Save the Manatee Trust Fund

2004–2005 Annual Report

Florida Fish and Wildlife Conservation Commission

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

1-888-404-FWCC (3922)

To report fish and wildlife violations,
as well as manatee injuries and mortalities

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Save the Manatee Trust Fund

Annual Report

2004–2005

Florida Fish and Wildlife Conservation Commission
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Florida Fish and Wildlife Conservation Commission

Fish and Wildlife Research Institute
Division of Law Enforcement
and
Division of Habitat and Species Conservation

Executive Summary

This is the annual status report on expenditures from the Save the Manatee Trust Fund (STMTF). Each year, the report is provided to the President of the Florida Senate and the Speaker of the Florida House of Representatives.

Funding for the state's manatee-related research and conservation activities is provided primarily from the STMTF, which receives money from sales of manatee license plates and decals, boat registration fees, and voluntary donations. Revenues for fiscal year (FY) 2004–2005 totaled $3,548,984. Expenditures for the same period were $3,607,089, with $325,000 provided for manatee research activities at Mote Marine Laboratory and a charge to General Revenue of $99,830. Expenditures above revenues were taken from the balance of the STMTF. Details are presented in pie charts in the report.

Expenditures from the STMTF were made for the Florida Fish and Wildlife Conservation Commission's (FWC) manatee programs: $419,867 provided to the Division of Law Enforcement (LE) for manatee-related patrols, etc.; $867,258 for management activities within the Division of Habitat and Species Conservation's Imperiled Species Management Section (ISM); and $1,611,112 for research activities conducted by the Fish and Wildlife Research Institute (FWRI) in St. Petersburg. The report includes budgetary analyses for individual research and management program efforts, followed by summaries of the work performed.

The Florida manatee is native to Florida's coastal and riverine waters. Both the U.S. Fish and Wildlife Service (USFWS) and the FWC list the manatee as an endangered species. Manatees have been protected in Florida since 1892. Federally, both the Marine Mammal Protection Act and the Endangered Species Act protect manatees. Current state efforts to recover the population are guided by the Florida Manatee Sanctuary Act [Section 370.12 (2), Florida Statutes] and the federal Florida Manatee Recovery Plan of 2001.

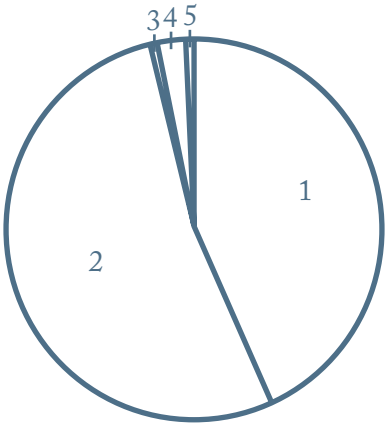
The FWC and the USFWS have continued to address the existing controversy surrounding manatee issues. During FY 2004-05 a series of Manatee Forums were convened with key stakeholders. The goal of the Forums is to provide a process to improve communication and understanding among stakeholder groups and participating agencies. Through this process we hope to establish areas of common ground, identify problems or conflicts, and develop potential solutions. The Executive Director of the FWC and the Director of Region Four of the USFWS have been instrumental in the development of this idea and its implementation.

Another FWC and USFWS initiative this year was to begin developing a process to determine effectiveness of regulatory zones. In addition, FWC staff members continued to serve on the federal Florida Manatee Recovery and Implementation Team and were represented on all of the team's working groups and task forces.

Although great strides have been made toward recovering the Florida manatee, there are still human-related and natural factors that could negatively affect the long-term survival of the species. With continuing management, law enforcement, outreach, research, and partnerships, the FWC is working to ensure that there will be a viable manatee population in Florida's future.

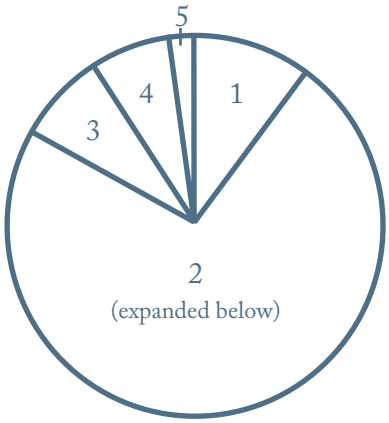
STMTF 2004–2005 Revenues and Expenditures

REVENUES
$3,548,984



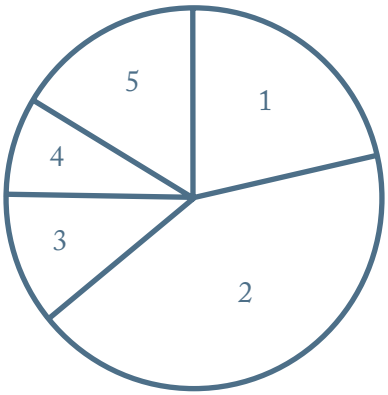
1 Save the Manatee License Plate (*$1,542,458*)
2 Vessel Registration (*$1,879,893*)
3 Interest (*$20,752*)
4 Decals and Donations (*$87,095*)
5 Miscellaneous (*$18,786*)

APPROPRIATIONS
$4,280,567



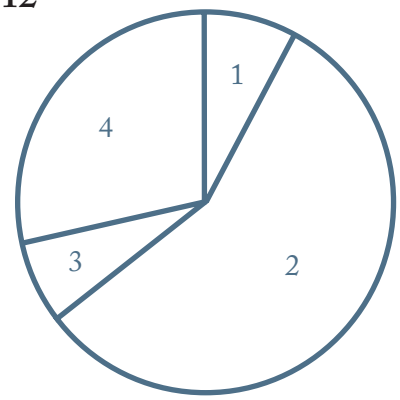
1 Law Enforcement (*$425,830*)
2 FWC Manatee Program (*$3,145,885*)
3 Mote Marine Laboratory (*$325,000*)
4 Administrative Overhead (*$284,022*)
5 Service Charge to General Revenue (*$99,830*)

FWC Manatee Program
STMTF Conservation Management Expenditures
$867,258



1 Rule Development (*$184,803*)
2 Planning and Permitting (*$369,102*)
3 Habitat Protection (*$98,900*)
4 Data Distribution (*$72,970*)
5 Education and Information (*$141,493*)

FWC Manatee Program
STMTF Research Expenditures
$1,611,112



1 Behavioral Ecology (*$128,576*)
2 Mortality and Rescue (*$906,393*)
3 Photo Identification (Life History) (*$113,612*)
4 Population Assessment and Monitoring (*$462,531*)

Table of Contents

Manatee Basics

common name Florida manatee

scientific name *Trichechus manatus latirostris*

status Endangered (federal and state)

range Throughout Florida (the summer months into southeastern states)

maximum census 3,300 counted in 2001

history Native species found in fossil record and recorded by earliest explorers

diet Freshwater and marine species of plants

reproduction Breed year-round; most calves born in spring; mature female can produce one calf approximately every three years

life span Can live over 50 years, but this is rare

unusual fact Age determined by examination of a thin cross section of the earbone of dead manatees, and counting growth layers, similar to counting rings in a tree

A CLOSER LOOK

Adult manatees average 8–10 feet in length and weigh around 1,000 pounds. The largest manatees may reach 14 feet in length and weigh over 3,500 pounds. Adults are gray in color, with sparse hairs distributed over much of the body. Stiff whiskers (vibrissae) grow around the face and lips. Algae growing on the skin may make them appear green or brown. Manatees that live in saltwater may also have barnacles growing on their skin. Despite their large size, manatees can be difficult to see in the wild because of their color and behavior. Manatees eat a variety of marine and aquatic plants and are often seen near natural or artificial freshwater sources.

During periods of cold weather, manatees aggregate, or gather, in waters warmer than 68° F. This warm water may be in south Florida or may be from an artesian spring or industrial discharge. Manatees mate year-round; however, most calves are born in the spring. Gestation lasts approximately 13 months and results in the birth of a calf (rarely twins) measuring 3–5 feet in length. The calves remain with their mothers for up to two years.

There are a variety of threats to manatees. They may die from exposure to harmful algal blooms (red tide), the effects of cold water, and disease. Human-related causes of death include collisions with watercraft, crushing in water control gates and boat locks, and entanglement in fishing gear. Manatee habitat loss or degradation, including future changes in artificial warm-water refuges and reductions in natural spring flows used as refuges, is also of concern.

Research Activities

Mortality and Rescue

Research Activities

A network of researchers and law enforcement agencies was established in 1974 to recover manatee carcasses and assist injured manatees. The mortality and rescue program now rests largely with the FWC.

Staff members at five coastal field stations retrieve all reported carcasses. To determine cause of death, most carcasses are examined (necropsied) at the FWC Marine Mammal Pathobiology Laboratory (MMPL) in St. Petersburg. Although the MMPL was originally designed to process only 150 carcasses per year, it now regularly processes over 300 annually.

Information gained through carcass salvage and manatee rescue and rehabilitation is crucial to providing wildlife managers with information about manatee health, mortality factors, life history, and general and reproductive biology. This program also provides data used in assessing the population.

2004–2005 Highlights

Carcass Salvage

- Statewide, there were 346 manatee carcasses documented in Florida during the fiscal year. All but three were recovered and examined.

- Researchers collected tissue samples for genetic analysis from 338 of the recovered carcasses. Other tissues were collected for toxicology and histopathology.

- FWC staff hosted a workshop with national experts in forensic and veterinary science, marine engineering, and marine mammal biology, in order to review and discuss the methodology and utility of forensic wound analysis at the MMPL. The purpose of this workshop was primarily to address the question of what type of vessels cause injuries to manatees. A technical report with proceedings from the workshop will be produced during the next fiscal year.

MANATEE MORTALITY FY 2004–2005

Cause of Death	*Number of Deaths*
Carcasses Not Recovered	3
Cold Stress	36
Human (flood gate or canal lock)	6
Human—Other (entanglement, ingestion, etc.)	7
Human—Watercraft Related	70
Natural	54
Perinatal (total body length less than 150 cm or about 5 feet)	80
Undetermined (decomposed or other)	90
Total Carcasses July 1–June 30	346

2004–2005 Highlights (continued)

Carcass Salvage (continued)

- A red tide event persisted in southwest Florida and at least fifty manatee deaths in FY 2004-2005 in Southwest Florida were attributed to the red tide toxin called brevetoxin. This event was declared an unusual mortality event by the federal Working Group for Marine Mammal Unusual Mortality Events. Manatee unusual mortality events related to brevetoxin were also declared in southwest Florida in 1996, 2002, and 2003.

A manatee carcass with boat propeller wounds.

- MMPL staff members conducted several necropsy training workshops and classes for the following groups:

  - Veterinary students from the MARVET program and Aquatic Medicine students from the University of Florida and the University of Illinois.

  - Two workshops funded by the National Marine Fisheries Service (NMFS)-Prescott Stranding Program; workshops designed to train stranding network volunteers to respond to dolphin strandings and perform necropsies.

- A University of Florida veterinarian was again stationed at the MMPL to assist with necropsies, rescues, and research.

Rescue and Rehabilitation

- 56 rescues were performed statewide during FY 2004-2005.

- As of June 2005, 26 of these rescued manatees were released back into the wild; 15 died, and the remaining 15 animals were still being rehabilitated in facilities around the state.

MANATEE RESCUES FY 2004–2005

Type of Rescue	*Number of Rescues*
Calf—Alone	8
Calf—With Rescued Mother	5
Human—Entanglement	12
Human—Entrapment (flood gate or canal lock)	6
Human—Other	5
Human—Watercraft Related	7
Incidental	1
Natural—Includes Red Tide	10
Undetermined	2

Population Monitoring and Assessment

Research Activities

Population assessment and monitoring is designed to address whether the manatee population is declining, stable, or increasing. Assessment includes a comparison of current and past conditions and an estimate of future risk. Computer modeling and risk assessments are the primary tools used in assessing the population. In partnership with the United States Geological Survey (USGS), development of a core biological model was initiated. This model will be used to help answer questions relating to the manatee population.

Aerial surveys are one tool for monitoring the manatee population. Manatee aerial survey research addresses three questions about manatee populations: the number of manatees present in an area, trends in the size of the manatee population, and manatee seasonal distribution. Aerial surveys are used to acquire information on manatee distribution, relative abundance, and habitat use. FWC staff members use several types of aerial surveys to assess the manatee population. FWC uses statewide synoptic surveys to obtain a general count of manatees at known winter aggregation sites. These aerial surveys are conducted to meet Chapter 370.12 (4), Florida Statutes, requiring an annual, impartial, scientific benchmark census of the manatee population. The counts, conducted 22 times since 1991, are flown after cold fronts, when animals gather, or aggregate, at warm springs and thermal discharges from power plants. Synoptic surveys yield minimum estimates of the manatee population. FWC uses another type of aerial survey called distribution surveys to determine the seasonal distribution and relative abundance of manatees. These distribution surveys are usually flown twice monthly for a period of two years.

Information on manatee life histories is essential in assessing manatee population dynamics and recovery. Long-term data on growth and survival of individuals, reproductive performance of mature females, and health of wild manatees are important to the development of reliable population models. These data are gathered using a variety of research tools such as photo-identification of distinctly scarred individuals. Manatee photo-identification is a research technique that uses the unique pattern of scars and mutilations on a manatee's trunk and tail fluke to identify individual animals over time. The scars are usually a result of encounters with boats, but they can be caused by entanglement in fishing gear, and by infections. This research is accomplished through a partnership between the FWC, the USGS's Sirenia Project, and Mote Marine Laboratory. Partners work collaboratively to photograph Florida manatees throughout their range, to process images, to identify manatees, and to manage an integrated sightings database, known as the Manatee Individual Photo-identification System (MIPS). Photo-identification data provide insights into manatee movements, site fidelity, adult survival rates, and reproductive parameters such as calving intervals and length of calf dependency.

2004–2005 Highlights

- On January 26, 2005, FWC staff conducted its annual statewide synoptic survey—a simultaneous count of manatees over a broad area. Twenty observers (18 in air and 2 on ground) counted 3,143 manatees (the second highest count on record) in 20 areas on both coasts. Observers were staff members from 14 state, federal, and county agencies, as well as research laboratories, non-governmental organizations (NGO), and universities.

  - Gulf coast count 1,549
  - East coast count 1,594

- Aerial surveys were flown at the Tampa Electric Company's (TECO) Big Bend, Florida Power and Light Company (FPL) Fort Myers, and power plants in Brevard County to support an experimental comprehensive inter-agency study to improve our ability to model manatee population dynamics.

- In October, FWRI held an aerial survey safety workshop to improve the safety for FWC aerial observers.

- FWC staff members participated in and co-chaired the USFWS Manatee Population Status Working Group which finalized an assessment of the biological status of the Florida manatee population.

- A manuscript describing detection probabilities for manatees using the TECO Big Bend power plant in Apollo Beach was completed and will be submitted to the Journal of Wildlife Management. Counts of manatees using the power plant were corrected using calculated detection probabilities.

- A manatee biological review panel was appointed in June 2005 to conduct a biological status review of the Florida manatee. The final report is scheduled to be presented at the June 2006 FWC meeting.

Photo-identification

- FWC, USGS, and Mote Marine Laboratory formalized their partnership by developing and signing a MIPS Memorandum of Agreement which specified partner responsibilities and the details of an interconnection security agreement. The partnership developed:

  - Standardized protocols for management of images and digital photography.

  - Standardized protocols for scanning and archival of program slides.

- FWC's transition to digital photography was completed. This transition, along with the changes in subsequent data processing, have facilitated the proper archival of project data, the efficient exchange of image data between partners, and the comparison of identifying features on manatees photographed throughout their range.

- In the effort to transition to a digital platform, 41,909 slides from the FWRI photo-identification slide catalog were scanned at high resolution.

- FWC staff members, interns, and volunteers spent 140+ days conducting land- and boat-based photo-identification research during 430+ visits to sites used by manatees in the Tampa Bay area and southwest Florida.

- The southwest Florida portion of the photo-identification catalog currently contains the sighting histories for 559 fully photo-documented manatees. There are currently 1,960 manatees in the state-wide catalog.

Behavioral Ecology

Research Activities

Research on manatee use of Florida's coastal habitats is essential to understanding the resources required to recover and sustain a healthy population. By tracking the movements of individual manatees in fresh, brackish, and saltwater habitats, biologists obtain valuable information about manatee seasonal and daily movement patterns, migratory behavior, site fidelity, diving behavior, and habitat requirements. To track manatees, researchers place a padded belt around a manatee's tail and tether a floating radio-tag containing a satellite-linked transmitter to the belt. Staff members use the satellite-derived locations to remotely track manatee movements over long periods. Biologists locate these study animals by homing in on the tag's unique radio and ultrasonic signals in order to obtain data on behavior, group size, habitat, and movements. Processed data are mapped in a Geographic Information System (GIS); these data are made available to managers for use in developing regulatory rules, evaluating permits, and devising strategies for manatee conservation and recovery.

The behavioral ecology research program continued its focus on manatee winter use of warm-water sites and associated foraging areas. This work will contribute scientific information necessary to develop a meaningful management plan for maintaining a reliable network of warm-water sites and nearby winter feeding grounds for manatees.

2004–2005 Highlights

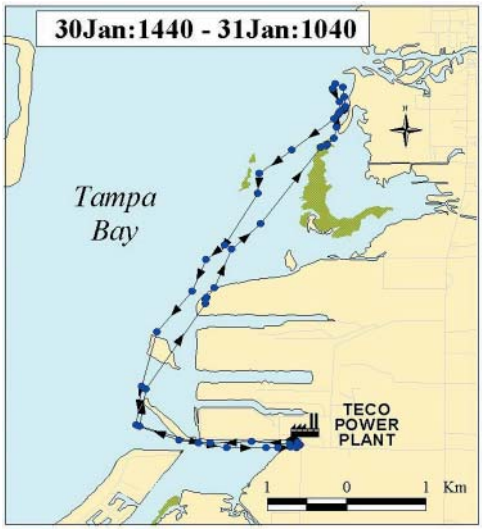
- To study winter foraging movements and attendance patterns at industrial warm-water sources in Tampa Bay, researchers tagged six manatees at Apollo Beach outside the TECO Big Bend power plant discharge canal in December 2004.
- A team of scientists and veterinarians from FWC, University of Florida, Mote Marine Laboratory, Sea World of Florida, and USGS assessed the health and body condition of each captured manatee to gain knowledge about the health of free-ranging manatees.
- The manatees carried Global Positioning System (GPS) tags, time-depth recorders, and temperature dataloggers that provided data on movements, habitat use, diving behavior, and water temperature throughout the winter and early spring.
- This research was supported in part by grants from Tampa Port Authority and the Wildlife Foundation of Florida.

2004–2005 Highlights (continued)

- The field test of a newly designed self-releasing telemetry belt was successful. After being attached to the manatee for three months, the belt and satellite-linked tag detached automatically from the animal within hours of the programmed time. This technological advance will permit staff to quickly retrieve telemetry gear without disturbing the manatee.

- As a contributing organization to the multi-agency Manatee Rehabilitation Partnership, FWC staff continued to assist Wildlife Trust in the release, field tracking, and health assessments of several rehabilitated manatees located in Tampa Bay, Biscayne Bay, Charlotte Harbor, and the St. Johns River.

- FWC conducted an expanded capture safety workshop to improve the safety of staff and animals during manatee handling activities.



Travel patterns of tagged manatees can be depicted on maps, such as this map showing the feeding trip of "Norbert," one of the program's tagged manatees.

Manatees are captured and tagged to record travel and feeding patterns via satellite transmitters.

Human Dimensions

Research Activities

Traditionally, wildlife managers have relied on biological data to assess manatee status and set recovery goals. Natural resource managers use laws, regulations, and outreach as tools to achieve these goals. Human behavior ultimately determines the success of wildlife management actions. Human-dimension research investigates how to apply research results to achieve cost-effective manatee protection. Increased voluntary compliance with speed zones is one example of cost-effective manatee protection that could relieve some of the burden on law enforcement. Human-dimension research can lead to approaches that allow agencies and citizens to be more effective and work cooperatively in resource management issues.

2004–2005 Highlights

- With funding from FWC Law Enforcement (LE), staff members initiated a boat traffic study at Anna Maria Island. The study area was designated as a slow-speed zone with a high-speed boat corridor and will be posted in the next fiscal year. Boat traffic data collected before and after speed zone implementation will be compared to help scientists and regulators determine the effectiveness of the zone.

- In fulfillment of the 2001 settlement agreement with Save the Manatee Club et al., FWC staff members completed a characterization of boating and manatee use in the Ten Thousand Islands area in Collier County.

- FWC staff assisted in analyzing boat traffic data collected by Mote Marine Laboratory during a study in Broward County.

- FWC staff initiated data collection about boat-traffic along the Sebastian River with the Friends of the Sebastian River, a local environmental stewardship organization.

- FWC and USFWS staff members initiated development of a coordinated approach for evaluating the effectiveness of speed zones.

Staff member recording boat speed data using a laser gun.

Research Publications and Reports

Research Activities

Lightsey, J.D., S.A. Rommel, A.M. Costidis, and T.D. Pitchford. Gross necropsy diagnosis of watercraft-related mortality in the Florida Manatee (*Trichechus manatus latirostris*). Journal of Zoo and Wildlife Medicine. In Press.

Flamm, R.O., B.L. Weigle, I.E. Wright, M. Ross, and S. Aglietti. 2005. Estimation of manatee (*Trichechus manatus latirostris*) places and movement corridors, an application of satellite telemetry data. Ecological Applications. In Press.

Rommel, S.A., and A.M. Costidis, Manatee necropsy procedure. The husbandry and veterinary care of captive Florida manatees (*Trichechus manatus latirostris*). U.S. Fish and Wildlife Service, Atlanta, Georgia. In Press.

Rommel, S.A.. Manatee Anatomy. The husbandry and veterinary care of captive Florida manatees (*Trichechus manatus latirostris*). U.S. Fish and Wildlife Service, Atlanta, Georgia. In Press.

Ward-Geiger, L.I., G. Silber, R. Baumstark, and T.L. Pulfer. Characterization of ship traffic in right whale habitat. Coastal Management. In Press.

Langtimm, C.A., C.A. Beck, H.H. Edwards, K.J. Fick-Child, B.B. Ackerman, S.L. Barton, and W.C. Hartley. 2004. Survival estimates for Florida manatees from the photo-identification of individuals. Marine Mammal Science 20(3): 438-463.

Reynolds, J.E., III, S.A. Rommel, and M.E. Pitchford. 2004. Likelihood of sperm competition in manatees explaining an apparent paradox. Marine Mammal Science 20 (3): 464-476.

Nowacek, S.M., R.S. Wells, E.C.G. Owen, T.R. Speakman, R.O. Flamm, and D.P. Nowacek. 2004. Florida manatees (*Trichechus manatus latirostris*) respond to approaching vessels. Biological Conservation 119: 517-523.

In fall 2003, the USFWS reinstated its Florida Manatee Recovery and Implementation Team. FWC staff members serve on the steering committee and the following ten working groups and task forces of the Recovery Team:

- Regulatory Working Group
- Interagency Task Force for Water Control Measures
- Manatee Protection Working Group
- Entanglement Working Group
- Rescue, Rehabilitation, Release Program
- Population Status Working Group
- Habitat Working Group
- Warm Water Task Force
- CERP Interagency Manatee Task Force
- Education Working Group

Right Whales

Research Activities

In addition to manatee recovery efforts, the FWC is involved in recovery efforts for other endangered marine mammals, including the North Atlantic right whale, *Eubalaena glacialis*, the most endangered of the world's large whales. Most of this work is supported through grant funding provided by National Oceanic and Atmospheric Administration's (NOAA)-NMFS; however, portions of some salaries are provided by the STMTF. Efforts to prevent human-caused mortality in this species have been heightened. Even one death per year has a significant effect on the population, which is estimated to number just 325 individuals. In 1994, NOAA-NMFS designated Florida and Georgia coastal waters as critical habitat for the right whale. This region is the only known calving ground of the North Atlantic right whale. The FWC is dedicated to assisting NOAA-NMFS in its efforts to protect the North Atlantic right whale as outlined in the 2004 revision of the North Atlantic Right Whale Recovery Plan.

Federal efforts to protect right whales in the Florida-Georgia critical habitat have resulted in the formation of the Southeast Implementation Team (SEIT) for the Recovery of the North Atlantic Right Whale, a multi-agency and citizen advisory group. The team develops management and research recommendations and assists in implementing the recovery plan. The FWC has been a member of the SEIT since its 1993 inception and has served as chair of the team for the past three years.

In an attempt to prevent ship strikes, which can kill or injure right whales, NOAA and the U.S. Coast Guard implemented the Mandatory Ship Reporting Systems (MSR) in July 1999. Under the MSR, all commercial ships greater than 300 gross tons are required to report to the MSR when entering the area surrounding designated critical habitat off the coasts of Florida and Georgia. During the November 15 to April 14 calving season, ships' captains are required to report vessel position, speed, and destination at their point of entry into the MSR. Once the MSR server receives a report, a message providing information about recent right whale locations and advisories is relayed to the ship. FWRI coordinates a pager-alert network that notifies key agencies, ports, and mariners when right whales have been sighted. This timely information allows ships to take evasive action if necessary to avoid whales.

Since 1987, FWRI staff members have conducted numerous aerial surveys to monitor seasonal presence of right whales, to determine the number of calves born, and to mitigate ship-whale collisions. Over the past several years, FWRI has worked closely with federal, state, and NGO partners to compile years of calving ground aerial-survey data into GIS format. Analyses of these spatial data will help scientists better define right whale distribution patterns in the southeast calving grounds in relation to environmental factors and human activities.

To better understand whale habitats, researchers are currently studying sea surface temperatures and bathymetry relative to whale sightings. Ship traffic data generated from MSR systems are also integrated into GIS to help characterize ship traffic patterns in right whale critical habitats.

2004–2005 Highlights

- FWRI received federal funding from the National Fish and Wildlife Foundation and NOAA-NMFS to hire a biologist to focus on right whale recovery tasks and to help implement the federal right whale recovery plan. The biologist, hired in February 2005, participated in disentanglement training to release whales from fishing gear, aerial survey safety training and aerial surveys, attended a federal large whale take-reduction team meeting, and was involved with the SEIT.

- FWRI staff members conducted over a hundred surveys off the Florida east coast during the 2004-2005 season. This effort resulted in 158 right whale sightings that contributed to the identification of 28 cow-calf pairs in the southeast United States this season, the second highest number of calves documented.

- A manuscript titled "Characterization of Ship Traffic in Right Whale Critical Habitat" was accepted for publication in Coastal Management. It describes the use of GIS to assess ship traffic. This technique will serve as an integrative tool in the development and implementation of measures needed to reduce the threat of ship strikes to right whales. Another manuscript titled "North Atlantic Right Whale Distribution in Relation to Sea Surface Temperature in the Southeastern United States Calving Grounds" is in peer review.

- Two biopsy samples were collected as part of a multi-organizational effort for genetic analyses. The samples will be used to generate information on kinship, individual gender and identification, stock identity, and genetic variability within the population. The blubber portion of the samples will be used to determine contaminant levels and to gain information about feeding ecology and nutritional condition.

- Three entangled right whales were sighted in the calving grounds this season. FWC staff, working in collaboration with other agencies and organizations including NOAA-NMFS, the U.S. Coast Guard, the Georgia Department of Natural Resources, and the Center for Coastal Studies, participated in the successful disentanglement of one of the whales named "Yellowfin." The right whale team also provided photo-documentation of the other two entangled whales for use in disentanglement action plans. "Kingfisher," an entangled right whale spotted off Florida last season, was re-sighted and appeared to be in relatively good condition, although still trailing some lines.

- Staff assisted with the retrieval and necropsy of the carcass of a 14-year old pregnant right whale found off the Georgia coast on January 15, 2005. The whale had survived a ship strike in 1991; however, her death was attributed to complications brought on by wounds from the 1991 strike. The healed wounds likely became compromised as her body expanded with this, her first documented pregnancy.

Disentanglement of "Yellowfin" off the coast of South Carolina.

Mote Marine Laboratory Manatee Research Projects

Research Activities

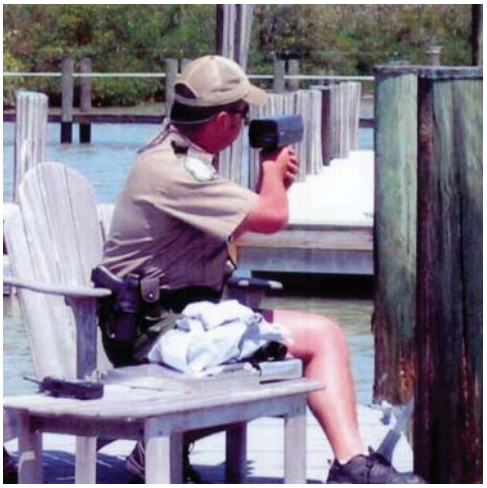
The Legislature has appropriated $325,000 annually from the STMTF for Mote Marine Laboratory's Manatee Research Program. The following seven projects were conducted in the 2004-2005 fiscal year:

- Fatty Acid Signature Analysis as a Potential Forensic Tool for Manatees
- Modeling and Data Analysis
- Calibration Studies at Ft. Myers Power Plant
- Studies in Matlacha Isles and other areas of southwestern Florida: Facilitating adult survival estimations and documenting manatee habitat use patterns in southwestern Florida
- Assessment of Thermal Biology and Potential for Thermal Stress
- Recreational Boat Traffic Surveys of Broward County, Florida
- Manatee Rescue and Verification

Law Enforcement Activities

Enforcement Activities

Law Enforcement Activities



In FY 2004-2005, the Legislature appropriated $419,867 from the STMTF for Division of Law Enforcement (LE), primarily for salaries and benefits. The funds were used to enhance enforcement of the existing manatee protection speed zones. Some funds were used to increase boater awareness within Collier County through the posting of Manatee Awareness Kiosks at eight popular county boat ramps.

The LE's efforts are based on the premise that education and enforcement are inseparable. The LE's enforcement efforts in this area include a strong educational component designed to enhance community awareness of manatee issues. The goal is to gain an acceptable level of compliance to the manatee protection speed zones, which is expected to result in a reduction of the watercraft-related manatee mortalities.

Enforcement efforts begin with educational and informational vessel stops and verbal warnings as each new protection zone is posted. The enforcement contact escalates to written warnings and issuance of Uniform Boating Citations (UBC's) after a specific zone has been posted for a reasonable amount of time or for repeat offenders. Officer discretion, based on interviewing violators, is the guideline for the type of enforcement action applied in each contact.

Enforcement efforts have focused on areas of high watercraft-related manatee mortalities, areas of high vessel traffic in manatee protection zones, newly established protection zones, and during the times of the year when high manatee activity is expected (primarily winter months).

The LE continues to provide enhanced enforcement in counties such as Duval, Brevard, Indian River, Volusia, Dade, Broward, Palm Beach, Lee, Collier, Pinellas, Hillsborough, Manatee, Sarasota, Citrus, and Levy, all of which are of critical interest regarding manatee protection.

2004–2005 Highlights

- In response to increased watercraft-related manatee mortalities, reports of boater noncompliance with speed zones, and reports of aggregations of manatees, the LE officers working throughout the state conducted over 45,000 patrol hours.
- Throughout the state the LE participated in more than 40 outreach efforts designed to promote awareness of manatee-related issues and compliance with manatee protection speed zones.
- The LE made 44,031 educational contacts regarding manatee protection.

2004–2005 Highlights (continued)

- In an effort to enhance manatee protection in Duval County, officers coordinated an enforcement presence in manatee protection areas during the annual Greater Jacksonville Kingfish Tournament which attracts an estimated 1,000 vessels.

Inter-Agency Law Enforcement Cooperation

- FWC continues to coordinate Marine Law Enforcement Task Forces in two areas of the state to provide effective and efficient law enforcement on the water. Though each task force addresses all marine law enforcement issues, protecting manatees is a primary focus.

  - Lee County Marine Law Enforcement Task Force—The following law enforcement agencies participate: FWC LE, Lee County Sheriff's Office, Cape Coral Police Department, Fort Myers Police Department, Sanibel Police Department, and the USFWS.

Poster for the Lee County Marine Law Enforcement Task Force

  - Northeast Florida Marine Law Enforcement Task Force—The following law enforcement agencies participate: FWC LE, Jacksonville Sheriff's Office, Clay County Sheriff's Office, St. Johns County Sheriff's Office, Naval Air Station Jacksonville, U.S. Coast Guard, and the USFWS.

Technology

- The FWC Office of Information Technology worked with the LE to develop a more efficient method for collecting enforcement activity data. The new system, which came on line in January 2004, improved timeliness and reduced paperwork requirements by providing a Web-based application for data entry at each regional office. This data is now posted on the Internet and available for the public to view at: http://myfwc.com/law/manateepatrol/ - or through a link on MyFWC.com.

Mutual Aid Agreement

- The FWC LE continues to implement the manatee protection provisions of the Mutual Aid Agreement (MAA) with the USFWS, Office of Law Enforcement. The joint enforcement strategy includes the following elements:

  - When possible, use a consistent approach to manatee protection zone enforcement. This enforcement philosophy was emphasized in training sessions conducted with enforcement officers and agents from both agencies.

  - Train USFWS agents to use and issue UBCs—Two training sessions were conducted, one in January and one in March.

2004–2005 Highlights (continued)

- Train FWC officers to document and submit federal citations for violation of manatee protection zones—Lee and Volusia county FWC officers were trained and additional training sessions will be scheduled.

- Schedule ten joint-enforcement operations in areas of critical concern for every calendar year.

- The following additional accomplishments occurred within the MAA:

  :: FWC officers in all counties of the South and Southwest Regions and in the Special Enforcement Area of Collier County received training in the preparation of federal citations for violations of manatee protection zones.

  :: FWC officers worked extended educational details with USFWS officers in several areas of the state: Duval County new federal manatee protection zone, Lee County, Sarasota County, Dade County, and Broward County.

- In January 2005, FWC officers in Citrus County assisted the British Broadcasting Corporation (BBC) with filming a documentary on manatees.

- The Southwest Region Tampa office assigned an officer to spend three days a week in the new manatee protection zone in Old Tampa Bay to provide education to boaters and to increase compliance with the new zone.

Inter-Agency Law Enforcement Cooperation

- A Cooperative Agreement was executed between USFWS and FWC to provide financial assistance to the FWC for repairing and/or replacing manatee enforcement signs and buoys. The total amount of assistance to date is $384,182.

- The FWC is currently inspecting all east coast signage from Nassau to Brevard counties. Uniform Marker Inspection Reports are being completed on each state sign/buoy and include digital photographs. These inspections will assist the FWC with preparing work orders for the repair and maintenance of any discrepant marker and will also assist with the GIS mapping of manatee enforcement zones.

- FWC adopted manatee protection zones within Tampa Bay, encompassing Pinellas, Hillsborough, and Manatee counties. Markers were installed in Pinellas and Hillsborough counties. Marker installation should be completed in Manatee County early next year.

Conservation Management Activities

Consensus Building and Stakeholder Cooperation

Conservation Management Activities

This past year, the FWC and the USFWS continued joint efforts to bring stakeholder groups together in a process that fostered constructive dialog. For the last year a series of Manatee Forums were convened with key stakeholders. The goal of the Forums is to provide a process to improve communication and understanding among stakeholder groups and participating agencies. Through this process FWC hopes to establish areas of common ground, identify problems or conflicts, and develop potential solutions. The FWC Executive Director and the USFWS Director of Region Four have been instrumental in the development of this idea and its implementation.

Photo: Bob Bonde, USGS Sirenia Project

From July 2004 through June 2005, the Forum met four times; three meetings lasted two days. The first two meetings were focused on creating the stakeholder group and developing the rules of conduct and the framework for the process. The next two meetings were focused on presenting relevant manatee research about manatee populations and manatee/boat issues. The forums are scheduled to continue into next fiscal year. The upcoming meetings focus on conflict resolution and topics relevant to manatee recovery. Both agencies believe this long-term, collaborative process has been effective in moving the manatee discourse forward, as well as in reducing conflict between various stakeholders.

MANATEE FORUM MEMBERSHIP

BoatU.S.	Audubon of Florida
Citizens for Florida's Waterways	Defenders of Wildlife
Coastal Conservation Association	Florida Wildlife Federation
Florida Council of Yacht Clubs	Pegasus Foundation
Florida Guides Association	Save the Manatee Club
Florida Marine Contractors Association	Sierra Club
Marine Industries Association of Florida	The Conservancy of Southwest Florida
National Marine Manufacturers Association	The Humane Society of the United States
Organized Fishermen of Florida	The Nature Conservancy
Personal Watercraft Industry Association	The Ocean Conservancy
Standing Watch	Wildlife Trust

Plan and Permit Review

Conservation Management Activities

These staff members conduct reviews of manatee protection plans (MPPs), environmental resource permits, and other types of guidance documents such as comprehensive plans.

MPPs are tools used to assist in the long-term preservation of manatees and their habitat. MPPs address boat-facility siting, habitat protection, local educational campaigns, and waterway-use regulations. Indirectly, MPPs may also increase boating safety, facilitate recreational planning, and protect aquatic habitat that is critical to many other species. MPP development can take several years because of the complexity of issues a county must address and the range of information that must be collected. Ten of the 13 "key" counties now have state-approved MPPs (see table). These county-specific documents serve as a vital evaluation tool in the environmental permit review process.

The FWC reviews many projects that require state permits from regulatory agencies such as Department of Environmental Protection (DEP), water management districts, and the Department of Community Affairs (DCA). The FWC provides recommendations to the regulators about how to reduce or eliminate potentially negative effects to manatees. Staff members also provide technical support to the USFWS.

2004–2005 Highlights

- FWC staff members assisted the US Army Corps of Engineers (ACOE) and the USFWS in developing the Interim II strategy for evaluating new watercraft access projects during permitting. Concurrent with this effort, staff also assisted these federal agencies in revising the "Manatee Key" and associated maps, as well as making revisions to the standard manatee conditions for in-water work.

- An on-going study funded by the Marine Mammal Commission and the USFWS to develop conservation measures that should be implemented during blasting activities was completed and a final report submitted.

- FWC staff members provided input to the DEP regarding proposed rule revisions related to submerged lands.

- FWC staff members attended numerous Cabinet Aides' meetings to assist with agenda items concerning manatees.

2004–2005 Highlights (continued)

County Summaries

- **Broward County**—FWC staff members assisted Broward County in the development of the first draft of their Boat-Facility Siting Plan (BFSP) completed in November 2004. Public comments from a December 2004 public workshop are currently being incorporated into a revision of the draft.

- **Clay County**—FWC staff members submitted comments on a Clay County MPP draft in 2005 and a revised draft is currently under review.

- **Duval County**—FWC staff members assisted Duval County with revising the manatee protection policies in their comprehensive plan.

- **Indian River County**—In August 2004, FWC approved revisions to the Indian River County MPP adopted by the Indian River County Board of County Commissioners in June 2004.

- **Lee County**—FWC received a County Commission approved draft of the MPP from Lee County staff in July 2004 and subsequently approved the MPP in August 2005.

- **Palm Beach County**—Two drafts of the Palm Beach County BFSP were developed following an initial public meeting held in 2005. The second draft is currently open for public and agency comment.

- **Volusia County**—FWC staff members assisted Volusia County in the development of their MPP. A final draft is scheduled to be presented to the County Council for approval in September 2005.

APPROVED MPP STATUS AS OF JUNE 2005

County	*Month and Year of State Approval*
Brevard	February 2003
Citrus	September 1991
Collier	July 1995
Dade	December 1995
Duval	June 1999
Indian River	November 2000
Lee	June 2004
Martin	June 2002
Sarasota	January 2004
St. Lucie	March 2002

Projects Reviewed During FY 2004-2005

Standard Conditions…..….....232

Requested Additional Information…….....……304

Critical Reviews that could significantly effect manatees or their habitat……....24

Miscellaneous Correspondence ….....6

Rule Administration

Conservation Management Activities

The Rule Administration group focuses primarily on establishing boat speed and access zones for manatee protection and administering activities related to these zones, including permit and variance reviews.

2004–2005 Highlights

Charlotte County {68C-22.015, Florida Administrative Code (FAC)}
In May 2005, FWC notified Charlotte County about its intention to consider amendments to the zones in the Placida Harbor area. During summer 2005, the county began forming a Local Rule Review Committee (LRRC) as required in Chapter 370.12(2)(f), Florida Statutes.

Duval County
In October 2004, the City of Jacksonville adopted Ordinance 2004-956-E to amend its existing manatee protection zones. The FWC formally approved the ordinance in December 2004.

General Provisions (68C-22.001, FAC)
Chapter 2004-343, Laws of Florida, requires the FWC to adopt a rule describing how the measurable biological goals (MBGs) are used when the FWC considers manatee protection rules. In response to this legislation, the FWC published a Notice of Rule Development in the Florida Administrative Weekly (FAW) in May 2005. In June 2005, the FWC Commissioners directed staff to propose changes to Rule 68C-22.001 to address FWC use of the MBGs in rule making.

Lee County (68C-22.005, FAC)
The LRRC for Lee County, which began its work in June 2004, submitted its final report in August 2004. The LRRC had been formed to review rule amendments the FWC developed earlier in 2004. These amendments to the rule were developed due to the new permanent and emergency federal zones established by the USFWS and because of issues raised in a January 2003 Lee County Court ruling. Staff reviewed the LRRC report and prepared a written response to the report in October 2005.

In December 2005, the FWC Commissioners considered the LRRC report, the staff response to the report, staff's revised recommendations, and public comment, before directing staff to formally propose amendments to the rule. A Notice of Proposed Rulemaking was published in the FAW in January 2005 and a public hearing was held in Ft. Myers in February 2005. The FWC conducted final public hearings in April and June 2005 before approving final amendments with several changes to the proposed zones.

MPP rules (Chapter 68C-23, FAC)
Chapter 2002-264, Laws of Florida, requires the FWC to adopt rules dealing with the identification of "substantial risk counties" and establishing criteria for the approval of MPPs. A Notice of Rule Development was published in the FAW in December 2004.

Manatee County
In September 2004, Manatee County adopted Ordinance 04-73 to amend Ordinance 04-44, which the county had adopted in March 2004. This ordinance addressed manatee protection issues throughout most of the county. The FWC formally approved Ordinance 04-73 in February 2005.

2004–2005 Highlights (continued)

Pinellas County
In November 2004, Pinellas County adopted Ordinance 04-80 to add manatee protection zones in the Safety Harbor area. The FWC formally approved the ordinance in February 2005.

Tampa Bay (68C-22.013, 68C-22.014, and 68C-22.016, FAC)
In September 2004, the FWC conducted a final public hearing before approving final zones with several changes to the original proposal. (A Notice of Proposed Rulemaking had been published in the FAW in May 2004 and two public hearings were held in the Tampa Bay area in June 2004.) A Notice of Change was published in the FAW in November 2004 and the rules were filed for adoption with the Department of State in December 2004.

Variances and Waivers

During the fiscal year, the FWC worked on five requests for variances from or waivers of manatee protection rules. The variance and waiver process is governed by Chapter 120.542, Florida Statutes.

- FWC staff members completed processing a request for a variance from portions of the Brevard County rule. The request was designed to allow activities associated with commercial crabbing. The applicant ultimately agreed that a modification to his commercial crabbing permit would suffice.

- FWC staff members processed the May 2004 request for a variance that was submitted on behalf of Hovercraft Adventures, Inc. The hovercraft company requested a variance from portions of the Miami-Dade County rule for activities associated with proposed hovercraft tour operations. In early 2005 the applicant decided that a variance was not currently needed and withdrew the request.

- FWC staff members processed the August 2004 petition from Seaside Films Florida for a variance from portions of the Miami-Dade County rule. The request was for activities associated with filming the motion picture Transporter 2. A Final Order granting a temporary variance was issued in September 2004.

- FWC staff members processed the November 2004 petition from Powerhouse Marine Machine for a variance from portions of the Volusia County rule. The variance request was for activities associated with testing repaired vessels. FWC staff requested additional information in December 2004 and the applicant responded in early 2005. A Final Order denying the request for variance was issued in April 2005.

- FWC staff members began processing the May 2005 petition from MV Film Productions, LLC, for a temporary variance from portions of the Miami-Dade County rule. The request was for activities associated with filming the motion picture Miami Vice. As of the end of the fiscal year, discussions were ongoing with the applicant.

2004–2005 Highlights (continued)

Permits

FWC issues a number of different types of permits for activities that would otherwise be prohibited by the manatee protection rules. The permitting process is set forth in Rule 68C-22.003, FAC. The LE handles most of these requests which are made primarily for commercial fishing or professional fishing guide activities. There are typically 150 – 200 of these permits in effect at any time. In addition, staff members worked on the following eight requests for other types of permits.

Requests for Vessel Testing

- In May 2004, the FWC received a request from BRP US, Inc., (formerly Bombardier) for renewal of its vessel testing permit in Brevard County. A new permit was issued in July 2004.

- In June 2004, the FWC received a request from BRP US, Inc., for renewal of its vessel testing permit in South Florida (encompassing portions of Martin, Palm Beach, and St. Lucie counties). A new permit was issued in August 2004.

- In July 2004, the FWC received a request from Boston Whaler for renewal of its vessel testing permit in Volusia County. A new five-year permit was issued in April 2005. Boston Whaler subsequently submitted a request to modify the new permit. Discussions are ongoing with the applicant.

- In February 2005, the FWC received a request from BRP US, Inc., for a temporary vessel testing permit in a portion of Martin County. A temporary permit (through September 2005) was issued in April 2005.

Requests for Access to No Entry Zones

- In May 2004, the FWC received a request from Road Rock, Inc. for a permit to access the No Entry zone in the cooling canal system of the FPL Lauderdale power plant in Broward County for dredging and quarrying operations. A permit granting access was issued in August 2004; however, the applicant contested the permit condition that prohibited access during the December – February period. An informal hearing was held in November 2004. A Final Order affirming the permit conditions was issued in January 2005.

- In February 2005, the FWC received a request from TECO for a permit to access the No Entry zone at the Apollo Beach power plant in Hillsborough County for research activities. A permit granting access was issued in March 2005.

- In April 2005, FWC staff members processed a request from FPL for renewal of a previously issued permit to access the Virginia Key No Entry zone in Miami-Dade County to relocate a high voltage line. A new permit was issued in April 2005.

- In June 2005, FWC staff members processed a request from Miami-Dade County for a permit to access the Virginia Key No Entry zone in Miami-Dade County to monitor activities being performed by FPL. A permit was issued in June 2005.

Habitat Characterization, Assessment, and Protection

Conservation Management Activities

Habitat protection programs focus on understanding the manatee's habitat needs and assessing habitat health and stability. The recovery of the manatee population in Florida cannot occur without suitable habitat. Human population in Florida, and associated extensive coastal development, is a long-term threat to the manatee's habitat. Historically, coastal development has resulted in degradation of water quality and destruction of seagrasses – the manatee's primary food. Scientists are exploring ways to minimize negative effects of coastal development. Reductions in the flow of warm spring waters, due to human consumption, threaten significant natural warm-water refuges in the northern half of the state. Looming deregulation and aging power plants pose possible threats to established artificial warm water refuges.

FWC coordinated with other agencies to effectively manage human activities in natural systems used by manatees. Efforts centered on the objectives of the federal Florida Manatee Recovery Plan. FWC staff members co-chaired the Habitat Working Group (HWG) and the Warm Water Task Force (WWTF) of the federal Florida manatee recovery and implementation team.

2004–2005 Highlights

- FWC staff members coordinated with the ACOE, the South Florida Water Management District (SFWMD) and the Southwest Florida Water Management District (SWFWMD) to address central and south Florida structure-related mortality through the Interagency Task Force for Water Control Structures. Structure-related manatee mortality is the second leading cause of human-related manatee mortality. From 1974-2004, 150 manatees (average of 4.8 manatees/year) died in 23 of the numerous water control structures in the central and south Florida canal system. Since 1991, ongoing efforts through the task force have led the ACOE and SFWMD to retrofit water control structures and revise structure operational protocols. These efforts are helping reduce structure-caused mortality at retrofitted structures.

- A warm-water management plan was drafted by the WWTF. The draft plan creates an interim strategy to maintain regional warm-water networks, as well as a long-term plan for sustaining warm-water habitat. The WWTF has begun efforts to identify specific warm-water habitat that may be incorporated into the interim and long term regional warm-water networks.

2004–2005 Highlights (continued)

- The HWG addressed issues relating to effects of reduced spring flow and loss of thermal refuges, changes in foraging areas, and development of alternatives to current artificial warm-water sources.

- The HWG developed a draft suitable habitat checklist for natural and artificial warm-water refuges.

- The HWG began developing a method for estimating manatee habitat carrying capacity based on winter warm-water refuge sites and available foraging habitat.

- FWC staff members collaborated with its federal and SFWMD partners to draft recommendations for manatee protection in Comprehensive Everglades Restoration Plan (CERP) related construction activities. These recommendations will address activities such as culvert and water control structure installation, potential aquifer storage and recovery thermal effects, potential manatee entrapment in canal networks, and in-water construction effects on manatees.

- The CERP interagency manatee task force conducted manatee habitat evaluation surveys in more than 100 miles of flood control canals in the Everglades and Everglades Agricultural Area. This information will be used to determine which canals are accessible to manatees and which canals have high risk factors where manatee access should be eliminated or modified.

- The FWC continued working with the Kings Bay Advisory Group to restore submerged aquatic vegetation in the Kings Bay in Crystal River. FWC staff members began planning for seasonal protection of manatee foraging resources. Through regional citizen and interagency coordination as part of the SWFWMD Surface Water Improvement (SWIM) program, the group is also working toward complete ecological restoration of Kings Bay.

Manatee Outreach

Conservation Management Activities

Public support of government conservation programs is vital to the success of those programs. The goal is to foster understanding of the problems facing manatees and the steps needed to recover the species. In addition, it is important to target specific user groups that affect manatees. Knowledge of manatee habitat requirements, behavior, and general biology can contribute to the reduction of manatee disturbance, harassment, injury, and death. A wide array of information is distributed to a variety of audiences. An important goal is to provide factual, timely information that is appropriate to the target user group.

2004–2005 Highlights

Marina Outreach
FWC staff members continued to supply marinas with manatee education materials.

Visitor Centers
Staff members continued to provide informational materials to the State of Florida Nature and Heritage Tourism Center. The center is located in White Springs, a short distance from I-75 near the Georgia-Florida border. Other visitor centers were also provided materials for distribution to tourists.

Information Requests and Bulk Orders
Staff members responded to over 1,000 e-mails about manatee-related education programs. There were 389 requests for specific information or materials, 114 of which were bulk orders for materials destined for distribution through the requestor's organization. New information is regularly posted on the FWC Web site and as more people use the internet, the volume of individual requests is expected to diminish.

Publications Produced:
Manatee speed zone brochures (various counties)
Multi-lingual boater card
Coloring Activity booklets
Manatee brochures
Commonly Asked Questions booklet
"The Florida Manatee—A Florida Treasure" (new brochure)

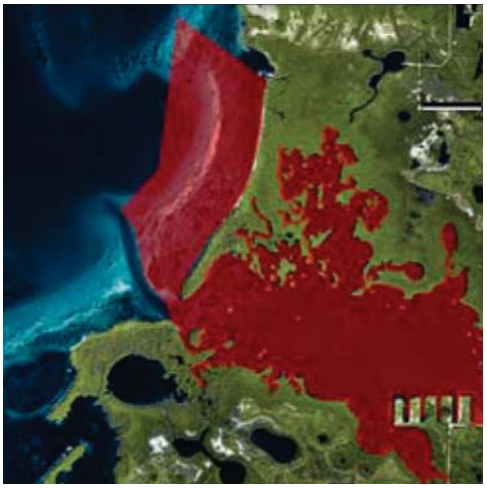
E-Field trip
Staff members worked with an internet company specializing in on-line educational field trips to update the FWC e-field trip about manatees. This self-guided look at the life of a manatee gave students around the world and of all grade levels the opportunity to learn about these mammals. Florida students continue to be the largest user group of the manatee e-field trip.

"Way of the Manatee" Treasure Box Program
Staff participated in a variety of special events and teacher workshops to promote the Manatee Treasure Box program. The treasure boxes are self-contained educational units that are loaned to classroom teachers. The boxes contain a variety of resource materials, crafts, games, and instructions that underscore manatee conservation and incorporate a number of Sunshine State Standards. Boxes were loaned to teachers. Information about how to create the manatee treasure box was provided to groups statewide.

Data Distribution and Technical Support

Conservation Management Activities

Management decisions require accurate spatial data. Manatee data such as that from aerial surveys, mortality, and telemetry comes from the FWRI and other sources and is processed for use by staff members and external project managers and consultants. Data are made available to the public through several avenues. Maps are posted online for download. Data is offered digitally, through e-mail or CD-ROM, for staff members and the public to use with their own GIS. FWC can provide custom paper maps for staff members and the public who do not have GIS capability. Manatee Protection Zone maps were added to the FWC website in early 2003 and continue to be requested frequently by law enforcement officers, consultants, and the general public.



2004–2005 Highlights

- Staff members produced sign plans, speed zone maps, boater educational brochures, and kiosk maps as new manatee protection zones were being developed for Tampa Bay. This effort allowed for zones to be posted shortly after rule adoption rather than taking a year or more as had been the case in the past. Sign plan and installation costs were minimized through the use of NOAA charts and satellite images that provide an accurate depiction of the sign posting locations.

- Reassessment of existing zones and coordination with the USFWS for manatee protection zones were priorities in Lee and Duval Counties. Boat and manatee distribution data from San Carlos and Estero Bay were analyzed to assess manatee protection zones in Lee County.

- Staff members collaborated with the LE and the USFWS to post new signs on the St. Johns River in Duval County and to produce maps showing overlapping federal and state zones.

- Staff members analyzed boating data, manatee telemetry data, and aerial survey data to assist staff working on BFSPs as part of the MPP development for Volusia and Broward counties.

- Staff assisted with habitat issues by providing GPS translations and mapping of seagrass assessments and restoration sites.

Appendix A: Acronyms

ACOE—U.S. Army Corps of Engineers
BFSP—Boat Facility Siting Plan
BWS—FWC's Boating and Waterways Section
CERP—Comprehensive Everglades Restoration Plan
DCA—Florida's Department of Community Affairs
DEP—Florida's Department of Environmental Protection
FAC—Florida Administrative Code
FAW—Florida Administrative Weekly
FPL—Florida Power and Light Company
FWRI—FWC's Fish and Wildlife Research Institute
FWC—Florida Fish and Wildlife Conservation Commission
FY—Fiscal Year
GIS—Geographic Information System
GPS—Global Positioning System
HWG—Habitat Working Group (a working group of the federal Florida Manatee Recovery & Implementation Team)
ISM—FWC's Imperiled Species Management Section
LE—FWC's Division of Law Enforcement
LRRC—Local Rule Review Committee
MAA—Mutual Aid Agreement
MBGs—Measurable Biological Goals
MIPS—Manatee Individual Photo-Identification System
MMPL—Marine Mammal Pathobiology Laboratory
MPP—Manatee Protection Plan
MSR—Mandatory Ship Reporting Systems
NGO—Non-Governmental Organization
NMFS—National Marine Fisheries Service
NOAA—National Oceanic and Atmospheric Administration
SEIT—Southeast Implementation Team
SFWMD—South Florida Water Management District
STMTF—Save the Manatee Trust Fund
SWFWMD—Southwest Florida Water Management District
SWIM—Surface Water Improvement Program
TECO—Tampa Electric Company
UBC—Uniform Boating Citations
USFWS—U.S. Fish and Wildlife Service
USGS—U.S. Geological Survey
WWTF—Warm-Water Task Force (a task force of the federal Florida Manatee Recovery & Implementation Team)

Appendix B: Definitions

Idle Speed

Minimum speed necessary to make headway and be able to maintain control of the vessel. *See 68C-22.002(1), FAC, for the complete definition.*

No Entry Zone

An area where all activities are prohibited unless specific authorization is given (except for fishing from an adjacent shoreline with a cane pole).
See 68C-22.002(11), FAC, for the complete definition.

Slow Speed

That speed where a vessel is fully off plane and completely settled in the water, and not creating an excessive wake or other hazardous condition.
See 68C-22.002(4), FAC, for the complete definition.

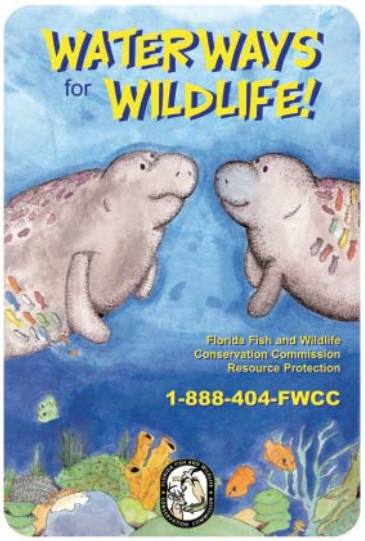
Manatee License Plate and Decal Program

MANATEE LICENSE PLATE

The manatee license plate was enacted on March 16, 1990, and was created to raise funds for manatee research and protection. To date, over 530,000 manatee license plates have been issued, and over $32,000,000 has been collected to fund manatee research and protection in the State of Florida. A redesign has been proposed for the manatee license plate to increase sales.

MANATEE DECAL

Chapter 328, Florida Statutes, provides that a sticker or decal can be given to citizens who donate $5 or more to the Save the Manatee Trust Fund. The FWC invited all middle school age students who attend public, private, or home schools in Florida to enter the Manatee Decal Art Contest. This art project encourages middle school students to support protection efforts by learning about manatees and their role in Florida's environment.



In fall 2004, a press event was held to present the framed decal to the contest winner Alicia del Aguila, a 7th grade student at South Miami Community Middle School.

Each year tax collectors participate by carrying decals at their offices statewide. Citrus County was the winning county in the 2004-2005 Voluntary Contribution Campaign. Money from the decals supports manatee protection efforts such as rescue, rehabilitation, research, and public education. The 2004–2005 manatee decal program and other donations provided $87,095 to the Save the Manatee Trust Fund.

December 2005