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## Recommendations to Improve Boating Safety and Manatee Protection for Florida Waterways - Draft

Florida. Department of Natural Resources

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**RECOMMENDATIONS TO IMPROVE  
BOATING SAFETY AND MANATEE PROTECTION  
FOR FLORIDA WATERWAYS**

**Presented at the Request of the  
Governor and Cabinet  
September 14, 1989**

**State of Florida  
Department of Natural Resources**

**DRAFT**

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## INTRODUCTION

At the June 13 Cabinet meeting, Secretary of State Jim Smith expressed concern over this year's alarmingly high number of manatee mortalities and boating accidents. The rate of manatee mortality for the first half of 1989 far outpaces the mortality recorded for the same period in 1988, which itself was a "record high." Human injuries and fatalities from boating accidents in Florida account for over ten percent of the total nationwide. It is becoming increasingly apparent that threats to the boating public and our remaining manatee population cannot be adequately controlled by current protection measures.

At Secretary of State Smith's suggestion, the Governor and Cabinet directed the Department to make recommendations for specific actions to protect the manatee and to make the state's waterways safer for the boating public. Commissioner of Education Betty Castor further delineated the boating safety directives to the Department in a June 16 letter. The Department's recommendations were to address new boat speed zones--including a possible statewide maximum speed limit; preserve areas; habitat protection; awareness and education programs; and mechanisms for coordination with other governmental entities and interest groups. The Department was requested to identify necessary actions to improve boating safety and manatee protection which can be accomplished under existing authority, as well as develop proposals for expanded authority for legislative consideration.

This report identifies actions which will go far in safeguarding the boating public and protecting the endangered manatee in Florida waterways. In presenting these recommendations, the Department's goal is to establish a partnership with local government. Problems resulting from reckless boating operation, and from the ever-expanding population of boaters itself, cannot be addressed on a strong, immediate basis through one agency's actions or by isolated, small-scale initiatives. This emergency response requires the cooperative efforts of all levels of government and a range of interest groups. Innovative, comprehensive measures -- together with adequate funding -- are essential.



## EXECUTIVE SUMMARY

### Boating Safety Concerns

With over eight thousand miles of coastline, Florida has long been considered the nation's boating capital. No matter where you travel in the state, a navigable waterway is only a few miles away. For the most part, these waterways harbor excellent and safe facilities for the boating public. In 1959, realizing its responsibility to promote boating safety, the Florida Legislature passed the state's first boating law. It provided for registration of motorboats and established minimum safety requirements. Florida's motorboat law has been improved over the years and is now regarded as one of the nation's best.

Over the past several years the fatality rate from boating accidents has declined nationwide. Unfortunately, in Florida the reverse is true. For the past three years Florida's fatality rate has been 2 1/2 times the national average.

### Recommended Actions

To combat this unacceptable fatality rate the Department is proposing legislation that will establish speed limits in certain waterways and clarify the procedures for establishment of boating restricted zones on a statewide basis. The Department is also proposing legislation to enhance the enforcement of Florida's non-criminal boating offenses through the enactment of "in rem" (against the vessel rather than against the operator) proceedings against vessels. In the area of boating education the Department is recommending that a Boating Education Unit be established to teach safe boating practices in the public school system and that a mandatory boating safety education course be completed by a boat operator born after October 1, 1975. In addition, an adequate number of Marine Patrol Officers to properly patrol our waterways, as well as funds for overtime Marine Patrol Officer work, are being requested.

## Manatee Protection Concerns

Human activities are the greatest identifiable cause of manatee deaths in Florida, accounting for half of the known causes, and directly or indirectly affecting virtually every aspect of manatee ecology. Boat/barge related manatee mortalities account for 80% of human-related mortalities, and the number of boat-related deaths continues to increase as the number of registered boats increases. In the fifteen years that manatee deaths have been recorded, the highest yearly totals for confirmed boat-killed manatees occurred from 1984 through 1988. In this period, boat/barge related mortality increased by 84% over the preceding five year period. Deaths attributed to boats or barges reached a new high (43) in 1988. Through the end of June 1989, boat/barge related mortality exceeded that for the same period in 1988. High mortality has been successfully reduced in specific areas through speed regulations. However, as mortality becomes increasingly widespread, more comprehensive measures must be considered.

Over 80% of all boat/barge related mortality occurs in ten counties: Brevard, Duval, Lee, Collier, Broward, Dade, Palm Beach, Volusia, Martin and Citrus. Two additional counties, Indian River and St. Lucie, although not particularly high mortality counties, are especially important as travel corridors and as feeding and resting areas for the East Coast manatee population. Manatee protection efforts over the next five years should be focused on these twelve counties, referred to as "key" counties throughout the rest of the report.

## Recommended Actions

### Establish a Maximum Speed Limit

In twelve key manatee protection counties, a maximum speed limit of 20 mph is proposed for all inland waters accessible to manatees, except in marked channels which will have a maximum speed limit of 30 mph. County governments will be able to petition the Department to exempt certain areas from the 20 mph maximum speed limit.

### Adopt an Emergency Manatee Protection Rule for Brevard County

An emergency speed zone rule for portions of Brevard County is recommended for adoption at the September 14 Cabinet meeting. Emergency manatee protection measures are needed for the Banana River, Sykes Creek, Newfound Harbor and adjacent canals and tributaries, due to the recent increase in boat-related manatee mortality there. Slow speed zones, with a 20 mph maximum speed limit in the navigation channel (except in four small portions of the channel which would be slow speed zones), are recommended.



### Create New Manatee Protection Zones

Six new manatee protection zones are proposed for establishment by December 1989. The zones are located in the lower St. Johns River (Duval County), Sebastian Creek (Brevard and Indian River counties), the Caloosahatchee River (Lee County), and the Tomoka River (Volusia County), and at the Riviera Beach (Palm Beach County) and Port Everglades (Broward County) power plants. In addition, rulemaking will be initiated to establish the zones created by the Brevard County emergency rule, only in effect for 90 days, as permanent zones.

### Designate Manatee Preserves

Due to the continued high boat/barge related manatee mortality, harassment, and loss of essential habitat, it is important to manatee survival to set aside large preserves (motorboat prohibited areas) in which the animals can feed, rest, mate and give birth in relative safety. The U.S. Fish and Wildlife Service is currently pursuing the adoption of a manatee preserve in the upper Banana River adjacent to the current NASA restricted zone abutting Cape Canaveral.

### Improve Sign Posting and Maintenance Capabilities

Speed zone signs must be properly placed and maintained for the zones to be enforceable. Many signs in the existing zones need replacement. When new speed zones are adopted, sign posting and maintenance needs will greatly increase. It is proposed that sign posting duties be transferred out of the Department's Division of Marine Resources to a more appropriate entity. Due to the expense of sign posting and maintenance, the Department recommends that uniform maximum speed zones be adopted and enforced with the understanding that maximum speed limits apply unless waters are otherwise posted.

### Institute an Interim Boating Facility Expansion Policy

New or expanded boating facilities for the top twelve manatee abundance and mortality counties will be limited to a maximum of one powerboat slip per 100 linear feet of developable shoreline until the county has implemented an approved manatee protection plan and boating facility siting policy.

### Accelerate Development and Utilization of the Marine Resource Geographic Information System

The geographic information system (GIS) provides analytical capabilities to better understand manatees and their habitat, thereby facilitating protection efforts. As GIS development is time and manpower intensive, additional staffing is required for its acceleration.



### Recommend Legislative Action

Several amendments to the "Florida Manatee Sanctuary Act", subsection 370.12(2), Florida Statutes, are proposed. New revenue sources are recommended to provide the estimated annual budget of \$1.5 to \$2 million necessary to meet the Department's manatee recovery objectives. A total of 19 new staff positions is needed to meet the demands of the state's manatee recovery program, 13 of which should be established immediately to carry out the recommendations of this report.

### Actively Promote the Dissemination of Manatee Information

A new awareness campaign will bring additional statewide attention to the manatee's endangered species status, and provide detailed information on how educators, students, boaters, divers, industry, developers and the general public can assist in protecting and maintaining Florida's manatee population.

## **BOATING SAFETY STRATEGIES**

Recreational boating in the State of Florida is enjoyed twelve months of the year by approximately four million residents and visitors. With 8,426 miles of saltwater tidal coastline, 2,000,000 acres of natural lakes (7,700 lakes of over 10 acres), 1,000,000 acres of man-made lakes and 11,909 miles of rivers and streams; Florida has long been considered the nation's recreational boating capital.

As of June 1989, Florida had 710,831 registered boats. This is an increase of approximately 35,000 boats over last year (a consistent increase of 5% a year). It is also estimated that an additional 300,000 boats visited Florida from other areas and that there are at least 100,000 boats domiciled in Florida which are not required to be registered. It is projected that by the year 2000, there will be over 1,600,000 vessels plying Florida's waterways.

Florida is easily the fastest growing recreational boating state in the nation with problems to match. In 1988, Florida recorded 1,203 boating accidents with 94 recreational and 11 commercial fatalities. Unfortunately, Florida has led the nation in recreational fatalities for the past two years. Florida's recreational fatality rate of 13.9 per 100,000 vessels is over 2 1/2 times the nationwide rate of 5.5. Total vessel and property damage as a result of boating accidents in 1988 was \$7,602,387. The U.S. Coast Guard estimates that only 10% of all boating accidents are reported. Based on this estimate, Florida probably has over 12,000 boating accidents per year. As of June 1989, 619 accidents have been reported with 46 fatalities and 262 injuries. Every factor concerning recreational boating in Florida is increasing - more boats, faster boats, more boaters, more accidents, more injuries, more property damage and more fatalities. The only constant is the amount of available waterways. Traffic congestion, coupled with speed, is causing more collision accidents. Speed limits are necessary to effectively manage our waterways for the protection of the boating public. Legislation is proposed to assist in alleviating our growing problems.

### **Establish a Maximum Speed Limit for Navigational Channels and Nearshore Areas**

Proposed legislation will establish a statewide maximum speed limit of 30 miles per hour for vessels operating within a marked navigation channel, within 100 feet adjacent to a marked navigation channel, or within 500 feet of any shoreline (see Attachment A).

Upon request from a county or municipality to establish a watersport area, the Department may waive or modify any maximum



speed or wake limit established by this legislation. The Department shall establish by rule the criteria and procedures for issuing such waiver or modification.

In addition, the Department shall have the authority for establishing, by rule, higher or lower numerical speed limits and maximum wake size limits on any of the other waters of the state. Speed and wake limits, if established, shall be on a local need basis. These limits shall be developed in consultation with the governing body of the county or city to be regulated, and where required under federal law, with the U.S. Coast Guard and the U.S. Army Corps of Engineers.

Each county which has been granted a special speed or wake limit shall post and maintain uniform regulatory markers noticing such limits at the county line and periodically on the waters throughout the county as directed by the department.

Speed and wake limits established pursuant to this section shall not preempt the establishment or enforcement of any restricted area established pursuant to Section 327.46 and/or Section 370.12, Florida Statutes, and posted as required by rule.

A violation of the established speed or wake limit would be a non-criminal infraction.

#### **Enhance Enforcement**

The Department is also proposing legislation for "in rem" (against the vessel rather than against the operator) proceedings against vessels in violation of the non-criminal provisions of Chapter 327, Florida Statutes. Such procedures are used by the U.S. Coast Guard for violation of federal boating regulations. This innovative approach will enable the Department to issue a citation to a vessel which was photographed or recorded to be in violation of boating laws. The citation would be mailed to the vessel owner. Procedures would be established by Department rule for legal action against an owner who ignored the citation.

#### **Implement a Boating Safety Education Program**

The Department plans on budgeting for a 24 employee boating education unit. These employees will work in the school system (most likely at the middle school level) teaching the National Association of State Boating Law Administrators course (see Attachment B). During the summer break, the instructors will focus on adult education and summer youth camp programs. In addition to the boating safety curriculum, the unit will emphasize manatee issues. Funding for this unit is proposed from the Florida Lottery.



In addition to the boating education unit, the Department is proposing legislation to require a Boating Safety Course prior to operating a vessel of more than 10 horsepower for persons born after October 1, 1975 (see Attachment C). The effective date of this legislation will be October 1, 1991. In effect, this means that on October 1, 1991 anyone under 16 years of age would be required to have taken and passed a Department approved course. By the year 2001, it would require anyone under 26 years of age to qualify. The Department feels this "phase in" approach is a good way to implement mandatory education. A very critical element in the success of this program is having an adequate number of instructors and sufficient materials available.

#### **Provide Additional Law Enforcement Personnel**

The Florida Marine Patrol is making a concerted effort to meet the marine law enforcement needs of the public. However, with only 264 assigned FMP Officer positions to patrol over 8,400 miles of coastline and to respond to more than 15,500 annual public complaints, the mathematical conclusion is evident. The Patrol is spread far too thin from a geographic, as well as, from an operational response standpoint. Realistically, a minimum of seven officer positions is required to man each established water zone on a 24 hour per day basis. This number of officers allows for 3 shift scheduling with a nighttime manning provision for 2 assigned officers per boat. In theory, this formula means that with current manpower allocations, a statewide maximum of only 30 FMP operational units could be somewhere in service at a given time. There are 35 coastal counties in Florida. Consequently, this formula also means that, on the average, there is less than one 24 hour operational unit allocated to each county. In practice, the Patrol maximizes its manpower resources through creative scheduling and peak workload management techniques. As a result, increased coverage is available during peak boating activity periods, with decreased or no coverage available during lesser activity periods. Although justifiable, these efforts are less than satisfactory and cannot overcome the significant lack of sufficient resources needed to provide the public and Florida's marine environment with adequate marine law enforcement services and protection. Adequate allocation of law enforcement officers (see Attachment D) is a critical element in the success or failure of this program.

#### **Appropriate Funds for Overtime Pay**

During the last three months of FY 88-89 the Marine Patrol received an additional \$50,000 salary appropriation to be used specifically for patrolling select manatee zones. This project proved to be very beneficial to both manatee protection and public safety. The Marine Patrol is proposing to continue this concept in FY 89-90 by requesting the release of \$200,000 of non-recurring funds from the grants and donations trust fund.

The funds will provide for approximately 10,000 extra hours of selective law enforcement patrol. Officers assigned will concentrate on boaters operating under the influence, reckless operation and manatee violations.



## **MANATEE PROTECTION STRATEGIES**

These comprehensive manatee protection strategies have their basis in the revised West Indian Manatee Recovery Plan developed by a multi-interest manatee recovery team for the U.S. Fish and Wildlife Service. The recovery team was composed of many of the top manatee experts in Florida, as well as governmental agency representatives and two marine industries association members. Selected portions of the recovery plan, which detail the Department's manatee recovery responsibilities, are included as Attachments E and F. The estimated manpower (19 new positions) and funding resources (\$1.5 to \$2 million) required to implement the plan are identified in Attachment F.

### **Establish a Maximum Speed Limit in Twelve Key Manatee Protection Counties**

In the twelve key manatee protection counties, a maximum 20 mph speed limit should be implemented for all inland waters accessible to manatees, except in marked navigation channels which would have a 30 mph maximum speed limit: Brevard, Broward, Citrus, Collier, Dade, Duval, Indian River, Lee, Martin, Palm Beach, St. Lucie and Volusia. In setting the maximum speed allowable at 20 mph outside of marked channels, the likelihood of manatees being struck by boats will be reduced by giving both manatees and boaters additional time to avoid collisions. Should a manatee still be struck, the resultant damage would be less severe than at higher speeds. These speed restrictions are designated to provide some additional protection for manatees with the least adverse impact on boaters. A fifteen-inch maximum wake restriction is being considered to discourage boats from producing large wakes.

Each county government, if it so desires, will be able to petition the Department to exempt certain areas from the 20 mph maximum speed limit, provided the following criteria are met:

- a. the area of water for which the exemption is being sought is not an area of regular or frequent manatee use during the time of year for which the exemption is being applied;
- b. the exemption will not create a boating safety problem;
- c. the exemption will not contribute to the destruction of seagrass and shoreline habitat; and
- d. the county will be responsible for adequately marking or posting the requested area in a manner consistent with the terms of the exemption.



An advisory council will be established to review county petitions and determine whether an area may be exempted from the speed restrictions. The council will consist of two Department representatives (one from the Division of Marine Resources and one from the Division of Law Enforcement), one Department of Environmental Regulation representative, one Department of Community Affairs representative and one U.S. Fish and Wildlife Service representative. The county may appeal council decisions to the Governor and Cabinet.

Rulemaking to establish the maximum speed limits is targeted for December 1989 completion. Establishment of maximum speed limits will not eliminate the need for site specific manatee protection zones (idle, slow or "no entry" zones) in critical manatee areas.

#### Adopt an Emergency Rule for Brevard County

Emergency speed zone rules should be adopted at the September 14 Cabinet meeting for the Banana River, Sykes Creek, Newfound Harbor and adjacent canals and tributaries, due to the recent increase in boat-related manatee mortality (see Attachment G). Attempts to fund a boating study and develop a county wide manatee protection plan with Brevard County have been ongoing for some time. However, the high number of manatee mortalities in the county in recent months represents an emergency situation that cannot wait until the boating study and manatee protection plan for Brevard County are complete.

Emergency manatee protection speed restrictions are proposed as follows:

##### Banana River

North boundary: NASA Causeway

South boundary: SR 518 Bridge

Outside the channel, a year-round slow speed zone is proposed. In the channel, a maximum speed of 20 mph is recommended--except south of latitude 28°10' which will be a slow speed channel-included zone. Some sections of the Banana River channel will need marking.

##### Newfound Harbor

North boundary: SR 520 Bridge

South boundary: Buck Point

Outside the channel, a year-round slow speed zone is proposed. In the channel, a maximum speed of 20 mph is recommended. The channel needs to be marked.

##### Sykes Creek

North boundary: Canaveral Barge Canal

South boundary: SR 520 Bridge



Improvement of an existing year-round slow speed zone for Sykes Creek (the main navigational channel is exempt, except in three locations) is recommended. To strengthen current regulations, the maximum allowable speed in the channel should be reduced from 25 mph to 20 mph, the main channel (and access channels, as appropriate) should be posted with additional channel markers, and the Marine Patrol and local law enforcement agencies should be furnished with radar to enable them to detect speeders. Existing signs need to be cleaned and missing signs replaced so that the zone is enforceable. If these actions are not feasible or adequate to protect the manatees in Sykes Creek, the channel-exemption should be removed from the zone entirely.

Note that the above speed restrictions would apply to all adjacent canals and tributaries of the Banana River, Newfound Harbor and Sykes Creek.

Brevard County is the county used most heavily by manatees along the mid-Atlantic coast of Florida. Large numbers of manatees have been sighted in the county during aerial and ground surveys. During mid-winter months, sightings are largely confined to the Indian River in the vicinity of the heated effluents from two power plants. Aggregations of up to 183 animals have been counted at these plants during a single aerial survey. At all other times of the year manatees are found throughout the county, particularly in the Banana River.

Aerial survey results gathered over the last decade indicate that the upper Banana River has the largest warm season concentration of manatees in the United States, particularly during times of migration. Peaks in Banana River counts occur in the spring and fall. Two hundred and fifty manatees were observed in the upper Banana River during a single aerial survey in April 1986. Resightings of distinctively scarred manatees and animals with radio transmitters in the county and in distant locations, such as Broward, Palm Beach and Dade counties, and the St. Johns River and south Georgia, corroborate the basis of observed migratory seasonal peaks. Brevard County contains habitat of importance not only to a local population but to a large segment of the entire East Coast manatee population of approximately 700 animals.

Numerous manatee sightings have also been recorded in the Banana River south of the NASA Causeway. Primary manatee use areas include the basins between the 528 and 520 Causeways, and between the 520 and 404 Causeways. During the 29 aerial surveys from December 1985 through December 1986, 1158 manatee sightings were recorded in these primary use areas. A maximum single survey count for this area of 97 was recorded in September 1986. Secondary manatee use areas include the Banana River from the NASA to 528 Causeways and from the 404 Causeway to the SR 518



Bridge. Two hundred and seventy-eight manatee sightings were recorded during 29 aerial surveys conducted from December 1985 through December 1986 in these sections of the Banana River. A maximum single survey count of 41 was recorded in September 1986.

Ground survey investigations indicate that areas of manatee concentrations in the Banana River include the Banana River Marine Service Marina, MSS Inlet, Peterson Point, Cape Canaveral Wastewater Treatment Plant, Minuteman Causeway Cove and the Canaveral Locks. In addition, heavy manatee use of several bodies of water confluent with the Banana River have been documented. These include the Newfound Harbor-Sykes Creek area, the Barge Canal, and the canals in Satellite Beach, particularly Grand Canal and Lake Shepard. Manatee use of these areas occurs throughout the year but is reduced in mid-winter.

The heavy use of Brevard County by manatees is also documented through the highest manatee mortality rate in the state. A total of 70 manatees have been killed as a result of boat/barge collisions in Brevard County through May 1989. Of these 70 deaths, 32 occurred in the Banana River and 12 occurred in Sykes Creek. In 1987-88, 22,963 pleasure boats and 1,612 commercial vessels were registered in Brevard County.

The annual number of boat/barge related mortalities in the Banana River has varied from zero to five. In 1989, as of July 31, five manatees have already been found dead in the Banana River as a result of boat collisions. Boat/barge mortality in the Banana River has occurred in all months except February and November (1-January, 0-February, 2-March, 3-April, 6-May, 7-June, 3-July, 2-August, 4-September, 4-October, 0-November and 1-December). Mortality locations are spread throughout the Banana River; two north of the 528 Causeway, six in the Port Canaveral area, seven between the 520 Causeway and Barge Canal, eleven between the 520 and 404 Causeways, and six south of the 404 Causeway to the south end of the Banana River.

The annual number of boat/barge related mortalities in Sykes Creek has varied from zero to three. Three manatees were killed in Sykes Creek in 1986. Two boat killed manatees were recovered in Sykes Creek in April and May 1989. Mortality in Sykes Creek has occurred from April through October (3-April, 4-May, 0-June, 2-July, 0-August, 1-September, 2-October), with the highest number of manatees killed by boat collisions occurring in May. Sykes Creek boat related mortalities were spread throughout the creek; highest numbers occurred near the Barge Canal and just north of the 520 Causeway.

Brevard County implemented a speed zone in Sykes Creek following the recovery of three boat-killed manatees in 1986. At the time, Sykes Creek was the most concentrated area of manatee mortality in the county. The current year-round slow speed zone



extends from the Barge Canal to the 520 Causeway. The channel is exempt except for three areas of the creek, including the Kiwanis Island Basin. Two mortalities in Sykes Creek in 1989 indicate that the current zone may not be adequate to protect manatees.

There are currently ten manatee protection and boating safety zones in the county that have been implemented either by the Department, U.S. Fish and Wildlife Service, the county or a municipality (see Attachment H). The locations of these zones are: Haulover Canal, Indian River power plants, Port Canaveral, Sykes Creek, Manatee Cove, Grand Canal, the vicinity of the SR 518 Bridge, Eau Gallie River, Crane Creek and Turkey Creek. These zones are enforced by the Brevard County Sheriff's Department, the Cocoa Beach Police Department, Florida Marine Patrol, the Indian Harbor Beach Police Department, the Palm Bay Police Department and the Melbourne Police Department. These zones are not adequate to handle the impacts to manatees from the current high numbers of boats in the county, much less the expected numbers of boats that will be registered in the years to come. Additional speed zones are required to protect the bulk of the East Coast manatee population. Along with these zones, stepped up law enforcement is necessary to provide adequate manatee protection. Increased law enforcement efforts are currently needed from local, state and federal entities and will become more important as the number of speed zones in the county increases.

#### **Create New Manatee Protection Speed Zones**

Rulemaking will be initiated for the following proposed manatee protection zones: the lower St. Johns River (Duval County); Sebastian Creek (Brevard and Indian River counties); Caloosahatchee River (Lee County); Tomoka River (Volusia County); and "no entry" areas at the Riviera Beach (Palm Beach County) and Port Everglades (Broward County) power plants (See Attachment I). In addition, rulemaking will be initiated to establish the zones created by the Brevard County emergency rule, only in effect for 90 days, as permanent zones.

#### **Establish Manatee Preserves**

"No entry" areas are protected zones in which boating, swimming, and diving are prohibited for the protection of manatees. Historically, "no entry" areas have been designated by the federal government at warm water refuges where large numbers of manatees congregate. In some areas, such as Kings Bay in Citrus County, a portion of the warm water refuge is closed off with markers, providing an area where manatees can escape contact with swimmers. In power plant discharge canals, the entire area is established as a "no entry" zone to prevent boaters or swimmers from causing manatees to leave the warm water.



Due to continued high boat/barge related manatee mortality, harassment and loss of essential habitat, it is increasingly important to manatee survival to set aside areas in which the animals can feed, rest, mate and give birth in safety. The U.S. Fish and Wildlife Service is currently pursuing the adoption of a manatee preserve (motorboat prohibited area) in the upper Banana River between the NASA and 528 Causeways adjacent to the current NASA restricted zone. Other areas are under consideration as potential manatees preserves. However, before their recommendation, time is needed to evaluate manatee distribution data (in some cases additional data will need to be collected), the degree of commercial and recreational use of the areas, riparian owners involved and the most practical and effective methods for posting the areas. Potential preserve areas include portions of: the Mosquito Lagoon (Brevard County), the Ten Thousand Islands area of Everglades National Park, and the Oleta River (Dade County).

The Department's current authority appears to be limited to preventing motorboat access into protected areas; it is unclear whether authority exists to establish absolute "no entry" areas. Absolute "no entry" can be established under federal authority, as has been done at Kings Bay, or could be pursued through a change to Chapter 370, Florida Statutes (see Statutory Amendments section).

#### Post and Maintain Manatee Regulatory Signs

Once manatee protection zones are established, they must be clearly marked with appropriate regulatory signs. Proper design, location and maintenance of these signs is a necessity if the speed limits are to be enforceable. Approximately twenty manatee protection zone areas have been designated and posted with regulatory signs, and seven more areas are currently proposed for designation and posting. Before 1983, the Florida Marine Patrol posted and oversaw maintenance of regulatory signs. Since then, the responsibility for recommending zone designation, posting approved areas, and maintaining the signs has rested with the Marine Mammals Section of the Division of Marine Resources.

The task of installing signs generally requires the services of a contractor, special equipment and personnel to assist and guide the contractor. The task includes obtaining all required environmental permits, posting new signs and replacing any damaged or missing pilings and signs.

Protection zone areas must be inspected on a regular schedule (quarterly) to ensure that adequate marking is present and that no hazards to navigation exist. Under current fiscal and staffing limitations, the Department is unable to perform routine sign inspection and maintenance in the existing protection zones. Many signs and pilings need replacement. It



is recommended that sign posting and maintenance responsibilities be transferred to a more appropriate entity. If not transferred and the Division of Marine Resources is expected to successfully manage signage for the manatee protection zones, a significant increase in funding (three employees and \$250,000) will be a necessary inclusion in next year's budget.

Alternatively, assistance from the affected counties would be more economical and efficient. Each county would assume responsibility for the posting, inspection and maintenance of the regulatory signs in its waters with guidance and assistance from the Department. Funding would be available through the Florida Boating Improvement Program to supplement a county's special program budget (see Attachment J). The Department would establish, by rule, appropriate standards and criteria; oversight for county compliance would be provided by the Division of Marine Resources. A statutory amendment is recommended to implement this policy.

Specific authority will be sought to adopt and enforce maximum speed zones, indicating that these speed limits are in force unless otherwise posted. With such authority, the cost of posting maximum speed zones would be dramatically reduced; it would only be necessary to post major access points and intermittent locations throughout the zones. Likewise, the chances of hitting a regulatory marker and the aesthetic pollution from excessive signage would be reduced. Other site specific zones would continue to be posted more comprehensively.

#### **Implement an Interim Boating Facility Expansion Policy**

The construction of new or expanded boat facilities for the key counties (within known manatee habitat) should be limited to a maximum of one powerboat slip per 100 linear feet of developable shoreline until the county has developed and implemented a manatee protection plan and a boating facility siting policy. Expansion of dry storage facilities would likewise be restricted.

Construction of slips restricted to sailboats will be allowed in areas where sailboat use is feasible and other resources such as seagrass beds are not impacted. Boat ramps would be restricted to one trailer parking space per 100 linear feet of developable shoreline. Variance from the slip-to-shoreline ratio for new or expanded boating facilities near speed regulated inlets may be allowed if no significant adverse impacts are expected. This policy will be incorporated into Division of State Lands procedures and coordinated with U.S. Fish and Wildlife Service, the Department of Environmental Regulation and the Department of Community Affairs. The policy will apply to facilities with more than five boat slips. Standard construction conditions will continue to



apply to all water related construction--including the installation of manatee caution signs and informational displays. Projects expected to significantly impact or alter seagrass beds, sources of freshwater, warm water refugia or other important manatee resources will not be approved.

The Citrus County Manatee Protection Plan is expected to be completed this fall. The East Central Florida Regional Planning Council has recently released a study, "Marina Siting Suitability in the Coastal Estuaries of East Central Florida." These two documents may provide models for similar studies in other areas.

County specific manatee protection plans and boating facility siting policies must be based on comprehensive manatee mortality, abundance and distribution data, as well as other natural resources data. The plans should address ways to reduce human impacts to manatees, including the preferred siting of boating facilities. Policies to limit or prohibit the construction of marinas and dry storage facilities in important manatee or habitat areas should be incorporated in the plan. (Additional plan components are described in Attachment K, Manatee Protection Plan Guidelines.) The quantity of available manatee information, collected by the Department, the U.S. Fish and Wildlife Service and other researchers, varies for each county. The amount of boating information which a county may require to make land use recommendations also will vary. In some counties, collection of additional manatee and boating data may be necessary to develop the manatee protection plans. Counties may develop interim protection plans utilizing the best available information if acceptable to the Department. Reasonable relaxation of the requirements of the interim boating expansion policy may be allowed. The Department will assist in the development of protection plans by providing access to the required manatee data and will have county orientation meetings in October. The interim manatee protection plans should identify additional research needs and include a timetable for accomplishing the research and development of a more comprehensive manatee protection plan once the necessary information becomes available.

**Utilize the Marine Resource Geographic Information System to Analyze Manatee Data; Provide the Geographic Information System Data to Individual Counties**

The geographic information system will provide a better understanding of the temporal and spatial relationship of manatees and their habitats (see Attachment L). The information will be used for development and refinement of manatee protection plans. Highest priority for data entry into the GIS are the four counties with the highest mortality--Brevard, Duval, Collier and Lee. Data entry and analysis is expected to take a year and a half. GIS data preparation would follow for Broward, Dade,



Martin and Citrus Counties (completion expected by the fall of 1992), followed by Palm Beach, Volusia, Indian River and St. Lucie Counties (completion expected by the spring of 1994). Development of the GIS is time and manpower intensive. The time line can be shortened only with increased manpower; two additional positions are requested.

### **Recommend Legislative Action**

#### **Statutory Amendments**

Specific authority to protect and preserve manatees is found in subsection 370.12(2), Florida Statutes (see Attachment M, the "Florida Manatee Sanctuary Act"). However, the statute is deficient and the following amendments are recommended.

##### **Subsection 370.12(2)(g)**

Delete the sentence: "The main channel of the Atlantic Intracoastal Waterway within this area is exempted from speed restrictions." Without such a change, manatees cannot be adequately protected from the increasing boat traffic generated by new development. The adoption of additional regulatory zones should allow for increases in boating facilities while protecting manatees.

##### **Subsection 370.12(2)(f)**

To protect manatees from harassment and other forms of "taking," it is recommended that this section be amended as follows: in line two, after the words "collisions with motorboats" and before the words "the Department of," add "or harassment."

##### **Subsection 370.12(2)(o)**

Add a new subsection: "The Department is authorized to establish, by rule, sanctuaries for manatees where the animals can rest, feed, reproduce or nurse undisturbed by human activities." It is currently not possible to prevent non-motorized boats or divers from chasing manatees in warm water refuges. This amendment would allow for the creation of "no entry" zones, which at present can only be established by federal rules.

##### **Subsection 370.12(2)(i)**

Delete the words "during the period between November 15 of each year and March 31 of the succeeding year" and add the words "and duration" after "zone sufficient in size" and before "to protect the concentration of manatees." This amendment is needed to more accurately depict when manatees are likely to be present. It is primarily a non-substantive change for consistency within the statute.



Subsection 370.12(2)(j)

In the first sentence delete the words "post and." Add a new sentence: "Counties with manatee sightings in their waters will assume responsibility for posting, inspecting and maintaining the regulatory signs with guidance from the Department based on criteria and standards established by rule." Local government assumption of the day-to-day responsibility for regulatory signs is the most efficient and economical approach to regulating boat speeds.

Subsection 370.12(2)(n)

Although the Department's authority to protect manatees is clearly delineated, authority to protect their habitat is not. It is recommended that the words "or to protect the manatees' habitat, e.g., seagrasses" be added at the end of this subsection. Currently, unless seagrasses are being prop dredged, there is no way to protect them from boating activities. Direct protection of seagrasses under other related statutes should also be pursued.

Subsection 327.25(12)

In addition to the authority vested in subsection 370.12(2), Florida Statutes, subsection 327.25(12) authorizes county governments the optional use of their share of funds collected pursuant to section 327.28 for manatee and marine mammal protection activities. It is recommended that individual counties assume responsibility for posting, inspecting and maintaining boating speed limit signs in their waters. Subsection 327.25(12) should be amended by adding a new last sentence: "Local governments will assume responsibility for posting and maintaining boat speed limit signs in their waters using said grant funds, if necessary. The Department shall, by rule, establish standards and criteria for posting, inspecting and maintaining the signs." Without this amendment, the Department will continue to be responsible for posting and maintaining the signs. To fulfill this responsibility, a significant increase in staffing and funding for the manatee program would be needed.

Other issues for legislative action include:

- Seeking authority to not post 20 or 30 mph maximum speed limit areas established by rule under Chapters 370 or 327, Florida Statutes (that is, unless otherwise posted, the speed limit would automatically be 20 or 30 mph). This provision would reduce the number of signs and funding necessary to mark the various waterways.
- Requiring the use of floating or above-the-water fenders along bulkheads and between large vessels moored in waters likely to be used by manatees. A significant number of



manatees have been crushed between a bulkhead and a large ship or barge, or between the vessels themselves. Although most new facilities have been required to install and use these bumpers, a large number of older facilities currently are not employing these protective devices. Fenders will save manatees as well as protect ships, barges and bulkheads during heavy seas and wakes.

- Investigation of future mandatory use of propeller guards if a practical design can be developed. Propeller guards may provide limited relief from manatee and swimmer injuries, particularly when combined with other speed controls.
- Designation of and funding for dedicated resource protection officers.

### **Increased Funding**

It is projected that an annual budget of \$1.5 to \$2 million, including additional manpower resources, is required to meet the Department's manatee and habitat protection responsibilities (see Attachment B, the Manatee Recovery Plan Implementation Schedule). The Department's manatee program budget for 1988-89 is \$492,000.

The manatee license plate bill, passed by the 1989 Legislature, will provide some additional revenue for the manatee program. Manatee license plate revenues are to be split between environmental education and manatee protection efforts. With the proliferation of special license plates it is difficult to estimate the monies which the Department will receive from this source. In 1988-89, sale of special license plates by the Department of Highway Safety and Motor Vehicles was as follows: 31,138 collegiate tags; 63,826 Challenger tags; and 106,888 personal tags. It is expected that manatee tags will be available for purchase in the spring of 1990. If 15,000 persons (Save the Manatee Club membership) purchase the special tag, 1989-90 revenue for the manatee program is projected at \$56,250 (\$15 tag fee x 15,000 x 0.5, manatee program portion x 0.5 year).

Other potential means of increasing funding for the manatee program are:

#### Require a tax on all new boats.

In 1988-89, the number of registered vessels in Florida increased by 35,357 over the previous year. With a \$30 tax on all first-time boat registrations, \$1,060,710 would be generated. A projected 40,000 increase in registered vessels in 1989-90 would generate approximately \$1.2 million. Alternatively, a graduated first time boat registration fee could be imposed, with fees increasing as a vessel's horsepower increases:



25 horsepower or less:	\$30
26 to 50 horsepower:	\$50
51 to 100 horsepower:	\$100
101 to 250 horsepower:	\$300
Greater than 250 horsepower:	\$500

The initial registration fee would not apply to watercraft equipped with jet drives, or propellers enclosed and protected by a propeller guard manufactured to design specifications approved by the Department. No propeller guards have received Department approval at this time.

Increase boat registration fees by \$1.

Based on the total registered vessels in 1988-89, new revenues of \$710,831 would be generated. In 1989-90, if there is an increase of 40,000 registered vessels, approximately \$750,831 would be generated.

Increase the \$250,000 transfer for manatee and marine mammal protection as authorized in Section 327.28(1), Florida Statutes.

Revising this transfer to \$0.50 per registered vessel would generate a total of \$355,415 based on the number of vessels registered in 1988-89.

Add an environmental impact surcharge fee to submerged land leases.

The total square footage of submerged lands under lease as of June 30, 1989 (not including leases where the fee is waived) is 28,542,049. A one cent increase in the lease fee per square foot would generate \$285,420 on this base.

Earmark revenue from taxes on gas and diesel sold at marinas for marine resource enhancement.

Identify tax revenues from fuel sold at marinas, using Department of Revenue records. Earmark the funds for the marine resource enhancement efforts of the Department of Natural Resources.

Require an annual license for boat dealers.

An annual license fee of \$500, similar to that required for automobile dealers, would be instituted for boat dealers. Also consistent with automobile dealer provisions, the current \$16 fee for a dealer's personal boat registration could be increased to \$22 (current motor vehicle dealer classification cost).

Register all boats in Florida.

Currently, only power driven vessels are registered in Florida. Some other states require that all vessels be registered and the federal government is expected to mandate that all vessels be registered within five years. The



Division of Law Enforcement estimates that an additional \$1 million in revenue would be generated by registering all vessels in Florida.

### New Staff Positions

The timeline for providing counties with geographic information system data, aiding in their preparation of manatee protection plans, and reviewing their plans can be reduced significantly through increased staffing of the Marine Mammals Section. It is proposed that the permanent staff be increased immediately:

Position	Current Staff	Requested Staff
Planning staff	(FTE) 1	2
GIS analysis	(FTE) 1	1
GIS data entry	(OPS) 1	1
Administration	(FTE) 2	2
Salvage coordinator	(OPS) 1	1
Salvage assistants	(FTE) 0	2
Management analyst	(FTE) 1	transfer to Trust Fund
SW field supervisor	(FTE) 1	transfer to Trust Fund
Population assessment	(FTE) 1	transfer to Trust Fund
Research coordinator	(FTE) 0	1
Sign posting & maintenance	(OPS) 1	3
Total	10	13

Two additional planning positions are needed to work with the twelve key counties on the development and implementation of interim and final manatee protection plans and boating facility policies. The development and utilization of the Marine Resource Geographic Information System will play a major role in facilitating the integration of research data and management recommendations. One additional position is needed to perform ongoing data management and another position is needed to enter backlogged data.

Three new employees with marine mammal pathology expertise are needed to accomplish some of the most pressing tasks outlined in the recovery plan, such as determining the causes of natural mortality, evaluating the effects of pollution and toxins on manatees, and performing genetic and aging research. A research coordinator is needed to coordinate various research efforts and to analyze existing population data. The Department needs to initiate aerial surveys in new areas and to experiment with additional innovative approaches to population estimation. Two additional administrative positions are needed to assist with section research and management responsibilities. Three sign



posting and maintenance positions (necessary if the program is not transferred) are essential with the Department's increasing regulatory zone responsibilities.

Eventually, six additional positions will be needed to accomplish the Department's responsibilities under the manatee recovery plan (see Attachment F).

Additional staff time could be made available by changing the responsibilities of the existing Environmental Specialist II position from reviewing proposed boat facilities to providing technical information to the counties. This assumes, however, that the Division of State Lands could take over the review of manatee related boating facilities construction with assistance from the Marine Mammals Section.

#### **Actively Promote Dissemination of Manatee Information**

The Office of Communications and staff in the Marine Research Institute have been working for the last four months to develop a manatee awareness campaign that will run during the entire 1989-90 wintering season. The campaign is being developed in cooperation with a successful Tampa advertising agency that is donating its considerable talent and time to the state as part of its commitment to public service. The campaign will include:

Radio, Television and Print Public Service Announcements  
High quality commercials and ads which focus on public responsibility to protect manatees are being produced.

Manatee Information Booklet  
The Office of Communications has developed a complete manatee information booklet. This booklet is being printed with the cooperation of the Jacksonville Marine Association, the Marine Association of South Florida, the Florida Wildlife Federation and the Florida Phosphate Council. It will be distributed as part of the overall campaign.

Manatee Guide for Boaters and Divers  
This short, easy to use brochure will be distributed to boaters and divers. It contains reminders on manatee protection.

All of the materials and public service announcements are being developed for presentation and distribution at the October 10 Cabinet meeting. This Cabinet meeting will also serve as a kickoff for the advertising campaign.

Students constitute a large and valuable group who can ensure the future of Florida's living resources, such as the manatee, as well as disseminate information to their parents and peer groups. Environmental problems and solutions cannot be

adequately covered in a short segment of a basic biology class. Environmental education should be expanded in every school district to include environmental science as a required course for all students, kindergarten through twelfth grade.

Workshops can be conducted to train law enforcement officers for manatee rescue or salvage operations and to make the judiciary aware of the plight of the manatee.

To monitor the effectiveness of manatee awareness and education campaigns, public opinion and awareness surveys should be periodically conducted.



## IMPLEMENTATION OF RECOMMENDED ACTIONS

Implementation of these boating safety and manatee protection recommendations will require action by the Governor and Cabinet or the Florida Legislature.

### Actions for Governor and Cabinet Implementation

- Establishment of a maximum 20 mph speed limit for inland waters--excluding marked navigational channels which would have a 30 mph speed limit--in twelve key manatee protection counties.
- Adoption of an emergency manatee protection rule for portions of Brevard County at the September 14 Cabinet meeting.
- Adoption of rules for new manatee protection speed zones, including establishing the Brevard County emergency zones as permanent speed zones.
- Designation of manatee preserves.
- Adoption of an interim boating facility expansion policy.
- Appropriation of overtime pay for Marine Patrol Officers

### Actions for Legislative Implementation

- Transfer of signage responsibilities to local governments, or provision of an adequate budget to the Department for sign posting and maintenance.
- Amendment to the Florida Manatee Sanctuary Act as recommended by the Division of Marine Resources.
- Creation of new revenue sources for the manatee program.
- Establishment of new staff positions in the Division of Law Enforcement for a boating safety education unit and additional marine patrol capability, and in the Division of Marine Resources to carry out the state's manatee recovery responsibilities.
- Passage of a boating safety bill to establish a maximum 30 mph speed limit for navigational channels and nearshore waters and to enhance the marine patrol's enforcement capabilities.