

RECOMMENDED ACTION PLAN

In this Section, the results of analyses of existing conditions are used to develop and describe a comprehensive program to protect manatees and their habitat in St. Johns County while minimizing the impacts to boaters and owners of waterfront property. The goal of this MPP is to maintain or decrease the already low level of watercraft-related manatee mortalities in St. Johns County in order to keep the USFWS designation of St. Johns County as 'medium risk' for manatees.

Because watercraft-related manatee mortality in St. Johns County has been minimal (i.e., less than one/yr as an average over any ten-year period), no new zones are proposed and no changes are recommended to the current speed restriction zones. Recommendations are made, however, for a variety of actions the County could pursue when/if the rates of watercraft and/or other human-related manatee mortality increase or if the Commission chooses to do so.

Opportunities are identified and suggested for initiatives that will enhance public education and awareness about manatees and their habitat. Potential funding sources, including federal and state governmental entities and non-governmental organizations (i.e., foundations, trusts) that may provide financial assistance toward implementing components of this plan are also identified.

Because a significant proportion of manatee-related activities are beyond the sole control of St. Johns County, this Section also describes a process for enhancing inter-governmental communication and coordination.

A. Habitat Protection

This Section identifies and describes recommendations for initiatives that will maintain and enhance manatee habitat in St. Johns County.

1. Foraging Habitat

Analysis of manatee sighting records and the results of vegetation mapping suggest that relatively little is known about the foraging habits and habitats of manatees in St. Johns County. To address these shortcomings, the County could consider enlisting the support of environmental professional(s) and/or volunteers who would work under the direction of a suitably qualified environmental professional. Monitors could (with advance concurrence by FWC and FWS) follow individual manatees and, following a monitoring protocol, document foraging activities and other behavior. Understanding the feeding behavior and food resources (i.e., type, abundance, distribution, seasonal variation...) that are available at different times of the year would enhance the County's ability to protect manatees while they are in County waters. If and when such a study is developed and implemented, it should be developed and implemented in coordination with FWC and FWS. Due to the apparent higher numbers of manatees, it is suggested that implementing such a study in the St. Johns River would be a higher priority than the Matanzas-Tolomato-AICW complex. With adequate supervision, such a study could be conducted by volunteers with supervision by Sea Grant and/or GTMNERR staff.

Additionally, because it appears that little is known about the spatial (and seasonal) distribution of seagrasses (marine/estuarine waters) and eel grass (freshwater), it is recommended that research be conducted to better understand the local distribution of these species. A detailed literature search could be followed by field assessments, if necessary. SJRWMD would be a likely partner for such an endeavor in the St. Johns River; GTMNERR would be a likely partner in the Tolomato-Matanzas-Guana-AICW area. The St. Augustine the Beach, Port and Waterway District might also provide assistance (and/or funding) for such work.

2. Fresh Water Sources

Although in many areas of Florida, sources of fresh water (e.g., springs) provide considerable benefit for manatees, there are no springs in St. Johns County that have been documented to attract large numbers of manatees. There are, however two notable springs that discharge sizable volumes of fresh water into waterbodies that are accessible to manatees.

The first of these freshwater springs was described in the description of nearshore habitat (Section A), due to it's location in the Atlantic Ocean approximately 2.5. miles east of Crescent Beach. The results of manatee surveys do not indicate that this offshore introduction of freshwater into the marine environment attracts manatees, but it could be that no manatees have been seen there because no surveys have been conducted at that location.

The second site is located approximately 1850' north of the Shands (S.R. 16) Bridge over the St. Johns River (Appendix A). An estimate of the rate of discharge that was made in 1996, suggested an extremely low flow of 1 ft³/sec. Perhaps attributable to this low flow and perhaps because of its location near the middle of the River (where manatees are rarely observed) this site has not been documented to attract manatees. However, due to consistent manatee presence in the shoreline areas of the River, it is likely that the area around the spring boil is not surveyed.

Manatees have been observed in upstream reaches of several creeks and waterways in both the western and eastern areas of the County (e.g., Trout Creek, Julington Creek, Moultrie Creek), but no data are available indicating that fresh water is the attractant in these areas. It is recommended that monitoring be done in these areas to determine and document the use (or lack thereof) by manatees.

3. Water Quality

As described previously, water quality varies considerably throughout St. Johns County. Areas that are below applicable standards have been identified through FDEP's identification of 'Impaired Waters' and action plans are in place to address the sources of pollutants. Examples of actions already underway include the SJRWMD's Surface Water Improvement Plan for the St. Johns River, the work of the Guana, Tolomato, Matanzas Shellfish and Water Quality Task Force focusing on its water bodies and the County's own initiatives to upgrade stormwater systems and replace septic systems with efficient water treatment facilities.

Based on these on-going activities, no additional water-quality related improvements appear necessary to ensure that manatees are not subjected to water quality that would result in sickness or death.

4. Habitat Acquisition Areas – Environmentally Sensitive Lands

As described in the Inventory of Existing Conditions, the County is presently involved in partnerships with a variety of federal, state and regional entities to identify and acquire environmentally sensitive lands. A significant proportion of the marshlands adjacent to the County's major waterways are already in public ownership and under governmental management. Acquisition of waterfront tracts in the St. Johns River that are already on the County's Greenways/Blueways Master Plan and St. Johns River Blueway Proposal (Appendix H) would also likely help to protect manatees.

Two potential improvement opportunities that the County could consider which would have the potential to improve conditions for manatees appear feasible:

1. The County could ensure that the presence of manatee habitat would be a positive review criterion for the LAMP, which would boost the chances of acquiring water front tracts.
2. Manatee presence data from FWC, Jacksonville University and the Sirenia project could be further analyzed to determine if there are secondary congregating areas (it is known that there are no primary sites in St. Johns County) and acquisition initiatives could then target preserving those secondary sites.

5. Contaminant and Pollution Exposure

Through St. Johns County's compliance with Section 303(d) of the Clean Water Act, waterways that are considered impaired have been identified, and steps are being developed or implemented to address these situations.

In addition to these impaired waterways where water quality problems are chronic, there is the potential for acute water pollution through catastrophic events (e.g., hurricanes, oil or fuel spills). To reduce the potential for negative impacts, the State of Florida (FDEP or WMD) currently requires that permit applicants who wish to construct a new or expand an existing marina develop a Fuel Spill Contingency Plan as part of the Environmental Resources Permitting process. St. Johns County has also made a commitment to seek implementation of 'Marine Best Management Practices'. Additional steps that St. Johns County could consider to further protect manatee from potential exposure to pollutants include:

- a) Urging/requiring existing marinas to make upgrades to meet 'Clean Marina' Standards.
- b) Urging/requiring existing marinas (and other facilities that store or sell fuel and which may be exempt from the *requirement* to develop petroleum containment plans) to voluntarily develop and implement such plans.
- c) To the extent that it has not already done so, through its Mosquito Control District and Public Works Departments, St. Johns County could work with FDEP, the University of Florida's Institute of Food and Agricultural Sciences, SJRWMD and other concerned agencies to limit the application of pesticides and herbicides that could potentially impact manatee habitat. Floating plants that are treated with herbicide may be carried into manatee habitat, may be ingested by manatees, and/or their decomposition by-products may result in unacceptable accumulations of

organic sediments on the bottom of local waterways. Consequently, St. Johns County could work with SJRWMD and others to explore methods (e.g., mechanical harvesting, biological controls) for removing floating vegetation from its waterways.

- d) Because non-point source pollutants are the most difficult to identify and address, St. Johns County could develop, distribute and/or make available brochures which identify practices for 'how to be a good neighbor' for waterfront property owners.

6. Resting, Loafing and Calving Areas

Because St. Johns County was not one of the 13 'key counties' where human-related manatee mortality was the highest, research and/or monitoring to document resting, loafing and calving areas has not been a priority in St. Johns County. In other areas of Florida, however, data have suggested that the narrow, comparatively quiet upstream waters of tidal and freshwater creeks provide important refuges for manatees, particularly during calving. It is possible that such sites exist in St. Johns County, but that there has been no research that would result in these locations being identified.

Manatees have been documented to be present in various canals creeks and waterways within the County, and the County could set up a program to document the specifics of manatee use at particular sites. If specific locations where manatees gather are identified, investigations could be made to help identify the factors (e.g., water flow (or lack thereof), thermal stratification, salinity variations...) which make the sites attractive. By recording the type of activity, frequency of use and travel patterns, the County would be in a more informed position to determine if any additional manatee protection initiatives are warranted. The County could consult with FWC to develop protocols for monitoring/observations to ensure that data collection practices are consistent with other programs and to prevent unnecessary disturbance of manatees. It is recommended that fieldwork could be conducted/organized by Florida Sea Grant staff and make use of volunteers who would likely be interested in becoming involved with such a project.

B. Manatee/ Human Interaction

In over 30 years of monitoring, there have been no instances in St. Johns County where there have been any manatee deaths as a result of any human-related cause other than watercraft. As the County's population increases, though, there is the likelihood of increased interaction between man and manatees. Two potential opportunities are suggested as methods that St. Johns County could implement to reduce the possibility that a human-related manatee death would occur:

- 1) As described more fully in the Section on Education, the County could advance the awareness of the public about the presence of manatees in local waters. Public Service announcements on radio, TV 'infomercials', including the County's television station and inserts into vessel registration mailers are examples of proactive initiatives that the County could consider as ways of trying to keep human-related manatee mortality non-existent.
- 2) In other areas of the state, manatees have become trapped in storm drains and culverts, and FWC has recommended that counties consider retrofitting these structures with grates to prevent manatee entrapment. Based on research performed during development of this Plan, it appears that this problem has only occurred in one instance