Save the Manatee Trust Fund

2005–2006 Annual Report

Florida Fish and Wildlife Conservation Commission

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

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

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Save the Manatee Trust Fund

Annual Report

2005–2006

Florida Fish and Wildlife Conservation Commission
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Submitted by

Florida Fish and Wildlife Conservation Commission

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

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) 2005–2006 totaled $3,446,849. Appropriations for the same period were $4,190,509, with $325,000 provided for manatee research activities at Mote Marine Laboratory and a service charge to General Revenue of $99,858 that most trust funds are required by law to pay.

Expenditures from the STMTF were made by the Florida Fish and Wildlife Conservation Commission's (FWC) manatee programs: $423,569 by the Division of Law Enforcement (LE) for manatee-related patrols, $907,178 for species management activities within the Division of Habitat and Species Conservation's Imperiled Species Management Section (ISM); and $1,671,789 for research activities conducted by the Fish and Wildlife Research Institute (FWRI). Details of revenues, appropriations, and expenditures are shown in the pie charts below. The report includes budgetary analyses for individual research and management program efforts, followed by summaries of the work performed.

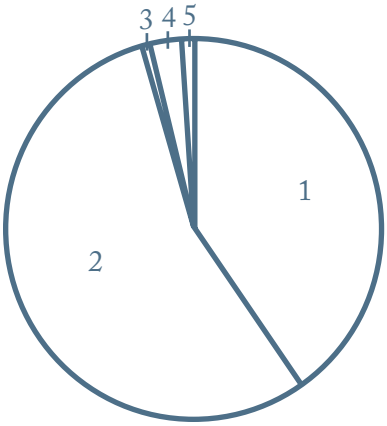
The Florida manatee is native to Florida's coastal and riverine waters and has been protected in Florida since 1892. Current state efforts to recover the population are guided by the Florida Manatee Sanctuary Act [Subsection 370.12 (2), Florida Statutes] and the federal Florida Manatee Recovery Plan of 2001. Federally, both the Marine Mammal Protection Act and the Endangered Species Act protect manatees. The U.S. Fish and Wildlife Service (USFWS) lists the manatee as an endangered species. During 2005-06 the FWC proposed to reclassify the manatee from endangered to threatened status based on the recommendations of a Biological Review Panel using the FWC listing rule (68A-27.0012, F.A.C.) However, the FWC listing process requires development and Commission approval of a Management Plan before the manatee can be reclassified. In 2006 a FWC team was chartered to begin development of the management plan. The FWC anticipates taking the first draft of the plan to the Commission in 2007. Once approved and implemented this management plan will provide the framework for conserving manatees and sustaining habitat throughout its range in Florida.

During FY 2005-06 the Manatee Forum, a group of 22 key stakeholders, met on three occasions to discuss a variety of controversial aspects of manatee conservation. Through this process, FWC hopes to establish areas of common ground, identify problems or conflicts, and develop potential solutions. The Executive Director of FWC and the Director of Region Four of the USFWS were instrumental in creating the Manatee Forum and continue to actively participate in Forum meetings.

Through partnerships with federal and state agencies, local governments, non-governmental organizations and the business community, FWC is working to ensure that there will be a viable manatee population in Florida's future. 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. Declining revenues to the Save the Manatee Trust Fund and increasing costs associated with manatee conservation due to inflation also create an uncertain future. FWC is taking steps to increase license plate sales, has instituted cost saving measures, and may be seeking other remedies. Providing these efforts result in sufficient long-term state funding dedicated to manatee conservation, FWC is optimistic that manatees will continue to move toward recovery and will remain a unique and treasured part of Florida.

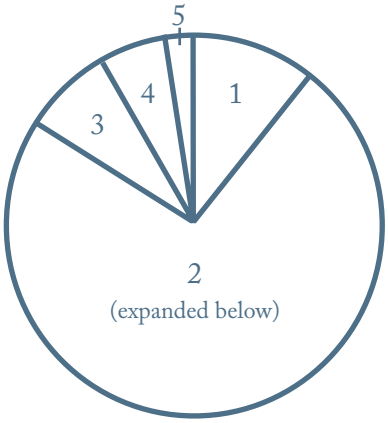
STMTF 2005–2006 Revenues and Expenditures

REVENUES
$3,446,849



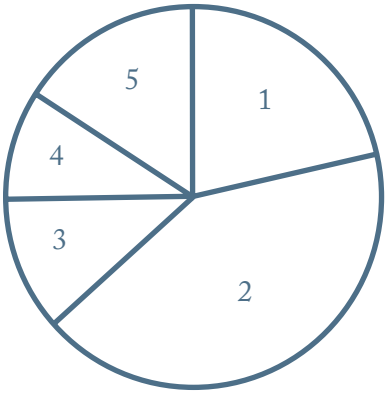
1 Save the Manatee License Plate (*$1,392,730*)
2 Vessel Registration (*$1,900,592*)
3 Interest (*$19,442*)
4 Decals and Donations (*$94,533*)
5 Miscellaneous (*$39,552*)

APPROPRIATIONS
$4,190,509



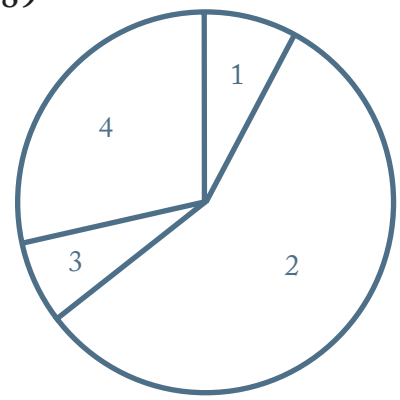
1 Law Enforcement (*$448,728*)
2 FWC Manatee Program (*$3,067,014*)
3 Mote Marine Laboratory (*$325,000*)
4 Administrative Overhead (*$249,909*)
5 Service Charge to General Revenue (*$99,858*)

FWC Manatee Program
STMTF Conservation Management Expenditures
$907,178



1 Rule Development (*$192,011*)
2 Planning and Permitting (*$383,526*)
3 Habitat Protection (*$102,940*)
4 Data Distribution (*$84,173*)
5 Education and Information (*$144,528*)

FWC Manatee Program
STMTF Research Expenditures
$1,671,789



1 Behavioral Ecology (*$144,377*)
2 Mortality and Rescue (*$871,450*)
3 Photo Identification (Life History) (*$166,923*)
4 Population Assessment and Monitoring (*$489,039*)

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
Population Monitoring and Assessment
Behavioral Ecology
Human Dimensions
Research Publications and Reports
Right Whales
Mote Marine Laboratory Manatee Research Projects

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 Florida Fish and Wildlife Conservation Commission (FWC)'s Fish and Wildlife Research Institute (FWRI).

FWRI staff members at five coastal field stations retrieve all reported carcasses. These stations are located around the state: Jacksonville, Melbourne, Tequesta, Port Charlotte, and St. Petersburg. Most recovered carcasses are transported by field personnel from recovery locations to FWRI's Marine Mammal Pathobiology Laboratory (MMPL), St. Petersburg. These trips often cover long distances and require a significant amount of personnel's time. Once at MMPL, carcasses are examined (necropsied) to determine cause of death. Although MMPL originally was 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 population health and status.

MANATEE MORTALITY FY 2005–2006

Cause of Death	*Number of Deaths*
Carcasses Not Recovered	11
Human (flood gate or canal lock)	4
Human—Other (entanglement, ingestion, etc.)	5
Human—Watercraft Related	85
Natural—Cold Stress	22
Natural—Other (includes red tide)	57
Perinatal (total body length less than 150 cm or about 5 feet)	79
Undetermined (decomposed or other)	127
Total Carcasses July 1, 2005–June 30, 2006	390

2005–2006 Highlights

Carcass Salvage

- Statewide, there were 388 manatee carcasses documented in Florida (an additional two carcasses were documented in Georgia) during Fiscal Year (FY) 2005-2006. All but 11 were recovered and examined

- Researchers collected tissue samples for genetic analysis from 371 of the recovered carcasses. Other tissues were collected for toxicology and histology (e.g., skin, organ, and tissue samples).

- A red tide event persisted in southwest Florida in FY 2005-2006 and at least 50 manatee deaths were attributed to the red tide toxin called brevetoxin. This event was declared an Unusual Mortality Event by the

2005–2006 Highlights (continued)

Carcass Salvage (continued)

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, 2003, and in FY 2004-2005.

- MMPL staff members conducted several necropsy training workshops and classes for the following groups:
  - Veterinary students from the Marine Veterinary Medicine Program (http://www.marvet.org).
  - 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. A UF vet has been assisting MMPL annually since 2004.

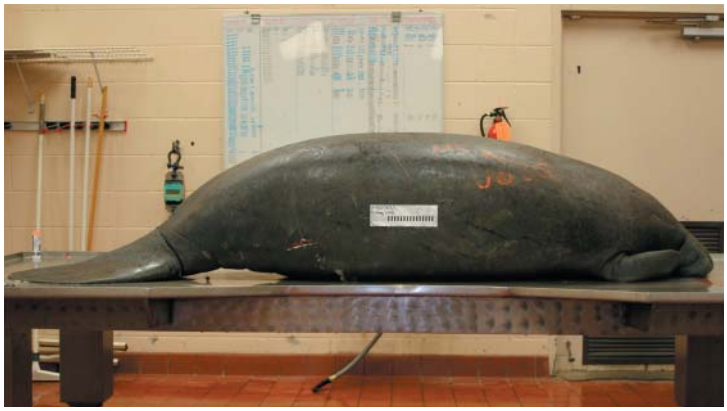
Rescue and Rehabilitation

- Seventy-one rescues were performed statewide during FY 2005-2006. As of June 2006, 28 of these rescued manatees were released back into the wild, 27 died, and the remaining 16 animals were still being rehabilitated in facilities around the state.

MANATEE RESCUES FY 2005–2006

Type of Rescue	*Number of Rescues*
Calf—Alone	13
Calf—With Rescued Mother	1
Human—Entanglement	15
Human—Entrapment*	6
Human—Watercraft Related	27
Natural—Includes Red Tide	9
Total	71

* includes power plant intake canals, irrigation canals, weirs, culverts, man-made canals, man-made lakes, etc.



A manatee carcass is prepared for necropsy at MMPL.

Population Monitoring and Assessment

Research Activities

FWRI scientists use a variety of methods to assess and monitor the current and future status of the Florida manatee population. Population assessments currently include documenting trends in manatee counts at winter aggregation sites, estimating survival, population growth, and reproductive rates. Assessments may also include estimates of risk to the population, including projected declines in population size and probability of persistence into the future (i.e., risk of extinction). A Manatee Biological Status Review was completed in December 2003 and updated in spring 2006. In 2005, the Manatee Population Status Working Group (PSWG), a working group of the U.S. Fish and Wildlife Service (USFWS)-led Florida Manatee Recovery and Implementation Team (Recovery Team), submitted an annual assessment to USFWS to assist in manatee conservation decision-making. This assessment summarized current biological information relevant to the status of the Florida manatee. Staff contributed in an ongoing effort to continue the development and maintenance of the manatee Core Biological Model. This model is used to integrate information about manatee life history to analyze population dynamics and to predict population changes under various environmental and management scenarios. Staff members have also collaborated with USFWS and United States Geological Survey (USGS) researchers to quantify the relative importance of threats to manatees and to develop draft recovery criteria for the Recovery Team.

FWC uses two types of aerial surveys to monitor manatees. These surveys provide minimum counts and information about habitat use and seasonal distribution. Statewide synoptic surveys provide a count of manatees at known aggregation sites and other sites in winter. These surveys are conducted to meet §370.12 (4), Florida Statutes, requiring an annual, impartial, scientific benchmark census of the manatee population. The counts, conducted 23 times since 1991, are flown after cold fronts, when animals aggregate at warm springs and thermal discharges from power plants. Synoptic surveys yield minimum counts of the number of manatees using these warm water sites and cannot be used to estimate population size. FWC uses another type of aerial survey called distribution surveys to determine the seasonal distribution of manatees. These regional surveys are usually flown twice monthly for a period of two years.

Researchers are developing new aerial survey methods that will provide more precise and reliable estimates of population size and distribution. These methods will be complimented with models that provide information about how well observers detect manatees from the air and relate environmental variables to the number of animals counted by observers.

Information on manatee life history is essential in assessing manatee population dynamics and recovery. Specifically, long-term data on growth and survival of individuals, reproductive performance of mature females, and health of 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 realized through a partnership between FWRI, the USGS's Sirenia Project, and Mote Marine Laboratory (MML). Partners work collaboratively to photograph Florida manatees throughout their range, process images, identify manatees, and manage an integrated sightings database, known as the Manatee Individual Photo-identification System (MIPS). Photo-identification data provide insights into manatee movements, site fidelity (i.e., the tendency to return to the same location year after year), adult survival rates, and reproductive parameters such as calving intervals and length of calf dependency.

2005–2006 Highlights

- In February 2006, FWRI conducted its annual statewide synoptic survey—a simultaneous count of manatees over a broad area. Eighteen observers (16 in air and two on ground) counted 3,113 manatees in 20 areas on both coasts. Observers were staff members from nine state, federal, and county agencies, as well as research laboratories, non-governmental organizations (NGOs), and universities.
  - Gulf coast count 1,639
  - East coast count 1,474

- Twice monthly distribution surveys were initiated in Flagler and St. Johns counties.

- In October 2005, FWRI held an aerial survey safety workshop to improve the safety for FWC aerial observers.

- FWC staff members participated in and chaired the Recovery Team's PSWG. One of this group's goals is to provide annual assessments of the biological status of the Florida manatee population.

- FWRI staff members, interns, and volunteers spent 200+ days conducting land- and boat-based photo-identification research during 550+ visits to sites used by manatees in the Tampa Bay area and southwest Florida. Over 16,000 images documenting the unique features of individual manatees were taken and archived.

- All five FWRI field labs completed the transition to digital photography. This transition, along with the changes in subsequent data processing, has facilitated the proper archiving of project data and the efficient exchange of image data.

- In an effort to transition to a digital platform, FWRI completed the scanning and subsequent metadata processing of all slides from the FWRI photo-identification slide catalog (over 69,000 slides).

- Twenty manatee carcasses were identified as known photo-identification animals. Five of these carcasses were identified based on Passive Integrated Transponder (PIT) tags which are sub-cutaneous tags that uniquely identify animals and can be detected by a special scanning device.

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, FWRI 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. The satellite-derived locations provide a detailed record of manatee movements over long periods. In the field, 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 program continued its focus on manatee winter use of warm-water refuges and associated foraging areas with a fourth and final year of tagging and tracking in Tampa Bay. The scope of the research was expanded this year in collaboration with FWRI seagrass biologists to investigate the effects of manatee foraging activity on seagrass communities around a principal warm-water aggregation site. 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. The research was supported in part by grants from the Wildlife Foundation of Florida.

2005–2006 Highlights

- To study winter foraging movements and attendance patterns at industrial warm-water sources in Tampa Bay, researchers tagged 15 manatees at Apollo Beach outside the Tampa Electric Company (TECO) Big Bend power plant discharge canal in December 2005 and January 2006.
- An interagency team of scientists and veterinarians (FWRI, USGS, UF, MML) assessed the health and body condition of 21 captured manatees to gain knowledge about the health of free-ranging manatees.
- The manatees carried Global Positioning System (GPS) tags, time-depth recorders, and temperature data-loggers that provided data on movements, habitat use, diving behavior, and water temperature throughout the winter.
- Five manatees were recaptured in March to assess changes in body condition and health over the winter, because this season

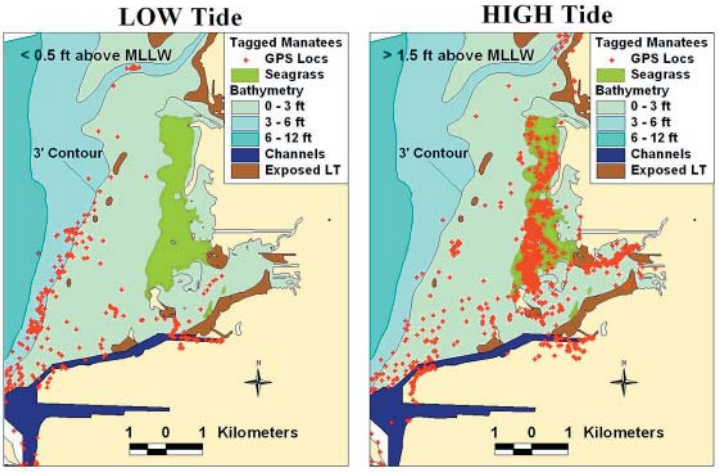
2005–2006 Highlights (continued)

is thought to be energetically stressful due to low ambient water temperatures and reduced availability of forage.

- To examine the effects of manatee grazing on seagrass beds near a major winter aggregation site, researchers monitored seagrass using a combination of aerial photographs from a tethered balloon, in-water transects, biomass cores, and quadrat sampling (i.e., sampling density and species diversity in known-area square plots). A total of nine exclosures (restricting manatee access) at three sites in northeastern Tampa Bay were installed to evaluate manatee impacts on seagrass cover and biomass during the winter and to measure recovery of the grassbeds during the spring and summer.

- FWRI participated as a contributing organization to the multi-agency Manatee Rehabilitation Partnership (http://www.wildtracks.org/Florida/home.htm), consisting of representatives from federal (USFWS, USGS), state (FWC), academic (UF), NGOs (Caribbean Stranding Network, Hubbs-SeaWorld Research Institute, Save the Manatee Club, Wildlife Trust), and private oceanaria (Cincinnati Zoo, Columbus Zoo, Living Seas at Epcot, Lowry Park Zoo, Miami Seaquarium, SeaWorld Orlando). As part of that partnership, FWRI staff assisted Wildlife Trust in the release, field tracking, satellite data processing, and periodic health assessments of several rehabilitated manatees. Releases occurred in Tampa Bay, Charlotte Harbor, Indian River Lagoon, Biscayne Bay, and the St. Johns River.

- FWRI staff and the U.S. Department of Energy's Oak Ridge National Laboratory (Oak Ridge, TN) initiated work on a method for conducting a manatee habitat characterization. The method is called multivariate geographic clustering and it provides a statistical basis for mapping manatee habitat use.



Maps depicting manatee access to some inshore, shallow seagrass beds in Tampa Bay as influenced by tides.

Human Dimensions

Research Activities

Traditionally, wildlife resource managers rely on biological data to assess manatee status and set recovery goals. Resource managers then 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 and influence human behavior to achieve cost-effective manatee protection (e.g., increased voluntary compliance with speed zones). Human-dimension research can lead to approaches that allow agencies and citizens to be more effective and to work cooperatively on manatee protection issues.

2005–2006 Highlights

- With funding from FWC's Division of Law Enforcement (LE), FWRI staff members completed the first phase of a boat traffic study at Anna Maria Sound to evaluate speed zone effectiveness. The study area was designated as a slow-speed zone with a high-speed boat corridor running through it. The first phase represented the pre-posting of regulatory signage. The signs are scheduled to be posted by October 2006. FWRI will initiate sampling after signs have been in place for about a year and compare boat traffic patterns.

- FWRI staff assisted in analyzing boat traffic data collected by MML during a study in Lemon Bay. This study is a comparison of vessel traffic before and after posting of regulatory signs.

- With funding from USFWS, the Friends of the St. Sebastian completed data collection for a boater compliance study in the St. Sebastian River. This study was conducted as a follow-up to boater compliance research conducted in same area in 2000-2001. In general, boater compliance with the posted slow speed manatee protection zone has increased approximately 10% over the last five years. Higher compliance rates and increasing trends in compliance rates in the St. Sebastian River may be linked to community environmental stewardship and social pressures.

- FWC and USFWS staff members continued development of a coordinated approach for evaluating the effectiveness of speed zones. The majority of FWRI's focus is on conducting risk assessments that map the likelihood of a manatee and boat being in the same place.

Research Publications and Reports

Research Activities

2006

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Right Whales

Research Activities

In addition to manatee recovery efforts, 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)-Fisheries; however, portions of some salaries are provided by the Save the Manatee Trust Fund (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-Fisheries designated portions of 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. FWC is dedicated to assisting NOAA-Fisheries 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 U.S. Right Whale Recovery Plan Implementation Team (SEIT), a multi-agency and citizen advisory group. The team develops management and research recommendations and assists in implementing the recovery plan. FWC has been a member of the SEIT since its 1993 inception and FWRI staff have served as chair of the team for the past four years.

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.

In an attempt to prevent ship strikes, which can kill or injure right whales, NOAA and the U.S. Coast Guard (USCG) implemented the Mandatory Ship Reporting Systems (MSRS) in July 1999. Under the MSRS, all commercial ships greater than 300 gross tons are required to report to the MSRS when entering the area surrounding designated critical habitat off the coasts of Florida and Georgia. During the November 15 to April 16 calving season, at point of entry to the region, ships' captains are required to report vessel position, speed, and destination into the MSRS. Once the MSRS server receives a report, a message providing information about recent right whale locations and advisories is relayed to the ship. FWRI aerial survey staff report whales sightings into the MSRS as well as to the U.S. Navy for subsequent broadcast to mariners as part of an Early Warning System (EWS) aimed to protect right whales from vessel collisions. As part of the EWS, FWRI coordinates a pager-alert network that notifies key agencies, ports, and mariners when and where right whales have been sighted. This timely information allows ships to take evasive action if necessary to avoid whales.

To better understand whale habitats, researchers are currently studying sea surface temperatures and bathymetry (water depth) relative to whale sightings. Ship traffic data generated from MSRS are also integrated into GIS to help characterize ship traffic patterns in right whale critical habitats. Together, data on whale distributions, habitat variables, and vessel traffic provide a framework for quantifying the risk of vessel collisions and the effectiveness of proposed management plans.

2005–2006 Highlights

- **Aerial Surveys** FWRI staff conducted over 100 aerial surveys that resulted in 205 right whale sightings and the identification of 19 cow/calf pairs in the southeastern U.S. this season. This relatively good news was tempered by the fact that three calves are known to have died, one by vessel collision and a second by entanglement (the third death is of unknown cause).

- **Entanglements** FWRI staff participated in the partial disentanglement of a right whale entangled in commercial fishing gear (heavy lines) off Florida and North Carolina. This whale has subsequently been seen in the northeast U.S. and appears to have shed the life-threatening portion of the gear. FWRI staff also participated in the successful disentanglement of a juvenile humpback whale entangled in commercial fishing gear (lines and buoys) off Ponce Inlet, Florida.

- **Strandings** FWRI staff participated in the retrieval and subsequent necropsy of two dead right whale calves in January 2006. Both of these whales were first reported floating in the waters off Jacksonville. One of the calves was determined to have been killed as a result of a ship-strike and the other died due to entanglement in fishing gear.

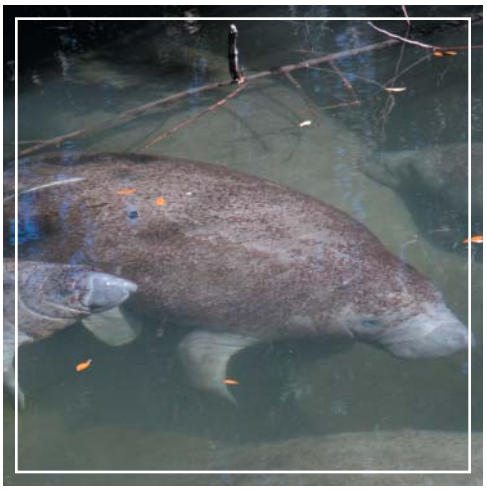
- **Biopsy Sample Collection** FWRI staff conducted 16 right whale biopsy sampling trips which resulted in 14 skin and blubber biopsy samples collected. Of the 14 biopsy samples collected, five were of calves and nine were of juvenile whales. Biopsy samples were also collected from an entangled juvenile right whale and an entangled juvenile humpback whale. The skin 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.

- **Extralimital Whales** FWRI staff conducted an aerial overflight following a USCG report of whales off Longboat Key Florida. A NOAA vessel also responded out of St. Petersburg and the aerial and surface teams combined to document the whales as a mom/calf right whale pair that had been seen earlier in the year off Texas. Right whale sightings in the Gulf of Mexico are rare.

Mote Marine Laboratory Manatee Research Projects

Research Activities

The Legislature has appropriated $325,000 annually from STMTF for the Manatee Research Program at MML. The following projects were conducted in the 2005-2006 fiscal year:



- *Photo-Identification Studies and Genetic Sample Acquisition and Processing of Manatees in Southwestern Florida* MML conducts photo-identification studies at locations in southwest Florida and integrates that program with USGS and FWRI efforts into the MIPS database. Additionally, MML is developing a minimally-invasive technique for sampling manatee skin to yield high-quality genomic DNA with the goal of establishing and maintaining a collection of manatee DNA samples from the southwestern Florida population. These efforts will supplement ongoing efforts in photo-identification to address questions of population variation, stability, and size.

- *Fatty Acid Signature Analysis as a Potential Forensic Tool for Manatees* Fatty acid signature analysis is an important tool by which marine mammal scientists gain insight into foraging ecology as well as a promising way to assess exposure to natural toxins (including red tide) and anthropogenic contaminants. Analyses of fatty acids in 53 manatee livers have been completed and results are being submitted for publication in a scientific research journal.

- *Calibration Survey Planning* Originally, this project was expected to evaluate aerial survey methods at the Fort Myers power plant, a major over-wintering site for southwest Florida manatees. However, the project was not initiated and through written and oral agreements with Dr. Elsa Haubold (Program Administrator for the Marine Mammal Program at the time), the funds dedicated to this project were partially used for an additional project, "Estimating the trend of the Atlantic Coast population of Florida manatees: Reconciling demographic and aerial methods." This project reconciled independently created population models that described population trends in the Atlantic sub-population. The remaining funds were used to enhance the photo-identification project described above.

- *Molecular Biologist Postdoctoral Position* This position primarily worked on developing and testing the innovative genetic sampling technique described above.

- *Manatee Rescue and Verification* MML acts as a federally-registered partner in the manatee carcass salvage and rescue program. MML researchers are permitted to verify carcasses and assist in rescues of injured or trapped manatees, primarily in Manatee and Sarasota counties.

Conservation Management Activities

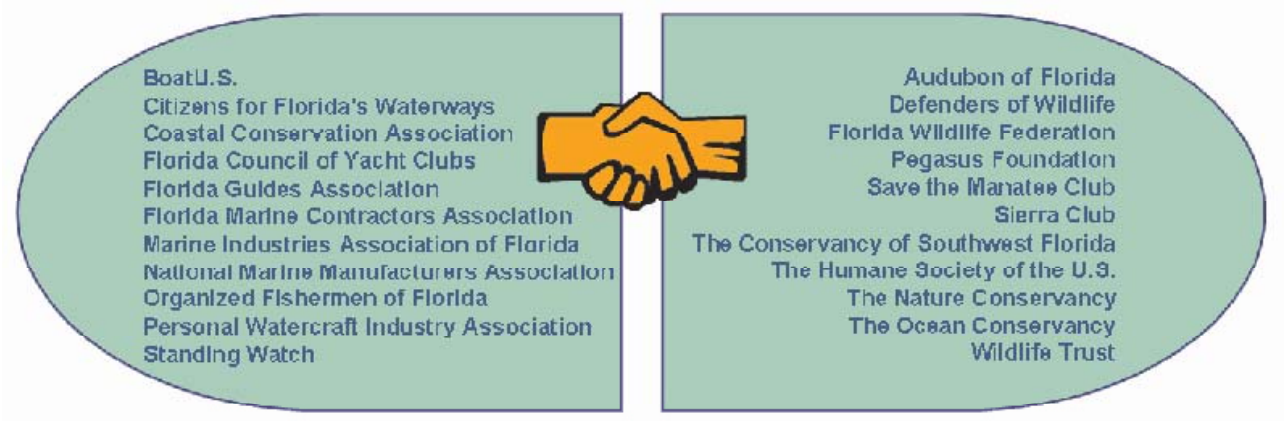
Consensus Building and Stakeholder Cooperation
Plan and Permit Review
Rule Administration
Habitat Characterization, Assessment, and Protection
Manatee Outreach
Data Distribution and Technical Support

Consensus Building and Stakeholder Cooperation

Conservation Management Activities

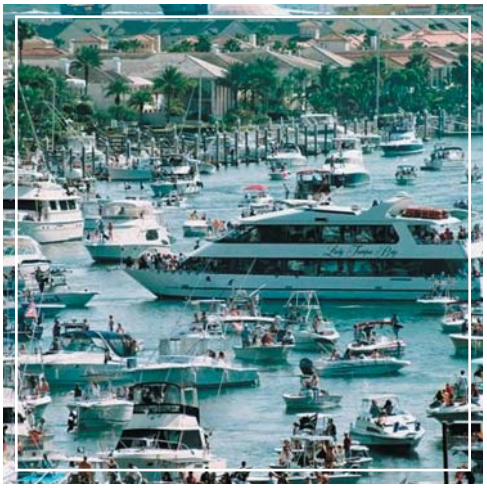
FWC and USFWS have been working to address existing controversies surrounding manatee issues. During the last year, FWC has continued to staff the Manatee Forum, a group of 22 stakeholder organizations (see figure below). The goal of the Forum is to provide a process to improve communication and understanding among key stakeholder groups and participating agencies. Through this process, FWC and USFWS hope to establish areas of common ground, identify problems or conflicts, and develop potential solutions. Both the Executive Director of FWC and the Southeast Regional Director (Region 4) of the USFWS have been instrumental in the development of this idea and its implementation.

From July 2005 through June 2006, the Forum met three times for a total of seven meeting days. Due to hurricanes, one meeting was cancelled and combined with the next planned meeting. The first meeting focused on boating-related issues and manatee habitat considerations. The next two meetings focused on conflict resolution and finding common ground. The overall effort does present challenges in finding ways to work together; however, both agencies still believe that working together has been worthwhile in moving the manatee discourse forward, as well as increasing communication and reducing the intensity of the conflict among the stakeholders.



Plan and Permit Review

Conservation Management Activities



FWC-Imperiled Species Management Section (ISM) staff conduct reviews of manatee protection plans, environmental resource permits, and other types of guidance documents such as comprehensive plans.

Manatee protection plans (MPPs) are one tool that can assist in the long-term preservation of manatees and their habitat. MPPs include Boat Facility Siting Plans (BFSP) and also address habitat protection, education, and waterway-use regulations. Indirectly, MPPs also may increase boating safety, facilitate recreational planning, and protect aquatic habitat critical to many other species. Plans may take several years to develop because of the complexity of issues a county must address and the range of information that must be collected. Under Chapter 370.12 (2) Florida Statutes, 13 counties are identified that are required to develop county-wide manatee protection plans. These counties are: Brevard, Broward, Citrus, Collier, Duval, Indian River, Lee, Martin, Miami-Dade, Palm Beach, Sarasota, St. Lucie, and Volusia counties. Of these 13 all but Broward and Palm Beach Counties have state approved MPPs.

The Department of Environmental Protection and the state's water management districts are responsible for issuing state permits for projects that may adversely affect manatees and their habitat. These agencies request assistance in reviewing these permits from FWC staff who then draft agency recommendations to reduce or eliminate potentially adverse effects of proposed projects. Since approved MPPs are coordinated closely with the USFWS, federal reviews of projects also reflect the provisions of approved MPPs resulting in more predictable and efficient reviews of permits in counties with approved plans.

2005–2006 Highlights

Manatee Protection Plans

- Two MPPs, those of Volusia and Clay counties, were approved by the FWC and the USFWS. Volusia County was one of the original 13 "key" counties required to develop a MMP. Clay County volunteered to develop a MPP and requested FWC assistance in that effort.

- ISM staff provided extensive technical assistance to Broward and Palm Beach counties as they developed their MPPs. This involved coordination with USFWS during reviews of early drafts of portions of the plans to ensure consistency between FWC and USFWS in the development of these county plans.

- ISM staff assisted Duval County staff in developing revisions to their MPP to address internal inconsistencies. The MPP revisions then were prepared for inclusion in the county comprehensive plan.

2005–2006 Highlights (continued)

- A meeting was held of the 13 counties required to develop MPPs to discuss issues relevant to these counties, share strategies, and provide feedback to the state on local efforts to implement the plans. The group determined that an annual meeting would be mutually beneficial to the counties, FWC, and USFWS.

Permit Review

- FWC review of projects that will require underwater blasting continued to consume significant staff time and effort. Staff handled blasting projects at the Port of Miami, on the Alafia River in Hillsborough County, and in Pinellas County (the John's Pass Bridge replacement). Staff also attended a number of meetings conducted by the U.S. Army Corps of Engineers (USACOE) that dealt with determining general safety standards for protected marine species during blasting activities, including a workshop entitled, "Confined Underwater Blasting as a Construction Technique."

- Staff developed extensive comments for a USCG project regarding port security technology. This project involved the testing of experimental sonar and remotely operated equipment to detect explosive devices on the bottom of ships prior to entering major Florida ports (Jacksonville, Miami, St. Petersburg, Tampa, and Port Everglades).

- In addition to handling a high workload for permit application review, ISM staff also accomplished the following permit related activities:

  - One staff member participated as a marine mammal and sea turtle observer during the sinking of the U.S.S. Oriskany, which is now an artificial reef off Pensacola.

  - Along with USFWS, staff attended two separate site visit meetings with power plant staff from the TECO Gannon Power Plant in Hillsborough County and the Anclote Power Plant in Pasco County. These visits were prompted by a carcass recovery at the TECO plant's intake area and were done to assess future risk to manatees at TECO and to examine measures taken to preclude manatee mortality at the Anclote plant's intake site.

  - Staff presented at four training workshops to state regulatory agencies with USACOE and USFWS on a revised process to improve interagency coordination.

  - ISM staff gave a presentation at a Dock Permitting Workshop for municipalities held by Volusia County as a follow-up to the adoption of the Volusia County MPP to explain implementation of the plan.

Projects Reviewed During FY 2005–2006

Requests for Additional Information 493

Standard Comments (including miscellaneous correspondence) 281

Critical Comments (projects that could significantly affect manatees)... 49

2005–2006 Highlights (continued)

MANATEE PROTECTION PLAN SUMMARIES

County	*State Approval*	*2005-2006 Significant MPP Activities*
Brevard	February 2003	In May 2006, Brevard County staff and ISM staff held a coordination meeting to discuss the implementation of some of the Brevard MPP policies during permitting.
Broward	(review pending as of 6/30/06)	The current draft is being reviewed by the county's Manatee Core Group and by the general public via internet access.
Clay	June 2006	While not designated as one of the 13 "key" counties, the county opted to be proactive in developing a MPP to provide additional protection for manatees. After much coordination at the state and local levels, the Clay County MPP was approved by FWC and USFWS this year.
Duval	June 1999	ISM staff assisted the City of Jacksonville with revising portions of the BFSP in the Duval MPP. These revisions have been scheduled for review by the Jacksonville Waterways Commission at the September 2006 meeting.
Indian River	November 2000	In May 2006, Indian River County staff and ISM staff held a coordination meeting to discuss the implementation of some of the Indian River MPP policies during permitting.
Palm Beach	(review pending as of 6/30/06)	The Palm Beach County Board of County Commissioners approved a draft MPP in June 2006. This draft currently is under review at the state and federal levels.
Volusia	October 2005	FWC staff assisted Volusia County staff and staff from a number of the coastal cities with finalizing the BFSP element (Phase II) of their MPP, as approved by the FWC and the USFWS this year.

Note: Eleven of the 13 "key" counties now have state-approved MPPs.

Rule Administration

Conservation Management Activities

FWC staff in ISM oversee the process of promulgating manatee protection boat speed and access rules and administer activities related to these zones, including permit and variance reviews. Staff evaluate data and develop proposed rules for consideration by the Commission.

2005–2006 Highlights

Brevard County {68C-22.006, Florida Administrative Code (FAC)}
In September 2005, a local boating group submitted an informal petition requesting changes to some of the zones in Brevard County, mainly in the central portion of the county. After several meetings and conversations with representatives of the group, FWC staff responded via letter in January 2006 stating that there was insufficient new information at the present time to support making changes to the rule. However, staff notified the group that FWC staff and others were working to develop new tools that could be used in future evaluations, and that new boating data would be collected for Brevard County that could be used in an assessment of the zones. Aerial surveys of boating activity began in April 2006 and will likely continue through at least June 2007. Florida Sea Grant, located at UF, is a NOAA-administered university-based research, education, and extension program that also is conducting a survey-based study of boating patterns. Results likely will be available in mid-2007. FWC staff anticipate re-evaluating the requested changes and having at least a preliminary assessment completed within the first half of 2007.

Charlotte County (68C-22.015, FAC)
In response to a May 2005 letter from FWC, Charlotte County formed a Local Rule Review Committee (LRRC) in July 2005 to consider possible rule amendments to allow a forked 25 MPH access channel in Placida Harbor to provide faster access to residents living on southern Little Gasparilla Island. The LRRC met in August and September, and submitted its final report in October 2005. At the November 2005 Commission meeting, the Commissioners considered the LRRC report and the FWC staff response, and directed staff to formally propose amendments. A Notice of Proposed Rulemaking was published in February 2006, and staff conducted a public hearing in Englewood in March 2006. The final public hearing was conducted during the June 2006 Commission meeting, where the amendments were approved as advertised. The amendments were filed for adoption with the Department of State in July 2006.

Duval County (Rule 68C-22.027, F.A.C.)
In October 2005, the City of Jacksonville requested that FWC amend its zones in the downtown Jacksonville area to make the zones the same as the existing federal zones, as amended by the USFWS in April 2005. In response to a December 2005 letter from FWC, the City (a consolidated government with Duval County) formed a LRRC in February 2006 to consider possible amendments. The LRRC met in March and April, and submitted its final report in May 2006. At the June 2006 Commission meeting, Commissioners considered the LRRC report and ISM staff response, and directed staff to formally propose amendments. Staff anticipates completing this

2005–2006 Highlights (continued)

rule action by late 2006 or early 2007.

General Provisions (Rule 68C-22.001, F.A.C.)
Chapter 2004-343, Laws of Florida, required FWC to adopt a rule describing how the Measurable Biological Goals are used when FWC considers manatee protection rules. A Notice of Proposed Rulemaking was published in July 2005 and staff conducted a public hearing in Tallahassee in August 2005. The final public hearing was conducted during the September 2005 Commission meeting, where the amendments were approved as advertised. The amendments were filed for adoption with the Department of State in October 2005.

Hillsborough County
In October 2005, Hillsborough County Commissioners adopted Ordinance 05-15 to add manatee protection zones in the Cockroach Bay area. FWC formally approved the ordinance in November 2005.

Lee County (Rule 68C-22.005, F.A.C.)
The process to re-address this rule began in 2004 because of new permanent and emergency federal zones established by USFWS, as well as issues raised in a January 2003 Lee County Court ruling. Amendments to the existing rule were approved by Commissioners in April and June 2005. These amendments make the state rule consistent with the federal rules. A Notice of Change (to the existing rule) was published in July 2005 and the amendments were filed for adoption with the Department of State in August 2005.

MPP Rules
Chapter 2002-264, Laws of Florida, provides authority to FWC to adopt rules dealing with the identification of "substantial risk counties" and establishing criteria for the approval of manatee protection plans. Staff conducted Rule Development Workshops in November 2005. Work on this rule was suspended in March 2006 when it was decided that additional discussions within FWC as well as with stakeholders were needed concerning the statutory authority granted by Chapter 2002-264.

Safe Haven Zones
Between 2001 and 2006, FWC performed numerous studies and other actions in fulfillment of a settlement agreement FWC signed in 2001 to resolve a lawsuit from a coalition of environmental groups. The final requirement of the settlement was consideration of the need for new safe havens at six locations around Florida. Staff evaluated these areas and concluded that no new zones were needed at this time, although additional actions could be warranted in the future depending on the outcomes of several ongoing research projects. Staff presented their findings at the June 2006 Commission meeting and the Commissioners concurred.

Variances and Waivers

ISM staff worked on two requests for variances or waivers from manatee protection rules during the fiscal year. Both requests were withdrawn by the applicants because it was determined that no authorization was necessary. The variance and waiver process is governed by Chapter 120.542, Florida Statutes.

- In May 2005, FWC received a petition from MV Film Productions LLC, for a temporary variance from portions of the Miami-Dade County rule for activities

2005–2006 Highlights (continued)

associated with filming of the motion picture *Miami Vice*. After multiple discussions, the applicant decided that the activities could be restructured or moved to unregulated waters to avoid the need for a variance. The application was withdrawn in July 2005.

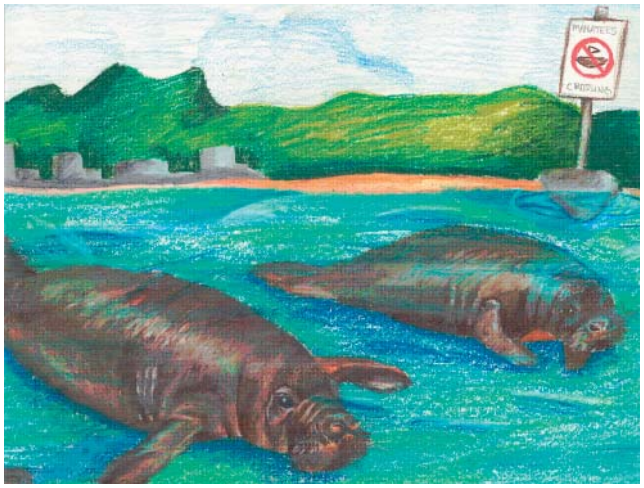
- In August 2005, FWC received a petition from USA Water Ski for a temporary variance from portions of the Broward County rule for activities associated with a planned water ski exhibition to be performed during a boat parade in December 2005. Staff had multiple discussions with the applicant regarding additional information that was needed before the petition could be reviewed, but no additional information was submitted before the boat parade was held. In January 2006, staff learned that no exhibition was performed. USA Water Ski withdrew its application in February 2006.

Permits

Rule 68C-22.003, F.A.C., allows FWC to issue a number of different types of permits for activities that would otherwise be prohibited by MPPs. The most numerous of these permits are those that are handled by LE for commercial fishing or professional fishing guide activities. There are typically 150-200 of these permits in effect at any given time. Besides these permits, staff worked on two requests for other types of permits during the fiscal year:

- In April 2005, FWC received a request from Boston Whaler to modify its vessel testing permit in Volusia County. A modified permit was issued in September 2005.

- In October and November 2005, staff coordinated with FWC's Division of Marine Fisheries Management to consider a request from a researcher for a Special Activity License for fisheries sampling in the vicinity of the Riviera Beach power plant in Palm Beach County. The applicant ultimately decided that no activities needed to be performed that would require a permit under Rule 68C-22.003, F.A.C.



2005–06 Manatee Art Decal Contest entry depicting a Manatee Safe Haven Zone.

Habitat Characterization, Assessment, and Protection

Conservation Management Activities

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. Ways to minimize negative effects of coastal development are being explored. Reductions in the flow of warm spring waters, due to consumptive human uses, threaten significant natural warm-water refuges in the northern half of the state. An uncertain future for the power industry, with looming operational changes and possible power plant closures, also poses possible threats to established artificial warm-water refuges. In light of these threats to existing warm water sources, FWC and USFWS are looking at the possibility of providing access to additional warm water sites that are currently inaccessible to manatees. Understanding the manatee's habitat needs and assessing habitat health and stability is a primary focus of habitat protection programs.

FWC manatee habitat staff coordinated with intergovernmental agencies in working groups and task forces to manage human activities in natural systems used by manatees. These group efforts centered on the objectives of the federal Florida Manatee Recovery Plan and included co-coordination of the Recovery Team's Habitat Working Group (HWG) and Warm Water Task Force (WWTF).

2005–2006 Highlights

- FWC staff coordinated with the USACOE, the South Florida Water Management District (SFWMD), and the Southwest Florida Water Management District (SWFWMD) to address central and south Florida structure-related mortality issues through the Interagency Task Force for Water Control Structures. Structure-related manatee mortality has long been identified as the second leading cause of human-related manatee mortality. Within the footprint of the central and south Florida canal system, 154 manatees have died as a result of interactions with 23 of the numerous water control structures in this region, yielding an average rate of 4.9 manatees/year since 1974. Ongoing efforts since 1991 through the water control structure task force have led the USACOE and SFWMD to retrofit water control structures and revise operational protocols. These efforts are having a significant influence on reducing structure-caused mortality at retrofitted structures.

- FWC and USFWS staff co-chaired the WWTF during the past year. A warm-water

2005–2006 Highlights (continued)

management plan has been drafted that addresses an interim strategy to maintain regional warm-water networks, as well as a long-term plan for sustainable 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. WWTF members also began to explore alternatives to existing power-plant-based warm-water production for long-term mitigation of the loss of these sites.

- FWC also has continued to co-chair the HWG and participate in a broad range of manatee habitat issues with its Recovery Team partners. These issues include defining warm-water and foraging habitat carrying capacity, effects of reduced spring flow and loss of thermal refuges, changes in foraging areas, development of alternatives to current artificial warm-water sources, etc. Focused efforts of the HWG include developing a suitable habitat checklist (assessment inventory) for identified natural and artificial warm-water refuges and estimating habitat carrying capacity based on winter warm-water refuge sites and foraging habitat available to regional manatee populations.

- FWC worked with USFWS and SFWMD partners in the Comprehensive Everglades Restoration Plan (CERP) Task Force to draft recommendations for manatee protection in 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. The CERP Task Force also conducted a manatee habitat assessment of the central and south Florida canal system. This information has been used to determine which canals are accessible to manatees and which canals have high risk factors and should have access eliminated or modified

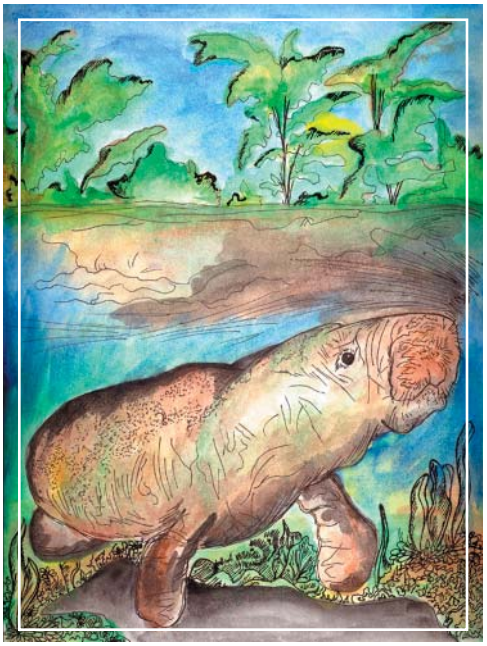
- FWC continued working with the Kings Bay Advisory Group to restore submerged aquatic vegetation in Kings Bay in Crystal River. Staff began planning for seasonal protection of manatee foraging resources with an eye toward allowing expansion of such resources during peak growing periods. The group is also working toward a complete ecological restoration of Kings Bay through regional citizen and interagency coordination as part of the SWFWMD Surface Water Improvement and Management Program.

Water-control structure, Miami-Dade County.

Manatee Outreach

Conservation Management Activities

Public support of government conservation programs is vital. For that support to be forthcoming, the public must be well-informed and understand the threats facing manatees, as well as the steps that need to be taken for species recovery. In addition, it is important to engage specific user groups that can impact manatees. Knowledge of manatee habitat requirements, behavior, and general biology can contribute toward the reduction of manatee disturbance, harassment, injury, and death. A wide array of information is distributed to a variety of audiences. The goal is to provide factual, timely information appropriate to the target user groups.



2005–2006 Highlights

Visitor Centers
FWC has a contract with the State of Florida Nature and Heritage Tourism Center to provide free manatee-related materials in exchange for the free distribution of the materials to tourists. The Center is located in White Springs, a short distance away from I-75 near the Georgia-Florida border.

Information Requests and Bulk Orders
A total of 220 phone or mailed requests for information were received for a response. Of these, 141 were requests for bulk orders of materials to be distributed through organizations.

A new FWC website is available now to handle most of the routine manatee questions that are received by the agency (http://myfwc.com/psm/manatee/eiwelcome.htm). This service provides the individual with an automatic response and a link to the FWC manatee web pages for more information. Telephone and mail requests for manatee information have dropped off considerably since inception of the website.

Coloring activity booklets, manatee brochures, and the "Commonly Asked Questions" booklet continue to be popular distribution items. Bookmarks with the Wildlife Alert Hotline (1-888-404-3922) and a manatee support message have been developed for general distribution.

E-Field Trip
Outreach opportunities via the internet continue to be successful. An internet company specializing in educational field trips available online for classrooms worked with staff to update FWC's e-field trip about manatees. This engaging, self-guided tour into the life of the manatee gives elementary to high school students, nationally and internationally, a tool to learn about the manatee without traveling to or within Florida. The online field trip provides students with much of the same information as current FWC manatee brochures, educational materials, and the Treasure Box (see below) but is more efficient in connecting with a broader range of students. A student journal and a question/answer session are included within the

2005–2006 Highlights (continued)

online field trip. A total of 301 schools from nearly all 50 states and three U.S. territories took the virtual field trip. Florida continues to have the highest number of students who visit this website, with 118 schools and almost 4,000 students participating in the online field trip.

Way of the Manatee Treasure Box Program
In the 2005-2006 school year, staff participated in a variety of special events or teacher workshops to promote the Way of the Manatee Treasure Box program. This program includes a variety of educational materials (e.g., videos, manatee artifacts, craft projects, activity books) in a "Treasure Box" that is available to teachers and education centers around the state and can be adapted to a variety of age groups. The main focus this year continued to be the distribution of boxes to other groups in seven counties around the state. A list of supplies and some resources were provided for this service. The boxes are loaned to area teachers or are used by the host sites for their programs. Outreach staff included additional learning tools—bone drawings for the Anatomy Center—and solicited publishers and authors for donations of books to use with the program. As a result, FWC received hundreds of books for the Treasure Box program.

Site Visits
Manatee Outreach staff visited several sites during 2005-2006 to promote manatee awareness and education: Citrus County (festival), Homosassa Springs State Wildlife Park, and the TECO Manatee Viewing Center.

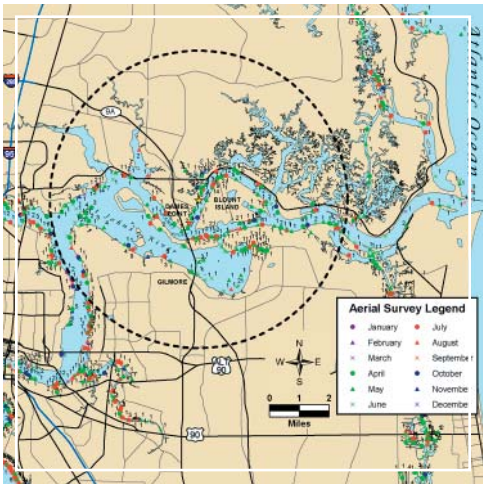
Manatee Decal Program
In June, a press event was held to present a framed decal to the winner of the 2006-2007 Manatee Decal Art Contest, Berry Donovan Foster, a seventh-grade student at Citrus Springs Middle School. Each year tax collectors participate by selling decals at tax collection offices around the state. More than 75 students participated in the art contest for the manatee decal. The 2005-2006 decal, with art designed by Vivian Chu, was available for sale from July 1 to June 30. Decals sold for this period totaled 10,599. At a cost of $5 each, they generated approximately $53,000 for STMTF.

Entry in 2005-2006 Manatee Decal Art Contest.

Data Distribution and Technical Support

Conservation Management Activities

The GIS staff focused this year on providing quality data, analysis, and maps to rules, MPP, permitting, and habitat staff this year. Data are now more easily accessible to the public due to FWRI's online mapping capabilities and the level of ease that the new ArcMap (ESRI, Inc.) program provides. The general public and consultants are now able to conduct their own analyses quickly and produce their own maps without having to request information from staff. Mortality data were distributed via the website this year and manatee data requests were sent via e-mail to many consultants, several county agencies, USFWS, and the Save the Manatee Club.



2005–2006 Highlights

- Reassessment of existing zones and coordination with USFWS manatee protection zones were priorities in Lee, Duval (downtown area), Charlotte (Placida Harbor), and Collier (10,000 Islands) counties.
- Mapping for the remaining six safe haven areas identified in the 2001 settlement agreement was provided to the rules staff for analysis.
- Permitting issues required extensive mapping, including state and federal permit locations in Pinellas and Flagler counties, a Request for Additional Information for a project in Taylor County, dredging projects at Port Sutton and Jupiter Inlet, and several projects under review by the Governor and Cabinet.
- Staff assisted with the joint FWC/USFWS mapping of Important Manatee Areas in Florida.
- Through coordination with LE-Boating and Waterways Section, staff helped finalize the last section of the new Manatee County Manatee Protection Zone sign plans, thus allowing for zone posting within a few months after Commission approval, rather than a year or more.
- New manatee aerial survey flight paths for St. Johns/Flagler and Collier counties were drafted.
- BFSP analysis assistance was provided for Broward, Duval, Palm Beach, and Volusia counties.
- ISM staff provided FWRI maps of upland land uses and public lands for the Regional Assessment of the east central Florida coast (Brevard, Indian River and Volusia counties).
- ISM-GIS staff assisted with GPS translation and mapping for seagrass assessments and restoration sites in the Florida Panhandle for the manatee habitat staff.
- Educational graphics for both printed materials and the website were continuously produced, including school materials, the manatee decal contest, speed zone maps and brochures, educational sign information, and for electronic Manatee Forum presentations.

Law Enforcement Activities

Enforcement Activities

Enforcement Activities

Law Enforcement Activities

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

Enforcement efforts begin with educational/informational vessel stops and verbal warnings as each new protection zone is posted. The enforcement contact escalates to written warnings and issuing Uniform Boating Citations (UBC) after a specific zone has been posted for a reasonable amount of time or for repeat offenders. Officer discretion, based upon 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).

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

2005–2006 Highlights

- In response to increased watercraft-related manatee mortalities, reports of boater noncompliance with speed zones, and reports of aggregation of manatees, officers throughout the state conducted over 50,515 patrol hours.
- LE participated in over 35 outreach efforts throughout the state. These programs promoted awareness of manatee-related issues and compliance with manatee protection speed zones.
- LE made 48,418 educational contacts regarding manatee protection.
- LE currently is inspecting all east coast signage from Nassau to Dade counties. Uniform Marker Inspection Reports are being completed on each state marker and may include digital photographs if marker damage is observed so repairs can be addressed quickly.
- The Southwest Region Tampa office continued to assign an officer three days a week to the new manatee protection zone in Old Tampa Bay (established in FY 2004–

2005–2006 Highlights (continued)

2005), providing education to boaters and increasing compliance with the new zone.

- FWC adopted manatee protection zones within Tampa Bay, encompassing Hillsborough, Pinellas, and Manatee counties. Markers have been fully installed within Hillsborough and Pinellas counties. Marker installations have been completed in a majority of Manatee County waterways. In the remaining waterways (Anna Maria Sound, Palma Sola Bay, and Sarasota Bay), installations are scheduled for completion by June 2007.

- During the Greater Jacksonville Kingfish Tournament, a special detail was conducted to address early morning vessel traffic in manatee zones to ensure compliance. This annual tournament attracts many fishers, often in excess of 1000 vessels.

Inter Agency Law Enforcement Cooperation

- FWC coordinates Marine Law Enforcement Task Forces in three areas of the state to provide effective and efficient law enforcement on the water. Although 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, Lee County Sheriff's Office, Cape Coral, Fort Myers, and Sanibel police departments, and USFWS.

  - Northeast Florida Marine Law Enforcement Task Force – The following law enforcement agencies participate: FWC, Jacksonville, Clay County, and St. Johns County sheriff's offices, Naval Air Station-Jacksonville, USCG, and USFWS.

  - In May 2006, the Bay County Marine Law Enforcement Task Force was established to target marine law enforcement issues in the northwest area of the state. The following law enforcement agencies participate: FWC, Bay County Sheriff's Office, Panama City and Panama City Beach police departments, and USCG.

- In December 2005, Operation Slow Speed was conducted as the first statewide enforcement effort directed toward enforcement of manatee protection zones. This effort was coordinated by FWC Officer Scott Prasse out of the South Region and included more than 45 local, county, state and federal agencies in 19 counties.

- In May 2006, LE personnel conducted a manatee/endangered species workshop at the Rookery Bay National Estuarine Research Reserve Headquarters. This workshop provided an opportunity to share information with multiple law enforcement agencies and biologists. FWRI biologists and LE officers interacted with personnel from Collier County Sheriff's Office, City of Marco and City of Naples police departments, the National Park Service, USCG, and. USFWS.

Technology

- The FWC Office of Information Technology continued working with LE to develop a more efficient method for collecting enforcement activity data. The system,

2005–2006 Highlights (continued)

which came on-line in January 2004, improved timeliness and reduced paperwork requirements by providing an internet-based application for data entry at each regional office. These data are now posted on the Internet and available for public view at: http://myfwc.com/law/manateepatrol/.

- LE is implementing zone marker assessment technology to inventory marker characteristics and will include a GIS mapping component. Such a database will facilitate and expedite the repair and replacement of large numbers of signs damaged in catastrophic climatic events. The database will enable inventorying and tracking the status of markers using technology with location accuracy. The database will be used to efficiently coordinate marker repairs and work orders, insure accurate sign placement, and improve enforcement efforts to enhance manatee protection as well as boater safety and compliance with regulations.

Mutual Aid Agreement

- LE continues to implement the manatee protection provisions of the Mutual Aid Agreement (MAA; established 2003) 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.

  - Train USFWS agents to use and issue UBCs.

  - Train FWC officers to document and submit federal citations for violation of manatee protection zones.

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

- Specific MAA Activities in FY2005-2006

  - 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 Broward, Dade, Duval, Lee, and Sarasota counties.

  - In November 2005, FWC and USFWS agents were trained in issuing UBCs for violations within federal manatee protection zones within southwest Florida: Charlotte, Hillsborough, Lee, Manatee, Pinellas, and Sarasota counties.

FWC officers conduct boater educational and compliance stops in manatee zones around Florida.

Appendix

Appendix A: Acronyms
Appendix B: Definitions
Manatee License Plate and Decal Program

Appendix A: Acronyms

BFSP—Boat Facility Siting Plan
CERP—Comprehensive Everglades Restoration Plan
Commission, Commissioners—refers to the Governor-appointed body and/or members of the FWC Commission
EWS—Early Warning System
FAC—Florida Administrative Code
Forum—the Manatee Forum, a group of 22 stakeholder organizations organized by FWC and USFWS to address manatee issues
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 (between FWC and USFWS law enforcement divisions)
MIPS—Manatee Individual Photo-Identification System
MML—Mote Marine Laboratory
MMPL—Marine Mammal Pathobiology Laboratory
MPP—Manatee Protection Plan
MSRS—Mandatory Ship Reporting Systems
NGO—Non-Governmental Organization
NMFS—National Marine Fisheries Service
NOAA—National Oceanic and Atmospheric Administration
PIT—Passive Integrated Transponder
PSWG—Population Status Working Group (a working group of the federal Florida Manatee Recovery & Implementation Team)
Recovery Team—the USFWS-led Florida Manatee Recovery and Implementation Team, consisting of over 100 individuals representing about 50 different federal, state, local, academic, NGO, and private organizations
SEIT—Southeast Implementation Team
SFWMD—South Florida Water Management District
STMTF—Save the Manatee Trust Fund
SWFWMD—Southwest Florida Water Management District
TECO—Tampa Electric Company
UF—University of Florida
UBC—Uniform Boating Citations
USACOE—U.S. Army Corps of Engineers
USCG—U.S. Coast Guard
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), F.A.C., 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), F.A.C., 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), F.A.C., 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 559,000 manatee license plates have been issued, and nearly $34,000,000 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.

Vivian Chiu, 13, an 8th grade student from Indian Ridge Middle School in Broward County created the artwork for the 2005–2006 manatee decal. Vivian's artwork is a watercolor image of three manatees, which she titled, "Manatees in Nature." The decal caption used for the 2005–2006 decal was "Protect Wildlife Habitat" and seagrass habitat protection information was included on the back of this decal series.

Each year tax collectors participate by selling decals at their offices statewide. Flagler County was the winning county in the 2005-2006 Voluntary Contribution Campaign. Money from the decals supports manatee protection efforts such as rescue, rehabilitation, research, and public education. The 2005-2006 manatee decal program and other donations provided approximately $53,000 to the Save the Manatee Trust Fund.

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