

COLLIER COUNTY
ENVIRONMENTAL SERVICES DIVISION

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COLLIER COUNTY
MANATEE PROTECTION PLAN

PREPARED BY

NATURAL RESOURCES DEPARTMENT

MAY, 1995

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1. INTRODUCTION

1.1 Setting

The West Indian manatee (Trichechus manatus) is one of four living species of large herbivorous aquatic mammals of the Order Sirenia. The animals are characterized by having thick skin, sparse body hair, paddle-shaped forelimbs, horizontally flattened tails, and no hindlimbs. The average adult is nine to eleven and a half feet long. Manatees are slow moving, but capable of swimming rapidly over short distances. The southeastern U.S. population, known as the Florida manatee, is a distinct subspecies, latirostris, which may be reproductively, as well as geographically, isolated from the remainder of the species range (USFWS, 1989). Due to severe overexploitation and lack of sufficient regulation, the manatee is extinct over much of its historic range.

The reproductive potential of the species is relatively low. Cows usually copulate with several bulls during a brief receptivity period. Gestation lasts for 365 to 400 days, and three to five years is the normal calving interval. There is usually one calf per birth, but instances of twins and foster parenthood have been recorded. Calving may occur throughout the year. Newborns are approximately one meter in length, and weigh about 30 kg. Nursing may continue for 1-2 years, but grazing may begin within a few weeks after birth. The age-specific aspects of manatee reproduction are not thoroughly known because a method of age determination has only recently been described. However, based on field observations of recognizable individuals, it appears that manatees become sexually mature at 6 - 10 years of age (Reynolds and Odell, 1991).

The West Indian manatee was designated as an endangered species by the Endangered Species Act of 1973. This federal legislation is administered by the U.S. Fish and Wildlife Service (USFWS). In 1978 the state passed the Florida Manatee Sanctuary Act and established Florida as a refuge and sanctuary for manatees and provided the authority for the initiation of protective measures, carried out since that time through amendments to the Act (Ch. 16N-22, F.A.C.).

The historic range of the species is from northern Brazil, up to Mexico and the southeastern U.S. (Florida and Georgia), and through the Caribbean, in shallow coastal and inland waterbodies. The U.S. population, the Florida manatee, centered along Florida's coastline, is among the last viable population of this species in the world.

In recent years Collier County has been one of the fastest growing counties in the nation, with regard to population.

Collier County is the southernmost population center on the west coast of peninsular Florida (See **Figure 1-1**). It has been shown that as population increases in this county, there is a proportional increase in boat registrations. A ratio of one registered boat per eleven people exists in the county. Boating related accidents are a major cause of manatee mortality. Furthermore, much of the resultant development from the increasing population is occurring in the coastal zone, which may affect manatee habitat.

Shoreline development brings with it a concurrent increase in boat traffic to the area. According to the Marine Mammal Commission's 1988 report,

"the principal threat to manatee habitat...is increasing levels of boat traffic in essential travel corridors and at feeding areas, resting areas, warm-water refuges, and fresh water sources. Increased levels of boating traffic are a threat to manatee habitat because they increase the probability that manatees will be killed or injured by collisions with boats and because they disrupt normal behavior patterns. While this is not a threat in the usual sense, if so altering an area that it no longer meets a species' needs, the hazards created by high speed boat traffic in areas preferred by manatees clearly reduce its suitability for the species."

1.2 Purpose

The purpose of this plan is to provide County-wide protection for the West Indian manatee. To effectively provide manatee protection, this plan contains criteria for marina and boat facility siting, shoreline and submerged land development, manatee - human interaction, habitat protection, educational programs, law enforcement, and intergovernment coordination.

1.3 Objectives

Mandated objectives for county manatee protection plans by the FDEP include reducing the number of boat-related manatee mortalities, achieving an optimal sustainable manatee population, protecting manatee habitat, promoting boating safety, and increasing public awareness of the need to protect manatees and their environment (State of Florida DNR, 1989c).

2.0 INVENTORY AND ANALYSIS

2.1 Manatee - Human Interaction

Human activities in and around manatee habitats in Florida have dramatically increased in recent years. These activities contribute to the demise of this endangered species. Widespread development in coastal areas for housing, commercial and agricultural activities has severely altered the estuarine environments where manatees have traditionally inhabited. Activities such as dredge and fill operations, canalization of rivers, streams and estuaries, and other alterations of the natural environment contribute to the decline of significant manatee habitat. Commercial and recreational boating activities significantly contribute to the decline of manatee habitat, but also are directly responsible for over 25% of manatee deaths in Florida.

2.1.1 Manatee Protection Programs

2.1.1.1 International Protection

Regulation dealing with manatee protection outside of the U.S. is minimal. Manatees are now rare or extinct in areas outside the U.S. due mainly to human exploitation. They have been hunted for meat and other products, and overexploited for hundreds of years. Many of the governments within the manatee's natural range are experiencing severe social, economic, and political problems, making effectual manatee protection impractical. Regulations generally do exist that prohibit exploitation, but enforcement isn't strong. To prevent extinction of this species, protection efforts must come from within the United States (Marine Mammal Commission, 1988).

2.1.1.2 Federal Protection

The USFWS of the U.S. Department of the Interior, protects manatees under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. These laws prohibit the harassment, hunting, capture, or killing of manatees. Harassment is defined as "...an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering" (USFWS, 1989).

The Endangered Species Act defines sanctuaries, refuges, and critical habitats. "Sanctuaries" are inviolate areas where human activities are completely prohibited so that manatees can breed, nurse, and rest without human disturbance. "Refuges" are areas

where human presence is allowed, but activities deemed to cause disturbance or harassment to manatees are restricted.

These areas require regulation of development and other human activities for manatee protection. The USFWS designated critical habitat areas in the 1970's, before much of the current knowledge about manatee protection was available. Since that time, it was found that there are many more areas that should be so designated. Most of coastal Collier County is presently designated as critical manatee habitat (from the midpoint of Gordon Pass south to the Collier/Monroe county line). The position of the USFWS is that it is preferable to consider essential manatee habitat areas when regulating activities deemed harmful to the conservation of manatees. Essential habitat is broadly defined as any land or water area which contains elements necessary to the survival and recovery of the Florida manatee from its current endangered status, and which may require special management and protection measures. All of coastal Collier County is within essential manatee habitat (Turner, 1991).

One of the major objectives of the USFWS Florida Manatee Recovery Plan of 1989 is to "minimize alteration, degradation, or destruction of habitat used by manatees and monitor its status." The plan recommends the following activities:

1. Identify habitats of special biological significance to manatees.
2. Characterize habitats of special biological significance to manatees.
3. Identify and evaluate potential hazards to manatee habitats.
4. Identify and protect essential habitats.
5. Monitor status of essential habitats.
6. Inform and educate public.
7. Establish additional State/Federal regulations as needs are identified.
8. Enforce regulations.
9. Evaluate effectiveness of education programs, regulations, and enforcement.

2.1.1.3 State Protection

The Florida Manatee Sanctuary Act, Chapter 16N-22, F.A.C., provides manatee protection by declaring the State of Florida a "refuge and sanctuary for the manatee, the 'Florida State Marine Mammal'". State responsibilities for manatee protection fall under the jurisdiction of the State of Florida Department of Environmental Protection (FDEP) and the FGFWFC.

The Governor and Cabinet of the State of Florida made several recommendations in their October 24, 1989 action for increasing boating safety and manatee protection. A state-wide maximum boating daytime speed limit of 35 MPH within marked navigation channels, 20 MPH nighttime speed limit for all waters, mandatory

vessel operator licensing, "in rem" enforcement, maximum horsepower/load restrictions, D.U.I. repeat offender provisions, mandatory boating safety education, formation of a boating education unit, and added Florida Marine Patrol Officers and support staff were all approved in this action, which was to amend Chapter 327, Florida Statutes, "Vessels: Registration and Safety".

Conceptual approval was given to the FDNR (FDEP) in 1989 to proceed with legislative proposals for amendments to the Florida Manatee Sanctuary Act, to increase protection for habitat, to protect manatees from harmful acts, and to authorize local governments to protect manatees through local ordinances (State of Florida Governor and Cabinet, 1989). The adoption of a boating facility expansion policy for the 13 key manatee counties, including Collier County, has been approved. This policy involves the limitation of construction for new or expanded boating facilities to one powerboat slip per 100 feet of shoreline until an approved manatee protection plan and siting policy has been implemented by local governments. The Governor and Cabinet directed the FDNR (FDEP) to present recommendations for priority acquisition of critical manatee use areas under the CARL program and to strengthen aquatic preserve management plans for seagrass bed protection.

The FDNR (FDEP), in their 1989 Manatee Recovery Plan Implementation Schedule, list themselves as the lead agency, with participants to include the FGFWFC, Oceanaria, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, regional planning councils, and local governments. The plan outlines the following criteria:

1. Maintain and improve reporting systems for dead/injured manatees.
2. Establish and expand a network of manatee reserves and protected areas connecting travel corridors.
3. Protect and maintain the integrity of coastal ecosystems.
4. Develop manatee protection plans (local government as lead agency).
5. Evaluate current and future enforcement regulations and develop programs including workshops/training sessions.
6. Standardize fines and improve and educate judiciary system.

2.1.1.4 State Mandated Objectives for County Protection Plans

Mandated objectives for county manatee protection plans by the FDEP include reducing the number of boat-related manatee mortalities, achieving an optimal sustainable manatee population, protecting manatee habitat, promoting boating safety, and increasing public awareness of the need to protect manatees and

their environment (State of Florida DNR, 1989c).

The framework for the County's Manatee Protection Plan, as recommended by the FDEP, is required to include boat facility siting and regulation criteria, boating regulations, manatee research, habitat management, and education, and implementation strategies. An information base should include details such as the locations and capacities of all marina and port facilities and boat ramps, boating activity patterns, manatee sighting and mortality information, special waters information (i.e., Aquatic Preserve, Outstanding Florida Waters, etc.), locations of significant manatee habitat resources, protection areas, and safety zones, locations of manatee information displays, and other relevant data.

A recommendations section should include boating expansion criteria; identification of boating recreation areas where higher boat speeds should be permitted, a plan for marking navigational channels in currently unmarked waterways used by manatees, designation of speed zone, refuge, and sanctuary areas, installation of manatee educational displays, development and circulation of educational pamphlets to boaters, inclusion of manatee and marine habitat education programs in the County's school system curricula, development of appropriate aquatic plant control methods in manatee areas, identification of land acquisition projects to increase sanctuary areas for manatees, and other actions as specified by the FDEP (State of Florida DNR, 1989c).

2.1.1.5 County Protection

On October 24, 1989, the Governor and Cabinet of the State of Florida approved a proposal allowing the FDEP to implement interim manatee protection plans in 13 key manatee counties, including Collier County. On December 19, 1989, the Collier County Board of County Commissioners elected to limit boat speeds to 30 MPH in all officially marked navigation channels, and 20 MPH in all other County waters, with site specific modifications (Resolution No. 89-416).

These modifications include a boating speed limit of 30 and 35 MPH in the Dollar Bay and Hurricane Pass areas, respectively, which were designated as recreation areas for sport boating, water skiing, or similar activities that require boat speeds greater than the County-wide speed limit. A further modification was the implementation of an idle speed zone in the portion of Caxambas Bay (See **Figure 2-7**) located between the southern shore of Marco Island and the central shoal area of the bay and its designation as a manatee protection area.

The conditions in the resolution were adopted by state law in an amendment to Rule Number 16N-22.023 on June 26, 1990 and became effective in August, 1990. This resolution was passed with the

understanding that the major cause of known human-related manatee mortality is boat/barge collision, that the boat speed restrictions are temporary measures to reduce such collisions, and that a more comprehensive protection plan will be formulated at the County level.

Manatee protection speed zones at Port of the Islands are Idle Speed in all waters connected with the Faka Union Canal, lying southerly of the Tamiami Trail Bridge, to a point extending 500 feet south of the southernmost east-west canal, and Slow Speed to Faka Union Bay. (Ch. 16N-22.0161 F.A.C.),

County designated idle speed zones include the Gulf of Mexico waters within 500' of sandy and/or bathing beaches (Ordinance 89-11), portions of Caxambas Waterway, Goodland, Isles of Capri, Rock Creek, Vanderbilt Waterway, Gulf Harbor, and the Marco River (Resolution Nos. 79-165, 86-1, and 86-11), Vanderbilt Lagoon (Resolution No. 85-146), and the portion of Henderson Creek east of S.R. 951 (Resolution No. 81-199). These speed zones were designated primarily to reduce boat and property damage caused by excessive boat wakes in heavily traveled areas. These speed zones also help in the protection of manatees which are also using these areas.

Goal 7 of the County's Conservation and Coastal Management Element (CCME) states that "the County shall protect and conserve its fisheries and wildlife", and includes several policies relating specifically to manatee protection. Objective 6.2 in the CCME states that "there shall be no unacceptable net loss of viable naturally functioning marine and fresh water wetlands", which includes critical manatee habitat areas. The CCME objective addressing manatee protection (Objective 7.2) states that "by January 1, 1990, West Indian Manatee deaths shall not exceed the five year average of 1983 through 1987 of eleven deaths." This objective was not met by the given date; on the contrary, manatee deaths in Collier County amounted to 19 in 1989, 13 in 1990, 14 in 1991 and an all time high of 20 in 1992, followed by 18 manatee deaths in 1993. Reasons for this may include an increase in boater activity in manatee areas, a failure to have a viable manatee protection plan in place, and an insufficient amount of public awareness regarding manatee protection. It is hoped that with the implementation of this plan, human-related manatee deaths will decrease in Collier County.

Presently, Collier County Project Review Services requires the following stipulations for all commercial and multi-family development orders related to boat docks and marinas in critical manatee habitat:

1. Instruction to all personnel associated with construction of the facility concerning the presence of manatees, the existence of manatee protection laws and penalties, and the necessity to report any

collisions with manatees.

2. All vessels associated with the project shall operate in deep water wherever possible, and where not possible, shall operate at idle speed where the draft of the vessel provides less than a three foot clearance from the substrata.
3. At least one manatee awareness sign shall be installed in a prominent location within the facility.
4. A permanent manatee educational display shall be installed and maintained at a prominent location at the facility.
5. Educational literature on the manatee and its habitat shall be distributed to the users of the facility.
6. Turbidity screens used during construction will not endanger manatees.
7. The manatee protection plan shall be reviewed by the FDNR prior to county final site plan approval and/or issuance of building permits (Prynoski, 1990).

2.1.2 Manatee Distribution

Manatees are common year-round residents in Collier County. To investigate local populations of manatees, available sighting data were analyzed. Sighting data were obtained from three major sources: FDEP's aerial sighting data for Collier County (Frohlich, 1989; Nabor and Frohlich, 1991); "Manatee Alert" sighting data for Collier County (Scheneman, 1990-91); and Rookery Bay National Estuarine Research Reserve's sighting data for the Rookery Bay area (Bertone, 1990). Other sources of information regarding manatee sightings in Collier County are also given. See **Appendix B** for information on the DEP Manatee Distribution Map.

2.1.2.1 Florida Department of Environmental Protection (FDEP) aerial sighting data for Collier County

This information was taken from draft reports by Frohlich (1989), and Nabor and Frohlich (1991) released to assist Collier County in the preparation of an interim manatee protection plan. This type of survey, used in southwestern Florida since 1973, is considered the best available method for the collection of data on trends in relative abundances and distributions of manatees.

Six general areas were chosen for these surveys, taking into account present and possible future conflict between manatee and human activities: Port of the Islands area, Naples Bay and

surrounding waters, Everglades City area, Ochopee, the area near the Collier/Lee County line, and the Marco Island area. Each of these study sites was divided into 2-10 zones. Aerial surveys were conducted bimonthly (this varied in a few instances), for a period of 1-3 years, depending on the study area. These surveys still continue (Frohlich, 1991).

A total of 3,207 manatee sightings was recorded in Collier County over the 1986-89 period, 64% of those (2,060) occurring at Port of the Islands, and 26% (837) in the Marco Island area. For any month at any study area, the highest mean number of manatees per survey was in the Marco Island area (36.4), followed by Port of the Islands (28.6), the Naples area (6.7), Everglades City (2.6), Ochopee (2.3), and the Lee/Collier border (1.3).

At Port of the Islands, sightings occurred year-round. The mean number of manatees per survey was highest during January and March, with values of 50.5 and 45.3, respectively. Lowest values (15 - 16.7 mean manatees/survey) occurred during the months of July, August, and October). The number of manatees seen in the Port of the Islands area increased over the 3 year period surveyed: 544 in 1988, 714 in 1989, and 802 in 1990.

Manatees congregate in this area year-round, attracted to the fresh water that spills over the weir at the northern end of the Faka Union Canal (where it drains the Golden Gate system). This area also may provide relatively warmer water during periods of cold weather. The basin is designated as an idle speed zone, and the Faka Union Canal a caution zone, both year-round, to minimize the number of boat/manatee collisions (Florida Manatee Sanctuary Act, Ch. 16N-22 F.A.C.). The Faka Union Canal may also be designated an idle speed zone by the Florida Marine Patrol, if they deem it necessary.

In the Marco Island area, sightings also occurred year-round. The mean number of manatees per survey was highest during May (67.0), with mean values of 19-45 found during all other months, with the exception of December (8.0). Manatees were more abundant in the Marco Island area during warmer months (summer, spring, and fall), and low in abundance during winter. This trend is opposite that of the Port of the Islands, in which manatee abundances are highest during the winter. These data concur with typical manatee congregation and dispersal patterns over the year. In addition, the highest percentage of females with calves was recorded during February, November, and December, with January being much lower. This may indicate trends in movement to and from refuge areas (e.g., Port of the Islands) (Nabor and Frohlich, 1991). Within the Marco Island area, calves were most abundant in waterbodies including the Big Marco River, Tarpon Bay, and Caxambas Bay.

Manatees were present nearly year-round at the other aerial survey sites, with no distinct patterns of abundance. Although much of the County's manatee habitat was not included in these

aerial surveys, these data generally reflected a county-wide dispersion pattern of manatees throughout the year, with convergence into refuge areas (e.g., Port of the Islands) during cold weather.

Additional aerial data gathered from January 1991 to October 1992 in the Ten Thousand Islands area further confirm that manatees are widely dispersed throughout most of the year and concentrated in the Faka Union Canal during the winter months. These data also point to manatee congregation areas at the mouth of the Barron River and deeper portions of Chokoloskee Bay.

2.1.2.2 "Manatee Alert"

The Collier County Natural Resources Department established a database for the "Manatee Alert" sightings from April 1, 1990 through March 31, 1991. "Manatee Alert" was published each day in the Naples Daily News and reported manatee sightings phoned into a toll free number. Unfortunately this feature no longer appears in the paper. The purpose of the database was to gain some indication of frequency of contact between manatees and humans.

For the creation of this database, the Collier County coastline was divided into 9 major units, each of which was divided into 2-13 subunits. This format enabled manatee sightings in specific areas of each unit to be recorded.

Approximately 2,000 sightings were reported in Collier County from April 1, 1990 to March 31, 1991. Manatees were seen throughout the County, the boundaries extending from just north of Wiggins Pass, down through the Ten Thousand Islands, to northern Everglades National Park. Sightings were reported in the inshore Gulf waters and passes, as well as in the inland waterways, back bays, and tributaries. Most manatee sightings were reported in populated areas and areas frequented by boaters/fishermen, as opposed to areas of low human habitation (e.g., the Ten Thousand Islands area). This trend may be due to the nature of the data collection method and should not be construed to mean that manatees are in low abundance in the more isolated areas of the county.

The unit with the greatest number of sightings was the Marco Island unit (1,091). This unit includes the passes, bays, and rivers surrounding the island, as well as all of its inland canals/waterways. Manatee sightings were (and are) especially abundant in these inland canals/waterways (711), as well as in the passes and rivers surrounding the island. An average of 59 sightings/month was reported for the inland canals/waterways of Marco Island. Speculations exist on whether manatees show a "preference" for this area, as opposed to other adjacent less-populated areas (e.g., the Ten Thousand Islands area). This high abundance could simply be attributed to increased likelihood

of sighting by the large number of interested residents on the lookout for manatees in the Marco Island area. In addition, there are reports of residents providing fresh water via garden hoses hanging off their docks in the canals behind their residences. Other attracting factors may include food sources (seagrasses in some canals, possible feeding of manatees by residents), and relatively warmer water (lack of flushing in dead-end canals).

The next highest number of sightings reported was in the Naples Headland unit, followed by Kice Island, Keewaydin Island, Vanderbilt Beach, and the Ten Thousand Islands units. Lesser numbers of sightings were reported in the Park Shore, Barefoot Beach, and Coconut Island units. The subunits with the greatest numbers of sightings reported (besides Marco Island inland waterways) included Big Marco River, Caxambas Pass, Naples Gulf, Vanderbilt Beach Gulf, Big Marco Pass, Henderson Creek, Marco Island Gulf, and Naples Bay. Manatees were sighted year-round, with more sightings reported during April and May than in other months. This could be due to the fact that manatees typically begin to leave their winter refuges and congregate during the spring for mating purposes.

2.1.2.3 Rookery Bay National Estuarine Research Reserve (RBNERR) sighting data

This information was obtained from Rookery Bay Estuarine Research Reserve, which keeps boating logs of manatee sightings in the Rookery Bay area, including notes on manatee behavior (Bertone, 1990a). Much of the data were gathered during bimonthly water sampling runs. The area encompassed within most of the sampling runs extended from the inland waterway to the north of Rookery Bay, throughout Rookery Bay and Henderson Creek, down into Johnson Bay, as well as the waters surrounding Marco Island.

In the two and one-half year period between May 1988 and December 1990, 123 sampling runs were conducted. During these runs, 393 manatees were sighted, with most of those (over 90%) seen in Rookery/Hall Bay, Henderson Creek and adjacent areas, the remainder being sighted in the Marco Island area (Bertone, 1990a).

It was also noted that areas of greatest manatee concentrations were found at Johnson Bay along the eastern shoreline between Markers 14 and 20, in Rookery Bay, and at the basin adjacent to Enchanting Shores Trailer Park on Henderson Creek. The Rookery Bay National Estuarine Research Reserve is currently analyzing these data, and redesigning the sighting program in order to make it more quantifiable (Bertone, 1990b).

2.1.2.4 Other sources of manatee sighting information

The U.S. Fish and Wildlife Service, in their 1989 report, cite

the seagrass bed areas around the Ten Thousand Islands, and the freshwater areas at the Faka Union Canal as specific resources used by manatees. Freshwater remains available at Port of the Islands, at the headwaters of the Faka Union River Canal. This waterbody may provide relatively warmer water during short winter cold periods. According to the USFWS (1989), the Port of the Islands area is listed as the only major warm water refuge in Collier County.

The Wiggins Pass area and the waters inland of the pass are known to be commonly used by manatees (Davis, 1990). W. Carleton, of Vanderbilt Surf Colony II reported frequently seeing manatees in the small western arm of Water Turkey Bay adjacent to Delnor Wiggins State Recreation Area, and witnessed a manatee birth there in 1989 (Carleton, 1990). "Manatee Alert" reports of 4/6 - 4/9/91 indicate heavy usage by manatees of the Vanderbilt coast, Wiggins Pass, and back bay areas during this time period.

It was reported that one area of major concentration of manatees is the seagrass beds on Cape Romano Shoals (Dryden, 1990).

Bertone (1990b) reported an area of major concentrations of manatees located at the basin of the Enchanting Shores Trailer Park on Manatee Road. This development is adjacent to Henderson Creek. He noted that manatees are documented coming into the basin year-round, and that in colder months, manatees congregate there in greater numbers. During the Christmas freeze of 1989, 7 manatees were seen in the basin for 6 days, and up to 11 manatees were seen in the basin at one time. His data indicate that fresh water of slightly warmer temperature seeps through the substrata in the basin. Stout and Stout (1991) indicated that this area is heavily used by manatees year-round. Frohlich, (1991), indicated that manatees have been observed via aerial survey in transit in Henderson Creek. He posited that it was likely that the manatees are using the area as a source of fresh water.

2.1.3 Manatee Mortality and Injury

2.1.3.1 Manatee Mortality in Florida

In Florida, it is estimated that nearly 10% of the State's total manatee population (about 140 individuals) die on average each year. Human-caused mortality is considered to be the greatest threat to the species' survival, and accounts for almost half of the known causes of manatee deaths. From the onset of the manatee carcass salvage program by the DNR, in 1974, to January, 1994, a total of 2,219 dead manatees have been recovered by the State. Despite increased protection, manatee deaths have increased in recent years. The five year average ending in 1987 was 112 deaths per year. The five year average from 1988 to 1992 was 169 deaths, a 50% increase over the previous five year period. The primary cause of known human-related injury and

death in Florida is collision with power boats or barges. Watercraft related manatee mortality accounts for approximately 80% of human-related deaths. The number of boat-related deaths increases each year as the number of registered boats increases. Most living manatees exhibit non-lethal prop scars (State of Florida DNR, 1989b).

Manatee behavior patterns themselves may affect the probability of boat strikes. In narrow channels with high concentrations of boat traffic, manatees prefer traveling along channel margins or shoreline margins, avoiding the channel's center. They may be thus avoiding the heavy boat traffic and/or fast currents. Manatees are able to move quickly in short bursts of speed, and can detect and avoid oncoming boats if the boats are moving slowly enough and there is a way to avoid them. However, when manatees are feeding, they are less wary of boat traffic. In addition, they cannot dive below the level of the vessel's draft if they are in too shallow an area. The most frequent incidences of manatee strikes by boats may be caused by erratic boat traffic patterns in non-channel shallow seagrass bed areas. Therefore, slow or idle speed zones should be established in shallow feeding and resting areas and along waterway margins, where manatees are known to occur.

Entanglement in float lines for crab traps, drowning in nets, entrapment, crushing, or drowning in water control structures, and vandalism such as shooting and poaching, are other major causes of human-related injury and death to manatees. Oil spills, herbicides, and other chronically present chemical contaminants can lead to chronic poisoning of manatees, with subtle pathological effects, acute poisoning resulting in death, and a reduction in the amount of suitable food or feeding areas (USFWS, 1989). More subtle effects on manatee populations can be caused by human interest. Snorkelers, swimmers, and scuba divers interested in observing the animals may inadvertently disturb them. Pursuing the manatees by boat, touching them, or "hitching rides" have been observed to drive the manatees away from warmer waters into colder waters where they are more prone to disease. This is especially true around warm water refugia in northern Florida and around power plant effluents. Human disturbances of this nature have also been seen to disrupt relationships between nursing females and their calves (USFWS, 1989).

2.1.3.2 Known Manatee Mortalities in Collier County

The following mortality information was taken from FDEP's database of Florida manatee deaths, by county, from 1974 through December 1993. The database contains information on each mortality, including field identification number, date, death category, location, sex, length, and necropsy results. See **Appendix C** for information on the DEP Manatee Mortality Location Map.

In Collier County, from 1976 through December 1993, 186 dead manatees were recovered (6 of these were verified but not recovered) (see **Table 2-1**). Sixty-nine were verified through necropsy as being "human-related" deaths: 63 were killed by collision with watercraft, and 3 were shot (two of these were also butchered). Of those killed by watercraft collision, 15 were recovered from the Port of the Islands/Faka Union Canal area, and 15 from Everglades National Park. Other boat-killed manatees were recovered from the Rookery Bay/Henderson Creek area, Naples Bay, Dollar Bay, Goodland Bay and Marco Island.

Manatee Mortality in Collier County

Year	Watercraft Collision	Other Human Related	Perinatal	Other Natural	Undetermined	Total
1976	-	-	-	-	1	1
1977	-	-	-	-	3	3
1978	-	-	-	-	3	3
1979	1	1	-	-	2	4
1980	1	1	-	-	3	5
1981	4	-	1	-	8	13
1982	3	-	1	-	1	5
1983	4	-	1	-	4	9
1984	-	-	-	2	7	9
1985	1	-	3	2	7	13
1986	9	-	1	-	2	12
1987	6	1	1	1	2	11
1988	5	-	3	-	6	14
1989	7	-	7	1	4	19
1990	7	-	1	3	2	13
1991	5	-	4	1	4	14
1992	5	2	5	2	6	20
1993	5	1	3	3	6	18
TOTAL	63	6	31	15	71	186

Table 2-1 Manatee Mortality in Collier County

Also during this time period, 31 dependent calves were recovered (also referred to as perinatal deaths), and 15 deaths were attributed to "natural" causes. The number of manatees in these two death categories has increased recently. Some of these deaths could be attributed to human activities including pollution (pesticides, herbicides, etc.) of ingested vegetation or water, entanglement in fishing nets and traps, and disturbance by boaters, divers, and fishermen (Van Meter, 1987; Naples Daily News, January 4, 1991).

Seventy-one manatees died due to undetermined causes, and were recovered in locations throughout the County. Of this number, 25 were recovered from the Port of the Islands/Faka Union Canal

area. A certain proportion of these 71 deaths could have been attributed to collision with boats, as most of the manatees in this death category were so badly decomposed that the cause of death could not be determined.

The highest number of overall mortalities was in the Port of the Islands/Faka Union Canal area (56), followed by the Everglades National Park area (28). Although the Port of the Islands/Faka Union Canal area is designated as a manatee protection zone, many boaters fail to travel slowly, as it is approximately 3.5 miles long. Other mortalities were reported from the Rookery Bay/Henderson Creek system, Marco Island and other areas throughout the County.

During the period from 1986-1993, mortalities were relatively high compared to previous years, both in number of boat collisions and overall. The greatest number of mortalities occurred in 1992 (20), followed by 1989 (19), 1993 (18), 1988 (14), 1981, 1985, and 1990 (13 each).

There are probably more mortalities than have been recorded, for several reasons. First, a carcass may be reported but later not found by FDEP recovery personnel (Frohlich, 1991). Second, it is probable that a small number of deaths and/or collisions are not reported by boaters for fear of fine/imprisonment. This is because convictions for violation of state boat speed zone laws carry a maximum fine of \$500 and/or imprisonment of up to 60 days (federal penalties can be more severe). However, outside of the posted speed zones, accidental manatee hits carry no penalties (Florida Power and Light, 1987). Lastly, under certain circumstances, boaters may not even realize that they've hit a manatee.

Another recovery problem is low enforcement manpower. According to District 5 of the Florida Marine Patrol (Naples Daily News, June 20, 1990), their patrol, made up of 4 officers (in 3 shifts) is not visible enough to deter boaters who violate the law (e.g., speeding violations in slow speed zones). The County Sheriff's Department also recommends allocations of more State resources to enforce existing and proposed rules.

2.1.3.3 Conclusions based on mortality data

Three waterbodies within the County have been identified as high manatee mortality areas, based on the number of deaths attributed to boat collisions. Of the 63 deaths caused by boat collisions from 1974 through the end of 1993, 16 were recovered from the Port of the Islands/Faka Union canal area. This area accounts for the highest concentration of manatees in Collier County.

The Faka Union canal is the salt water portion of the extensive Golden Gate Canal system. A weir is situated at the north end of

MANATEE DEATHS IN EVERGLADES NATIONAL PARK

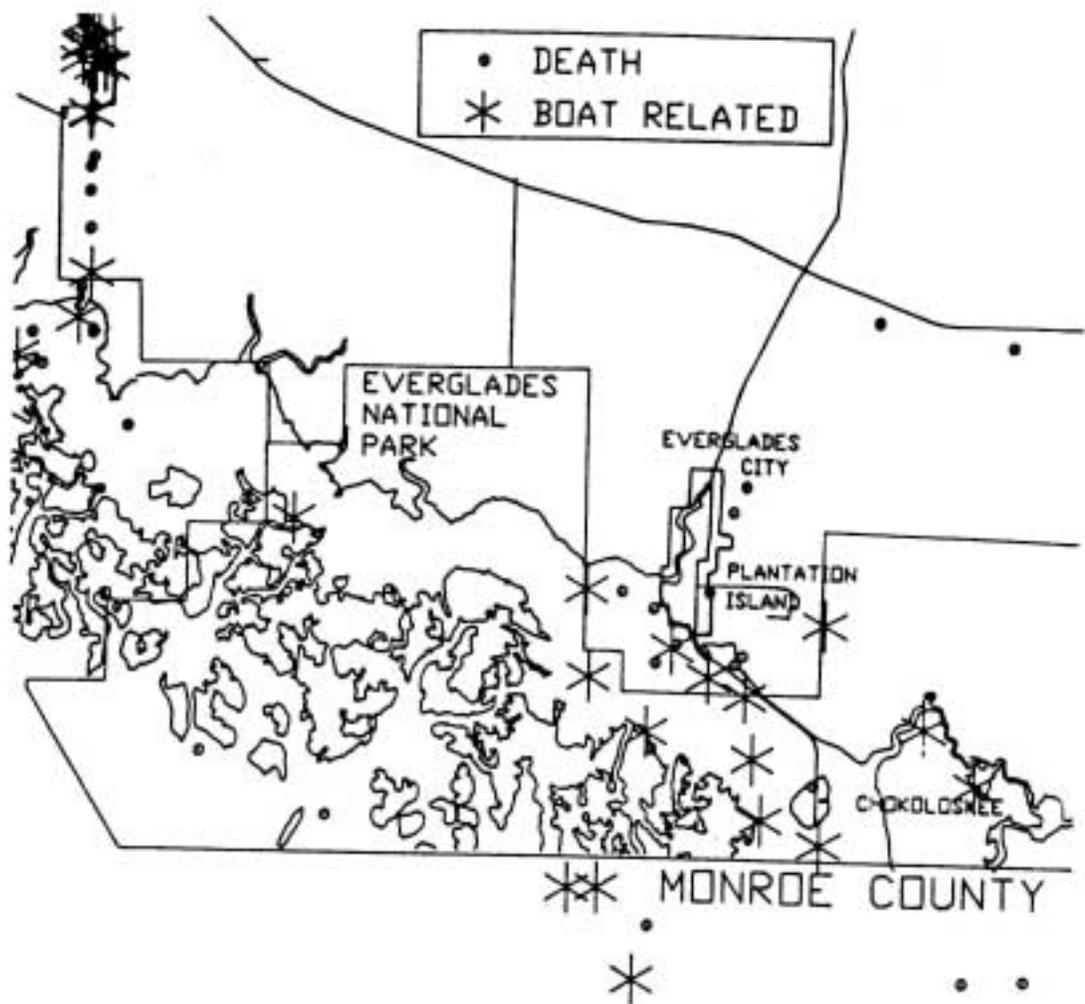


Figure 2-1 Manatee Deaths in Everglades National Park

the Port of the Islands marina basin. This waterbody attracts manatees because of the volume of warm freshwater input, and the large amount of aquatic vegetation that flows over the weir. During the Synoptic Survey conducted by the FDEP on January 12, 1992, 246 manatees were counted in the Faka Union canal. This large number indicates this area is utilized as a warm water refuge by the area manatee population.

The portion of Everglades National Park located within Collier County (See **Figure 2-1**) has the second highest boat collision mortality rate. Since 1976, 14 manatee deaths were attributed to boat collisions. Most of the manatees recovered from this area were in Chokoloskee Bay. Chokoloskee Bay is over 6 miles long and over a mile wide in most places. The average depth of the Bay is less than 3 feet at Mean Lower Low Water.

The third waterbody is the Rookery Bay/Henderson Creek area. A total of seven manatees killed by boat collisions have been recovered from this area. Rookery Bay is a shallow bay located approximately midway between Naples and Marco Island along the Inland Waterway. Henderson Creek flows into Rookery Bay from the east. A weir is located at the headwaters of the creek where it joins a freshwater canal at U.S. 41. A borrow pit constructed near the headwaters of Henderson Creek contains a freshwater spring. This borrow pit is frequently used by manatees, particularly during the winter months.

2.1.4 Collier County Boating Study and Facility Inventory

The Collier County Natural Resources Department completed a year long boating survey which included a boat facility inventory, shoreline survey and mail out survey. Interviews were also conducted at boat ramps at six times during the year. Information gathered from this survey is used throughout this report.

A total of 1500 surveys were mailed out to Collier County registered boat owners. This represents a sample size of 11% of the total 13614 boat owners. Of the 1500 surveys sent out 572 were returned, a response rate of 38%, or 4% of the total boater population.

To the question: Do you support site-specific boating speed limits to:

- A. improve boating safety?
- B. protect manatees and other marine life?

75% responded yes to part A and 77% said yes to part B. These figures indicate that the majority of boaters in Collier County would support site-specific boat speeds.



Figure 2-2 Collier County Marine Resources Location Map

2.1.5 Boating Use Areas and Facilities

Boating facilities and land uses that may affect the Florida manatee in Collier County are described below. These are divided into sections determined by the pass or inlet with which they are associated. The information for this section was largely taken from the Coastal Zone Management Plan (Collier County Natural Resources Department, 1991) and the Boating Study and Facility Survey (Collier County Natural Resources Department, 1994). **Figure 2-2:** Collier County Marine Resources Location Map, indicates the locations of public and private marinas and public boat ramps in the county, **Appendix A** contains information on popular boating destinations.

Seasonal variations in boating use are very apparent. During the winter "season" the population more than doubles in Collier County. The 1993 shoreline survey indicated an increase of 436 boats moored at private residences during the season. The Intercept survey showed that 40% of the boaters using boat ramps during the season were not full time County residents. This increase in boating traffic, particularly in the confined backwater areas, adds to the increased dangers to manatees as well as boater's safety.

Adding to this increased boating traffic is the proliferation of rental boats in the Naples Bay and Marco Island areas. During the 1993 survey period 116 boats were available for rent between Marco Island and Naples Bay. Rental agreements confine most of these boats to the back bay areas. Many of the people renting these boats are unfamiliar with boating in general, and completely unfamiliar with the back bay waters of Collier County. These rental boaters contribute to many of the groundings and prop-scaring taking place in the seagrass beds of this area. The unfamiliarity with the local conditions also contributes to the peril of the manatees and other boater's safety.

Boat speeds in most coastal areas in Collier County are restricted to 20 MPH except for marked navigational channels where speeds are restricted to 30 MPH. One of the purposes of regulating the speed and operation of motor boats within Collier County is to provide protection for the Florida manatee (State of Florida Department of Natural Resources, 1990a).

2.1.5.1 Wiggins Pass Area

Wiggins Pass is an extremely dynamic inlet system with constantly changing channel and sandbar configurations. Wiggins Pass (See **Figure 2-3**) and its associated shorelines, back bays, wetlands, and upland habitats form a valuable resource system for Collier County. The Pass and connecting waterways provide access to the Gulf for recreational and commercial boaters. The natural back bay and upland habitats are ecologically important systems which harbor an abundance of wildlife, including many commercially valuable and protected species.

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| ○ Manatee Death | * Boat Related Death |
| 6 Marinas | |

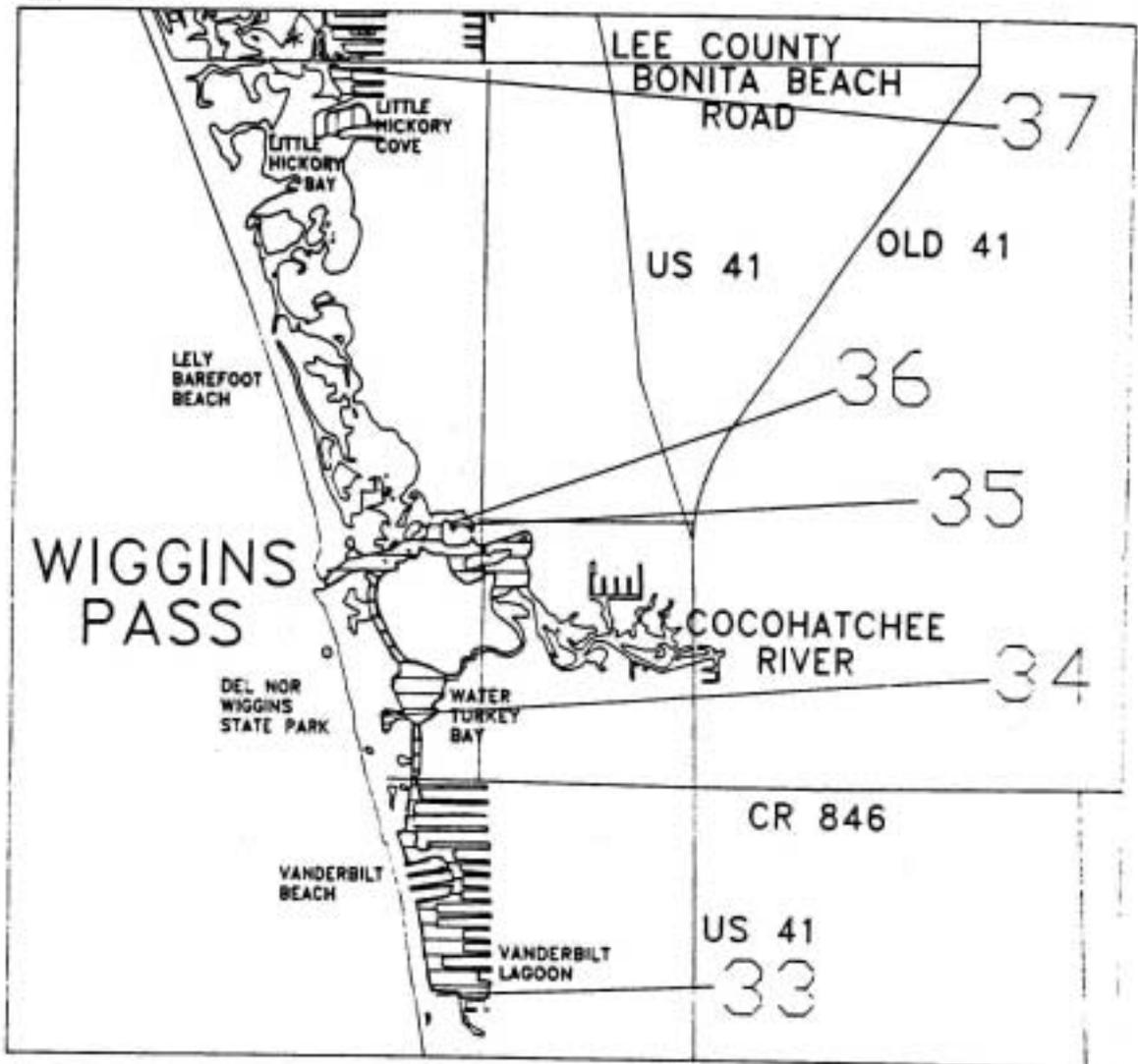


Figure 2-3 Wiggins Pass Area

The pass drains a portion of Little Hickory Bay, Wiggins Bay, and associated estuaries. Connection exists between Little Hickory Bay and Estero Bay to the north in Lee County. Wiggins Pass also drains the Cocohatchee River and its tributaries to the east, and Water Turkey Bay and Vanderbilt Lagoon to the south.

The Wiggins Pass area serves much of the North Naples boating public. The most popular boating activities listed from this area are recreational fishing and cruising. When the Gulf is calm most fishing activity takes place offshore. Wiggins Pass also provides the nearest Collier County access to some of the best tarpon fishing in the world during the Spring.

Backwater fishing is also very popular in this area. Many fishermen prefer the calm predictable backbays to the rather unpredictable offshore waters. Several small mangrove lined bays exist between Wiggins Bay and Little Hickory Bay where several types of game fish are sought.

The Channel from Wiggins Bay to Little Hickory Bay is shallow and unmarked. It winds through mangroves and oyster bars and offers the cruiser many bird watching and sightseeing opportunities. Little Hickory Bay connects to Estero Bay to the north. Estero Bay is listed as an Outstanding Florida Water body and offers many sight seeing opportunities as well as access to the Intracoastal Waterway.

According to the 1993 Boat Study there are approximately 660 boats kept at private docks and condominiums in the Wiggins Pass area during the winter season and around 450 boats during the off season. There are approximately 740 vacant docks during the busiest time of the year. These figures indicate that 53% of the docks in the Wiggins Pass area are currently vacant.

Wiggins Pass

Facility	Wetslips		Dry Storage		Ramp	Fuel	Pump	Bait	Repairs	Boat	Manatee
	Used	Vacant	Used	Vacant			Out			Rental	Sign
Back Bay Marina	34	7	30	0		X		X	X	5	NO
Wiggins Pass Marina	0	0	335	25	X	X	X	X	X	8	yes
Del-Nor Wiggins State Park	Transient	Only	0	0	X						yes
Cocohatchee River Park	Transient	Only	0	0	X			X			Yes
Island Marina	22	58	0	0							yes
Vanderbilt Beach Marina	13	3	0	0		X		X			no

Table 2-2 Wiggins Pass Boating Facilities

Marinas

There are presently four commercial marinas which service the Wiggins Pass system. The northern-most marina, Back Bay Marina, located at the north end of Little Hickory Bay, services the Wiggins Pass and the New Pass (Lee County) boating public. Services offered by the marina are repair services, fuel, bait & tackle, charter boats, wet boat storage (41 spaces) and dry storage (30 spaces). Wiggins Pass Marina, to the east of Wiggins Pass, offers services such as boat repair, fuel, bait and tackle, charters, ships store, and a 360 space dry storage building. There are no wet slips available, but a large floating dock is used for temporary tie-ups. Island Marina has 80 wetslips, no dry storage, and no fuel facilities. Vanderbilt Beach Marina is located at the southern limit of the Wiggins Pass area, offering fuel, bait & tackle, charter boat services, and 16 wet slips.

At present there is one additional marina planned for this area, by Tempustech, Inc. The proposed project consists of six wet slips for temporary mooring, and 90 dry slips. The petitioners are proposing a manatee protection program in their mitigation plan. This includes three manatee education kiosks with bulletin boards, boater safety and manatee displays, video, slide, and other programs, and distribution of brochures. A visitor training program is also proposed, wherein the club will sponsor free manatee awareness/boater safety programs for club members. Watercraft will be restricted to lengths of 26' or less, and all vessels will be stored in dry dock. Water quality monitoring will also be conducted (State of Florida DER, 1991).

Boat Ramps

Delnor Wiggins State Recreation Area has one public boat ramp. Although the parking lot is filled to capacity every weekend (37 parking spaces), people still stand in line awaiting an opening. The ramp allows immediate access to the estuarine system of the Water Turkey Bay area and back bay waters as far north as Little Hickory Bay, as well as access to the Gulf of Mexico.

Collier County Parks and Recreation Department commissioned a recreation and planning consultant to prepare the Collier County Boat Landing Study (Reynolds, Smith and Hill, 1988). One of the objectives of the study was to insure adequate provision of facilities for all Collier County residents (seasonal and permanent). To accomplish this, a standard was formulated for boat ramps vs. present population (1:11,347) and projected populations by comparison to other counties and the Florida State standards (1:5,000). Geographic distributions of boat ramps vs. populations, and resource locations were also taken into account. Although local surveys for Collier County in comparison to other counties resulted in a much higher per capita participation in boating and fishing recreational activities (250% higher than other counties in the State of Florida), a midpoint standard was allocated (1:6,675).

According to the Collier County Boat Landing Study, the North Naples Planning District, which encompasses the entire Wiggins Pass area, requires only one boat ramp to satisfy the public needs in 1990 (besides the Delnor Wiggins Pass State Recreation Area boat ramp). The projected population by the year 1999 for this area is 30,340 residents, which calls for an additional two boat ramps. In recognition of this deficit, the Collier County Parks and Recreation Department has constructed on a 6.2 acre site at Conklin Point, less than one mile east of Wiggins Pass, a four lane boat ramp facility. The Cocohatchee River Park boat ramp contains 60 car/trailer parking spaces and 42 transient docks. The boat ramp should be sufficient to accommodate the North Naples Planning District well into the 2000's.

2.1.5.2 Clam Pass Area

Clam Pass is a natural unimproved inlet that connects the Gulf of Mexico to a number of small lagoons and creeks that are aligned approximately parallel to the shoreline (See **Figure 2-4**). Boating activity in this area is limited due to the ephemeral nature of the pass, and the shallow waters of the bay system, however, canoeing is very popular.

Currently there are nine boats (four of which are jet skis) and 25 vacant docks in the Seagate subdivision located on the southern end of Outer Clam Bay.

Clam Pass

Facility	Wetlands		Dry Storage		Ramp	Fuel Pump	Bait	Repairs	Boat Rental	Manatee Sign
	Used	Vacant	Used	Vacant						
Clam Pass Park	0	0	0	0	Canoe only					NO

Table 2-3 Clam Pass Boating Facilities

Marinas

There are no marinas within Clam Pass system. The Army Corps of Engineers Permit No. 79K-0282 Special Conditions (for the filling of the 98 acres of wetlands for the Pelican Bay PUD) specify that there is to be no dredging allowed (by permit or otherwise) in Outer, Inner or Upper Clam Bays, its connecting waterways, and/or adjacent wetlands, or Clam Pass (except to maintain the opening

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| ○ Manatee Death | * Boat Related Death |
| 6 Marinas | |

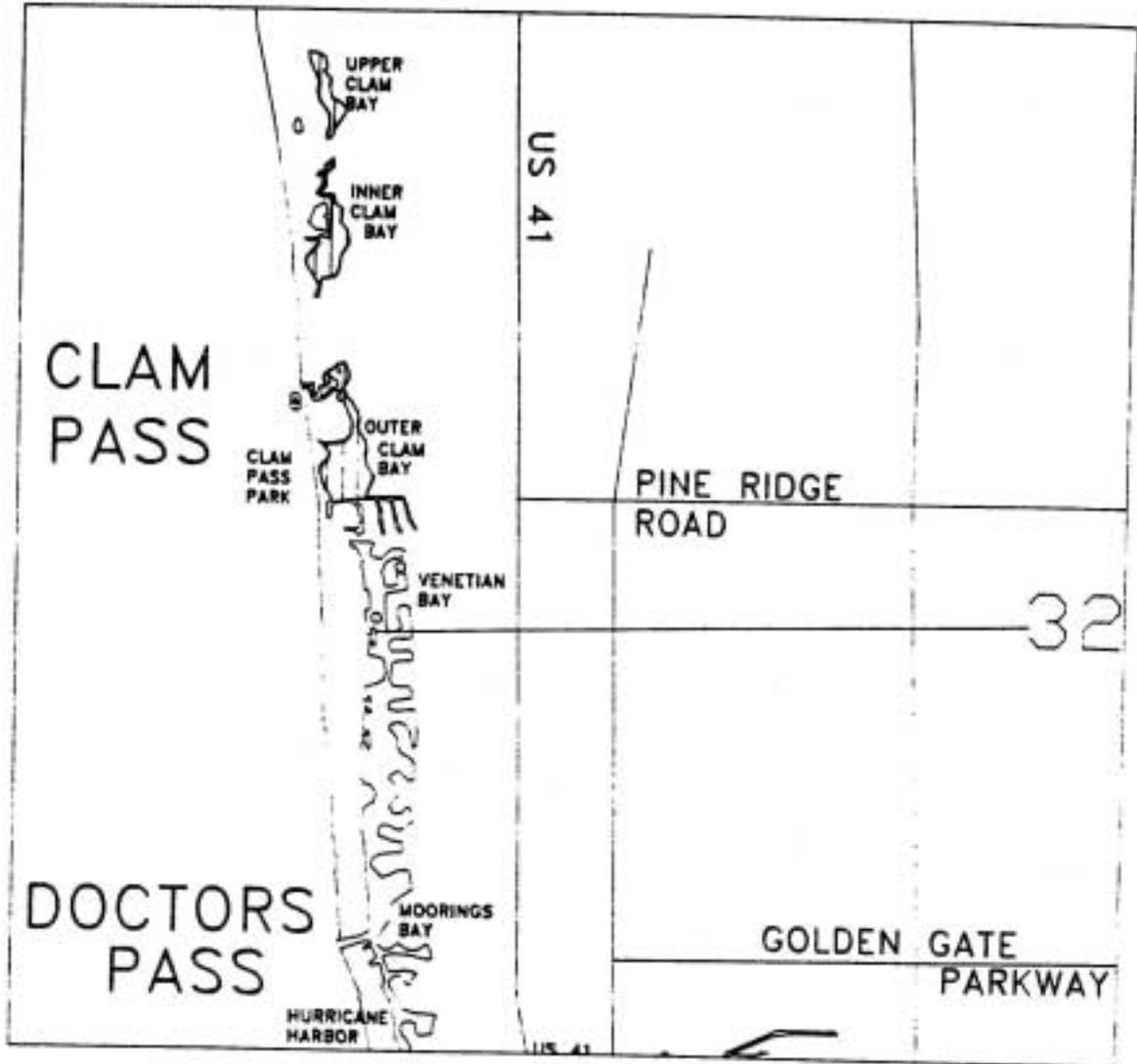


Figure 2-4 Clam Pass and Doctors Pass Area

to waters of the Gulf of Mexico). Another permit condition indicates that there are to be no bulkheads, piers, stilt houses, walkways, or other structures allowed in the Clam Bay system or adjacent wetlands connecting to private uplands (a small pier and the Collier County boardwalk were stipulated exceptions to the permit conditions). For these reasons there may never be a marina permitted in this area.

Boat Ramps

Due to the sensitivity of the area, shallow back bay systems, and the highly ephemeral nature of Clam pass, there are no public boat ramps in the Clam Pass system, however, an area is set aside as a canoe launch.

2.1.5.3 Doctors Pass Area

Doctors Pass provides a major ingress and egress to the Gulf of Mexico for residents and visitors of the Moorings and Parkshore Subdivisions. Doctors Pass (See **Figure 2-4**) is an example of a typical man-altered inlet, located between the Park Shore and Naples Headland beach management segments within the City of Naples. Doctors Pass and its associated back bay system has been totally altered by development, and as such, is considered to be an artificial waterbody. Inner and Outer Doctors Bays are classified as Class II waters (Appropriate for Shellfish Harvesting) by the FDEP (Florida Administrative Code, Chapter 17-302).

Boating activity in this area primarily takes place in the Gulf of Mexico. Doctors Pass is situated approximately five miles north of Gordon Pass and 18 miles north of Capri Pass both of which are popular cruising destinations. Offshore fishing is the most popular boating activity.

Residents inside Doctors Pass and the bay system are provided with mooring facilities. There are 1155 boat docks or other mooring facilities located at private residences and condominiums. The boating population that utilizes Doctors Pass is very seasonal. During the summer months the boating population using the Bay systems and the Pass is at a minimum, averaging 300 boats. The peak winter boating population is approximately 550 boats.

Doctors Pass

Facility	Wetslips		Dry Storage		Ramp	Fuel	Pump Out	Bait	Repairs	Boat Rental	Manatee Sign
	Used	Vacant	Used	Vacant							
Park Shore Marina	Transient Only		0	0		X		X		5	NO

Table 2-4 Doctors Pass Boating Facilities

Marinas

One marina services the Doctors Pass area. The Parkshore Marina is located at the south end of Venetian Bay, in the Venetian Bay Villages shopping center. The marina offers fuel, live and frozen bait, rental tackle, and rental boats. There are approximately 3 boat slips (depending on boat size and rental boat status there could be up to 8 total slips) available for use by the public. There are no other marinas planned for this area. All coastal areas serviced by Doctors Pass are developed.

Boat Ramps

There are no public boat ramp facilities in the Moorings or Park Shore subdivisions. No public boat ramp facilities are anticipated for the Doctors Pass area in the future due to present development (Holley, 1991).

2.1.5.4 Gordon Pass Area

Gordon Pass is one of the most active passes on the southwest Florida coast (See **Figure 2-5**). It offers the major ingress and egress to the Gulf of Mexico for residents and tourists of the City of Naples and Collier County. Naples Bay, Dollar Bay and the Gordon River provide water-oriented recreation and commercial opportunities to local residents and tourists. These areas are not officially part of the Intracoastal Waterway, although termed as such. They are actually part of a local inland waterway, providing a protected passage from Naples to Goodland.

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| o Manatee Death | * Boat Related Death |
| 6 Marinas | |

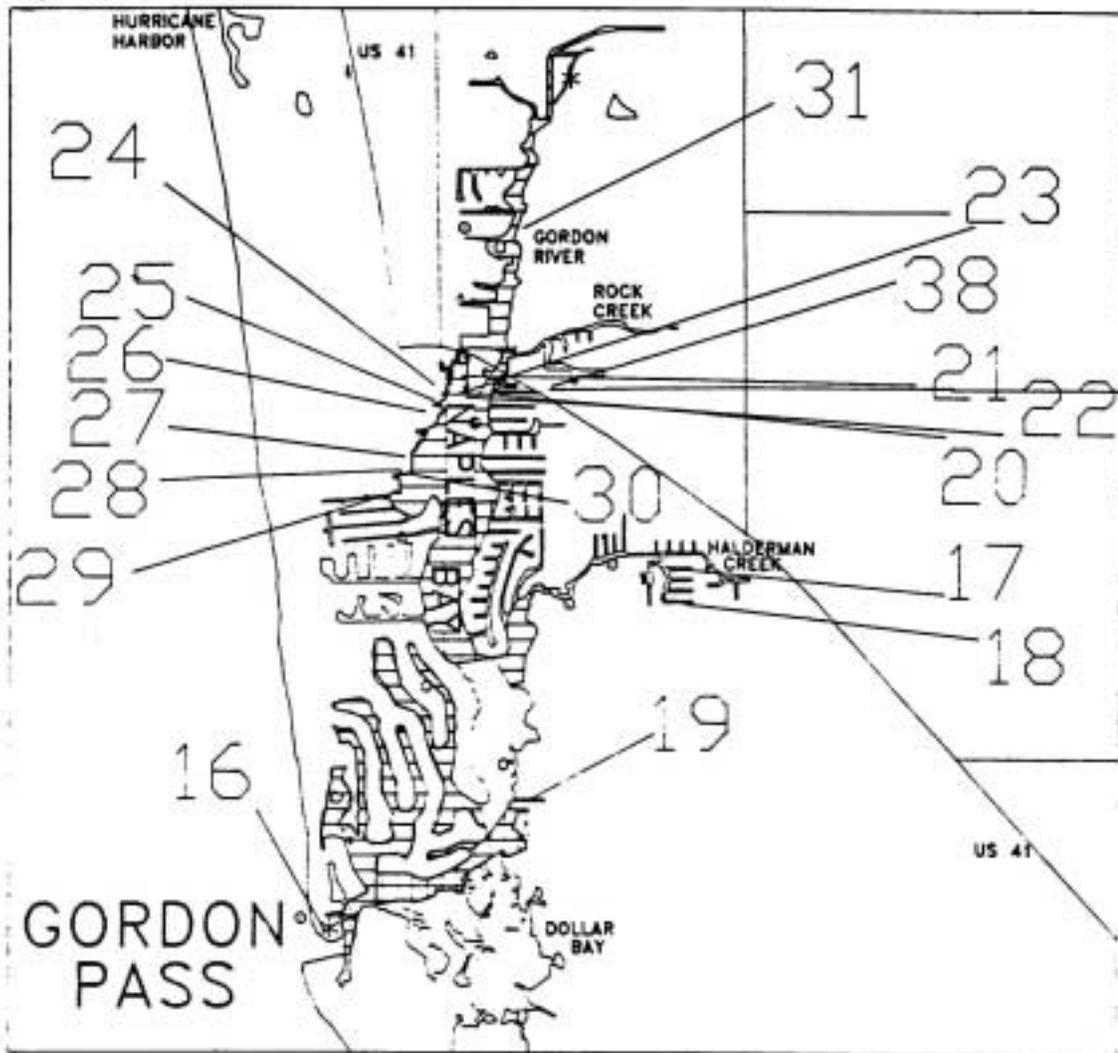


Figure 2-5 Gordon Pass Area

Historic shorelines of Naples Bay and the Gordon River were dominated by mature mangrove forests, while submerged seagrass beds and oyster bars were the dominant benthic communities. In the early 1960's extensive dredge and fill operations were undertaken to create a greater amount of waterfront property out of open water and wetlands.

Most of the coastal area south of Gordon Pass is encompassed in state-designated Aquatic Preserves. Waters and wetlands within these Aquatic Preserves are designated as Outstanding Florida Waters. Rookery Bay Aquatic Preserve boundaries run from Gordon Pass to south of Cape Romano Island, while excluding Marco Island.

Cruising is one of the most popular boating activities in the Gordon Pass area. The canals of Port Royal or cruising to several restaurants on Marco Island are the most favored destinations. There are currently four marinas in Naples Bay that offer 38 boats for rent and many tourists utilize them. Other popular destinations are Keewaydin Island and Hurricane Pass. Recreational fishing, both offshore and backwater, is the favorite boating activity.

The City of Naples Boat Traffic Study (Henigar and Ray Engineering Associates, Inc., and Mote Marine Laboratory, 1989), determined the present level of service (LOS) for Naples Bay and Dollar Bay; both bays are placed in LOS category "C". Category "C" is determined to be the range of stable flow, but marks the beginning of the range of flow in which the operation of individual boats becomes significantly affected by interactions with other boats in the bay system. The selection of speed is now affected by the presence of other boats and maneuvering requires substantial vigilance on the part of the boater. The general level of comfort and convenience declines noticeably at this level (Henigar and Ray Engineering Associates, Inc., 1989). Having already arrived at this decline in the level of service in the Gordon Pass area, continued allowance of both public and private marinas will continue to lower the level of weekend and seasonal boating pleasure and safety.

The shoreline survey conducted in 1993 indicated that there were nearly over 1500 boats docked at private residences and condominiums during the winter "season" in the Gordon Pass area. During this same period approximately 1000 docks were vacant. Of the total 2607 docks located in the Gordon Pass area 40% are vacant during the busiest time of the year this number increases to 48% during the summer months.

Gordon Pass

Facility	Wetslips		Dry Storage		Ramp	Fuel	Pump	Bait	Repairs	Boat	Manatee
	Used	Vacant	Used	Vacant			Out			Rental	Sign
Brookside Marina	86	14	30	0	X	X		X	X	8	No
Naples Marina & Boat Center	0	0	370	202		X					Yes
Port O' Call Marina	16	0	16	0	X	X				14	No
Naples Sailing & Yacht Club	40	8	0	0							No
Bay Marina	9	21	70	0		X		X	X		No
Boat Haven	110	6	198	2	X	X		X	X	10	No
Great American Boat Yard	54	3	4	0		X					No
Turner Marine	84	21	32	33		X		X	X		No
Coconut Grove Marina	28	3	0	0		X	X				No
Naples Landing	Transient	Only	0	0	X						Yes
Naples City Dock	88	0	0	0		X	X	X			Yes
Cove Marina	33	3	0	0							Yes
Cove Inn Marina	7	0	0	0		X		X		6	No
Naples Yacht Club	43	8	0	0		X	X				No
Moby Ricks Marina	12	3	0	0		X		X			No
Gulfshore Marina	0	0	103	37		X		X	X		No
South Point Yacht Club	76	4	0	0			x				Yes
Bayview Park	Transient	Only	0	0	X						Yes
Keewaydin Dock	Transient	Only	0	0		X		x			No

Table 2-5 Gordon Pass Boating Facilities

Marinas

There are 16 commercial marinas and private yacht clubs which service the Gordon Pass area. The total number of wet slips for these marinas is 780 and 1097 in dry storage. There are also many "self storage" lots in the area with "open air" boat storage. The wet storage facilities are nearly filled to capacity during the winter season; however, only 60% of the dry storage is utilized. These figures represent the fact that many boats are stored during the summer and are docked at private residences during the winter season. The Naples Municipal Dock, located on Naples Bay at the end of 12th Avenue South, contains 88 boat slips available for public rental and three transient slips, each providing electrical power

and water. The City dock also provides the following facilities: restrooms, showers, vending machines, fuel, ice, frozen bait, charter fishing, charter sailing, fish cleaning tables, a head pump, and live shrimp. The City dock has a long waiting list for boat slips, and vacant slips are filled on a lottery basis.

Boat Ramps

At present there are two City-owned public boat ramps and one County-owned public boat ramp, which provide access to the Gulf of Mexico via Gordon Pass. The County ramp is located at Bayview Park and the City ramps at Naples Landing Park.

Bayview Park has a double boat ramp and is located approximately one mile east of Gordon Pass, on the east side of Naples Bay. The park contains picnic tables, barbecue grills, a playground, a large lighted pavilion equipped with a double barbecue pit, and restroom facilities. Bayview Park provides 49 parking spaces (16 car/trailer and 33 car) for boaters and visitors. Because of the popularity of the area, there is a great need for ancillary parking facilities, especially for boat trailers. On weekends the ramp parking is filled to capacity, as well as the road leading to the park (Danford Avenue). There is no land presently owned by the County to accommodate an expansion. Plans are currently underway with a private land owner to expand the park facilities both for parking and boat ramps.

The Naples Landing Park boat ramps are located approximately three miles north of Gordon Pass, on the west side of Naples Bay (at the east end of Broad Avenue South). The two and one-half acre park site and boat ramp service a large population of boaters from the City of Naples. The bayfront park contains three small pavilions and restroom facilities. There are three boat ramps, each with a loading dock. Additional docking areas are located along the park. The "Old" Landing boat ramp is located directly adjacent to the "New" Landings, containing one boat ramp. There are 37 combination car-trailer parking spaces and 11 car parking spaces available at the ramps.

According to the Collier County Boat Landing Study (1988), there are three ramps currently in demand in the Gordon Pass area (leaving a one ramp deficit), and an additional two ramps will be required by 1996. The study does not indicate or give reference to the four boat ramps in the City of Naples, at the Naples Landing Park. Therefore, at present there seems to be sufficient ramps (although a grave deficit in parking seems apparent) to support the local population for the next eight years (Reynolds, Smith, and Hills, 1988). In addition to the public ramps, there are also three boat ramps located at private marinas that can be used by the public for a small fee.

2.1.5.5 Hurricane/Little Marco Pass Area

Hurricane and Little Marco Passes are located between the southern ends of Keewaydin and Little Marco Islands and the northern section of Cannon Island. The two passes can be considered as one pass "complex" due to their proximity and drainage characteristics. Little Marco Pass is the inlet that leads from the channel between Little Marco Island and Keewaydin Island to the Gulf of Mexico. Hurricane Pass is the larger of the two passes and leads from the channel between Little Marco Island and Cannon Island to the Gulf. The pass complex lies approximately 7.9 miles to the south of Gordon Pass and 1.6 miles to the north of Capri Pass.

Hurricane and Little Marco Passes drain the inland waters of South Dollar Bay, Rookery Bay, Henderson Creek (See **Figure 2-6**), and portions of Johnson Bay and all the associated tributaries, drainage canals, and embayments. These waterbodies, with the exception of the Henderson Creek Canal, the Lely Canal, and the headwaters of Henderson Creek, are within the Rookery Bay Aquatic Preserve boundaries. The waters within the Preserve boundaries have been designated as Outstanding Florida Waters (OFW). The entire system can be thought of as the Rookery Bay ecosystem, encompassing approximately 43,000 acres of land and water between the City of Naples and Marco Island.

Hurricane Pass and Little Marco Pass provide ingress and egress to the Gulf of Mexico for many recreational and commercial boaters in Collier County. This region is one of the most utilized and popular recreational areas for boaters, skiers, and fishermen. The waters between Keewaydin Island and Little Marco Island from the north end of Little Marco Island to the Gulf of Mexico, and the waters between Little Marco Island and Cannon Island to the Gulf of Mexico have been designated as boating recreation/water sports areas. This designation allows boat speeds of up to 35 miles per hour for recreational activities such as water skiing.

Rookery Bay, Johnson Bay and several smaller bays and creeks are favored fishing areas for both commercial and recreational fishermen. These shallow backwaters are home to several species of commercially valuable fish as well as much sought after game fish.

Most of the docks located in the Hurricane/Little Marco Pass area are transient docks built along Keewaydin Island, Cannon Island and Little Marco Island. Several of these docks are large multi-boat docks which cater to private clubs with land holdings on these islands.

The residential area of Henderson Creek consists mostly of manufactured housing communities. Most of the waterfront homes have docks which can accommodate Class A and Class 1 vessels.

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| o Manatee Death | * Boat Related Death |
| 6 Marinas | |

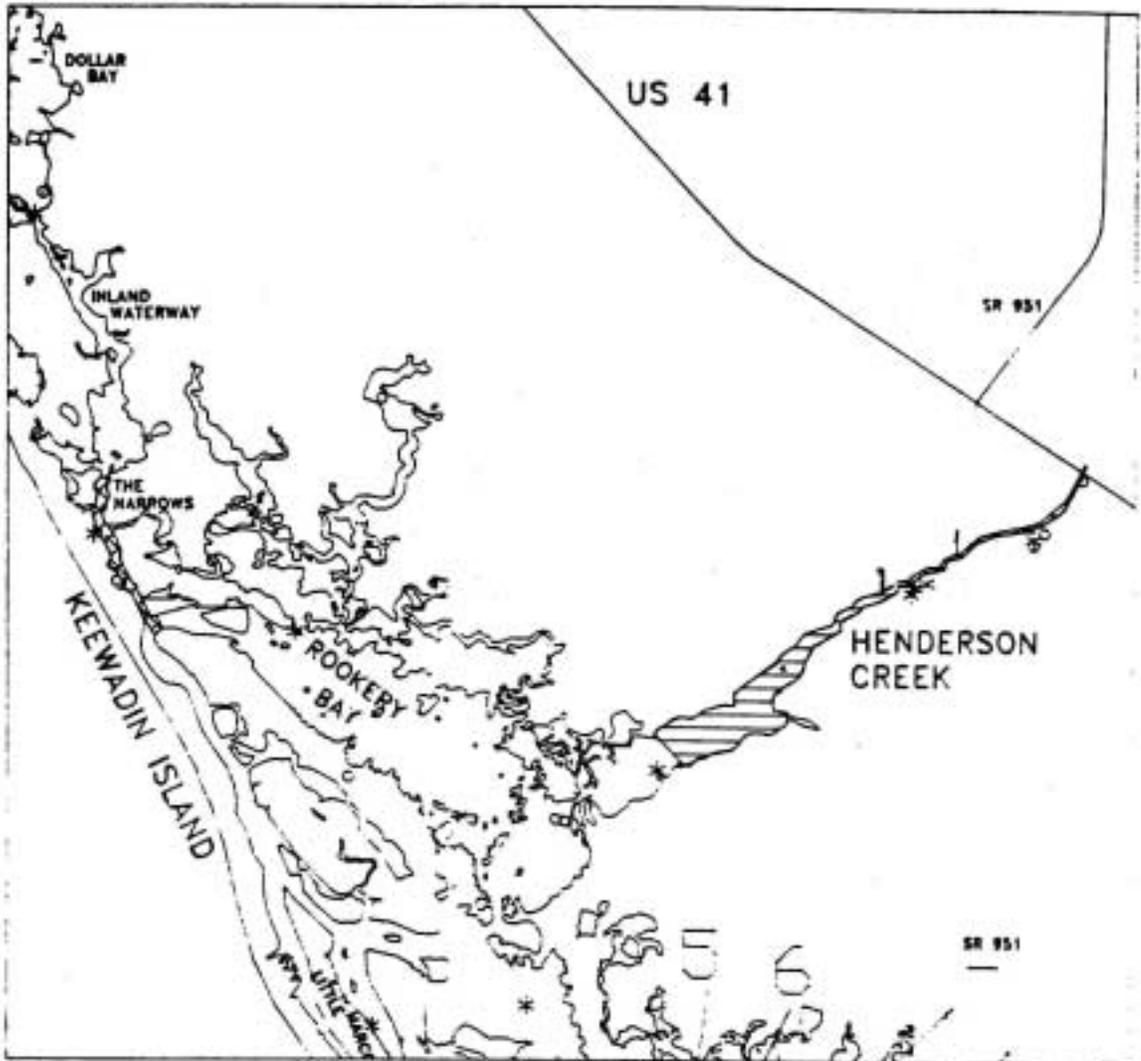


Figure 2-6 Hurricane/Little Marco Pass Area

The 1993 shoreline inventory indicated that 54 boats were present during the off season. This number more than doubled to 109 during the season.

Marinas

There are no marinas in the Hurricane/Little Marco Pass area. The adjacent lands surrounding the area are predominantly zoned as ST (Special Treatment) due to their environmentally sensitive nature. These lands contain mangrove forests and other wetland habitats. Much of the upland property to the west of southern Dollar Bay is in government ownership and managed by Rookery Bay National Estuarine Research Reserve. The area waters are also located within the Aquatic Preserve.

Since the entire area is located within the Rookery Bay Aquatic Preserve, and the waters are designated OFW, the location of marinas, their related uses, and potential impacts in the Preserve are a major concern to the State DEP. Any proposed marinas are subject to the rules and regulations of the Florida Administrative Code, Subsection 18-20.004.

Boat Ramps

There is one boat ramp within the Hurricane/Little Marco Pass area, located at Rookery Bay near the terminus of Shell Island Road. The ramp is unimproved and specifically geared to small boats, since water depths in Rookery Bay rarely exceed 3 feet. Access to the pass area is via a small section of Rookery Bay (historically known as Hall Bay) and through Calhoun Channel (running between Johnson Island and Cannon Island). Due to the sensitivity of the area and lack of development, no additional boat ramps are predicted for the future.

2.1.5.6 Big Marco/Capri Pass Area

Big Marco Pass and Capri Pass are located south of Little Marco and Cannon Islands and north of Marco Island (See **Figure 2-7**). Coconut Island separates the two passes. However, because of its small size and the negligible distance between it and the other passes, this area will be treated as one pass complex. The passes are tide-dominated inlets, and have a large ebb tidal delta; this delta causes frequent shoaling. Prior to 1973 when a storm breached Coconut Island forming Capri Pass, Big Marco Pass was the main navigational channel leading to the Marco River and was the southern limit of the federal navigational channel from Naples.

The drainage basins emptying into Capri and Big Marco Passes roughly encompass lands between Henderson Creek to the north, U.S. 41 to the northeast, and S.R. 951 and S.R. 92 to the east.

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| ○ Manatee Death | * Boat Related Death |
| 6 Marinas | |

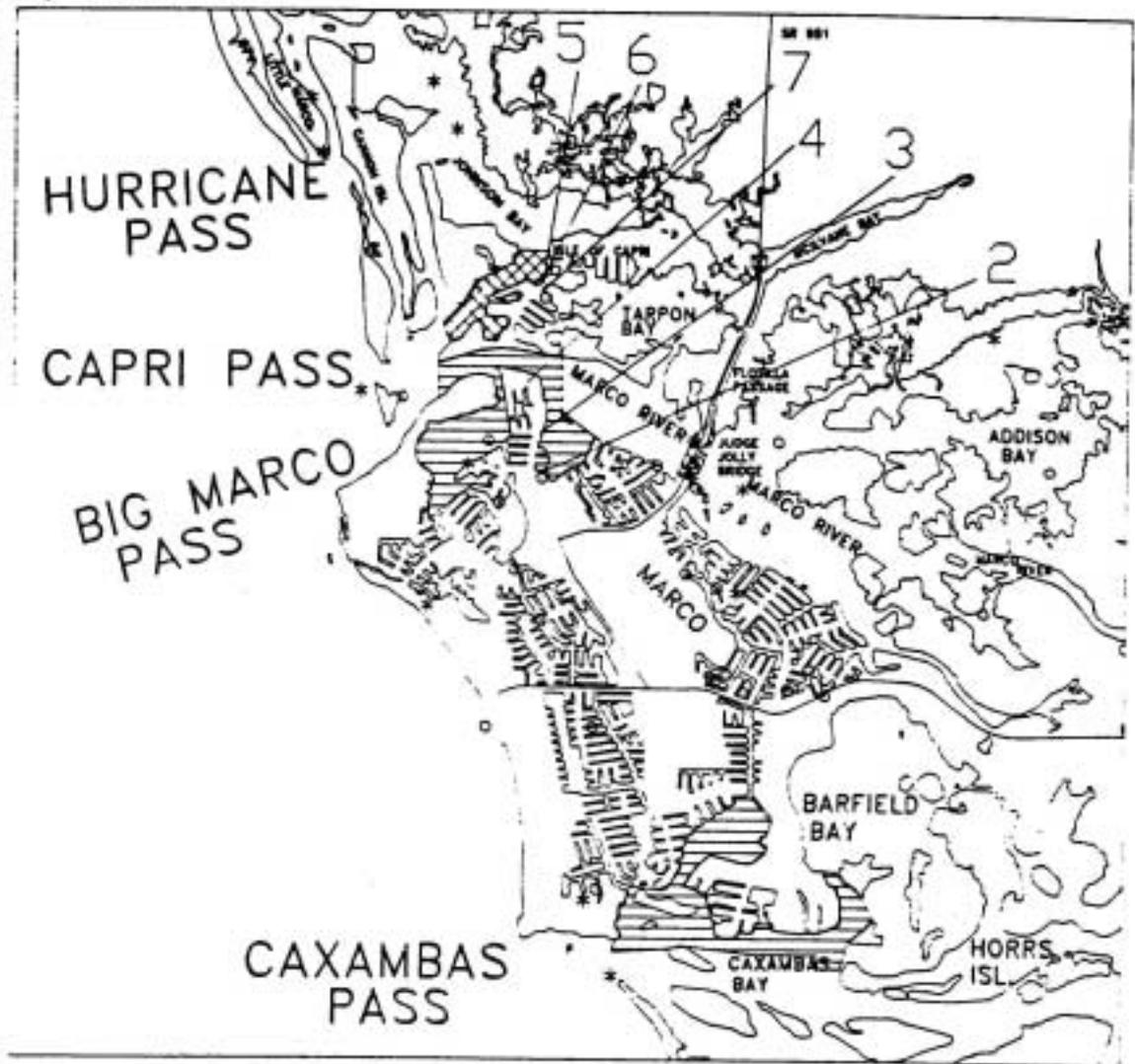


Figure 2-7 Big Marco/Capri Pass and Caxambas Pass Areas

Waterbodies within the basin include Johnson Bay, McIlvane Bay, Tarpon Bay, Unknown Bay, Addison Bay, Bear Point Cove, Three Island Cove, Big Marco River, Sanctuary Sound, Collier Bay, the residential bays and canals of Isles of Capri and north Marco Island.

Boating traffic in this area is heavy particularly on weekends and during "season" when the many winter residents are present. Recreational fishing is the most popular boating activity with cruising listed as a close second. Restaurants on Marco, Isles of Capri and Goodland are popular cruising destinations. Boaters have a choice of entering the Gulf through the Passes, heading north towards Naples via the Inland Waterway or south along the Marco River to Goodland and the Ten Thousand Islands.

The passes and inland waters in this area are frequently used by Florida manatees for feeding and resting activities. For this reason, as well as for boater safety purposes, the canals of Marco Island and Isles of Capri, and the eastern and northern shores of Marco Island, have been designated as idle speed zones. The waters of Big Marco Pass, from the eastern end of Johnson Bay to the pass opening, have also been approved as idle speed zones by the Board of County Commissioners on October 9, 1990.

Big Marco/Capri Pass

Facility	Wetslips		Dry Storage		Ramp	Fuel	Pump Out	Bait	Repairs	Boat Rental	Manatee Sign
	Used	Vacant	Used	Vacant							
Isles of Capri											
Pelican Bend Marina	20	2	0	0		X		X			NO
Williams Capri Marina	21	8	88	13		X		X	X		NO
Misfits Marina	37	3	0	0		X		X	X	5	YES
Marco Island											
Snook Inn	Transient Only		0	0		X					NO
Factory Bay Marina	26	47	0	0		X		X	X	32	YES
Marco River Marina	65	0	200	0		X		X	X	20	NO
O'Shea's	Transient Only		0	0		X		X		8	YES
CR 951 Boat Ramp	Transient Only		0	0	X						YES

Table 2-6 Big Marco/Capri Pass Boating Facilities

The Big Marco/Capri Pass complex is almost completely encompassed by the Rookery Bay Aquatic Preserve, Class II Outstanding Florida Waters of the State. The Class II status currently includes a prohibition for shellfish harvesting. The Aquatic Preserve boundaries bisect Big Marco Pass at the center line.

Nearly every waterfront home and condominium on Isles of Capri and Marco Island has a private residential dock associated with it. The 1993 boat survey shows nearly 530 private docks on Isles of Capri of which 200 are vacant during the off season. During the winter season 2420 residential docks were counted on the portion of Marco Island served by the Big Marco/Capri Pass system of which 1110 were vacant. The number of vacant docks on Marco increased to 1265 during the off season.

Marinas

Marco Island and Isles of Capri contain the second highest concentration of commercial marinas in Collier County. The area supports 6 commercial facilities which provides 229 wet slips and approximately 301 dry slips. These marinas provide the usual services such as ships stores, fuel, bait and ice. Several of these marinas also have restaurants associated with them, and are common cruising destinations. Charter fishing and sightseeing boats also operate from several of these facilities. In recent years boat rentals have become a popular service, in October 1993, 65 boats were available for rent from four facilities.

Boat Ramps

The only boat ramp that services the Big Marco Pass area is the S.R. 951 boat ramp. The ramp is highly utilized due to the ease of access to the Gulf of Mexico and the prime fishing grounds of the Ten Thousand Islands. The ramp is filled to capacity during weekdays, especially during the winter, and over-filled on the weekends. It is estimated that by the year 1994 an additional ramp will be needed to accommodate the increasing population of this area (Reynolds, et. al., 1988). The S.R. 951 boat ramp contains a paved 35 foot wide launching facility capable of launching two boats at a time. Parking areas include 17 trailer and two car spaces. Amenities provided include a fish cleaning table, garbage cans, and a manatee awareness sign.

2.1.5.7 Caxambas Pass Area

Caxambas Pass is bound by Marco Island to the north, and Kice Island to the south (See **Figure 2-7**). It drains several shallow natural waterbodies including Caxambas Bay, Barfield Bay, Grassy Bay, Little Grassy Bay, Blue Hill Creek, and Blue Hill Bay. It

also drains the man-made residential canals of Marco Island, and the altered waterbodies of Roberts Bay and Smokehouse Creek.

Caxambas Pass itself is not marked, although it is a commonly used navigational channel. Several markers exist to the east, in Caxambas Bay, to mark shoal areas. The waters of the south half of the pass, and all waters of its drainage basin outside of Marco Island, are within the Rookery Bay Aquatic Preserve boundaries, and are designated as Class II, and as Outstanding Florida Waters of the State.

Recreational fishing is the most popular boating activity in this area. When the waters of the Gulf are too rough for passage through the Pass, boaters have the option of several natural channels to the more sheltered waters of Gullivan Bay and the Ten Thousand Islands. The many grass flats that occur in the area are noted for sea trout and other popular game fish.

The pass and inland waters in this area are heavily used by Florida manatees for feeding and resting activities. For this reason, as well as for boater safety purposes, Roberts Bay, Smokehouse Creek, and the canals of Marco Island have all been designated as idle speed zones. The northern half of Caxambas Bay from Red Marker "4", east and north to the northeast corner of David Key, has also been designated as an idle speed zone.

Caxambas Pass is located south of Marco Island and north of Kice Island. The Pass and Caxambas Bay is partially stabilized along its northern shoreline by hard, man-made structures such as vertical seawalls and riprap revetments. Its southern boundary is left in its natural state, and consists of several shoals and undeveloped mangrove islands.

The residential canals on the south end of Marco Island empty into Roberts Bay and Caxambas Bay. Virtually all single family residences along these canals have boat docks associated with them. A total of 1365 residential boat docks were counted in this area of which 528 are vacant during the off season.

Caxambas Pass									
Facility	Wet slips		Dry Storage		Ramp	Fuel Pump Out	Bait Repairs	Boat Rental	Manatee Sign
	Used	Vacant	Used	Vacant					
Caxambas Pass Ramp	Transient Only		0	0	X	X	X		YES

Table 2-7 Caxambas Pass Boating Facilities

Marinas

There are no public marinas in the Caxambas Pass area. However, there is a multitude of private marinas and dockage facilities associated with private condominium and resort developments.

Boat Ramps

The Caxambas Park boat ramp is located in Caxambas Bay, on the southwestern peninsula of Marco Island at Caxambas Pass. The park is a well developed facility on a four acre parcel, with paved access and parking for 31 trailers and 30 cars. The paved ramp is 30 feet wide and provides 2 lanes for boat launching. Picnic areas with benches and tables are provided under shelter or in open locations. Other amenities include restrooms, two floating docks, a water system, a fish cleaning table and security lighting. A concessionaire is contracted by the county to provide fuel and a bait and tackle shop.

2.1.5.8 Ten Thousand Islands Area

The Ten Thousand Island system consists of myriad mangrove islands, oyster bars and sand spits interspersed with numerous tidal creeks and passes (See **Figures 2-8, 2-9 and 2-10**). The area is part of the largest mangrove system in the western hemisphere, with black and white mangroves forming dense forests landward of the fringing red mangroves. Marco Island and Goodland are located at the northwest and northeast ends of the Ten Thousand Islands, respectively, Everglades City and Chokoloskee, at the south end, and Port of the Islands located approximately in the middle.

The majority of the area is protected in State or Federal preserves. The Ten Thousand Islands Aquatic Preserve, the Ten Thousand Islands National Wildlife Refuge and Everglades National Park encompass almost the entire coastal area to the south county line. This area represents more than half of the County's linear shoreline.

Fishing is the major recreational activity throughout the Ten Thousand Islands. Charter boats and fishing guides are abundant in the Goodland area, and Port of the Islands also has charter boats for fishing in the Ten Thousand Islands. Everglades City and Chokoloskee support the majority of the Commercial fishing industry in the County, but recreational and charter fishing are also major boating activities.

The Ten Thousand Islands and Everglades National Park are visited by thousands of tourists every year. Many of these visitors trailer small boats to be used for sight seeing and fishing. Most R.V. parks and camp grounds have small boat ramps associated

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| o Manatee Death | * Boat Related Death |
| 6 Marinas | |

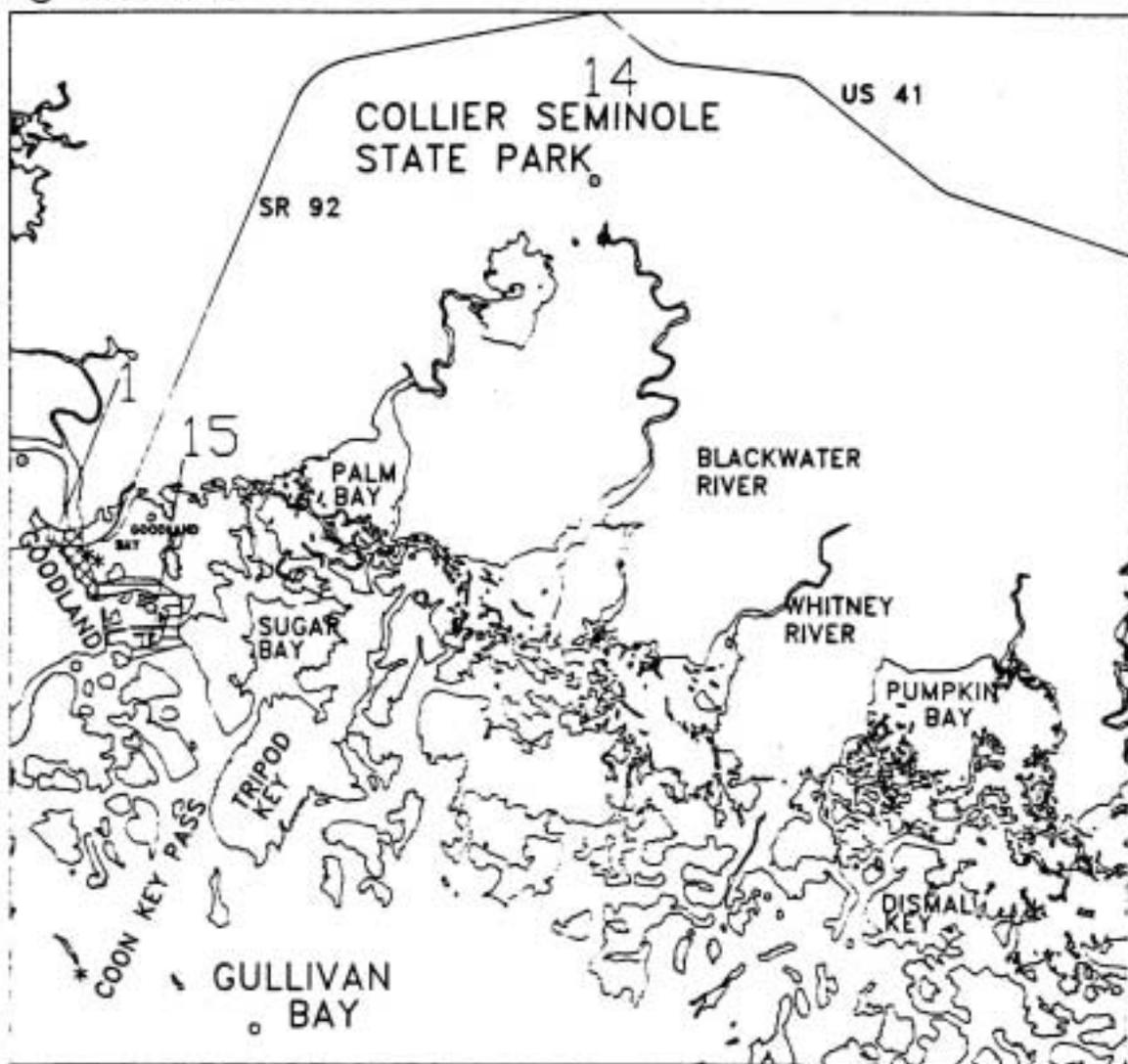


Figure 2-8 Ten Thousand Islands (North)

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| o Manatee Death | * Boat Related Death |
| 6 Marinas | |

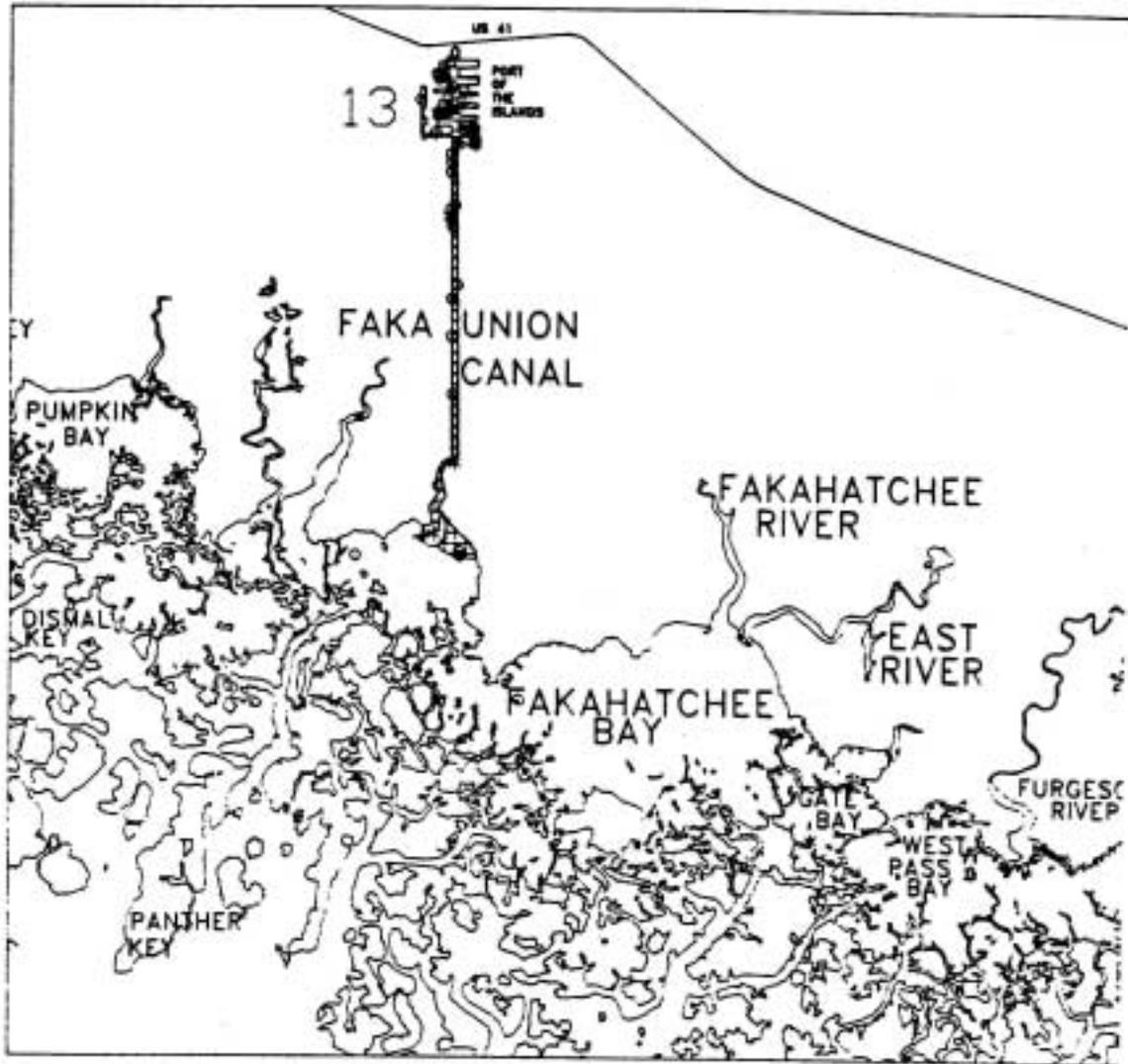


Figure 2-9 Ten Thousand Islands (Central)

SPEED ZONE LEGEND

- | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Existing Idle Speed |  Proposed Idle Speed |
|  Existing Slow Speed |  Proposed Slow Speed |
| o Manatee Death | * Boat Related Death |
| 6 Marinas | |

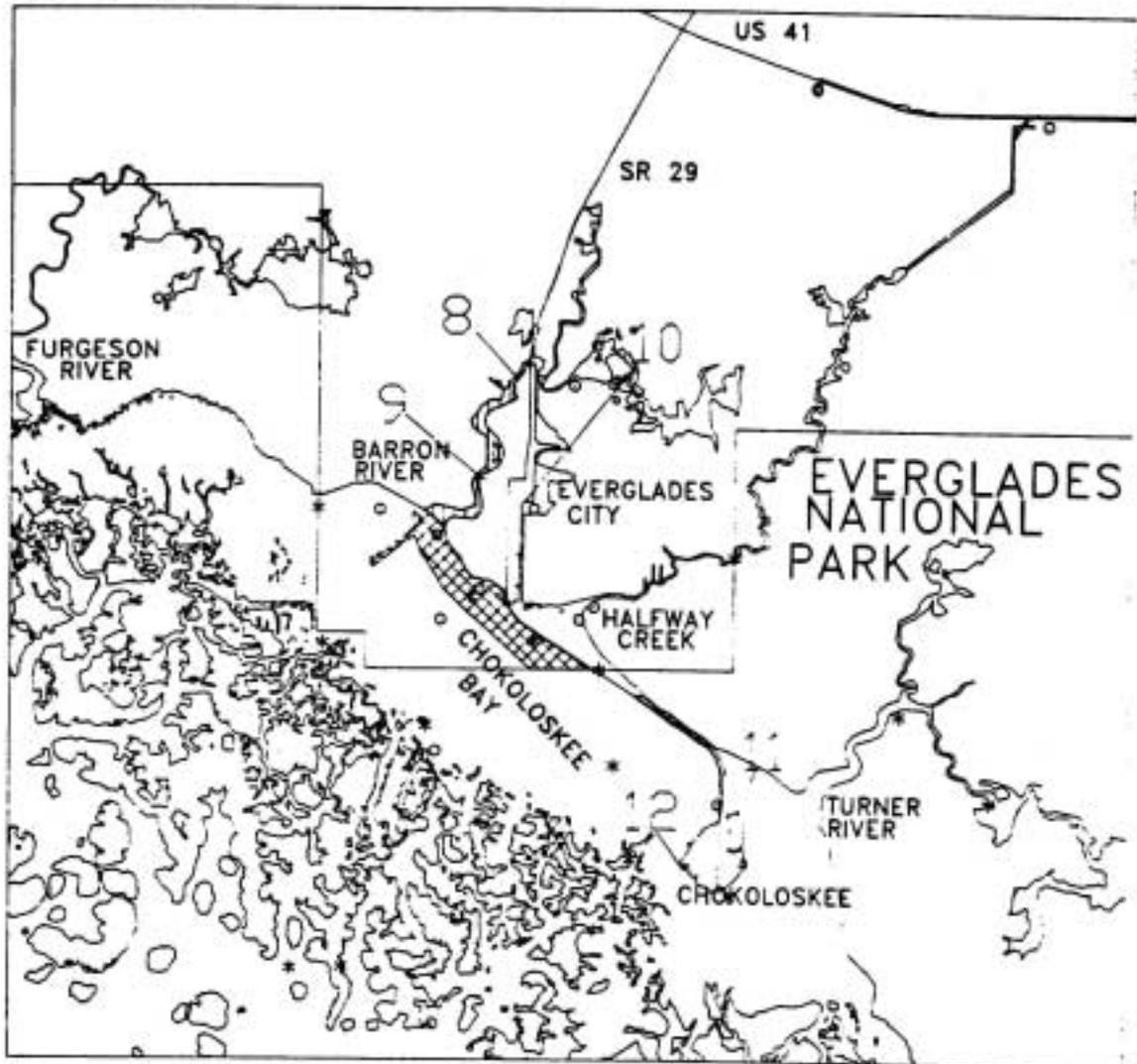


Figure 2-10 Ten Thousand Islands (South)

with them. Everglades National Park has well marked channels through the back water areas for small boats and canoes which many of these visitors use.

The majority of the recreational fishing takes place in the deeper passes such as Dismal Key Pass, Fakahatchee Pass, West Pass and Rabbit Key Pass. Most of the bays located in the Ten Thousand Islands are very shallow, typically less than 2 feet MLLW. Because of their shallow nature, and the extensive local knowledge necessary to navigate, most recreational fishermen avoid these areas.

Professional fishing guides who are familiar with the area utilize some of the more out of the way fishing areas such as the Ferguson River, East River and remote fishing holes among the mangrove islands. Guides leaving from Everglades City and Chokoloskee typically head south to Lostmans River and the back bays of the National Park.

Commercial fishing is of prime importance. Very large catches of mullet, bluefish, red drum, grouper, king mackerel, sea trout, Spanish mackerel, red snapper, and pompano are common. Sport fishing opportunities are abundant as well, as the area supports rich populations of snook, tarpon, and mangrove snapper. Sport fishermen also utilize the natural populations of redfish, pompano, sea trout, sheepshead, and mackerel. Clams, oysters, and conch contributed to a rich fisheries industry in the past, but overharvesting depleted these resources. Stone crabs are commercially taken in large numbers.

Eco-tourism is a growing industry in the Ten Thousand Islands. The natural beauty of this area is being enjoyed by people from all over the world. Tour boat operations are proliferating in the area surrounding Everglades National Park to exploit this industry. The Park System also operates a number of sight-seeing boats through the islands. Animal species often sighted include bald eagles, ospreys, bottlenose dolphin and manatees.

The Ten Thousand Islands area includes Goodland, Port of the Islands, Everglades City and Chokoloskee. Most waterfront homes in these areas have private docks. There is very little fluctuation in the number of boats (3%) using private docks in this area between summer and winter since most are utilized by commercial fishermen or professional fishing guides.

The shoreline survey for Goodland showed 139 boats were kept at private residences during the season while 206 docks remained vacant. The off season count indicated 129 boats were docked.

The Port of the Islands shoreline inventory listed 27 boats were docked at private residences while only 14 were present during the off season.

The winter season count for Everglades City and Chokoloskee indicated 246 were docked while the summer count was 274. The reason for the higher off season number is attributed to the fact that many boats were out during the survey. The count of vacant docks for the winter season was 456 while the summer count was 520.

The Ten Thousand Islands is mostly made up of state and federal preserve areas which include the Ten Thousand Islands Aquatic Preserve, the Ten Thousand Islands National Wildlife Refuge and the Everglades National Park. These public land holdings are mostly made up of mangrove forests and saltmarsh and will never be suitable for marina construction.

Ten Thousand Islands											
Facility	Wetslips		Dry Storage		Ramp	Fuel	Pump	Bait	Repairs	Boat Rental	Manatee Signs
	Used	Vacant	Used	Vacant							
<hr/>											
Goodland Bridge Marina	26	37	4	0	X	X		X		8	NO
Goodland Bay Marina	28	12	121	9		X		X	X	2	NO
<hr/>											
Collier/Seminole Park	Transient Only		0	0	X						YES
Port of the Islands	71	25	0	0	X	X	X	X		5	YES
<hr/>											
Everglades City											
Barron River Marina	23	62	0	0	X	X		X			YES
Captains Table Marina	Transient Only		0	0	X	X					NO
Everglades Rod & Gun Club	Transient Only		0	0		X					NO
<hr/>											
Chokoloskee											
Parkway Village	17	16	9	21	X	X		X			NO
Chokoloskee Outdoor Resorts	20	13	0	0	X	X		X		5	YES

Table 2-8 Ten Thousand Islands Boating Facilities

Marinas

Goodland currently contains 2 public marinas with 134 dry slips and 103 wet slips. A new marina has been permitted and has yet to be developed. The new marina will be the largest in the town upon its completion, containing 140 wet slips and 250 dry storage

slips. Access to the Gulf of Mexico from Goodland is via Coon Key Pass.

Port of the Islands contains a private marina with 96 wet slips, on the Faka Union Canal. The marina is currently being expanded to include an additional 75 wet slips and floating docks. Access to the Gulf of Mexico is via Fakahatchee Pass. Stipulations on the permits to construct the additional slips included a phased expansion plan contingent upon a decrease in manatee mortality in the area. An approved manatee protection plan was required to be ongoing for at least one year, which demonstrated that speed regulations were effective and being complied with by the boating public. Monitoring is required to continue, and the additional slips would have to be removed if the plan proves to be ineffective. The manatee protection plan includes informing all personnel associated with the project about manatees and regulations concerning them. Manatee protection signs are required by the FDEP, with at least one permanent educational display per 50 boat slips. In addition to manatee protection, other environmental stipulations were required. Sewage pumpout facilities connecting to the central sewage system are to be installed, turbidity controls are required during construction, and liveboards at the new slips are required to have direct sewage hookup.

Everglades City currently contains one public marina with 85 wet slips and 2 hotel marinas accomodating transient boaters. Access to the Gulf of Mexico is via the Barron River across Chokoloskee Bay to Indian Key.

Chokoloskee has two marinas for a total 66 wet slips. Dry storage is available for 30 boats/trailers only on a transient basis. Access is gained to the Gulf by crossing Chokoloskee Bay to Sandfly Pass or Chokoloskee Pass.

Boat Ramps

There are no County owned public boat ramps in the Ten Thousand Islands area. An additional County ramp should be considered for the Goodland area for access to the Ten Thousand Islands.

The Goodland Bridge Marina has a single lane boat ramp available for public use for a fee. This is the only ramp availabe in Goodland at the present time.

At Collier-Seminole State Park, a boat basin with a two-lane boat ramp provides access to the Ten Thousand Islands and the Gulf of Mexico. A small admission fee into the park allows use of the boat ramp by the public. A bathhouse, fish cleaning table and picnic benches are also available at this location.

Port of the Islands has a two lane boat ramp that is available for public use for a small fee. Everglades City and Chokoloskee do not have public boat ramps; however, there are a few marinas

that allow public use of their ramps for a small fee.

There are no County boat ramp facilities in Everglades City or Chokoloskee, however, there are several boat ramps available to the public for a small fee. Both the Barron River Marina and the Captains Table Marina offer ramp service in Everglades City and the Chokoloskee Outdoor Resorts also has a single lane boat ramp.

2.1.6 Analysis of Existing Marina Usage

As of October 1993, Collier County contained 89 public and private marinas (including condominium and private club dockage facilities that contain more than 10 slips). There are 33 commercial/public marinas containing a total of 1,496 wet slips and 1,952 dry slips in the county. There are 56 private and/or club marinas containing an additional 1,541 wet slips in the county. During the winter season of 1993 the commercial marinas were at 71% occupancy. The 1993 Boat survey also indicated that 36% of wet slips in private marinas are utilized.

2.2 Water Quality and Aquatic Vegetation

2.2.1 Water Quality Concerns

Degradation of natural waterbodies that encompass manatee habitats have a negative impact on manatee populations. Development activities and poor agricultural practices contribute to this type of degradation, increasing turbidity, nutrient, and contaminant levels into estuarine and coastal waters. The continued degradation of estuarine waters in Collier County directly affects sea grass beds, which are the main foraging areas for manatees. Most of the seagrass beds in the County have either dwindled in size or disappeared completely due to poor water quality and the effects of upland development.

Contaminants, such as pesticide and herbicide residues, petroleum products, and heavy metals may contribute to the reduced health of individual manatees if these animals are chronically exposed to low levels. Such exposure may permit opportunistic infections to lead to manatee mortalities if conditions persist. Acute exposure to high levels of toxic pollutants, such as those resulting from petroleum or chemical spills, also represents a threat to manatee survival.

Collier County Pollution Control Department has an estuarine monitoring program which is designed to pinpoint such water quality problems. Estuarine water quality data for Collier County's estuarine systems, covering the period 1972 - 1990, was obtained from a number of separate studies including FDEP, Rookery Bay National Estuarine Research Reserve, Pelican Bay Improvement District, and Park Shore Development Corporation.

Differences between the various studies in design and duration preclude any definitive conclusions regarding estuarine water quality.

In summary Naples Bay water quality during 1976, 1977, 1983, and 1984 differed substantially from that in other areas of the County by its relatively high ammonia and bacteria levels. Coliform bacteria levels in Naples Bay during these years routinely violated State water quality standards. Both Naples Bay and the Clam Bays showed marked differences between wet and dry season water quality (Grabe, 1991).

2.2.2 Freshwater Sources

Although no conclusive evidence exists that manatees require freshwater to survive, manatees actively seek freshwater resources which are considered important manatee habitat components. Typical areas include the Gordon River, Blackwater River, Barron River and Halfway Creek.

Other freshwater sources in Collier County include point source discharges from water control structures. Manatees are known to commonly use the area at the north end of the Port of the Islands boat basin. The weir north of the basin drains the entire canal system of Golden Gate Estates. The water entering the Faka Union Canal at this point is slightly warmer than the surrounding waters during the winter months. It is likely that manatees also use other areas where water control structures deliver substantial quantities of freshwater.

Another source of freshwater commonly used by manatees is located at the basin adjacent to Enchanting Shores Trailer Park on Henderson Creek. Bertone (1993) reported that freshwater "boils" up from the substratum into the waters of the basin. The water welling up is slightly warmer than ambient temperatures during the colder months. Manatees have often been sighted in this basin, and in transit to and from it via Henderson Creek, by Bertone and residents of the trailer park. FDEP aerial surveys indicate that manatees transit that region of Henderson Creek regularly (Frohlich, 1991).

2.2.3 Aquatic Plant Control Activities

Presently, the Collier County Storm Water Management Department is responsible for maintaining all of the secondary and other drainage canals in the county. The Big Cypress Basin of the South Florida Water Management District maintains the major primary drainage canals. The Florida DEP oversees and approves the annual work plans for water management in the county. The work plans include specifications for aquatic plant control such as the types of herbicides to be used, their application, the time of year application takes place, and application rates. All

the personnel in the Collier County Aquatic Plant Control Section are licensed by the State of Florida and only approved herbicides such as Aquathal K, Diquat and Sonar SRP are used. The following table lists some of the more common plants targeted for control.

COMMON AQUATIC PLANTS

FLOATING	SUBMERGED	EMERGENT
Duckweed <u>Lemna</u> spp.	Bladderwort <u>Utricularia</u> spp.	Cattail <u>Typha</u> spp.
Pennywort <u>Hydrocotyle</u> spp.	Hydrilla <u>Hydrilla verticillata</u>	Water Hyacinth <u>Eichornia crassipes</u>
Water Lettuce <u>Pistia stratiotes</u>	Naiad <u>Najas</u> spp.	Waterwillow <u>Dianthera americana</u>
	Pondweed <u>Potamogeton</u> spp.	

Table 2-9 Common Aquatic Plants

All aquatic plant control activities in Collier County occur upstream of the water control structures. Typically, herbicide use occurs during the months of March and April, which are times of low flow conditions. Herbicide application is most effective during this time period. In addition, this is the time of year when the least amount of the chemicals enter the estuaries downstream of the water control structures. In the Faka Union Canal, herbicide application takes place north of Stewart Blvd. in South Golden Gate Estates. South of Stewart Blvd., to U.S. 41, aquatic vegetation is controlled by mechanical methods only. The S.R. 29 canal, which drains into the Barron River, is treated only from I-75 northward. The canal is not treated at all from I-75 south to the Barron River. There are plans by the Big Cypress National Preserve to purchase the one mile wide strip of land encompassing the S.R. 29 canal between I-75 and the Barron River, and allowing it to return to its natural state.

2.3 Habitat Protection

2.3.1 General Considerations

Habitat protection is an essential element in the protection plan for manatees. Areas that are used for feeding, as well as areas that manatees find attractive for resting, mating, calving, and nursing, need to be reserved as sanctuaries or otherwise protected, so that the species has abundant habitat resources to allow for its recovery (USFWS, 1989).

Seagrass beds are the most essential resource to the survival of the species. Recovery and maintenance of the existing Florida manatee population in this area directly depends on seagrass preservation, since these meadows provide most of their forage material in estuarine and marine systems. As herbivorous marine

mammals, manatees have presumably evolved from terrestrial mammalian stock; this ancestral group fed on terrestrial angiosperm (flowering) plants similar to those presently eaten by grazing mammals. Manatees are still physiologically similar to their ancestors, and have similar dietary requirements. Seagrasses provide the major source of angiosperm plant material in the marine and estuarine environments, and are therefore essential to the survival of these mammals.

Seagrasses, the primary food source for manatees in this area, are sensitive to development activities. Water transparency is the overriding factor controlling seagrass abundance and distribution. Dredging, shoreline construction, and boat traffic are all threats to the viability of existing seagrass beds. Seagrass meadows are highly productive biological communities that tolerate only warm, clear marine waters, and are biotic indicators of high water quality and healthy marine biological systems. According to the Marine Mammal Commission report of 1988, "food supplies are not yet limiting to the manatee populations of Florida. However, if the productivity of submerged seagrass beds near winter refuges declines significantly, recovery of the manatee would be affected. Protection of seagrass beds needs to be strengthened to ensure an adequate food supply to resident and transient manatees."

To protect the remaining seagrass meadows from further degradation from upland water sources, Collier County should begin a more intensive water quality monitoring program at watershed outlets entering the bays and backwaters which flow into the seagrass beds. Nutrient input from septic systems, agriculture, stormwater runoff, lawn care and waste water treatment plants contribute to water quality degradation. The County should also seek the aid of the local U. S. Soil Conservation Service in establishing Best Management Practices (BPM) for existing subdivision and agricultural areas. Also, non functioning BPMs should be located and corrective measures taken to make them functional. Private land owners as well as local governments should be encouraged to improve water quality from all existing and proposed urban and agricultural developments.

2.3.2 Collier County Land Development Code

The Collier County Land Development Code (LDC) addresses seagrass protection in Section 2.6.21 Private Boathouses and Docks.

2.6.21.7 All dock facilities are subject to, and shall comply with, all federal and state requirements and permits, including but not limited to the requirements and permits of the Florida Department of Environmental Protection, the U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency.

- 2.6.21.8 Where new boathouses, boatshelters, or docking facilities are proposed or boat dock extensions, the location and presence of seagrass or seagrass beds within two hundred (200) feet of any proposed dock facility or boathouse shall be identified on an aerial photograph having a scale of one inch to 200 feet when available from the county, or a scale of one inch to 400 feet when such photographs are not available from the county. The location of seagrass beds shall be verified by a site visit by the Site Development Review Director or his designee prior to issuance of any project approval or permit.
- 2.6.21.8.1 All proposed boathouses, boatshelters, and dock facilities shall be located and aligned to stay at least ten (10) feet from any existing seagrass beds, except where a continuous bed of seagrasses exists off the shore of the property and adjacent to the property, and to minimize negative impacts to seagrasses and other native shoreline, emergent and submerged vegetation and hard bottom communities.
- 2.6.21.8.2 Where a continuous bed of seagrasses exists off the shore of the property and adjacent to the property the applicant shall be allowed to build a dock across the seagrasses, or a boathouse, boatshelter or docking facility within ten feet of seagrasses. Such boathouses, boatshelters or docking facilities shall comply with the following conditions:
1. The boathouse, boatshelter or dock shall be at a height of at least three and one-half (3.5) feet NGVD.
 2. The terminal platform of the dock shall not exceed one hundred sixty (160) square feet.
 3. The access dock shall not exceed a width of four (4) feet.
 4. The access dock and terminal platform shall be sited to impact the smallest area of seagrasses possible.
- 2.6.21.8.3 The petitioner shall be required to demonstrate how negative impacts to seagrasses and other native shoreline vegetation and hard bottom communities have been minimized prior to any project approval or permit issuance.

2.3.3 Alternatives and Needed Action

The Marine Mammal Commission recommends the instatement of the following actions, with regard to habitat protection for manatees:

1. Identify and map seagrass beds used by manatees.
2. Prohibit new bulkheads, marinas, and other development in or near these areas that could decrease grassbed productivity or otherwise be hazardous to manatees.
3. acquire more undeveloped areas with essential manatee habitat, to ass a system of refuges and parks.
4. Restore and enhance manatee habitats.

3.0 MANATEE PROTECTION PLAN

3.1 Boating Considerations

3.1.1 Site Specific Recommendations

The following recommendations are based on the FDEP Manatee Mortality Data, the 1993 Collier County Boating Study and Facility Inventory, and the FDEP Office of Protected Species Management. These recommendations are intended for manatee protection, however, boating safety and marine habitat protection will also be achieved. Recommendations include designated speed zones, and additional channel markers.

Manatee mortalities in Florida have steadily increased over the last 15 years, to a high of 206 in 1990. Collier County has displayed a similar trend in manatee deaths with a high of 20 deaths in 1992. This alone should be enough rationale for limiting speeds in inland waterways, as well as establishing manatee sanctuary zones in areas of frequent manatee occurrence. However, another important reason for limiting boat speeds in crowded inland waterways is Florida's boating fatality rate. In 1993, there were 1,017 boating accidents in the State, resulting in 63 human deaths (this number is down from 80 fatalities in 1992), in Collier County there were 24 accidents involving one fatality (FMP).

Speed Zones and limits in Collier County will be enacted by State Rule, and adopted by Resolution. Speed zones and limits will comply with those defined in the Florida Manatee Sanctuary Act (Chapter 16N-22, F.A.C.).

1. "Idle speed" means the minimum speed that will maintain the steerage of a motorboat.
2. "Slow speed" means no speed greater than that which is reasonable and prudent to avoid either intentionally or negligently annoying, molesting, harassing, disturbing, colliding with, injuring or harming manatees and which comports with the duty of all persons to use due care under the circumstances.

A vessel that is: (1) operating on a plane is not proceeding at slow speed; (2) operating at a speed that creates no wake or minimum wake is proceeding at slow speed; (3) in the process of coming off plane and settling into the water or coming up onto plane is not proceeding at slow speed; (4) completely off plane and which has fully settled into the water and is proceeding without wake or with minimum wake is proceeding at slow speed.

3.1.1.1 Wiggins Pass

Little Hickory Bay to Wiggins Pass

All waters of Little Hickory Bay commencing at the Lee County line and proceeding south to a line located at 26° 19.40' will be regulated at Slow Speed, except those areas that are seawalled or the Boat Basin areas within the Lely Barefoot Beach Sub-division which will be Idle Speed.

Boat speeds will then be regulated to a maximum of 20 MPH in the waters south of 26° 19.40' to the area known as Wiggins Bay located at 26° 18.00' where Slow Speed will commence to Wiggins Pass (**See Figure 3-1**).

Also because of the increased numbers of boaters in the area the channel should be marked from Little Hickory Bay to Wiggins Pass. The waterway connecting Little Hickory Bay to the pass is shallow, narrow, and winds through dense mangroves, oyster bars and sea grass beds. A marked channel will reduce the possibility of boaters damaging the fragile habitat or becoming lost.

Wiggins Pass to the Cocohatchee River

Slow Speed will commence at the mouth of Wiggins Pass and proceed east to the area known as the "Choke Point" located at 81° 49.55' where Idle Speed will be regulated to the point where the river turns north at the Wiggins Bay Club Boat Basin. Slow Speed will then be regulated to the point where the river narrows at 26° 17.30' where boat speed will be regulated to a maximum of 20MPH (**See Figure 3-1**).

Wiggins Pass to Vanderbilt Lagoon

Commencing at Marker 1 in the area known as the "Chute", Slow Speed will be regulated to the south end of Water Turkey Bay where Idle Speed will be enforced to south end of Vanderbilt Lagoon (**See Figure 3-1**).

3.1.1.2 The Clam Bays

This shallow bay system contains some of the best sea grass beds in the northern part of the County. In order to protect the sea grass beds which is manatee habitat the entire Clam Bay System should be posted as an Idle Speed Zone (**See Figure 3-2**).

SPEED ZONE LEGEND

-  IDLE SPEED
 -  SLOW SPEED
 -  MARKED CHANNEL 30 mph
 -  OUTSIDE CHANNEL - SLOW SPEED
- OTHER AREAS MARKED CHANNEL 30 mph
OUTSIDE THE CHANNELS 20 mph

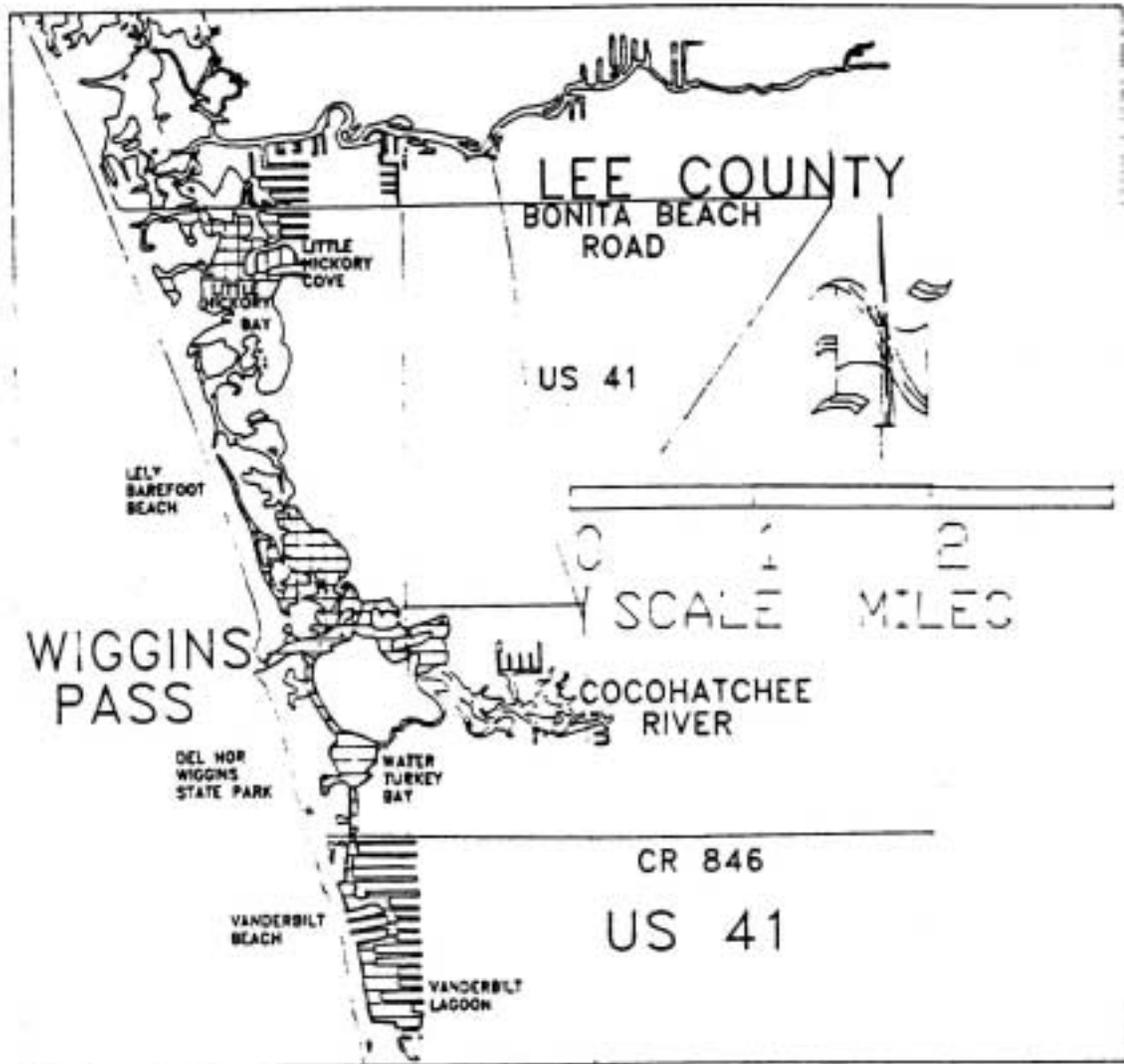


Figure 3-1 Wiggins Pass Area

SPEED ZONE LEGEND

-  IDLE SPEED
-  MARKED CHANNEL 30 mph
-  SLOW SPEED
-  OUTSIDE CHANNEL - SLOW SPEED
- OTHER AREAS MARKED CHANNEL 30 mph
- OUTSIDE THE CHANNELS 20 mph

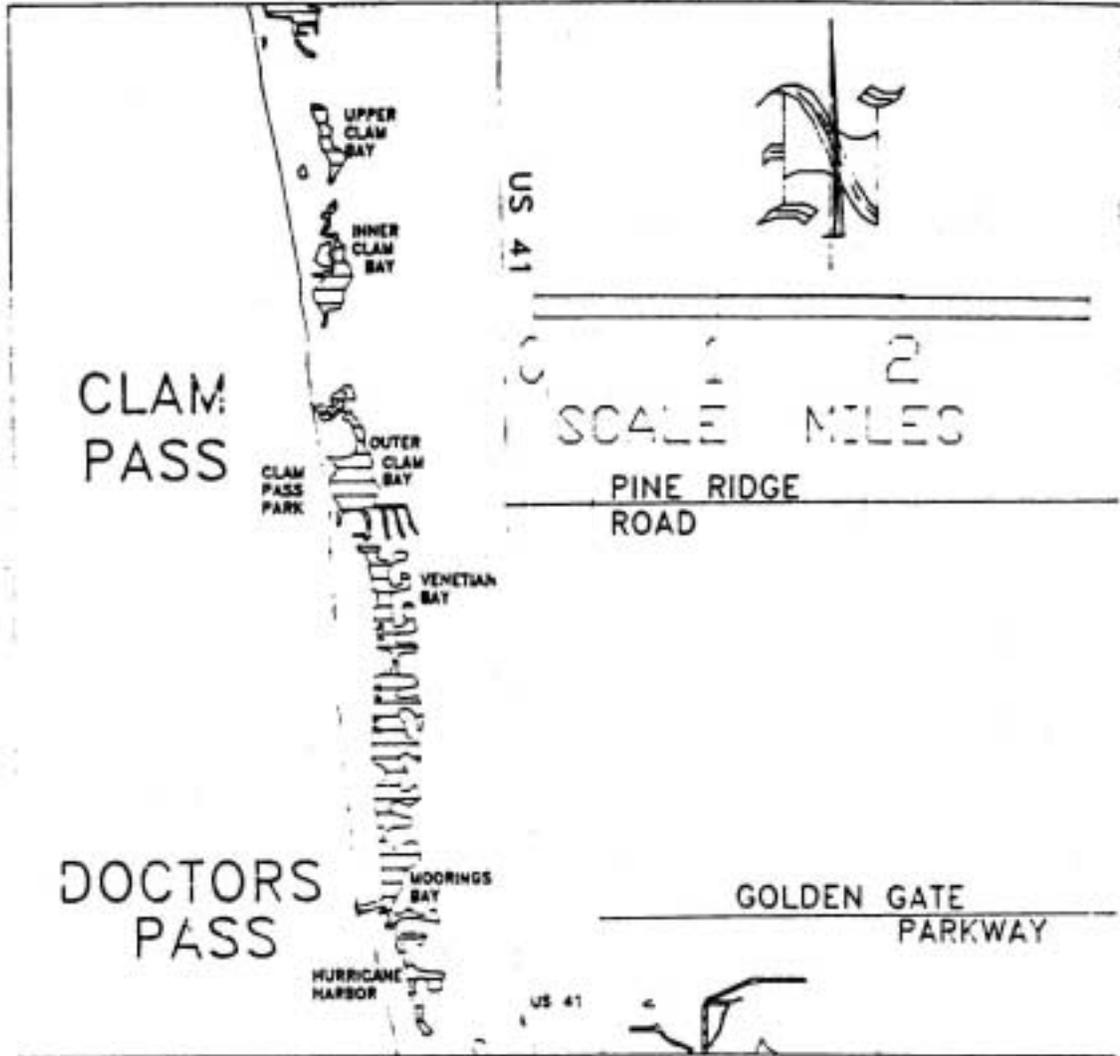


Figure 3-2 Clam Pass and Doctors Pass

3.1.1.3 Doctors Pass

All the waters of Moorings Bay and Venetian Bay will be regulated at Idle Speed (See **Figure 3-2**).

3.1.1.4 Gordon Pass

Naples Bay

The current Speed Zone regulated in Naples Bay will remain in effect (See **Figure 3-3**). These speeds are a mix of Idle, Slow and 30 MPH zones. These zones are in affect on weekends and other specified times.

Idle Speed is always enforced from Marker 6 to Marker 10, from Marker 36 to U.S. 41 Bridge, and in all residential canal and boat basins.

Slow Speed is enforced on weekends and holidays from Marker 36 to Marker 27 and from Marker 21 to Marker 10.

Haldeman Creek

The entire length of Haldeman Creek will be regulated as Slow Speed (See **Figure 3-3**). All canals and man-made waterways will be Idle Speed.

Gordon River and Rock Creek

From the U.S. 41 Bridge to the water control structure will be regulated at Slow Speed. Rock Creek will be regulated as Slow Speed (See **Figure 3-3**). All canals and man-made waterways will be Idle Speed.

3.1.1.5 Inland Waterway

The Inland Waterway is an approximately ten mile channel that runs from Naples Bay south to Capri Pass. This waterway varies in depth from between -3 feet to -14 feet at MLLW. The channel for the most part is surrounded by mangroves and shallow bays containing numerous oyster bars and sea grass beds.

The Inland Waterway is one of the most heavily traveled areas in the County. Many boaters routinely use this channel to travel between Naples and Marco Island. When the Gulf is rough, virtually all boating traffic is confined to this waterway. This channel also provides the only access to Rookery Bay and Johnson Bay areas that are heavily utilized by manatees.

SPEED ZONE LEGEND

-  IDLE SPEED
-  MARKED CHANNEL 30 mph
-  SLOW SPEED
- OUTSIDE CHANNEL - SLOW SPEED
- OTHER AREAS MARKED CHANNEL 30 mph
- OUTSIDE THE CHANNELS 20 mph

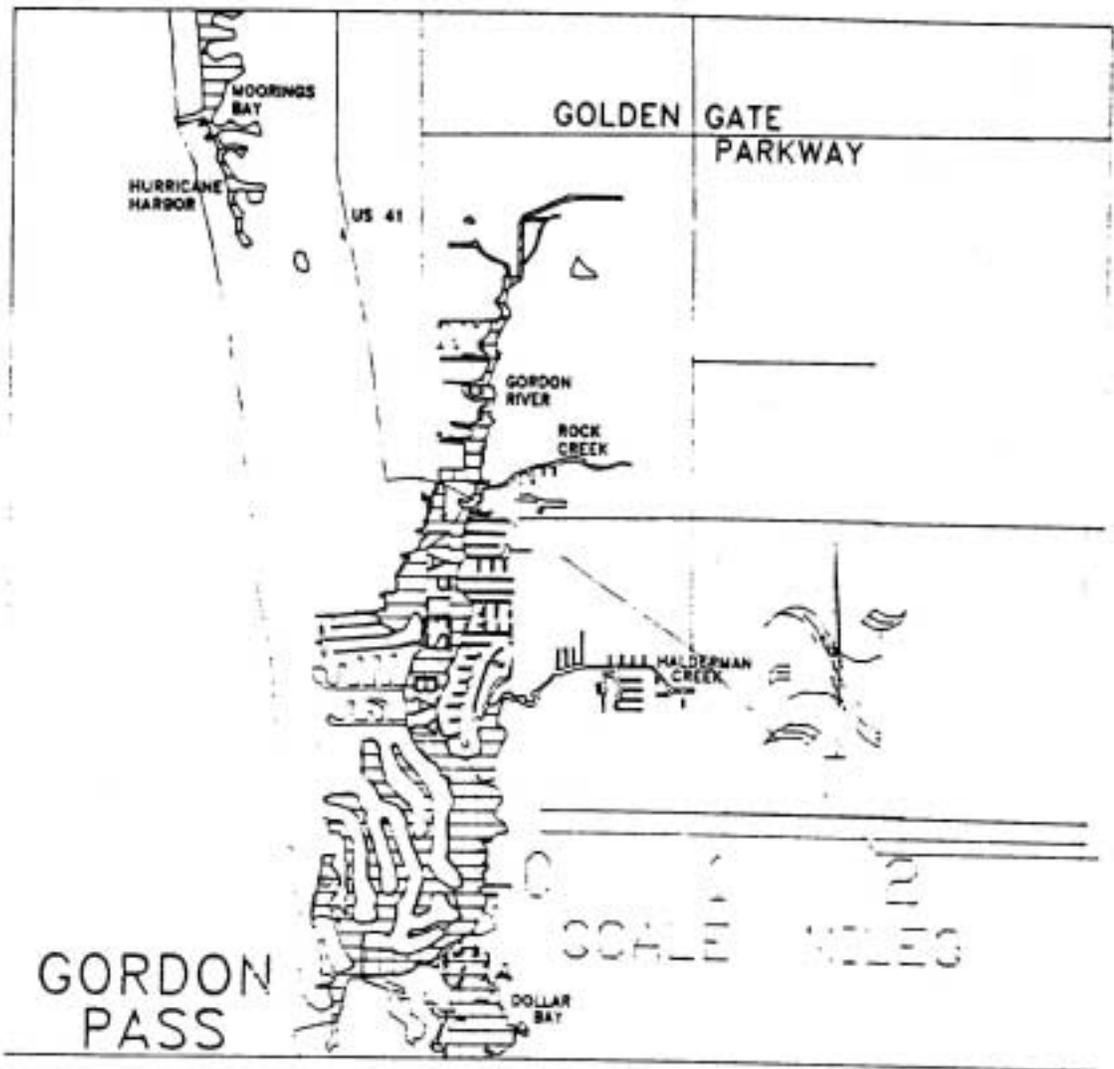


Figure 3-3 Gordon Pass

The Inland Waterway from Marker 73 south to marker 52 including Dollar Bay will be regulated at 30 MPH in the channel and Slow speed outside the marked channel.

The channel between markers 52 and 47 (See **Figure 3-4**) is the narrowest and among the most shallow areas of the Inland Waterway. This area often referred to as "The Narrows" presents a hazard to boaters, especially in meeting and overtaking maneuvers when more than two vessels are involved. Also, two manatee deaths attributed to boat collisions have been recorded here since 1989. For these reasons, this section of the channel should be designated a Slow Speed Zone.

From Marker 27A near the North end of Cannon Island to Marker 3 will be regulated at 30 MPH in the channel and Slow Speed outside the marked channel.

The waterway forks at the north end of Little Marco Island. The unmarked western channel between Little Marco and Keewaydin Islands is relatively deep (7 - 12 ft. MLLW) and is very popular with boaters and water skiers. The marked channel that bears to the southeast is much narrower and shallower, it then takes a sharp turn to the east. Boaters heading SE are looking directly into Hurricane Pass which is another popular water recreation area, however, there is a shoal area containing oyster bars and seagrass beds. Boaters who are unfamiliar with this area or fail to make the turn often go aground. The prop scars are very evident in this area. To help alleviate this problem additional channel markers should be placed between markers 29 to 27. These additional markers will make the channel more apparent.

Continuing south the channel enters Johnson Bay. The channel itself is relatively deep, but outside the channel the waters are generally less than 3 feet. The channel through this area is marked with alternating day markers. This confuses many boaters. Other boaters want to "cut the corner" and as a result go aground or prop-dredge their way through the sea grass beds. The seagrass beds in this area are known to be frequented by manatees. This portion of the channel from marker 16 to 14 should be delineated with additional markers.

The south end of Johnson Island consists of a shoal containing seagrass beds and is another area where prop-dredging and groundings occur. This is also the intersection of Capri Pass and the Inland Waterway. Manatees traverse this area when moving from the Marco River to Johnsons Bay. This area should be designated as Slow Speed (See **Figure 3-4**). Additional markers should also be placed in order to better delineate the channel and guide boaters around this shoal.

SPEED ZONE LEGEND

- | | |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  IDLE SPEED |  MARKED CHANNEL 30 mph |
|  SLOW SPEED | OUTSIDE CHANNEL - SLOW SPEED |
- OTHER AREAS MARKED CHANNEL 30 mph
OUTSIDE THE CHANNELS 20 mph

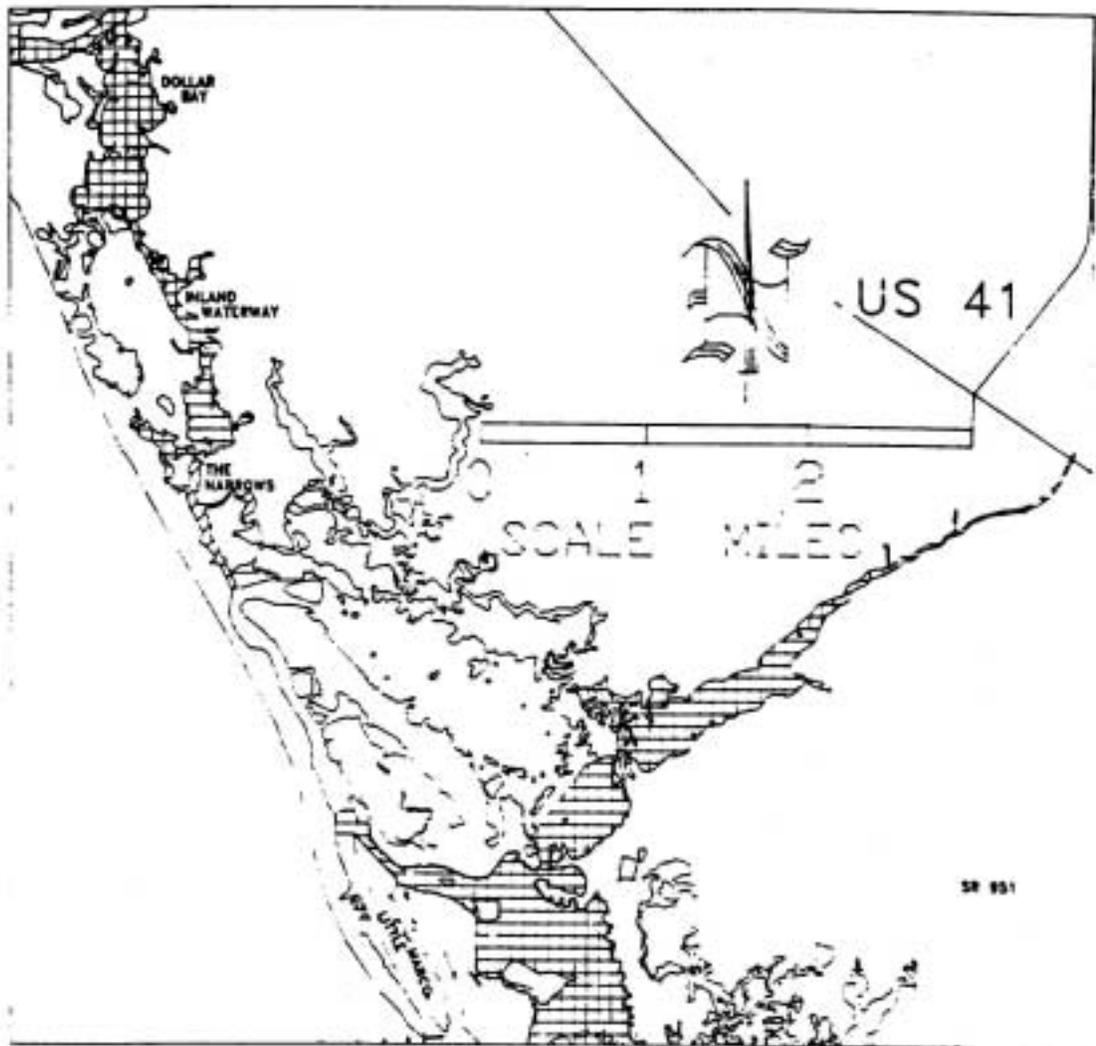


Figure 3-4 Inland Waterway

Rookery Bay

Rookery Bay will remain regulated at a maximum speed of 20 MPH (See **Figure 3-4**). Henderson Creek and Hall Bay will be regulated at Slow Speed. The basin adjacent to Enchanting Shores Trailer Park off Henderson Creek will be regulated as a No Entry Zone.

Johnson Bay

Johnson Bay will be regulated as Slow Speed except in the marked navigational channel which will be 30 MPH (See **Figure 3-4**).

Little Marco/Hurricane Pass

The existing 35 MPH zones will be repealed. There will be no speed limit in this area, except the marked Inland Waterway channel which will remain 30 MPH (See **Figure 3-4**).

3.1.1.6 Marco River

Big Marco/Capri Pass

Capri Pass will be regulated at Slow Speed from Marker 1 to the Isles of Capri (See **Figure 3-5**). The present Idle Speed zone in Big Marco Pass will be maintained.

Big Marco River

Idle Speed will be regulated in the Big Marco River to Marker 15. The remainder of the Big Marco River will be regulated at 30 MPH in the channel and Slow Speed in all other waters including Tarpon Bay, Bear Point Cove, Three Island Cove, Addison Bay, the Muddies and Sanctuary Sound.

The channel under the Judge Jolly Bridge is very narrow and heavily traveled. Many boaters utilizing the 951 boat ramp approaching the channel are blind to boating traffic to the west. Manatees are frequently sighted in this area, and several deaths have been recorded here. For these reasons the area from Flotilla Passage extending out to the channel and the area 300 feet on either side of the bridge should be designated Slow Speed (See **Figure 3-5**).

Additional channel markers should also be placed along portions of the Marco River. The area from marker 15 west of the Judge Jolly Bridge (SR 951) to marker 25 east of the bridge should be marked. Although the channel is relatively deep and wide through this area the adjacent waters are very shallow and contain many seagrass beds and oyster bars.

SPEED ZONE LEGEND

- | | |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  IDLE SPEED |  MARKED CHANNEL 30 mph |
|  SLOW SPEED | OUTSIDE CHANNEL - SLOW SPEED |
- OTHER AREAS MARKED CHANNEL 30 mph
OUTSIDE THE CHANNELS 20 mph

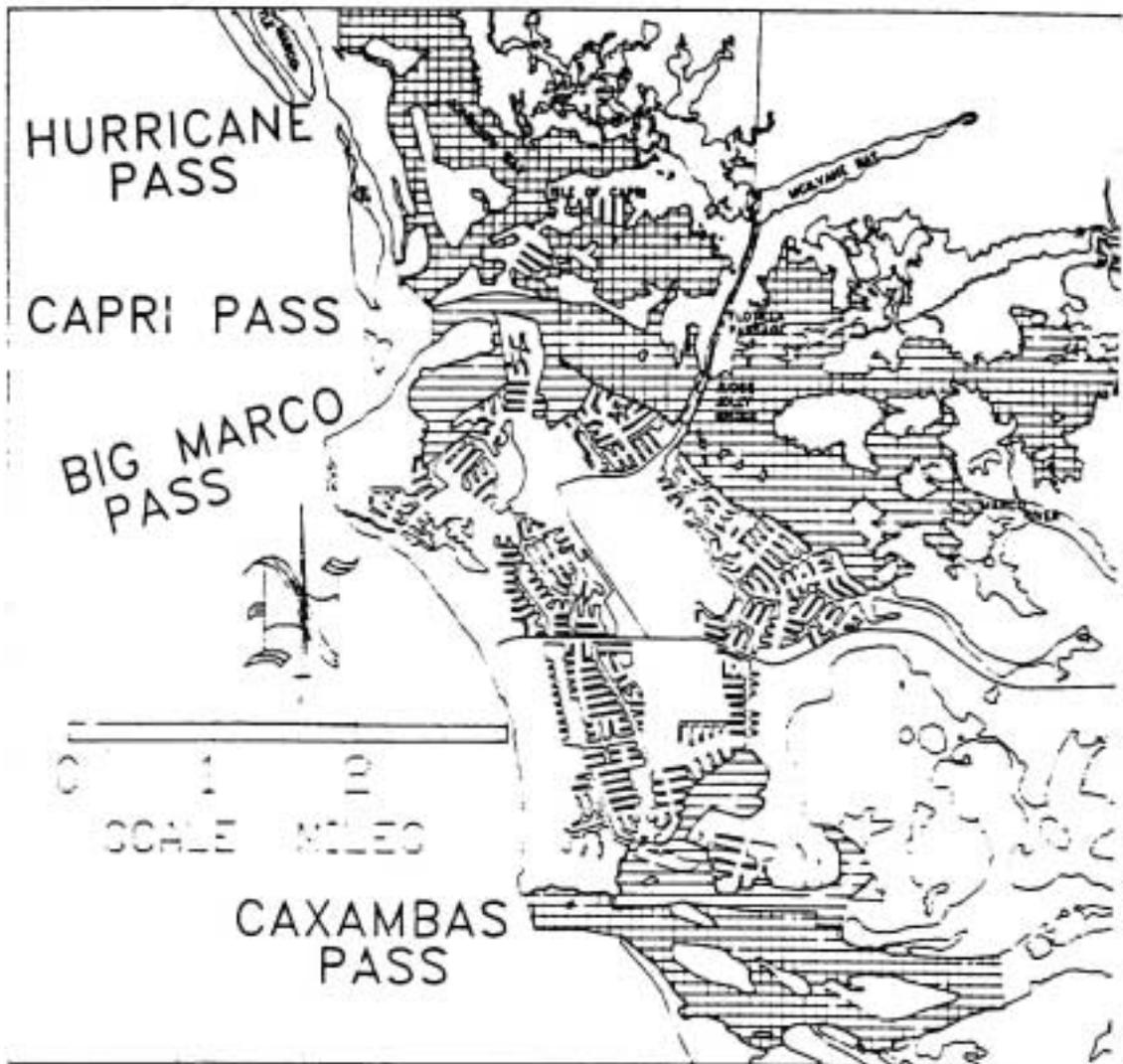


Figure 3-5 Capri Pass and Marco River

McIlvane Bay

McIlvane Bay is a long, shallow embayment (less than 3' MLLW) located about one mile north of the Marco River. McIlvane Bay is usually accessed via Flotilla Passage (See **Figure 3-5**) or through Johnson Bay. State Road 951 (SR 951) crosses McIlvane Bay by way of a low narrow bridge. Manatees have been frequently observed grazing on the seagrass beds located to the west of the bridge. Boaters approaching the bridge from Flotilla Passage or from the Northeast portion of McIlvane Bay may not see the manatees grazing in these seagrass beds in time to stop. For this reason the area 600 feet on either side of the McIlvane Bridge and Flotilla Passage will be regulated as a Slow Speed Zone.

Goodland Bay

Another area of concern along the Marco River is where it enters Goodland Bay (See **Figure 3-6**). This is a very active area for both manatees and boaters. Boaters returning from the Ten Thousand Islands and Goodland must pass through this area. The Goodland Bridge presents a choke point along this route, also the Barge Marina is situated to the west.

Manatees routinely utilize the Goodland Bay area. Aerial siting data indicates manatees present during all surveys. Additionally two manatee deaths caused by boat collisions have been recorded in this area during the past five years. The area from marker 15 in the Marco River to the existing Idle Speed Zone at marker 10 in the channel and all other waters of Goodland Bay will be regulated as a Slow Speed Zone. Idle Speed will be maintained around Goodland to Marker 6. Slow speed will be regulated in all waters to to Marker 3.

3.1.1.7 Caxambas Pass

Slow Speed will begin at marker 1 on the north side of Fred Key and will extend to Caxambas Pass. The southern boundary of this zone will be extended to follow a line running roughly from Helen Key through Fred Key, Currys Island and Dickmans Island, to Dickmans Point (See **Figure 3-6**).

All other waters of Marco Island including Collier Bay, Roberts Bay, Factory Bay, Smokehouse Bay and all seawalled areas will remain as Idle Speed.

3.1.1.8 Port of the Islands - Faka Union Canal

Manatees congregate in the Port of the Islands/Faka Union Canal area year-round, attracted to the fresh water that spills over the weir at the northern end of the marina basin. This area also provides relatively warmer water during periods of cold weather.

SPEED ZONE LEGEND

≡ IDLE SPEED ≡ MARKED CHANNEL 30 mph
▨ SLOW SPEED OUTSIDE CHANNEL - SLOW SPEED
OTHER AREAS MARKED CHANNEL 30 mph
OUTSIDE THE CHANNELS 20 mph



Figure 3-6 Caxambas Pass and Goodland Bay

More manatees have been sighted in this area than any other area of the County.

Port of the Islands (POI) contains a private marina with 100 wet slips on the Faka Union Canal. The Resort is planning to expand the marina facility by an additional 75 slips. Waterfront homes are being constructed along the ten finger canals, and 31 of these homes have private docks associated with them. The boat ramp at the facility is also a favored launching spot for boaters wishing to fish the Ten Thousand Islands. Boating activity in this area is expected to increase in the coming years.

The marina basin is designated as an Idle Speed Zone, and the Faka Union canal is a caution zone with the Idle Speed Zone extending southward for 500 feet where it becomes a Slow Speed Zone for the rest of the length of the canal (See **Figure 3-7**). Compliance with these speed zones is sporadic at best. The Florida Marine Patrol schedules one day a month patrol duty.

Port of the Islands should be required to include a manatee informational brochure in the closing documents of all real estate transactions on the waterfront. This brochure will include general information on manatees and how to spot them along with details of the POI speed zones and the maximum fine of \$500.00 for violating these zones. General information on the manatees at POI and details of the speed zones will also be presented at the annual meeting of the home owners.

POI should incorporate a description of the speed zones and potential fines for violating these zones into the boat rental agreement to be signed by renters. Ramp users will also be required to sign a list stating they understand the speed zones and potential fines.

3.1.1.9 Chokoloskee Bay and the Barron River

Everglades National Park has the second highest boat collision mortality rate. Since 1976, 13 manatee deaths were attributed to boat collisions. Most of the manatees recovered from the area were in Chokoloskee Bay. Chokoloskee Bay is over 6 miles long and over a mile wide in most places. The average depth of the Bay is less than 3 feet at Mean Lower Low Water.

Manatees are routinely observed in the deeper water of the borrow area along side the Chokoloskee causeway. The area from the mouth of the Barron River out to the first spoil island and then heading in an approximate Southeasterly direction 400 yards of the causeway all the way to Chokoloskee should be designated Slow Speed (See **Figure 3-8**).

SPEED ZONE LEGEND

- | | |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  IDLE SPEED |  MARKED CHANNEL 30 mph |
|  SLOW SPEED | OUTSIDE CHANNEL - SLOW SPEED |
- OTHER AREAS MARKED CHANNEL 30 mph
OUTSIDE THE CHANNELS 20 mph

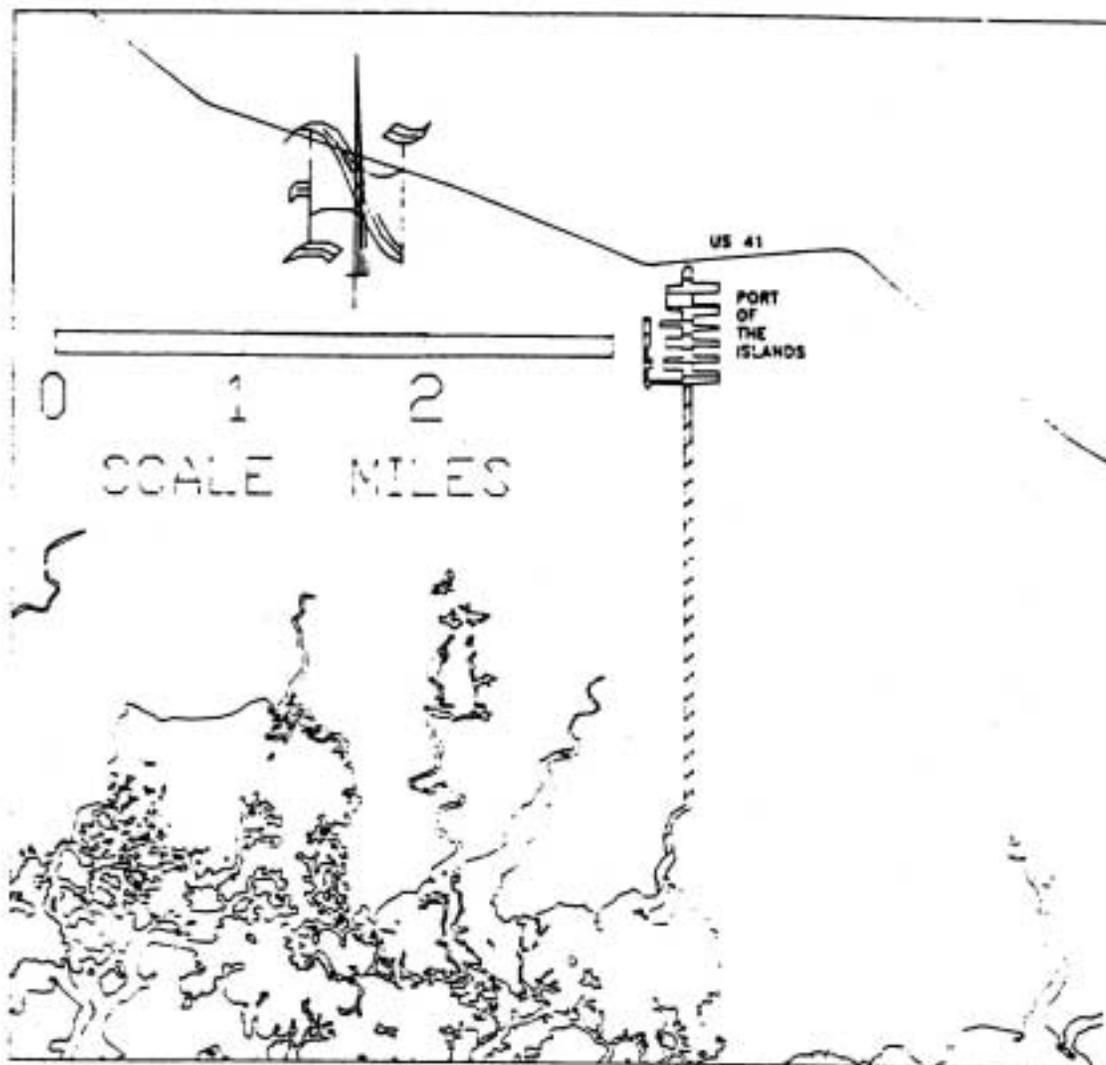


Figure 3-7 Port of the Islands

SPEED ZONE LEGEND

- | | |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  IDLE SPEED |  MARKED CHANNEL 30 mph |
|  SLOW SPEED | OUTSIDE CHANNEL - SLOW SPEED |
| OTHER AREAS MARKED CHANNEL 30 mph | |
| OUTSIDE THE CHANNELS 20 mph | |

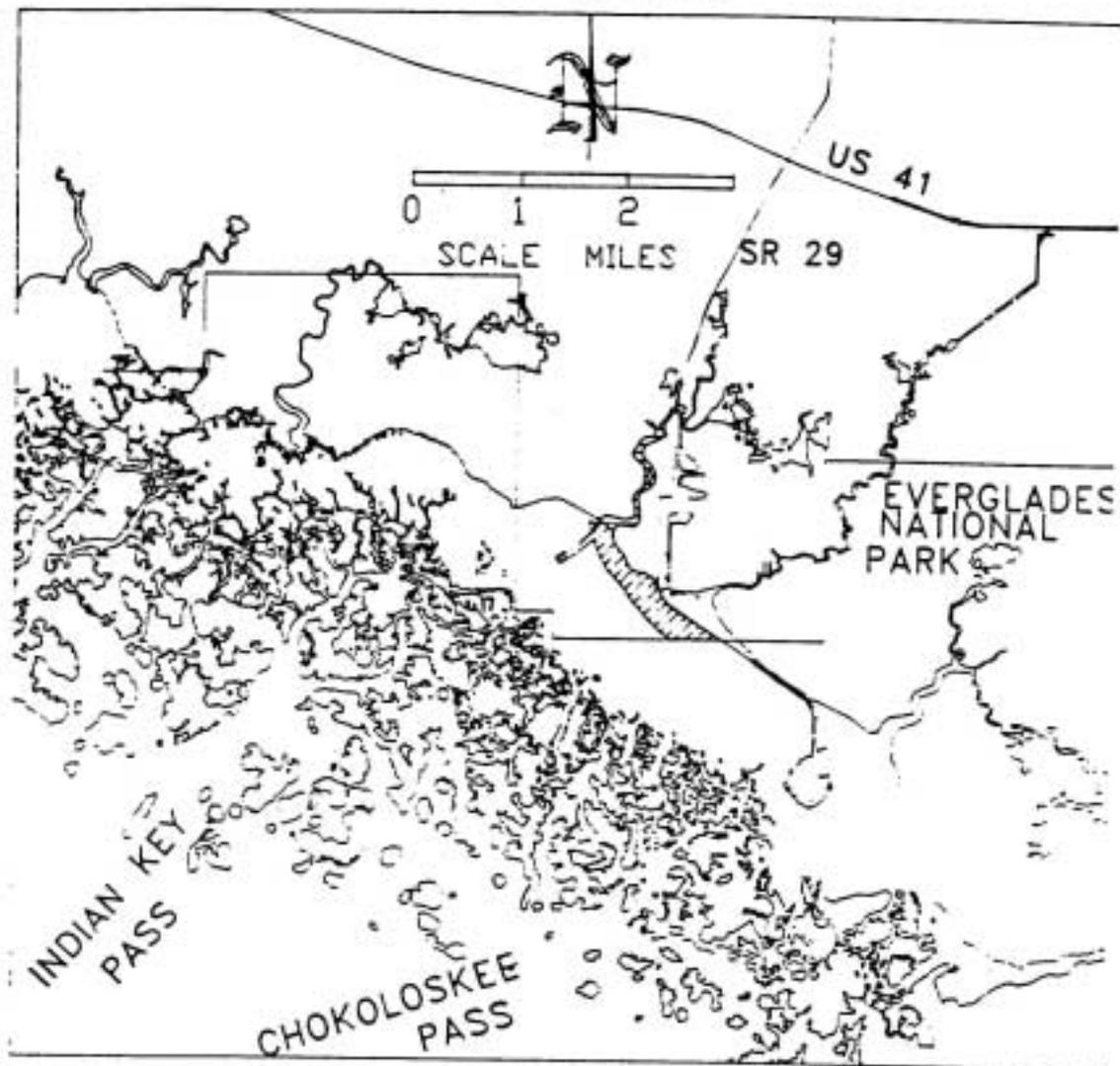


Figure 3-8 Barron River and Chokoloskee Bay

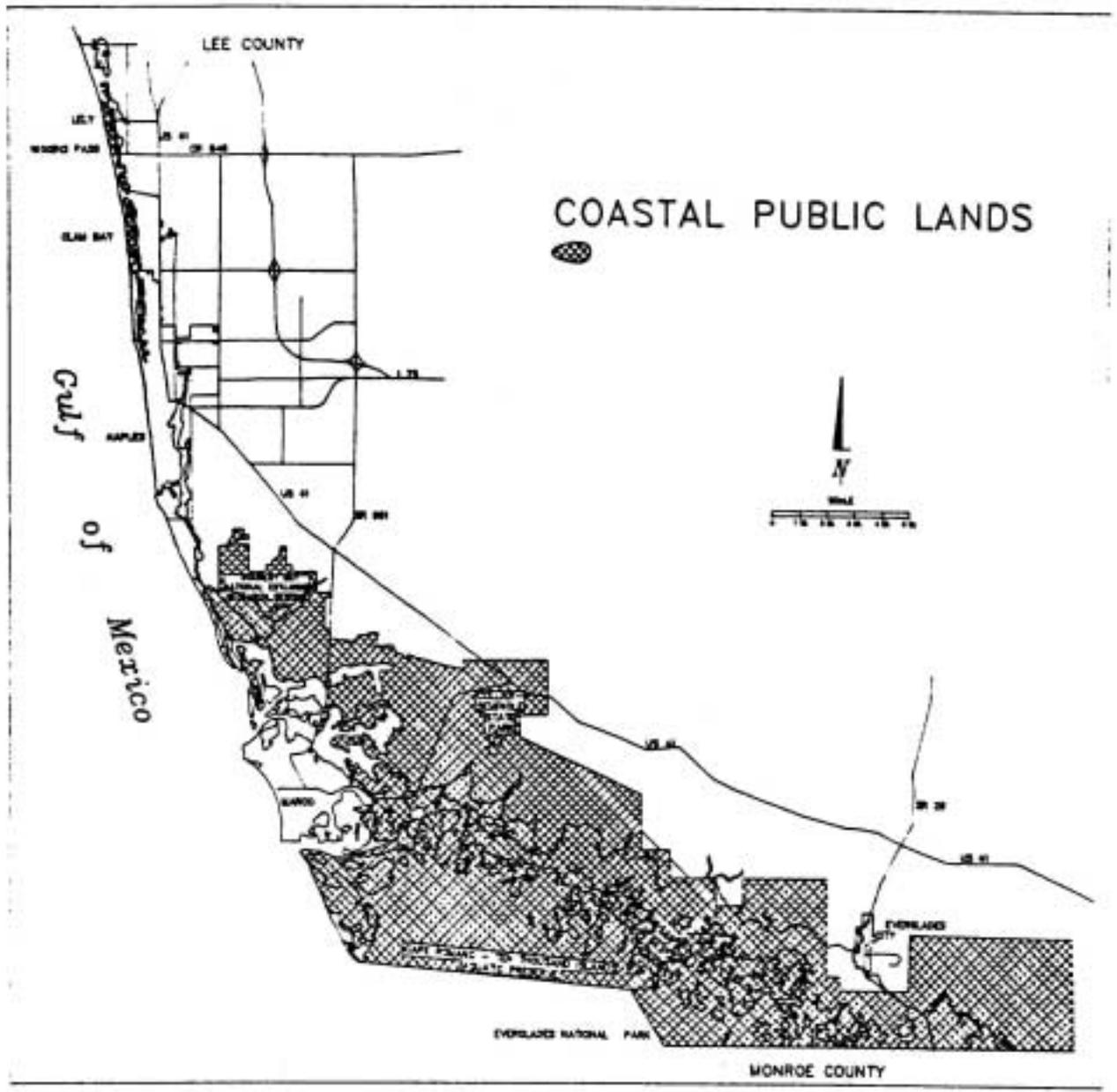


Figure 3-9 State and Federal Parks and Preserves

The Barron River is also a heavily traveled manatee route. Many manatees swim up river to the freshwater canals running along S.R. 29 and U.S. 41. The river extending from the mouth to the S.R. 29 bridge should be designated Idle Speed.

3.2 Marina Siting

Collier County has a linear coastline that extends over 50 miles in length. If all the coastal canals, rivers, bays and islands are included the coastline is literally hundreds of miles long. The vast majority of this coastline is in Public Ownership as parks and preserves (See **Figure 3-9**). For the most part, the areas of state and federal lands extend from Dollar Bay south to the Monroe County line with the exception of Marco Island, Isles of Capri, Goodland, Port of the Islands, Everglades City and Chokoloskee Island. These areas are mostly remote mangrove forested and salt marsh lands which will never be permitted for marina use or other development.

For the purposes of this plan, marina facilities include wet slip marinas, boat yards with water access, and multi-slip residential facilities. Dry storage facilities are only considered in this plan if they have water frontage, and the capability of launching vessels into those waters. Multi-slip residential facilities include condominiums, mobile home park facilities, and neighborhood facilities where boat mooring is concentrated in a common area, rather than individual docks located behind individual residences. This plan does not consider single family docks a marine facility.

3.2.1 Collier County Land Development Code

The Collier County Land Development Code (LDC) will be amended to be consistent with the Manatee Protection Plan. Future rezoning proposals will be evaluated for consistency with the adopted MPP. The procedure to change the zoning involve notice and advertising, two public hearings and approval by a super majority of the Board of County Commissioners, the procedures for which are listed in Division 2.7 of the LDC.

The LDC allows for the construction of private boathouses and docks in the Agricultural and Residential zoning districts (RSF 1-6, RMF-6, 12, 16), and Accessory use in Residential Tourist (RT), Village Residential (VR) and Mobile Home districts. Marinas are permitted in the C-3, C-4, and C-5 commercial districts and in the Community Facilities District as a conditional use. Boat yards and marinas are permitted as a conditional use in the VR district.

Multi-slip docking facilities with 10 slips or more, and all commercial marina facilities shall comply with the stipulations listed in the LDC. The guidelines for the construction of boat houses and docks are listed in LDC Section 2.6.21, and contain language for the protection of seagrass beds and other benthic communities (See Sec. 2.3.2)

3.2.1.1 Recommended Additions to the Land Development Code

The following stipulations are recommended to be appended to the LDC:

1. Proposed developments will be reviewed for consistency with the Manatee Protection Plan adopted by the Collier County Board of County Commissioners and approved by the Florida Department of Environmental Protection.
2. If the location of the proposed development appears to be consistent with the MPP, then the developer will submit a "Manatee Awareness and Protection Plan", which shall address, but not be limited to, the following categories:
 - Education and public awareness
 - Posting and maintaining Manatee Awareness signs
 - Information on type and destination of boat traffic that will be generated from the facility.
 - Monitoring and maintenance of water quality to comply with state standards.

3.2.2 Data Used in Marine Facility Siting Evaluation

A number of data sources were evaluated by County and DEP staff in developing the marine facility siting plan for Collier County. These include:

1. Manatee data
 - Abundance and distribution data
 - Mortality data
 - Ecology and life history information
2. General environmental / hydrographic data
 - Water depths
 - Benthic resources
 - Shoreline condition
3. Boating data
 - Collier County Boating Study
 - Presence of existing or proposed speed zones
 - Presence of existing or proposed marked channels
 - Local knowledge concerning boating patterns and needs

- 4. Land use / human data
 - Current zoning restrictions
 - Road access

3.2.3 Site Specific Recommendations

The following site specific recommendations can be implemented by creating an overlay to the zoning maps and including specific standards. This overlay can then be appended to the LDC.

3.2.3.1 Wiggins Pass Area

The waters of the Wiggins Pass area (See **Figure 3-11**) are very shallow, on average less than 5 feet at Mean Lower Low Water (MLLW). The Army Corps of Engineers designed the Wiggins Pass System for 3 foot draft vessels, and current maintenance dredging permits are based on the 3 foot draft design. All marinas or multi-dock facilities should advise their patrons of this potential draft limitation. Provisions should be made for posting the draft limitation on nautical charts, in notices to mariners and possibly signs at the pass entrance.

3.2.3.2 The Clam Bays

The Clam Bay system (See **Figure 3-12**) is a very shallow enclosed bayed complex. It is made up of three bays interconnected by shallow meandering creeks which wind through a dense mangrove forest. The Clam Bay system contains some of the richest seagrass beds in northern Collier County. The system is currently served by a canoe launching facility which is open to the public. A residential area at the southern end of the system contains the only power driven vessels and they are limited by draft as to when they can operate. In order to protect the shallow benthic habitats no power boat facilities should be permitted for the Clam Bay system.

3.2.3.3 Collier Bay

Collier Bay (See inset **Figure 3-10**) contains extensive seagrass beds. Manatees are known to congregate in this area. Several manatee deaths have occurred in this bay and associate waters. This area is currently posted as an Idle Speed Zone. Because of the presents of manatees in this area and the existence of seagrass beds, it is recommended that the currently imposed 1 power boat slip per 100 feet of shoreline limitation on multi dock facilities remain in effect.

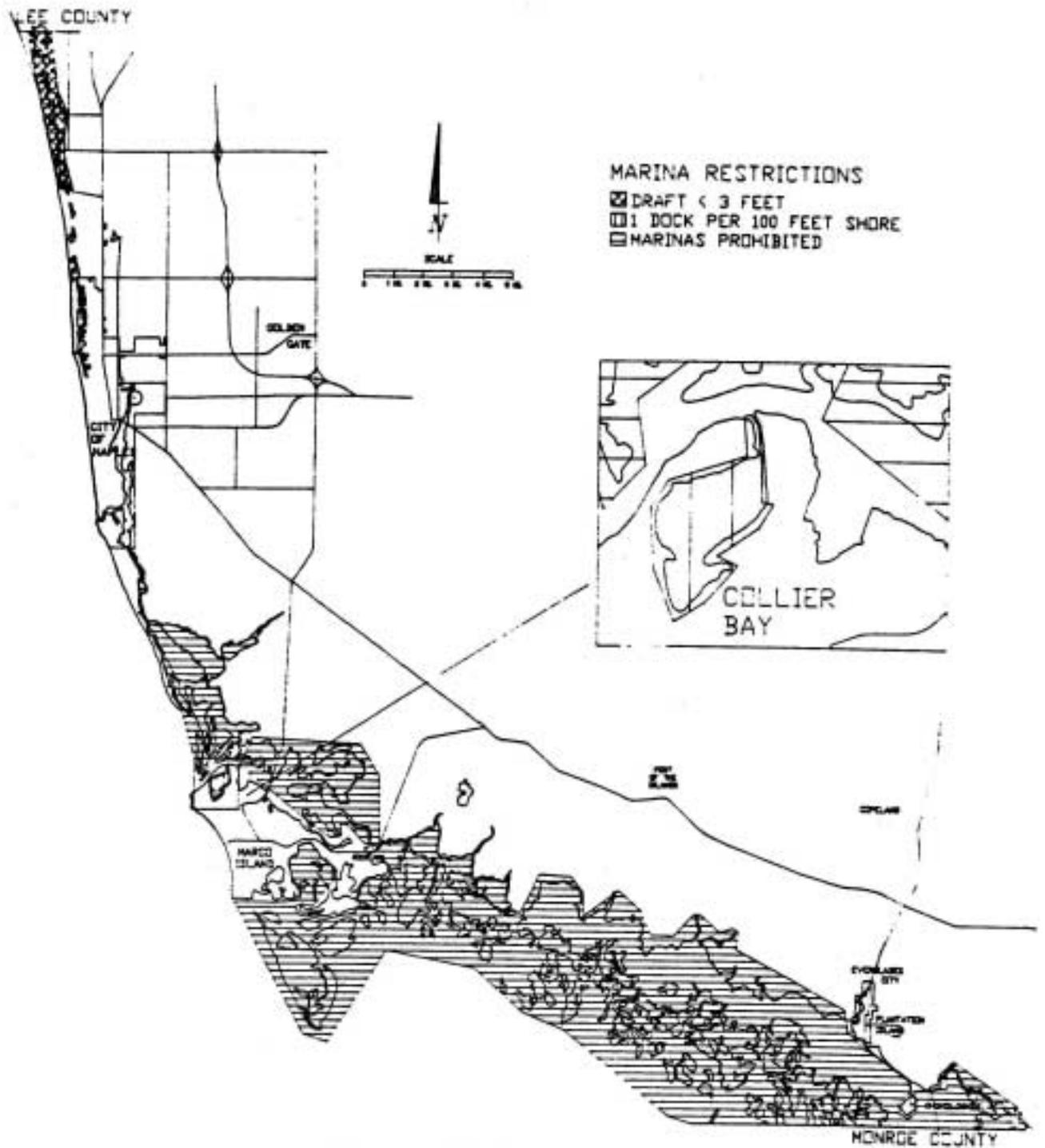


Figure 3-10 Marina Restrictions

3.2.3.4 Port of the Islands

Shoreline development within the seawalled basin at Port of the Islands will be restricted as follows:

1. Single family residential docks should be restricted to one power boat slip per 100 feet of shoreline or increments thereof with one power boat slip allowed for single family property lots with less than 100 feet of shoreline.
2. Multi-family residential docks should be restricted by allowing only marginal wharves along the waterfront of multi-family areas with no finger piers or "T" docks allowed.
3. The commercial marina should be restricted to the total 175 slips currently permitted. If future demands exceed this number then additional slips may be permitted only after proving no further deleterious effects to manatees have occurred subsequent to the adoption of this plan.

Port of the Islands will provide the documentation stating compliance with these recommendations.

3.2.4 Marina Siting Criteria

Collier County and the FDEP's Office of Protected Species Management has developed a rating system for marina siting throughout the remainder of the County. The purpose of the marina site rating system is to help determine the maximum powerboat wet slip densities in order to improve existing manatee protection. The marina site rating system gives a ranking based on three (3) criteria; water depth, native marine habitat and manatee abundance (See **Figures 3-11 - 3-15**).

Adequate water depth in Collier County is considered to be greater than four (4) feet at Mean Low Water (MLW). This premise is based on the fact that the majority of vessels in the county operate at less than two (2) foot draft, allowing two (2) feet of clearance below the keel for manatee protection. This depth requirement may also apply to the area between the proposed facility and any natural or other navigation channel, inlet, pass or deep water. Where necessary, marking of navigational channels may be required.

Native marine habitats include seagrass beds, salt marshes, mangroves or other biologically productive submerged and shoreline habitats which may be adversely affected or destroyed by dredging and filling activities.

Manatee abundance is determined by using the DEP manatee carcass recovery data. Updated data sets will be provided by DEP on an annual basis. While manatees are found throughout Collier County, data indicate that relative manatee use varies between areas, and certain areas can be designated as high manatee use. For the purposes of this plan high manatee use density is considered to be areas where more than 20% of all the watercraft-caused manatee deaths in Collier County have been found.

In evaluating a parcel for a potential boat facility, a minimum sphere of influence for the boat traffic must be designated. For this plan an on-water travel distance of five (5) miles is considered the sphere of influence. This is recognized to be a conservative travel distance since the studies show that some boats travel a significantly greater distance on a frequent basis. This distance was selected because it is an approximate average travel distance from many major boat origination points to the open Gulf, and it is a distance that keeps the spheres of influence of the major areas separate. For example, using this distance the sphere of influence for Everglades City/Chokoloskee area is separate from Port of the Islands, which is separate from Marco/Goodland. Likewise, in the northern part of the County manatee use of the Wiggins Pass area is considered separately for the Doctors Pass area which is separate from the Naples Bay area.

3.2.4.1 Ranking Criteria

A ranking of Preferred is given to a site that has or can legally create adequate water depth and access, will not impact native marine habitats, and will not impact a high manatee use area (See **Table 3-1**). A Moderate ranking is given when: there is adequate water depth and access, will not impact a high manatee area, but will impact native marine habitat; there is adequate water depth, no impact to native marine habitat, but will impact a high manatee use area; and when the water depth is less than four (4) feet MLW, will not impact native marine habitat, and will not impact a high manatee area. A Protected ranking is given to an area when: there is adequate water depth and access, but will impact native marine habitat and will impact a high manatee use area; there is not adequate water depth, will impact or destroy native marine habitat and will impact a high manatee use area; there is not adequate water depth, will not impact marine habitat; and will impact a high manatee use area; and there is not adequate depth will impact marine habitat and will not impact a high manatee use area.

MARINA SITING CRITERIA

LEGEND

▨ Adequate Depth
(> 4 ft MLW)

⊕ Native Habitat

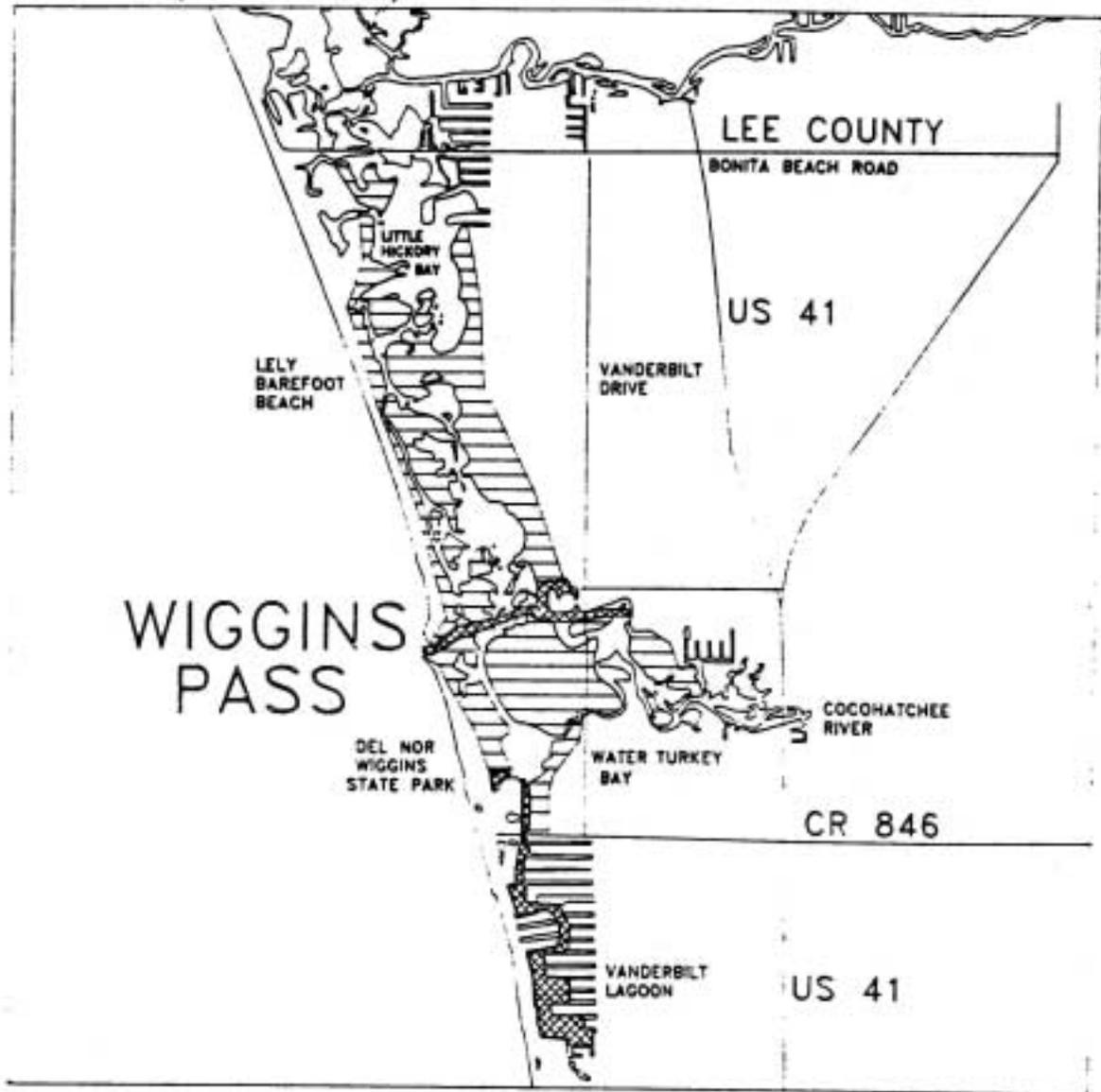


Figure 3-11 Wiggins Pass Area

MARINA SITING CRITERIA

LEGEND

☒ Adequate Depth
(> 4 ft MLW)

☐ Native Habitat

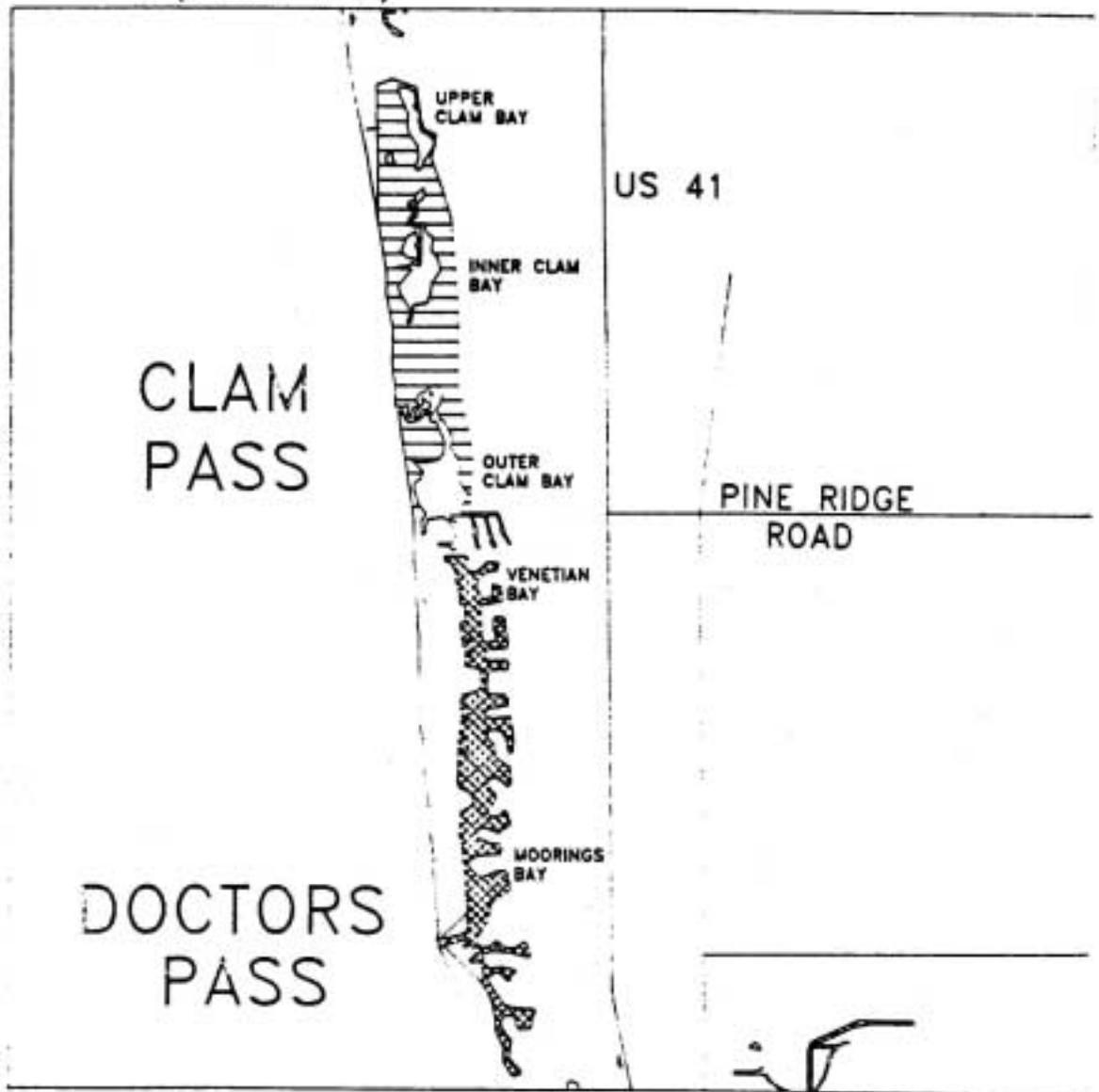


Figure 3-12 Doctors Pass (City of Naples)

MARINA SITING CRITERIA

LEGEND

 Adequate Depth
(> 4 ft MLW)

 Native Habitat

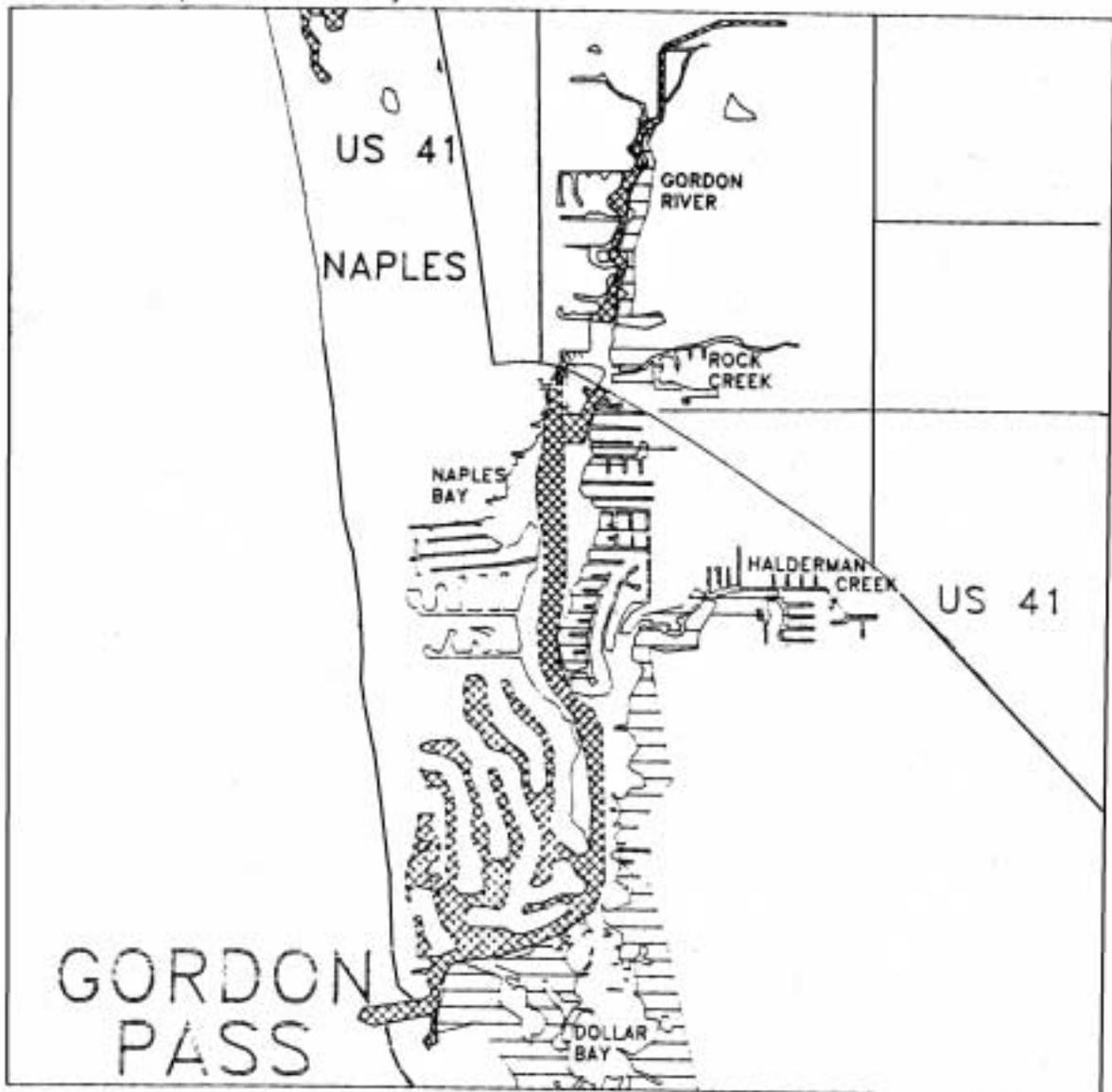


Figure 3-13 Gordon Pass Area (City of Naples)

MARINA SITING CRITERIA

LEGEND

 Adequate Depth
(> 4 ft MLW)

 Native Habitat

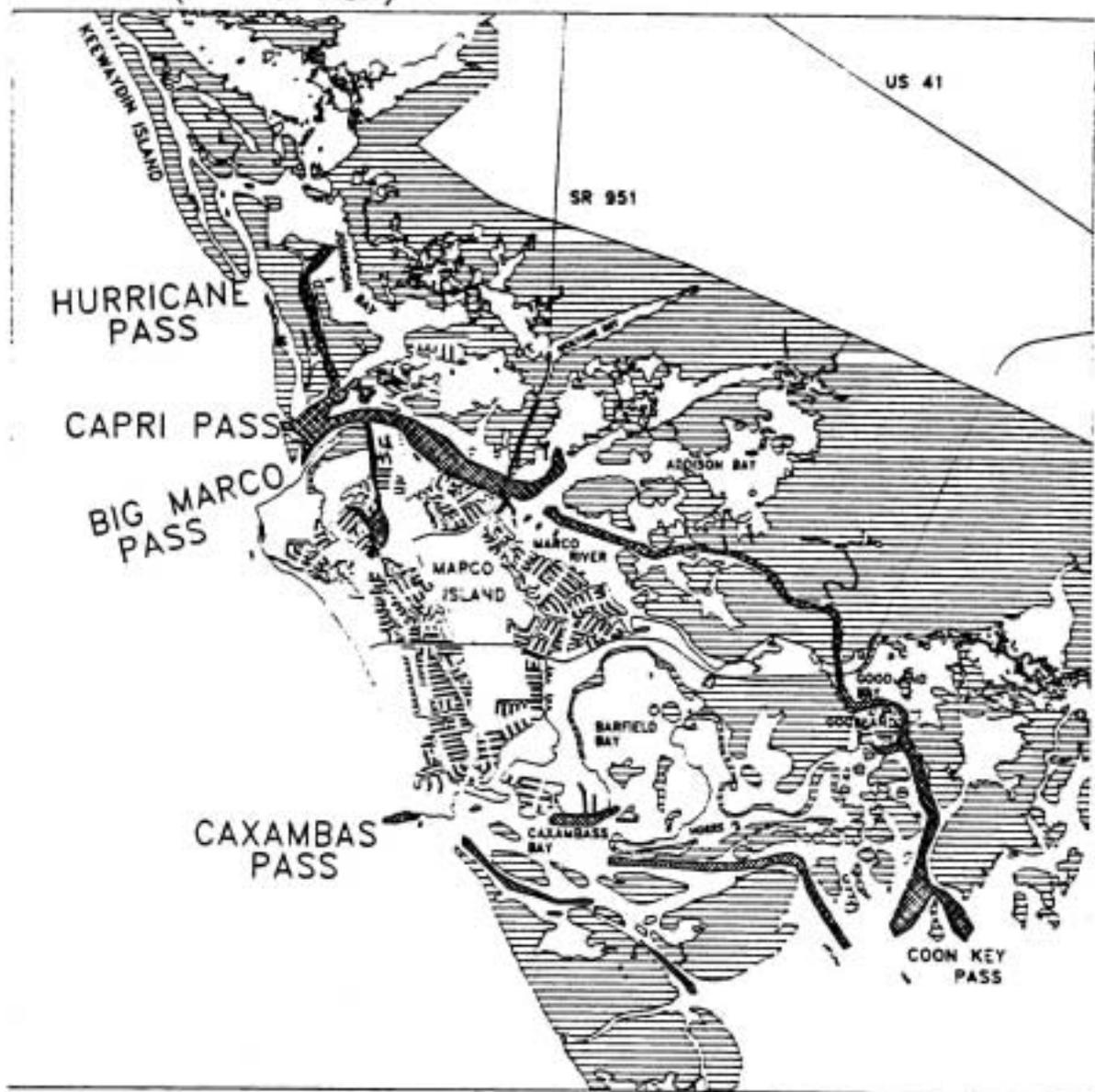


Figure 3-14 Marco Island and Goodland

MARINA SITING CRITERIA

LEGEND

 Adequate Depth
(> 4 ft MLW)

 Native Habitat

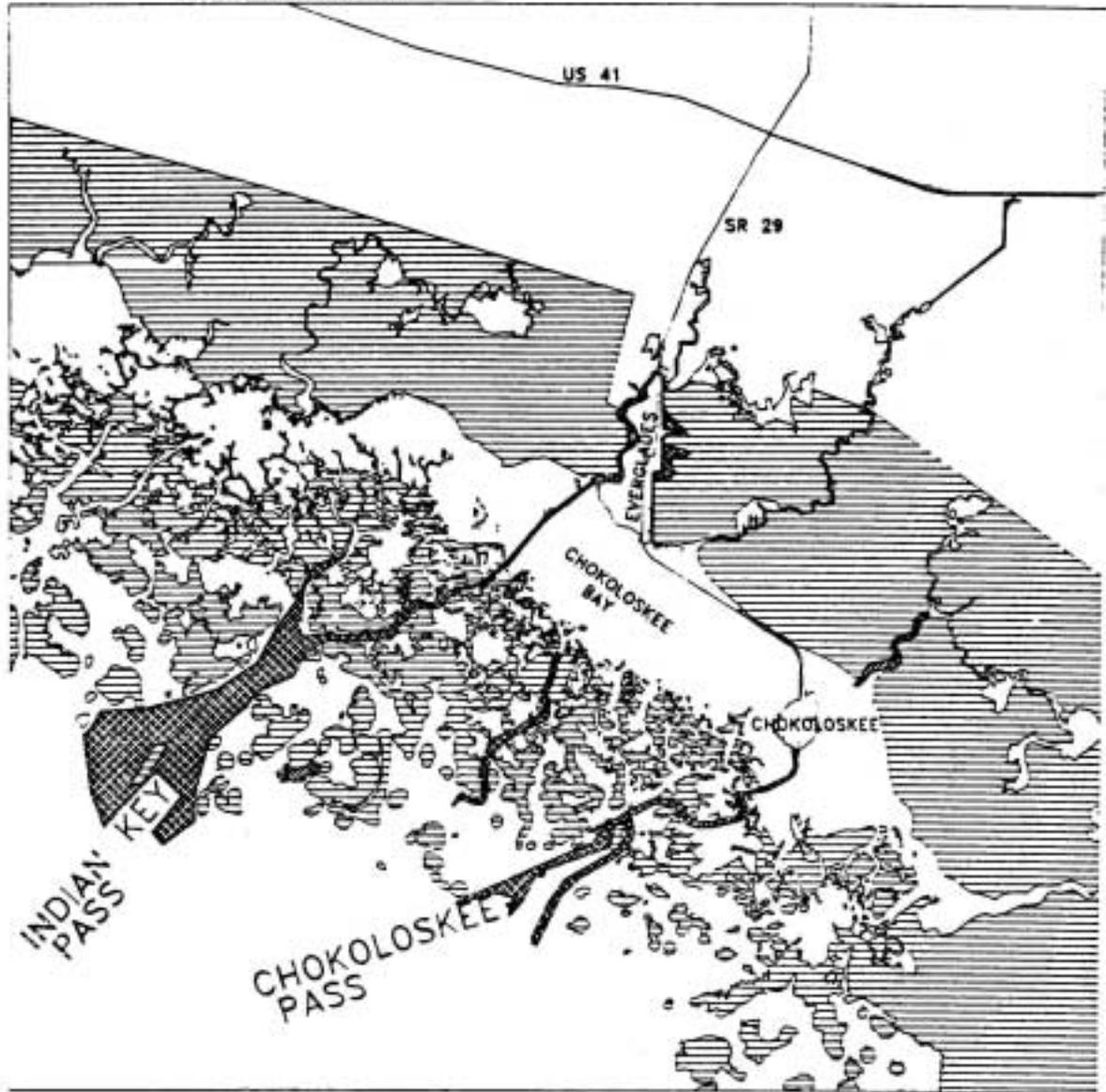


Figure 3-15 Everglades City and Chokoloskee Island

MARINA SITING CRITERIA

	Water Depth		Native Marine Habitat		Manatee Use	
	Greater Than 4' MLW	Less Than 4' MLW	No Impact ¹	Impact	Not High	High
PREFERRED	X		X		X	
MODERATE	X		X			X
MODERATE	X			X	X	
MODERATE		X	X		X	
PROTECTED	X			X		X
PROTECTED		X		X		X
PROTECTED		X	X			X
PROTECTED		X		X	X	

(1) For shoreline vegetation such as mangroves, no impact is defined as no greater than 5% of the native marine habitat is disturbed. For sea grasses, no impact means that no more than 100 square feet of sea grasses can be impacted.

Table 3-1 Marina Siting Criteria & Allowable Wet Slip Densities

Preferred Sites.

New or expanded wet slip marinas and multi-family facilities:
Shall be allowed at a density of 18 boat slips for every 100 feet of shoreline.

Dry Storage facilities:
Expansion of existing and construction of new facilities allowed.

Boat Ramps:
Expansion of existing and construction of new ramps allowed.

Moderate Development Sites.

New or expanded wet slip marinas and multi-family facilities:
Shall be allowed at a density of 10 boat slips for every 100 feet of shoreline.

Dry Storage facilities:
Expansion of existing allowed, construction of new facilities prohibited.

Boat Ramps:
Expansion of existing ramps allowed, construction of new ramps prohibited

Protected Sites.

New or expanded wet slip marinas and multi-family facilities:
Shall be allowed at a density of 1 boat slip for every 100 feet of shoreline.

Dry Storage facilities:
Expansion of existing or construction of new facilities prohibited.

Boat Ramps:
Expansion of existing or construction of new ramps prohibited

3.2.4.2 Mitigation

If a potential boat facility site is ranked as moderate or protected because of its proximity to a high use manatee area, its ranking can be increased if Slow Speed zones are established that account for a significant portion of the expected travel route of the boats using the proposed facility. In that case, the manatee criteria in the three way test (See **Table 3-1**) would not effect the outcome of the ranking. For example, if a site had greater than four (4') feet water depth, and had no impact to marine habitat, but had a high manatee use area within five (5) miles, it would be ranked as Moderate according to the table. However, if the major boat travel route was regulated as Slow Speed, the ranking would be increased to Preferred. If such Slow Speed zones are not existing, the County may establish, with DEP approval, additional Slow Speed zones in order to mitigate the proposed additional boat traffic.

3.2.4.3 Implementation

In conjunction with **Table 3-1** and **Figures 3-11 - 3-15**, it is possible to determine the approximate areas where the recommended maximum allowable densities will be applied. The exact areas

will depend on site specific data gathered during the site development process reviews.

This rating system does not preclude the existing zoning and density regulations required by the current Collier County Land Development Code (LDC). This system shall be used to determine the allowable maximum powerboat wetslip densities within future marina sites for the purpose of manatee protection. These criteria will be applied at the appropriate time of receiving a County permit. An amendment to the LDC will be necessary to implement these criteria.

Existing facilities and facilities which had State or Federal permits pending prior to adoption of the County Manatee Protection Plan shall be exempt from its provisions, but will be subject to the LDC. Manatee related restrictions which have been placed but which would not be required under this plan shall be lifted upon the plans adoption.

3.2.4.4 City of Naples

The Naples City Council passed Ordinance 94-7282 which amends Section 114-134(a) of the Code of Ordinances. The Ordinance addresses the Marina Site Ranking Criteria proposed by the County.

As in the County, the rating system does not preclude the existing zoning and density regulations required by the current city Building Code. This system shall be used to determine the allowable maximum powerboat wetslip densities within future marina sites for the purpose of manatee protection. These criteria will be applied at the appropriate time of receiving a City permit.

3.3 Education, Research, and Awareness

Education and public awareness may be the most important elements in a viable protection plan for any species or habitat. In order for a protection plan to be truly effective, it is necessary for the public to understand the problems facing the continued survival of the Florida manatee, the reasons why the species should be protected, and the ways that humans can aid in its recovery. In addition, more research information is needed on manatee physiology, habitat needs, and behavior. The cause of death for 36% of recovered manatee carcasses could not be determined. Many of these carcasses were severely decomposed before they were recovered (State of Florida DNR, 1990a). For the above reasons, it is strongly recommended that education, research, and awareness programs, as well as increased recovery efforts, head the list of priorities for the County's manatee protection program.

3.3.1 Education

County environmental staff should coordinate with the local school board regarding environmental education. Programs should be adapted for grades K through 12 and include information about the Florida manatees and how they can recover from their endangered status. Field trips to see manatees in the wild and in captivity, as well as field trips to essential manatee habitat, should be part of the program.

3.3.2 Public Awareness

Brochures should focus on the rationale and provisions for regulations, as well as encouraging the public to take precautions outside of designated restricted zones. Information regarding manatee behavior and habitat needs should also be included. Such information may include feeding preferences, areas within the county where manatees are known to congregate, the fact that manatees prefer shoreline areas and channel margins, descriptions of critical manatee habitat areas and how to preserve them, etc. Brochures should be distributed at public boat ramps, boat rental facilities, marinas, boat registration offices, safe boating courses and federal, State, and County park facilities.

The Collier County Natural Resources Department recently authored a 4-fold informational brochure regarding manatee protection. The brochure will be included in all boater registration mailings in Collier County (estimated 20,000 per year). The brochure includes general information regarding the Florida manatee, a map of designated protection and speed restriction zones, citations of the enabling legislation, and information on what boaters could do to help protect manatees.

The Rookery Bay National Estuarine Research Reserve is currently developing a brochure that will help guide boaters through a portion of the County's back bay system. The brochure is primarily directed to rental boat operators, but the contained information will be of help and interest to all boaters. The brochure contains a color coded navigational chart of the area extending from the north end of Rookery Bay to the ABC Bird Islands east of the Judge Jolly Bridge. The color guide will indicate areas of adequate water depth for safe boating operations, areas where caution must be taken, and areas too shallow and must be avoided. The brochure also contains information on seagrasses and manatees.

Preliminary plans are to laminate a number of brochures to be attached to the control console of area rental boats. Anecdotal information indicates that the greatest number of groundings are by rental boat operators. These rental boat operators are unfamiliar with the boating conditions in the back bay waters and cause extensive damage to shallow seagrass beds. The rental boat

dealers are in favor of this plan because unintentional groundings cause damage to their boats and motors.

The Collier County Marine Trades Association (CCMTA) has expressed a great deal of interest in this plan and would like to expand the concept throughout the rest of the County. The back bay areas of Collier County offer a great deal of recreational enjoyment to boaters, however, unfamiliarity with existing conditions can cause considerable harm to both boaters and the environment. Informational brochures explaining local conditions can help insure the safe and competent operation of all watercraft.

3.3.3 Research

County environmental staff should coordinate with FDEP and USFWS for the purpose of assisting in manatee research. The County can contribute to sighting studies and habitat usage by the Florida manatee within Collier County. Studies should also be coordinated with those of bordering counties, specifically Lee and Monroe Counties, and with the Biology Department of Edison Community College.

4.0 RECOMMENDATIONS and IMPLEMENTATION

4.1 Boat Speed Regulation

4.1.1 For the purpose of manatee protection, Collier County shall adopt by Resolution the State Rule that will establish Idle Speed zones in the following locations:

- 1.) Little Hickory Cove (See **Figure 3-1**)
- 2.) The Clam Bay System (See **Figure 3-2**)
- 3.) The Barron River (See **Figure 3-8**)

4.1.2 For the purpose of manatee protection and boater's safety, Collier County shall adopt by Resolution the State Rule that will establish Slow Speed zones in the following locations:

- 1.) Little Hickory Bay to Wiggins Pass (See **Figure 3-1**)
- 2.) The Inland Waterway (See **Figure 3-4**)
- 3.) The Rookery Bay and Johnson Bay area (See **Figure 3-4**)
- 4.) The Marco River and associated waters (See **Figure 3-5**)
- 5.) McIlvane Bay Bridge (See **Figure 3-5**)
- 6.) Goodland Bay (See **Figure 3-6**)
- 7.) Caxambas Bay (See **Figure 3-6**)
- 8.) The area in Chokoloskee Bay extending from the mouth of the Barron River out to the first spoil island and then heading in an approximate Southeasterly direction 400 yards off the causeway to Chokoloskee (See **Figure 3-8**).

4.2 Habitat Protection

4.2.1 To protect shallow seagrass beds located adjacent to boat channels additional channel markers shall be placed in the following locations:

- 1.) The Inland Waterway from marker 29 to 27, from marker 16 to 14, and the south end of Johnson Island.
- 2.) The Marco River from marker 15 west of the Judge Jolly Bridge (CR 951) to marker 25 east of the bridge.

4.2.2 To protect the remaining seagrass meadows from further degradation from upland water sources, Collier County shall continue the water quality monitoring program at watershed outlets entering the bays and backwaters which flow into the seagrass beds.

4.3 Shoreline Development

4.3.1 For manatee protection during the construction of marinas and multi-boat facilities the following are recommended additions to the Collier County Land Development Code:

- 1.) A manatee protection plan shall be submitted by the development, which shall address, but not be limited to, the following categories:
 - Education and public awareness
 - Posting and maintaining Manatee Awareness signs
 - Information on type and destination of boat traffic that will be generated from the facility.
 - Monitoring and maintainance of water quality to comply with state standards.

4.3.2 The waters of the Wiggins Pass area are very shallow, on average less than 5 feet at Mean Lower Low Water (MLLW). The Army Corps of Engineers designed the Wiggins Pass System for 3 foot draft vessels, and current maintenance dredging permits are based on the 3 foot draft design. All marinas or multi-dock facilities shall advise their patrons of this potential draft limitation. This shall be implemented by creating an overlay to the Official Zonning Map, providing specific standards and amending the LDC.

4.3.3 The Clam Bay system is a very shallow enclosed bayed complex. It is made up of three bays interconnected by shallow meandering creeks which wind through a dense mangrove forest. The Clam Bay system contains some of the richest seagrass beds in northern Collier County. The system is currently served by a canoe launching facility which is open to the public. A residential area at the southern end of the system contains the only power driven vessels and they are limited by draft as to when they can operate. In order to protect the shallow benthic habitats, and due to the ephemeral nature of Clam Pass, no power boat facilities shall be permitted for the Clam Bay system. This shall be implemented by creating an overlay to the Official Zonning Map, providing specific standards and amending the LDC.

4.3.4 Collier Bay contains extensive seagrass beds. Manatees are known to congregate in this area. Several manatee deaths have occurred in this bay and associated waters. This area is currently posted as an Idle Speed Zone. Because of the presence of manatees in this area and the existence of seagrass beds, the currently imposed 1 power boat slip per 100 feet of shoreline

limitation on multi dock facilities shall remain in effect. This shall be implemented by creating an overlay to the Official Zonning Map, providing specific standards and amending the LDC.

4.3.5 Collier County shall adopt the Marina Siting Criteria and Density Limits (as listed in Section 3.2.3), and amend them to the Land Development Code.

4.3.6 The City of Naples has adopted the Marina Siting Criteria and supports the Collier County Manatee Protection Plan (See **Appendix D**).

4.3.7 The City of Everglades City has approved and supports the Collier County Manatee Protection Plan (See **Appendix F**).

4.4 Education and Public Awareness

4.4.1 County environmental staff shall coordinate with the local school board regarding environmental education. Programs should be adapted for grades K through 12 and include information about the Florida manatees and how they can recover from their endangered status. Field trips to see manatees in the wild and in captivity, as well as field trips to essential manatee habitat, should be part of the program.

4.4.2 Brochures shall be printed which focus on the rationale and provisions for regulations, as well as encouraging the public to take precautions outside of designated restricted zones. Information regarding manatee behavior and habitat needs should also be included. Such information may include feeding preferences, areas within the county where manatees are known to congregate, the fact that manatees prefer shoreline areas and channel margins, descriptions of critical manatee habitat areas and how to preserve them, etc. Brochures should be distributed at public boat ramps, boat rental facilities, marinas, boat registration offices, safe boating courses and federal, State, and county park facilities.

4.5 Research

4.5.1 County environmental staff shall continue to coordinate with FDEP and USFWS for the purpose of assisting in manatee research. The County can contribute to sighting studies and habitat usage by the Florida manatee within Collier County. Studies should also be coordinated with those of bordering counties, specifically Lee and Monroe Counties, and with the Biology Department of Edison Community College

4.6 Port of the Islands

Port of the Islands and the Faka-Union Canal contains the highest concentration of manatees in Collier County especially during the winter season. Because of the high concentration of manatees present in this area special consideration must be given for this location. Increased manatee awareness by both the resident and transient boaters is essential for protecting the manatees. The County should encourage the Port of the Islands Homeowners Association to adopt the following:

4.6.1 Port of the Islands should be required to include a manatee informational brochure in the closing documents of all real estate transactions on the waterfront. This brochure will include general information on manatees and how to spot them along with details of the POI speed zones and the maximum fine of \$500.00 for violating these zones

4.6.2 POI should incorporate a description of the speed zones and potential fines for violating these zones into the boat rental agreement to be signed by renters. Ramp users will also be required to sign a list stating they understand the speed zones and potential fines.

4.6.3 Shoreline development within the manatee sanctuary at Port of the Islands will be restricted as follows:

1. Single family residential docks should be restricted to one power boat slip per 100 feet of shoreline or increments thereof with one power boat slip allowed for single family property lots with less than 100 feet of shoreline.
2. Multi-family residential docks should be restricted by allowing only marginal wharves along the waterfront of multi-family areas with no finger piers or "T" docks allowed.
3. The commercial marina should be restricted to the total 175 slips currently permitted. If future demands exceed this number then additional slips may be permitted only after proving no further deleterious effects to manatees have occurred subsequent to the adoption of this plan.

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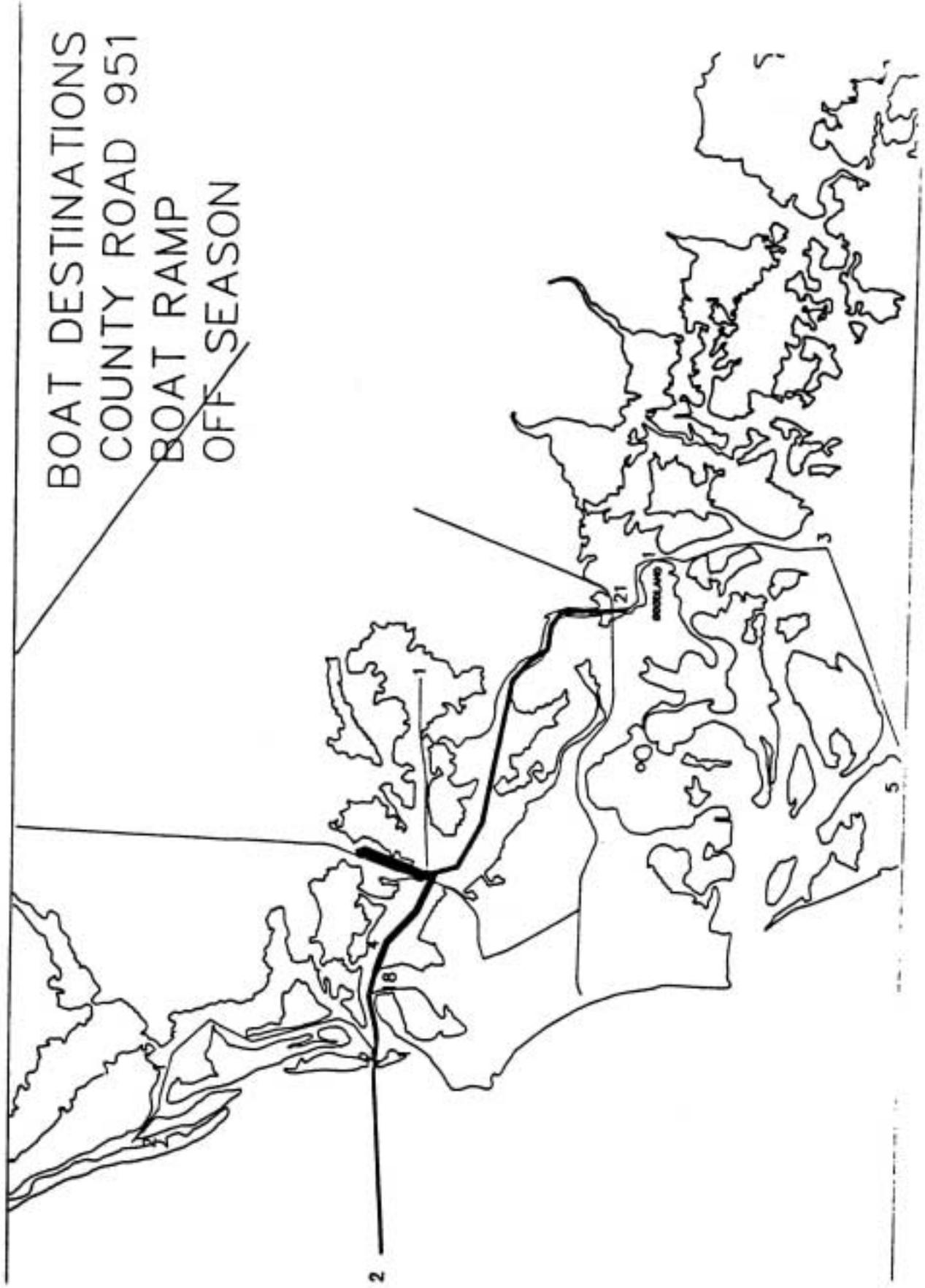
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A P P E N D I X A

The following information was excerpted from the 1994 Collier County Boating Study and Facility Inventory.



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BOAT RAMP
OFF SEASON

2

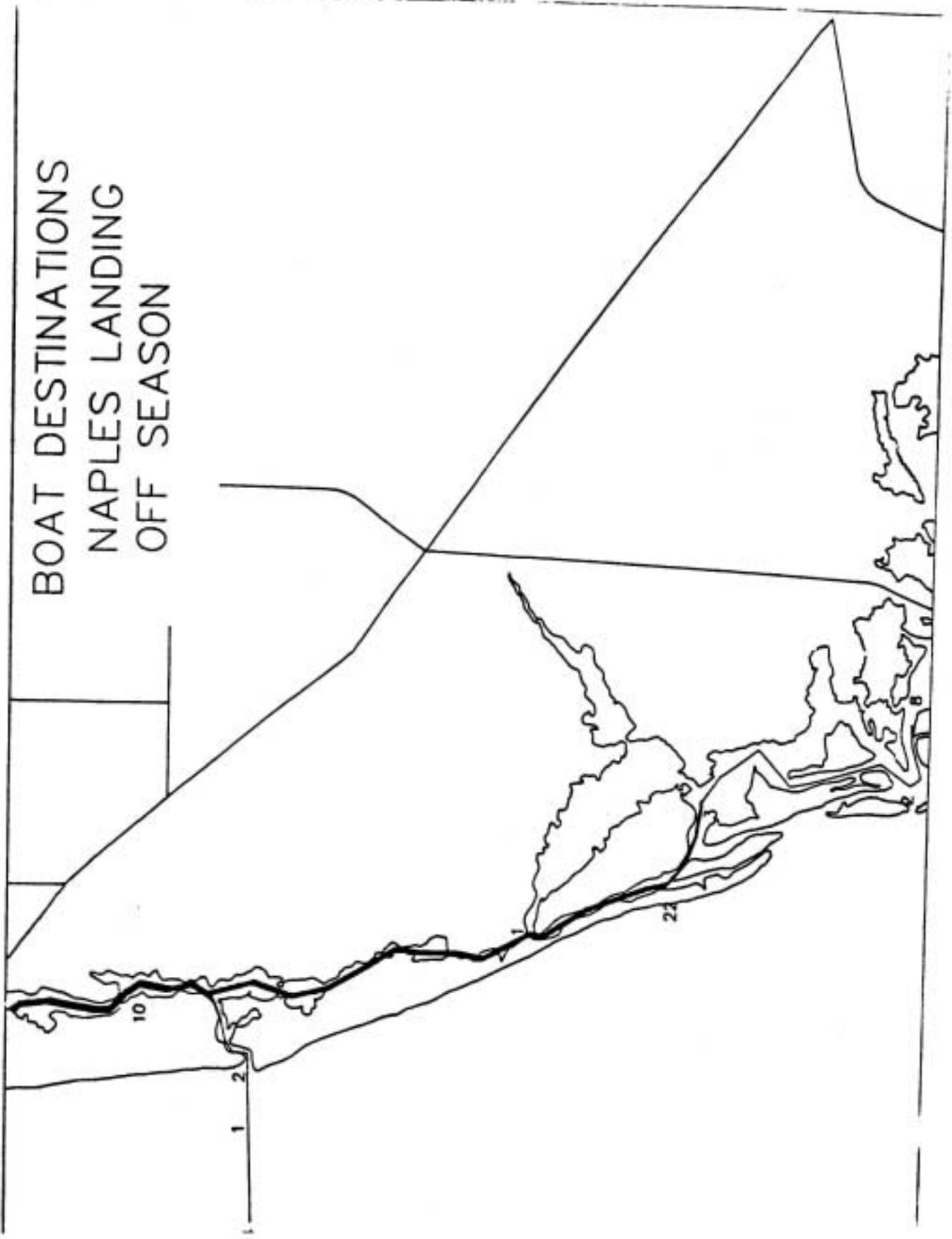
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ROCKLAND

5

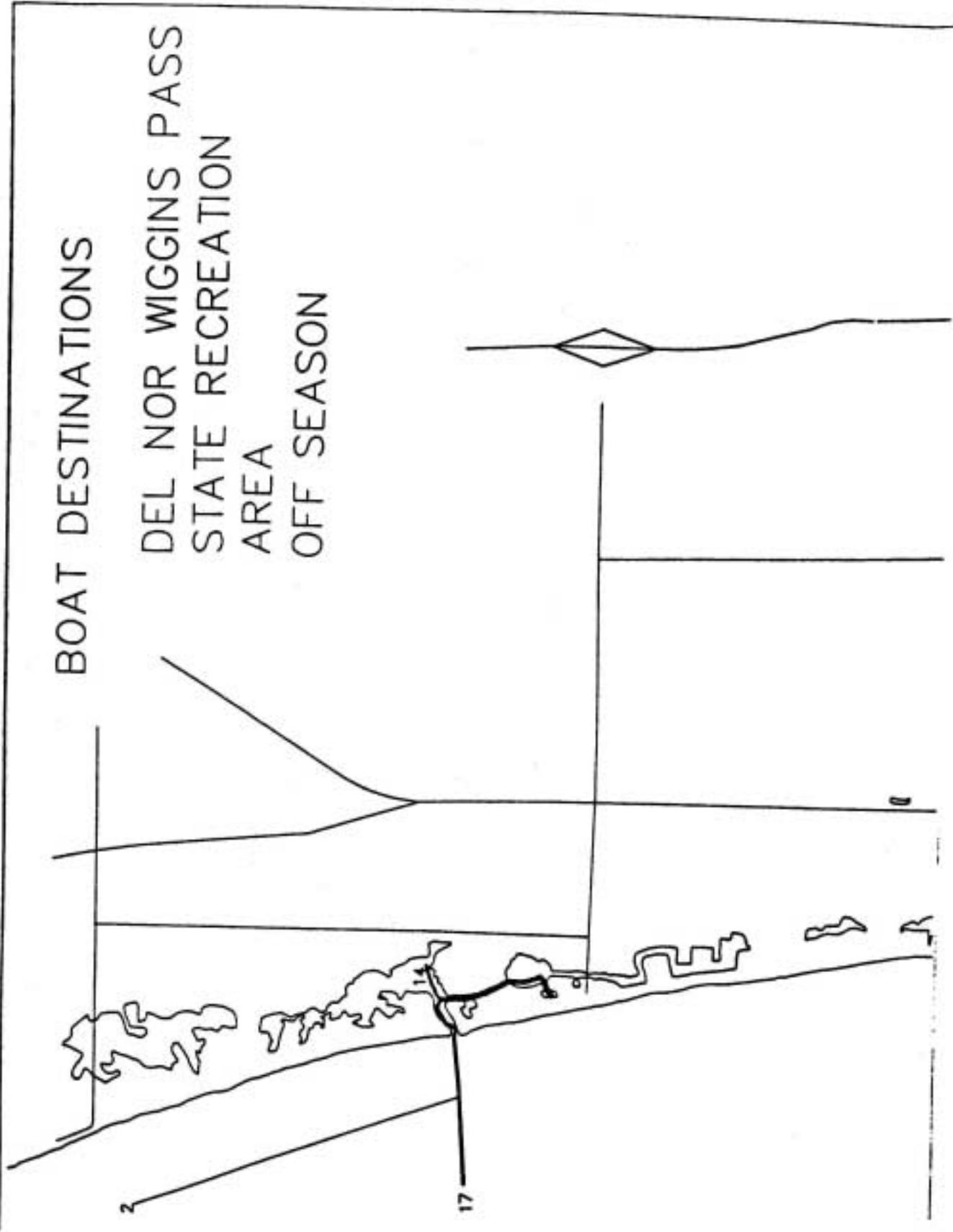
12

BOAT DESTINATIONS
NAPLES LANDING
OFF SEASON

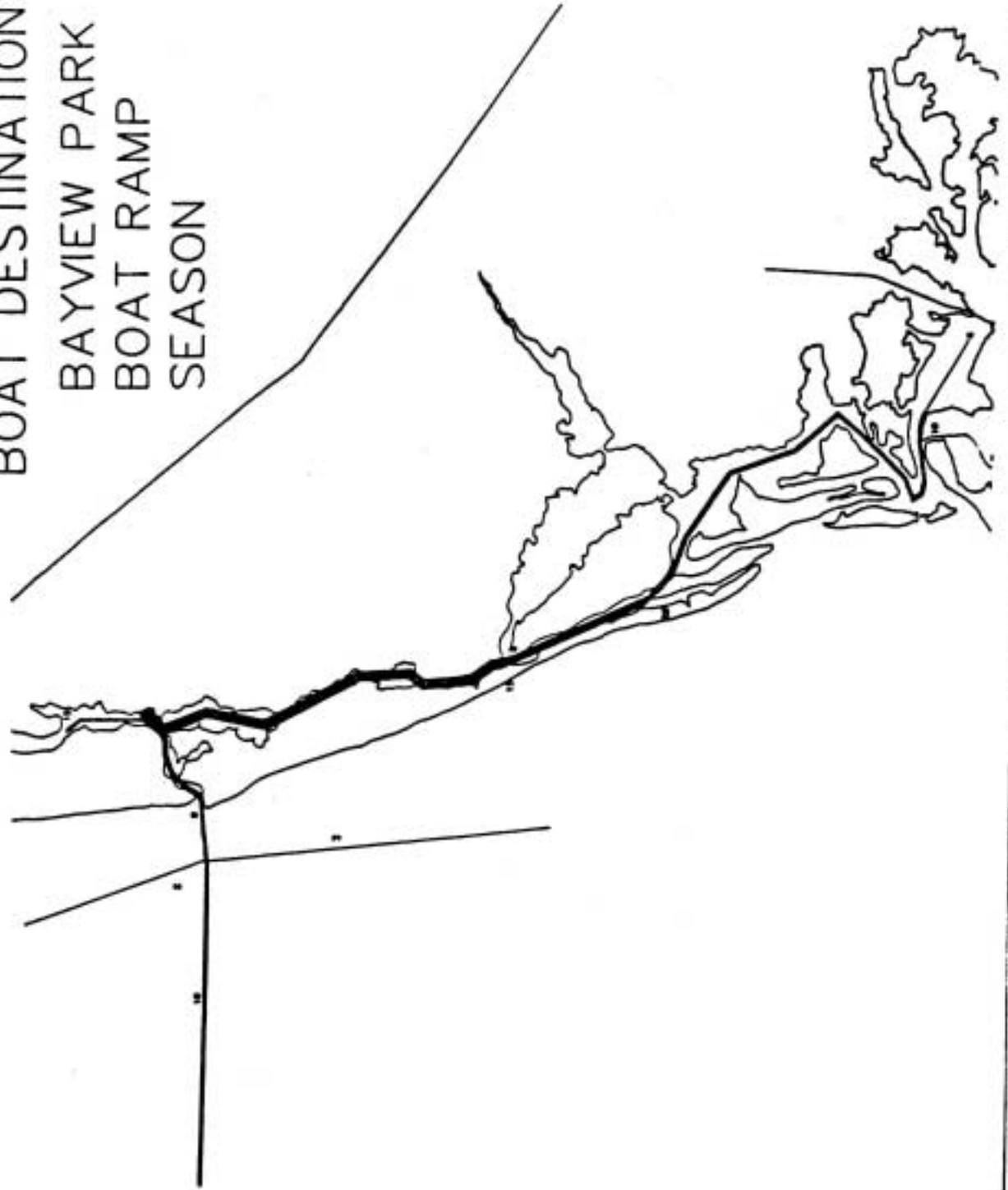


BOAT DESTINATIONS

DEL NOR WIGGINS PASS
STATE RECREATION
AREA
OFF SEASON

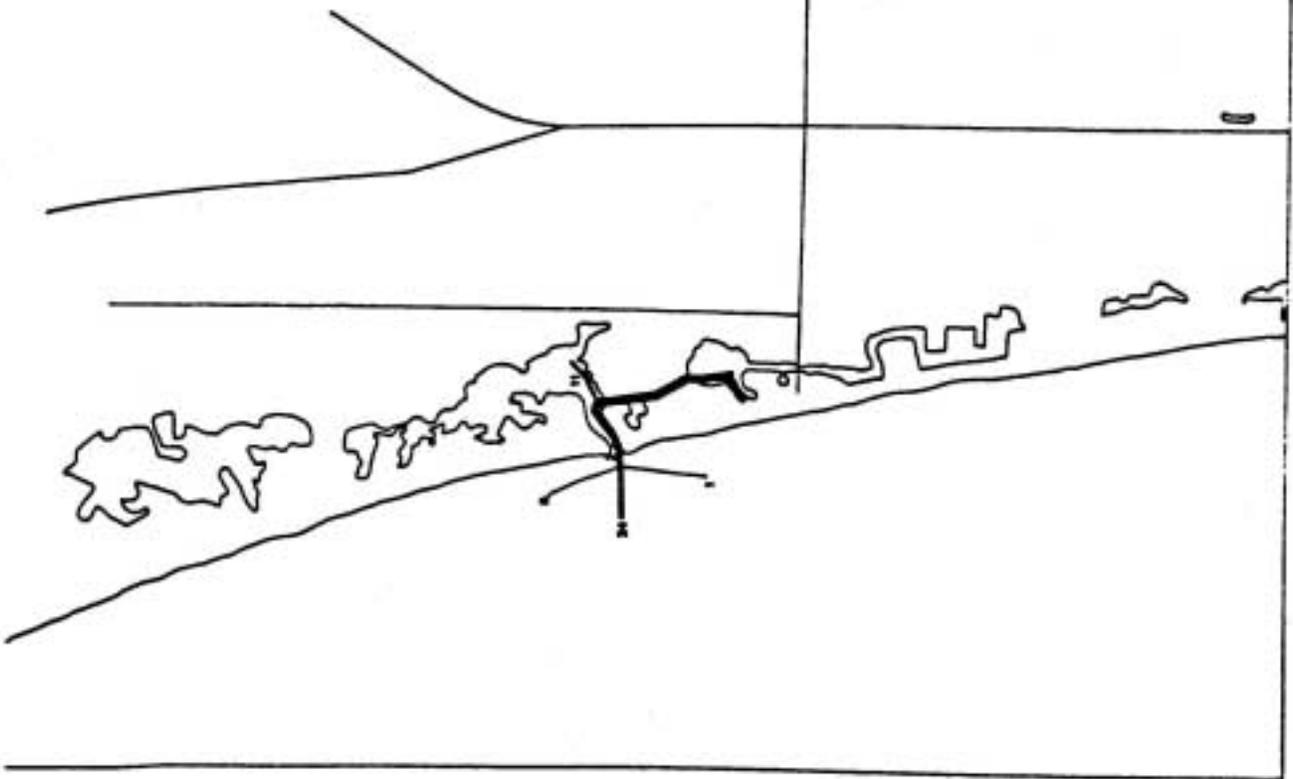


BOAT DESTINATIONS
BAYVIEW PARK
BOAT RAMP
SEASON



BOAT DESTINATIONS

DEL NOR WIGGINS PASS
STATE RECREATION
AREA
SEASON



BOAT DESTINATIONS
CAXAMBAS RAMP
SEASON



Table 3

Ramp Destinations - Season

See Maps 6-11 (Pages 87-92).

DESTINATIONS	DEPARTURE POINT					Total	
	ORS	DNW	NPL	BVP	CRB		CXR
Addison Bay					2		2
Backwaters**	6	11		12	14	25	68
Big Marco Pass					2		2
Blind Pass						1	1
Cape Romano					2	7	9
Caxambas Pass						10	10
Chokoloskee Bay	6						6
Coconut Is					2		2
Dismal Key						1	1
Doctors Pass				1			1
Everglades City				1		1	2
Flotilla Channel					2		2
Goodland				2	11	4	17
Gordon Pass				9			9
Gulf of Mexico	2	24	1	19	14	26	86
Gullivan Bay					1	2	3
Horr's Is						1	1
Hurricane Pass				1	1	1	3
Inland Waterway				3	3		6
Keewaydin Is			2	29	15		46
Kice Is						14	14
Little Marco Is				1			1
Marco Is		1	1	19	9	5	35
Marco River					11	2	13
Naples Bay			4	15	5	1	25
Outside County	12	8		1	2		23
Rabbit Key Pass	1						1
Rookery Bay			1	6	5		12
Tarpon Bay	1						1
10,000 Islands	9				2	7	18
Whitehorse Key						1	1
Wiggins Pass		2					2

*Data from 18 Jan., 10 Mar., and 3 Apr. ramp surveys.

**Backwaters refers to unspecified inland waters of Collier County

Ramp Destination

ORS - Outdoor Resorts DNW - Del-Nor Wiggins State Park
 NPL - Naples Landing BVP - Bayview Park
 CXR - Caxambas Pass Park CRP - Cocohatchee River Park
 CRB - County Road 951 Boat Ramp

Table 4

Ramp Destinations - Offseason*

See Maps 12-17 (Pages 93-98)

DESTINATION	DEPARTURE POINT					Total
	CRP	DNW	NPL	BVP	CRB	
Addison Bay					1	1
Backwaters**	10	14	3	7	21	63
Big Marco Pass					1	1
Blind Pass						1
Cape Romano					3	8
Capri Pass					2	2
Caxambas Pass						6
Cocohatchee Rv		2				2
Coon Key					3	4
Dismal Key						1
Flotilla Channel					1	1
Goodland					1	4
Gordon Pass			2	5		7
Gulf of Mexico	21	15	4	15	12	85
Keewaydin Is			22	23	2	48
Kice Is					1	10
Little Marco Is			2	1		3
Marco Is			8	7	18	36
Marco River					4	4
Naples Bay			10	2		12
Outside County		2	1			3
Rookery Bay			1	2	1	4
Sea Oat Is				1		1
10,000 Islands						1
Vanderbilt Bch	1					1

*Data from 31 May, 15 Jul., and 14 Aug. ramp surveys.

**Backwaters refers to unspecified inland waters of Collier County

Ramp Destination

ORS - Outdoor Resorts DNW - Del-Nor Wiggins State Park
 NPL - Naples Landing BVP - Bayview Park
 CXR - Caxambas Pass Park CRP - Cocohatchee River Park
 CRB - County Road 951 Boat Ramp

A P P E N D I X B

Due to the size of the Manatee Distribution Map copies will be made available for viewing or copying at the following location:

Collier County Natural Resources Department
Bldg. H
3301 East Tamiami Trail
Naples, Fl 33963

or by contacting the

Department of Environmental Protection
Office of Protected Species
3900 Commonwealth Blvd.
Tallahassee, Fl 32399

A P P E N D I X C

Due to the size of the Manatee Mortality Location Map copies will be made available for viewing or copying at the following location:

Collier County Natural Resources Department
Bldg. H
3301 East Tamiami Trail
Naples, Fl 33963

or by contacting the

Department of Environmental Protection
Office of Protected Species
3900 Commonwealth Blvd.
Tallahassee, Fl 32399

A P P E N D I X D

CITY OF NAPLES

Ordinance 94-7282 - Adopting the Marina Siting Criteria

Resolution 94-7283 - Approving and Supporting the Collier County
Manatee Protection Plan

ORDINANCE 94-7282

AN ORDINANCE AMENDING SECTION 114-134(a) OF THE CODE OF ORDINANCES BY ADDING WORDING; ADDING NEW SUBSECTION (l) TO SECTION 114-134 OF THE CODE OF ORDINANCES BY ADDRESSING MANATEE PROTECTION PLANS; AND ADDING NEW SUBSECTION (m) TO SECTION 114-134 OF THE CODE OF ORDINANCES ADDRESSING MARINA SITE RANKING CRITERIA; PROVIDING A SEVERABILITY CLAUSE, A REPEALER PROVISION AND AN EFFECTIVE DATE.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF NAPLES, FLORIDA:

Section 1. That Section 114-134(a) of the Code of Ordinances is hereby amended to read as follows:

(a) In order to ensure that any marina development is environmentally sound, certain criteria have been proposed by the Southwest Florida Regional Planning Council, Collier County, and the State of Florida. The city criteria are adapted from their discussions.

Section 2. That Section 114-134 of the Code of Ordinances is hereby amended by adding subsection (l) to read as follows:

(l) All proposals for marina development shall include a manatee protection plan, which addresses, but is not necessarily limited to, the following issues:

- (1) Programs for education and public awareness.
- (2) Programs for posting and maintaining manatee and vessel speed control signs.
- (3) An analysis of the anticipated mix of vessel drafts in relation to the controlling depth of the Gordon Pass to Naples Bay navigation channel, obtained from the most recent U.S. Army Corps of Engineers channel depth survey. If deemed necessary, the marina shall provide information on vessel draft limitations to its patrons.

Section 3. That Section 114-134 of the Code of Ordinances is hereby amended by adding subsection (m) to read as follows:

(m) The following ranking system, based on water depth and native marine habitat criteria, is hereby established to determine the number of power-boat wet slips per length of marina shoreline. The table is modified from the Collier County marina site ranking system. A ranking of high is given to a site that has adequate water depth and access, and will not impact native marine habitats. A medium ranking is given when there is adequate water depth and access, but native marine habitat will be impacted, and when water depth is less than -4 feet MLW, but native marine habitat will not be impacted. A low ranking is given to an area that does not have adequate depth or access, and where native marine habitat will be impacted. The power boat wet slip density ranges from one (1) to eighteen (18) slips per 100 feet of shoreline.

Marina Siting Criteria					
Rank	Water Depth	Water Depth	Native Marine Habitat*	Native Marine Habitat*	Power Boat Wet Slip Density
	Greater Than 4'MLM	Less Than 4'MLM	No Impact	Impact	Maximum Allowed†
High	X		X		18/100
Medium	X			X	10/100
Medium		X	X		10/100
Low		X		X	1/100

* Native marine habitat refers to sea grass beds or oyster bars. No impact is defined as no more than 5% of the native marine habitat is disturbed.

† Number of power boat slips per 100 linear feet of shoreline.

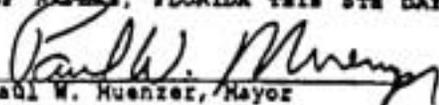
Section 4. If any word, phrase, clause, subsection or section of this ordinance is for any reason held unconstitutional or invalid, the invalidity thereof shall not affect the validity of any remaining portions of this ordinance.

Section 5. That all sections or parts of sections of the Code of Municipal Ordinances, all ordinances or parts of ordinances, and all resolutions or parts of resolutions in conflict herewith, be and the same are hereby repealed to the extent of such conflict.

Section 6. This ordinance shall take effect immediately upon adoption at second reading.

APPROVED AT FIRST READING THIS 21ST DAY OF SEPTEMBER, 1994.

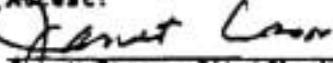
PASSED AND ADOPTED AT SECOND READING AND PUBLIC HEARING IN OPEN AND REGULAR SESSION OF THE CITY COUNCIL OF THE CITY OF NAPLES, FLORIDA THIS 5TH DAY OF OCTOBER, 1994.


Paul W. Huenzer, Mayor

Approved as to form and legality:


Maria J. Chiaro, City Attorney

Attest:


Janet Cason, City Clerk

Approved as to accuracy:


Jon C. Stalger, Ph.D.,
Natural Resources Manager
N:\AEP\CO\NCIL\ORD\94-7282

94-7282	
Korset	Y
Pennington	M Y
Proiman	Y
Sullivan	3 Y
Tarrant	Y
VanArsdale	Y
Muenzer	Y
(7-0)	
M=Motion S=Second	
Y=Yes N=No A=Absent	

RESOLUTION 94-7271

A RESOLUTION DECLARING THAT THE EXISTING VESSEL SPEED CONTROL ZONES WITHIN THE CITY OF NAPLES AFFORD SUFFICIENT PROTECTION TO MANATEES SO THAT NO ADDITIONAL VESSEL SPEED CONTROLS ARE NECESSARY AT THIS TIME; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, The Board of Collier County Commissioners has adopted a manatee protection plan which does not include reference to the waterways within the City of Naples; and

WHEREAS, The Florida Department of Environmental Protection desires the County plan to include all waterways within Collier County, before it will consider approval of the plan; and

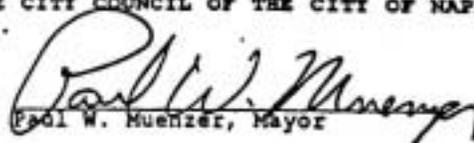
WHEREAS, The City Council is desirous of cooperating with the Board of Collier County Commissioners and the Florida Department of Environmental Protection.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF NAPLES, FLORIDA:

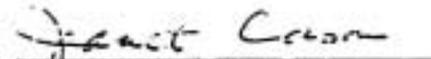
Section 1. That the existing vessel speed control zones within the City of Naples afford sufficient protection to manatees, so that no additional vessel speed controls are necessary at this time.

Section 2. This resolution shall take effect immediately upon adoption.

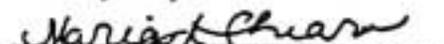
PASSED IN OPEN AND REGULAR SESSION OF THE CITY COUNCIL OF THE CITY OF NAPLES, FLORIDA, THIS 21ST DAY OF SEPTEMBER, 1994.


Paul W. Muenzer, Mayor

Attest:


Janet Cason, City Clerk
N:\COUNCIL\RES\94-7271

Approved as to form
and legality:


Maria J. Giarro, City Attorney

94-7271	
Korest	A
Pennington	Y
Prolman	Y
Sullivan	M Y
Tarrant	Y
VanArsdale	S Y
Muenzer	Y
(6-0)	
M=Motion S=Second	
Y=Yes N=No A=Absent	

A P P E N D I X F

CITY OF EVERGLADES CITY

Letter to Commissioner Bettye J. Matthews stating that the City Council voted to approve and support the Collier County Manatee Protection Plan.

City of Everglades City

P.O. Box 110 Everglades City, Collier County, Florida 33929
City Hall Copeland Avenue & Broadway
Phone (813) 695-3781 Fax (813) 695-3020

June 2, 1994

Collier County Commissioner
3301 Tamiami Trail East
Building "F"
Naples, Florida 33962

RE: COLLIER COUNTY MANATEE PROTECTION PLAN

Dear Ms. Matthews:

Please be advised and pass the message along to the Board of Commissioners. The Everglades City Council met on May 16th, 1994 which the manatee plan was discussed. The Council motioned to approve and support the Collier County Manatee Protection Plan vs the States Plan. If there is anything the City of Everglades City can do in support of this plan please advise the City Clerk.

The State is proposing to control the docking of boats and permitting. If permit can be obtained it would only permit one power boat per every 100' at shoreline. There is not enough docking at current in Everglades City.

As you know the City of Everglades is a very small municipality, if the States Plan was to be passed it would devastate the Cities economy, tourism, sports fishing etc.

I thank you for your concern and if the City can assist please do not hesitate in calling.

Sincerely,

Carlton Butler, Mayor

Mayor
Carlton "Snapper" Butler

City Clerk
Martha Napier

City Supervisor
Larry Hostler

City Attorneys
Chris Lomberdo / Tony Pires

APPENDIX G

FLORIDA STATUTES

CHAPTER 62N-22

THE FLORIDA MANATEE SANCTUARY ACT

RULE TITLE

FAKA UNION CANAL ZONES ESTABLISHED

RULE NO:

62N-22.0161

RULE TITLE

COLLIER COUNTY ZONES

RULE NO:

68C-22.023

16N-22.023, Amended

6-5-97, 62N-22.023.

CHAPTER 68C-22 THE FLORIDA MANATEE SANCTUARY ACT

68C-22.001 Scope.

68C-22.002 Definitions.

68C-22.003 Regulated Activities.

68C-22.004 Management Provisions.

68C-22.005 Lee County Zones.

68C-22.006 Brevard County Zones.

68C-22.007 Indian River County Zones.

68C-22.008 St. Lucie County Zones.

68C-22.009 Palm Beach County Zones.

68C-22.010 Broward County Zones.

68C-22.011 Citrus and Associated County (Parts of Levy and Hernando) Zones.

68C-22.012 Volusia and Associated County (Parts of Putnam, Lake, Seminole and Flagler) Zones.

68C-22.013 Hillsborough County Zones.

68C-22.014 Manatee County Zones.

68C-22.015 Charlotte County (and Part of DeSoto County) Zones.

68C-22.018 Turkey Creek Zones Established. (Repealed)

68C-22.021 Manatee Cove Zone Established. (Repealed)

68C-22.022 Hillsborough County - Big Bend Zones Established.

68C-22.023 Collier County Zones.

68C-22.024 Martin County Zones.

68C-22.025 Dade County Zones.

68C-22.026 Sarasota and Associated County (Parts of Manatee and Charlotte) Zones.

68C-22.027 Duval County and Associated County (Parts of Clay and St. Johns) Zones.

68C-22.001 Scope.

(1) The "Florida Manatee Sanctuary Act" was adopted to protect the West Indian (Florida) manatee or sea cow (*Trichechus manatus*) in the waters of the State of Florida from disturbance, harassment, injury or harm in part by regulating as mandated in subsections 370.12(2)(f), (g), (h), (i), (j), (k), (l), (m), (n), and (o), F.S., motorboat speeds and vessel operations in the critical areas of manatee concentration.

(2) As required by Section 370.12(2), F.S., the Commission shall only establish manatee protection zones in areas where manatee sightings are frequent and it can be generally assumed, based on all available information, that they inhabit these areas on a regular, periodic or continuous basis. To make this determination, the Commission shall use all available scientific information as well as any other available, relevant, and reliable information. The information considered by the Commission shall include the following (when available):

(a) Manatee mortality data;

(b) Aerial survey data;

(c) Satellite telemetry data;

(d) VHF radio telemetry data;

(e) Manatee sightings, observations and notes made by researchers or other qualified observers (such as park personnel, law enforcement officers, etc.);

(f) Studies and reports pertaining to manatee distribution, relative abundance, habitat, behavior, or other manatee information;

(g) Scar catalog (photo identification) data;

(h) Expert opinions; and

(i) Any other site-specific information which is available.

(3) In establishing manatee protection zones as provided above, the Commission shall take into consideration, in relation to manatee protection needs, the rights of boaters, fishermen, and waterskiers (as they apply under Section 370.12(2)(j), F.S.). Recognizing that regulations governing the speed and operation of motorboats in manatee use areas constitute the most direct mechanism for protecting manatees from harmful impacts and death in areas frequented by motorboats, the Commission shall utilize the standards provided under paragraph (3)(a), below, in determining the likelihood of threats to manatees associated with manatee protection needs, vessel activity and waterway characteristics in critical areas. Following such a determination, the Commission shall establish such boater restrictions as are justified by manatee protection needs. The Commission shall not establish restrictions which may result in undue interference with the rights of boaters, fishermen, and waterskiers (as they apply

under Section 370.12(2)(j), F.S.).

(a) The Commission utilizes the following standards in determining the likelihood of threat to the survival of West Indian (Florida) manatee associated with vessel activity and waterway characteristics in areas of regular, frequent, periodic, or continuous manatee use: - 6

1. A threat to manatees exists if, due to the nature or frequency of known boating activity in the area, the absence of adequate speed restrictions will likely result in either:

- a. Injury or death to manatees;
- b. Disruption of the manatee's regular use, behavior or migratory patterns; or
- c. Disturbance which would lead to or cause destruction of essential manatee habitat.

2. In determining that a threat to manatees exists, the Commission will consider, but not be limited to an examination of, the following factors:

- a. The proximity and degree of known boating activities to areas with presumed patterns of manatee use on the basis of all available information;
- b. Seasonal and/or year-round patterns of manatee use;
- c. The number of manatees known or assumed to occur in, or seasonally use, the area on the basis of all available information;
- d. The manatee mortality trends within the area;
- e. The existence of features within the area which are essential to the survival of, or are known to attract, manatees, such as seagrasses or other food sources, favorable water depths, and fresh or warm water sources; and
- f. The characteristics of the waterway in question in relation to known boating activity patterns.

(b) In consideration of balancing the rights of fishermen, boaters and waterskiers to use waters for recreational and commercial purposes (as applicable under Section 370.12(2)(j), F.S.), with the necessity for boat speed regulation to protect manatees in identified manatee use areas, the Commission shall (1) designate within these areas limited lanes or corridors to provide for higher speed (greater than 25 mph) motorboat travel, or (2) not regulate sufficient portions of these areas in order to accommodate activities that require higher speeds, upon a finding that such areas are needed and will not result in serious threats to manatees or their habitat. A serious threat to manatees exists if, due to the nature or frequency of known boating activity in relation to manatee use in the area, the provision for higher speed corridors or unregulated areas will more likely than not result in death or injury to manatees within these areas.

Specific Authority 370.12(2)(f)-(i), (k), (n), (o) FS. Law Implemented 370.12(2)(d), (f)-(k), (m), (n), (o) FS. History—New 3-19-79, Formerly 16N-22.01, Amended 12-30-86, 6-16-93, 9-9-93, Formerly 16N-22.001, Amended 5-31-95, 6-25-96, 5-12-98, Formerly 62N-22.001.

68C-22.002 Definitions.

When used in these rules, the following words shall have the indicated meanings unless the context clearly indicates otherwise:

(1) "Critical areas" means portions of waters of the State of Florida as defined by subsections 370.12(2)(f), (g), (h), (i), (j), (k), (n), and (o), F.S.

(2) "Idle speed" means the minimum speed that will maintain the steerageway of a motorboat.

(3) "Idle speed zone" means an area where vessels may not be operated at greater than Idle Speed, as defined in subsection

68C-22.002(2), F.A.C.

(4) "Miles" means statute miles.

(5) "Motorboat" means any boat or vessel propelled or powered by machinery.

(6) "Motorboats prohibited zone" means an area where the entry of vessels being propelled or powered by machinery is prohibited. These zones do not apply to vessels using other means of propulsion (e.g., sails, oars, or poles, etc.) provided that propelling machinery, if fitted, is not being used and, to the maximum extent possible, said machinery is raised out of the water.

(7) "Slow speed" means the speed at which a vessel proceeds when it is fully off plane and completely settled into the water. Vessels shall not be operated at a speed that creates an excessive wake or other hazardous condition which endangers other vessels under the existing circumstances. This required level of protection for the safety of vessels and vessel operators is also intended to provide adequate protection for manatees and is therefore adopted because of

its familiarity to vessel operators. Due to the different speeds at which vessels of different sizes and configurations may travel while in compliance with this definition, there is no specific numerical speed assigned to Slow Speed. A vessel is NOT proceeding at Slow Speed if it is: (1) on a plane; (2) in the process of coming off plane and settling into the water or coming up onto plane; or (3) creating an excessive wake or other hazardous condition which endangers other vessels. A vessel IS proceeding at Slow Speed if it is fully off plane and completely settled into the water and not creating an excessive wake or other hazardous condition which endangers other vessels.

(8) "Slow speed zone" means an area where vessels may not be operated at greater than Slow Speed, as defined in subsection

68C-22.002(7), F.A.C.

(9) "Caution zone" means an area where manatees frequently inhabit on a somewhat regular basis and motorboat operators are advised to use caution so as not to strike a manatee.

(10) "Waters" means waters of the State of Florida.

(11) "Maximum 25 MPH Speed Zone" means a controlled area within which a vessel's speed made good over the bottom, measured in statute miles, shall not exceed 25 miles per hour. Although it is the intention of the Commission to allow those vessels capable of attaining a planing configuration at 25 MPH to do so, this speed limit shall not be construed as permitting the reckless or careless operation of a vessel, in violation of Section 327.33, F.S., or authorizing any vessel to travel at an unsafe speed, in violation of 33 U.S.C. s. 2006, as adopted pursuant to Section 327.33, F.S., by reason of: - 7

(a) Having an elevated bow which restricts visibility, or

(b) Producing an excessive wake which endangers other vessels or natural resources of the state.

(12) "Maximum 30 MPH Speed Zone" means a controlled area within which a vessel's speed made good over the bottom measured in statute miles, shall not exceed 30 miles per hour. Although it is the intention of the Commission to allow those vessels capable of attaining a planing configuration at 30 MPH to do so, this speed limit shall not be construed as permitting the reckless or careless operation of a vessel, in violation of Section 327.33, F.S., or authorizing any vessel to travel at an unsafe speed, in violation of 33 U.S.C. s. 2006, as adopted pursuant to Section 327.33, F.S., by reason of:

(a) Having an elevated bow which restricts visibility, or

(b) Producing an excessive wake which endangers other vessels or natural resources of the state.

(13) "Maximum 35 MPH Speed Zone" means a controlled area within which a vessel's speed made good over the bottom, measured in statute miles, shall not exceed 35 miles per hour. Although it is the intention of the Commission to allow those vessels capable of attaining a planing configuration at 35 MPH to do so, this speed limit shall not be construed as permitting the reckless or careless operation of a vessel, in violation of Section 327.33, F.S., or authorizing any vessel to travel at an unsafe speed, in violation of 33 U.S.C. s. 2006, as adopted pursuant to Section 327.33, F.S., by reason of:

(a) Having an elevated bow which restricts visibility, or

(b) Producing an excessive wake which endangers other vessels or natural resources of the state.

(14) "Shoreline" means the point where the water meets the land at any point in time.

(15) "General Contour of the Shoreline" means a line defined as the most waterward of the outside edge of emergent aquatic vegetation, if present, or a line of Mean Low Water as defined in Chapter 177, Part II, Florida Statutes, as approximated on NOAA nautical charts. Waters lying landward of this line are to be included up to the shoreline, as defined under subsection (14), above. Emergent aquatic vegetation shall include plants rooted in the ground that extend above the surface of the water.

(16) "Channel" means a marked navigation channel, unless otherwise described or designated, and is not intended to mean an access or side channel unless otherwise designated for the purpose of regulation.

(17) "No entry zone" means a limited area of critical importance as a safe haven for manatees to rest, feed, reproduce, give birth, nurse or otherwise habituate undisturbed by human activity. No vessel of any kind, whether power-driven or non-motorized, as referenced in section 1(b), Article VII, of the Florida Constitution, including every description of watercraft, barge, and airboat, shall be permitted within the designated area. No other vessel or flotation device, including but not limited to a seaplane, sailboard, surfboard, raft, or any other water toy or other like object intended for or capable of use as a means of transportation on the water, shall be permitted within the designated area, nor shall other human activities including but not limited to diving, snorkeling, swimming, fishing (except from an adjacent bank or bridge when using poles or lines which are not equipped with a fishing line

retrieval mechanism, e.g., a cane pole), and the introduction by persons of food or other objects, that involves disturbance of these waters or the manatees so inhabiting them, be permitted within such a designated area, except as provided under Rule 68C-22.003, F.A. C.

(18) “Authorized Resident” means any person owning a fee or leasehold interest in real property or a boating facility immediately adjacent to a motorboats prohibited zone or a no entry zone.

(19) “Vessel” is synonymous with boat, as referenced in section 1(b), Article VII, of the State Constitution, and includes every description of watercraft, barge, and airboat other than a seaplane on the water used or capable of being used as a means of transportation on water.

(20) “Rights of Boaters, Fishermen and Waterskiers” (as they apply under Section 370.12(2)(j), F.S.), means that boaters, fisherpersons and waterskiers have the right to use the waters of the State of Florida for recreational or commercial purposes in a manner consistent with all applicable federal, state and local laws and regulations. Such laws and regulations include, but are not limited to, those governing the operation and safety of vessels on the water to promote public safety, environmental/natural resource protection, and/or responsible use of the waters of the State.

(21) “Undue Interference” (as used in Section 370.12(2)(j), F.S.), refers to a regulation which exceeds that which is warranted based upon all information available, either in degree or in geographic scope, for the protection of manatees in the waters subject to the regulation. A Commission regulation restricting the operation and speed of motorboat traffic is excessive if the regulation (a) encompasses a larger geographic area or time frame than is warranted for the protection of the manatee, (b) sets speed limits which are more restrictive than are warranted to protect the manatee, (c) encompasses an area where the Commission has not determined that a likelihood of threat to manatees exists, or (d) fails to provide limited lanes or corridors providing for higher speed motorboat travel, as called for in paragraph 68C-22.001(3)(b), F.A.C. Determination of the likelihood of threat will be made as set forth in paragraph 68C-22.001(3)(a), F.A.C.

(22) “Planing” means riding on or near the water’s surface as a result of the hydrodynamic forces on a vessel’s hull, sponsons, foils or other surfaces. A vessel is considered “on plane” when it is being operated at or above the speed necessary to keep the vessel planing.

(23) “Wake” means all changes in the vertical height of the water’s surface caused by the passage of a vessel including, a vessel’s bow wave, stern wave, and propeller wash. - 8

(24) “Harassment” means any intentional or negligent act or omission which creates the likelihood of causing an injury to a manatee by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, breeding, feeding or sheltering. The intentional provision of any type of food to manatees not in captivity shall be considered harassment under this definition, unless authorized by a valid federal or state permit.

(25) “Maximum 20 MPH Speed Zone” means a controlled area within which a vessel’s speed made good over the bottom, measured in statute miles, shall not exceed 20 miles per hour. Although it is the intention of the Commission to allow those vessels capable of attaining a planing configuration at 20 MPH to do so, this speed limit shall not be construed as permitting the reckless or careless operation of a vessel, in violation of Section 327.33, F.S., or authorizing any vessel to travel at an unsafe speed, in violation of 33 U.S.C. s. 2006, as adopted pursuant to Section 327.33, F.S., by reason of:

(a) Having an elevated bow which restricts visibility, or

(b) Producing an excessive wake which endangers other vessels or natural resources of the state.

Specific Authority 370.12(2)(f)-(i), (k), (n), (o) FS. Law Implemented 370.12(2)(d), (f)-(k), (m), (n), (o) FS. History—New 3-19-79, Amended

11-23-83, Formerly 16N-22.02, Amended 12-30-86, 12-24-90, 12-25-91, 6-16-93, 9-9-93, Formerly 16N-22.002, Amended 5-31-95, 6-25-96,

5-12-98, Formerly 62N-22.002.

68C-22.003 Regulated Activities.

(1) General Guidelines and Application Procedures: This rule sets forth criteria pertaining to the regulation of the speed and operation of vessel traffic and other activities which are otherwise prohibited by Chapter 68C-22, F.A.C. Permits for such regulated activities shall be issued only as provided hereunder. Permits shall be issued only upon a finding by the Commission that activities as described in this section will not pose a serious threat to manatees, and that such activities are justified. Determinations of justification of need will be made based on the criteria given under each specific subsection. Permits shall not be granted for activities within “Motorboats Prohibited” or “No Entry” zones, except as explicitly provided for in this section. (a) In considering applications for permits under this section, a “serious threat to manatees” exists if, due to the nature, location, or frequency of the activity proposed, its conduct can be reasonably expected to result in either (1) injury or death to manatees, (2) a significant disruption of

the manatee's normal use, behavior or migratory patterns, or (3) disturbance which would lead to or cause destruction of essential manatee habitat. In making its determination, the Commission's examination will include an evaluation of the following factors:

1. Patterns of manatee use of the area, both seasonal and year-round;
2. The number of manatees known or assumed to occur in or seasonally use the area;
3. The manatee mortality trends within the area;
4. The existence of features within the area which are essential to the survival of, or are known to attract, manatees, such as seagrasses or other food sources, favorable water depths, and fresh or warm water sources;
5. The cumulative effect of the requested activities in light of other permits previously granted or currently being considered by the Commission and known vessel traffic patterns and densities in the area; and
6. The characteristics of the waterway and of the vessel(s)/motor(s) which would be operated by the applicant.

(b) Applications for permits to conduct activities described in this section should be submitted as far in advance of the requested activities as possible and must be submitted to the Chief of the Office of Environmental Services, Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, FL 32399.

Information which must be submitted is described in each specific subsection. If an application does not contain sufficient information to enable the Office to evaluate the request, the Office shall request any needed information within 30 days of receipt of the request. The Office shall respond by letter (issuing a permit or denying the request) as quickly as is practical and must respond within 90 days of receipt of all necessary information.

(c) When issuing a permit, the Commission may place conditions on the permit as necessary to protect manatees. Examples of types of conditions which may be specified include seasonal constraints, use of screens or barriers, restrictions on types of permitted activities, restrictions relative to time of day, day of week, or weather conditions when permits are in effect, use of specialized equipment (e.g., propeller guards or jet drives, speedometers) when feasible and such use would not defeat the purpose of the requested activity, additional water quality precautions, sea grass protection or protection of associated marine life or vegetation, temporary marking or permit display, limitations on intensity of activity, pre-activity monitoring, use of manatee observers, and after-activity reports. The specific conditions, if any, that are placed on a permit will be dependent on the specifics of the request. Acceptance of the permit shall constitute evidence that the recipient agrees to comply with the conditions set forth in the permit. (d) The Commission retains the right to modify or rescind a permit should information become available indicating that the permitted activity is likely to create a serious threat to manatees or that the permit (in its current form) is not needed by the recipient. Before a permit is modified or rescinded, the permit holder shall be given an opportunity to discuss with the Commission the reasons for the modification or rescission. Unless an immediate threat to manatees is likely, the Commission shall wait at least 30 days after notifying the permit holder before taking action on the permit. If a single manatee is struck or killed by a vessel operating pursuant to a permit under these provisions, the permit shall be immediately re-evaluated by the Commission to determine if the permit needs to be modified or rescinded. – 9 (e) Receipt of a permit does not release a holder from the duty to comply with all federal, state, and local regulations (other than Chapter 68C-22, F.A.C.), governing the operation of vessels on navigable waterways or pertaining to protection of the West Indian (Florida) manatee. Permit issuance does not constitute authorization for the recipient to kill, injure, or harass a manatee while operating under a permit. (f) Failure to comply with the permit or associated conditions, or any finding of fraudulent use or application for said permit, shall be cause for the immediate revocation of the permit.

(2) Law Enforcement: Any authorized law enforcement officer may engage in any activity otherwise prohibited by Chapter, 68C-22, F.A.C., if: (a) The officer is acting in the performance of his or her official duties, and entry into a "Motorboats Prohibited" or "No Entry" zone as defined in Rule 68C-22.002, F.A.C., is reasonably warranted; or (b) The activity is being conducted to directly protect manatees, to enhance the propagation or survival of manatees, or it is reasonably required to enforce other provisions of Chapter 68C-22, F.A.C.

(3) Emergency Situations: Any person may engage in water-borne activity otherwise prohibited by Chapter 68C-22, F.A.C., if such activity is reasonably necessary to prevent the loss of life or property due to emergency circumstances, or to render emergency assistance.

(4) General Activities: For the purpose of issuing authorizations to allow the performance of certain activities which are otherwise prohibited by Chapter 68C-22, F.A.C., (including activities prohibited by "Motorboats Prohibited" or "No Entry" zones as defined in Rule 68C-22.002, F.A.C., as provided in subsection (1), permits shall be issued by the Commission only upon both a showing of a justification of need by the applicant and a determination of an absence of serious threat to manatees in association with the requested activity. Permits shall only be issued for activities which: are necessary to carry out a prerequisite of permitting by federal, state, or local governments (or are

a condition to or are otherwise authorized by a valid permit), are necessary for habitat restoration or environmental protection purposes, are necessary for other scientific or educational purposes or for the enhancement of propagation or survival of the manatee, or are necessary for purposes of construction, maintenance, or repair to adjacent property owner's facilities including maintenance dredging and debris removal. Permitted activities may not, either intentionally or negligently, molest, harass, collide with, injure or harm manatees. When operating under a permit within "Motorboats Prohibited" or "No Entry" zones, vessels shall be operated at no greater than idle speed.

(a) Permits are non-transferable and shall only be considered upon written application as specified hereunder. Copies of any associated permits must be submitted with the request. The application must, at a minimum, contain enough information to demonstrate:

1. The nature and scope of the activity to be conducted within the restricted area, including the number of vessels to be involved, the type and configuration of the vessels, and the maximum speeds necessary;
2. The specific area within which the activity would be conducted, described in the application and depicted on a nautical chart;
3. The period of time for which the permit is needed, limited to specific dates if possible; and
4. Justification for conducting the activity within waters regulated for manatee protection, clearly demonstrating why an alternative site is unsuitable or unavailable.

(b) Permits granted under the provisions of this subsection shall be effective only for the time period specified in the permit, and only in the areas specified in the notice.

(5) Resident Access to Limited Entry Areas: Any authorized resident or his/her guests who must cross a "Motorboats Prohibited" or "No Entry" zone as defined in Rule 68C-22.002, F.A.C., for the sole purpose of water access by boat to private residences, boat houses, or boat docks, shall be authorized access by obtaining and affixing an identifying insignia to his/her vessel. Motorboats shall be operated at no greater than idle speed while within the zone.

(a) To obtain authorization, authorized residents must submit a signed letter providing the following information and documentation:

1. The name, mailing address, and telephone number of the authorized resident;
2. A description of the vessel(s) to be permitted, including a copy(ies) of the current vessel registration(s);
3. A map showing the location of the property to which access is required in relation to the "No Entry" or "Motorboats

Prohibited" zone;

4. Verification of property ownership, rental or lease. For property owners, acceptable forms of verification include the property's tax assessment, a current utilities or telephone bill, or a mortgage agreement. For residents renting or leasing the property, acceptable forms of verification include the rental or lease agreement, or a current utilities or telephone bill. To be acceptable, the document used for verification must be in the authorized resident's name.

(b) Upon review and approval of the application by the Office of Environmental Services, an identifying decal or other insignia shall be issued, free of charge, to authorized residents. (Two (2) insignias or decals per authorized resident shall also be issued free of charge for use by authorized guests, with additional guest decals available upon justification of need).

(6) Commercial Fishing and Professional Guiding: The following provisions pertain to qualifying commercial fishermen and professional fishing guides. In those speed zones wherein such intent was provided and specified at the time of zone establishment and as provided in subsection (1), permits shall be issued by the Commission only upon both a showing of a justification of need by the applicant and a determination of an absence of serious threat to manatees in association with the requested activity. – 10 (a) In considering applications for permits under this subsection, a justification of need will be based on a finding of hardship. A hardship will be found to exist if an applicant can demonstrate the following:

1. Commercial fishing or professional guiding, as appropriate, is either:
 - a. The applicant's principal occupation, in that a majority of the applicant's work week is spent in pursuit of that occupation; or b. A significant source of income for the applicant, in that a minimum of 25% of the applicant's gross annual income is attributable to revenue derived from that occupation;
2. The applicant's customary fishing or guiding practices would be significantly curtailed as a result of the restrictions for which a permit is sought in that at least 25% of the applicant's gross annual income would be lost if a permit is not granted because sufficient alternative sites or methods for carrying out the activity in question are not available to the applicant; and
3. The applicant's compliance with the restrictions for which a permit is sought will result in a significant economic or physical burden being borne by the applicant.

(b) Upon a determination by the Office of Environmental Services that such a permit will not result in serious threats to manatees and that a hardship exists as a result of the speed restrictions imposed, commercial fishermen fulfilling the following requirements shall be granted a permit;

1. Possession of a current Saltwater Products License issued pursuant to Section 370.06, F.S., or of an equivalent freshwater license issued pursuant to Section 372.65, F.S., (if only freshwater species are taken), a current commercial vessel registration, and any other license(s) as may be required of commercial fishermen to operate within the particular county in which a permit is sought; and;
2. Completion of the permit application referenced in paragraph (6)(d) hereunder, including submittal of copies of all documents required in subparagraph (b)1., above.

(c) Upon a determination by the Office of Environmental Services that such a permit will not result in serious threats to manatees and that a hardship exists as a result of the speed restrictions imposed, professional fishing guides fulfilling the following requirements shall be granted a permit:

1. Possession of a current commercial vessel registration;
 2. Possession of a current license from the U.S. Coast Guard authorizing the carriage of passengers for hire on the waters for which the permit is sought;
 3. Possession of a current saltwater fishing license in accordance with Section 370.0605, F.S., for vessels carrying customers wherein a fee is paid directly or indirectly (if saltwater species are taken);
 4. Possession of other current occupational license(s) as may be required of professional fishing guides to operate within the particular county in which the permit is sought; and
 5. Completion of the permit application referenced in paragraph (6)(d) hereunder, including submittal of copies of all documents required in subparagraphs (c)1. through (c)4., above.
- (d) A permit application form ("Application for Permit, Manatee Protection Zones"), Form No. FWC 68C-22.003-6 (6/96), which is hereby incorporated by reference, may be obtained from the Fish and Wildlife Conservation Commission, Office of Environmental Services, 620 South Meridian Street, Tallahassee, FL 32399, or from the Division of Law Enforcement office as designated under specific manatee protection zone rule provisions. The form shall include items for completion by commercial fishermen and professional fishing guides, imparting information necessary: (1) to show a justification of need by the applicant; and (2) for the Commission to make a determination as to the potential impacts of allowing the requested activities within specified regulated areas.

(e) Acceptance of a permit shall constitute evidence that the recipient agrees to maintain speeds of 20 mph or less at all times while operating under a permit within the restricted area and to comply with any and all conditions set forth within the permit. (Examples of other types of conditions which may be specified to promote manatee protection are described in subsection 68C-22.003(1), F.A.C.) (f) Permits granted under the provisions of this section shall be effective only for the time period specified in the permit, and only in the areas specified in the notice. Permits may only be utilized by the fisherman or guide in whose name it is issued, only while aboard the vessel identified on the permit, and only when engaged in their customary fishing or guiding practices, as applicable. For guides, permits apply only when paying customers are aboard.

(7) Testing of Motors or Vessels by Manufacturers: The following provisions pertain to boat motor and vessel testing operations by manufacturers. As provided in subsection (1), permits shall be issued by the Commission only upon both a showing of justification of need by the applicant and a determination of an absence of serious threat to manatees in association with the requested activity. Permits shall be in effect for five (5) years, or for a shorter period if requested by the applicant, and shall only be issued upon written application as specified within paragraph (7)(a) hereunder. Permits are non-transferable and shall only be issued from speed restrictions appearing in Chapter 68C-22, F.A.C., which were established after June 1, 1990. (a) Permits shall be granted only upon:

1. Submission of a request in writing to the Office of Environmental Services clearly stating:
 - a. The geographic areas within which testing is to be conducted (The written description shall be accompanied by navigational charts or boater guide maps clearly indicating the proposed test course location and route);
 - b. The types of vessels/motors to be tested;
 - c. The estimated number of motors or vessels to be tested annually; - 11
 - d. The estimated maximum number of motors or vessels to be tested at any one time within the restricted area;
 - e. The estimated maximum speeds at which vessels will travel during the tests; and
 - f. The estimated number of qualified employees to work as vessel operators, and a brief description of their qualifications.
2. Submission of a statement of justification of need to utilize specific waterways or specific portions of waterways within areas for which manatee speed zone protection has been established, clearly demonstrating a substantial hardship (economic, operational or other) to the manufacturer. Such a statement must detail why, and under what

circumstances, other waters are inappropriate for such testing purposes. (b) Acceptance of a permit shall constitute evidence that the recipient (and his/her authorized employees) agrees to:

1. Carry on the vessel a copy of the permit and, an identification as an employee of a corporation or firm actively engaged in the manufacture of boat motors or vessels;
2. Unless otherwise provided in the permit, operate only between sun-up and sundown, Monday through Friday, and sun-up Saturday through noon, not on Sundays or on state-recognized holidays; and
3. Comply with any and all conditions set forth in the permit. (Examples of other types of conditions which may be specified to promote manatee protection are described in subsection 68C-22.003(1), F.A.C.) (c) For the purposes of this rule, the following definitions shall apply:

1. Testing – The act by a manufacturer of evaluating a boat motor or vessel for the purposes of determining its operational characteristics. Such operational characteristics shall include, but not be limited to, those pertaining to product designs, endurance, performance, and safety.
2. Boat motor manufacturer – An entity engaged in the production of boat motors from basic components for the purpose of sale.
3. Vessel manufacturer – An entity engaged in the production of vessels from basic components for the purpose of sale.
4. Vessel – Vessel is synonymous with boat, as referenced in Section 1(b), Article VII, of the State Constitution, and includes every description of watercraft, barge, and airboat other than a seaplane on the water used or capable of being used as a means of transportation on water.

(8) Resident Access Through Speed-controlled Areas: For the sole purpose of allowing ingress and egress to persons who must travel through speed zones established under Chapter 68C-22, F.A.C., to access private residences, boat houses, or boat docks, except as provided under subsections (4) and (5) above, who would otherwise be physically precluded water access because of speed restrictions (such that shoaling or other physical factors would require residents to exceed such speed restrictions), the Commission shall grant a non-transferable resident permit upon a demonstration of just cause, as set forth in paragraph (8)(a) hereunder, and upon a finding that issuance of such a permit will not pose a serious threat to manatees. (a) The Office of Environmental Services, upon review by the Division of Law Enforcement, will consider a request for such a resident permit upon the receipt of a signed explanatory letter of intent from the affected resident clearly demonstrating:

1. The need to exceed speed restrictions for ingress and egress purposes;
2. Justification for traveling at speeds greater than those established within designated zone on the basis of vessel and boat motor types/horsepower;
3. Evidence of property ownership or residency in said property;
4. Areas, as marked on an accompanying map and clearly described with permanent landmarks, where shoaling or other physical circumstances warrant exception to restrictive provisions, and the minimum area/distance required for travel at speeds greater than those established within the designated zone; and

5. Description(s) and vessel registration number(s) for vessel(s) owned by said resident for which a permit is requested. (b) Acceptance of a permit shall constitute evidence that the recipient agrees to maintain speeds of 25 MPH or less at all times while operating under a permit unless otherwise provided in the permit, to hold said permit on the vessel at all times, and to comply with any and all conditions set forth within the permit. (Examples of other types of conditions which may be specified to promote manatee protection are described in subsection 68C-22.003(1), F.A.C.) (c) Permits granted under the provisions of this subsection shall be effective only for the time period specified in the permit, and only in the areas specified in the notice. (d) If the area for which a permit has been issued is dredged, the permit recipient shall so notify the Commission.

(9) Boat Races: The following provisions pertain to powerboat racing. In those speed zones wherein such intent was provided and specified at the time of zone establishment and as provided in subsection (1), permits shall be issued by the Commission only upon both a showing of a justification of need by the applicant and a determination of an absence of serious threat to manatees in association with the requested activity. Permits are non-transferable and shall only be considered upon written application as specified hereunder.

(a) The application must, at a minimum, contain enough information to demonstrate:

1. The nature and scope of the racing event, including estimated numbers of vessels to be involved, the nature and configuration of the vessels, and the maximum speeds anticipated;
2. The specific area within which the racing event is requested, described in the application and depicted on a nautical chart;
3. The intended date(s) of the racing event; and

4. Justification for holding the racing event within waters regulated for manatee protection, clearly demonstrating why an alternative site is unsuitable or unavailable. - 12

(b) Failure to comply with the permit or associated conditions, or any finding of fraudulent use or application for said permit, shall be cause for the immediate revocation of the permit, including suspension of permit privileges prior to or during the permitted event. (Examples of types of conditions which may be specified to promote manatee protection are described in subsection 68C-22.003(1), F.A.C.) (c) If a single manatee is struck or killed by a vessel operating above the posted speed limit pursuant to a permit under these provisions, the permit shall be automatically and immediately rescinded. (d) Permits granted under the provisions of this subsection shall be effective only for the time period specified in the permit, and only in the areas specified in the permit.

Specific Authority 370.12(2)(f)-(i), (k), (n), (o) FS. Law Implemented 370.12(2)(d), (f)-(k), (m), (n), (o) FS. History--New 3-19-79, Formerly 16N-22.03, Amended 12-30-86, 8-28-90, 12-25-91, 6-16-93, Formerly 16N-22.003, Amended 6-25-96, 5-12-98, Formerly 62N-22.003.

68C-22.004 Management Provisions.

(1) Appropriate zones are established for the purpose of regulating the speed and operation of motorboat traffic by taking into consideration the safety and well-being of the manatees in those state waters designated in subsection 370.12(2)(f), (g), (h), (i), (j), (k), (l), (n), F.S., safety of the boating public, inconvenience to the boating public and natural marine habitat protection. (2) Such zones shall be marked by large signs conforming to the Florida Uniform Waterway Marking System in accordance with Sections 327.40 and 327.41, F.S., provided with reflectorized paint or attached units and situated in locations where they will be highly visible to the boating public.

(3) Regulations restricting motorboat speed and operation, as set forth under this chapter, are not intended to supersede any existing regulations duly established by federal, state, or local authority which are more restrictive in nature. Permitted markers as posted are presumptive evidence of intended zone boundaries.

Specific Authority 370.12(2)(f) FS. Law Implemented 370.12(2)(f) FS. History--New 3-19-79, Formerly 16N-22.04, Amended 12-30-86, 12-25-91,

Formerly 16N-22.004, 62N-22.004.

68C-22.023 Collier County Zones.

(1) The Commission hereby designates the waters within Collier County, as described below, as areas where manatees are frequently seen. The Commission has further determined that manatees are assumed to inhabit these waters periodically or continuously. This rule is for the purpose of regulating the speed and operation of motorboats in portions of these designated areas. In balancing the rights of fishermen, boaters, and waterskiers to use these waterways for recreational and commercial purposes (as applicable under Section 370.12(2)(j), F.S.), with the need to provide manatee protection, the Commission has examined the need for higher speed corridors through regulated areas. Such corridors are provided in those areas where the Commission determined, on the basis of all available information, (1) there is a need for the corridor and (2) the corridor will not result in serious threats to manatees or their habitat (as defined in Rule 68C-22.001, F.A.C.). Higher speed corridors are not provided in areas where both of - 57 the above findings were not made. Regulations described herein which affect the Faka Union Canal area are unchanged from those adopted in 1983, and amended in 1988, which formerly appeared in Rule 68C-22.0161, F.A.C. Zones described herein are in effect year-round and include all associated and navigable tributaries, lakes, creeks, coves, backwaters, canals, and boat basins unless otherwise designated or excluded.

(a) NO ENTRY – Henderson Creek/Enchanting Shores area: All waters of the basin and canal adjacent to the Enchanting Shores Trailer Park, east of a line bearing 20° beginning at a point (approximate latitude 26°02'54" N, approximate longitude 81°14'28" W) on the southern shoreline of the canal approximately 50 feet east of where the canal flows into Henderson Creek (all said waters being located in Section 11, Township 51 South, Range 26 East).

(b) IDLE SPEED (channel included) –

1. Naples Bay area: All waters of Naples Bay and associated waters south of the US 41 bridge and north of an east-west line running through channel marker “33” (approximate latitude 26°07'46" N, approximate longitude 81°47'28" W), including the waters of Crayton Cove;

2. Gordon Pass/Port Royal area: All waters of Gordon Pass and associated waters northeast of lines which bear 160° and 340° from channel marker “7A” (approximate latitude 26°05'39" N, approximate longitude 81°47'56" W) and west and southwest of a line which bears approximately 143° from the southeasternmost point (approximate latitude 26°05'49" N, approximate longitude 81°47'51" W) of the peninsula north of channel marker “10” to the northeasternmost point (approximate latitude 26°05'46" N, approximate longitude 81°47'48" W) of the peninsula

south of channel marker "10"; and all waters of the bay and canal system north of Admiralty Bay, including all waters of Man of War Cove, Smugglers Bay, and Morgan's Cove; 3. Henderson Creek area: All waters of Henderson Creek and associated waters east of State Road 951, except as designated under paragraph (1)(a);

4. Marco Island/Collier Bay area: All waters of Marco River, Collier Bay, Marco Bay, and associated waters, south of the Isle of Capri, Stingaree Island, and a straight line connecting their southern shorelines, east of a line which bears 180° from the westernmost point of the Isle of Capri (approximate latitude 25°58'28" N, approximate longitude 81°44'22" W), and south and west of a line beginning at a point on Stingaree Island (approximate latitude 25°58'30" N, approximate longitude 81°43'27" W) and bearing 180° to channel marker "15" and then bearing approximately 154° to the line's ending point on the northernmost point of the peninsula containing Orange Court (approximate latitude 25°57'57" N, approximate longitude 81°43'16" W);

5. Caxambas Bay/Roberts Bay area: All waters of Caxambas Bay, Roberts Bay, and associated waters, north of a line beginning at a point on the shoreline of Marco Island (approximate latitude 25°54'29" N, approximate longitude 81°43'04" W) (west of channel marker "4") and bearing approximately 106° to the westernmost point of the unnamed island north of Dickman's Island, then running along the northern shoreline of said island to its easternmost point, and then bearing approximately 92° through channel marker "13" to the line's ending point on the shoreline of Horrs Island, and west of a line beginning at a point on Horrs Island (approximate latitude 25°54'13" N, approximate longitude 81°41'15" W) and bearing 0° to the southeasternmost point of Pass Key (approximate latitude 25°54'26" N, approximate longitude 81°41'15" W), then running along the eastern shoreline of said key to its northernmost point, then bearing approximately 338° to the southernmost point of David Key (approximate latitude 25°54'47" N, approximate longitude 81°41'24" W), then running along the southwestern shoreline of said key to its westernmost point, and then bearing 270° to the line's ending point on the shoreline of Marco Island;

6. Goodland Bay area: All waters of Goodland Bay and associated waters, south of a line beginning at a point on the shoreline of Marco Island (approximate latitude 25°55'34" N, approximate longitude 81°39'08" W) and bearing 45° through channel marker "10" to a point on the shoreline of the unnamed island northeast of channel marker "10", then running along the southern shoreline of said unnamed island to its easternmost point, then running 600 feet north of and parallel with the shoreline of Marco Island to the northwesternmost point of the small unnamed island east of Goodland, then running along the western shoreline of said unnamed island to its southwesternmost point, and then bearing approximately 190° to the line's ending point (approximate latitude 25°55'21" N, approximate longitude 81°38'31" W) on the northwestern shoreline of the large unnamed island east of channel marker "6", and north of a line beginning at a point (approximate latitude 25°55'15" N, approximate longitude 81°38'27" W) on the shoreline of the large unnamed island east of channel marker "6" and bearing 245° through said channel marker to the northernmost point of the large mangrove island south of Goodland, then bearing approximately 270° to the easternmost point of the small unnamed island immediately west of said island, then running along the southern shoreline of said island to its southwesternmost – 58 point, then bearing approximately 21° to the southwesternmost point of the unnamed island to the northeast, then running along the southern shoreline of said island to its easternmost point, then bearing approximately 80° to the southwesternmost point of the large unnamed island to the east (approximate latitude 26°17'29" N, approximate longitude 81°49'31" W), then running along the southern shoreline of said island to its southeasternmost point, then bearing approximately 100° to the southwesternmost point of the small unnamed island to the southeast (approximate latitude 26°17'29" N, approximate longitude 81°49'26" W), then running along the southern and eastern shorelines of said island to its easternmost point, then bearing approximately 25° to the easternmost point of the small unnamed island to the northeast, and then bearing approximately 350° to the line's ending point at the southwesternmost point of the peninsula (approximate latitude 26°17'36" N, approximate longitude 81°49'24" W) to the north of said unnamed island (all these islands being north of the marked channel leading into Wiggins Bay), and north and west of a line at the southern end of Wiggins Bay beginning at the northeasternmost point of the peninsula west of the Cocohatchee River (approximate latitude 26°17'16" N, approximate longitude 81°48'58" W) and bearing 90° to its ending point on the eastern shoreline of said river, including all waters of Water Turkey Bay and Vanderbilt Lagoon; 2. Gordon River area: All waters of the Gordon River, Rock Creek, and associated waters, north of the US 41 bridge; 3. The Narrows: All waters east of Keewadin Island known as "The Narrows" south of channel marker "52" (approximate latitude 26°03'22" N, approximate longitude 81°46'44" W) and north of channel marker "47" (approximate latitude 26°02'34" N, approximate longitude 81°46'31" W); 4. Flotilla Passage area: All waters of Flotilla Passage; all waters within 300 feet of the State Road 951 bridge over the Marco River (Judge Jolly Bridge) and those waters within 300 feet of shore between Flotilla Passage and said bridge; and all waters within 600 feet of the State Road 951 bridge over McIlvane Bay;

5. Goodland Bay area: All waters of Goodland Bay south of channel marker "15" in the Marco River (north of the State Road 92 bridge over Goodland Bay), except as designated under subparagraph (1)(b)6.;

6. Faka Union Canal area: All waters of Faka Union Canal, Faka Union Bay, and associated waters, south of an east-west line 500 feet south of the southernmost east-west canal and north of a line in Faka Union Bay beginning at the southernmost point of the peninsula (approximate latitude 25°54'02" N, approximate longitude 81°31'02" W) north of channel marker "42" and bearing 107° to the line's ending point on the eastern shoreline of Faka Union Bay (said line running through a point in the marked channel 16,468 feet south of the above-described northern boundary as formerly described in Rule 68C-22.0161, F.A.C.);

7. Everglades City/Chokoloskee Bay area: All waters of Chokoloskee Bay and associated waters south of a line beginning at a point on the northern shoreline of the bay (approximate latitude 25°51'15" N, approximate longitude 81°23'47" W) and bearing 180° to the northernmost point of Bear Island, then running along the western shoreline of said island to its southwesternmost point, then bearing approximately 225° to the line's ending point at the southernmost point of the unnamed spoil island (approximate latitude 25°50'50" N, approximate longitude 81°24'04" W) north of channel marker "27", north of a line beginning at the aforementioned southernmost point of the unnamed spoil island north of channel marker "27" and bearing approximately 113° to channel marker "5" (approximate latitude 25°50'31" N, approximate longitude 81°23'16" W), and then bearing approximately 135° to the line's ending point on the boundary of Everglades National Park (approximate latitude 25°49'57" N, approximate longitude 81°22'38" W) 1,200 feet west of the Chokoloskee Causeway, and south of the Chokoloskee Causeway.

(d) 30 MPH IN CHANNEL/SLOW SPEED OUTSIDE OF CHANNEL – All channels that are duly permitted by applicable state and federal authorities are included in the 30 mph channel designation. Local channels that are not duly permitted (including those marked by PVC pipes or similar materials) are not included.

1. Little Hickory Bay/Bonita Shores area: All waters of Little Hickory Bay and associated waters south of the Lee County line and north of a line beginning at a point on the western shoreline of Little Hickory Bay (approximate latitude 26°19'26" N, approximate longitude 81°50'15" W) and bearing 90° to the southernmost point of the peninsula containing Third Street West in Bonita Shores (approximate latitude 26°19'26" N, approximate longitude 81°49'58" W), and then bearing 125° to the line's ending point on the eastern shoreline of Little Hickory Bay;

2. Wiggins Pass/South Wiggins Island area: All waters south of a line beginning at a point on the eastern shoreline of Wiggins Island (approximate latitude 26°18'09" N, approximate longitude 81°49'48" W) at the narrow section of the waterway north of Wiggins Pass and bearing 90° to the line's ending point on the eastern shoreline of said waterway, and north of a line beginning at the southeasternmost point of Wiggins Island (approximate latitude 26°17'25" N, approximate longitude 81°49'38" W) and bearing approximately 78° to the southernmost point of the first small unnamed island to the east, then running along the southeastern shoreline of said unnamed island to its easternmost point, then bearing approximately 21° to the southwesternmost point of the unnamed island to the northeast, then running along the southern shoreline of said island to its easternmost point, then bearing approximately 80° to the southwesternmost point of the large unnamed island to the east (approximate latitude 26°17'29" N, approximate longitude 81°49'31" W), then running along the southern shoreline of said island to its southeasternmost point, then bearing approximately 100° to the southwesternmost point of the small unnamed island to the southeast (approximate latitude 26°17'29" N, approximate longitude 81°49'26" W), then running along the southern and eastern shorelines of said island to its easternmost point, then bearing approximately 25° to the easternmost point of the small unnamed island to the northeast, and then bearing approximately 350° to the line's ending point at the southwesternmost point of the peninsula (approximate latitude 26°17'36" N, approximate longitude 81°49'24" W) to the north of said unnamed island (all these islands being north of the marked channel leading into Wiggins Bay); point, and then bearing 290° to the line's ending point on the shoreline of Marco Island (approximate latitude 25°55'10" N, approximate longitude 81°39'06" W);

7. Faka Union Canal/Port of the Islands area: All waters of Faka Union Canal and associated waters, south of the Tamiami Trail Bridge (US 41), and north of an east-west line 500 feet south of the southernmost east-west canal;

8. Everglades City/Barron River: All waters of the Barron River and associated waters north and east of the mouth of the river (beginning just northeast of channel marker "1") and west of the State Road 29 Bridge.

(c) SLOW SPEED (channel included) –

1. Wiggins Pass/Vanderbilt Lagoon area: All waters of Wiggins Pass, Wiggins Bay, Water Turkey Bay, Vanderbilt Lagoon, and associated waters, east of a line which bears 180° from the southernmost point of Wiggins Island (approximate latitude 26°17'17" N, approximate longitude 81°49'55" W), south of a line beginning at the southeasternmost point of Wiggins Island (approximate latitude 26°17'25" N, approximate longitude 81°49'38" W) and bearing approximately 78° to the southernmost point of the first small unnamed island to the east, then running

along the southeastern shoreline of said unnamed island to its easternmost – 59 3. Naples Bay/Dollar Bay area: All waters of Naples Bay, Haldeman Creek, Admiralty Bay, Dollar Bay, and associated waters, south of an east-west line running through channel marker “33” (approximate latitude 26°07'46" N, approximate longitude 81°47'28" W) and north of channel marker “52” (approximate latitude 26°03'22" N, approximate longitude 81°46'44" W), except as designated under subparagraph (1)(b)2.;

4. Inland Waterway/Halloway Island area: All waters south of channel marker “47” (approximate latitude 26°02'34" N, approximate longitude 81°46'31" W), west of a north-south line at the north end of Halloway Island running through the westernmost point (approximate latitude 26°02'34" N, approximate longitude 81°46'18" W) of the small unnamed island at the north end of Rookery Bay and at the south end of Halloway Island west of a north-south line running through channel marker “27A” (approximate latitude 26°00'53" N, approximate longitude 81°45'15" W), and north of a line beginning at a point on Keewadin Island (approximate latitude 26°01'04" N, approximate longitude 81°45'53" W) and bearing 90° to the northernmost point of Little Marco Island, then running along the eastern shoreline to a point on said island (approximate latitude 26°00'46" N, approximate longitude 81°45'30" W) south of channel marker “28A”, then bearing approximately 107° to the line’s ending point at the northwesternmost point of Cannon Island (approximate latitude 26°00'43" N, approximate longitude 81°45'20" W); 5. Johnson Bay area: All waters of Johnson Bay and associated waters, east of a north-south line at the north end of Cannon Island running through channel marker “27A” (approximate latitude 26°00'53" N, approximate longitude 81°45'15" W) and at the south end of Cannon Island east of a line bearing approximately 135° from the southernmost point of the unnamed island south of Cannon Island (approximate latitude 25°58'40" N, approximate longitude 81°44'35" W) to the westernmost point of the Isle of Capri (approximate latitude 25°58'29" N, approximate longitude 81°44'23" W), south of Hall Bay, and north of the Isle of Capri, excluding the unnamed bays and backwater areas north and east of Johnson Bay; 6. Henderson Creek/Hall Bay area: All waters of Henderson Creek, Hall Bay, and associated waters, west of State Road 951, north and east of Johnson Bay, and south and east of a line beginning at a point on the southeastern shore of Halloway Island (approximate latitude 26°01'12" N, approximate longitude 81°44'43" W) and bearing 90° to the southwesternmost point (approximate latitude 26°01'12" N, approximate longitude 81°44'40" W) of the large unnamed island separating Rookery Bay and Hall Bay, then running along the eastern shoreline of said island to its northeasternmost point, then bearing approximately 15° to the southwesternmost point of the unnamed island to the northeast, then running along the eastern shoreline of said island to its southeasternmost point, then bearing approximately 62° to the line’s ending point at a point (approximate latitude 26°01'33" N, approximate longitude 81°44'15" W) on the southwestern shoreline of the peninsula forming the northwestern boundary of Henderson Creek;

7. Tarpon Bay/North Marco River area: All waters of Tarpon Bay, Marco River, and associated waters, south of the Isle of Capri, east of a line which bears 180° from the westernmost point of the Isles of Capri (approximate latitude 25°58'28" N, approximate longitude 81°44'22" W), and north and west of State Road 951, except as designated under subparagraphs (1)(b)4. and (1)(c)4.;

8. South Marco River/Addison Bay area: All waters of Marco River, Sanctuary Sound, Georgia Fruit Farm Creek, Bear Point Cove, Three Island Cove, the Muddies, Addison Bay, and associated waters, east of State Road 951, south of Unknown Bay, Upper Addison Bay, and the unnamed bays and backwater areas north and east of Bear Point Cove, Three Island Cove, and Addison Bay, and north of channel marker “15” in the Marco River (north of the State Road 92 bridge over Goodland Bay), except as designated under subparagraph (1)(c)4.;

9. Caxambas Pass/Helen Key area: All waters of Caxambas Pass, Caxambas Bay, and associated waters, south of Marco Island, Horrs Island, and a line beginning at a point on the shoreline of Marco Island (approximate latitude 25°54'29" N, approximate longitude 81°43'04" W) (west of channel marker “4”) and bearing approximately 106° to the westernmost point of the unnamed island north of Dickman’s Island, then running along the northern shoreline of said island to its easternmost point, and then bearing approximately 92° through channel marker “13” to the line’s ending point on the shoreline of Horrs Island, east of a line beginning at the southwesternmost point of Marco Island (approximate latitude 25°54'28" N, approximate longitude 81°43'43" W) and bearing 165° to a point in Caxambas Pass (approximate latitude 25°54'15" N, approximate longitude 81°43'39" W), then bearing approximately 100° to the line’s ending point on the northernmost point of Dickman’s Point (approximate latitude 25°54'10" N, approximate longitude 81°43'02" W), north and east of Kice Island, Helen Key and a line beginning at a point on the eastern shoreline of Kice Island (approximate latitude 25°53'13" N, approximate longitude 81°41'14" W) and bearing 48° to the northwesternmost point of the large unnamed island between Kice Island and Helen Key, then bearing approximately 48° to the line’s ending point at the westernmost point of Helen Key (approximate latitude 25°53'24" N, approximate longitude 81°41'02" W), and west of a north-south line through channel marker “3” (north of Helen

Key), excluding the waters of Grassy Bay and Little Grassy Bay; 10. Coon Key Pass/Goodland area: All waters of Coon Key Pass, Blue Hill Creek, and associated waters, south of Marco Island and a line beginning at a point (approximate latitude 25°55'15" N, approximate longitude 81°38'27" W) on the shoreline of the large unnamed island east of channel marker "6" and bearing 245° through said channel marker to the northernmost point of the large mangrove island south of Goodland, then bearing approximately 270° to the easternmost point of the small unnamed island immediately west of said island, then running along the southern shoreline of said island to its southwesternmost point, and then bearing 290° to the line's ending point on the shoreline of Marco Island (approximate latitude 25°55'10" N, approximate longitude 81°39'06" W), east of a line beginning at a point on the southern shoreline of Marco Island (approximate latitude 25°55'08" N, approximate longitude 81°39'19" W) and bearing 180° to the northern shoreline of Horrs Island, then running along the eastern – 60 shoreline of Horrs Island to the line's ending point at a point on the shoreline of Horrs Island (approximate latitude 25°54'49" N, approximate longitude 81°39'14" W), north of a line beginning at the aforementioned point on the shoreline of Horrs Island and bearing 90° to the northwesternmost point of an unnamed island east of Horrs Island (approximate latitude 25°54'49" N, approximate longitude 81°39'11" W), then running along the northern shoreline of said island to its easternmost point, then bearing approximately 115° to the westernmost point of the large unnamed island to the east (approximate latitude 25°54'44" N, approximate longitude 81°39'00" W), then running along the northern and eastern shorelines of said island to its southeasternmost point, then bearing approximately 38° to the line's ending point (approximate latitude 25°54'37" N, approximate longitude 81°38'10" W) at the southernmost point of the large unnamed island east of channel marker "6".

(e) 30 MPH IN CHANNEL/20 MPH OUTSIDE OF CHANNEL – All channels that are duly permitted by applicable state and

federal authorities are included in the 30 mph channel designation. Local channels that are not duly permitted (including those marked by PVC pipes or similar materials) are not included.

1. Little Hickory Bay area: All waters of Little Hickory Bay and associated waters south of a line beginning at a point on the western shoreline of Little Hickory Bay (approximate latitude 26°19'26" N, approximate longitude 81°50'15" W) and bearing 90° to the southernmost point of the peninsula containing Third Street West in Bonita Shores (approximate latitude 26°19'26" N, approximate longitude 81°49'58" W), and then bearing 125° to the line's ending point on the eastern shoreline of Little Hickory

Bay, and north of a line beginning at a point on the eastern shoreline of Wiggins Island (approximate latitude 26°18'09" N, approximate longitude 81°49'48" W) at the narrow section of the waterway north of Wiggins Pass and bearing 90° to the line's ending point on the eastern shoreline of said waterway;

2. Cocohatchee River area: All waters of the Cocohatchee River and associated waters south and east of a line at the southern end of Wiggins Bay beginning at the northeasternmost point of the peninsula west of the Cocohatchee River (approximate latitude 26°17'16" N, approximate longitude 81°48'58" W) and bearing 90° to its ending point on the eastern shoreline of said river;

3. Rookery Bay area: All waters of Rookery Bay and associated waters east of the Narrows section of the Inland Waterway and a north-south line at the north end of Holloway Island running through the westernmost point (approximate latitude 26°02'34" N, approximate longitude 81°46'18" W) of the small unnamed island at the north end of Rookery Bay, and north of a line beginning at a point on the southeastern shore of Holloway Island (approximate latitude 26°01'12" N, approximate longitude 81°44'43" W) and bearing 90° to the southwesternmost point (approximate latitude 26°01'12" N, approximate longitude 81°44'40" W) of the large unnamed island separating Rookery Bay and Hall Bay, then running along the eastern shoreline of said island to its northeasternmost point, then bearing approximately 15° to the southwesternmost point of the unnamed island to the northeast, then running along the eastern shoreline of said island to its southeasternmost point, then bearing approximately 62° to the line's ending point at a point (approximate latitude 26°01'33" N, approximate longitude 81°44'15" W) on the southwestern shoreline of the peninsula forming the northwestern boundary of Henderson Creek;

4. McIlvane Bay area: All waters of McIlvane Bay, the unnamed bays and backwater areas north and east of Johnson Bay, and associated waters, north of Flotilla Passage, the Isle of Capri, and Johnson Bay, except as designated under subparagraph (1)(c)4.;

5. Unknown Bay/Upper Addison Bay area: All waters of Unknown Bay, Upper Addison Bay, and associated waters, north of Bear Point Cove, Three Islands Cove, and Addison Bay;

6. Barfield Bay/Blue Hill Bay area: All waters of Barfield Bay, Blue Hill Creek, and associated waters, north of Horrs Island, north and east of a line beginning at a point on Horrs Island (approximate latitude 25°54'13" N, approximate longitude 81°41'15" W) and bearing 0° to the southeasternmost point of Pass Key (approximate latitude

25°54'26" N, approximate longitude 81°41'15" W), then running along the eastern shoreline of said key to its northernmost point, then bearing approximately 338° to the southernmost point of David Key (approximate latitude 25°54'47" N, approximate longitude 81°41'24" W), then running along the southwestern shoreline of said key to its westernmost point, then bearing 270° to the line's ending point on the shoreline of Marco Island, and west of a line beginning at a point on the southern shoreline of Marco Island (approximate latitude 25°55'08" N, approximate longitude 81°39'19" W) and bearing 180° to the northern shoreline of Horrs Island; 7. Palm Bay/Sugar Bay area: All waters of Palm Bay, Sugar Bay, Mud Bay, and associated waters, east of Goodland Bay, the large unnamed island east of channel marker "6", and a line beginning at the southernmost point of said unnamed island (approximate latitude 25°54'37" N, approximate longitude 81°38'10" W) and bearing approximately 157° to the line's ending point at a point on the northwestern shoreline of Tripod Key (approximate latitude 25°54'30" N, approximate longitude 81°38'07" W);

8. Ten Thousand Islands/Faka Union Bay/Chokoloskee Bay area: All waters of the Ten Thousand Islands area (including those waters of the Blackwater River, Blackwater Bay, Faka Union Bay, and Chokoloskee Bay), east of Palm Bay, Sugar Bay, Tripod Key, and a line beginning at a point on Tripod Key (approximate latitude 25°54'15" N, approximate longitude 81°37'33" W) and bearing approximately 170° to the westernmost point of the large unnamed island northeast of Brush Island, then bearing approximately 174° to the northwesternmost point of Brush Island, then running along the western shoreline of Brush Island to the line's ending point at the southernmost point of said island (approximate latitude 25°53'26" N, approximate longitude 81°37'22" W), and north of the Monroe County line and a line connecting the southern shorelines of all the outermost islands of the Ten Thousand Islands area, excluding all waters within the boundaries of Everglades National Park, and areas otherwise designated under - 61 (2) Commercial Fishing and Professional Guiding Permits: The following provisions pertain to the issuance of permits to allow commercial fishermen and professional fishing guides to operate their vessels in specified areas at speeds greater than the speed limits established under subsection (1) above. Procedures related to the application for and the review and issuance of these permits are as set forth in Rule 68C-22.003, F.A.C.

(a) Permits shall be limited as follows:

1. Permits shall only be issued for the zones or portions of zones described under subparagraphs (1)(c)5. and (1)(d)4. through (1)(d)9.;
2. Permits shall not authorize the recipient to operate at speeds greater than 20 MPH, and;
3. Permits shall not apply on weekends or state-recognized holidays.

(b) Permit applications may be obtained at the Fish and Wildlife Conservation Commission, Division of Law Enforcement Office, 2423 Edwards Drive, Fort Myers, FL 33901, (telephone (941) 332-6971).

(3) The zones described in subsection 68C-22.023(1), F.A.C., are depicted on the following maps, labelled "Collier County Manatee Protection Zones" and dated April 1997. These maps shall replace all previously published maps. Maps provided are intended as depictions of the above-described zones. In the event of conflict between the two, the above descriptions shall prevail.

SEE FLORIDA ADMINISTRATIVE CODE FOR "MAPS 1 THROUGH 9 AND MAP COVERAGES"

Specific Authority 370.12(2)(f), (n), (o) FS. Law Implemented 370.12(2)(f)11, (n), (o) FS. History—New 8-28-90, Formerly 16N-22.023, Amended 6-5-97, 62N-22.023.

Maps of the Collier County Manatee Protection Rule
68C-22.023 F.A.C.

This map does not show boating safety or local zones.

LEE COUNTY
COLLIER COUNTY

68C-22.023(1)(d)1.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(e)1.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

BONITA
SHORES

LITTLE
HICKORY
BAY

68C-22.023(1)(d)2.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

WIGGINS
ISLAND

WIGGINS BAY

US 41

68C-22.023(1)(e)2.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

WIGGINS PASS

COCO HATCHEE
RIVER

GULF
OF
MEXICO

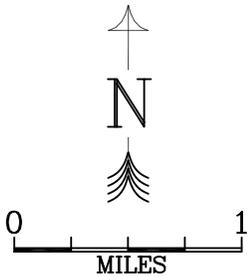
WATER
TURKEY
BAY

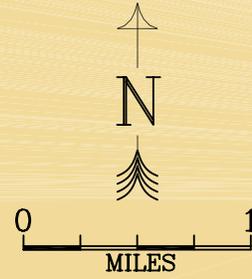
68C-22.023(1)(c)1.
SLOW SPEED ALL YEAR
CHANNEL INCLUDED

VANDERBILT
SHORES

UPPER
CLAM
BAY

INNER
CLAM
BAY





DOCTORS PASS
MOORINGS BAY

US 41

68C-22.023(1)(c)2.
SLOW SPEED ALL YEAR
(CHANNEL INCLUDED)

GORDON RIVER

ROCK CREEK

NAPLES

NAPLES BAY

68C-22.023(1)(b)1.
IDLE SPEED ALL YEAR
(CHANNEL INCLUDED)

US 41

HALDEMAN CREEK

68C-22.023(1)(b)2.
IDLE SPEED ALL YEAR
(CHANNEL INCLUDED)

68C-22.023(1)(d)3.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

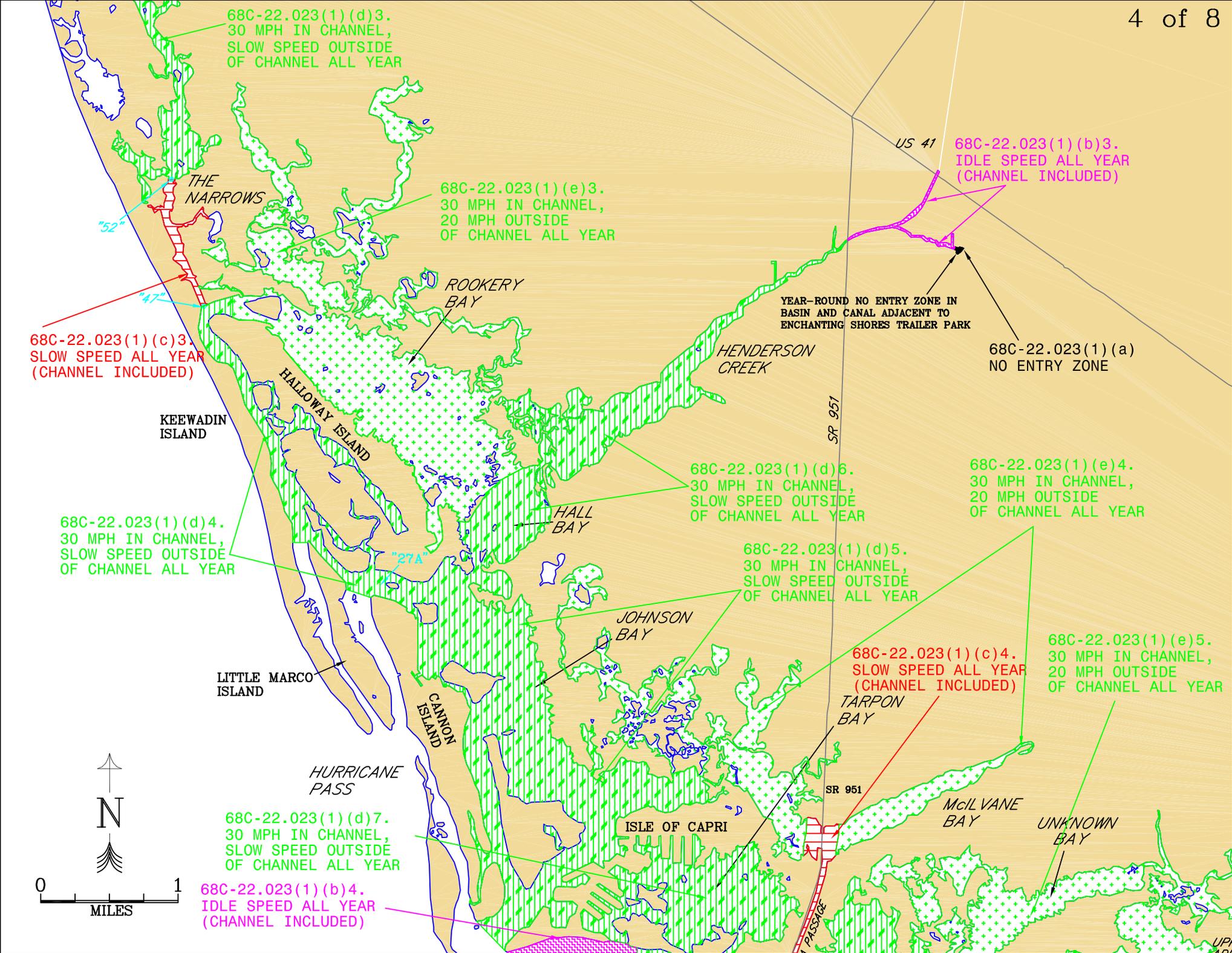
"7A"
GORDON PASS

"10"

"73"
DOLLAR BAY

GULF
OF
MEXICO

68C-22.023(1)(d)3.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR



68C-22.023(1)(d)3.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(e)3.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(b)3.
IDLE SPEED ALL YEAR
(CHANNEL INCLUDED)

68C-22.023(1)(c)3.
SLOW SPEED ALL YEAR
(CHANNEL INCLUDED)

YEAR-ROUND NO ENTRY ZONE IN
BASIN AND CANAL ADJACENT TO
ENCHANTING SHORES TRAILER PARK

68C-22.023(1)(a)
NO ENTRY ZONE

68C-22.023(1)(d)6.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(e)4.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(d)4.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(d)5.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(e)5.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(c)4.
SLOW SPEED ALL YEAR
(CHANNEL INCLUDED)

68C-22.023(1)(d)7.
30 MPH IN CHANNEL,
SLOW SPEED OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(b)4.
IDLE SPEED ALL YEAR
(CHANNEL INCLUDED)



KEEWADIN
ISLAND

HALLOWAY
ISLAND

LITTLE MARCO
ISLAND

HURRICANE
PASS

CANNON
ISLAND

ISLE OF CAPRI

THE
NARROWS

ROOKERY
BAY

HALL
BAY

JOHNSON
BAY

SR 951

SR 951

SR 951

US 41

HENDERSON
CREEK

TARPON
BAY

McILVANE
BAY

UNKNOWN
BAY

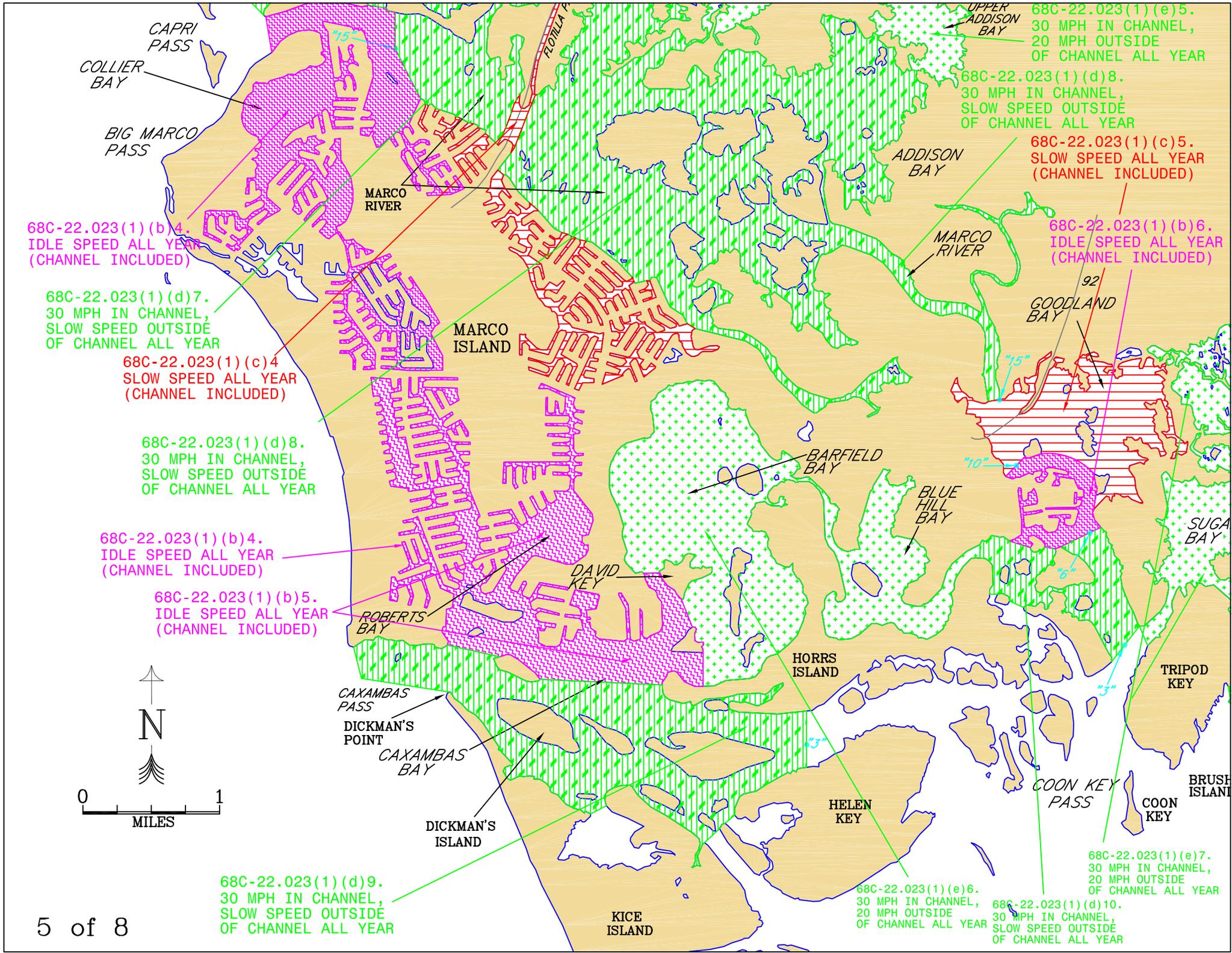
"52"

"47"

"27A"

PASSAGE

UP



68C-22.023(1)(e)7.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(c)6.
SLOW SPEED ALL YEAR
(CHANNEL INCLUDED)

68C-22.023(1)(e)7.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

MUD BAY

PALM BAY

BLACKWATER BAY

BLACKWATER RIVER

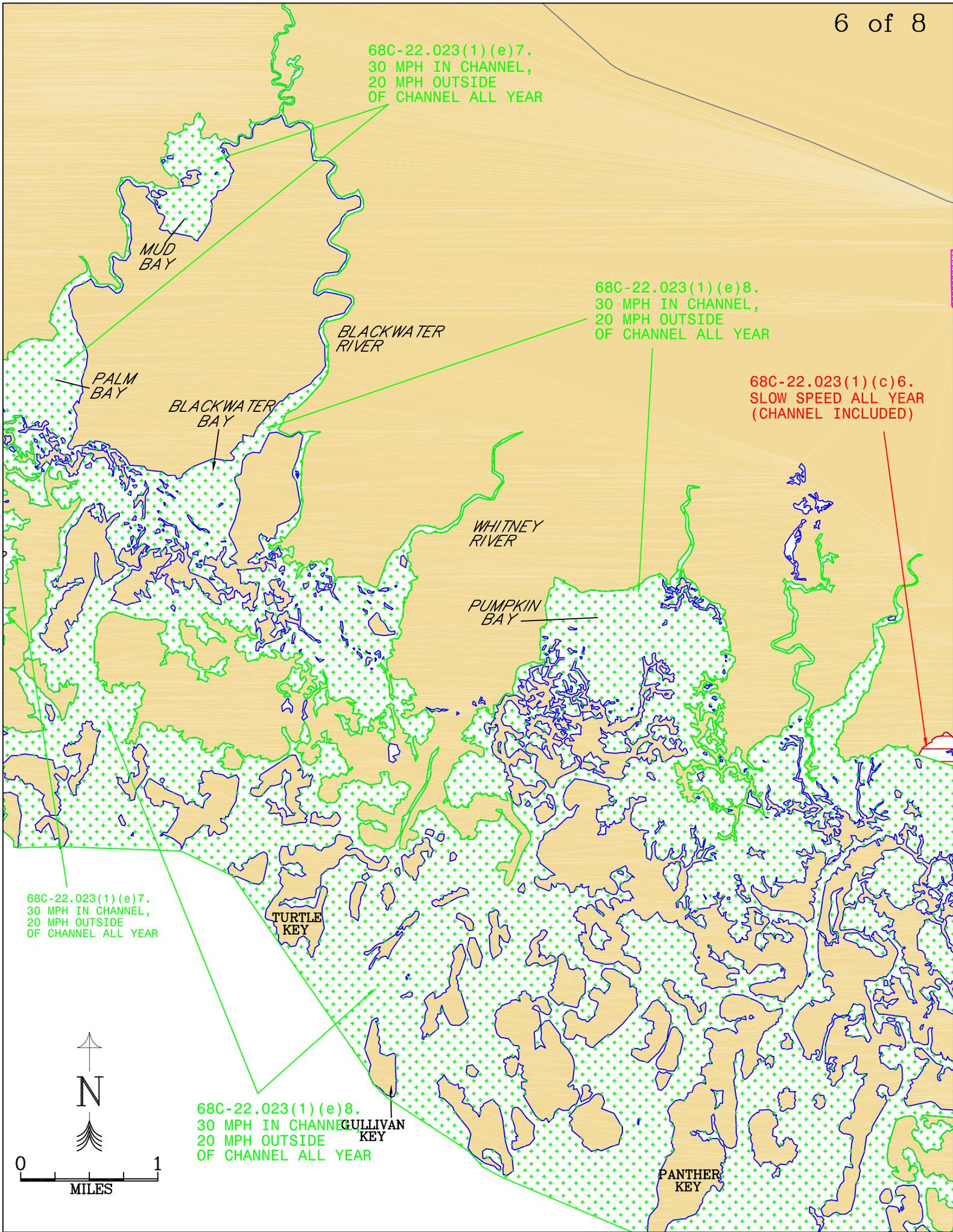
WHITNEY RIVER

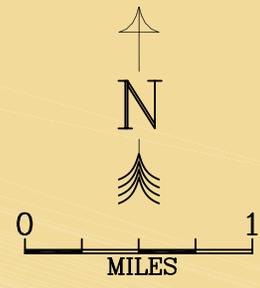
PUMPKIN BAY

TURTLE KEY

GULLIVAN KEY

PANTHER KEY





68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

*PORT OF
THE ISLANDS*

68C-22.023(1)(b)7.
IDLE SPEED ALL YEAR
(CHANNEL INCLUDED)

US 41

*FAKA
UNION
CANAL*

68C-22.023(1)(c)6.
SLOW SPEED ALL YEAR
(CHANNEL INCLUDED)

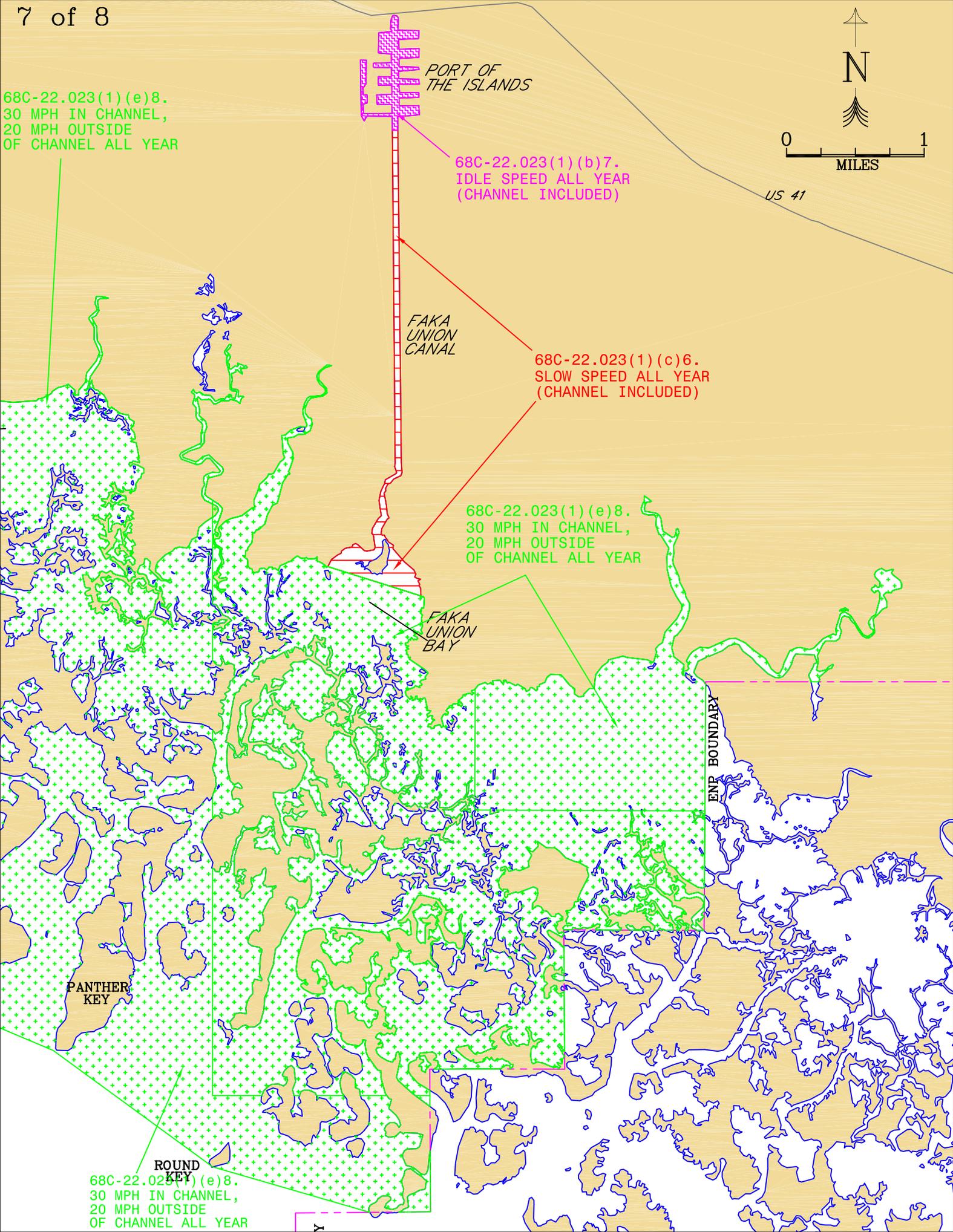
68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

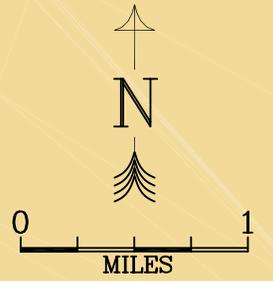
*FAKA
UNION
BAY*

ENP BOUNDARY

PANTHER
KEY

ROUND
KEY
68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR





68C-22.023(1)(b)8.
IDLE SPEED ALL YEAR
(CHANNEL INCLUDED)

SR 29

BEAR ISLAND

BARRON RIVER

EVERGLADES CITY

68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

HALFWAY CREEK

68C-22.023(1)(c)7.
SLOW SPEED ALL YEAR
(CHANNEL INCLUDED)

ENP BOUNDARY

CHOKOLOSKEE BAY

68C-22.023(1)(e)8.
30 MPH IN CHANNEL,
20 MPH OUTSIDE
OF CHANNEL ALL YEAR

CHOKOLOSKEE

