts of proposed mangrove alteration, while allowing waterfront property owners to selectively trim mangroves in order to increase enjoyment of the benefits of riparian ownership.

Ordinance #325

An ordinance amending article XLVII, excavations and fills, of Chapter 33, zoning, of the Code of Laws and Ordinances of Martin County, Florida; thereby amending excavation, fill or mining permit application requirements; changing fill permit standards; involving the community development department in the permitting process; regulating the placement of fill material with respect to freshwater wetland systems, mangrove vegetation, and/or the mean high water mark of estuarine systems or aquatic preserves, with exceptions; regulating excavation near wetland area; prohibiting mining in specified endangered habitats, and limiting other excavation activity in those habitats; providing littoral zone side slope requirements; amending littoral zone plan requirements to include plan view of littoral zone; requiring all landscaping, littoral zone, revegetation and lake management plans to be approved by the South Florida Water Management District and county staff; amending the agricultural exemption section; amending mining application requirements; requiring specified vegetation in extended littoral zone shelves; increasing fee for excavation or fill permits; making receivers of fill responsible for payment of hauling fees; adding additional

penalties for violation of this ordinance; providing for conflicting provisions; severability; applicability of ordinance; filing with Department of State; filing with Department of Community Affairs; filing with Treasure Coast Regional Planning Council; filing with Department of Environmental Regulation; effective date; and codification.

Purpose: to prevent public nuisances, safety hazards and damage to private and public property in the excavation and filling of land and in order to protect the environment, including the quality and quantity of ground and surface waters, it is necessary to regulate excavation and fill activities, including mining, in Martin County.

Martin County Vessel Control, Water Safety and Manatee Protection Ordinance #369

An ordinance relating to vessel control and water safety and manatee protection; providing for title; providing for purpose and authority; providing for definitions, areas of enforcement, means of enforcement, careful and prudent operation of vessels, and speed criteria; providing for vessel speed and wake limits; providing for designated watersports activity areas; providing for public education, providing for exemptions, conflicting provisions, severability, applicability, filing with Department of State, Department of Environmental Regulation, Department of Natural Resources, Department of Community Affairs, Treasure Coast Regional Planning Council, effective date, penalties, and codification.

Purpose: to promote safety in and between boating, watersports, swimming, diving and other water borne activities in the waters of Martin County for humans and to protect the manatee, an endangered species, and seagrass beds.

Ordinance #297

An ordinance amending Chapter 23, land use generally, of the code of laws and ordinances of Martin County, Florida, by adding new Article VII, development approval procedures, providing for a development review committee and composition thereof; providing for new review procedures for certain developments to real property including, but not limited to planned unit developments, subdivision plats, site plan approvals; providing for criteria for determining whether a modification to a previously approved plan constitutes a major or minor change; providing for conflicting provisions, severability, applicability of ordinance, filing with Department of State, filing with Department of Environmental Regulation, filing with Department of Community Affairs, filing with Treasure Coast Regional Planning Council, effective date, penalties and codification.

Intent: the preapplication conference is intended to provide the applicant with the opportunity to jointly confer with members of the Development Review Committee (hereinafter referred to as the DRC) prior to submitting a final formal application. The DRC will advise the applicant on the feasibility of various possible design alternatives, will generally advise the applicant as to which areas of the Land Development Code and Comprehensive Plan are applicable, and also provide the applicant information regarding any projected plans, programs or other matters that may affect the project. The opinions expressed at the preapplication conference are intended to be solely for the general assistance of the applicant and to provide general direction to the applicant and are in no event to be considered binding on the County staff, the County Commission or the applicant.

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