

Florida Manatee Recovery Plan

(Trichechus manatus latirostris)

Third Revision



**U.S. Fish and Wildlife Service
Southeast Region**

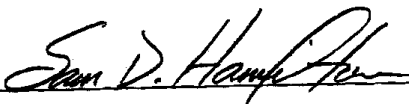
FLORIDA MANATEE RECOVERY PLAN

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THIRD REVISION

Original Approval: April 15, 1980
First revision approved: July 24, 1989
Second revision approved: January 29, 1996

Southeast Region
U.S. Fish and Wildlife Service
Atlanta, Georgia

Approved: 
Sam D. Hamilton, Regional Director, Southeast Region,
U.S. Fish and Wildlife Service

Date: 10/30/01

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LITERATURE CITATION SHOULD READ AS FOLLOWS:

U.S. Fish and Wildlife Service. 2001. Florida Manatee Recovery Plan, (*Trichechus manatus latirostris*), Third Revision. U.S. Fish and Wildlife Service. Atlanta, Georgia. 144 pp. + appendices.

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ACKNOWLEDGMENTS

FWS gratefully acknowledges the commitment and efforts of the following individuals to the recovery of the Florida manatee. Without their assistance and the dynamic discussions at recovery team meetings, this revision would not have been possible.

David Arnold*

Florida Fish and Wildlife
Conservation Commission

Winifred Perkins*

Florida Power and Light
Company

Randall Wells*

Chicago Zoological
Society/Mote Marine
Laboratory

Kipp Frohlich

Florida Fish and Wildlife
Conservation Commission

Duncan Powell*

U.S. Environmental
Protection Agency

Barb Zoodsma*

Georgia Department of
Natural Resources

Jack Jackson*

Vero's Tackle and Sport

Buddy Powell*

Florida Fish and Wildlife
Conservation Commission
(now with the Wildlife Trust)

Elmar Kurzbach*

U.S. Army Corps of
Engineers

John Reynolds*

Eckerd College/Marine
Mammal Commission
(now with Mote Marine
Laboratory)

David Laist*

Marine Mammal
Commission

Lynn Lefebvre*

U.S. Geological Service

Pat Riley*

Southwest Florida Marine
Industry Association &
Centennial Harbor Marina

Tom Linley*

Florida Department of
Environmental Protection

Pat Rose*

Save the Manatee Club

Liz Manners

U.S. Army Corps of
Engineers

Patti Thompson

Save the Manatee Club

Dave Murphy*

Lowry Park Zoological Park
and Gardens

Andy VanOs*

Florida Citizen

Leslie Ward

Florida Fish and Wildlife
Conservation Commission

Additional thanks go to the
following for their technical
assistance and in drafting many
sections of this document:

Bruce Ackerman, Karen Ausley,
Cathy Beck, Heather Carolan,
Lt. Bob Clarke, Karen Estock,
Dean Easton, Derek Fagone,
Cathy Langtimm, Ron Mezich,
Tom Pitchford, Sara Shapiro,
and Kent Smith;

and to the U.S. Fish and Wildlife
Service staff:

Gloria Bell, Pete Benjamin,
Bill Brooks*,
Cindy Dohner, Dave Flemming,
Dave Hankla, Joyce Kleen,
Jim Kraus*, Elizabeth
Souheaver, Cam Shaw,
Jay Slack, Linda Walker, Jim
Valade, Noreen Walsh, Grant
Webber* and Dawn Zattau.

***Appointed Recovery Team
members have an asterisk
by their name.**

EXECUTIVE SUMMARY

CURRENT SPECIES STATUS

Endangered. The near and long term threats from human-related activities are the reasons for which the Florida manatee currently necessitates protection under the Endangered Species Act. The focus of recovery is not on how many manatees exist, but instead the focus is on implementing, monitoring and addressing the effectiveness of conservation measures to reduce or remove threats which will lead to a healthy and self-sustaining population. The Florida manatee could be considered for reclassification from endangered to threatened provided that threats can be reduced or removed, and that the population trend is stable or increasing for a sufficient time period.

HABITAT REQUIREMENTS AND LIMITING FACTORS

The Florida manatee lives in freshwater, brackish and marine habitats. Submerged, emergent, and floating vegetation are their preferred food. During the winter, cold temperatures keep the population concentrated in peninsular Florida and many manatees rely on the warm water from natural springs and power plant outfalls. During the summer they expand their range and on rare occasions are seen as far north as Rhode Island on the Atlantic coast and as far west as Texas on the Gulf coast.

The most significant problem presently faced by manatees in Florida is death or injury from boat strikes. The long-term availability of warm-water refuges for manatees is uncertain if minimum flows and levels are not established for the natural springs on which many manatees depend, and as deregulation of the power industry in Florida occurs. Their survival will depend on maintaining the integrity of ecosystems and habitat sufficient to support a viable manatee population.

RECOVERY GOAL

The goal of this revised recovery plan is to assure the long-term viability of the Florida manatee in the wild, allowing initially for reclassification to threatened status and, ultimately, removal from the List of Endangered and Threatened Wildlife.

RECOVERY CRITERIA

This plan sets forth criteria, which when met, will ensure a healthy, self-sustaining population of manatees in Florida by reducing or removing threats to the species' existence.

The following criteria must be met prior to **reclassification of the Florida manatee from endangered to threatened (downlisting)**:

1. Reduce threats to manatee habitat or range, as well as threats from natural and manmade factors by:
 - identifying minimum spring flows;
 - protecting selected warm-water refuge sites;
 - identifying for protection foraging habitat associated with the warm-water refuge sites;
 - identifying for protection other important manatee areas; and
 - reducing unauthorized human caused “take.”
2. Achieve the following population benchmarks in each of the four regions over the most recent 10 year period of time:
 - statistical confidence that the average annual rate of adult survival is 90% or greater;
 - statistical confidence that the average annual percentage of adult female manatees accompanied by first or second year calves in winter is at least 40%; and
 - statistical confidence that the average annual rate of population growth is equal to or greater than zero.

The following criteria must be met prior to **removal of the Florida manatee from the List of Endangered and Threatened Wildlife (delisting)**:

1. Reduce or remove threats to manatee habitat or range, as well as threats from natural and manmade factors by enacting and implementing federal, state or local regulations that:
 - adopt and maintain minimum spring flows;
 - protect warm-water refuge sites;
 - protect foraging habitat associated with select warm-water refuge sites;
 - protect other important manatee areas; and
 - reduce or remove unauthorized human caused “take.”
2. Achieve the following population benchmarks in each of the four regions for an additional 10 years after reclassification:
 - statistical confidence that the average annual rate of adult survival is 90% or greater;
 - statistical confidence that average annual percentage of adult female manatees accompanied by first or second year calves in winter is at least 40%; and
 - statistical confidence that average annual rate of population growth is equal to or greater than zero.

ACTIONS NEEDED

1. Minimize causes of manatee disturbance, harassment, injury and mortality.
2. Determine and monitor the status of the manatee population.
3. Protect, identify, evaluate, and monitor manatee habitats.
4. Facilitate manatee recovery through public awareness and education.

DATE OF RECOVERY

Currently, in some regions of the state, there are only reliable population data for the past 6 years. Therefore, full recovery may not be possible for at least another 14 years in order to meet the standard of assessing the population over the most recent 10 years of data for reclassification from endangered to threatened status and for an additional 10 years after reclassification for removal from the List of Endangered and Threatened Wildlife. Time is also needed to establish and implement management initiatives to reduce or remove the threats.

TOTAL ESTIMATED COST OF RECOVERY

Based on information provided by our recovery partners, current annual estimated budget expenditures for recovery approach \$10,000,000.

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LIST OF ACRONYMS AND ABBREVIATIONS

The following standard abbreviations for units of measurements and other scientific/technical acronyms and terms are found throughout this document:

BPSM	Florida Fish and Wildlife Conservation Commission, Bureau of Protected Species Management
CERP	Comprehensive Everglades Restoration Plan
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CZS	Chicago Zoological Society
DERM	Miami-Dade Department of Environmental Resources Management
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended
FDEP	Florida Department of Environmental Protection
FDNR	Florida Department of Natural Resources
FIND	Florida Inland Navigation District
FMRI	Florida Fish and Wildlife Conservation Commission, Florida Marine Research Institute
FPL	Florida Power and Light Company
FR	Federal Register
FWC	Florida Fish and Wildlife Conservation Commission
FWC-DLE	Florida Fish and Wildlife Conservation Commission Division of Law Enforcement
FWS	U.S. Fish and Wildlife Service
GDNR	Georgia Department of Natural Resources
GIS	Geographic Information System
GPS	Global Positioning System
HBOI	Harbor Branch Oceanographic Institute
HWG	Habitat Working Group
IOWG	Interagency Oceanaria Working Group

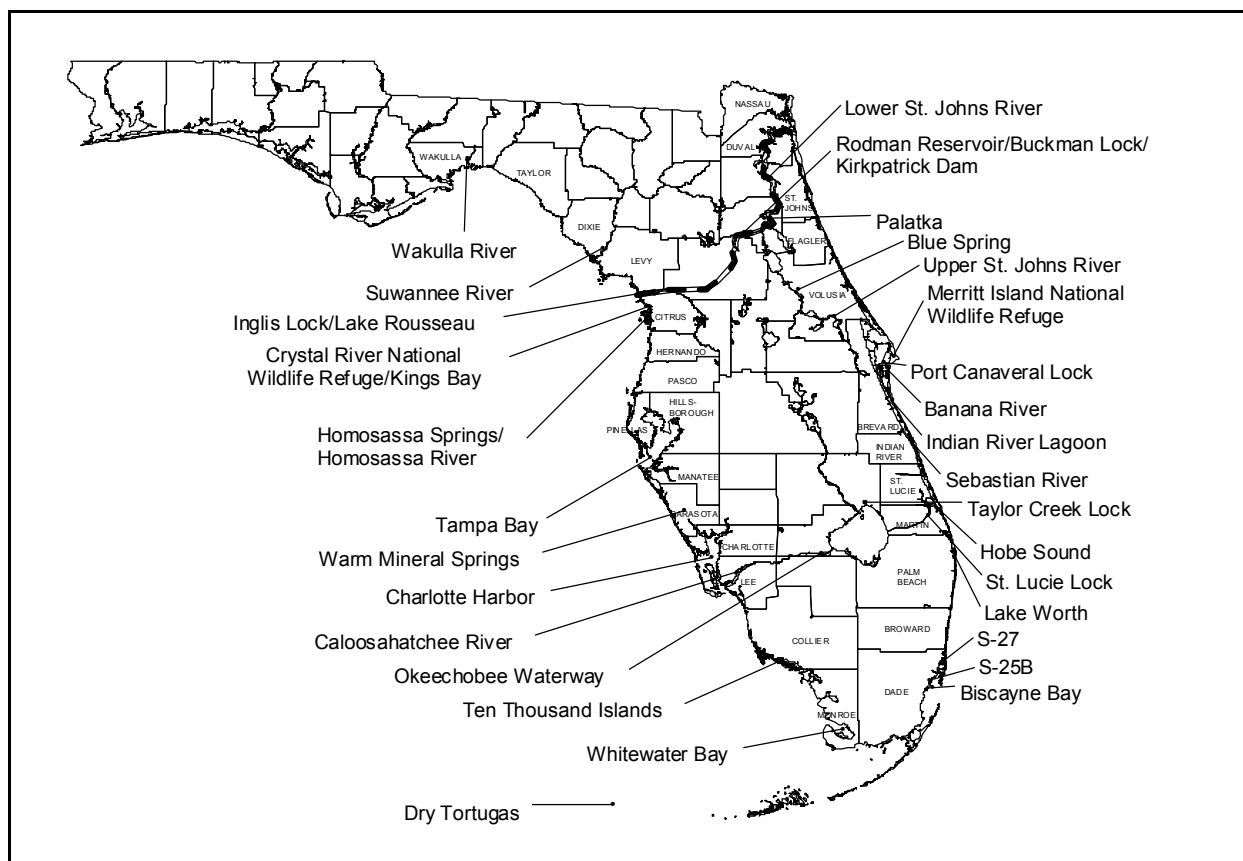
LIST OF ACRONYMS AND ABBREVIATIONS

LOA	Letter of Authorization
LE	Law Enforcement
MIPS	Manatee Individual Photo-Identification System
MML	Mote Marine Laboratory
MMPA	Marine Mammal Protection Act of 1972, as amended
MMPL	Marine Mammal Pathology Lab
MNPL	Maximum net productivity level
MPP	Manatee Protection Plan
MPS	Manatee protection system
MPSWG	Manatee Population Status Working Group
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NSAV	Native submerged aquatic vegetation
NWR	National Wildlife Refuge
OC	The Ocean Conservancy (formerly the Center for Marine Conservation)
OSP	Optimum Sustainable Population
PIT	Passive Integrated Transponder
SAV	Submerged aquatic vegetation
SMC	Save the Manatee Club
USCG	U.S. Coast Guard
USGS-Sirenia	U.S. Geological Survey, Sirenia Project
USN	U.S. Navy
VHF	Very high frequency
WMD's	Water Management Districts
C Fish Industry	Commercial Fishing Industry
Local Gov'ts	Local Governments
M Industry	Marine Industries
Oceanaria	Cincinnati Zoo, Columbus Zoo, Homosassa Springs State Wildlife Park, Living Seas, Lowry Park Zoo, Miami Seaquarium, Mote Marine Laboratory, Sea World Florida and California, South Florida Museum
Photo-ID	Photo-identification
P Industry	Power Industries
R Fish Industry	Recreational Fishing Industry

LIST OF ACRONYMS AND ABBREVIATIONS

C	Centigrade
cm	centimeters
ft	feet
hrs	hours
K	carrying capacity
kg	kilograms
km	kilometers
lbs	pounds
m	meters
mi	miles
min	minutes
ppm	parts per million
%	percent
≤	less than or equal to
°	degrees

Florida Coastal Counties and Other Sites Referenced in the Florida Manatee Recovery Plan



PREFACE

This Florida Manatee Recovery Plan revision adds new and refines existing recovery program activities for the next five years. The Recovery Plan is composed of four major sections:

1. **Introduction:** This section acquaints the reader with the Florida manatee, its status, the threats it faces, and past and ongoing conservation efforts. It also serves as a review of the biological literature for this subspecies.
2. **Recovery:** This section describes the goal of the plan; outlines an upcoming status review; presents reclassification and delisting criteria based upon the five listing/recovery factors and population benchmarks to assist in evaluating the status; objectives, strategy and actions or tasks needed to achieve recovery. These recovery tasks are presented in step-down outline format for quick reference and in a narrative outline, organized by four major objectives: (1) minimize causes of manatee disturbance, harassment, injury and mortality; (2) determine and monitor the status of the manatee population; (3) protect, identify, evaluate, and monitor manatee habitats; and (4) facilitate manatee recovery through public awareness and education.
3. **Implementation Schedule:** This section presents the recovery tasks from the step down outline in table format; assigns priorities to the tasks; estimates the time necessary to complete the tasks; identifies parties with authority, responsibility, or expressed interest in implementation of the tasks; and estimates the cost of the tasks and recovery program.
4. **Appendices:** This section presents additional information utilized by the FWS and Recovery Team to draft this revision.

