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

Manatee Protection Strategies Task Force

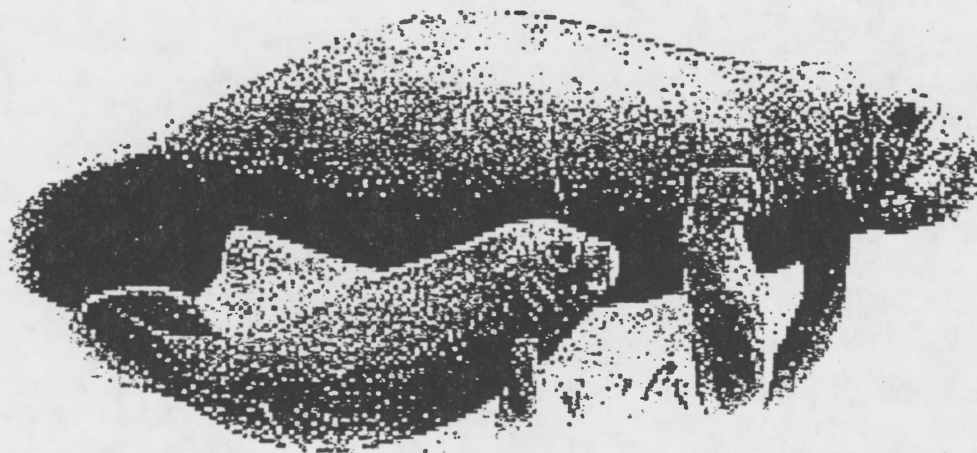
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# POSITION PAPER

**\*\*FINAL DRAFT\*\***

**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

July 1998

## **MANATEE PROTECTION TASK FORCE MEMBERS**

**Ms. Pam Leasure, Co-Chair**  
Pinellas County Dept. of  
Environmental Management

**Dr. David K. Voigts, Co-Chair**  
Florida Power Corporation

**Mr. Alan Wright**  
Hillsborough City-County Planning  
Commission

**Ms. Patti Thompson**  
Save the Manatee Club

**Mr. Cameron Shaw, Refuge Manager**  
Chassahowitzka National Wildlife  
Refuge

**Lt. Calvin Adams**  
FL Dept. of Environmental Protection  
FL Marine Patrol

**Mr. William A. Durrance**  
Ruskin, FL  
Sport Fisherman

**Mr. Gus Muench**  
C-BUG

**Ms. Jessica Archer**  
FL Dept. of Environmental Protection  
Bureau of Protected Species  
Management

**Mr. Doug Means**  
Manatee County Dept. of  
Environmental Management

**Mr. Bob Kirn**  
Marine Industries Association of  
Greater  
Tampa Bay

**Mr. Ken Hartley**  
Pinellas Park, FL  
Commercial Fisherman

**Mr. Don Sayre**  
Florida Power & Light Company  
Manatee County Resident

**Mr. Mike Brewer**  
St. Pete Sail & Power Squadron

**Mr. Sal Versaggi**  
Southeastern Fisheries Association

**Ms. Debbie Halin**  
Lowry Park Zoo

**STAFF:**  
**Suzanne T. Cooper**  
Tampa Bay Regional Planning Council

### **TECHNICAL ASSISTANCE PROVIDED BY:**

**Mr. Brad Weigle**  
FL Dept. of Environmental Protection  
FL Marine Research Institute

**Ms. Beth Wright**  
FL Dept. of Environmental Protection  
FL Marine Research Institute

**Ms. Holly Greening**  
Tampa Bay Estuary Program



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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

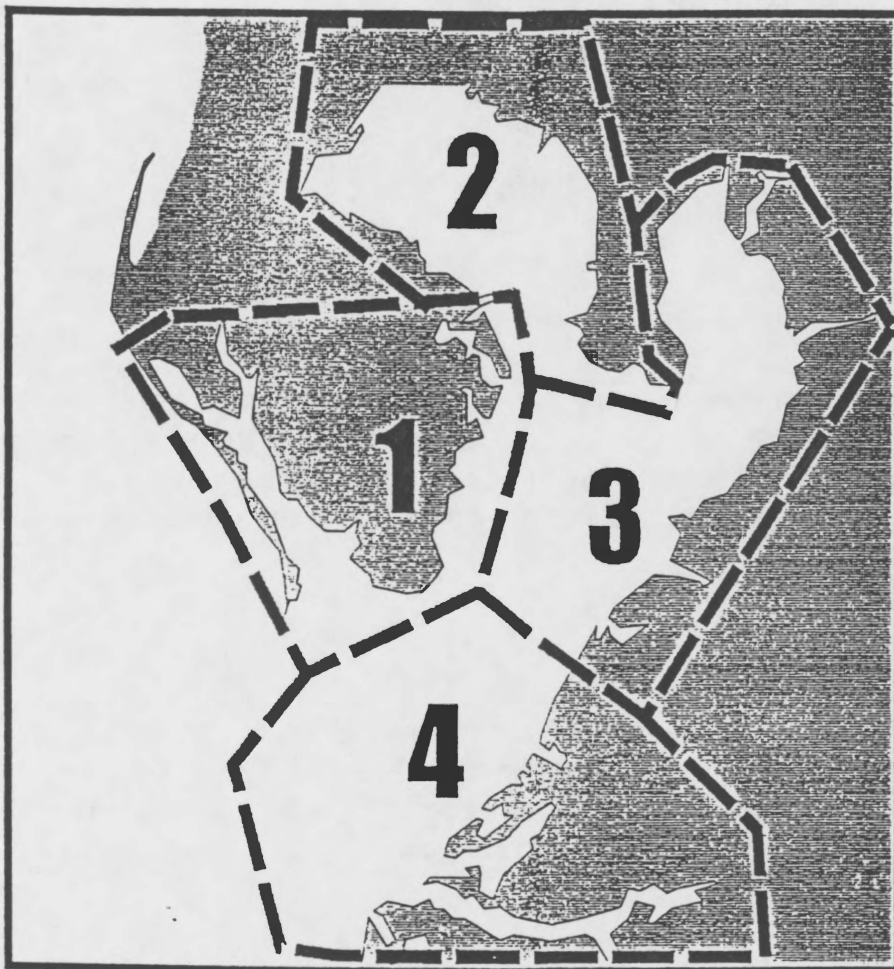
Since May of 1997, the task force has held 14 meetings in order to receive input on the development of manatee protection zones. A preliminary set of these zones were proposed by FMRI staff and then amended to reflect input received by the Task Force from members and citizens with local knowledge and 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 sections<sup>1</sup> (Figure 1). Meeting schedules, data analysis and input of public comment were then performed according to each section. This allowed members of the general public to plan attendance at specific task force meetings in order to contribute input into the review process. A final set of summary meetings were held after all sections were reviewed and input received, in order to organize the information gathered and develop a comprehensive set of recommendations.

<sup>1</sup> Section boundaries were designed to facilitate logical and orderly review of Tampa Bay and are 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 Review Sections**



### 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 channels<sup>2</sup> are recommended for "Normal Safe Operation" unless otherwise designated by state or local government. Place names used are as named on the NOAA chart for Tampa Bay.

The recommendations are divided into the following categories:

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

<sup>2</sup> As designated or permitted by the United States Coast Guard.



### **3.1 RECOMMENDATIONS: SECTION 1**

#### **Approximate Zone Boundary:**

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

#### **Recommended Regulatory Zones**

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

#### **Recommended Non-Regulatory Zones**

As shown on Map 1, "Proposed Tampa Bay Zone - Mid-Pinellas County" and Map 2, "Proposed Tampa Bay Zone -- S. Pinellas County," dated 7/16/97, 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 which are recommended for formal marking, are designated for "Normal Safe Operation":

- 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.
- (M) parallel and immediately south of the Gandy Bridge, connecting Snug Harbor to deep water.

- 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.
  - 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.

## Other Recommendations

1. In the area north of the west end of the Howard Frankland bridge, reduce the width of the proposed protection zone by about one-third, maintaining the zone to just outside the large seagrass flat.



## 3.2 RECOMMENDATIONS: SECTION 2

### Approximate Zone Boundary:

Those coastal areas of Pinellas and Hillsborough counties from the northwestern shoreline of the Howard Franklin 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 Gadsen Point in the southeast portion of Mac Dill Airforce Base.



## **Recommended Regulatory Zones**

Designate a "Slow Speed Manatee Area" speedzone for those waters inside the six-foot contour<sup>3</sup> between the southeastern end of the Howard Frankland Causeway and Gun Branch.

*existing channels - boating access not compromised*

## **Recommended Non-Regulatory Zones**

As shown on Map 3, entitled "Proposed Tampa Bay Zone - Eastern Old Tampa Bay" and Map 4, and "Proposed Tampa Bay Zone - Upper Old Tampa Bay," dated 7/16/97, 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 which are recommended for formal marking, are designated for "Normal Safe Operation":

- 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 Recommendations**

1. Waters east of Rocky Point Island, north of the Courtney Campbell Causeway. Do not designate for manatee protection, but for special uses (water sports). The adjacent canals are already designated slow-speed.
2. On the west side of Safety Harbor, reduce the width of the proposed protection zone to the six-foot contour.

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<sup>3</sup> 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).

3. On the eastern side of the mouth of Safety Harbor, widen the proposed protection zone to include the seagrass beds south of the peninsula.



### **3.3 RECOMMENDATIONS: SECTION 3**

#### **Approximate Zone Boundary:**

Those coastal areas of Hillsborough County from Gadsen 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 Hillsborough/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 channel 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 entitled *Proposed Tampa Bay Zone - Upper Hillsborough Bay*(Map 5) (7/16/97); - *NE Shore*(Map 6) (8/7/97); - *Eastern Shore* (Map 7) (8/7/97); and - *SE Shore*(Map 8) (8/7/97); 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/commonly used areas which are recommended for formal marking, are designated for "Normal Safe Operation":

- (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 Recommendations

1. Remove designation of Alafia River channel as idle-speed during winter months.
2. Add the Alafia River above U.S. 41 as a manatee protection zone.



### 3.4 RECOMMENDATIONS: SECTION 4

#### Approximate Zone Boundary:

Those coastal areas of Manatee County from the Hillsborough/Manatee 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 entitled *Proposed Tampa Bay Zone - SE Shore*; - *Terra Ceia Bay & lower Manatee R.*; - *Braden R. & upper Manatee R.*; and - *Anna Maria Sound*; 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 which are recommended for formal marking, are designated for "Normal Safe Operation":

- channel into Bishop 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.

#### **Other Recommendations**

None.



### **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 (4.5 knots; 5 mph) outside marked channels and a maximum of 25 knots (29 mph) 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.
- 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 (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), 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**

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.

- The rate at which manatees in the Bay accumulate new scars attributed to boats.
- 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.

Formulate a means to measure how effective the measures have been; conduct the review annually for three years after implementation and biennially thereafter.

## **4.0 INFORMATION AND DATA REVIEWED**

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 conflicts similar to those experienced in Tampa Bay.

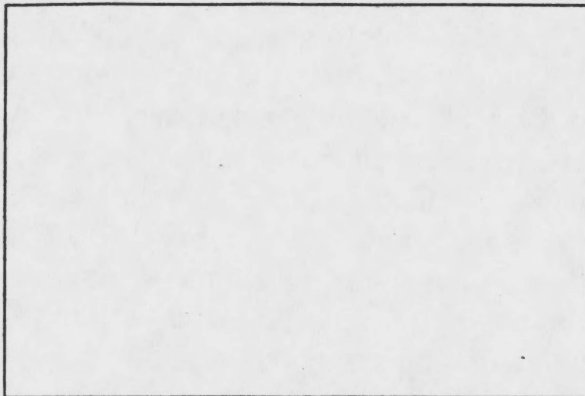
**Manatee's Role in the Florida Environment** - These are the largest vertebrate grazers in seagrass systems, with no natural predators. The West Indian manatee is one of only four living species in the order Sirenia. Others include the dugong in certain coastal waters of the Indian and Pacific Oceans; 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 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.

The West Indian 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.



High tides are used 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 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

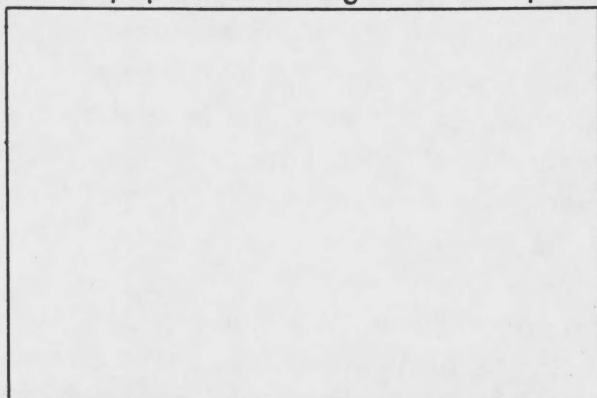


dependence of so many manatees on this site prompted FPL to dig artesian wells that provide an alternative warm-water source in case of a plant shutdown during cold spells. Several natural springs are used on the west coast during the winter, the most important of which are at the headwaters of the Crystal 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.

As an economic tool, 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, recent 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.

**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.

**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:

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.

**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. Winter creates colder water temperatures, and the manatees seek out the warm water discharges of TECO's Big Bend and Gannon electric-generating plants and FPC's Bartow plant. On warm winter days they move out to feed, returning to the warm sanctuaries at night. 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.

**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 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 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.

**Current 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 and from the Columbus Drive bridge downstream to the Platt Street bridge, is idle speed, no-wake year-round;
- 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).

**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 very limited, and proving the violation is very difficult.

**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. 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 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. It was recognized that 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. The problem is that manatees cannot move as quickly as necessary to avoid boats moving more than about 22 knots (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 costs for increased enforcement presence, both local and State government has 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.

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 Definitions:**

**Idle speed** = Minimum speed necessary to maintain steerage of the vessel (in the environmental conditions present).

**Knots** = speed on the water.    One knot = 1.1517 miles per hour  
One mile per hour = 0.868 knots

**Slow speed** = Proceeding off plane, with boat parallel to the water surface, and proceeding at a minimum wake.

## **7.0 Sources of Information:**

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**Attachment A** - Action FW-2 of *Charting the Course for Tampa Bay*, the Comprehensive Conservation and Management Plan.

**Attachment B** - Types of Manatee Aggregation and Special Use Sites, with examples in Tampa Bay.

**Attachment C** - Maps of proposed Manatee protection zones.

**Appendix I** - Summaries of all Task Force meetings.