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ST. JOSEPH BAY

AQUATIC PRESERVE MANAGEMENT PLAN

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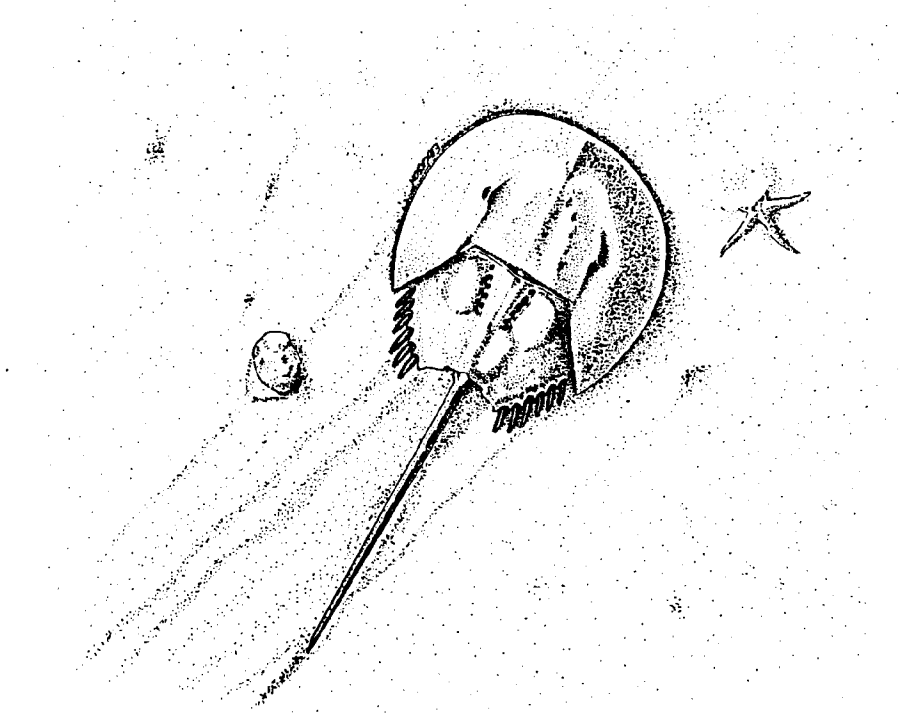

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DEPARTMENT OF NATURAL RESOURCES

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ST. JOSEPH BAY

AQUATIC PRESERVE MANAGEMENT PLAN

ADOPTED

JANUARY 22, 1992

VIRGINIA WETHERELL

Executive Director

Florida Department of Natural Resources

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

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EXECUTIVE SUMMARY

The St. Joseph Bay Aquatic Preserve is located on the southwest coast of Gulf County in northwest Florida near the city of Port St. Joe. Formed by a narrow spit of land extending out from Cape St. Blas it is the only embayed body of water in the eastern Gulf of Mexico not influenced by the inflow of fresh water. The preserve encompasses approximately 73,000 acres, including all tidal lands and islands, sandbars, shallow banks, submerged bottom, and land waterward of the mean high water to which the state holds title. Sportfishing and recreational shellfish harvesting are important tourist attractions throughout the year. This aquatic preserve provides food and habitat for numerous fish, reptiles, marine mammals, birds, and benthic invertebrates. Several designated species are known to occur in the preserve, including the Peregrine falcon, Southern bald eagle, Leatherback turtle, Atlantic ridley turtle and the Atlantic loggerhead turtle.

Submerged lands are selected as aquatic preserves based upon their outstanding biological, aesthetic, and/or scientific values. St. Joseph Bay was designated an Aquatic Preserve in 1969 for the primary purpose of preserving the biological resources in the bay and maintaining them in an essentially natural condition.

In early 1990, the salt marsh surrounding the bay began showing signs of stress with the dying off of the cordgrass. In the summer of 1991 attempts by the Department of Natural Resources to restore the cordgrass by transplanting healthy, nursery-grown plants into the bay have met with failure; all of the transplanted grasses died by the end of the summer. Seagrasses provide habitat and refuge from predators to many juvenile populations of commercially important species of fish and invertebrates. In St. Joe Bay, they cover one-sixth of the bay bottom, and are vital to the coastal ecosystem not only for their associated food webs, but for their ability to recycle nutrients, stabilize sediments, and buffer the wave energy of storms.

The main objective of the management plan for St. Joseph Bay Aquatic Preserve is to protect the preserve's natural resources for the benefit of future generations. On site management activities include actions by field personnel to protect plant communities, animal life, geologic features, archeological sites, and water resources of the preserve. Management activities will also focus on cumulative impacts and encroachments.

St. Joseph Bay Aquatic Preserve has been divided into several management areas. The classification of each management area is based on the resource value of submerged lands associated with existing future land uses on the adjacent uplands. The intent of the plan in designating these management areas is to make potential development activities and uses of the preserve compatible with resource protection goals. The major uses of this preserve are recreational fishing and shellfishing, boating, snorkeling, swimming, commercial navigation, adjacent land uses and their attendant facilities (e.g., docks). Maintaining the continued health of the preserve involves minimizing adverse impacts from all uses within and adjacent to the preserve.

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 preserves' boundaries are also provided. Public and private uses that are allowable pursuant to the 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. One of the aquatic preserve management program's objectives, therefore, is to complement 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 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 the 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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Copies of the legal description of the St. Joseph Aquatic Preserve, as well as copies of Chapters 253 and 258, F.S., and Chapter 18-21, F.A.C., may be obtained from:

Bureau of Submerged Lands and Preserves
Department of Natural Resources
3900 Commonwealth Blvd.
Mail Station 125
Tallahassee, Florida 32399

CHAPTER I

INTRODUCTION

St. Joseph Bay in Gulf County, Florida covers about 73,000 acres along the northern coast of the Gulf of Mexico. It was designated an aquatic preserve by the Governor and Cabinet in 1969 and is one of 42 such preserves in Florida (Figure 1). The boundaries of the preserve (Figure 2) include all tidal lands and islands, sandbars, shallow banks, submerged bottom, and lands waterward of mean high water (MHW) to which the state holds title.

St. Joseph Bay is an important natural resource to Gulf County in terms of commercial and recreational fishing. The bay is unique in being the only sizable, embayed body of water in the eastern portion of the Gulf of Mexico not markedly influenced by the inflow of fresh water. Species harvested commercially within the aquatic preserve include bay scallops, mullet, hard-shell clams, blue crabs, and shrimp. The commercial harvesting of bay scallops has proven to be controversial since it competes with recreational harvesting of scallops. Sportfishing is an important form of tourism throughout the year. Major species sought through recreational fishing include spotted seatrout, king and spanish mackerel, flounder, bay scallops, hardshell or quahog clams, and sunray venus clams.

The St. Joseph Bay Aquatic Preserve is located on the southwest coast of Gulf County in northwest Florida, near the community of Port St. Joe. Its boundaries encompasses only the state-owned sovereignty submerged lands occurring below mean high water. Uplands and man-made canals are excluded from the preserve. Other excluded areas include a linear band of privately owned submerged lands and marsh running along the eastern shore of St. Joseph Bay, six private in-holdings occurring along the southern and western shore, the bay area located north of the Port St. Joe navigation channel, and the immediate area of the channel. Through the Conservation and Recreation Lands (CARL) program, the state of Florida is pursuing acquisition of these areas.

The goal of the Florida Aquatic Preserve Program as specified in Section 258.36, Florida Statutes (F.S.), is to set aside forever state-owned submerged lands which have exceptional biological, aesthetic, or scientific value for the benefit of future generations. Aquatic preserves include only lands or water bottoms owned or leased by the state and lands owned by other governmental bodies specifically authorized for inclusion in the preserve. Any publicly owned and maintained navigation channel or other public works project authorized by the United States Congress and designed to improve or maintain commerce and navigation are excluded from the aquatic preserve boundaries.

It was the intent of the Florida Legislature that aquatic preserves be maintained in an essentially natural or existing condition. Therefore, the Department of Natural Resources (DNR) develops and oversees implementation of the management program to better assure that the overall goal of setting aside aquatic preserves for future generations is realized. This management plan outlines this program. As more information is learned about the preserve, management strategies outlined in this plan may need to be modified.

Specific goals included for the St. Joseph Bay Aquatic Preserve are: 1) to conduct those resource management actions necessary to conserve or enhance the natural resource oriented values of the preserve for future generations; 2) to assure that all laws, rules, ordinances, and permit conditions relating to the protection of natural resources are complied with; 3) to have the necessary research and monitoring activities conducted so that the ecological functioning of the preserve is understood, so that preserve can be managed and used in an ecologically sound and wise manner, and so that the preserve can be maintained in its natural condition for future generations; and, 4) to educate people so that they will use the environment in ways that conserve it, consider environmental issues when planning and making decisions which could affect the environment, and take part in decisions affecting nearby natural resources.

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

Previous management plans were designed to be generic in nature, with policies and management guidance generally applicable to all aquatic preserves. This plan and all future aquatic preserve management plans, however, will be designed to be more site-specific and contain policy guidance and directives applicable to an individual preserve.

Implementation of this plan relies heavily on authorities and activities existing outside the Aquatic Preserve Program per se. Aquatic preserves were intended to be managed to emphasize maintenance and enhancement of natural resources. Section 18-20.004(2)(a), F.A.C., states that proposed development projects and lease requests to utilize sovereign bottoms in less developed aquatic preserves, such as St. Joseph Bay, shall be subject to a higher standard than similar projects in the more developed preserves. As more information is learned about the preserve and ambient conditions analyzed, efforts to restore or enhance the productivity of the bay may be undertaken, if necessary.

This management plan is divided as follows: Chapter II cites authorities upon which this management program and plan are built. Chapters III and IV discuss the resource, man's usage of the resource, past problems associated with usage of the resource, and status and content of applicable local government comprehensive plans. Chapter V focuses on site specific management issues and needs and Chapter VI discusses management areas. Chapter VII provides a management action plan for the aquatic preserve. Chapter VIII the management coordination network. And, Chapters IX and X the staffing and budgetary needs and resources and activity monitoring program.

FIGURE 1 - FLORIDA AQUATIC PRESERVE SYSTEM

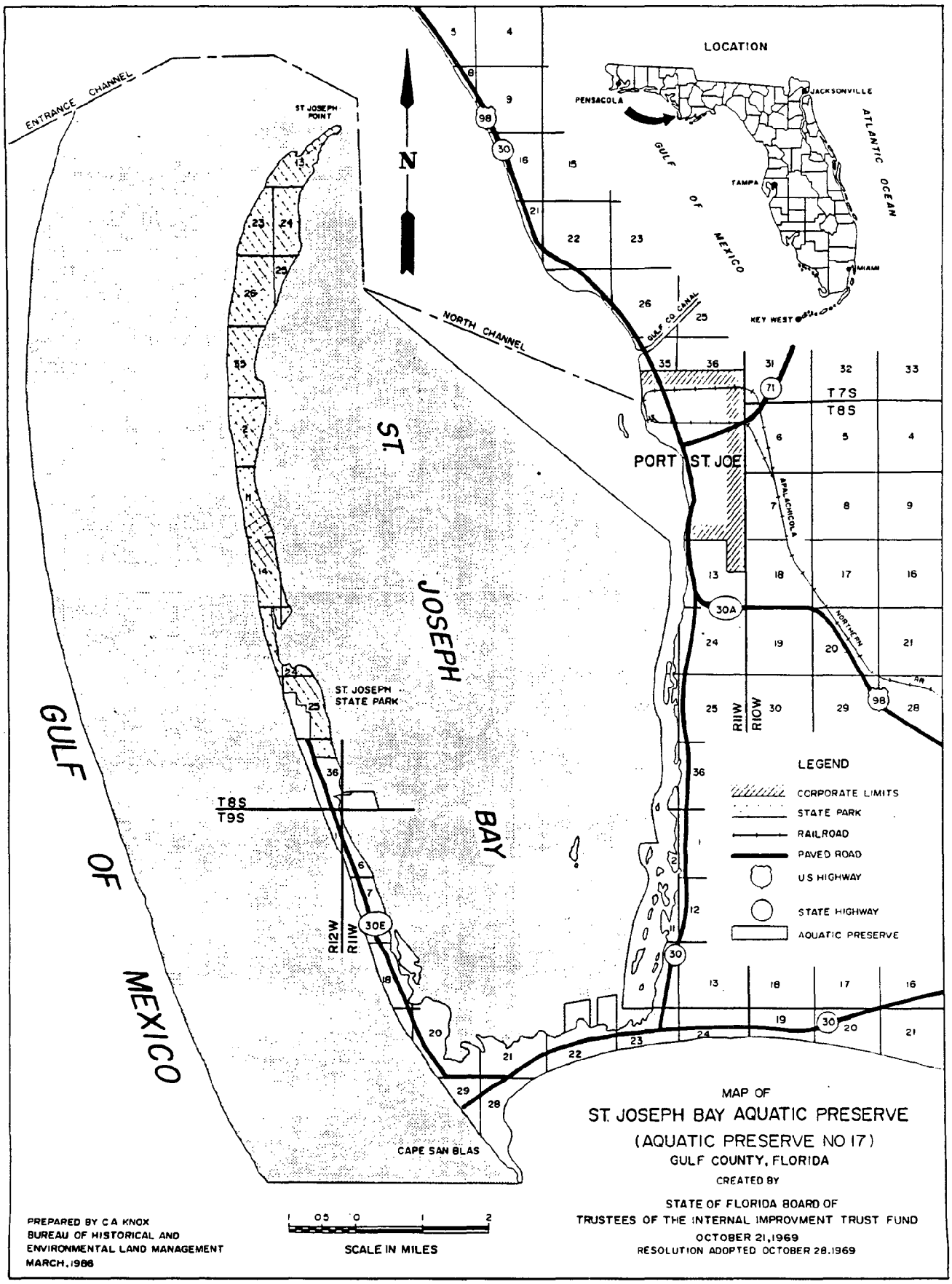

FIGURE 2. **St. Joseph Bay Aquatic Preserve**

CHAPTER II

MANAGEMENT AUTHORITY

The primary laws providing management authority for aquatic preserves are Chapters 253 and 258, 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. They also empower the Trustees to adopt and enforce rules and regulations for managing all sovereignty submerged lands, including aquatic preserves.

The jurisdiction of the Florida Aquatic Preserve Program relates to the use of sovereign submerged lands within the boundaries of the aquatic preserve. Activities which cannot be controlled directly through an aquatic preserve designation include use of the adjacent uplands, federal navigation projects within an aquatic preserve, commercial fishing, water uses (e.g., boat speeds, wake zones, etc.), and water quality. Although the Aquatic Preserve Program does not directly control water quality, by virtue of the aquatic preserve designation the waterbody has been declared an Outstanding Florida Water (OFW) and therefore, ambient water quality at the time of the designation is the water quality standards for the estuary.

The principle differences between submerged lands designated as aquatic preserves and other submerged bottoms within the state are in regard to activities which would disturb the submerged bottoms such as in the drilling of oil and gas wells, excavation of minerals, construction of seawalls, the placement of rip rap, the construction of docks and boat-houses, dredging and filling, and the placement of utilities. In addition, a public interest test must be met within aquatic preserves, whereas on other sovereign lands no public interest test exists except in regard to the sale of sovereign land.

Sections 258.35-258.42, F.S., enacted in 1975 comprise the Florida Aquatic Preserves Act. These sections 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.

Management responsibilities may be fulfilled directly by the Governor and Cabinet or indirectly by staff of the Division of State Lands through delegations of authority from the Board of Trustees. Staff of the Division of State Lands, Bureau of Submerged Lands and Preserves serve as on-site managers for the Board of Trustees and review requests for uses affecting state-owned sovereignty submerged lands within the aquatic preserves. Project assessments and reviews are evaluated in accordance with the criteria in Sections 258.35-258.42, F.S., (Florida Aquatic Preserves Act), and Chapter 18-20, F.A.C.

BACKGROUND

The laws supporting aquatic preserve management are the direct result of the public's awareness of the importance of preserving Florida's coastal environment resulting from the rampant dredge and fill activities in the late 1960s.

In 1967 the Randall Act (Chapter 67-393, Laws of Florida), established procedures regulating previously unrestricted dredge and fill activities on state-owned submerged lands. That same year the Legislature provided 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 estuaries from development led to the Board of Trustees establishment of a moratorium on the sale of submerged lands to private interests. In the same year, an Interagency Advisory Committee (IAC) on submerged lands was created. In late 1968, the committee issued a report recommending the establishment of twenty-six aquatic preserves. Also in 1968, the Florida Constitution was revised, declaring in Article II, Section 7, the state's policy of conserving and protecting the natural resources and scenic beauty. That constitutional provision also established the authority for the Legislature to enact measures for abatement of air and water pollution.
On October 21, 1969, the Governor and Cabinet acted upon the recommendations of the IAC and adopted by resolution eighteen of the waterbodies as aquatic preserves, including St. Joseph Bay. Other preserves were similarly adopted at various times through 1971. Prior to the October 1969 action, the legislature had created the Boca Ciega Aquatic Preserve. Subsequent legislation in 1972, 1973, and 1974 created the Pinellas County, Lake Jackson and Biscayne Bay Aquatic Preserves, respectively.

In 1975, the Legislature established the Florida Aquatic Preserve Act (Chapter 258, F.S.), bringing all existing preserves under a standardized set of maintenance criteria. Subsequent acts added Cockroach Bay in 1976, Rookery Bay in 1977 and Gasparilla Sound-Charlotte Harbor in 1978 to the Aquatic Preserve Program.

In June, 1985, the Legislature passed Senate Bill 762 which expanded the boundaries of the Rookery Bay, Banana River, Indian River-Malabar to Vero Beach, Loxahatchee River-Lake Worth Creek, and Wekiva River Aquatic Preserves, and created the Guana River Marsh and Big Bend Seagrasses Aquatic Preserves. Lemon Bay and Rainbow Springs were added as aquatic preserves by SB 607 in 1986.

ADMINISTRATIVE RULES FOR AQUATIC PRESERVES

Chapters 18-20 and 18-21, F.A.C., are rules adopted by the Board of Trustees designating the allowable uses of aquatic preserves and other submerged lands.

Chapter 18-20, F.A.C. (Appendix A), addresses the aquatic preserves specifically and derives its authority from Sections 258.35, 258.36, 258.37, and 258.38, F.S. 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 the aquatic preserves. The intent of this Chapter is found 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 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 excep-tional 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, mudflats, estuarine, aquatic and marine reptiles, game and non-game fish species, estuarine aquatic, and marine invertebrates, estuarine, aquatic, and marine mammals, birds, shellfish and mollusks;

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

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

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 the 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; and,

(6) to aid in the implementation of the State Lands Management Plan."

RELATION 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 Florida. As such, it provides direction for management of 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 of the State Comprehensive Plan.

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, contain specific policies concerning spoil islands, submerged lands leases, "Outstanding Native Florida Landscapes", unique natural features, seagrass beds, archaeo-logical and historical resources, and endangered species. These policies provide some of the fundamental direction for formulating management plans and policies for the Aquatic Preserve Program.

A Local Government Comprehensive Plan (LGCP) for Gulf County is required by Section 163.3161, F.S. This plan is intended to guide the future development in the city and county and is required by law to conform to criteria, policies, and practices listed in their comprehensive plan. The Division of State Lands reviews these local plans to assure their compliance with submerged land policies of the state and of the Aquatic Preserve Program. Aquatic preserve management plans provide management guidance for state sovereign lands which are beyond the jurisdiction of the Local Government Comprehensive Planning Act. Therefore, if coordinated properly the management plan for an aquatic preserve can serve as the waterward extension of the County's Local Government Comprehensive Plan. Gulf County's plan has been reviewed by Bureau staff, as well as from other state agencies. It was submitted to the Department of Community Affairs in June 1990 and is currently awaiting final approval and adoption by the state. In March 1990, the Beach Restoration Management Plan was adopted by the Governor and Cabinet for Gulf County. The Aquatic preserve management plan is consistent with the beach management plan for the area.

CHAPTER III

RESOURCE DESCRIPTION

To manage and protect the resources of an aquatic preserve it is essential to understand the physical and biological resources of the preserve, how they function and interact within the preserve boundaries, and how the resources within the preserve interact with the larger natural system of which they are part.

PHYSIOGRAPHY AND GEOLOGY

St. Joseph Bay is formed by a narrow spit of land extending out from Cape San Blas. The bay owes its existence to the Cape San Blas shoals and the historical migrating of the Apalachicola River (Stewart, 1962). Before sea level rise, these shoals are believed to have been a barrier island system (Schnable and Goodell, 1968). The shoals extend about 10 miles into the Gulf of Mexico and are marked by a series of broad ridges and troughs. They have caused wave action to deflect littoral drift, which in turn has resulted in the emergence of the St. Joseph spit or peninsula north of Lighthouse Bay. The Cape San Blas portion is the result of the westward migration of the mainland.

St. Joseph Bay is unique in being the only sizable, embayed body of water in the eastern portion of the near-shore gulf coast not markedly influenced by the inflow of fresh water. The bay has a mean depth of 21 feet, with the deepest parts being about 35 feet near the northern tip of the spit. Figure 3 shows the bathymetry of St. Joseph Bay. Below the five-foot level salinity values are essentially identical to those in the open gulf.

Bottom sediments are predominantly quartz sand, with localized areas of clayey silt, sandy silt, clayey sand, and gravel-sand mixtures (Stewart, 1962). Figure 4 maps the sediment types in St. Joseph Bay. Present day sedimentation in St. Joseph Bay may be attributed to the coastal transport of sand from the east and biological activity within the bay itself. Since the spit enclosed the bay, the rate of sedimentation has been slow. Therefore, the central portion of the bay has a depth and gradient which is in close agreement with that of the offshore slope. The large accumulation of clay in the central portion of the bay has led to the conclusion that these fine sediments represent a relic surface produced by the discharge of an old distributary of the Apalachicola River (Stewart and Gorsline, 1962).

St. Joseph Bay lies on an offshore extension of the Gulf Coastal lowlands geomorphic province. The onshore terrain consists of a flat, frequently swampy plain sloping gently towards the coast. Near-surface sediments are Pleistocene and Holocene deltaic and marine sands which are generally over 100 feet thick. These

overlay Upper Miocene limestones, clays, and shell beds (Schmidt, 1978). Relict marine bars, dunes, and spits, formed during high Pleistocene sea level stands, are superimposed on the otherwise flat landscape. Land slope near the coast averages 2 to 3 feet per mile. Offshore, the submarine plain slopes seaward at a rate of 4 to 5 feet per mile for at least 10 miles.

St. Joseph spit is connected to the mainland by a 3 mile long arm extending eastward from Cape San Blas. The spit bends sharply at the Cape and extends about 15 miles northward in a gentle convex-seaward arc. Width of the spit is generally less than one-mile. Eagle Harbor, midway up the spit, forms a natural cove on the bay side. This feature may represent an ancient pass which once divided the spit into two islands (Stapor, 1973).

An analysis of the coastal sand budgets for northwest Florida suggest that the region has shifted from historically having an excess of sand to a current shortage (Stapor, 1973). The beaches of Gulf County are about 100 to 200 feet in width and are backed by dunes reaching to about 40 feet in height. They have experienced a balance of erosion and deposition over the last 100 years. Some sections have experienced long-term recession and have contributed sand to other areas that have a history of accretion (BSRC, 1985). Cape San Blas and St. Joseph spit have been lengthening from sand eroded from their western shore. The primary causes of beach and dune erosion in Gulf County are periodic storm events and long term sea level rise (DNR, 1990).

According to the DNR's Beach Restoration Management Plan (DNR, 1990), the coast along the 17 mile reach extending from St. Joseph Point south to Cape San Blas is eroding (Stapor, 1971; Tanner, 1975; Balsillie, 1985; Clark, 1989), with the exception of the northern 2.17 miles (Balsillie, 1985).

In the northern ten miles of this eroding portion of the St. Joseph peninsula, the historical erosion rate increases from 0 to -3.75 ft/yr, while in the southern five miles the erosion rate increases from -4.1 to -30.7 ft/yr (Balsillie, 1975). The latter is the largest historical long-term erosion rate recorded in Florida. Tanner (1975) has noted that a lighthouse located just over one mile north of Cape San Blas has been relocated six times to eastern sites since its original construction. Clark (1989), however, describes these erosion rates as noncritical on the basis that there are few or little coastal man-made structures to be threatened. Erosion along a 500 foot segment of beach at Stump Hole threatens county road C30 and is designated as critical erosion.

A longshore drift divide has been identified along the southern one-third of the St. Joseph peninsula (Stapor, 1971; 1973b; 1974; U.S. Army, 1971). St. Joseph point is accreting and migrating northward due to erosion north of the divide and longshore transport of eroded material to the north. Progradation of the point has been described as slight (Tanner, 1975). The majority of the eroded material is

SOURCE: STEWART & GORSLINE, 1962.

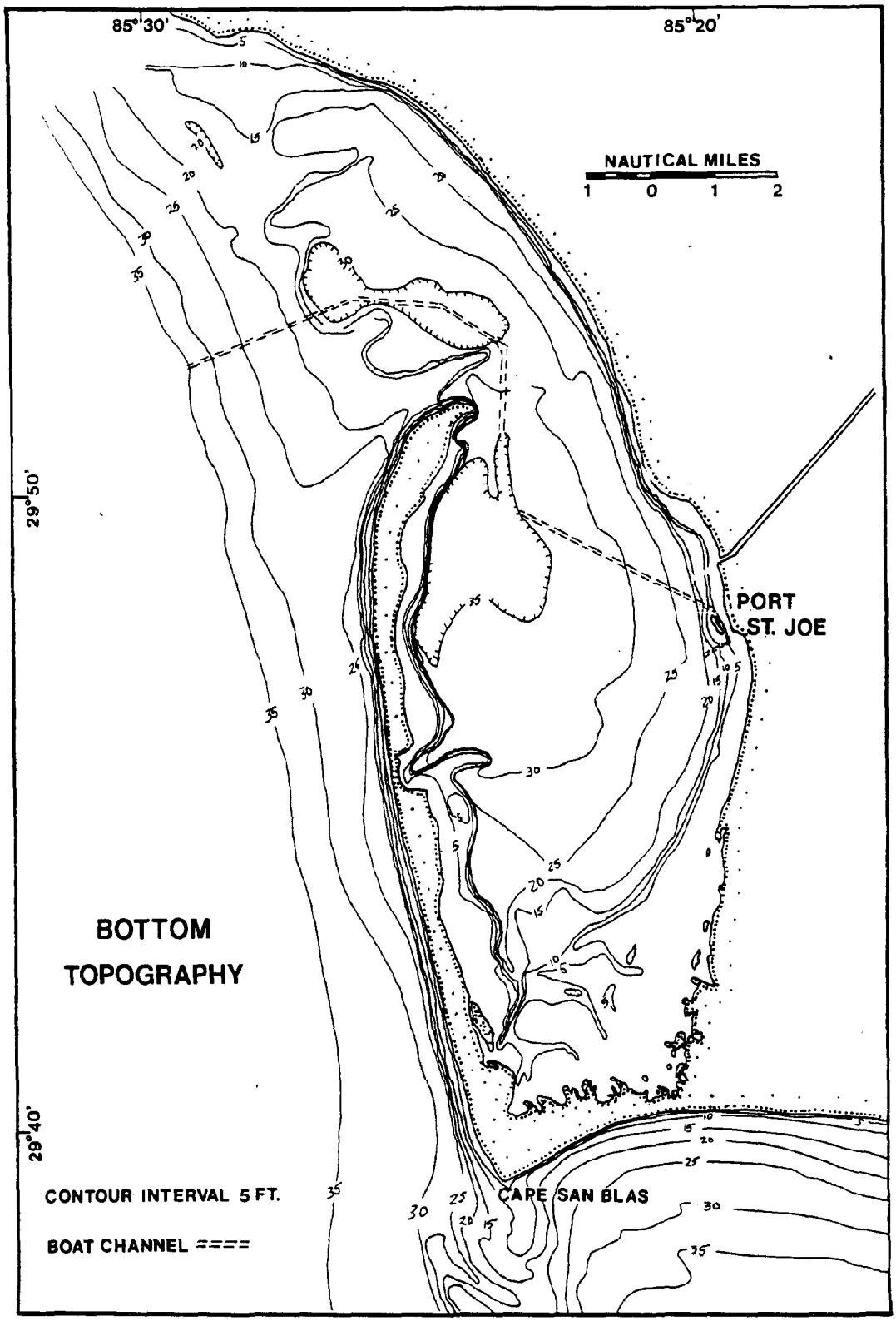

FIGURE 3. **Bathymetry of St. Joseph Bay**

SOURCE: STEWART & GORSLINE, 1962.

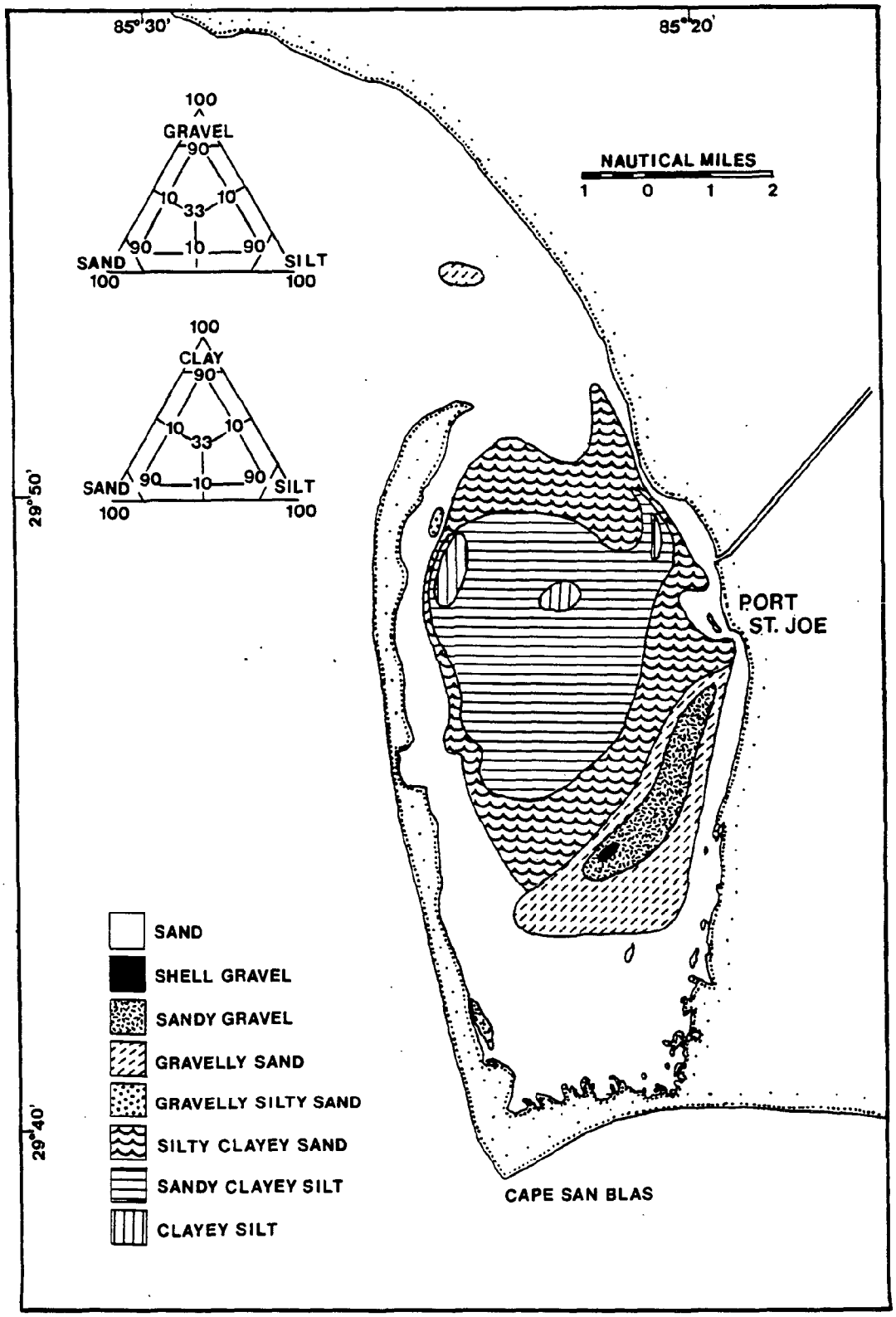

FIGURE 4. **Bottom Sediments of St. Joseph Bay**

moving south and is accreting in shoals south of Cape San Blas (Tanner 1960a; 1961; Stapor, 1971; 1973; 1974; Stauble and Warnke, 1974). Stapor (1971) suggests that the southerly longshore transport may be due to strong southerly winds near the Cape.

The nine miles of shoreline from Cape San Blas east to Indian Pass is stable to accreting. Very high historical rates of accretion from 61.4 ft/yr near the Cape to 5.0 ft/yr several miles eastward strongly suggest a significant net eastward movement of Cape San Blas shoal material, controlled mainly by wave refraction due to shoal configuration. Such a conclusion is strongly supported by physiographic evidence of backbeach dune ridge formation (DNR, 1990). The beaches of the mainland of Gulf County north of the city of Port St. Joe are for the most part accreting (Balsillie, 1985). Between 1860 and 1935 the shores migrated seaward about 200 to 300 feet (BSRC, 1985).

Although the St. Joseph spit is lined with dunes facing the Gulf of Mexico, these dunes almost without exception show signs of severe scarp erosion. Blowout conditions exist in some of the high dune areas on the spit, where the landward migrating dune material has breached the dune line and buried trees to their tops further inland. The topography is also low in the areas north and east of the cape. Therefore, in an event of 100 year frequency storm or hurricane, most coastal areas of Gulf County are subject to flooding (BSRC, 1985).

The shallow nearshore gulf in the region is a drowned alluvial plain grading into a limestone plateau to the east and south (McNulty et al., 1972). The north gulf coast sedimentary province contains relict sand west of the Apalachicola delta. Water movement along the shallow west Florida shelf is primarily due to tides, although wind effects are evident, especially in winter when cold fronts move through the area. The high salinity coastal waters are well-mixed except during winter months when a thermocline separates the colder bottom waters from the surface waters (Livingston, 1984).

CLIMATE

St. Joseph Bay is located in a transitional climatic zone between the semi-tropical climate of peninsular Florida and the subtropical climate of the southeastern United States. Average annual rainfall is about 60 inches. Maximum rainfall occurs during the summer and fall months, with September being the wettest. The dry season occurs from October through December. Convection type storms are the predominant source of rainfall in the summer and frontal storms are the typical source in the winter.

The climate of Gulf County is largely determined by its proximity to the Gulf of Mexico, the northern continental land mass, and its temperate latitude. Generally,

the warm waters help create warm, humid summers and mild winters. Wind conditions are generally north through the winter and southerly during the summer months. Hurricane and tropical storms occasionally influence the late summer and fall weather of the region, bringing extremes in wind, rainfall, and tide. Over a 500 year period it is estimated that a total of 90 land falling hurricanes will occur within a distance of 270 nautical miles of Gulf County (Dean and Chiu, 1985). In 1985 hurricane force winds were experienced twice within the aquatic preserve boundaries.

HYDROLOGY

The gulf coast falls within a moderate energy coastal area (Tanner, 1960), with average breaker heights of 4 to 20 inches. Waves traveling northward through the Gulf of Mexico are refracted clockwise around the Cape San Blas shoals in such a manner as to arrive nearly parallel to the beach. This results in a bi-directional littoral drift system which runs northward along the northern half of the spit and southward along the southern portion (Tanner, 1966).

St. Joseph Bay lies in the transition zone between the semi-diurnal tides of the big bend area and the diurnal (daily) tides to the west. One study has found that predicted and actual tides in St. Joseph Bay are not concurrent (Rudloe, 1985). The bay exhibits chiefly diurnal tides with a single high and low stage each day. The average tidal range is 1.4 feet. Daily ranges decrease to less than 0.2 feet during equatorial tides (when the moon is over the celestial equator) and increase to 1.5 to 2.5 feet during tropic tides (when the moon is over the Tropic of Cancer or Tropic of Capricorn) (Barnett and Gunter, 1986).

Currents in St. Joseph Bay show a response to the tidal cycle of ebb and flood. In general, during the flood tide a moderately strong flow sweeps around the point and into the lagoon. A counter-clockwise circulation pattern is established in the central portion of the lagoon. This movement is disrupted only during the maximum flood tide. At ebb tide, currents flow from the lagoon and outer basin via the channel at the point and across the shoal in the vicinity of the boat channel. Current movement is essentially on the surface throughout a major portion of the bay, diminishing rapidly below the 5 foot depth contour. In the shallow south end of the bay current movement is negligible. Circulation is also believed to be limited in the deeper portions of the bay (Stewart, 1962).

Numerous small bayous, creeks, and ditches drain into St. Joseph Bay. The principal sources of freshwater into the bay include rainfall, overland drainage and the Gulf County Canal (a man-made canal dug by the U.S. Army Corps of Engineers). During periods of high river stage on the Apalachicola River, a small percentage of the Apalachicola River's flow may be diverted westward and exit the Canal via Lake Wimico and the Intracoastal Waterway.

BIOTA AND HABITAT

The ecology of near-shore coastal areas is defined by both the salinity regime and nutrient budget. As noted above, the salinity regime of St. Joseph Bay is essentially identical to that of the gulf. In most of the extensive shallow reaches of the lower bay there is no appreciable current except for the daily tide. Therefore, this most productive area of the bay functions largely as a closed system (Stewart, 1962). Consequently, the nutrient budget and food web of the bay are dependent upon the primary productivity of the bay itself.

Salt marshes and seagrasses play an important role in the food web of St. Joseph Bay. Salt marshes generally develop along low-energy coasts under stable or emergent conditions. Salt marshes constitute an extremely productive ecosystem. Salt marsh communities are typically low in species diversity and dominated by a few species. The dominant species in salt marshes of St. Joseph Bay are black needlerush (Juncus roemerianus) and smooth cordgrass (Spartina alterniflora). The ecological significance of salt marshes to the bay is that they serve as a foundation for detrital based food chains. Marsh detritus produced by biological decomposition and mechanical breakdown of dead plant material is reported as a rich and abundant food source for estuarine organisms (de la Cruz, 1975). Recent studies, however, question the long-held belief that marshes serve as nutrient pools and primary sources of detritus for the food chain (Stout, 1984). Very few comprehensive studies have addressed the functional role of salt marshes in the estuarine ecosystem, and even less information is available on gulf coast Juncus marshes.

Other important functions of salt marshes include: serving as the exclusive habitat of a few species of algae and seed plants, of a large variety of invertebrates, of a large number of birds, and of a few reptiles and mammals; providing protection to adjacent low-lying uplands from saltwater intrusion, coastal erosion, and in expansive marshes, from salt spray; and, serving as important nursery grounds and refuges for important commercial and sport species (Wolfe et al., 1988).

Virtually the entire rim of the bay is bordered by salt marsh. This marsh is a narrow band along much of the spit, but widens near Pig Bayou and is a prominent feature of the shallow areas of the southern and southeastern portions of the bay. Extending into the bay for up to hundreds of feet, this intertidal zone also includes tidal mud-flats. In a few places along the eastern shore the salt marsh is influenced by tidal creeks which supply some fresh water to the bay. In early 1990, the salt marsh surrounding St. Joseph Bay began showing signs of stress and dying off. Whether the cause of this stress is due to a natural phenomena or to man has not yet been determined. Evidence suggests that mortality is due to a chronic stress rather than a single acute episode of stress. At this time the reason for the dieoff is being studied by the Department of Natural Resources.

Seagrasses are the equivalent of an underwater salt marsh in terms of net productivity. The physical structure provided by seagrass blades and rhizomes increases available habitat surface area for surrounding organisms as much as 15 to 20 times compared to unvegetated bottoms. In addition, they offer refuge from predators to many large juvenile populations of commercially important species of fish and invertebrates (Wolfe et al., 1988). Two types of food webs are associated with seagrass communities: (1) a grazing food chain component comprised of herbivores that feed on living plants (the seagrass blade itself and associated algae) and their predators; and, (2) a detrital food chain component comprised of herbivores that feed on dead material, together with their associated predators.

In St. Joseph Bay they cover about one-sixth of the bay bottom. They are found in the shallower areas where the sun can penetrate to the bottom. Figure 5 shows the location of seagrass beds in St. Joseph Bay. The areal coverage of bay bottom by seagrasses was stable during the 1970s because of the relatively unpopulated nature of the area (Savastano et al., 1984; Livingston, 1987).

Five species of seagrass are found in the bay: Cuban shoal grass (Halodule wrightii), manatee grass (Syringodium filiforme), turtle grass (Thalassia testudinum), widgeon grass (Ruppia maritima), and star grass (Halophila engelmanni). Shoal grass is recognized as the pioneer species in the successional development of grassbeds in the gulf and Caribbean (Zieman and Zieman, 1989). It can tolerate exposure and is therefore found in the shallow areas. Manatee grass is found in areas deeper than those colonized by shoal grass and is typically interspersed with other seagrass species. Turtle grass is by far the most predominant species of seagrass in the bay. Star grass is patchily distributed throughout the bay and widgeon grass occurs in a few small, isolated populations on the eastern side of the bay. A recent monitoring of seagrass beds along the north Florida coast found the richest and most abundant concentrations of marine grasses in St. Joseph Bay (Williams, 1981).

Seagrasses are vital to the coastal ecosystem because they form the basis of a three-dimensional, structurally complex habitat. The importance of seagrass beds extends beyond their geographical limits because of the distribution of seagrass detritus, and their ability to cycle nutrients, stabilize sediments, provide habitat and shelter to juvenile fish and invertebrates, serve as a food source, and buffer wave energy in a storm (Zieman, 1982; Dawes, 1987; Virnstein, 1987). Seagrass beds in St. Joseph Bay are important habitat for such commercially and recreationally important marine species as the bay scallop (Argopecten irradians concentricus), blue crabs (Callinectes sapidus), penaeid shrimp (Penaeus spp.), mullet (Mugil cephalus), spotted seatrout (Cynoscion nebulosus), and redfish (Sciaenops ocellatus).

Although seagrasses do not grow below 15 to 20 foot depths, detrital matter from the beds is transported to this level and is available to deeper dwelling marine

SOURCE: SAVASTANO et al., 1984.

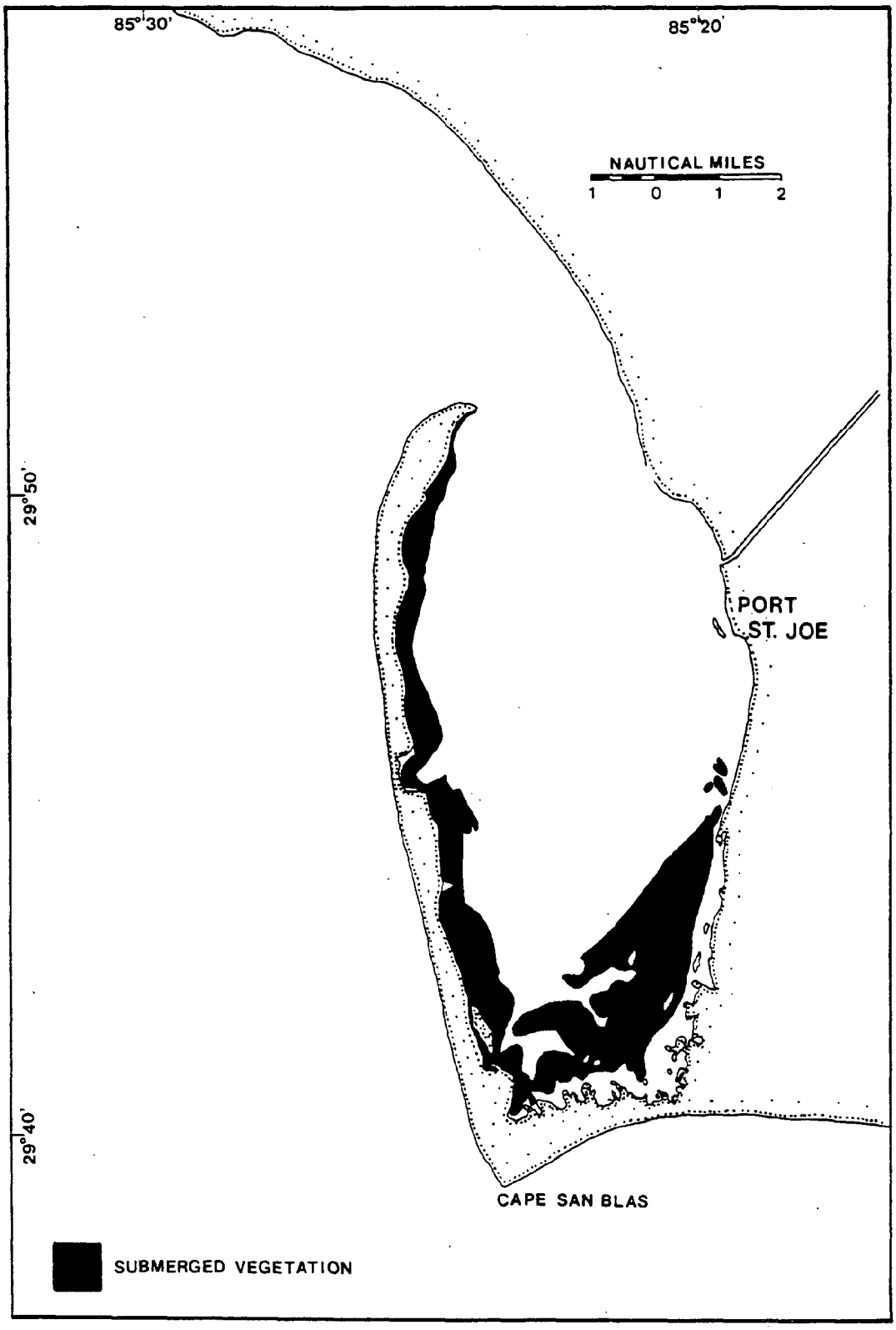

FIGURE 5. **Seagrass Beds of St. Joseph Bay**

organisms including the commercially dredged hardshell clams and shrimp. There are some questions in regard to the impacts of commercial scallop harvesting on seagrass beds in St. Joseph Bay. As the bottoms are dragged to catch the scallops, seagrasses are cut or uprooted. Anecdotal evidence suggest the recovery of seagrasses is slow (Zieman, 1982). Turtle grass beds are especially affected since this species does not spread its rhizome mat very rapidly. Propeller cuts can be persistent features, lasting three or more years (Wolfe et al., 1988; Eleuterius, 1987).

Important species found in the sand bottoms of the bay include flounder (Paralichtys spp.), hardshell clams or quahog clams (Mercenaria mercenaria), Venus sunray clams (Macrocallista nimbosa), and the pygmy octopus (Octopus joubini). Organisms found in the near-shore areas of the gulf are part of a temperate sand community.

To the west of Cape San Blas the continental shelf is narrow and numerous pelagic species are found relatively close to shore. Important commercial and recreational species in this region include brown shrimp (Penaeus aztecus), white shrimp (P. setiferus), pink shrimp (P. duorarum), grouper (Myctero-perca spp.), greater amberjack (Serioila dumerilli), Atlantic bonito (Sarda sarda), crevalle jack (Caranx hippo), sharks, spot (Leiostomus xanthurus), Atlantic croaker (Micropogonias undulatus), sand seatrout (Cynoscion arenarius), gulf menhaden (Brevoortia patronus), bluefish (Pomatomus saltatrix), Spanish mackeral (Scomberomorus maculatus), king mackeral (S. cavalla), and the billfishes, blue marlin (Makaira nigricans), white marlin (Tetrapturus albidus), and sailfish (Istiophorus platypterus) (Wolfe et al., 1988).

The marine sandy beaches along the peninsula are composed of fine quartz grains with a medium diameter of 0.1 to 0.2 millimeters (Salsman and Ciesluk, 1978). The aerobic zone (i.e., depth of oxygenated sediment) in beach sediments is very deep because of tidal flushing and the relatively large interstitial pore spaces. This allows organisms to live far down within the sediment and escape the pounding of waves. The majority of beach organisms tend to be suspension feeders, using the rushing water to constantly carry food in and waste material away (Wolfe et al., 1988).

The land area surrounding the aquatic preserve is an important stopover during the gulf coast fall and spring bird migrations. St. Joseph Bay lies between the Mississippi and east coast flyways, and therefore receives birds from both the midwest and Atlantic seaboard which use the Gulf of Mexico and peninsular Florida during migration. In season, the Cape and peninsula are concentrated with thousands of migratory birds including warblers, vireos, tanagers, and grosbeaks. Hawk migration in the fall is particularly striking, for the St. Joseph peninsula draws hawks from much of the North American land mass. Riding autumnal cold fronts, several species of hawks and falcons follow the land as far south as possible,

culminating in a great assembly over the peninsula. Estimates of 3,000 to 5,000 hawks per year may be seen during the month of October.

A number of species found either within or in close proximity to the St. Joseph Bay Aquatic Preserve are of special interest because of their scarcity or declining populations. Separate lists which formally designate species for special protection are kept by both the state and federal governments. These lists designate a species as either "endangered" or "threaten-ed", depending upon the degree of scarcity or the threat to their continued existence as a species. The state list also includes an additional early cautionary category called "species of special concern", while the federal government lists such species as "under review".

Species either found within or in close proximity to the aquatic preserve which have legal status on the state or federal list published in September 1987 (FGFWFC, 1987) are:

Endangered: peregrine falcon (Falco peregrinus tundrius) (state), Southern bald eagle (Haliaeetus leucocephalus) (federal), Leatherback turtle (Dermochelys coriacea) (state and federal), and Atlantic ridley turtle (Lepidochelys kempi)(state and federal). **Threatened:** Atlantic loggerhead turtle (Caretta caretta caretta) (state and federal), American alligator (Alligator mississippiensis) (federal), Southern bald eagle (state), peregrine falcon (federal), Southeastern kestrel (Falco sparverius paulus) (state), Cuban snowy plover (Charadrius alexandrinus tenuirostris) (federal), and least tern (Sterna antillarum) (state). **Species of Special Concern or Under Review:** American alligator (state), Gopher tortoise (Gopherus polyphemus) (state and federal), Cuban snowy plover (federal), little blue heron (Egretta caerulea) (state), snowy egret (Egretta thula) (state), reddish egret (Egretta rufescens) (state and federal), Louisiana heron (Egretta tricolor) (state), and eastern brown pelican (Pelecanus occidentalis) (state).

Species not included above which also have legal protective status through the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora are the osprey (Pandion haliaetus) and marsh hawk (Circus cyaneus).

CULTURAL RESOURCES

The Division of Historical Records, Department of State, has identified nine archaeological sites in the immediate coastal area of St. Joseph Bay. They include four shell middens, three old house or settlement sites, the Confederate salt works, and the Cape San Blas lighthouse. Due to the moderate energy nature of the coastline, most relict indian sites were probably either buried by sand or destroyed by wave action.

Notable among the cultural sites is Richardson Hammock, a large, well preserved shell midden site representative of the Deptford, Swift Creek, Weeden Island, and Fort Walton cultural periods (ca. 500 B.C. to A.D. 1500). The site is known to contain human burials. The site is believed to be one of the largest and best preserved archaeological sites of its type in the northwest Florida gulf coast region.

CHAPTER IV

HUMAN USES AND ASSOCIATED IMPACTS

To develop a management program for the resources of the St. Joseph Bay Aquatic Preserve it is essential to understand how humans use the resource in addition to the biology and ecology of the Bay. The major uses of the aquatic preserve area include commercial and recreational fishing and uses of the adjacent uplands.

Typical of the counties of northwest Florida, Gulf County, with a population of 11,600 in 1986, is one of the less populated counties in the state. It has a mean population density of 20.7 people per square mile, 56th among the 67 counties in the state. Only seven counties in the state are growing at a slower rate (BEBR, 1987). A principle factor leading to the slow growth rate within Gulf County has been the significant out-migration of residents, especially younger, working-age people, because of the limited job opportunities. This slow growth is expected to continue into the near future.

The major source of income in Gulf County is manufacturing, with the St. Joe Forest Products Company being the principle employer. The paper company's plant is located just north of the city of Port St. Joe, adjacent to St. Joe Bay and currently employs about half the county's work force. Other major sources of income in the county include transportation, government, and the marketing of seafood. Although the county has no organized economic development plan, future economic development options for the county appear directed toward shipping and port use, the fishing and shellfishing industry, tourism and recreational activities, and the development of second homes on the coast (Larry Wells, pers. comm).

Commercial shipping and port use center around the St. Joseph Ship Channel and the Gulf County Canal which connects the Gulf of Mexico to the Gulf Intracoastal Waterway (GIWW). The ship channel is maintained at 35 x 300 foot dimensions, while both the GIWW and the canal are maintained at 12 x 125 foot dimensions. The ship channel is used by both commercial fishing boats and the St. Joe Forest Products Company. Since the GIWW provides access to the western Gulf of Mexico all the way to the Mexican border via protected waters, it can potentially lead to some future economic development opportunities. Efforts have been made to have a seafood industrial park constructed along the canal. As noted earlier, Section 258.40 (2), F.S., specifically exempts any publicly owned and maintained navigation channel from an aquatic preserve.

The port of Port St. Joe is located on St. Joseph Bay at the city of Port St. Joe and consists of property owned by the city of Port St. Joe, St. Joe Forest Products

Company, Hess Petroleum, and McKenzie Tank Lines. In recent years, the port has not been an active waterborne cargo port, although the Port of St. Joe Master Plan clearly shows a desire by the county to revitalize the port. Products which have passed through the port include cotton, timber, petroleum, chemicals, paper, rosin, turpentine, and various agricultural commodities (Baskerville-Donavan, 1990).

The St. Joseph Ship Channel consists of an entrance channel, turning basin, and south channel. Channel maintenance is the responsibility of the Corps of Engineers and dockside depth maintenance is the responsibility of dock owners. According the Port of St. Joe Master Plan, the Corps of Engineers is trying to obtain approval for reclassifying the interim offshore disposal site to a permanent site to assure long-term disposal of the Port's existing navigational channels and turning basin. The majority of the finer grained inner-bay sediments can likely be disposed of at this offshore site. Any sediments, however, which contain excessive metal or nutrient levels or are extremely fine-grained, may have to be disposed of in an approved upland site (Baskerville-Donavan, 1990).

Species harvested commercially within the aquatic preserve include bay scallops, mullet, hardshell clams, blue crabs, and shrimp. The primary species of shellfish harvested is the hard shell clam or quahog. The sunray venus clam are also available in the bay, but not in commercial quantities. Hardshell clams congregate in large numbers buried in firm mud and sand substrates. They are harvested by permitted dredging from the central portion of the bay. There is no closed season for clamming. Figure 6 shows the present shellfish harvesting classification for St. Joseph Bay. The approved harvesting area for clamming in St. Joseph Bay has expanded since the 1970's (Barnett and Gunter, 1986).

As of 1986 there were no wet storage facilities or shellfish propagation leases located in St. Joseph Bay, eleven mechanical clam harvesting permits had been issued, and there were six certified shellfish processing plants in Gulf County.

The commercial harvesting of bay scallops has proven to be a controversial aspect of the marine harvest since it competes with recreational harvesting of scallops. This issue was manifested locally in the early 1980s through a petition by county residents to their Board of County Commissioners to stop commercial harvesting. The Board responded by requesting the Department of Natural Resources (DNR) ban commercial scalloping in St. Joseph Bay. A compromise was eventually reached in which commercial scalloping is banned in the earlier part of the scallop season and on weekends until Labor Day, and with a limit placed on recreational harvesters.

Sport and shellfishing is the most active form of tourism through-out the year. Major species sought include spotted seatrout, king and spanish mackerel, flounder, bay scallops and sunray venus clams. Other important recreational activities include beach-oriented activities, nature watching, and hiking. A major

SOURCE: Shellfish Environmental Assessment (SEAS) 1990.

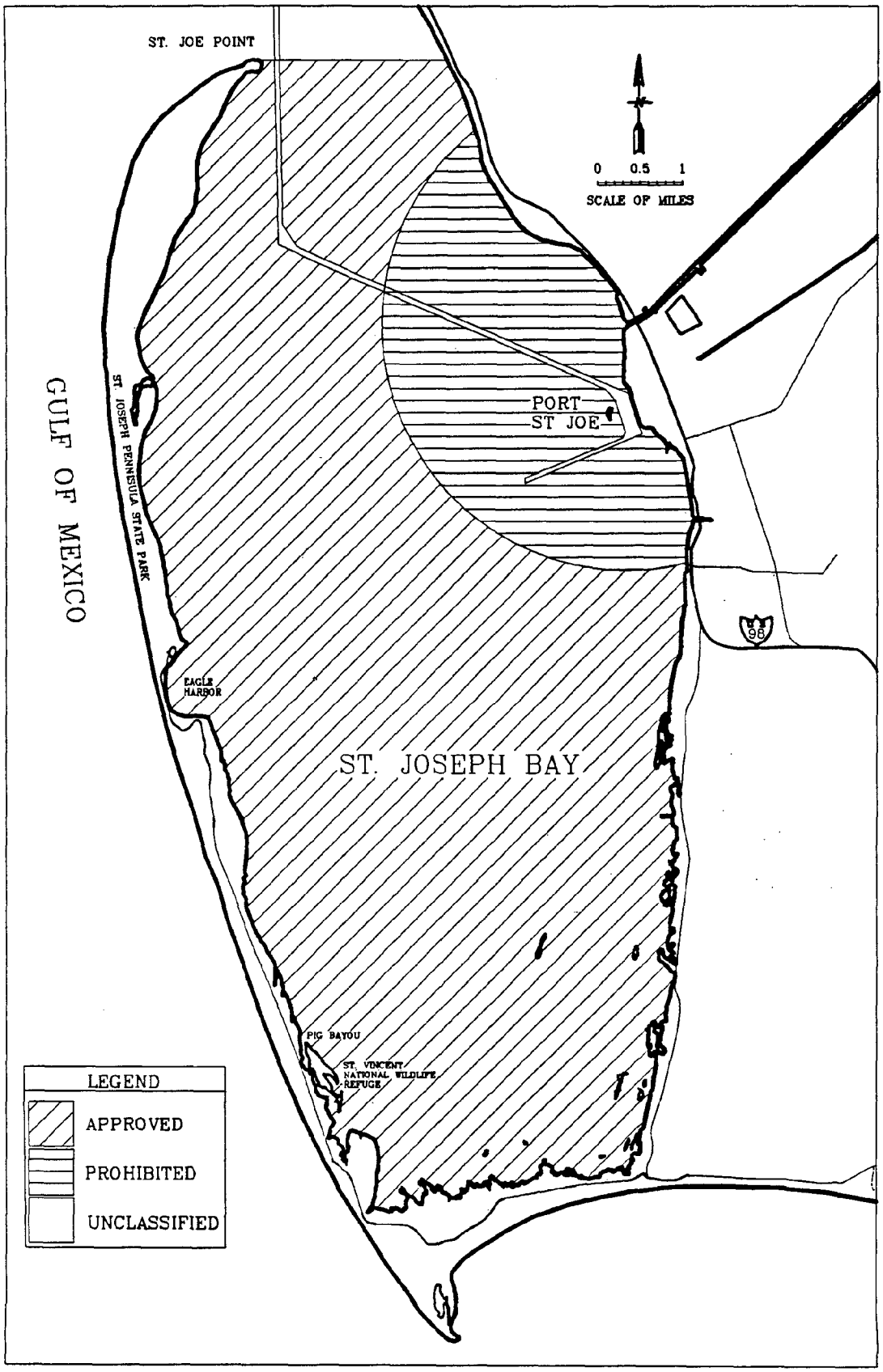

FIGURE 6. **Shellfish Harvesting Classifications for St. Joseph Bay**

focus of the on-land recreation activities is the T.H. Stone State Park on the St. Joseph peninsula. A review of boat registrations, visitation records at the state park, and violation citations issued by the Marine Patrol all suggest that recreational use of the aquatic preserve area is increasing.

Increased use of the aquatic preserve for recreation and visitation also results in increased development pressure on the peninsula. This in turn results in increased potential to degrade water quality through stormwater runoff and septage as well as providing public beach and bay access problems.

Public boat access to St. Joseph Bay is currently limited to: the Port St. Joe city pier, two private fish camps on the eastern shore of the bay, and two launching areas at Eagle Harbor in the state park. The Gulf County Comprehensive Plan noted that there is no short-term needs in the county for additional marina facilities.

In regard to residential land use, it is important to note that Gulf County has historically had no zoning or special ordinances relating to land use disturbances. The county is, however, in the process of developing their Local Government Comprehensive Plan (LGCP) pursuant to the requirements of Florida Statutes. After adoption the county will have zoning for the first time. Figure 7 shows the Future Land Use Map from the LGCP for the land surrounding the St. Joseph Bay Aquatic Preserve.

Historically, limitations have been placed on development densities in the upland area surrounding the aquatic preserve by state restrictions on septic tank densities. There are currently two areas served by centralized sewer systems on the uplands adjacent to or near the aquatic preserve: the Barrier Dunes subdivision on St. Joseph's spit and the city of St. Joe's system. All other areas are served by septic tanks. In accordance with Chapter 10D-6, F.A.C., the maximum residential densities in areas serviced by septic systems is 2 units per acre if a centralized water system is not available and 4 units per acre if a centralized system is available.

The Gulf County LGCP states that the Soil Conservation Service found the soil types in Gulf County as having at best moderate to severe limitations for septic tank drain fields. The majority of the county is classified as severe and the lands on Cape San Blas and on the spit are classified as having very severe limitations. The LGCP further states that septic tank use on barrier islands should be unacceptable under all conditions and that requirements be made that septic tank drainfields be situated in such a way that the bottom of the drainfield is at least 36 inches above the water table. Based on this situation and the limits it imposes on the development potential for the St. Joseph peninsula and Cape San Blas, the LGCP recommends that centralized wastewater facilities be constructed on St. Joseph spit and between Indian Pass and Cape San Blas. This recommendation, however, ignores the fact that these facilities would lie in the Coastal High Hazard Area and

would therefore not be eligible for public subsidies according to established policy in both the State Comprehensive Plan and the Apalachee Regional Policy Plan. The LGCP also states that 75% of the county's growth over the next five to seven years is expected to occur on St. Joseph spit and in the Cape San Blas/Indian Pass area. Since 1973, municipal and industrial wastes generated near the city of Port St. Joe have been treated by a single treatment facility. About 97% of the inflow into the city's sewage treatment plant comes from the St. Joe Paper Company. And, the effluent discharge from the sewage treatment plant goes directly into the Gulf County Canal, which drains into St. Joseph Bay.

As shown by Figure 7, the land use designations surrounding St. Joseph Bay on the Future Land Use Map include conservation, recreation, agriculture, industrial, incorporated, residential, mixed commercial/residential, and public. As noted earlier, circulation is limited in the shallow reaches of the lower bay and that there exists a counter-clockwise circulation pattern in the upper bay. Therefore, areas where land use is of special concern relative to the long-term protection of the aquatic resources of the bay are the peninsula and the lower bay. Designated land uses in these areas include: conservation in the state park portion of the peninsula and Pig Island (which is part of the St. Vincent National Wildlife Refuge); public in the area owned by Eglin Air Force Base; recreation at the William J. Rish Park facility; agriculture in an area at the southwest corner of the bay; and, the remainder is zoned mixed commercial/residential.

Both the St. Joseph peninsula and Cape San Blas south of the state park have been erratically subdivided and developed since 1975. Parcel sizes range from one-half acre to five acres in size, with little discernible pattern of subdivision. A unified townhouse, Barrier Dunes subdivision, has been constructed adjacent to the state park. Elsewhere single family and duplex beach homes are mixed irregularly with townhouses (up to eight units per acre) and undeveloped lots. Most of this development has been for second homes. Other land uses include four small convenience stores and a handful of docks. There has been a trend toward more bayside development in the past few years (Larry Wells, pers. comm.).

The Department of Health and Rehabilitative Services operates a facility for the disabled on the peninsula and their are two federally owned facilities nearby. One is Pig Island which is a part of the St. Vincent National Wildlife Refuge and the other is an Air Force radar tracking facility covering several hundred acres. At the base of the cape and the mainland the county owns a 40-acre tract with frontage on both the gulf and the bay. This tract is currently used as a solid waste disposal facility.

Continuing north along the mainland bay shore is a 3 mile stretch of land under one ownership, where a single townhouse development is being constructed. Then a small scattered cluster of older homes lies in the vicinity of a fish camp. Nearby is the County Country Club and some associated single family units on one-half acre lots.

SOURCE: Gulf County Comprehensive Plan, 1990.

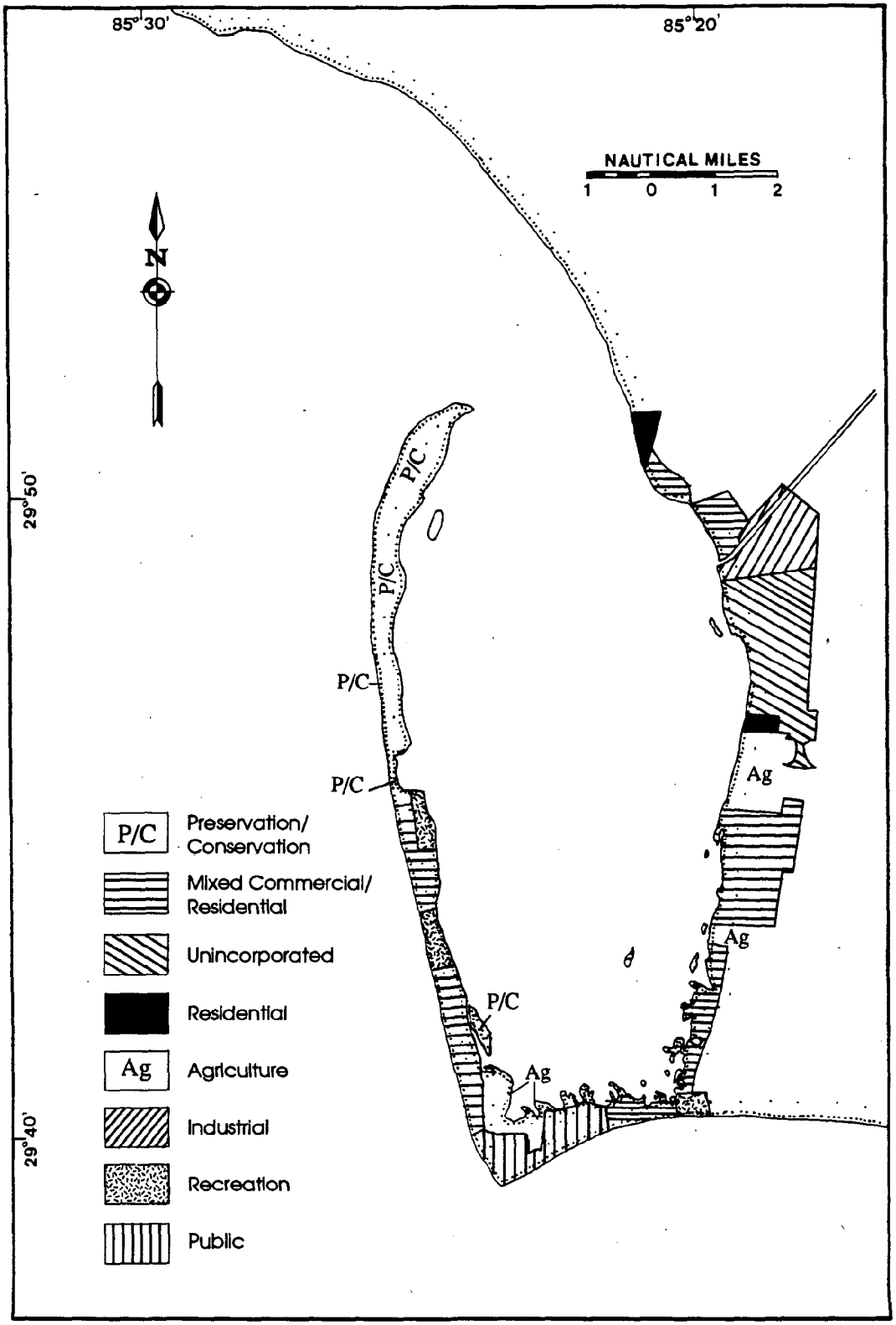

FIGURE 7. **Future Land Use Map**

A portion of the eastern shore of the bay is excluded from the aquatic preserve since it has been conveyed into private ownership. A small number of islands occur just outside of the aquatic preserve boundary, but the largest island, Black's Island is within the boundary. On the island is a small group camping facility.

Not far north of the fish camp the land is owned by a timber company and is undeveloped up to the junction of County Road 30A and US-98. At this point the urban area of Port St. Joe begins. The residential area extends to the junction with State Road 71 (where the city pier is located). This is followed by a commercial district and an extensive industrial area which continues across and along the Gulf County Canal. North of the canal lies the residential community of Highland View, which extends to Palm Point. Next, a 4 mile stretch of undeveloped beach exists before residential development begins again in an area referred to as St. Joe Beach and Beacon Hill. At present, this is the most rapidly developing part of the county (Larry Wells, pers. comm.).

Coastal storms and hurricanes are a factor which must be accounted for in coastal development both in regard to potential property damage and estimated evacuation time. Over a 500 year period it is estimated that a total of 90 land falling hurricanes will occur within a distance of 270 nautical miles of Gulf County (Dean and Chiu, 1985). In 1985 hurricane force winds were experienced twice within the aquatic preserve boundaries. There is a possibility that a large storm or hurricane could breach the narrow portion of St. Joseph spit at Stump Hole (DNR, 1990). DNR (1990) recommends that studies should be conducted to determine the potential for a permanent breakthrough at this location and to evaluate the alternative solutions to allowing breakthrough to occur. Because the bay is a salt water embayment and not an estuary per se, the ecological implications of a breakthrough may be limited.

Since many of the roads to be used for evacuating the cape and spit have low elevations, they would be flooded well before a hurricane makes landfall. Consequently, evacuation of this area is already considered a problem and it would only be exacerbated by additional development (Apalachee Regional Planning Council, 1984). However, the fact that this area consists mostly of second homes could absolve some of the evacuation problems.

On Cape San Blas and the spit, flood insurance is not available because this area has been declared undeveloped under the federal Coastal Barriers Resource Act. While this could be interpreted as a barrier to further development, the actual limits of the flood zones allow construction to occur above the zone without the need for flood insurance.

Recent changes to the State Coastal Construction Control Line are believed to have significantly affected development trends on the cape and spit (Larry Wells, pers. comm.). The history of the shoreline of the St. Joseph spit indicates that it is

eroding. Because a 100-year frequency storm/hurricane would overtop and flood much of the coastal areas in Gulf County, it has been concluded that coastal development in Gulf County carries with it a high risk factor (BSRC, 1985). Consequently, the State Coastal Construction Control Line was revised recently. With the reestablishment of a coastal construction control line in 1986 and with the adoption and enforcement of local coastal building codes, impactive and imprudent coastal development has been substantially curtailed along the Gulf County coast. A 30-year erosion project prohibition for major structures, other than qualifying single-family dwellings, imposes large setback requirements in erosion stressed areas. With any new development proposals, adherence to dune preservation is essential (DNR, 1990).

The primary cause for beach and dune erosion in Gulf County include periodic storm events and long term sea level rise. Although the very high historical rate of erosion along the southern St. Joseph peninsula and the west shore of Cape San Blas are not completely understood, it is speculated that shoreline alignment and shoal geometry affect wave refraction and energy levels in the area.

Only one coastal construction device has been constructed in Gulf County. The device, installed in 1986 following Hurricane Kate, is a rubble mound revetment about 200 feet in length constructed by the federal government near Cape San Blas to protect a road (DNR, 1990).

Storm water management in these highly permeable soils does not present as major an obstacle to development as does potable water and sewage disposal. Nevertheless, the creation of impermeable surfaces in place of natural contours and vegetation will increase runoff, which can ultimately have a deleterious affect on the seagrasses within the aquatic preserve.

A survey of biological aspects of St. Joseph Bay associated with water quality in 1979 found the bay to have excellent macroinvertebrate diversity and only occasional high bacteria counts (FDER, 1979). Neither of the two stations tested in the bay during this study showed signs of pollution degradation during the study period. The 1990 Florida Water Quality Assessment (Hand et al., 1990) states that water quality in St. Joe Bay is good. This report does note that in the vicinity of where the Gulf County Canal enters St. Joe Bay, a site roughly two miles outside of the aquatic preserve boundary, bottom sediments are mucky instead of sandy and seagrass coverage is decreased due to the poorer transparency of the waters. Because of the circulation patterns in St. Joe Bay, Hand et al. (1990) noted that the effluent was relatively quickly dispersed and unless samples were collected directly in the plume, the water column quality remained quite good.

Barnett and Gunter (1986) provide a summary of water quality data collected in St. Joseph Bay between 1981 and 1984 by the Department of Natural Resources for the purposes of 1) identifying, recording, and evaluating point and non-point

pollution sources, 2) determining if the area is properly classified for shellfish harvesting based on pollution sources and water quality, and 3) assessing the possibility of classifying an unclassified area north of St. Joseph Bay. Survey results indicated that fecal coliform levels in the presently approved area met ISSP standards. The survey also led to reclassification and expansion of shellfish harvesting areas. The report further notes that as development along the St. Joseph Bay shoreline continues, the bay will be subjected to increased sewage and runoff pressures necessitating continued evaluation. The Department of Natural Resources intends to continue monitoring 22 stations throughout the bay for fecal coliform levels, water temperature, salinity, dissolved oxygen, turbidity, and pH. Monitoring will be conducted at least quarterly during varying meteorological and hydrographic conditions.

Barnett and Gunter (1986) included an assessment of trace metals and pesticides found in clams harvested from St. Joseph Bay. Table 1 summarizes data for clams collected from the presently approved area of St. Joseph Bay and for clams collected from nine approved or conditionally approved areas throughout the state. This table shows that in general, the values compared favorably. The assessment of pesticide levels in clams found that pesticide levels were below the detection limit for all pesticides tested. All values are listed in parts per million per wet weight per whole organism per composite sample.

TABLE 1

TRACE METAL LEVELS IN CLAMS IN ST. JOSEPH BAY
AND THROUGHOUT THE STATE

	St. Joseph Bay (n=4)			Florida (n=36)		
Trace Metal	Mean	Maximum	Minimum	Mean	Maximum	Minimum
AL	18.38	23.05	7.50	11.69	52.65	0.50
AS	7.93	9.00	6.49	4.59	9.49	1.04
CD	0.12	0.19	0.10	0.35	1.10	0.05
CR	0.47	0.53	0.37	0.30	1.28	0.06
CU	1.32	1.90	0.50	1.48	4.70	0.50
FE	27.42	37.80	17.00	38.63	86.30	15.00
HG	0.03	0.04	0.02	0.02	0.04	0.00
MN	2.93	5.20	1.65	7.06	26.10	0.80
NI	2.01	2.61	1.40	0.72	2.61	0.06
PB	0.56	1.33	0.05	0.67	6.50	0.05
SE	0.35	0.47	0.20	0.45	1.00	0.18
ZN	12.50	14.00	12.00	12.14	25.00	1.00

Source: Barnett and Gunter (1986)

Since 1972 the city of Port St. Joe has voluntarily monitored the 16 stations within proximity of the discharge from their central wastewater treatment facility. About 97% of inflow from the city of Port St. Joe's wastewater treatment plant comes from the St. Joe Forest Products Company. The effluent from the wastewater plant goes into the Gulf County Canal, which drains directly into St. Joseph Bay. Stations are located in the Gulf Intercoastal Waterway, the Gulf County Canal, and the near-canal area of St. Joe Bay. In 1987, the DER incorporated this voluntary program into the discharge permit for the city's facility. Overall, the results of the city's monitoring program show no trend of water quality degradation. More specifically, long-term average temperatures demonstrated no significant difference between receiving water temperatures and those downstream of the WWTP outfall.

Discharge of freshwater effluent appears to have not affected ambient salinity levels. BOD5 levels in St. Joe Bay were quite low and well within the range encountered in estuarine waters. BOD5 loading has shown no measurable effect on dissolved oxygen concentrations in the Gulf County Canal or in St. Joe Bay. No consistent dissolved oxygen sag was evident at the first station below the outfall. Since the WWTP effluent is highly colored and contains fine particulates which do not settle out of suspension easily, visible turbidity plumes exist in the Gulf County Canal in the immediate vicinity of the outfall. Localized impacts to water column productivity might occur due to reduced light penetration, and benthic habitat smothering might occur if rapid solids deposition occurs.

The U.S. EPA and the paper industry conducted a cooperative dioxin screening study about the formation and distribution of 2,3,7,8-TCDD and 2,3,7,8-TCDF in bleached kraft mills (NCASI, 1988). Although the initial screening study was based on only five mills around the country, it showed that the bleach plant was the most significant source of these compounds and that molecular chlorine use was a major factor influencing their formation. As a follow-up, the paper industry voluntarily entered into another study with EPA to measure the export of TCDD and TCDF from all 104 mills in the United States that practice chlorine bleaching, including the St. Joe Forest Products mill at Port St. Joe. TCDD levels in the pulp at the Port St. Joe mill were reported to be 2.2 parts per trillion and TCDF levels in the pulp were reported to be 5.7 parts per trillion. TCDD and TCDF levels in the effluent <u>from the mill</u> were reported to be 21 parts per quadrillion and 60 parts per quadrillion, respectively (NCASI, 1990).

Prior to the EPA/Paper Industry Study (NCASI, 1990), the city of Port St. Joe had conducted dioxin monitoring of its treatment plant outfall. In 1989, the city reported that extensive testing of the wastewater treatment plant effluent samples was conducted and that no dioxin was found.

On the following page is a table summarizing the dioxin and furan data collected from the city of Port St. Joe.

Summary of Dioxin and Furan Data for Effluent Samples Collected from City of Port St. Joe Industrial Wastewater Treatment Plant Outfall, June 1988 through October 1989

Sample Date	Dioxin, 2,3,7,8,-TCDD	Furan, 2,3,7,8-TCDF	Data Source
June (?), 1988	21 ppq	60 ppq	EPA 104-Mill Study Data as of June 2, 1989 (1)
June 5-9, 1989	ND @ 3 ppq	ND @ 8.9 ppq	ALA 5-day Composite "308" Sample, 1st Round
Sept. 5-9, 1989	ND @ 3.6 ppq	ND @ 3.2 ppq	ALA 5-day Composite "308" Sample, 2nd Round (2)
Sept. 18-19, 1989	ND @ 5.5 ppq	ND @ 5.3 ppq	ALA 24-hr. Composite "Special Study" Sample
Sept. 18-20, 1989	ND @ 6.3 ppq	10 ppq	ALA 3-day Composite "Special Study" Sample
Sept. 18-22, 1989	ND @ 4.4 ppq	ND @ 5.6 ppq	ALA 5-day Composite "Special Study" Sample
Oct. 3-4, 1989	ND @ 5.9 ppq	ND @ 6.4 ppq	ALA 24-hr. Composite "Special Study" Sample
Oct. 3-5, 1989	ND @ 5.9 ppq	ND @ 6.1 ppq	ALA 3-day Composite "Special Study" Sample
Oct. 3-7, 1989	ND @ 4.1 ppq	ND @ 4.4 ppq	ALA 5-day Composite "Special Study" Sample
Oct. 3-9, 1989	ND @ 6.2 ppq	ND @ 5.7 ppq	ALA 7-day Composite "Special Study" Sample

(1) EPA results were from American Paper Institute/EPA cooperative study of dioxin in effluents in 104 paper mills nationwide. Results reported were for sample collected by EPA in June 1988.
(2) Data not completely QA/QC checked by ENSR

ppq = parts per quadrillion; ND = none detected
EPA = U.S. Environmental Protection Agency
ALA = Alvarez, Lehman & Associates, Inc., Gainesville, Florida
"308" Sample = sample collected during EPA-mandated dioxin studies under Section 308 of Federal Clean Water Act
"Special Studies" = sample collected by ALA in special studies initiated by St. Joe Forest Products Company

Note:
1) Laboratory analysis of all samples were by Enseco Incorporated, California Analytical Laboratory, West Sacramento, California
2) Test methods for chlorinated dioxin and furan analysis followed NCASI Technical Bulletin 551, unless otherwise noted
3) QA/QC data for ALA samples not yet compiled

Compiled by: Alvarez, Lehman & Associates, Inc., 1990 (updated 1/8/91)

The estuarine water column is an important transition zone in the geochemical cycle because of increases in pH and ionic strength associated with the change from freshwater to sea water. These increases change the solubility of substances, and may also enhance the flocculation and precipitation of materials. Many substances may be removed from the water column to the sediments when waters are mixed. For example, toxic organics such as petroleum hydrocarbons (e.g., PCBs and pesticides) have low solubilities and accumulate in sediments shortly after being introduced to estuarine waters. Therefore, estuarine sediments act as a sink for some constituents, so that the pollution status of an estuary is reflected better in the sediments than in the water column (Ryan et al., 1984; Schropp and Windom, 1988). The historic emphasis of environmental quality assessment has been through water column sampling. In estuaries water quality data can provide an understanding of the impacts of individual pollution events, but are of little value in understanding long-term trends, assessing ambient background conditions, or assessing the degree of environmental stress.

Sediment grain-size is an important qualitative predictor of sediment chemistry (Ryan et al., 1984). Fine-grained sediments usually contain elevated concentrations of metals and hydrocarbons, while lower levels are observed in coarse-grained sediments. Fine-grained sediments have greater concentrations because they are more enriched in organic and clay materials, and because they have greater surface areas which provide more binding sites.

Because of the naturally high abundance of aluminum (in a relative sense) and the relatively small inputs of aluminum from human-sources, aluminum-to-metal ratios can be used to determine if heavy metal levels in sediments are from natural or human sources (Schropp and Windom, 1988). In reviewing the aluminum-to-metal ratios for sediment data collected by the Department of Environmental Regulation in 1983 relative to the interpretation tables found in Schropp and Windom (1988), only 1 of 10 stations in St. Joseph ship channel showed evidence of enriched metal levels in bottom sediments which could be attributed to human sources. This station was in the Gulf County canal which is located outside the boundary of the preserve. At this station sediments showed enrichment in copper, lead, and zinc.

CHAPTER V

SITE SPECIFIC MANAGEMENT ISSUES

In the preceding chapter, uses of the St. Joseph Bay Aquatic Preserve area and impacts associated with these uses were reviewed. Impacts on marine resources from adjacent land uses may result from either the direct use of the marine resources through such structures as docks, piers, and marinas or through effects from upland activities through means such as stormwater runoff and septic tank drainage. In the first part of this chapter, site specific management issues which relate to accomplishing the long-term goal of the Florida Aquatic Preserve Program of setting aside the natural resources of designated bodies for the benefit of future generations are reviewed. And, in the second part of the chapters policy guidelines are established that will address these issues.

ISSUE 1: No Manager:

Although St. Joseph Bay has been designated an aquatic preserve since 1969, it has never had a full-time manager. At the present time, management of the St. Joseph Aquatic Preserve is accomplished by the manager of the Alligator Harbor Aquatic Preserve, and for permit application reviews, by district staff in the Pensacola branch office. As should be expected, this situation has resulted in only limited implementation of the provisions of the program. As is noted in Chapter IX, the management program for the St. Joseph Bay Aquatic Preserve discussed in this plan cannot be effectively implemented without adequate funding, staffing, and equipment. It is initially estimated that to effectively implement a management program in St. Joseph Bay one full-time employee dedicated solely to the St. Joseph Bay Aquatic Preserve and a part-time OPS assistant are necessary. This estimate does not include staff-time or expenses by Department of Natural Resources (DNR) and other state agency employees involved intermittently in the various tasks necessary to manage and conserve the natural resources of the aquatic preserve (i.e., permitting, shellfish monitoring, enforcement of fishing rules, etc.).

The provision of staff to the Aquatic Preserve Program is the responsibility of the Florida Legislature. The Division of State Lands is pursuing additional positions to staff aquatic preserves through annual appropriation requests to the Legislature. Other possible means of getting a manager for the St. Joseph Bay Aquatic Preserve include transferring a position from another aquatic preserve or hiring a manager on a temporary basis until a career-service position is allocated by the Legislature. In the interim, the St. Joseph Aquatic Preserve will continue to be managed on a part-time basis by the manager for the Alligator Harbor Aquatic Preserve and field staff in the Pensacola District Office.

ISSUE 2: Control of Upland Development Activities:

The regulation of upland development activities is the responsibility of local government and the Department of Community Affairs (DCA), not the Bureau of Submerged Lands and Preserves. Nevertheless, upland development activity has the potential to have a significant adverse impact on the natural resources of the aquatic preserve.

The best avenue for the staff associated with the St. Joseph Bay Aquatic Preserve to control upland development activities is to work closely with the local government. The Local Government Comprehensive Plan (LGCP) for Gulf County has already been prepared. It is not too late, however, for staff associated with the Aquatic Preserve Program to be actively involved in the preparation of land development regulations and local ordinances necessary to implement the goals, objectives, and policies of the LGCP. Aquatic preserve staff could also, through a formalized agreement, work cooperatively with the county on monitoring the implementation of the policies of the LGCP which relate to protecting and conserving the natural resources of St. Joseph Bay.

ISSUE 3: Private Submerged Holdings:

Much of the mainland shore of St. Joseph Bay and part of the peninsula shore is in private ownership and therefore, not within the boundaries of the St. Joseph Bay Aquatic Preserve (see Figure 2, page 7). Although these areas are no less important to the functioning of the aquatic ecosystem, they are subject to less stringent criteria regarding the construction of docks and piers, marinas, dredge and fill operations, and other uses of the submerged bottoms within the jurisdiction of the Aquatic Preserve Program. Development activities on these submerged bottoms also do not have to meet a public interest test.

The Bureau of Submerged Lands and Preserves has no juris-diction to include these areas within the aquatic preserve boundaries. Through the Conservation and Recreation Lands Program (CARL), the State of Florida is pursuing the acquisition of a buffer around St. Joseph Bay. On the 1990 CARL list, this acquisition was ranked 23rd on a statewide basis. Figure 8 shows the acquisition boundaries of the St. Joseph Bay buffer included in the CARL proposal. Considering current funding levels for land acquisition programs, the current ranking of this proposal, and the funding requirements for acquisition projects with a higher acquisition priority, it is not likely that any acquisition through the CARL program will occur before the fall of 1991.

Section 258.40(1), F.S., provides that arrangement can be made between the Board of Trustees and the owner of a private submerged parcel for that parcel to be

SOURCE: DNR, 1990

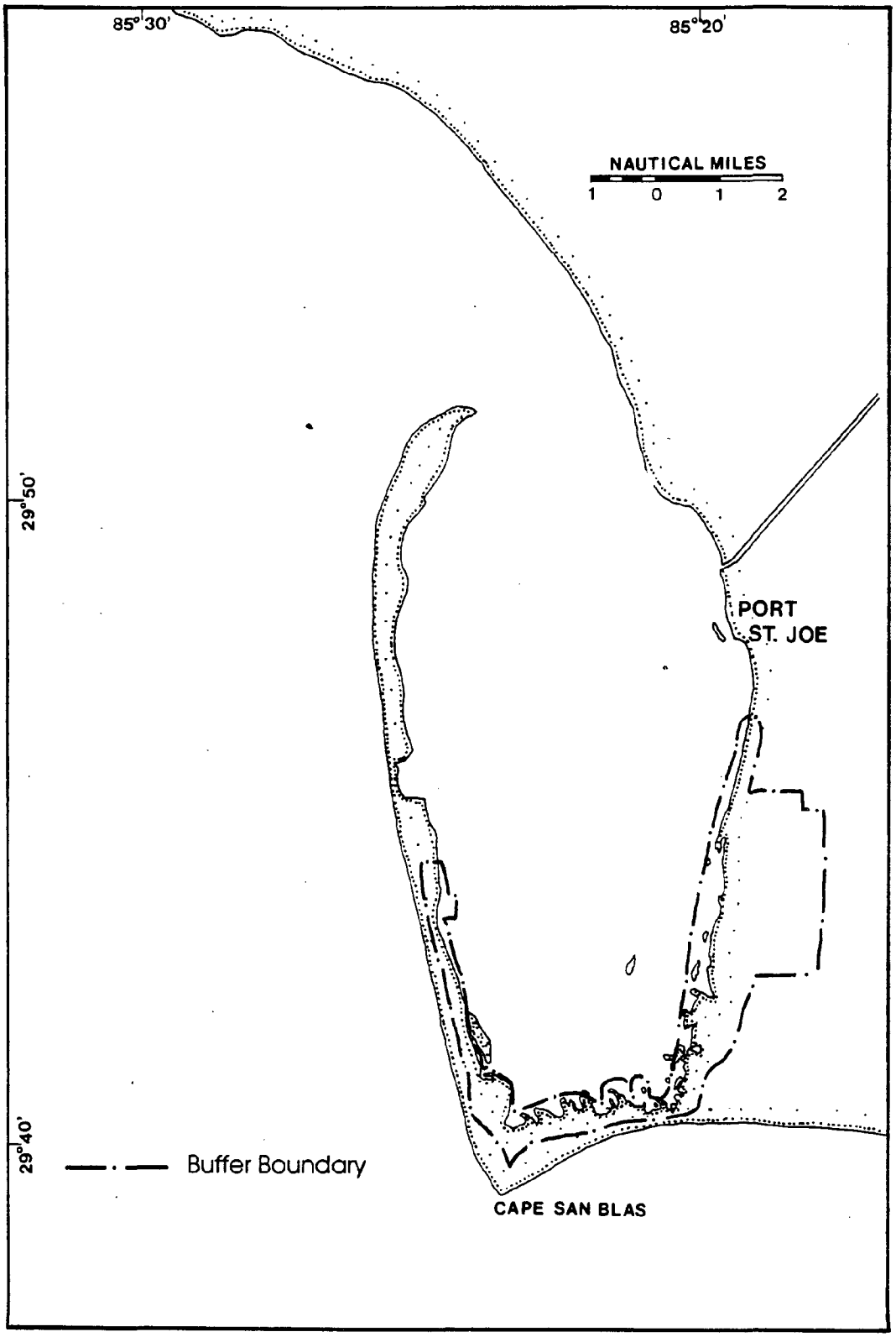

FIGURE 8. **Proposed St. Joseph Bay Buffer Aquisition Through The CARL Program**

included within the boundaries of an aquatic preserve. Section 18-20.008(3), F.A.C., further provides that the appropriate instrument to include a private parcel in an aquatic preserve shall be either a dedication in perpetuity or a lease. It further provides that a lease shall contain the following conditions:

1. The term of the lease shall be for a minimum of ten years;

2. The Board of Trustees shall have the power and duty to enforce the provisions of each lease agreement, 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; and

3. The Board of Trustees shall pay no more than $1 per year for any such lease.

ISSUE 4: Cutting of Submerged Aquatic Vegetation by Power Boats:

There are some lingering questions in regard to the impacts of commercial and recreational scallop harvesting on seagrass beds in St. Joseph Bay. As the bottoms are dragged to catch scallops, seagrasses are cut or uprooted. Similarly, extensive operation of motors in shallow areas can lead to significant cutting of seagrasses. Anecdotal evidence suggest the recovery of seagrasses is slow. Turtle grass beds are especially affected since this species does not spread its rhizome mat very rapidly. Propeller cuts can be persistent features, lasting three or more years. This problem is not restricted to St. Joseph Bay and has been addressed as a concern in many parts of the state.

Potential means of dealing with this issue include restricting the use of power boats in certain parts of the bay and/or restricting portions of the bay from dragging. Prior to addressing the issue, however, it is essential that better documentation be established regarding the extent and significance of damage to submerged vegetation.

ISSUE 5: Do Present Water and Sediment Quality Monitoring Efforts Adequately Portray the Status of Water Quality in the Bay:

Current DER water quality and sediment monitoring stations are located in the vicinity of the St. Joseph ship channel and the city of Port St. Joe. Consequently, these stations do not monitor water quality in the productive southern end of the bay. The DNR's Shellfish Environmental Assessment Section does test fecal coliform levels and basic water quality parameters over the entire bay. Nevertheless, not all of the potential pollutants in the bay are monitored. Sediments

are assessed on a regular basis only in close proximity to the port and its navigation channel.

ISSUE 6: Close Coordination Between the County and the Aquatic Preserve Program:

The best way to effectively integrate the authorities and jurisdictions regarding submerged land vested in the Aquatic Preserve Program and the authorities and jurisdictions regarding upland land use vested in local government is to have the two entities work closely together. Furthermore, several policies in the preserve's Management Action Plan (Chapter VII) promote preserve staff working closely with local government. Likewise, policies in Gulf County's Local Government Comprehensive Plan promote coordination between the Aquatic Preserve Program and county government.

A good means to assure close coordination between aquatic preserve staff and local government is to include in the preserve manager's job description a requirement that the manager closely coordinate with local government and attend both planning and zoning and county commission meetings whenever there is an appropriate issue on the agenda. And, when a manager is hired, county government should make efforts to involve the staff person in appropriate issues.

ISSUE 7: Dying off of marsh grass:

In the early part of 1990, residents and users of St. Joseph Bay began noticing that the marsh grass surrounding the bay was dying off. Initial comparisons of historical acreage in Spartina to current acreage suggests significant loss of habitat. Metals and pesticide analyses of sediments and water comparing affected and not affected areas have not suggested any trends. Analyses of sulfide and alcohol dehydrogenase data indicate the potential presence of another environmental stress: either natural or anthropogenic (Leslie, 1991).

Because of the importance of the marshes to the ecological productivity of the bay, the Department of Natural Resources has initiated an effort to discover the reason for this die-off. Included in this effort are 1) an analysis of aerial photos to determine historical changes in salt marsh acreage in the bay; 2) ground surveys of existing salt marshes both within and in proximity to St. Joe Bay; 3) an analysis of affected marshes for fungal pathogens; 4) an analysis of associated faunal die-offs; 5) toxicity testing of sediments; 6) transplant experiments to determine the relative influence of elevation, sediment quality, and water quality on Spartina growth and survival; and 7) lead-210 analyses of sedimentation rates. At this time, none of these tasks have been completed (Carlson, 1991).

MANAGEMENT INITIATIVES

The following is a list of management initiatives to address resource management issues applicable to the St. Joseph Bay Aquatic Preserve. Adoption of these initiatives will provide specific direction on addressing issues not covered directly by statute or rule.

1. Encourage acquisition of privately owned submerged bottoms within St. Joseph Bay and an upland buffer strip adjacent to the bay.

2. Seek full-time staffing of the preserve as outlined in Chapter IX of this plan.

3. In coordination with the local community, review, update, and revise as appropriate, the tasks and programs in the management plan at a minimum of once every 2 years.

4. Develop a resource inventory and map natural habitat types within the aquatic preserve.

5. Research and monitor to document the extent and significance of damage of seagrasses by props and dragging for scallops.

6. Regularly monitor the health and areal coverage of seagrass beds and marsh grass areas.

7. Protect, and where possible, enhance the habitats of species threatened, endangered, or of special concern within the aquatic preserve.

8. Give a high priority toward the research and monitor erosion and its causative factors, with a special emphasis being placed on the critically eroding segment at Stump Hole.

9. Coordinate with federal, state, and local government in implementing the aquatic preserve management plan, especially in the areas of protection of natural and cultural resources, and in the enforcement of applicable resource laws and ordinances.

10. Develop a cooperative working relationship with adjacent landowners to develop and implement management criteria conducive to the long-term protection of both upland and submerged habitats.

11. Require in the job description for the manager of the St. Joseph Bay Aquatic Preserve that the manager closely coordinate with local government and attend working relationship with county government and attend both

planning and zoning and county commission meetings whenever there is an appropriate issue on the agenda.

12. Require that the manager closely coordinate with county and city government on the preparation, adoption, and enforcement of land development regulations which will protect the natural resources of the aquatic preserve.

13. Upon staffing, the Preserve shall provide an annual report to the Board of County Commissioners of Gulf County and to the city of Port St. Joe which assesses the status of environmental health in the St. Joseph Bay aquatic preserve.

14. Encourage the placement of docks and piers in locations that transverse the least amount of salt marsh and seagrass beds.

15. Encourage property owner associations to incorporate the communal use of an individual private residential single dock or a private residential multi-slip dock, within their community, as opposed to the building of numerous personal docks.

16. In coordination with local interests and with the scientific community, establish a prioritized list of research and monitoring needs for the aquatic preserve. This list should be updated at a minimum of every 2 years.

17. Obtain and serve as a repository for all past monitoring data, scientific literature, government reports, historical accounts, and available maps and photos relevant to the aquatic preserve. A copy of all material should be provided to the Gulf County library.

18. Assure that information from historical and ongoing research and monitoring activities in the aquatic preserve are considered in resource management and use decisions.

19. Provide assistance to environmentally oriented education programs at public and private schools at all grade levels from kindergarten through university classes and to the community at large.

CHAPTER VI

MANAGEMENT AREAS

INTRODUCTION

This chapter divides the aquatic preserve into separate management areas where general or special rule criteria and allowable uses are defined for each area. The management areas are classified and delineated based on the types and locations of existing and planned uses of the adjacent uplands, as well as on the types, occurrence and characteristics of the natural and historical resources on the submerged lands. The various management areas delineated may be classified similarly or differently as these factors vary within the preserve.

The intent of this chapter is three-fold: 1) to provide a better understanding of 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 the aquatic preserve; and, 3) to provide local planners with a guide for land-use decisions. In summary, the intent of this chapter is both to afford both habitat protection and to clearly delineate 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 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 sovereignty submerged lands within the boundaries of a given preserve. Activities which are not within the boundaries of the aquatic preserve (i.e., adjacent upland land uses) or which do not directly affect the sovereignty submerged bottom (i.e., regulation of commercial fishing or water quality) are not within the jurisdiction of the Aquatic Preserve Program.

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 principle difference is that submerged lands within an aquatic preserve must be managed with the intent of protecting them for future generations. Consequently, any proposed use must be shown to be in the public interest before it can be authorized and an applicant must demonstrate that no other alternative exists which would allow the proposed activity to be constructed or undertaken outside the boundaries of the aquatic preserve.

MANAGEMENT AREA CLASSIFICATIONS

A key component of the management program for an aquatic preserve is the division of the preserve into management areas. The classification of management areas in an aquatic preserve is based upon both resource value of submerged lands within the preserve, and the existing and anticipated future land use on the adjacent uplands as designated in the Local Government Comprehensive Plan. As in the delineation of upland land uses through zoning, the intention of delineating a preserve into management areas is to guide development activities on the state-owned submerged lands to areas where it is more appropriate, and 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 bottoms. The Aquatic Preserve Program has no jurisdiction over the designated use of the adjacent uplands. The incorporation of the designated land use into the management area classification is primarily an acknowledgement of how local government has chosen to have a certain area developed; however, this upland designation also serves as a tool in designating compatible uses of the submerged lands in accordance with upland uses. Specific land use categories to be incorporated in the classification of management areas include:

Agriculture (AG): This category represents by state-owned submerged lands adjacent to land designated on an approved future land use map for a county and/or municipality as agriculture. It is intended to accommodate private areas with sparse populations used primarily for agricultural and/or forestry purposes.

Single-Family (SF): This category represents state-owned submerged lands adjacent to land designated on an approved future land use map for a county and/or municipality as single-family residential. It includes areas using the adjacent portion of the aquatic preserve solely for private activities. For purposes of the St. Joseph Bay Aquatic Preserve the shoreline areas on Cape San Blas and the peninsula and Black's Island which are classified as mixed commercial/ residential are included under this category.

Multi-Family (MF): This category represents state-owned submerged lands adjacent to land designated on an approved 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 is using the adjacent portion of the aquatic preserve solely for private activities. The associated residences include townhouses, trailer parks, condominiums, apartments,

and any other group of multi-family dwellings. They may also include a group of single-family property owners, as in the case of a homeowners association, that desires to construct any of the above-mentioned structures for the mutual benefit of the group.

Commercial-Industrial (CI): This category represents state-owned submerged lands adjacent to land designated on an approved 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 includes marinas that charge fees; yacht clubs that charge membership fees; private businesses such as fish houses; and, establishments such as restaurants.

Public Recreation (PR): This category represents state-owned submerged lands adjacent to land designated on an approved future land use map of a county and/or municipality as public usage or preservation and which is utilized for the purposes of public recreation. It is intended to include both areas where structures used by the general public at no charge and federal, state, county, or municipal parks that charge a nominal fee. Military structures, while not always open to the public, are considered in this category since the military serves the public. Therefore, the land on Cape San Blas owned by Eglin Air Force Base and the U.S. Coast Guard are included under this category.

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

Open-water (OW): This category represents state-owned submerged lands within an aquatic preserve which are of a distance of greater than 500 feet from land.

Classifications of management areas are also derived from the resource value of the state-owned submerged lands adjacent to the upland property. Each of the land use classifications noted above is assigned a second code letter to define the resource value of its submerged bottoms. The methodology used for determining resource value shall be consistent with the latest procedure approved by the Bureau of Submerged Lands and Preserves. An area within the preserve is designated as a **primary resource protection area (PRPA)**, then will be assigned a resource value of "**1**". A PRPA essentially combines Resource Protection Areas 1 and 2, as defined in Section 18-20.003 (31), and 18-20.003 (32), F.A.C.

Submerged areas that are characterized by the absence of the above resource attributes will be designated as a **secondary resource protection area (SRPA)**, and will be assigned a resource value of "**2**". A SRPA is essentially 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 example, if an area within the preserve is determined to have be a primary resource protection area, and if its adjacent land is zoned as a single-family residential neighborhood, it would be classified as **SF/1** management area.

Minimum criteria has been outlined for a number of uses and activities that can occur in the aquatic preserve. The minimum criteria provided in Chapter 18-20, F.A.C., applies to the uses and activities allowed for each management area.

In the next section of this chapter, the minimum criteria in Chapter 18-20, F.A.C., is provided. Then in the following section, the management areas are delineated providing boundaries, descriptions, and designated uses for each area. Any specific criteria for special management areas and a rationale for these criteria are also provided. Finally, Figure 9 provides a map of the management areas within the St. Joseph Bay Aquatic Preserve. The intention of providing this map is to give a general guidance and understanding of where management areas lie within the aquatic preserve. However, specific determination of what management classification provided to a specific site will be based on the definitions above. In the event that a site visit concludes that the management area for a specific site is different from that shown on the illustrations in Figure 9, the determination made during the site visit will be judged as the correct determination.

MINIMUM CRITERIA FOR ALLOWABLE USES

Chapter 18-20, F.A.C. (Appendix A), provides the minimum standards in regard to utilization of the state-owned submerged lands within an aquatic preserve. These minimum standards are reviewed below by designated use.

Private residential single docks:

Section 18-20.004(5)(a), F.A.C., provides that all docks within an aquatic preserve shall meet the following standards and criteria.

1. No dock shall extend the lesser of 500 feet waterward of the mean or ordinary high water line or 20% of the width of the water body at that particular location.

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 are determined on a case-by-case analysis.

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 protection and enhancement of the aquatic preserve shall prevail.

In addition, Section 18-20.004(5)(b), F.A.C., provides that private residential single docks shall conform to the following specific design standards and criteria:

1. An access dock must have a maximum width of 4 feet.

2. Must be designed and constructed to ensure maximum light penetration.

3. May extend from the shoreline to a maximum depth of -4 feet mean low water (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. New dredging is strongly discouraged.

Private residential multi-slip docks:

In addition to meeting the standards for all docking facilities noted above, Section 18-20.004(5)(c), F.A.C., provides that 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 water body 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, except as allowed pursuant to Sections 258.42 (3)(e)(1), F.S., while dredging in Resource Protection Areas 3 shall be strongly discouraged.

3. Water depths adjacent to and within the facility shall have a minimum of one foot of clearance between the deepest draft of a vessel and the bottom at MLW.

4. Main access docks and connecting or cross walks shall not exceed 6 feet in width.

5. Terminal platforms shall not exceed 8 feet in width.

6. Finger piers shall not exceed 3 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 shall also apply to private residential multi-slip docks.

Commercial-Industrial docking facilities and marinas:

Section 18-20.004(5)(d), F.A.C., provides that commercial, industrial, and other revenue generating/income related docking 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 Area 1; however, main access docks may be allowed to pass through Resource Protection Area 1 that are located along the shoreline, to reach an acceptable Resource Protection Area 2, provided that such crossing will generate minimal environmental impact.

3. The siting of docking facilities shall take into account the access of the boat traffic to avoid marine grassbeds or other aquatic resources in the surrounding area.

4. The siting of new facilities within the aquatic preserve shall be secondary to the expansions 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 alternative to multiple wet slip docking.

6. Marina siting will be coordinated with local governments to insure consistency with local plans and ordinances.

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.

Piers:

No specific standards are addressed in the current Rule 18-20, F.A.C., to regulate construction of piers; therefore these guidelines will be followed. Follow standards of private residential single docks or private residential multi-slip docks in accordance with the appropriate dock requirement for each management area's designated uses. In addition, the following applies to all piers:

(a) no temporary or permanent vessel mooring shall be permitted; at least one well displayed "no docking" sign shall be placed and maintained on each side of the pier; and, railings shall be placed around the entire perimeter of the pier; and,

(b) dredging is strictly prohibited when associated with pier construction or maintenance.

Ramps:

No specific standards are addressed in the current Rule 18-20, F.A.C., to regulate construction of boat ramps; therefore these guidelines will be followed. May be permitted on a case-by-case basis, after site inspection to assess the type and amount of shoreline and amount and type of benthic habitat that would be impacted; the amount of filling of submerged lands that would be required; and the accessibility to the ramp from both the water and land.

Lease or transfer of lands, (Private Leases):

Section 18-20.004(1)(b), F.A.C., provides that there shall be no further 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 lease, easement, or consent may be authorized for only the following activities: a public navigation project; maintenance of an existing navigation channel; installation or maintenance of navigation aids; creation or maintenance of a commercial/ industrial dock, pier, or marina; creation or maintenance of private docks; minimum dredging of navigation channels attendant to docking facilities; creation or maintenance of shore protection structures; installation or maintenance of oil and gas transportation facilities; creation, maintenance, replacement, or expansion of facilities required for the provision of public utilities; and, 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 Florida Aquatic Preserves Act (Section 258.35, F.S. through Section 258.46, F.S.). Section 18-20.004(1)(f), F.A.C. provides 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., provides that 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 grassbeds and do not interfere with traditional uses. In St. Joseph Bay Aquatic Preserve, utilities will be encouraged along existing utility easements, to the extent possible.

Spoil Disposal:

Section 18-20.004(3)(d), F.A.C., provides 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 and utility of the preserve.

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Division of State Lands. %
$   7  260     [Tallahassee] : 'b Dept. of Natural Resources, 'c [1992]. %
$   8  300     116 p. : 'b maps ; 'c 28 cm. %
$   9  504     Includes bibliographical references (p. 101-105). %
$  10  651  0  Saint Joseph Bay (Fla.) %
$  11  650  0  Bays 'z Florida. %
$  12  650  0  Aquatic resources 'z Florida 'z Saint Joseph Bay. %
$  13  650  0  Marine parks and preserves 'z Florida 'z Saint Joseph Bay 'x
Management. %
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$  15  740 01  Saint Joseph Bay aquatic preserve management plan. %
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MANAGEMENT AREAS

This section defines the management areas for the St. Joseph Bay Aquatic Preserve (Figure 9). Boundaries, descriptions, and allowable uses are listed for each area. In reviewing these management areas it must be recognized that the Bureau of Submerged Lands and Preserves has authority only over submerged lands not otherwise deeded. Due to changes that will occur from rezoning of adjacent uplands, and 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.

In addition to what is listed as allowable uses, certain activities are generally allowable in all management areas, in accordance with general rules. These include shoreline stabilization, maintenance dredging, and the maintenance of channel markers.

The determination of management area classifications have been based on information presented earlier. In the event that a site visit concludes that the management area for specific site is different from that shown in Figure 9, the determination made during the site visit will be judged as the correct determination.

MANAGEMENT AREA AG/1

(agriculture/primary resource protection area)

Boundaries: The southwest corner of the bay.

Description: The submerged lands adjacent to the southwest corner of the bay are characterized by salt marshes grading into dense seagrass beds. The parcel on the adjacent uplands is owned by a single-owner, is included in a proposed CARL acquisition, and is currently in a natural, undeveloped state. The submerged area adjacent to the mainland shore is characterized by a strip of salt marsh grading into patchy beds of seagrasses. The submerged lands adjacent to the mainland shore area are in private ownership and therefore not within the aquatic preserve boundaries. This upland parcel adjacent to this area is presently in single ownership, undeveloped, and used for forestry. It is also included in a proposed CARL acquisition.

Allowable Uses: Private residential single docks; piers; utility easements (in designated corridors).

MANAGEMENT AREA SF/1

(single-family/primary resource protection area)

Boundaries: The entire southern portion of the bay which is not designated either preservation, recreation, or agriculture. Black's Island is included under this classification.

Description: The submerged lands adjacent to this area are typified by a band of salt marsh which grades into seagrass beds. The salt marsh is widest in the southern and south-eastern portions of the bay, extending into the bay several hundreds of feet in some locations. Seagrass coverage varies from sparse along the central portion of the eastern shore, to dense in some areas in the southern and western portion of the bay. The submerged bottoms along the eastern portion of the bay and one site on the western portion are in private ownership and therefore not included within the aquatic preserve boundaries. The adjacent uplands are divided into multiple ownerships, some of which contain single-family homes, some of which are actively being developed, and some of which are in an undeveloped state. The upland parcels along the eastern portion of the bay are included in the proposed CARL acquisition. The submerged bottoms off of Black's Island are characterized by salt marsh and dense seagrass beds on the eastern side and sand bottoms with patchy seagrasses on the western side. The island is utilized as a camp facility.

Allowable Uses: Private residential single docks; piers; utility easements (in designated corridors).

MANAGEMENT AREA SF/2

(single-family/secondary resource protection area)

Boundaries: Portions of the Gulf shore of the peninsula.

Description: The submerged bottoms along the gulf shore are typical of the sandy beaches along this portion of the gulf shore consisting of fine quartz grains of medium diameter. The adjacent uplands are used primarily for single family second-homes or duplexes and other multi-family units which are used both by the owners and for rental purposes.

Allowable Uses: Private residential single docks; piers; utility easements.

MANAGEMENT AREA MF/2

(multi-family/secondary resource protection area)

Boundaries: Gulf shore adjacent to the state park.

Description: This area encompasses the Barrier Dunes subdivision. The submerged bottoms along the shore are typical of the sandy beaches along this portion of the gulf shore consisting of fine quartz grains of medium diameter.

Allowable Uses: Private residential multi-slip docks; piers; utility easements.

MANAGEMENT AREA PR/1

(public recreation/primary resource protection area)

Boundaries: The peninsula shore of St. Joseph Bay south of Eagle harbor, and the bay shore of the William J. Rish Park facility.

Description: The submerged lands adjacent to these areas are typified by a band of salt marsh which grades into seagrass beds. The salt marsh in the vicinity of Eagle Harbor is patchy, along W.J. Rish park is a narrow band, and in the southeast corner of the bay is much broader. Seagrass coverage is dense along most of this area. The W.J. Rish park has facilities developed for use by physically and/or emotionally handicapped people.

Allowable Uses: Public docks (constructed or repaired in a manner to minimize impact on submerged lands resources); ramps; utility easements (in designated corridors).

MANAGEMENT AREA PR/2

(public recreation/secondary resource protection area)

Boundaries: The gulf shore of the William J. Rish park facility and the gulf shore of Air Force and Coast Guard property near Cape San Blas.

Description: The submerged bottoms along the shore are typical of the sandy beaches along this portion of the gulf shore consisting of fine quartz grains of medium diameter. The adjacent uplands at the W.J. Rish park contain housing facilities for physically and/or emotionally disturbed people. The gulf shore of the

Air Force and Coast Guard facility is currently undeveloped, but is proposed to be developed into a spaceport.

Allowable Uses: Public docks (constructed or repaired in a manner to minimize impact on submerged lands resources); ramps; utility easements.

MANAGEMENT AREA P/1

(preservation/primary resource protection area)

Boundaries: The northern end of the St. Joseph peninsula to Eagle Harbor and Pig Island.

Description: This area is characterized by a narrow band of salt marsh and patchy to dense stands of seagrasses. The adjacent uplands is left in a natural state.

Allowable Uses: A single two-slip dock built in accordance with standards and criteria for private residential single docks.

MANAGEMENT AREA P/2

(preservation/secondary resource protection area)

Boundaries: The Gulf of Mexico shore of the St. Joseph peninsula to the area south of Eagle Harbor.

Description: The submerged bottoms along the shore are typical of the sandy beaches along this portion of the gulf shore consisting of fine quartz grains of medium diameter. The adjacent uplands are left in a natural state.

Allowable Uses: A single two-slip dock built in accordance with standards and criteria for private residential single docks; piers; utility easements.

MANAGEMENT AREA OW/1

(open water/primary resource protection area)

Boundaries: Areas in the southern portion of the bay.

Description: The submerged bottoms in this open water areas are characterized as being covered in seagrass beds ranging from dense to patchy.

Allowable Uses: utility easements (in designated corridors).

MANAGEMENT AREA OW/2

(open water/secondary resource protection area)

Boundaries: Open-water areas in the central and northern portions of the Bay and on the Gulf of Mexico coast.

Description: The submerged bottom in this open water area is characterized by its lack of coverage by seagrasses. Figure 4 (page 15) shows the bottom sediment types in open water areas within the aquatic preserve.

Allowable Uses: Private leases; utility easements; spoil disposal.

SOURCE: DNR, 1990

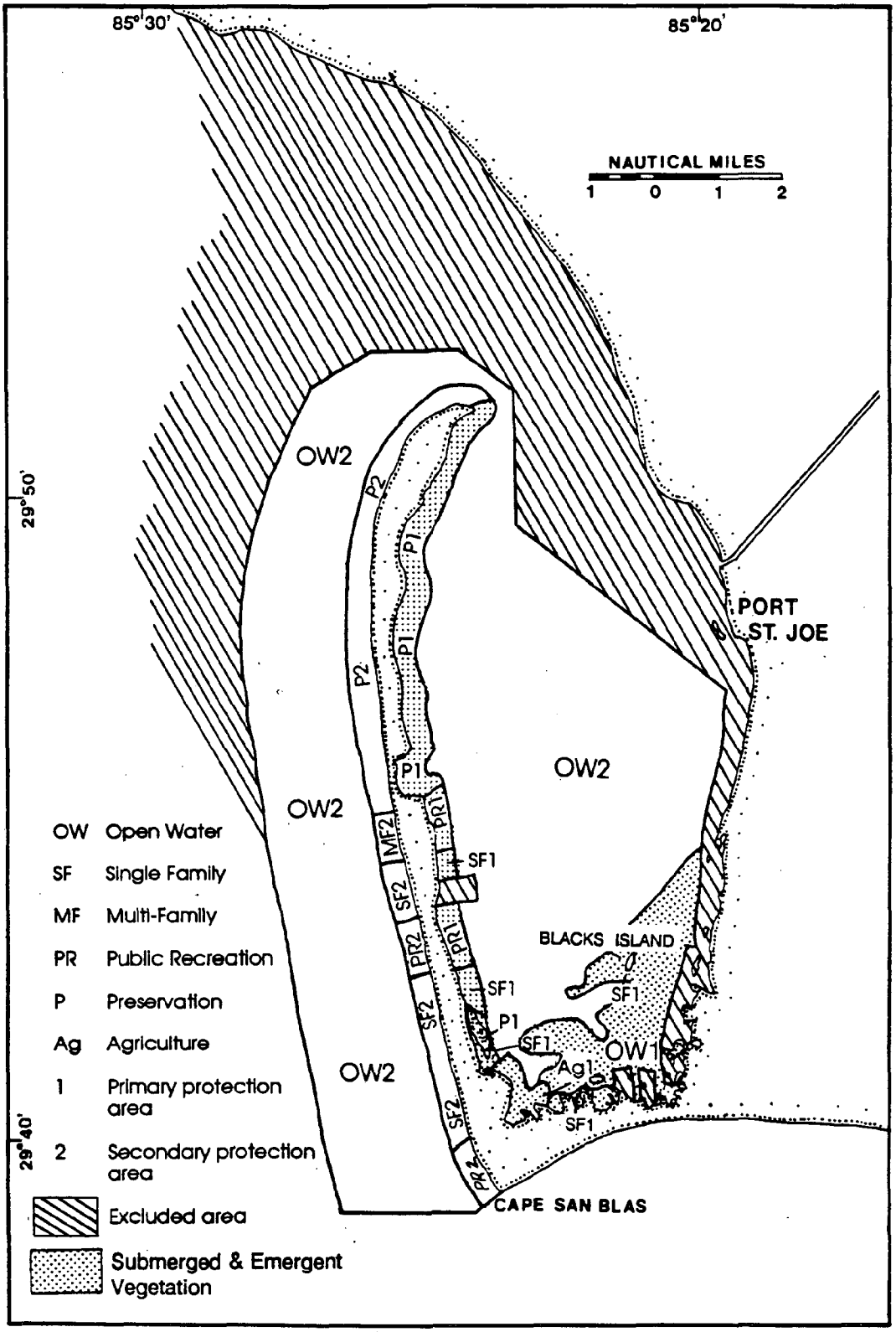

FIGURE 9. **Management Areas**

CHAPTER VII

MANAGEMENT ACTION PLAN

The objective of this chapter is to establish guidelines which allow for the management and protection of the St. Joseph Bay Aquatic Preserve's natural resources for the benefit of future generations (Section 258.35, F.S.). Many of the authorities needed to manage and protect natural resources in an aquatic preserve are vested to entities outside the Bureau of Submerged Lands and Preserves. Therefore, coordination is a key component of the implementation program for managing aquatic preserves. For instance, the regulation of land use practices on adjacent uplands is critical to the long-term protection of the aquatic resources of the preserve and no authority is vested in the program to manage growth. Instead, this authority is centered in county and city government and is guided by Gulf County's and the city of Port St. Joe's Local Government Comprehensive Plans.

It would improve the chances of the management goals and concepts of this management plan being attained if they are consistent with the local plan. Policy 1.2.1 of the Coastal Management Element of the draft Gulf County Comprehensive Plan states that development on St. Joseph spit, Cape San Blas, and in the Coastal High Hazard Area south of Port St. Joe shall be consistent with the policies of the currently adopted St. Joseph Bay Aquatic Preserve management plan. As noted earlier, the jurisdiction of the Aquatic Preserve Program does not extend into uplands in the Coastal High Hazard Area.

To effectively manage a natural resource, one must be knowledgeable about how the resource functions and what composes the resource, be able to transmit this knowledge to people who use and/or can potentially affect the resource, and be willing to take necessary actions to manage and protect the resource. Therefore, the management strategies for an aquatic preserve must consist of a variety of programs including direct hands-on management of resources, resource protection, environmental education, and research. The emphasis of the Aquatic Preserve Program in resource management is to conduct management activities and to coordinate the network of federal, state, regional, and local agencies with the authority to manage and protect natural resources. Through both of these strategies a cohesive management program that leads to the long-term conservation of the natural system may be attained.

For all of the following goals, objectives and tasks, the Department of Natural Resources will, when appropriate and practical, participate with other agencies and organizations dedicated to protecting the local resources. In order to avoid duplication of effort the Department will initiate programs only when they do not overlap or compete with programs operated by other governmental agencies or non-profit corporations.

RESOURCE MANAGEMENT PROGRAM

The role of the Aquatic Preserve Program in resource management includes: 1) serving as an informed source on the ecological components and cultural resources within the aquatic preserve; (2) overseeing those activities that affect the natural resources within the aquatic preserve; 3) ensuring that accurate information is used in resource-related permitting, management, and planning decisions; 4) ensuring that all laws and rules regarding the natural resources are obeyed and that violations are enforced by the appropriate authorities; 5) conducting on-site surveys for specific activities; 6) coordinating with other resource management and enforcement agencies; 7) coordinating with other educational programs to inform the public on the inherent values associated with natural resources; 8) conducting or cooperating with other entities to conduct pertinent research projects; and 9) developing, and periodically updating, a comprehensive management program. In conducting resource management activities, the focus of preserve staff should be on both the impacts of an individual action as well as the cumulative impacts of all changes and actions on the natural system.

Specific activities conducted by aquatic preserve staff in regard to resource management will include collecting and storing resource data and inventories; mapping the natural resources; monitoring of natural resources; identifying resource restoration needs and implementing a resource restoration program; and providing technical input and comments into environmental permitting and land-use planning decisions.

In regard to data collection and inventories the predominant role of the aquatic preserves program will be to organize and review data collected by other state and federal environmental agencies, other programs within DNR, universities, and other research entities. To the fullest extent possible, information will be stored in computers in a format defined by the central office and at a location accessible by the residents of Gulf County. Staff will conduct an assessment of ongoing monitoring activities to assess its adequacy in monitoring the environmental climate of the preserve. Whenever possible, staff will conduct additional monitoring activities to augment existing monitoring programs conducted by other agencies.

Resource Management Goal:

To conduct those resource management actions necessary to conserve or enhance the natural resource oriented values of the preserve for future generations.

Resource Management Objective 1:

Initiate implementation of a broad-based management program at the St. Joseph Bay Aquatic Preserve which focuses on the management and protection of natural resources, environmental education, and research.

Task 1-1:
Obtain the necessary staff and funds to implement all of the tasks listed in this resource management master plan.

Task 1-2:
Review, update, and revise as appropriate the tasks and programs in the management plan at a minimum of once every 2 years.

Resource Management Objective 2:

Establish and maintain close communication and coordination with all federal, state, regional, and local governmental agencies which have authority in natural resource management decisions that can affect the St. Joseph Bay Aquatic Preserve.

Task 2-1:
Assure that all state, federal, regional, and local government agencies which have authority in resource management decisions in the aquatic preserve are aware of the goals of the Aquatic Preserve Program, its authorities, and what actions are considered acceptable and not acceptable within or in close proximity to the aquatic preserve.

Task 2-2:
To understand the authorities of the various federal, state, regional, and local agencies in regard to resource management and determine which staff people in these agencies are responsible for activities within or in close proximity to the aquatic preserve.

Task 2-3:
Serve as a regular liaison for agencies with resource management authority and report any problems to specific agencies with jurisdiction to deal with the problem.

Task 2-4:
Coordinate closely with the Florida Department of State, Division of Historical Resources on all issues relating to historical and archaeological resources within the aquatic preserve.

Task 2-5
Develop a Memorandum of Understanding with all government entities having jurisdictional authority in natural resource management decisions which can affect the St. Joseph Bay Aquatic Preserve.

Resource Management Objective 3:

Be actively involved in all resource management decisions which can potentially affect the natural resources of St. Joseph Bay Aquatic Preserve.

Task 3-1:
Review and provide comments for all permits relating to construction activities on sovereign submerged lands within the aquatic preserve.

Task 3-2:
Review and provide comments on all upland land-use actions including comprehensive plans, county or municipal ordinances, or specific development proposals which have the potential to impact the natural resources of the aquatic preserve.

Task 3-3:
Provide technical comments on any administrative rules developed by state resource management agencies or the Marine Fisheries Commission regarding the protection and management of the natural resources of the aquatic preserve.

Task 3-4:
Review and provide comments on all permit applications that could potentially impact the natural resources of the aquatic preserve such as but not limited to the maintenance dredging of an existing navigation channel, modification of this channel, or the creation of new channels.

Resource Management Objective 4:

Provide increased management and protection emphasis to areas within the St. Joseph Bay Aquatic Preserve which either are integral to maintaining the productivity of the aquatic preserve, contain outstanding resource values, are in need of restoration or special management programs, or are important habitat to state and federally designated species.

Task 4-1:
Delineate any areas within the aquatic preserve where increased management emphasis is necessary, and develop specific program to address the needed additional emphasis.

Resource Management Objective 5:

To regularly monitor and inventory the natural and historical resources within the St. Joseph Bay Aquatic Preserve.

Task 5-1:
Prepare and regularly update a map of natural habitats within and adjacent to the aquatic preserve.

Task 5-2:
Identify and regularly monitor designated species and their associated habitats within or in close proximity to the aquatic preserve.

Task 5-3:
Evaluate water quality monitoring data which is collected by state and federal resource management agencies and through other research and monitoring efforts.

Task 5-4:
To monitor traditional uses of the aquatic preserve including commercial and recreational fishing, boating, and beach going to define extent of use and foresee any potential problems.

Task 5-5:
Annually prepare a report describing the state of the environment of the aquatic preserve. This report should discuss the findings of the resource monitoring program; most recent water quality data and any trends in water quality; any changes in resource community boundaries; status of designated species within the aquatic preserve; permit applications within the preserve; land development trends on adjacent uplands; and any enforcement actions necessary.

Resource Management Objective 6:

To focus on the impacts of resource utilization at the St. Joseph Bay Aquatic Preserve from a cumulative perspective as well as from the impacts of an individual action.

Task 6-1:
To utilize tools such as the local comprehensive plan to foresee future uses of the aquatic preserve.

Task 6-2:
To encourage the development of predictive tools to assess cumulative impacts of various development scenarios.

Task 6-3:
To consider the use of mitigative or restoration actions in association with any development activity that will degrade the natural resources of the aquatic preserve.

Resource Management Objective 7:

To implement those on-site management actions determined as necessary to maintain resource values of St. Joseph Bay Aquatic Preserve for future generations.

Task 7-1:
As necessary, prepare and implement plans to restore disturbed sites within the aquatic preserve.

Task 7-2:
As necessary, develop and implement specific programs to remove or eradicate undesired exotic animal and plant species.

RESOURCE PROTECTION PROGRAM

The role of the Bureau of Submerged Lands and Aquatic Preserves in resource protection includes enforcement of state laws and rules; coordinating with other enforcement staff in the Division of State Lands and other divisions and agencies having enforcement authority; and, reviewing and commenting on permits. In regard to direct enforcement, the Bureau has regional staff to deal with enforcement issues concerning aquatic preserves. If these staff are unavailable, the option of using Marine Patrol staff also exists. Any prosecution actions will be handled by DNR legal staff. On site staff are intended to serve only as technical support on enforcement issues. Violations of Chapter 18-20, F.A.C. are violations of civil law and as such are subject to all civil penalty limitations.

In serving as technical support, staff is expected to evaluate development proposals in aquatic preserves in regard to adverse impacts on natural and cultural resources and consistency with established laws and rules; conduct field assessments and prepare comments and recommendations to appropriate agencies; maintain good communication with local, regional, state, and federal environmental regulatory agencies; and, notify appropriate authorities of violations and illegal activities.

Other agencies with enforcement authority which can be used to protect the natural resources of an aquatic preserve include the Department of Natural Resources, the Department of Environmental Regulation, the Game and Fresh Water Fish Commission, and local law enforcement officers.

Resource Protection Goal:

To ensure compliance with all laws, rules, ordinances, and permit conditions relating to the protection of natural resources.

Resource Protection Objective 1:

To assure that all violations of federal, state, and local laws, rules, ordinances, and permit conditions in the St. Joseph Bay Aquatic Preserve are responded to in a timely manner.

Task 1-1:
The preserve manager will coordinate with agencies that have enforcement authority in the aquatic preserve area for natural resource related issues and develop a network of communication and coordination among these agencies.

Task 1-2:
To establish a scheduled program in coordination with other agencies with enforcement authority to systematically monitor the aquatic preserve for resource-oriented violations which could potentially affect the natural resources of the aquatic preserve. Any violations spotted in this effort should be immediately reported to the appropriate enforcement entities.

Task 1-3:
To regularly monitor all permitted actions within the aquatic preserve during their construction phase to assure compliance with permit conditions. Once construction is completed a letter shall be sent to the permitting entity stating that the project was completed and whether it is in compliance with the agreed upon permit conditions.

Task 1-4:
Provide technical support to federal, state, or local entities involved in resource-oriented enforcement actions within the aquatic preserve.

RESEARCH AND MONITORING PROGRAM

Marine research conducted within the DNR is normally the responsibility of the Division of Marine Resources. Nevertheless, because of the nature and purpose of aquatic preserves, some management related research projects should also be associated with this program. The two key components of a research program are research and monitoring. Research is the systematic collection and analysis of experimental and/or field observations that produce knowledge. And, monitoring is the systematic sampling and measurement over time of variables which describe the abundance and distribution of biological resources, the distribution and concentrations of physical, geological or chemical properties, or the location and rates of significant processes.

Research and monitoring conducted through the Aquatic Preserve Program shall focus on management solutions specific to a site or to the program in general. The overall program's involvement with research can vary from actually conducting a research project to providing in-kind support to certain research projects to contracting an outside entity to do necessary research.

The role and emphasis of a specific preserve in research and monitoring is contingent on the classification of the preserve. Preserves established for either biological or scientific purposes should emphasize research and monitoring activities much greater than preserves designated for aesthetic purposes. St. Joseph Bay Aquatic Preserve was established for biological/scientific purposes. Research conducted within aquatic preserves must be compatible with protection of natural resources and receive the clearance of aquatic preserve field staff and the central office staff.

Research and monitoring associated with an aquatic preserve will emphasize either providing a better understanding of the functioning and interrelationships of the preserve's natural systems; monitoring the status of the preserve over time; or, providing information to allow for the wise use and management of the preserve.

Staff of each preserve will keep close coordination with all research projects and monitoring activities ongoing within the preserve, as well as outside research conducted by universities, the Division of Marine Resources, or research entities which are pertinent to the preserve. Efforts will also be taken by the Central Office to assure that research funding for aquatic preserves under state programs such as Sea Grant and the Surface Water Improvement and Management Act are consistent with previously identified and approved research needs for the preserve.

Much of the existing research in St. Joseph Bay was done either by graduate students or professors from Florida State University. These past research projects have focused mainly on fisheries, seagrasses, and the geology of the bay and offshore area. There are no known ongoing research projects in St. Joseph Bay.

The research needs in St. Joseph Bay Aquatic Preserve include documenting the long-term impacts of powerboat propellers and commercial scallop dredging on the seagrass beds and the ecological productivity of the bay and establishing a means to evaluate the cumulative impact of development activities on adjacent uplands.

The other entities currently known to be involved in environmental monitoring in St. Joseph Bay Aquatic Preserve are the DER, DNR, and the city of Port St. Joe's Water Pollution Control Department. The DER has two stations in St. Joseph Bay which have been monitored since 1971. These stations are located on the eastern side of the bay about one-half mile above the state park boundary and on the western side of the bay off the city of Port St. Joe. Ideally, additional stations which are closer to the more productive south end of the bay should also be established. The University of Florida, Department of Environmental Engineering is about to be initiating a water and sediment monitoring effort in the bay. The Bureau of Coastal Data Acquisition, DNR, is conducting long term beach and offshore profile monitoring within the aquatic preserve. DNR has eighty-five monitoring stations located along the gulf shoreline of the preserve, as well as obtaining aerial videos of the coast. The city's Water Pollution Control Department has monitored the bay since 1973 and currently monitors water, sediment, and fish.

The St. Joseph Bay Aquatic Preserve is located adjacent to the Apalachicola Bay National Estuarine Research Reserve. This Reserve is operated by both the National Oceanic and Atmospheric Administration and DNR. The research programs at the Estuarine Research Reserve and the aquatic preserve will be closely coordinated. St. Joseph Bay is also located within 40 miles of Florida State University's Turkey Point Marine Institute.

Research and Monitoring Goal:

To have the necessary research and monitoring activities conducted so that the ecological functioning of the preserve is understood, so that the preserve can be managed and used in an ecologically sound and wise manner, and so that the preserves can be maintained in it's natural condition for future generations.

Research Objective 1:

Promote the scientific investigations and monitoring activities necessary in St. Joseph Bay to understand the status and basic functioning of the bay, enhance the management of its natural resources, and guide the wise management and utilization of those resources.

Task 1-1:
Establish and maintain communication and coordination links between the aquatic preserve staff and existing research and monitoring entities including Florida's state university system, DNR's Marine Resources Laboratory, the Florida Department of Environmental Regulation, the U.S. Environmental Protection Agency, the city of Port St. Joe's Water Pollution Control Department, and any other entity involved in research and monitoring in or near the preserve.

Task 1-2:
In coordination with the scientific community, establish a prioritized list of research and monitoring needs for the aquatic preserve. This list should be updated at a minimum of every 2 years.

Task 1-3:
By offering assistance either through logistical support or funding (as available) encourage the conducting of priority research projects.

Task 1-4:
As available funds and staff time and expertise permit, conduct priority research and monitoring activities.

Research Objective 2:

Staff should be knowledgeable about the ecological components of the bay and how they function by obtaining a basic understanding of all past and ongoing research projects and monitoring activities done within St. Joseph Bay Aquatic Preserve or in other areas whose results are applicable to the management and protection of the preserve.

Task 2-1:
To obtain and serve as a repository for all past monitoring data collected within the aquatic preserve. Copies of this information should be kept at both the DNR office and the Gulf County library. The existing monitoring programs should be assessed in regard to parameters monitored, sampling methods, sampling frequency, and station location in coordination with the scientific community to assure that they accurately portray the environmental climate of the preserve. If necessary, means of modifying or expanding the existing monitoring program should be examined.

Task 2-2:
To obtain, review, and serve as a repository for all existing scientific literature, government reports, historical accounts, and available maps and

photos of the aquatic preserve. Copies of this information should be kept at both the DNR office and the Gulf County library.

Task 2-3:
To regularly review the scientific literature relevant to the ecological processes within as well as the protection and management of the aquatic preserve.

Task 2-4:
To establish a library containing information on plant and animal species and communities found within the aquatic preserve. Copies of this information should be kept at both the DNR office and the Gulf County library.

Research Objective 3:

To coordinate the use of research findings into both management decisions and resource education programs.

Task 3-1:
Staff should serve as a link between historical and ongoing research and monitoring activities in the preserve and current resource management and use decisions. Staff should make key scientific information available to decision-makers.

Task 3-2:
Staff should serve as a link between historical and ongoing research and monitoring activities in the preserve and resource education programs. Materials used in resource education programs relating to the preserve should be reviewed by staff for accuracy and updated periodically to reflect current research findings.

Research Objective 4:

To coordinate with DER and the Northwest Florida Water Management District on the status of water quality in the preserve.

Task 4-1:
Maintain a file, and periodically assess data received from DER on water quality within the preserve. If water quality is declining, consult with DER to determine sources of degradation and evaluate possible actions to stop or reverse the trend. If water quality is improving, steps should be taken to document the reasons for the improvement.

Task 4-2:
Coordinate with the local mosquito control district or programs to review arthropod control plans submitted in compliance with Section 388.4111, F.S., and to monitor arthropod control activities for compliance with the management plan.

ENVIRONMENTAL EDUCATION/INFORMATION PROGRAM

The role of the Aquatic Preserve Program in environmental education is mainly to coordinate and augment existing programs conducted out of the local school system(s), the Florida Department of Education, or other state agencies. Education programs are conducted at aquatic preserves in an effort to meet the overall program goal of maintaining aquatic preserves at their current level of environmental quality for future generations. The target population of education programs at St. Joseph Bay Aquatic Preserve includes nearby upland landowners and developers, commercial and recreational resource users, students at all grade levels, organized groups, and local, regional, and state government agencies.

The involvement of aquatic preserve staff in public education will focus on the development of both programs in the school system and to the public at large. Specific areas of involvement may include developing informational pamphlets, brochures, or booklets; conducting interpretive tours; conducting lectures or classes; development of public service announcements for television and radio; and, development of video programs and other teaching aids that can be used by public school systems in their daily instruction to students. Two DNR publications, Environmental Education in Florida: Needs and Goals and A Guide for Environmental Education, serve as important resource documents for environmental education programs in aquatic preserves.

Environmental Education/Information Goal:

To educate people so that they will use the environment in ways that preserve it, consider environmental issues when planning and making decisions which could affect the environment, and take part in decisions affecting nearby natural resources. In general, the intent of aquatic preserve education programs is to make the public informed and responsible users of natural resources.

Education Objective 1:

To provide assistance to environmentally oriented education programs at public and private schools at all grade levels from kindergarten through university classes.

Task 1-1:
In coordination with staff of the Apalachicola National Estuarine Research Reserve prepare classroom units relating to the natural resources of St. Joseph Bay.

Task 1-2:
To periodically lead or assist in classroom field trips into the aquatic preserve.

Task 1-3:
To develop a specimen collection of species commonly found in the preserve to be used by public and private schools in their environmental education programs.

Task 1-4:
In coordination with staff of the Apalachicola National Estuarine Research Reserve participate in programs designed to educate environmental education instructors.

Task 1-5:
To develop a reference library of material relevant to the natural resources of St. Joseph Bay in Gulf County and make the contents available to educators.

Education Objective 2:

To provide and/or assist in environmental education programs to the community at large.

Task 2-1:
To conduct or assist in seminars, forums, or classes for public discussion of relevant resource management, utilization, and regulation issues. Seminars should involve both commercial and recreational resource users and should seek to involve resource users.

Task 2-2:
Develop brochures, pamphlets, and/or booklets in coordination with staff of the Apalachicola National Estuarine Research Reserve for public dissemination which describes both the purpose of and the activities conducted at the aquatic preserve and the functional importance of the Preserve's ecosystem.

Task 2-3:
Develop a network of signs to be placed at strategic access points to the aquatic preserve designed to educate the general public about ecological significance of St. Joseph Bay, the role of the general public in conserving natural resources, and the Aquatic Preserve Program.

Task 2-4:
Periodically prepare newspaper articles or radio announcements designed to educate the general public about the ecological significance of the preserve and/or topical resource management, utilization, and regulation issues. Through this vehicle the findings of recent research efforts should be disseminated to the public at large.

Task 2-5:
Provide reference material to nearby public libraries regarding the description, management, and utilization of the natural resources of the aquatic preserve. Efforts should be made to encourage public libraries to have a special section relating to local natural resources.

Task 2-6:
To conduct and/or sponsor cultural events including art and photography exhibitions, storytelling sessions, and musical events relating to the management and protection of natural resources.

CHAPTER VIII

MANAGEMENT COORDINATION NETWORK

This chapter provides an overview of the federal, state, regional, and local agencies that have jurisdiction or hold interest in the management of the St. Joseph Bay Aquatic Preserve. Much of the authority necessary to protect and manage the natural resources within and adjacent to the St. Joseph Bay Aquatic Preserve exists outside the Bureau of Submerged Lands and Preserves. Therefore, the preserve's management action plan (Chapter 7) includes several objectives and tasks which direct staff to coordinate with entities which have the necessary jurisdiction. Resource Management Objective 2 provides that the aquatic preserve staff should establish and maintain close communication and coordination with all federal, state, regional, and local governmental agencies which have authority in natural resource management decisions that can impact the St. Joseph Bay Aquatic Preserve. Resource Management Objective 3 further provides that staff "be actively involved in all resource management decisions which can potentially impact the natural resources of St. Joseph Bay Aquatic Preserve. And, Resource Protection Objective 1 provides that staff should assure that all violations of federal, state, and local laws, rules, ordinances, and permit conditions in the St. Joseph Bay Aquatic Preserve are responded to in a timely manner.

FEDERAL AGENCIES

Many federal agencies have property interests, land and wildlife management programs, research activities, construction activities, and regulatory programs existing or potentially existing within the St. Joseph Bay Aquatic Preserve. Listed below are the major federal agencies and their program involvement within the preserve.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) administers three programs which directly affect the St. Joseph Bay Aquatic Preserve. The Division of Ecological Services, headquartered in Panama City, reviews dredge and fill requests and other federal level permitting under the Fish and Wildlife Coordination Act. The USFWS is also charged with the protection and recovery of endangered species and bird rookeries. Field personnel could become involved in using available recovery techniques.

Under a provision in the Fish and Wildlife Coordination Act, the USFWS must be consulted before the Corps of Engineers can submit a plan for

congressional approval which relate to water diversion, channel deepening, or modifications to streams or other bodies of water.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (COE) regulates activities in waters and wetlands under four separate, but related laws and their subsequent amendments: Rivers and Harbors Act of 1899, Federal Water Pollution Act of 1972, Clean Water Act of 1977, and Marine Protection, Research, and Sanctuaries Act of 1972.

The COE's major responsibilities which relate to the St. Joseph Bay Aquatic Preserve are the maintenance of federally authorized navigation channels, pollution abatement, maintenance of water quality, and enhancement of fish and wildlife. The COE also provides technical guidance and planning assistance for development of the nation's water resources. Under Section 404 of the Federal Water Pollution Control Acts Amendments of 1972, the COE has regulatory authority over dredge and fill activities in coastal wetlands.

In December, 1982 a Memorandum of Understanding (MOU) between DNR, DER and the COE was executed. The MOU established a process whereby the proprietary concerns of the Trustees, stated in Chapter 253, F.S., is integrated into the DER/COE joint permitting process.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for the control and abatement of six types of pollution: air, water, noise, solid waste, toxic waste, and radiation. The DER is the state agency responsible for pollution control in Florida in conjunction with the federal program.

Coast Guard

The U.S. Coast Guard (USCG) is charged with the protection of the nation's coastline. In the preserve, the Coast Guard is involved in the regulation of boating safety, search and rescue, the surveillance of narcotics contraband, and plays a primary role in spill control in coastal areas. Additionally, the Coast Guard regulates the construction of structures, such as bridges, causeways, and aerial utilities, which may pose navigation hazards, and oversees safety issues associated with commercial navigation.

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA), Office of Coastal and Resource Management, administers the National Estuarine Research Reserve Program which includes the Apalachicola Bay National Estuarine Research Reserve (see discussion under Department of Natural Resources). NOAA's Office of Oceanography and Marine Assessment, Ocean Assessment Division (OAD) conducts research, assessment, and monitoring activities on environmental quality issues in estuaries. Through its National Status and Trends Program, OAD is conducting a nationwide monitoring program to assess chemical contamination in estuaries throughout the country. Through its National Coastal Pollutant Discharge Inventory, OAD determines the sources and analyzes the quality of discharged pollutants in estuaries. .OAD also has a National Estuarine Inventory which characterizes the physical and hydrological features of the nation's estuaries and coastal areas. NOAA also operates the weather station in Apalachicola, Florida and collects tidal data from four stations within or near the preserve.

National Marine Fisheries Service

The National Marine Fisheries (NMFS), U.S. Department of Commerce records commercial fish landings, enforces national fishery laws, and protects vital fishery habitats. The Environmental Assessment Branch of NMFS comments on permit applications, at the federal level, which may adversely impact fishery habitats. NMFS also has enforcement officers checking for illegal fishing activity.

Department of Defense (U.S. Air Force)

The U.S. Air Force owns several 100 acres adjacent to the aquatic preserve at which it operates a radar tracking facility.

Spaceport Florida Authority

The Spaceport Authority is currently activating a former Air Force missile test site on Cape San Blas for research-oriented sounding rocket launches.

STATE AGENCIES

Many state agencies have property interests, land and wildlife management programs, research activities, regulatory authority and construction activities within

the St. Joseph Bay Aquatic Preserve. The interactions of these programs with the management of the St. Joseph Bay Aquatic Preserve are outlined below:

Department of Natural Resources

The Division of Marine Resources has several programs relevant to aquatic preserves. The Marine Research Laboratory in St. Petersburg has several projects including resource protection area mapping and fishery habitat utilization studies which generate valuable resource management information.

The Division of Marine Resources also administers a permitting program for the collection of certain marine species and the use of certain chemicals. The Bureau of Submerged Lands and Preserves receives notification of issuance of permits within aquatic preserves.

The Division of Marine Resources' Shellfish Environmental Assessment Section (SEAS) is responsible for the classification and management of shellfish harvesting areas. A SEAS field support office and the laboratory support facility are located in Apalachicola. SEAS performs four primary tasks: conducting shoreline surveys to locate and evaluate potential pollution sources; establishing and monitoring water quality monitoring stations; red tide monitoring; and, managing shellfish harvesting areas for the purpose of protecting public health.

The Division of Law Enforcement's Marine Patrol, District 2 has a detachment located in Carrabelle, Florida. The detachment includes 22 people. The Marine Patrol regulates and enforces safe boating laws and enforces all commercial and recreational fishing laws.

The Division of State Lands, in addition to the work related to aquatic preserves, is charged with overseeing uses, sales, leases, or transfers of all state-owned lands. The Bureau of Submerged Lands and Preserve staff interact with other staff of State Lands in all transactions concerning submerged lands within the preserve including education, research, and acquisition of privately titled submerged lands or contiguous uplands important to the integrity of the preserve.

The Division of Resource Management is responsible for the management of aquatic plants, mineral resources, oil and gas exploration, and geologic studies. It also supervises state Navigation Districts and Canal Authority.

The Division of Beaches and Shores is responsible for managing erosion control, hurricane protection, coastal flood control, shoreline and offshore

rehabilitation, and the regulation of work and activities likely to affect the physical condition of the beach and shore.

The Division of Recreation and Parks oversees operations at the T.H. Stone State Park on the St. Joe peninsula.

Marine Fisheries Commission

The Marine Fisheries Commission (MFC) has been delegated rule making authority with respect to marine life, and regulates the harvesting of all marine life (except designated species), subject to final approval by the Governor and Cabinet. Their authority covers gear specifications, prohibited gear, bag limits, size limits, species that may not be sold, protected species, closed areas, quality control codes, harvesting seasons, special considerations related to egg-bearing females, and oyster and clam relaying. The MFC is required to make annual recommendations to the Governor and Cabinet regarding marine fisheries research priorities, which can in turn directly influence research efforts and priorities at the preserve.

Florida Game and Fresh Water Fish Commission

The Florida Game and Fresh Water Fish Commission (FGFWFC) has several programs directly related to resource management at the preserve. The Office of Environmental Services (with staff in Tallahassee and Apalachicola) reviews projects which may affect local fish and wildlife habitat. FGFWFC is the state coordinator of the Non-Game Wildlife and Endangered Species Program in Florida. The Division of Wildlife is also responsible for designating Critical Wildlife Management Areas to protect designated species. And, the FGFWFC has law enforcement officers working in the area.

Department of Environmental Regulation

The Department of Environmental Regulation (DER) has the authority to regulate air, water, noise, wastewater, stormwater, and hazardous waste pollution through a permitting and certification process. An interagency agreement between DNR and DER provides an avenue for prior DNR staff review and comment on projects with potential environmental impacts in the preserve.

DER is the state contact for the initiation of dredge and fill applications in conjunction with the COE and DNR. The permitting process is a key management tool for the protection of the preserve. In December 1982, a Memorandum of Understanding (MOU) between DER, DNR, and the COE established a process whereby the proprietary concerns of the Board of

Trustees, stated in Chapter 253, F.S., are integrated into the DER/COE joint permitting process.

The DER also oversees the Outstanding Florida Waters (OFW) program and enforces water quality regulations for the state. As an aquatic preserve, St. Joseph Bay was automatically designated an Outstanding Florida Water. Through this designation, ambient conditions become the water quality standard for the preserve, thereby providing a legal means of preventing any degradation to the preserve's water quality.

The DER Office of Coastal Management is charged with coordinating activities related to coastal management and reviewing federal actions for consistency with the State Coastal Management Program. The Office of Coastal Management also awards grants for research and management planning.

Department of Community Affairs

The Department of Community Affairs (DCA) is responsible for coordinating Developments of Regional Impact (DRI), designating Areas of Critical State Concern (ACSC), and overseeing the local planning process.

DRI's are major developments that may affect more than one county and require regional review from neighboring local governments the regional planning council, and state agencies. The ACSC program is intended to protect areas of the state where land development has, or may potentially endanger natural resources.

The DCA also oversees the development of Local Government Comprehensive Plans for counties and municipalities. Local governments are required to adopt land development regulations which are consistent with the adopted local comprehensive plan within one year after submission of their plan for review and approval by the DCA.

Department of Agriculture and Consumer Services

The Department of Agriculture and Consumer Services (DACS) is responsible for regulating pesticide usage, overseeing forestry operations, and overseeing designated plant species.

Department of Transportation

The Department of Transportation (DOT) is responsible for the planning and construction of state roads in Gulf County. The DOT also updates a state-wide aerial photographic survey every four years.

Department of State

The Department of State, Division of Historical Resources (DHR) has responsibility for protecting archaeological and historical sites. This includes cultural resources located on state-owned sovereignty submerged lands.

Department of Health and Rehabilitative Services

The Department of Health and Rehabilitative Services (HRS) administers septic tank and mosquito control programs at a state level. Although mosquito control serves a useful public function, the effects of pesticides in the waters of the preserve can be a primary concern. DNR staff are involved in the management programs developed by the Florida Coordinating Council on Mosquito Control, and subsequent policy recommendations resulting from this group will be evaluated for their potential effects on the aquatic preserve.

Office of Planning and Budgeting

The Office of Planning and Budgeting in the Executive Office of the Governor is responsible for administering project reviews applicable to Florida's Coastal Management Program and the Federal consistency program in conjunction with DER. This process incorporates all projects in the state that involve federal permitting, federal assistance, or direct federal activity. Each project must undergo this additional review to determine if the project is consistent with the established programs, policies, and rules of the state.

Florida Sea Grant

Florida Sea Grant is a State University System program with administrative offices at the University of Florida. By using seminars, workshops, demonstrations, publications, and personal contacts, Marine Extension Agents working for Sea Grant inform the public of current issues of the sea and coast.

REGIONAL AGENCIES

In addition to state and federal agencies, two regional agencies have a major role in the use and management of the preserve: The Northwest Florida Water Management District and the Apalachee Regional Planning Council.

Northwest Florida Water Management District

The Northwest Florida Water Management District (NWFWMD) administers permitting programs for consumptive water use, management and storage of surface water well drilling and operation, regulation of artificial recharge facilities, and works of the district. This includes withdrawal of water from rivers, streams, and wells. The types of water uses permitted by the NWFWMD which could affect the St. Joe Bay Aquatic Preserve includes public water supply.

In 1987 the Florida Legislature directed water management districts through the SWIM act to develop and implement plans to improve the water quality and related aspects of the state's surface waters. The SWIM program has no activities ongoing or planned which relate to the St. Joseph Bay Aquatic Preserve.

Apalachee Regional Planning Council

The Apalachee Regional Planning Council (ARPC) serves as a regional planning body for the local government of Gulf County. Among its duties, the ARPC : aids local governments with planning expertise; is the regional representative for the DRI review process; serves as a clearinghouse for state and federal projects and programs; conveys information from the local governments to the state and federal levels; assists local governments in getting grant aids; and prepares and administers the Regional Policy Plan.

The DRI review of projects which affect the preserve will be reviewed by both the central office staff and field personnel. DRI's for marinas, subdivisions adjacent to the preserve, and commercial or industrial developments will be reviewed closely for their potential impact on the preserve.

LOCAL GOVERNMENT

The St. Joseph Bay Aquatic Preserve is contained entirely within Gulf County. The city of St. Joe lies in close proximity to the preserve's boundary. The city of Port St. Joe is the regional water pollution control in closest proximity to St. Joseph Bay. The city is the owner and operator of the area's regional wastewater treatment plant. The city has acted as the major water pollution control authority in the region since 1973. The key area of interaction between county and/or municipal government and the St. Joseph Bay Aquatic Preserve is in the area of land use on the adjacent uplands and its associated impacts on and uses of the aquatic resources of the preserve. To this end, there are two basic areas of concern: local government comprehensive plans and local ordinances and regulations.

Local Government Comprehensive Plans

Local (municipal and county) governments are required by the Local Government Comprehensive Planning Act of 1975 (Section 163.3161, F.S.), (as amended by Chapter 85-55, Laws of Florida, to the Local Government Comprehensive Planning and Land Development Regulation Act) to develop and adopt comprehensive plans to guide their future development. The plans are to be composed of elements relating to different governmental functions (i.e., housing, physical facilities, conservation, land use, coastal zone protection, etc.). These plans must meet the approval of state agencies and be consistent with minimum standards set in Chapter 9J-5, F.A.C.

The coastal management element of the Local Government Comprehensive Plan, along with the land use and conservation elements, establishes long range plans for orderly, and balanced development, with particular attention to the identification and protection of environmental resources in the planning area. Conformance with the criteria, policies, and practices of a local government comprehensive plan is required for all development within the local government jurisdiction.

Local Ordinances and Programs

(personal communication from Larry McArdle, Manager, city of Port St. Joe Wastewater Treatment Plant)

There are two local ordinances (one municipal and one county) which directly relate to local government control over St. Joseph Bay, including the portions which are part of the aquatic preserve. The municipal ordinance is a pretreatment ordinance adopted by the city in accordance with Federal Clean Water Act requirements. The city's pretreatment ordinance regulates what industries can put in wastewater influents to the city's wastewater treatment plant. The county ordinance is one which regulates airboat and aircraft traffic on St. Joseph Bay.

The city of Port St. Joe has a water pollution control department which operates and maintains the city's regional industrial wastewater treatment plant. The city's plant was financed, constructed and operated with help from local industries in 1973. By developing one large regional facility, the city and its industries were able to eliminate three outdated facilities, and have achieved high quality treatment of the wastewaters generated by the city and its systems users. The city's collection and treatment system has eliminated approximately 90% of the pollutant loads discharged directly to St. Joe Bay prior to 1973.

Port Authority Master Plan

(personal communication from Larry McArdle, Manager, city of Port St. Joe Wastewater Treatment Plant)

The Port of St. Joe dates back to 1701 with a Spanish outpost in St. Joe Bay. The United States purchased Florida in 1819 from Spain, and by 1839 Port St. Joe ranked with the ports of Mobile, New Orleans and Apalachicola. Most of the currently existing Port of Port St. Joe facilities were developed by 1960-70. The existing port and facilities, by current comparison could be termed small or minor with respect to expansive gulf ports such as Tampa, Mobile and New Orleans. All existing deepwater port facilities are outside of the state aquatic preserve, but water portions lie adjacent to it.

The management of the Deepwater Port of Port St. Joe is by the Port Authority established under Section 215.431, Florida Statutes. The Authority is an independent public agency composed of five commissioners appointed by the Governor. They are authorized to own and acquire property, construct, maintain and operate Port and all other harbor facilities. The Port Authority prepared a master plan for Florida Department of Community Affairs and the Florida Department of Natural Resources in December 1988. Several goals, objectives and policies of the plan relate to the portion of St. Joe Bay which have historically been used as a port and for navigation, adjacent to the aquatic state preserve.

Local Development Codes

The local development and zoning codes (e.g., building codes) provide the major local regulation that defines what an owner can do on a particular parcel of property. The zoning prescribes the allowable uses and the intensity of those uses. Certain land uses and land use intensities adjacent to an aquatic preserve can lead to profound impacts on the resources of the preserve.

Within one year after the approval of their Local Government Comprehensive Plan, local governments are required to amend their land development regulations to be consistent with the provisions of the plan.

PRIVATE CONCERNS

In addition to coordinating and working closely with governmental entities, the aquatic preserve manager should also coordinate with private entities including St. Joe Bay Protection Committee, Friends of St. Joe Bay, representatives of St.

Joseph Forest Products Company, representatives of the commercial and recreational fishing industries, and other groups related to the protection or utilization of the natural resources of the bay.

CHAPTER IX

STAFFING AND FISCAL NEEDS

Historically, the Aquatic Preserves Program has been largely dependent on federal coastal zone grant funds for both its operation, and as a result, the funding of both field positions and central office positions has been limited.

In order for the St. Joseph Bay Aquatic Preserve to be managed in accordance with goals, objectives, and tasks set forth in this plan, adequate funding, staffing, and equipment is essential. Currently there is no legislative funding for staffing at the St. Joseph Bay Aquatic Preserve. Instead, management is conducted on a part-time basis by the manager of the Alligator Harbor Aquatic Preserve and permitting is handled by District staff in Pensacola. It is anticipated that the above program can be implemented with one full-time employee for the most part to the St. Joseph Bay Aquatic Preserve and a full-time secretarial assistant which would also assist staff of the Alligator Harbor Aquatic Preserve. This estimate does not include staff-time or expenses by DNR and other state agency employees involved intermittently in the various tasks necessary to manage and conserve the natural resources of the aquatic preserve. An annual review of the accomplishments of the program relative to the tasks listed in Chapter VII will help to determine if the initial staffing estimate is adequate to meet the legislative intent of the program.

A budget covering projected staff time, equipment, travel, and other expenses for this area is found in Table 2. The budget is required to fulfill the short-range needs of the preserve as described in this management plan, and accomplish the Department of Natural Resources goal of on-site management of all aquatic preserves by 1991, as expressed in the Agency Functional Plan.

TABLE 2

ESTIMATED BUDGET FOR THE FIRST TWO YEARS FOR
ST. JOSEPH BAY AQUATIC PRESERVE

SALARY	FIRST YEAR	SECOND YEAR
ES II (including benefits)	$ 32,010	$ 32,970
Secretary Specialist	16,324	16,814
Subtotal	$ 48,334	$ 49,784
OPERATING CAPITAL OUTLAY		
Vehicle	$15,000	
Boat/Motor/Trailer	17,500	
Office Equipment	3,500	
Computer	2,600	
Subtotal	$38,600	
OPERATING EXPENSES		
Office Rent, Gas, Phone	$ 19,000	$ 21,000
TOTAL COST	$105,934	$ 70,784

CHAPTER X

RESOURCE AND ACTIVITY MONITORING PROGRAM

To ensure that this management plan is effectively implemented, on-site staffing is imperative. The position of a preserve manager will be necessary in order to institute programs targeted at (1) monitoring the status of natural resources, (2) monitoring usage of the aquatic preserve, and (3) tracking progress and accomplishments that are directed at retaining the original integrity and value of the preserve.

RESOURCE MONITORING

In managing an aquatic preserve it is important to regularly review whether the efforts of the Aquatic Preserve Program and other federal, state, and local programs to protect the natural resources are meeting their objectives. Therefore, the status of the natural resources in the preserve will be monitored on a regular basis. Features which should be monitored include, but should not be limited to, trends in water and sediment quality (including monitoring point or non-point sources of pollution), areal coverage, location, and health of salt marshes and seagrass communities, recreational and commercial harvesting of marine resources, and development trends on adjacent uplands. As Resource Management Task 5-5 of the St. Joseph Bay Aquatic Preserve Management Action Plan (Chapter VII) provides, the preserve manager shall annually prepare a report describing the state of the environment of the aquatic preserve. This report will be the heart of the resource monitoring program. It should discuss the findings of the resource monitoring program; most recent water quality data and any trends in water quality; any changes in resource community boundaries; status of designated species within the aquatic preserve; permit applications within the preserve; land development trends on adjacent uplands; and any enforcement actions necessary.

To monitor changes in the natural resources, use of a regional geographic information system (GIS) is highly recommended. 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.

Future use of a GIS system at the St. Joseph Bay Aquatic Preserve could 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 could be computerized for comparison with later data to conduct a temporal analysis of resource abundance. Detailed monitoring of any re-vegetation or restoration efforts could also be computer analyzed. The on-line access to these natural resource data bases 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 data with identical or similar systems.

ACTIVITY MONITORING

As human interaction in and around the aquatic preserve increases, additional pressures are to be expected in the form of recreational and development activities. Monitoring the type of use of activities and their compatibility, their frequency of occurrence, as well as proven and expected detrimental effects on the preserve's natural resources, will provide a foundation to amending the policies of the aquatic preserve to protect its natural resources.

ACCOMPLISHMENTS AND PROGRESS MONITORING

For this management plan to be effectively implemented, it is necessary to monitor the accomplishments of the on-site program on a regular basis. Therefore as noted above, staff of the St. Joseph Bay Aquatic Preserve will be required to annually submit a report to the main office, the Gulf County Commission, and the City of Port St. Joe on the state of the natural environment of the aquatic preserve, what was done in the previous year toward the tasks listed in Chapter VII, and what are needs and directions of the aquatic preserve for the coming year. This report should be closely keyed to the tasks listed in Chapter VII and will serve as the basis for judging the adequacy of staffing and funding estimates listed in Chapter IX.

Specific information which should be included in the annual state of the preserve report includes any noted change in acreage or health of seagrasses and salt marshes; numbers of permits applied for, issued, and denied; whether any exemptions to standards were granted; number of structures built adjacent to the preserve; any changes in water quality within the preserve; and whether any violations were uncovered.

CHAPTER XI

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APPENDIX A

Administrative Codes

CHAPTER 18-20
FLORIDA AQUATIC PRESERVES

18-20.001	Intent.
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18-20.016	Coordination with Other Governmental Agencies.
18-20.017	Lake Jackson Aquatic Preserve.

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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), FS.

18. Estero Bay Aquatic Preserve as described in Section 258.39(28), Florida Statutes.

19. Pine Island Sound Aquatic Preserve, as described in the Official Records of Lee County in Book 648, pages 732-736.

20. Matlacha Pass Aquatic Preserve, as described in the Official Records of Lee County in Book 800, pages 725-728.

21. Gasparilla Sound — Charlotte Harbor Aquatic Preserve, as described in Section 258.392, F.S.

22. Cape Haze Aquatic Preserve, as described in Section 258.39(29), F.S.

23. Cockroach Bay Aquatic Preserve, as described in Section 258.391, F.S.

24. St. Martins Marsh Aquatic Preserve, as described in the Official Records of Citrus County in Book 276, pages 238-241.

25. Alligator Harbor Aquatic Preserve, as described in the Official Records of Franklin County in Volume 98, pages 82-85.

26. Apalachicola Bay Aquatic Preserve, as described in the Official Records of Gulf County in Book 46, pages 77-81, and in the Official Records of Franklin County in Volume 98, pages 102-106.

27. St. Joseph Bay Aquatic Preserve, as described in the Official Records of Gulf County in Book 46, pages 73-76.

28. St. Andrews State Park Aquatic Preserve, as described in the Official Records of Bay County in Book 379, pages 547-550.

29. Rocky Bayou State Park Aquatic Preserve, as described in the Official Records of Okaloosa County in Book 593, pages 742-745.

30. Yellow River Marsh Aquatic Preserve, as described in the Official Records of Santa Rosa County in Book 206, pages 568-571.

31. Fort Pickens State Park Aquatic Preserve, as described in the Official Records of Santa Rosa County in Book 220, pages 60-63, in the Official Records of Escambia County in Book 518, pages 659-662, less the lands dedicated to the U. S. A. for the establishment of the Gulf Islands National Seashore prior to the enactment of the act, until such time as the U. S. A. no longer wishes to maintain such lands for the purpose for which they were dedicated, at which time such lands would revert to the board and be managed as part of the preserve.

32. For the purpose of this section the boundaries of the Lake Jackson Aquatic Preserve, shall be the body of water in Leon County known as Lake Jackson in Sections 1, 2, 3, 5, 10, 11 and 14, Township 1 North, Range 1 West and Sections 11, 12, 13, 14, 15, 21, 22, 23, 26, 27, 28, 29, 32, 33, 34, and 35, Township 2 North, Range 1 West lying below the ordinary high water line. Such lands shall include the submerged bottom lands and the water column upon such lands, as well as all publicly owned islands, within the boundaries of the preserve. Any privately held upland within the boundaries of the preserve shall be deemed to be excluded therefrom; provided that the Board may negotiate an arrangement with any such private upland owner by which such land may be included in the preserve.

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

34. Future aquatic preserves established pursuant to general or special acts of the legislature.

Specific Authority 120.53, 258.43(1) FS. Law Implemented 258.39, 258.391, 258.392, 258.393, 258.40, 258.41, 258.42, 258.43, 258.44, 258.45 FS. History—New 2-23-81, Amended 8-7-85, Formerly 16Q-20.02, Transferred from 16Q-20.002.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) GENERAL PROPRIETARY

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

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

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

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

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

1. a public navigation project;

2. maintenance of an existing navigational channel;

3. installation or maintenance of approved navigational aids;

4. creation or maintenance of a commercial/industrial dock, pier or a marina;

5. creation or maintenance of private docks for reasonable ingress and egress of riparian owners;

6. minimum dredging for navigation channels attendant to docking facilities;

7. creation or maintenance of a shore protection structure;

8. installation or maintenance of oil and gas transportation facilities;

9. creation, maintenance, replacement or expansion of facilities required for the provision of public utilities; and

10. other activities which are a public necessity or which are necessary to enhance the quality or utility of the preserve and which are consistent with the act and this chapter.

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

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

(g) For activities listed in paragraphs 18-20.004(1)(e)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 wetslip; 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 or 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)(e)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)(e)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 8-7-85, 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 8-7-85, Formerly 16Q-20.05, Transferred from 16Q-20.005.

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

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

(2) The similar activities within the preserve

which are currently under consideration by the department; and

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

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

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

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

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

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

18-20.007 Protection of Riparian Rights.

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

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

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

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

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

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

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

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

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

18-20.009 Establishment or Expansion of Aquatic Preserves.

(1) The board may expand existing preserves or establish additional areas to be included in the aquatic preserve system, subject to confirmation by the legislature.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Specific Authority 258.43(1) FS. Law Implemented 253.03(7), 253.03(8) FS. History—New 2-25-81, Amended 6-7-85, 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 6-7-85, 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 6-7-85, Formerly 16Q-20.017, Transferred from 16Q-20.017.

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