

# Recovery for the West Indian Manatee

*Trichechus manatus latirostris*

**Recovery Objective:** RECLASSIFY to threatened, then delist

**South Florida Contribution:** RECLASSIFY to threatened, then delist

## Recovery Criteria

The West Indian manatee can be considered for reclassification to threatened when data and population models are available to assess population size and trends; when analyses indicate that the population is growing or stable; when mortality factors are controlled at acceptable levels or are decreasing; and when critical habitats are secure and threats to them are controlled or decreasing.

The Plan's long-range goal is to contribute toward restoring Florida manatees to optimum sustainable population levels under provisions of the Marine Mammal Protection Act of 1972, and maintaining them at those levels. The FWS and NMFS define optimum sustainable population size for a given species or stock as a level that is within a range between the largest number supportable by the ecosystem (i.e., carrying capacity) and the population size that results in maximum net productivity. Maximum net productivity is the greatest net annual increment in population numbers or biomass resulting from additions to the population by reproduction and/or growth, less losses due to natural mortality (50 CFR 216.3).

Growth in the human population and coastal development in Florida remain major obstacles in accomplishing these goals. Actions to stabilize the size of the human population are outside the scope of this plan. It must be emphasized, however, that while the following actions are considered necessary, they cannot by themselves accomplish this plan's goals.

## Species-level Recovery Actions

- S1. Support the investigation of the distribution and status of the manatee and its habitat in South Florida by continuing flying synoptic state-wide aerial surveys.** Aerial survey sighting data have provided and continue to provide useful data on manatee distribution and, in some situations, relative abundance. When combined with telemetry data, certain types of aerial sightings provide a sound basis for determining habitat use patterns. Aerial sightings also provide useful information on the proportion of calves. Because of uncertainty in the number of animals not seen in turbid water, uncertainty as to the proportion of the population within a survey area, and other problems, however, aerial sighting data generally do not permit scientists to estimate or detect trends in population size.
- S1.1. Continue flying synoptic state-wide aerial surveys.** In 1991, the Florida Marine Research Institute began flying coordinated state-wide aerial surveys of all known winter manatee habitat. The surveys are flown following cold fronts when manatees

aggregate at warm water refuges in greatest numbers. They involve large numbers of observers flying simultaneously over different segments of known winter manatee habitat. Although problems limit the use of this sighting data to measure population size or trends, the surveys have provided high counts that improve the lower bound of the range of the estimated number of animals. If correction factors for uncertainties noted above can be developed, the resulting data also may be used in the future to determine population trends. As appropriate, such surveys should be continued. For South Florida, aerial surveys should emphasize both manmade and natural warm water sites; particularly the waterways of Florida Bay and Everglades NP.

**S1.2. Undertake regional or local aerial surveys.** In some areas, aerial surveys are needed to improve information on local habitat use patterns. The information obtained through these surveys has been an important basis for developing and analyzing new speed zones and other management measures. As appropriate and possible, local aerial surveys should be undertaken or continued in the Indian, Miami, and Caloosahatchee Rivers; Sarasota, Estero, and Rookery Bays; Coral Gables Waterway, 10,000 Islands Region, and Whitewater Bay as well as other areas to improve information on local habitat use patterns and trends in relative abundance.

**S1.3. Continue aerial surveys of aggregation sites after cold fronts.** Florida Power & Light Company has supported aerial surveys of manatees at warm water power plant outfalls each winter since 1977. In addition to data on the numbers of animals sighted at these warm water refuges, this long-term data set includes calf counts that provide valuable information on reproduction. If correction factors can be developed to account for sighting uncertainties, the data may be useful in the future for assessing past population trends.

Miami  
Canal  
area

**S1.3. Support a dedicated aerial survey specialist and convene an Aerial Survey Working Group.** During a 1992 workshop on manatee population biology (O'Shea *et al.* 1992 *op. cit.*), participants reviewed aerial survey methodology and identified steps that might be taken to improve information generated by aerial surveys. By stratifying survey effort by habitat type, refining information on diving behavior in different habitats, defining acceptable sighting conditions, and testing strip transect methodology, participants concluded that it should be possible to strengthen data interpretation capabilities and detect regional (though perhaps not state-wide) trends in abundance. To monitor progress on aerial survey research, to improve survey methodology and to develop correction factors for sighting uncertainties, a dedicated aerial survey specialist should be supported to help develop and test methodological improvements and sighting correction factors. In addition, an Aerial Survey Working Group chaired by the specialist should be convened at least annually to provide further advice and assistance.

**S1.5. Analyze available aerial survey data.** Re-evaluate the results of past aerial surveys to improve estimates of selected parameters and population trends. To identify areas that need to be resurveyed, aerial survey data sets should be evaluated regionally to determine whether they are sufficiently complete and up-to-date. In addition, new methodologies and analytical techniques might be applied to ongoing aerial surveys. As possible, such analyses should be undertaken.

developed, evaluated, and improved as needed. Where estimates of model parameters need to be developed or improved, other relevant tasks should be modified or strengthened.

As more information on manatee life history parameters is obtained, population models will tend to become highly complex. It is important for those developing manatee population modelers to coordinate their activities, and interact directly with biologists who have collected manatee life history data or who are authorities on manatee ecology. Biologists will better understand how models were derived, and the modelers will obtain feed back on the reasonableness of their assumptions and interpretation of their results. The working group should be convened at least once every two years chaired by the staff of the Sirenia Project.

- S4. **Support the monitoring of manatee populations in South Florida.** The success of efforts to develop and implement measures to minimize manatee injury and mortality and to protect manatee habitat will depend on the accuracy and completeness of data on manatee life history and ecology, population status, and habitat condition. Good data in these areas are needed to identify and define problems, make informed judgements on appropriate management alternatives, establish an information base to justify selected actions, and provide a basis for determining whether or not the actions taken are achieving the desired result.

- S4.1. **Maintain a manatee telemetry program.** Telemetry programs are currently the only reliable means by which to generate detailed information on manatee movement and habitat use patterns. Manatees are netted, belted, and tagged with transmitters for remote and visual monitoring. These monitoring programs provide information used to identify key use areas and travel corridors, and to tabulate reproductive histories, monitor use of power plant effluents, and trace the progress of re-introduced captive manatees. This information is used to develop specific recommendations for manatee protection and to support habitat management initiatives.

- S4.1.1. **Maintain adequate telemetry capabilities.** Telemetry studies require personnel, tags, tag attachments, receivers, boats, vehicles, airplanes and other equipment to capture and tag animals and to retrieve or replace transmitting units. They also require computer hardware and software and personnel to process the data and funding for the cost of satellite data retrieval. Presently the Sirenia Project and the Florida Marine Research Institute can track up to 20 and 15 animals, respectively. This level of capability should be maintained exclusive of telemetry needs for tracking released rehabilitated animals, work in Puerto Rico (see the Puerto Rican manatee recovery plan), or cooperative studies in other countries.

- S4.1.2. **Enter telemetry locations into the manatee Geographic Information System (GIS) database.** Accurate information on manatee habitat use patterns provide a sound scientific basis for identifying and supporting management decisions on waterway speed and access rules, permits for facility construction in manatee habitat, etc. To assure access to new data by managers, telemetry data should be processed by researchers for entry into the Florida Marine Research Institute's GIS. A standardized methodology to interpret and display telemetry data should be developed with the results distributed to the appropriate management agencies and cooperating groups annually through the manatee GIS Coordinating Team.

Floridians and Georgians, materials and curricula on manatees and manatee conservation should be updated periodically and made available for use at various academic levels from elementary to high school.

- S5.2. Develop and update materials for target user groups.** Information important to achieve manatee conservation objectives differs for different user groups (e.g., boaters, divers, fishermen, commercial ship operators, shoreline owners, etc.) and different areas (e.g., people using a particular protected area, residents of coastal areas in Florida, tourists). By the same token, appropriate media (e.g., films, posters, brochures, public service announcements, personal presentations, etc.) also differ according to user groups and areas. Agencies and organizations carrying out public education and outreach programs should cooperate in assuring that pertinent information in appropriate formats is made available to relevant sectors of the public.
- S5.3. Maintain avenues to encourage and direct voluntary contributions in support of needed recovery work.** A significant amount of the funding to support the State of Florida's manatee recovery work is obtained from voluntary contributions in the form of a special state license plate and an optional contribution on boat registration applications as authorized by the Florida Legislature. Some equipment and funding also are provided from donations to the Save the Manatee Club and other environmental organizations. These voluntary contributions form a significant part of the funding base for the recovery program and permit much work to be done that would not otherwise be possible. Innovative approaches to obtain and direct voluntary support to needed program work should be tested and maintained.

**S6. Coordinate recovery activities, monitor and evaluate progress, and update/revise this narrative.** The actions necessary to support and implement recovery are beyond the abilities or scope of any one agency. They require the participation and cooperation of many Federal, State, and local agencies, as well as public, private, and industry organizations. To ensure that the work of involved agencies and groups is carried out in a timely, cost-effective manner that addresses priority recovery needs, the following administrative and coordination tasks should be carried out.

- S6.1. Maintain Federal and State Manatee Coordinator staff positions.** Given the central role of the FWS and the DEP, each agency should designate a full-time manatee coordinator and provide basic support staff. The level of support must be adequate to carry out administrative functions for which each is responsible and to work directly with involved agency and organization officials on a day-to-day basis.

The primary responsibility of the FWS's manatee coordinator and support staff is to provide Federal oversight, guidance, and support for the overall manatee recovery effort as outlined in the recovery plan. Additional responsibilities include preparing rules for Federal Manatee Sanctuaries; reviewing and providing guidance on development permits and section 7 consultations; assisting and monitoring recovery-related work by participating agencies and organizations; developing a die-off response plan; overseeing efforts to rescue, rehabilitate, and release distressed manatees; assisting and coordinating manatee land acquisitions; helping develop state waterway speed and access regulations and county manatee protection plans; assisting in the development of manatee-related provisions, programs and facilities at NWRs; updating the manatee recovery plan and preparing annual status reports; and chairing and convening meetings of the manatee recovery team.