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Position Paper: Summary of Issues and Recommendations Concerning Protection of the West Indian Manatee (*Trichechus Manatus*) in Tampa Bay

Manatee Protection Strategies Task Force

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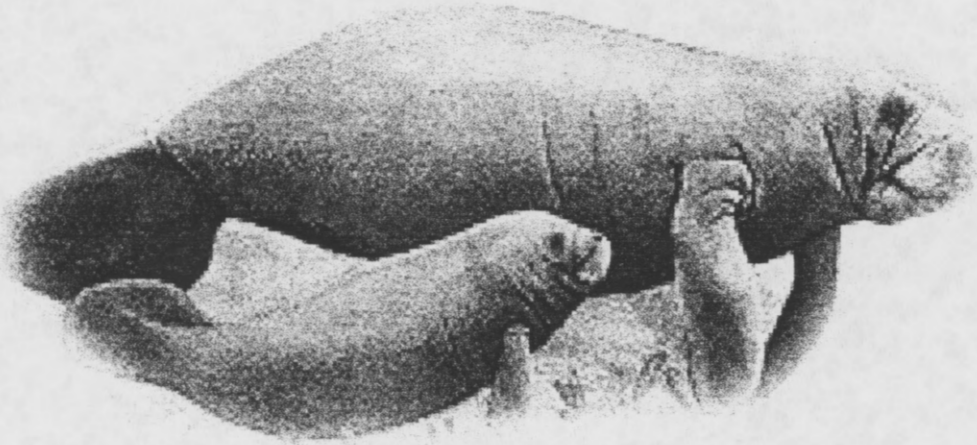
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POSITION PAPER
SUMMARY OF ISSUES AND RECOMMENDATIONS
CONCERNING PROTECTION OF THE
WEST INDIAN MANATEE
(*TRICHECUS MANATUS*)
IN TAMPA BAY

Prepared by the
MANATEE PROTECTION STRATEGIES TASK FORCE

Ms. Pam Leasure, Co-Chair
Dr. David Voigts, Co-Chair

Agency on Bay Management

June 1998

PROCLAMATION

- Whereas:** *the goal of the Tampa Bay Manatee Protection Strategies Task Force is to recommend protective measures to ensure the safety of the Tampa Bay population of the West Indian Manatee, and*
- Whereas:** *the Task Force reviewed the Tampa Bay area, which was subdivided into four sections, and*
- Whereas:** *each section was designated for slow speed with appropriate exceptions, and duly marked on the NOAA chart of Tampa Bay, and*
- Whereas:** *the six-foot contour was considered the entry point of said slow-speed zones with noted exceptions, and*
- Whereas:** *there are two schools of thought as to how to protect the manatee, namely voluntary compliance and mandatory regulation,*

The Tampa Bay Manatee Protection Strategies Task Force hereby adopts the recommendations contained within this document; to have regulatory and non-regulatory zones in conjunction with a strong public education initiative; and, appropriate monitoring to measure the success or failure of such strategies.



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- Attachment A - Action FW-2 from *Charting the Course for Tampa Bay, The Comprehensive Conservation and Management Plan*
- Attachment B - Maps of Recommended Manatee Protection Zones
- Attachment C - Records of Manatee Sightings, Manatee Mortality, and Seagrass Communities, 1974 - 1997.
- Attachment D - Florida Manatee Sanctuary Act

TABLE 1: MANATEE PROTECTION TASK FORCE MEMBERS

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1.0 THE GOAL OF THE TASK FORCE

Action FW-2 of *Charting the Course for Tampa Bay: The Comprehensive Conservation and Management Plan*, produced by the Tampa Bay National Estuary Program, is entitled **Establish and Enforce Manatee Protection Zones** (Attachment A is the full text of FW-2). The Tampa Bay Regional Planning Council's Agency on Bay Management was tasked with "Step 1: Establish a workgroup to explore recommendations for establishing manatee protection zones in Tampa Bay." The strategy was to review existing protection strategies, including those implemented at the federal, state and local levels. Current scientific information concerning Tampa Bay's manatee population was also to be considered. This information included manatee use patterns, documented wintering and calving sites, other important manatee aggregation sites within the Bay, behavior patterns, and causes of mortality. Boating use and traffic data was also considered in order to determine areas of historic fisheries, recreational use, access and destination points, and high traffic locations.

2.0 BACKGROUND SUMMARY

Since May of 1997, the task force held 14 meetings in order to receive input on the development of manatee protection zones. A preliminary set of these zones were proposed by FMRI staff and then amended to reflect input received by the Task Force from members and citizens with local knowledge and experience. Generally, recommended changes were based on refined data or on the demonstrated needs of recreational or commercial boating interests.

In order to facilitate the review of protection zones, the bay was subdivided into four geographic sections¹ (Figure 1). Meeting schedules, data analysis and input of public comment were then performed according to each section (Table 1). This allowed members of the general public to plan attendance at specific task force meetings in order to contribute input into the review process. In order to organize the information gathered and develop a comprehensive set of recommendations, a final set of summary meetings were held after all sections were reviewed and input received.

¹ Section boundaries were designed to facilitate logical and orderly review of Tampa Bay and were only intended to be approximate boundaries. It is recognized that manatee protection recommendations should also be coordinated for those portions of Pinellas and Manatee County not within the immediate geographic boundary of Tampa Bay since manatees and boats do not recognize such arbitrary limits.

FIGURE 1: Tampa Bay was divided into four geographic sections in order to assist with the review of manatee and boating data.

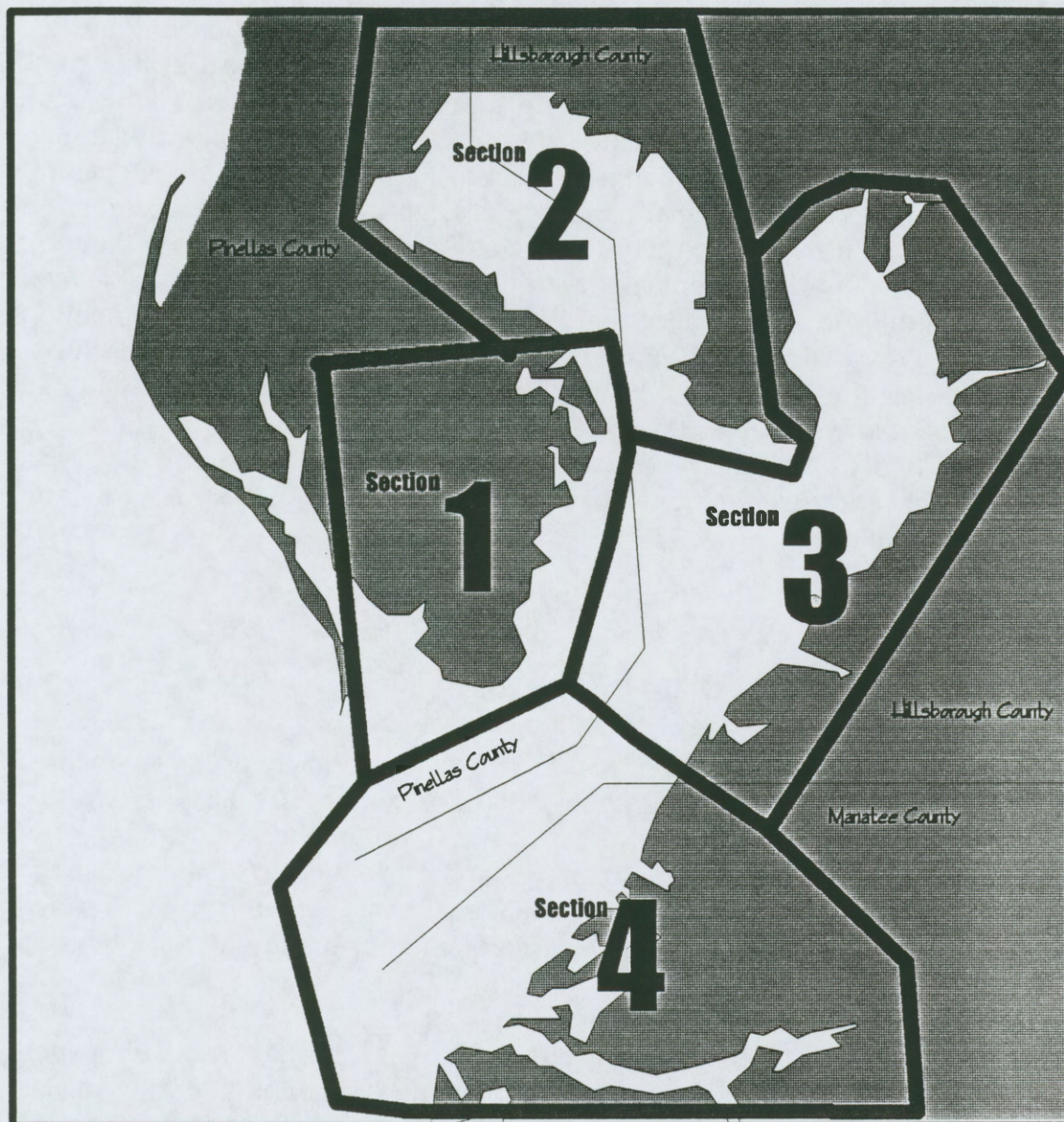







TABLE 2: Counties and Larger Cities By Study Section		
Section Number	Contains the Counties	Contains the Cities/Areas
1	Pinellas	St. Petersburg, Shore Acres, St. Petersburg Beach, Gulfport
2	Pinellas, Hillsborough	Tampa, Rocky Creek, Oldsmar, Bridgeport, Safety Harbor
3	Hillsborough	Tampa, Gibsonton, Ruskin
4	Manatee	Bradenton, Palmetto, Palma Sola, Holmes Beach

**Table 3: COMMON TERMS AND PHRASES
For Manatee Protection Zones**

<i>Term</i>	<i>Sign Example</i>	<i>Meaning</i>
<i>No Entry Zone</i>		A protected zone that prohibits boating, swimming, or diving for the protection of manatees. Zone may apply all year long or on a seasonal basis.
<i>Idle Speed</i>		The minimum speed necessary to maintain steerage of the vessel. Zone may apply all year long or on a seasonal basis.
<i>Slow Speed</i>		Boats must be off plane, settled in and level with the water, and proceeding at a minimum wake. Zone may apply all year long or on a seasonal basis.
<i>Resume Normal Safe Operation</i>		Sign indicating you may resume safe boating speed, usually visible as you leave a protected area.
<i>Maximum 30 Mph in Channel</i>	Sign similar to those above, with text, "Maximum 30 mph In Channel"	A maximum speed of 30 mph (approximately 25 knots) is designated within the marked channel in order to facilitate boating access and traffic. Speed zones, if designated, still apply outside the channel.
<i>Caution, Manatee Area</i>		An area frequented by manatees, requiring caution on the part of boaters to avoid disturbing or injuring the animals. This is an education sign.

3.0 RECOMMENDATIONS

Manatee protection and boating access recommendations are listed by geographic section (1-4) in the following pages. Unless noted, all permitted, marked boating access channels² are recommended for a maximum speed of 30mph (25knots), unless otherwise designated by state or local government. Place names used are as identified on the NOAA chart for Tampa Bay.

The recommendations are divided into the following categories:

- Manatee protection zones implemented through **regulatory**³ means.
- Slow speed zones implemented through **non-regulatory**⁴ means.
- Existing boating access channels and recommended locations for marking of new boating access channels.
- Other explanations and modifications.

² As designated or permitted by the United States Coast Guard.

³ Manatee protection zone established by rule, ordinance or statute, and enforceable by marine law enforcement units. State of Florida manatee rules may be found in Chapter 62N-22, F.A.C.

⁴ Manatee protection zone where compliance is voluntary. These zones are not enforceable by law enforcement units but may be managed by citizen groups in order to increase awareness.



3.1 RECOMMENDATIONS: SECTION 1

Approximate Zone Boundary:

Those coastal areas of Pinellas County from Redington Shores south to Ft. DeSoto, including St. Petersburg Beach, Boca Ciega Bay, Gulfport, St. Petersburg, and north to the southwestern shoreline of the Howard Frankland Bridge.

■ Recommended Regulatory Zones

Designate a "No-Entry Manatee Refuge Zone" for non power plant-related boats for the shallow area between the intake(shipping) channel at the Bartow power plant and the east-west channel south of Gandy Causeway, including the discharge canal, during November - March. This area would be "Slow-Speed" the rest of the year.

■ Recommended Non-Regulatory Zones

As shown on Maps 1 and 2, these areas should be designated for slow-speed, with exemptions for the boating access channels listed in the ensuing section.

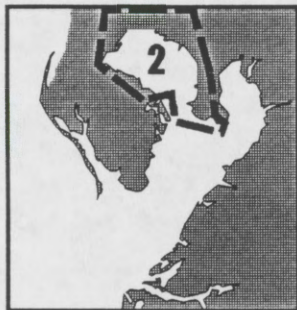
■ Existing and Recommended Boating Access Channels

Except where specified by local or county ordinance, the following marked channels (M), or deeper areas when they are formally marked as channels⁵, are recommended for "Maximum 30mph (25 knots) in Channel":

- parallel to the Howard Frankland bridge, on the north side, into the area called Big Island Gap.
- parallel to the Howard Frankland bridge, on the south side, to the Big Island Gap bridge at 4th Street.
- running east-west from the Big Island Gap bridge at 4th Street to deeper water.
- parallel to the Gandy Bridge, on the north side, then turning northeast to reach deep water.

⁵ As Permitted by the United States Coast Guard.

- (M) parallel and immediately south of the Gandy Bridge, connecting Snug Harbor to deep water.
- (M) ship channel into Bartow Power Plant.
- an east-west cut at the northern end of Weedon Island.
- (M) Bayou Grande channel into Riviera Bay.
- connection between deeper water, along the southern side of Venetian Isles, the shoreline of Shore Acres and Smacks Bayou, to deeper water of Tampa Bay.
- (M) channel into the entrance of Coffeepot Bayou.
- (M) channel into St. Petersburg Harbor.
- (M) channel into Bayboro Harbor.
- (M) channels into the 4th Street boat ramp.
- (M) passage along the shoreline of Coquina Key and south, between the channels into Big Bayou, Little Bayou and Pt. Pinellas.
- (M) channel into Big Bayou and Little Bayou.
- (M) channel from Pt. Pinellas to deeper water.



3.2 RECOMMENDATIONS: SECTION 2

Approximate Zone Boundary:

Those coastal areas of Pinellas and Hillsborough counties from the northwestern shoreline of the Howard Frankland Bridge; north to Safety Harbor and Lake Tarpon; south through Oldsmar, Rocky Creek and Rocky Point; south again through Tampa, Culbreath Isles, Westshore, and ending at Gadsden Point in the southeast portion of MacDill AirForce Base.

■ Recommended Regulatory Zones

Designate a "Slow Speed Manatee Area" speed zone for those waters inside the six-foot contour⁶ between the southeastern end of the Howard Frankland Causeway and Gun Branch.

⁶ It is recognized that regulatory zones based on depth contours are unenforceable by law enforcement officers. Final zone design should be based on a chosen distance from shoreline (shoreline buffer zone).

■ Recommended Non-Regulatory Zones

As shown on Maps 2-4, these areas should be designated for slow-speed, with exemptions for the boating access channels listed in the ensuing section.

■ Existing and Recommended Boating Access Channels

Except where specified by local or county ordinance, the following marked channels (M), or deeper areas when they are formally marked as channels, are recommended for "Maximum 30mph (25 knots) in Channel":

- channel into the boat ramp at Philippe Park.
- channel into Safety Harbor boat ramp.
- channel into Double Branch Bay.
- (M) channel into Channel A (Dick Creek).
- (M) channel into Baycrest.
- channel into Sweetwater Creek.
- (M) channel south of / parallel to the Howard Frankland Bridge.
- (M) channel into Culbreath Bayou.

■ Other

1. It is recommended that based on existing use, the waters east of Rocky Point Island, north of the Courtney Campbell Causeway may be designated as special use areas (water sports). The adjacent canals are already designated slow-speed by county or local ordinance.



3.3 RECOMMENDATIONS: SECTION 3

Approximate Zone Boundary:

Those coastal areas of Hillsborough County from Gadsden Point north to downtown Tampa, Davis Island, McKay Bay, Port of Tampa, Port Sutton, and the Alafia River; south through Apollo Beach and ending at the Manatee County line.

■ Recommended Regulatory Zones

Designate a "No-Entry, Manatee Refuge" zone for recreational boating traffic for the area in the Port Sutton Channel which serves as the warm-water discharge from the Gannon Plant, during November - March. This area would be "Normal Safe Operation" the remainder of the year.

■ Recommended Non-Regulatory Zones

As shown on the Maps 4-7, these areas should be designated for slow-speed, with exemptions for the boating access channels listed in the ensuing section.

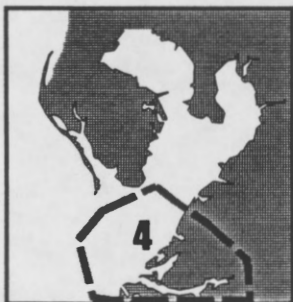
■ Existing and Recommended Boating Access Channels

Except where specified by local or county ordinance, the following marked channels (M), or deeper areas when they are formally marked as channels, are recommended for "Maximum 30mph (25 knots) in Channel":

- (M) channel into the Alafia River.
- (M) channel into TECO's Big Bend docks.
- (M) channel into Apollo Beach (south side).
- channel into Simmons Park entrance and south to Bahia Beach.
- (M) channel into Bahia Beach.
- (M) channel into Shell Point Marina.
- Little Manatee River channel.
- (M) channel into Cockroach Bay.
- channel into Piney Point.
- (M) channel into Port Manatee.

■ **Other**

1. Recommend State remove speed zone designation of Alafia River channel as idle-speed during winter months.



3.4 RECOMMENDATIONS: SECTION 4

Approximate Zone Boundary:

Those coastal areas of Manatee County from the Hillsborough County line south through Port Manatee, Bishops Harbor, Terra Ceia Bay, Palma Sola, Manatee and Braden rivers, Bradenton, and Anna Maria Sound; ending at the approximate confluence of Anna Maria

Sound and Sarasota Bay.

■ **Recommended Regulatory Zones**

Designate a "Slow Speed" zone for recreational boating traffic for the area south and southeast of channel marker 4 in Terra Ceia Bay, east of the Snead Island Cut.

■ **Recommended Non-Regulatory Zones**

As shown on the Maps 7-9, these areas should be designated for slow-speed, with exemptions for the boating access channels listed in the ensuing section.

■ **Existing and Recommended Boating Access Channels**

Except where specified by local or county ordinance, the following marked channels (M), or deeper areas when they are formally marked as channels, are recommended for "Maximum 30mph(25 knots) in Channel":

- channel into Bishops Harbor.
- channel on south side of Joe Island.
- channel into Miguel Bay.
- channel between Miguel Bay and Terra Ceia Bay.

- (M) channel into Terra Ceia Bay.
- pass between Gulf to Bay subdivision and Terra Ceia channel.
- Braden River channel.
- channels across Key Royale Bar into Bimini Beach subdivision.



3.5 BAYWIDE STRATEGIES

It is realized that community-wide effort and regional cooperation are necessary to successfully implement manatee protection strategies, whether non-regulatory or regulatory.

The following have been identified by the Task Force as some of the strategies that would be beneficial in accomplishing the Tampa Bay Estuary Program goals for manatee protection:

■ Public Education

- Using Save the Manatee Club curricula and materials, teach school children about natural resource protection/personal responsibility.
- Consider adopting the manatee as a symbol (ala Smokey Bear and Allie Gator) for Tampa Bay environmental promotions.

■ Boater Education:

- Post signs at all boat ramps, marinas and shoreline parks notifying boaters that manatees use the area; providing information on manatee behavior; recommending slow speed (approximately 5 mph or 4.5⁷ knots) outside marked channels and a maximum of 30 mph (approximately 25 knots) in channels; recommending careful use of shallow seagrass areas; and advising of penalties for harassment and feeding of manatees.
- Require environmental awareness as a component of the state-required boater education program.
- Encourage shoreline residents to place manatee awareness signs at appropriate locations.

⁷ One knot = 1.1517 miles per hour. One mile per hour = 0.868 knots

- Provide a map brochure with boater registration forms through the region's County Tax Collector's Offices. This brochure would advise of manatee and seagrass protection advisories and regulations for Tampa Bay.
- Have law enforcement officers provide free speed determination to help boaters gauge their speed using engine RPMs.
- Encourage all boat dealers to install depth gauges as standard equipment.
- Recommend that all boaters wear sunglasses with polarized lenses to reduce glare and improve below-water visibility.
- Encourage boat dealers to distribute a video and/or literature (yet to be prepared) on boating safety and environmental responsibility with each new boat.
- Augment the Tampa Bay Boaters' Guide to show the manatee protection zones and exempt channels, and to include more information about manatees in Tampa Bay.
- Use Go/No Go sticks consistently throughout the Bay.

■ **Other:**

- Consider the establishment of special use areas, reserved for water sports. The areas south of Pinellas Point and east of northern Rocky Point Island were identified as suitable, given the current (high) levels of use, deeper water, and lack of seagrass and manatee use.
- Form a T-BUG (Tampa Bay Users Group) like organization, modeled after C-BUG - the Cockroach Bay Users Group, to promote stewardship of the Bay, public safety and community awareness.

With little possibility for greatly-enhanced law enforcement programs, a non-regulatory approach may offer greater results than laws without enforcement. Bay-wide educational efforts would also be more far-reaching and consistent than various individual ordinances passed at the local level. Criteria should be established by which to measure the effectiveness of the educational efforts.



3.6 CRITERIA FOR MEASURING EFFECTIVENESS

The Task Force determined that it is necessary to formulate a means to measure how effective the implemented protection measures are in regards to boater compliance and manatee safety. This review may be conducted annually for three years after implementation, and biennially thereafter.

- Manatee population size and mortality rates attributable to boats.
- Boater surveys to gauge knowledge of the manatee protection issue and of the voluntary measures in place.
- Compile baseline data that can be used in determining effectiveness of protection strategies.
- The rate of seagrass scarring.
- Boater compliance with established speed guidelines.

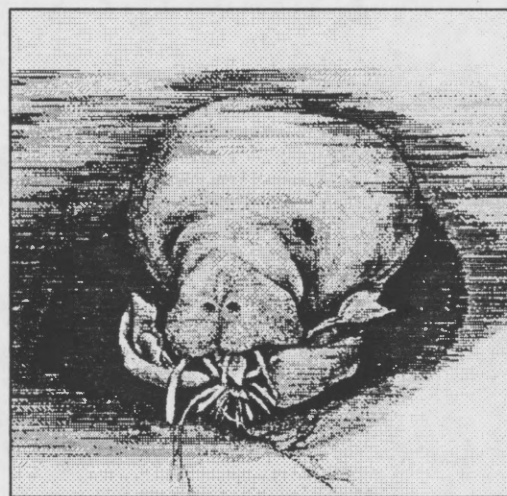
It was suggested that each county (Pinellas County already has plans to do this) should select one of its recommended manatee protection zones where it will provide a designated patrol for a 2-3 year test period to monitor and document when boaters are observed at speeds above the recommended speed through the manatee protection zones.

4.0 INFORMATION AND DATA REVIEWED

4.1 MANATEE BIOLOGY

- **Introduction** - Staff of the FL Department of Environmental Protection Florida Marine Research Institute provided data collected over a >20-year period on manatee feeding habits, important habitat, travel patterns, mortality, reaction to boats, etc. Staff of the U.S. Fish and Wildlife Service provided insight into federal rules and programs concerning manatee protection and recovery. Other governmental agencies also contributed to the wealth of information received by the Task Force during 12 months of committed effort. The Task Force examined the various marine law enforcement programs around the Bay, public and private initiatives at work to accomplish specific goals, and efforts underway around the state to address challenges similar to those experienced in Tampa Bay.
- **Manatee's Role in the Florida Environment** - Manatees are the largest vertebrate grazers in seagrass systems. They have no known natural predators. The West Indian manatee is one of only four living species in the order Sirenia. Others include the dugong in certain coastal waters of the Indian and Pacific Oceans; the West African manatee in the coastal waters and rivers of western Africa; and the Amazonian manatee in the fresh waters of the Amazon basin.

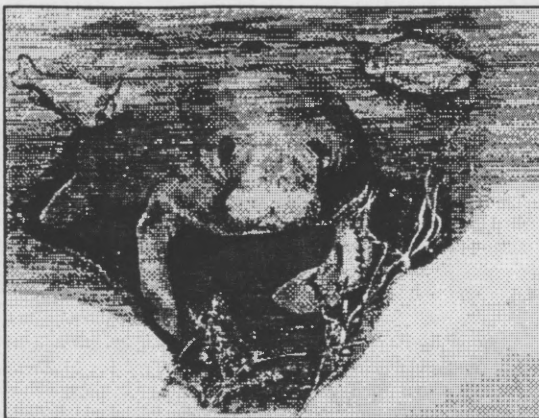
Florida's manatees belong to the species (*Trichechus manatus*) found from the southern United States to the northeast coast of Brazil. Recent studies of skull characteristics have verified that manatees in the southeastern United States are a subspecies distinguishable from manatees found in the West Indies, the Caribbean and northeastern South America. The preferred common name for the species is the West Indian manatee, but the subspecies found in Florida can also correctly be called the Florida manatee.



The manatee has been an integral part of Florida's ecology for millions of years. The fossil record shows that

In the animal kingdom, manatees belong to the Order Sirenia, and their closest land relatives are the elephant and hyrax (a rodent-like animal).

both manatees and dugongs were once found in the New World, but that manatees eventually replaced the dugongs. Manatees may have prevailed because they evolved more wear-resistant teeth and so were better able to exploit developing areas of freshwater vegetation as a food source. Forty-five million-year-old sirenian fossils have been found in Florida. Fossil dugong ribs have been discovered in shallow-water marine and estuarine sedimentary deposits throughout the state and manatee bones have been found in pre-Columbian Indian refuse mounds in southeastern Florida.



Florida is the "home" state of the manatee, though animals sometimes wander as far north as Virginia, and as far west as Louisiana during the warm summer and fall months.

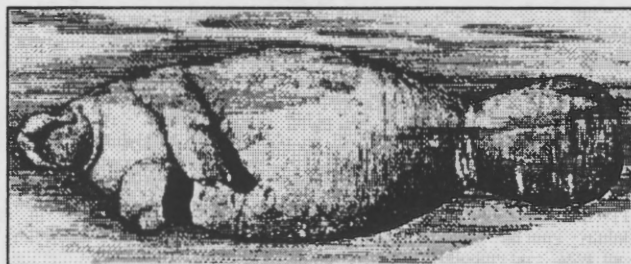
The West Indian (Florida) manatee lives in freshwater, brackish and marine habitats and can move freely between salinity extremes. It can be found in both clear and muddy water. Water depths of at least 1 to 2 meters (3-7 feet) are preferred and flats and shallows are avoided unless adjacent to deeper water. Along the coast manatees tend to travel in water that is 3 to 5 meters (10-16 feet) deep and are rarely seen in areas over 6 meters (20 feet) deep.

Manatees move during high tides to reach thoroughfares or feeding grounds that are inaccessible at low tide. Currents of over 5 kilometers (3 miles) per hour usually are avoided. If the water is deep enough and the currents are not too strong, these animals will travel great distances up coastal rivers. Manatees living in the upper St. Johns River are more than 200 kilometers (124 miles) from the ocean. Along the west coast of Florida, the principal summer habitats are the estuaries and grassbeds of rivers. Manatees rarely are seen in the Gulf of Mexico further than 1 kilometer (0.6 miles) from the mouth of a river.

Florida is essentially the northern end of the West Indian manatee's range. During the summer months, manatees range throughout the coastal waters, estuaries, bays, and rivers of both coasts of Florida and are usually found in small groups. Studies of known individuals show that many manatees return to preferred summer and winter grounds. Manatees can travel great distances. Trips of more than 528 miles between Blue Spring on the St. Johns River and Coral Gables have been made by radio-tagged individuals. It is believed that the historical winter range of the manatee was once centered in southern Florida, with small

groups spending the winter at a few natural springs in northern Florida. Over the past 30 years, the construction of power plants and other industrial sites that discharge warm water, coupled with the loss of natural habitats, has caused a shift in manatee winter distribution.

Winter aggregations now center around about 24 warm-water sources, six of which are natural springs. On the west coast, manatees may move south to Collier and Monroe counties in the winter. During aerial



A manatee cannot turn its head sideways, so it must turn its whole body around!

surveys of western peninsular Florida conducted from July through November 1979, 50 to 75 percent of the manatees sighted were in these two counties.

Manatees use several man-made warm-water sources on the west

coast; the primary one is Florida Power & Light Company's (FPL) Ft. Myers plant near the junction of the Orange and Caloosahatchee rivers. The dependence of so many manatees on this site prompted FPL to dig artesian wells that provide an alternative warm-water source in case of a plant shutdown during cold spells. Several natural springs are used on the west coast during the winter, the most important of which are at the headwaters of the Crystal and Homosassa rivers in Citrus County. There are no reports of large numbers of manatees in the headwaters of these rivers before the early 1960s, but the number of manatees using these springs has doubled in less than a decade. More than 200 manatees now use the Crystal and Homosassa river area as winter aggregation sites. As with the Blue Spring population on the St. Johns River, this increase is mostly the result of reproduction and some immigration.

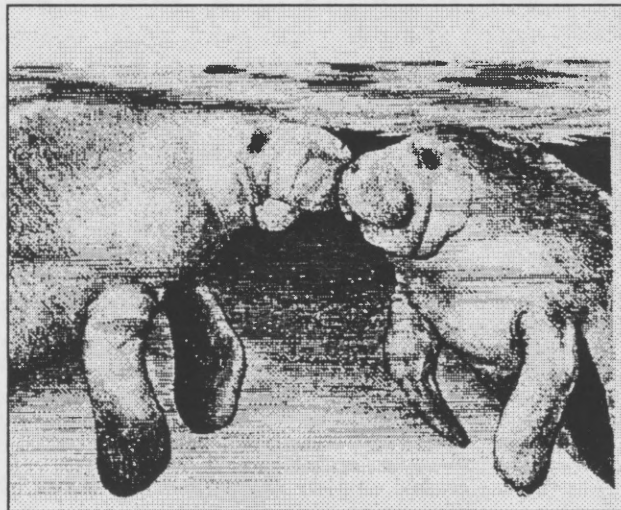
During the cold winter months in Tampa Bay, approximately 200 manatees use the TECO Gannon and Big Ben power plant warm-water discharge channels or canals (when plants are operating), and the FPC Bartow Plant warm-water outfall.

It has been suggested that manatees could be of value in controlling aquatic weeds that are a problem in many parts of the world, including Florida. However, studies have shown that manatees do not eat enough to be effective plant control agents. It has been calculated that about 3,000 manatees would be needed just to maintain a constant amount of hydrilla in the 408-acre headwaters of Crystal River.

The value of the manatee goes beyond its potential use for weed control. The sight of one of these animals in its natural habitat is a memorable experience, whether for the Florida resident or the visitor enjoying one of Florida's many waterways. It is difficult to put a dollar figure on ecological value or aesthetic appeal but, clearly, manatees are an important asset and an attraction unique to Florida.

4.2 Population

- **Manatee population size/trend** - On average, 50-60 manatees inhabit Tampa Bay in the summer, and <200 are here in the winter months. The winter population is higher in Tampa Bay now than in the recent past and may have increased due to the presence of protected warm water refugia at the major power plants. Data show that the number of animals, statewide, may be slightly increasing (save for the catastrophic die-off in 1996). The 1996 state count was 2,639. Early population counts of 800 - 1,000 animals, taken in the late 1970s, are believed to have been less accurate than those taken using the sophisticated methods of today. Modern methods of data collection include radio telemetry and satellite tracking, observations from airships, airplanes, and photo-documentation. Standardized counting protocol has resulted in a more reliable population estimate.



Manatees breathe on an average of every three to five minutes. When they are using a great deal of energy they may surface to breathe as often as every 30 seconds.

4.3 Legal Status

- **Federal status of the species** - Manatees have been protected under state law for 100 years, and under federal law for 30 years. The federal Marine Mammal Protection Act and the state Florida Manatee Sanctuary Act spell out specific regulations which protect this species. Four main objectives and about 125 tasks are identified in the Federal Manatee Recovery Plan support the three requirements which must be met in order for the manatee to be considered for de-listing:



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1. When analyses indicate the population is growing or stable,
2. When mortality factors are controlled at acceptable levels or decreasing, and
3. When critical habitats are secure and threats to them are controlled or decreasing.

Their slow maturation, low reproductive rate, and susceptibility to catastrophic events makes estimating a sustainable population size difficult. There are laws to prevent the animals from being harassed or harmed. The interpretation of these terms is very broad.

4.4 Habitat

- **Habitat needs** - Manatee generally feed along the edge of seagrass beds due to close proximity to deeper water and the frequency of disturbance by boats. They also eat marsh grasses, mangrove leaves, algae, hydrilla and water hyacinths, and forage throughout Tampa Bay. In Tampa Bay seagrasses grow in water less than six feet deep. Calving occurs in quiet, protected waters. Areas identified as important for this purpose in Tampa Bay are the Braden River and the Little Manatee and Manatee rivers east of Interstate 75. Fresh water (for drinking) is also important, and sites such as Sulphur Springs in the Hillsborough River, the springs near Culbreath Bayou and in Coffeepot Bayou, and various stormwater outfalls are heavily used. During the colder water temperatures of the winter season, manatees seek out the discharge canals of TECO's Big Bend and Gannon electric-generating plants and FPC's Bartow plant when they are discharging warm water. On milder winter days they move out to feed, returning to the warm sanctuaries at night.

4.5 Impacts to Manatees

- **Types of impacts** - Manatees are subjected to scarring, blunt trauma, and mortality. Scarring can reduce viability and breeding capacity. Deaths are classified under six headings: Watercraft, Floodgate/Canal Lock, Other Human, Perinatal, Other Natural, and Undetermined. Whereas it was previously found that most boat-related manatee deaths were



Scientists from around the state work as a team to collect and necropsy (a manatee autopsy) dead manatees as quickly as possible in order to determine cause of death.

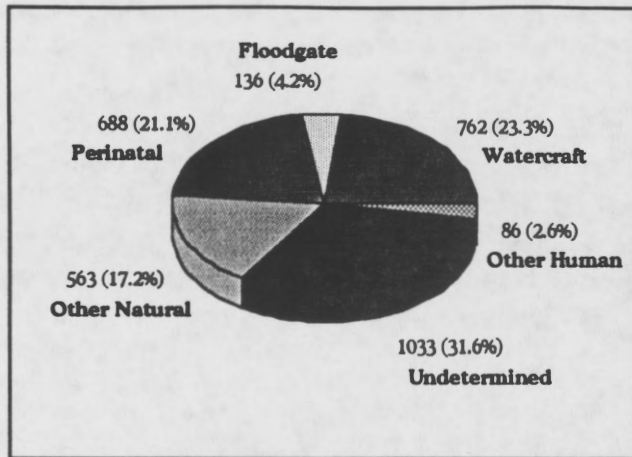


FIGURE 2 - MANATEE MORTALITY BY CAUSE OF DEATH, 1974 - 1997. The total number and percent of total deaths for each category is also listed. Source: FDEP.

mortalities attributable to human causes. Other human-related causes of mortality are entanglement in crab traps and monofilament fishing line, and water-control structures. Indirect human-related impacts are habitat (seagrass and protected waters) loss through hardening of the shoreline (seawalls), filling of shallow waters, and water quality degradation; and increased disturbance of the population's habits by watercraft. Many manatees in Tampa Bay display scars from boat propellers. Boats now account for an average of four deaths per year (1992-1996) in Tampa Bay.

caused by propeller strikes (60 percent compared to 40 percent due to hull impact), in the past few years a reversal in that trend has been seen. Hull impacts are now the determined cause of manatee mortality in 60 - 70 percent of the cases, as opposed to 30 - 40 percent caused by propeller strikes. Watercraft-related deaths are 80 percent of the

4.6 EXISTING MANATEE PROTECTION MEASURES

- Existing manatee protection measures in Tampa Bay - Several areas are designated for manatee protection or for public safety (with the same result):
 - the discharge canal of TECO's Big Bend plant is closed to boats at all times;
 - the Hillsborough River, from the dam downstream to the Jean Street Marina is idle speed, no wake year-round; and the Columbus Drive bridge downstream to the Platt Street bridge is idle speed, no-wake from November - March;
 - Rocky Creek is a designated slow-speed zone year-round;
 - Coffeepot Bayou is idle speed, no-wake year round; and
 - the Alafia River channel near the Cargill facility is slow-speed November through March (designated when a warm-water discharge there attracted manatees. The discharge no longer exists).

- Other local zones may exist which provide manatee and seagrass protection, but are not documented within this report.
- **Marine law enforcement in Tampa Bay** - It is estimated that less than five officers are patrolling the entire Tampa Bay at any given time (less than one each from the Cities of St. Petersburg and Tampa and the three counties; two or less from the FL Marine Patrol). There are state and federal laws concerning manatees, boating speeds, safe operation, etc. Enforcement of boating laws is limited, and proving the violation is difficult.

4.7 USER GROUPS IN TAMPA BAY

- **Recreational Uses** - Tampa Bay and its rivers are used for a wide variety of recreational purposes. The upper reaches of the rivers are popular for canoeing and fishing. More open stretches of the Alafia, Little Manatee and Manatee rivers are popular for water-skiing. The calm grass flats of the Bay attract fishermen as well as water skiers. Personal watercraft-users and swimmers flock to shallows near accessible beaches. Popular beaches include the eastern and western ends of the Courtney Campbell Causeway and the western end of Gandy Bridge. Back bays such as Cockroach Bay and Terra Ceia Bay are well-known fishing spots. Boaters trying to reach their favorite sites cross open waters randomly.
- **Commercial Uses** - The Bay supports several types of commercial uses. Bait shrimping and blue crab-harvesting using traps provide a livelihood for area residents. Cast-netters and commercial hook and line fishermen also utilize the bay's resources. Professional guides lead fishing trips to the best flats areas throughout the Bay. Bird-watching and other eco-tourism activities are a growing enterprise. Personal watercraft and powerboat rentals provide increased access to the Bay. On a larger scale, the commercial traffic of Port Manatee, Tampa, Port Tampa and St. Petersburg makes the Bay the



Manatees can swim up to 20mph in short bursts. Usually they swim about 5 mph.

ninth largest port in the United States. Some 43 miles of shipping channels, about 40 feet deep, cross the otherwise shallow Bay.

5.0 Points of Discussion

- **Recreational uses in the Bay** - Boaters are generally willing to observe laws when there is a valid reason and they are informed. Fishermen want quick access to shallows and deep water. Personal watercraft operators want to use shallows where the water is calm. Water skiers use the Bay's shallows and rivers, outside the marked channels. Some boaters won't obey rules or recommendations, regardless of the consequences.
- **Commercial uses in the Bay** - Commercial fishermen want the freedom to access fishing grounds, to move unimpeded, and to quickly return to port/dock. These boaters and fishermen don't want recreational boaters banned from shallows and forced into deeper waters. Commercial operators can apply for an exemption to the slow-speed requirement within regulated speed zones.
- **Effects of slow-speed zones** - Many boaters said they rarely see a manatee in Tampa Bay, which may be because the boaters are moving too fast, or because they do not realize what manatees look like in the water. Aerial video recordings show that manatees respond in a predictable fashion when they hear an approaching boat. They can successfully avoid boats in most cases. However, manatees cannot move as quickly as necessary to avoid boats moving more than about 25 mph, especially in waters less than six feet deep. Also, with continuous disruption, manatees are forced to stay near deep water, where food is limited and habitat is not conducive to rearing young.

A decrease in the rate of seagrass scarring may or may not occur if boats are forced to go slow in shallow (less than three feet) areas. Planing allows the boat and propeller to ride higher in the water, decreasing the needed running depth. Slower speeds may reduce the number of boats in the areas, but may also result in more seagrass scarring.

Flats fishermen expect better fishing if boats are poling or slowly motoring nearby, but believe time is lost if the flats cannot be reached as quickly as possible. Public safety would probably increase, and people

may become more aware of the natural features of the Bay if they move more slowly in the shallows and near the shoreline.

- **Regulatory vs. non-regulatory strategies** - As specified by the Florida Manatee Recovery Plan, speed zone regulations and manatee protection plan documents (MPPs) are required for the 13 Key Counties in Florida and recommended for all coastal counties which manatees inhabit. The three counties which make up Tampa Bay are considered second tier counties (13 Key Counties are considered first tier) but increasing population counts during winter surveys and increasing mortality indicate the need for manatee protection within the Tampa Bay area. Pinellas and Hillsborough counties have already taken steps to afford some level of manatee protection within their jurisdictions, however, no bay-wide set of manatee protection guidelines has been developed to date.

Due to competing programs and funding, and the costs of increased enforcement presence, both local and State governments have been slow to address the perceived shortfall in law enforcement presence within state or local waters. Because of man-power restrictions, many law enforcement officers advocate comprehensive education programs as a replacement or supplement to new regulations. Despite this opinion, marine law enforcement officers continue to voice determination to enforce on-water regulations as effectively as possible.

Efforts to protect manatee and fisheries habitat have occurred within Pinellas County. Within this county, a set of very strict internal combustion engine use exclusion and education-based seagrass caution protection zones have been established. Research regarding public compliance within these different zones exhibits that educational information can be as effective as strict regulatory control. Data indicates that the number of propeller scars in seagrass areas which were marked by educational "Shallow water use caution" signs, was roughly equivalent to those zones with more strict regulatory signs and protection that do not allow powered boat traffic. However, within the regulated zones, the location of propeller scars mostly occurred on the edges of the seagrass bed and resulted in a lower total acreage of seagrass scarring when compared to an unregulated control area. All protected zones are patrolled by the sheriff's marine unit which has the capability to issue citations for seagrass damage or non-compliance. This research is on-going.

Within Hillsborough County, a seagrass protection initiative has been undertaken by the Cockroach Bay Users Group (C-BUG). The seagrasses within the Cockroach Bay Aquatic Preserve had been seriously damaged by boat propellers and nets. When the County threatened to close the



bay to all boats, C-BUG was formed. This group of recreational and commercial boaters developed a plan of regulatory and non-regulatory measures to reduce the rate of seagrass scarring. The plan has been successful.

The Manatee County Department of Environmental Management is planning to post signs in the Terra Ceia Bay area to inform boaters of potential damage to the seagrass beds.

Surveys and public comment during the Manatee Task Force proceedings indicate that the majority of the general public is in favor of manatee protection. The methods by which this protection occurs often creates a perceived conflict between boater's rights and manatee protection. Management options which minimize watercraft mortality and risk from injury to manatees while maintaining as much public access to Tampa Bay waterways as possible, are preferred, at least by the majority of citizens who addressed the Task Force.

There are many initiatives to educate the public about Florida's natural resources and how to protect them. Voluntary, community-driven efforts to protect seagrasses and other shallow habitat have had a very positive effect in the Cockroach Bay area (C-BUG). The state Bureau of Protected Species Management recognizes this effort as a potentially valuable model for Tampa Bay and the state. With little possibility for greatly enhanced law enforcement presence, a combination of minimal regulation and greater emphasis on non-regulatory approaches may offer more effective and efficient results than a set of far reaching regulations with no increased levels of enforcement. In addition, the responsibility to respect and protect the unique resources of Tampa Bay fall back into the hands of it's residents and provide citizens with a sense of ownership.

These non-regulatory approaches include, but are not limited to bay-wide education efforts and citizen action groups. Criteria which measure the effectiveness of both non-regulatory and regulatory efforts should be defined, established and monitored on an annual basis. At the end of each two year cycle, the effectiveness of each program should be measured in order to modify or address any shortfalls or compliance problems.

6.0 Sources of Information:

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ATTACHMENT A

Action FW-2

from

*Charting the Course for Tampa Bay,
The Comprehensive Conservation and
Management Plan*

Establish and Enforce Manatee Protection Zones

FW-2

ACTION:

Enact local ordinances designating manatee protection zones in Tampa Bay.
Encourage the use of boat propeller guards throughout the bay.

BACKGROUND:

Research continues to bolster evidence that Tampa Bay is an important year-round or seasonal home to many imperiled manatees, which are protected under the federal Endangered Species Act. In fact, as many as 200 of the more than 2,600 manatees remaining in the state seek refuge in the winter at the warm-water discharges surrounding the bay's power plants. Additionally, the bay's seagrass meadows and numerous natural and manmade freshwater sources provide critical feeding and gathering areas for manatees throughout the year.

Although several no-wake areas were established in the bay for boater safety, only one — a protected area in St. Petersburg's Coffeepot Bayou — was created primarily to protect manatees. However, many communities are using boater safety zones for manatee protection.

Increases in manatee deaths associated with propeller strikes or collisions reinforce the need for more protective measures in Tampa Bay. Manatee deaths in Tampa Bay and adjacent coastal waters have risen from an average of 4.1 manatees a year between 1976 and 1985, to an average of 10.1 manatees a year from 1986 to 1994. Of the 164 manatee deaths verified in the bay area from 1976 through March 1996, 34, or 21 percent, died from collisions with watercraft.

Manatee researchers with the Florida Marine Research Institute (FMRI) have identified several areas of the bay where manatees would benefit from increased protection, based on the best available manatee population and distribution data. The areas are important as either winter refuges from cold water, seagrass feeding areas, sources of fresh water or migration routes. Among these sites are:

- warm-water outfalls of Tampa Electric Company's Big Bend power plants (winter sanctuaries)
- the warm-water outfall of Florida Power Corporation's Bartow power plant (winter sanctuary) and adjacent seagrass beds near Weedon Island (feeding area)
- Culbreath Bayou in Tampa (seagrass beds and freshwater source)
- Anna Maria Sound near Perico Island (seagrasses)
- lower Manatee River near Palmetto (fresh water and seagrasses)
- upper Braden River near Bradenton (freshwater source)

FW-2

- Hillsborough River near Sulphur Springs (fresh water)
- portions of Terra Ceia Bay
- portions of McKay Bay (seagrasses)
- the mouth of the Little Manatee River up to E.G. Simmons Park (seagrass beds)
- the Rocky Point area, southwest side of the Courtney Campbell Causeway (seagrass beds)

A joint meeting of the Tampa Bay NEP and the Agency on Bay Management (ABM) was held in November 1996 to discuss the justification and ramifications of establishing manatee protection zones in Tampa Bay. Participants concluded that a formal workgroup composed of environmental officials, manatee researchers and other interested parties should be created to develop specific recommendations.

Designation of manatee protection zones could be done unilaterally by local governments, or in conjunction with rules developed by the Florida Department of Environmental Protection (FDEP). Creation of zones by local ordinance is generally faster than the state rulemaking process and should be pursued first, followed by state adoption if necessary. Once designated, maximum boating speeds and entry restrictions would be put into place for the zones. The limits might require boaters to travel at idle speeds year-round within the zones, and forbid boat entry entirely during certain times of the year such as winter, when large numbers of manatees congregate in just a few small areas. The restrictions would be periodically re-evaluated and adjusted as needed, based on updated manatee population data. Consequently, continued research into manatee movements, habitat requirements and mortality should continue.

The Florida Marine Patrol (FMP) and local marine law enforcement units would enforce the restrictions in the manatee zones. However, the amount of money allocated to FMP activities in the Tampa Bay area currently is not sufficient to ensure adequate enforcement, thus this action also proposes investigating sources of additional funding for the FMP. Possible sources include a local boater registration add-on fee (already in place in Pinellas and Hillsborough counties) or a reallocation of revenues from the state Salt Water Fishing License. (See FW-1 for a more extensive discussion of these options.)

Enforcement also could be enhanced through public education, as well as citizen monitoring and reporting of speed violations.

Recognizing that manatees travel great distances and will not always remain within the protected zones, this action also encourages boaters to install special cage-like guards on their propellers to avoid causing propeller injuries to manatees throughout Tampa Bay. These guards, which now are manufactured commercially and cost about \$100 each, also can protect the bay's seagrasses from propeller damage and reduce human injuries from boat propellers. Newer prop guard models have made substantial progress in resolving concerns about boat performance, and the FDEP's Bureau of Protected Species Management has budgeted money in FY 97-98 to test the various models on the market.

STRATEGY:

STEP 1 Establish a workgroup to explore recommendations for establishing manatee protection zones in Tampa Bay. The workgroup's members should include environmental officials, manatee researchers and representatives from environmental and boating clubs, as well as boat manufacturers. The workgroup should submit recommendations to the NEP Policy Committee by September 1997.

Responsible parties: *Tampa Bay NEP, ABM, FDEP*

STEP 2 Implement recommendations from Step 1, including adoption of zones through local ordinances and installation of signs denoting protection areas.

Responsible parties: *FDEP, local governments,*

STEP 3 Increase funding for the FMP in Tampa Bay (see Action FW-1) and local law enforcement marine units to ensure adequate enforcement of boating speed and entry restrictions within the manatee protection zones. Among the possible revenue sources are a local boater registration add-on fee, or reallocation of state Saltwater Fishing License fees.

Responsible parties: *Local governments, Florida Legislature (for Salt Water Fishing License revenues)*

STEP 4 Organize and train qualified volunteers to monitor and report speed or entry violations within the protection zones. Volunteers also could assist with monitoring new zones to gauge the effectiveness of the restrictions.

Responsible parties: *FDEP, working with local environmental action groups such as Tampa BayWatch and the FMP's Coast Watch program.*

STEP 5 Continue ongoing manatee population and mortality studies in Tampa Bay. Reassess justification for the protection zones periodically based on monitoring data to determine the need for changes.

Responsible parties: *FDEP/FMRI*

STEP 6 Promote the use of propeller guards to avoid injuring manatees throughout Tampa Bay.

Responsible parties: *Tampa BayWatch, Florida Conservation Association, local boating and environmental groups and fishing clubs*

SCHEDULE:

Steps 1-4 can be initiated in 1997, with appropriate rulemaking and financing in place in 1998. Step 6 also can be initiated in 1997, with demonstrations of the propeller guards to various boating and fishing groups. Step 5 is an ongoing project that should continue indefinitely.

FW-2

FW-2

ACTION PLAN

Bay Fish & Wildlife

COST:

Designation of manatee protection zones would involve administrative and noticing requirements, as well as posting of designated areas. However, gaining public and boater support for designation of the zones and associated boating restrictions is expected to be a staff-intensive effort. Step 3 could be accomplished through a local boater registration add-on fee, or through a greater allocation of revenues from the state Salt Water Fishing License. Enforcement revenues also could be generated through legislative authorization of a law requiring local governments to transfer 25 percent of funds received in fines and penalties to the FDEP's FMP for those violations where arrests were made by FMP officers. The funds received from those transfers should be used exclusively for increasing enforcement capabilities of the FMP in the district generating the funds.

EXPECTED BENEFITS:

Designation of manatee protection zones will increase protection of manatees and vital seagrass habitats within Tampa Bay.

MONITORING ENVIRONMENTAL RESPONSE:

FDEP/FMRI currently monitors manatee abundance, distribution and mortality in Tampa Bay. These reports can be incorporated within the Tampa Bay NEP's Biennial Environmental Monitoring Report.

REGULATORY NEEDS:

Passage of local ordinances designating manatee zones. Legislative action also may be needed to ensure adequate funding for FMP and local enforcement of the restrictions.

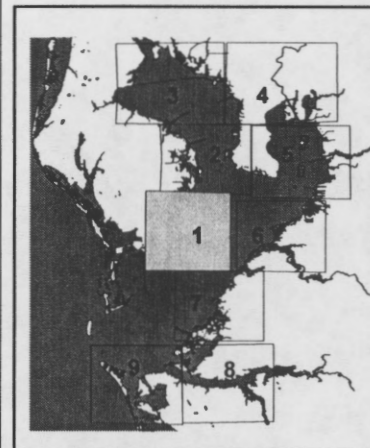
RELATED ACTIONS:

FW-1, BH-3

ATTACHMENT B

Maps of Recommended Manatee Protection Zones

MAP 1



- Channels
E
P
- Navigation
▲
■
- Bathymetry
1 - 3
4 - 6
- Proposed Regulatory Zone
- Protection Zone

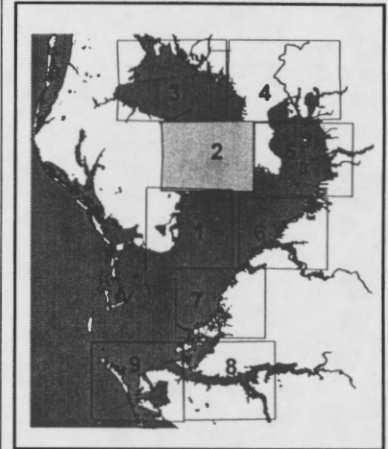
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0. 0.5 1 Miles



MAP 2



- Channels
- Navigation
- Bathymetry
- Proposed Regulatory Zone
- Protection Zone

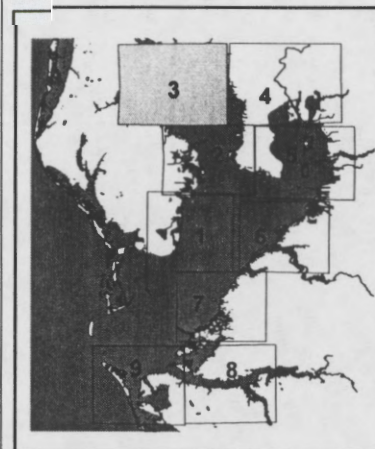
Manatee Protection Strategies

Base Data Provided by FMRI

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MAP 3



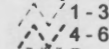
Channels



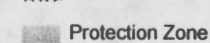
Navigation



Bathymetry



Proposed Regulatory Zone



Protection Zone

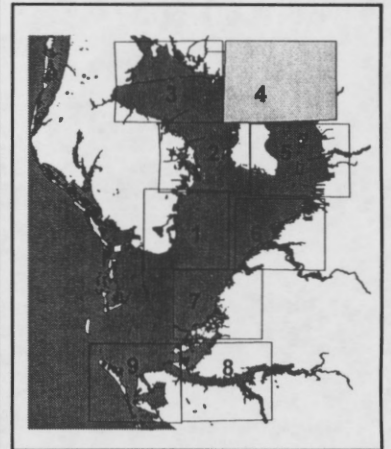
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 4



- Channels
 E
 P
 Navigation
 E
 O
 Proposed Regulatory Zone
 Protection Zone

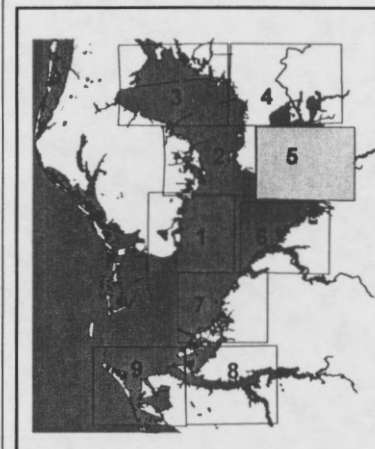
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 5



- Channels
 E
 P
Navigation
 E
 O
Bathymetry
 1-3
 4-6
 Proposed Regulatory Zone
 Protection Zone

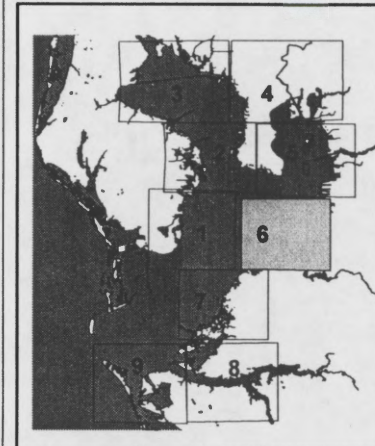
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 6



- Channels
E
P
- Navigation
E
O
- Bathymetry
1-3
4-6
- Proposed Regulatory Zone
- Protection Zone

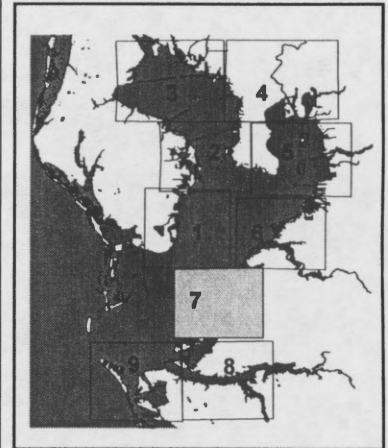
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 7



- Channels
 E
 P
 Navigation
 ▲ E
 ■ O
 Bathymetry
 1-3
 4-6
 Proposed Regulatory Zone
 Protection Zone

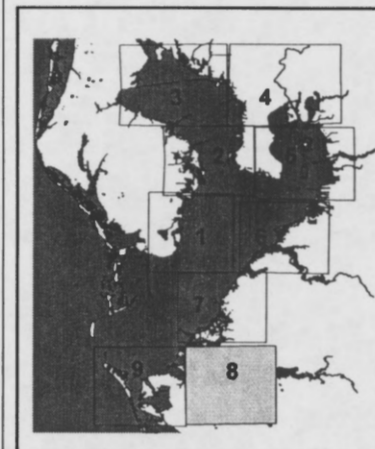
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 8



- Channels
E
P
- Navigation
E
O
- Bathymetry
1-3
4-6
- Proposed Regulatory Zone
- Protection Zone

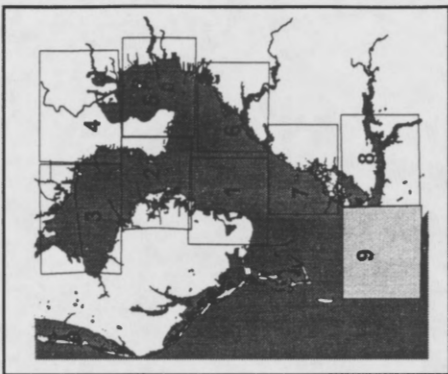
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



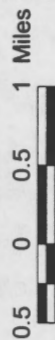
MAP 9



- Channels
 - E
 - P
- Navigation
 - E
 - O
- Bathymetry
 - 1-3
 - 4-6
- Proposed Regulatory Zone
- Protection Zone

Manatee Protection Strategies

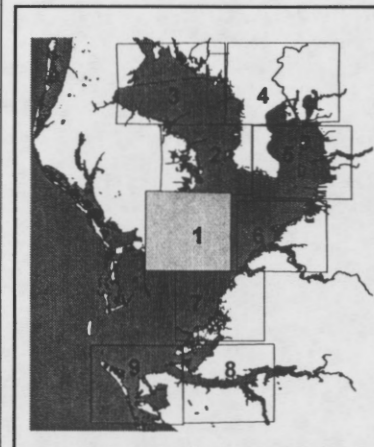
Base Data Provided by FMRI



ATTACHMENT C

Records of Manatee Sightings, Manatee
Mortality, and Seagrass Communities
(1974 - 1997)

MAP 1



Channels



Survey Count

○ 1

● 2

△ 3

● 4

⊠ 5 - 99

⌘ Manatee Deaths

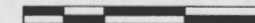
Seagrass



Manatee Protection Strategies

Base Data Provided by FMRI

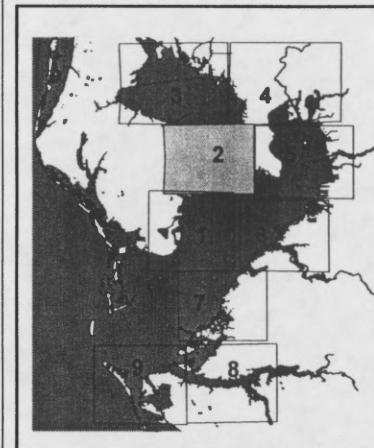
0.5 0 0.5 1 Miles



Tampa Bay Regional Planning Council



MAP 2



Channels



Survey Count

- 1
- 2
- △ 3
- 4
- ⊠ 5 - 99

Manatee Deaths

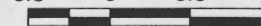
Seagrass



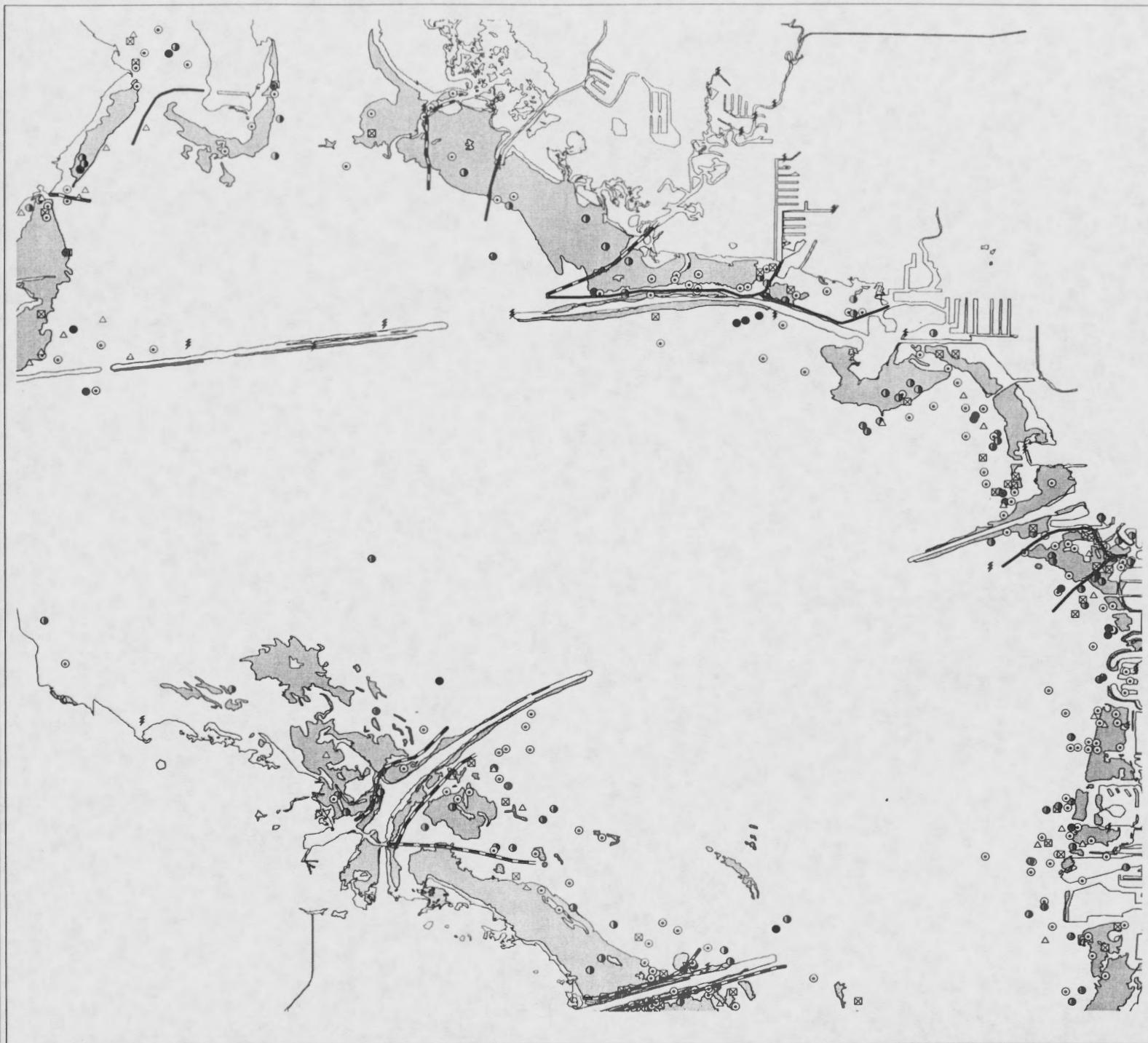
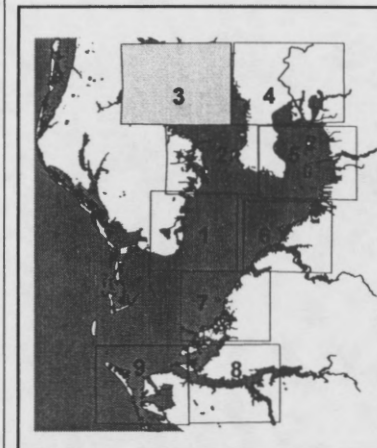
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 3



Channels



Survey Count

○ 1

● 2

△ 3

● 4

⊠ 5 - 99

Manatee Deaths

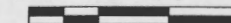
Seagrass



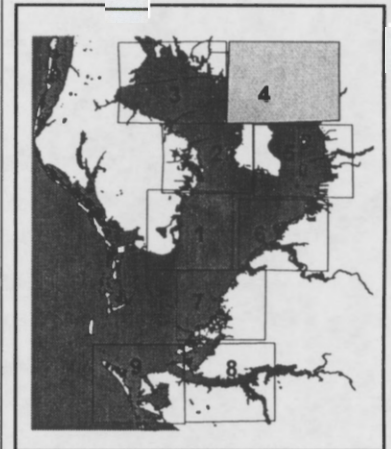
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 4



Channels



Survey Count

○ 1

● 2

△ 3

● 4

⊠ 5 - 99

‡ Manatee Deaths

Seagrass



Manatee Protection Strategies

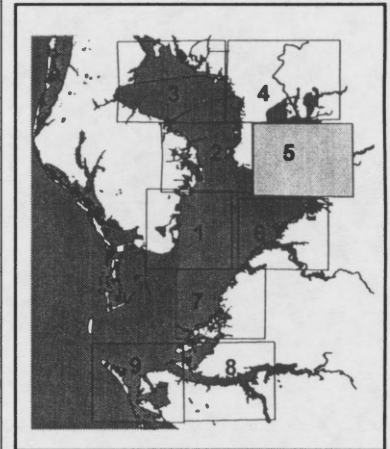
Base Data Provided by FMRI

0.5 0 0.5 1 Miles



Agency on Bay Management, 1998

MAP 5



Channels



Survey Count

○ 1

● 2

△ 3

● 4

⊠ 5 - 99

⚡ Manatee Deaths

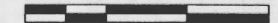
Seagrass



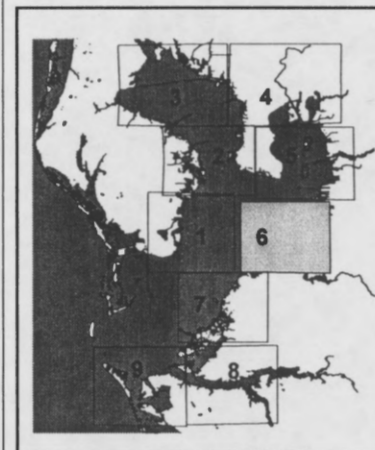
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 6



Channels



Survey Count

○ 1

● 2

△ 3

● 4

□ 5 - 99

⚡ Manatee Deaths

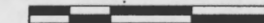
Seagrass



Manatee Protection Strategies

Base Data Provided by FMRI

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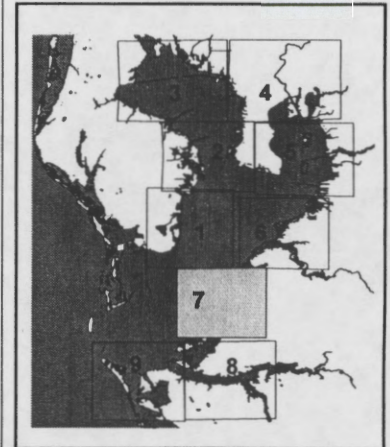


Tampa Bay Regional Planning Council



Agency on Bay Management, 1998

MAP 7



Channels



Survey Count

- 1
- 2
- △ 3
- 4
- ⊠ 5 - 99

Manatee Deaths

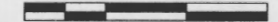
Seagrass



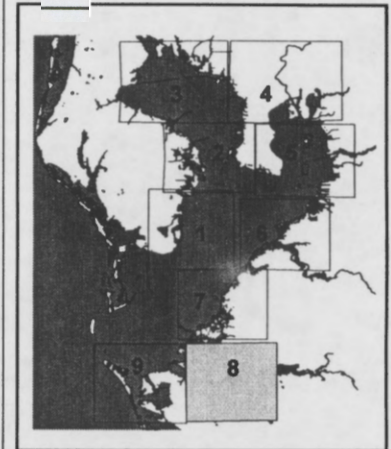
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 8



Channels



Survey Count

○ 1

● 2

△ 3

● 4

⊠ 5 - 99

‡ Manatee Deaths

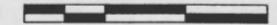
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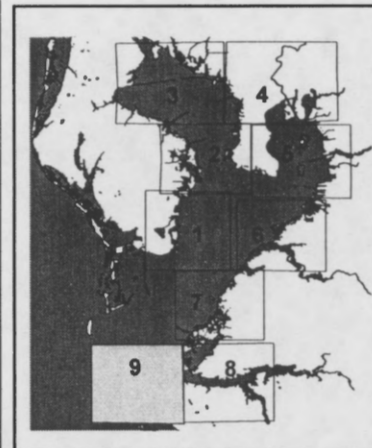
Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0 0.5 1 Miles



MAP 9



Channels



Survey Count

- 1
- 2
- △ 3
- 4
- ⊠ 5 - 99

Manatee Deaths

Seagrass



Manatee Protection Strategies

Base Data Provided by FMRI

0.5 0. 0.5 1 Miles



ATTACHMENT D

Florida Manatee Sanctuary Act

370.12 Marine animals; regulation.--

(2) PROTECTION OF MANATEES OR SEA COWS.--

(a) This subsection shall be known and may be cited as the "Florida Manatee Sanctuary Act."

(b) The State of Florida is hereby declared to be a refuge and sanctuary for the manatee, the "Florida state marine mammal."

(c) Whenever the department is satisfied that the interest of science will be subserved, and that the application for a permit to possess a manatee or sea cow (*Trichechus manatus*) is for a scientific or propagational purpose and should be granted, and after concurrence by the United States Department of the Interior, the Division of Marine Resources may grant to any person making such application a special permit to possess a manatee or sea cow, which permit shall specify the exact number which shall be maintained in captivity.

(d) Except as may be authorized by the terms of a valid state permit issued pursuant to paragraph (c) or by the terms of a valid federal permit, it is unlawful for any person at any time, by any means, or in any manner intentionally or negligently to annoy, molest, harass, or disturb or attempt to molest, harass, or disturb any manatee; injure or harm or attempt to injure or harm any manatee; capture or collect or attempt to capture or collect any manatee; pursue, hunt, wound, or kill or attempt to pursue, hunt, wound, or kill any manatee; or possess, literally or constructively, any manatee or any part of any manatee.

(e) Any gun, net, trap, spear, harpoon, boat of any kind, aircraft, automobile of any kind, other motorized vehicle, chemical, explosive, electrical equipment, scuba or other subaquatic gear, or other instrument, device, or apparatus of any kind or description used in violation of any provision of paragraph (d) may be forfeited upon conviction. The foregoing provisions relating to seizure and forfeiture of vehicles, vessels, equipment, or supplies do not apply when such vehicles, vessels, equipment, or supplies are owned by, or titled in the name of, innocent parties; and such provisions shall not vitiate any valid lien, retain title contract, or chattel mortgage on such vehicles, vessels, equipment, or supplies if such lien, retain title contract, or chattel mortgage is property of public record at the time of the seizure.

(f) In order to protect manatees or sea cows from harmful collisions with motorboats or from harassment, the Department of Environmental Protection shall adopt rules under chapter 120 regarding the expansion of existing, or construction of new, marine facilities and mooring or docking slips, by the addition or construction of five or more powerboat slips, and regulating the operation and speed of motorboat traffic, only where manatee sightings are frequent and it can be generally assumed, based on available scientific information, that they inhabit these areas on a regular or continuous basis:

1. In Lee County: the entire Orange River, including the Tice Florida Power and Light Corporation discharge canal and adjoining waters of the Caloosahatchee River within 1 mile of the confluence of the Orange and Caloosahatchee Rivers.

2. In Brevard County: those portions of the Indian River within three-fourths of a mile of the Orlando Utilities Commission Delespine power plant effluent and the Florida Power and Light Frontenac power plant effluents.

3. In Indian River County: the discharge canals of the Vero Beach Municipal Power Plant and connecting waters within 1 1/4 miles thereof.

4. In St. Lucie County: the discharge of the Henry D. King Municipal Electric Station and connecting waters within 1 mile thereof.

5. In Palm Beach County: the discharges of the Florida Power and Light Riviera Beach power plant and connecting waters within 1 1/2 miles thereof.

6. In Broward County: the discharge canal of the Florida Power and Light Port Everglades power plant and connecting waters within 1 1/2 miles thereof and the discharge canal of the Florida Power and Light Fort Lauderdale power plant and connecting waters within 2 miles thereof. For purposes of ensuring the physical safety of boaters in a sometimes turbulent area, the area from the easternmost edge of the authorized navigation project of the intracoastal waterway east through the Port Everglades Inlet is excluded from this regulatory zone.

7. In Citrus County: headwaters of the Crystal River, commonly referred to as King's Bay, and the Homosassa River.

8. In Volusia County: Blue Springs Run and connecting waters of the St. Johns River within 1 mile of the confluence of Blue Springs and the St. Johns River; and Thompson Creek, Strickland Creek, Dodson Creek, and the Tomoka River.

9. In Hillsborough County: that portion of the Alafia River from the main shipping channel in Tampa Bay to U.S. Highway 41.

10. In Sarasota County: the Venice Inlet and connecting waters within 1 mile thereof, including Lyons Bay, Donna Bay, Roberts Bay, and Hatchett Creek, excluding the waters of the intracoastal waterway and the right-of-way bordering the centerline of the intracoastal waterway.

11. In Collier County: within the Port of Islands, within section 9, township 52 south, range 28 east, and certain unsurveyed lands, all east-west canals and the north-south canals to the southerly extent of the intersecting east-west canals which lie southerly of the centerline of U.S. Highway 41.

12. In Manatee County: that portion of the Manatee River east of the west line of section 17, range 19 east, township 34 south; the Braden River south of the north line and east of the west line of section 29, range 18 east, township 34 south; Terra Ceia Bay and River, east of the west line of sections 26 and 35 of range 17 east, township 33 south, and east of the west line of section 2, range 17 east, township 34 south; and Bishop Harbor east of the west line of section 13, range 17 east, township 33 south.

13. In Dade County: those portions of Black Creek lying south and east of the water control dam, including all boat basins and connecting canals within 1 mile of the dam.

(g) The Department of Environmental Protection shall adopt rules regulating the operation and speed of motorboat traffic only where manatee sightings are frequent and it can be generally assumed that they inhabit these areas on a regular or continuous basis within that portion of the Indian River between the St. Lucie Inlet in Martin County and the Jupiter Inlet in Palm Beach County. In addition, the department shall adopt rules regulating the operation and speed of motorboat traffic only where manatee sightings are frequent and it can be generally assumed that they inhabit these areas on a regular or continuous basis within the Loxahatchee River in Palm Beach and Martin Counties, including the north and southwest forks thereof. A limited lane or corridor providing for reasonable motorboat speeds may be identified and designated within this area.

(h) The department shall adopt rules regulating the operation and speed of motorboat traffic only where manatee sightings are frequent and it can be generally assumed that they inhabit these areas on a regular or continuous basis within the Withlacoochee River and its tributaries in Citrus and Levy Counties. The specific areas to be regulated include the Withlacoochee River and the U.S. 19 bridge westward to a line between U.S. Coast Guard markers number 33 and number 34 at the mouth of the river, including

all side channels and coves along that portion of the river; Bennets' Creek from its beginning to its confluence with the Withlacoochee River; Bird's Creek from its beginning to its confluence with the Withlacoochee River; and the two dredged canal systems on the north side of the Withlacoochee River southwest of Yankeetown. A limited lane or corridor providing for reasonable motorboat speeds may be identified and designated within this area.

(i) If any new power plant is constructed or other source of warm water discharge is discovered within the state which attracts a concentration of manatees or sea cows, the Department of Environmental Protection is directed to adopt rules regulating the operation and speed of motorboat traffic within the area of such discharge. Such rules shall designate a zone which is sufficient in size, and which shall remain in effect for a sufficient period of time, to protect the manatees or sea cows.

(j) It is the intent of the Legislature through adoption of this paragraph to allow the Department of Environmental Protection to post and regulate boat speeds only where manatee sightings are frequent and it can be generally assumed that they inhabit these areas on a regular or continuous basis. It is not the intent of the Legislature to permit the department to post and regulate boat speeds generally in the above-described inlets, bays, rivers, creeks, thereby unduly interfering with the rights of fishers, boaters, and water skiers using the areas for recreational and commercial purposes. Limited lanes or corridors providing for reasonable motorboat speeds may be identified and designated within these areas.

(k) The department shall adopt rules regulating the operation and speed of motorboat traffic all year around within Turkey Creek and its tributaries and within Manatee Cove in Brevard County. The specific areas to be regulated consist of:

1. A body of water which starts at Melbourne-Tillman Drainage District structure MS-1, section 35, township 28 south, range 37 east, running east to include all natural waters and tributaries of Turkey Creek, section 26, township 28 south, range 37 east, to the confluence of Turkey Creek and the Indian River, section 24, township 28 south, range 37 east, including all lagoon waters of the Indian River bordered on the west by Palm Bay Point, the north by Castaway Point, the east by the four immediate spoil islands, and the south by Cape Malabar, thence northward along the shoreline of the Indian River to Palm Bay Point.

2. A triangle-shaped body of water forming a cove (commonly referred to as Manatee Cove) on the east side of the Banana River, with northern boundaries beginning and running parallel to the east-west cement bulkhead located 870 feet south of SR 520 Relief Bridge in Cocoa Beach and with western boundaries running in line with the City of Cocoa Beach channel markers 121 and 127 and all waters east of these boundaries in section 34, township 24 south, range 37 east; the center coordinates of this cove are 28°20'14" north, 80°35'17" west.

(l) The Legislature recognizes that, while the manatee or sea cow is designated a marine mammal by federal law, many of the warm water wintering areas are in freshwater springs and rivers which are under the primary state law enforcement jurisdiction of the Florida Game and Fresh Water Fish Commission. The law enforcement provisions of this section shall be carried out jointly by the department and the commission, with the department serving as the lead agency. The specific areas of jurisdictional responsibility are to be established between the department and the commission by interagency agreement.

(m) The department shall promulgate regulations relating to the operation and speed of motor boat traffic in port waters with due regard to the safety requirements of such traffic and the navigational hazards related to the movement of commercial vessels.

(n) The department may designate by rule other portions of state waters where manatees are frequently sighted and it can be assumed that manatees inhabit such waters periodically or continuously. Upon designation of such waters, the department shall adopt rules to regulate motorboat speed and operation which are necessary to protect manatees from harmful collisions with motorboats and from harassment. The department may adopt rules to protect manatee habitat, such as seagrass beds, within such waters from destruction by boats or other human activity. Such rules shall not protect noxious aquatic plants subject to control under s. 369.20.

(o) The department may designate, by rule, limited areas as a safe haven for manatees to rest, feed, reproduce, give birth, or nurse undisturbed by human activity. Access by motor boat to private residences, boat houses, and boat docks through these areas by residents, and their authorized guests, who must cross one of these areas to have water access to their property is permitted when the motorboat is operated at idle speed, no wake.

(p) Except in the marked navigation channel of the Florida Intracoastal Waterway as defined in s. 327.02 and the area within 100 feet of such channel, a local government may regulate, by ordinance, motorboat speed and operation on waters within its jurisdiction where manatees are frequently sighted and can be generally assumed to inhabit periodically or continuously. However, such an ordinance may not take effect until it has been reviewed and approved by the department. If the department and a local government disagree on the provisions of an ordinance, a local manatee protection committee must be formed to review the technical data of the department and the United States Fish and Wildlife Service, and to resolve conflicts regarding the ordinance. The manatee protection committee must be comprised of:

1. A representative of the department;
2. A representative of the county;
3. A representative of the United States Fish and Wildlife Service;
4. A representative of a local marine-related business;
5. A representative of the Save the Manatee Club;
6. A local fisher;
7. An affected property owner; and
8. A representative of the Florida Marine Patrol.

If local and state regulations are established for the same area, the more restrictive regulation shall prevail.

(q) The department shall evaluate the need for use of fenders to prevent crushing of manatees between vessels (100' or larger) and bulkheads or wharves in counties where manatees have been crushed by such vessels. For areas in counties where evidence indicates that manatees have been crushed between vessels and bulkheads or wharves, the department shall:

1. Adopt rules requiring use of fenders for construction of future bulkheads or wharves; and

2. Implement a plan and time schedule to require retrofitting of existing bulkheads or wharves consistent with port bulkhead or wharf repair or replacement schedules. The fenders shall provide sufficient standoff from the bulkhead or wharf under maximum operational compression to ensure that manatees cannot be crushed between the vessel and the bulkhead or wharf.

(r) Any violation of a restricted area established by this subsection, or established by rule or ordinance pursuant to this subsection, shall be considered a violation of the boating laws of this state and shall be charged on a uniform boating citation as provided in s. 327.74, except as otherwise provided in paragraph (s). Any person who refuses to post a bond or accept and sign a uniform boating citation shall, as provided in s. 327.73(3), be guilty of a misdemeanor of the second degree, punishable as provided in s. 775.082 or s. 775.083.

(s) Except as otherwise provided in this paragraph, any person violating the provisions of this subsection or any rule or ordinance adopted pursuant to this subsection shall be guilty of a misdemeanor, punishable as provided in s. 370.021(2)(a) or (b).

1. Any person operating a vessel in excess of a posted speed limit shall be guilty of a civil infraction, punishable as provided in s. 327.73, except as provided in subparagraph 2.

2. This paragraph does not apply to persons violating restrictions governing "No Entry" zones or "Motorboat Prohibited" zones, who, if convicted, shall be guilty of a misdemeanor, punishable as provided in s. 370.021(2)(a) or (b), or, if such violation demonstrates blatant or willful action, may be found guilty of harassment as described in paragraph (d).