

## Manatees and Florida Ports

The Department of Environmental Protection/Bureau of Protected Species Management

### Introduction

The development, maintenance and expansion of port facilities and inlets are significant activities in Florida's coastal waters. These activities can have many potential effects on the Florida manatee population due to alteration of habitat, habitat use patterns and direct physical threats from dredging, material transport, vessel access, blasting and other construction activities. Therefore, careful planning of all port and inlet projects with a responsible eye toward manatee and manatee habitat protection is essential. Often, Department approvals may have special conditions for the protection of manatees and their habitat. This document addresses port-related manatee concerns of the Bureau of Protected Species Management.

**Maintenance Dredging or Expansion of Ship Berths, Navigational and Inlet Channels:** Maintenance dredging may include use of hopper, pipeline or clam shell/dipper dredges and is typically a 24-hour-per-day operation. Construction related equipment, (supply barges, crew boats, etc.) and activities can be active away from the dredge platform itself. Expansion projects may include constructing new docking facilities and dredging new berths and channels or increasing the width, depth or alignment of existing channels.

*Manatees may be injured or killed during port maintenance or expansion activities by, 1) being struck by vessels and/or propellers, or 2) being crushed between vessels and the bottom, or between vessels and docking facilities. Indirect effects may include the destruction of seagrass resources, loss of foraging sites, and alteration of essential behavior, such as failing to use primary thermal aggregation sites and travel corridors.*

**The Use of Explosives (Blasting):** Explosives are sometimes used to remove or loosen hard substrate from channel bottoms during the creation or expansion of navigational channels. Additionally, explosives are some times used during the demolition of in-water structures.

*The use of explosives in-water causes a shock- wave which will injure or kill marine life, including manatees, even at significant distances from the actual blast. In the immediate vicinity of any in-water explosion, seagrass and other benthic resources are likely to be destroyed due to shock-wave effects or disbursed debris.*

**Sediment Disposal :** This activity includes transporting dredged sediments either by barge or pipeline to upland, spoil island, beach, and in-water offshore or nearshore disposal sites. Pipeline transport is generally used to traverse shallow water to nearby (within several miles) upland or in-water spoil sites. Barges may also be used for traversing shallow water to nearby spoil sites, but they are necessary to access offshore disposal sites.

*Sediment disposal may effect manatees and seagrass or submerged aquatic vegetation (SAV) in several ways. Pipeline transport can benefit manatees by reducing vessel traffic, but may adversely effect seagrass resources or reduce manatee access to nearshore foraging sites. Barges increase vessel traffic and the potential for vessel/manatee collisions. Barge traffic over shallow waters may propeller scar seagrass meadows and/or suspend sediments into the water column causing loss of seagrass through sediment smothering or reduction of light penetration. However, barges are used effectively in offshore waters and the chance of an interaction with a manatee is greatly reduced after these vessels move into ocean waters. In-water disposal of dredge spoil can lead to dramatic seagrass loss if disposal sites are located in or adjacent to seagrass communities.*

**Manatee Aggregation Sites:** For reasons related to ease of access, port facilities have been located in close proximity to large inlets that are either natural or man made. This is also true for a number of manatee aggregation sites. Inlets also are areas of high water quality allowing for the most robust growth of seagrass, which manatees are attracted to as foraging sites. Additionally, in several cases large power

plants with artificial thermal discharges have been constructed near these inlets. These artificial thermal discharges have become important warm water refuges for manatees during the cold season. *Large numbers of manatees in close proximity to port facilities, heavy vessel traffic and regular maintenance dredging activities increases the opportunity for direct adverse effects to manatee behavior and movement patterns, mortality and injury rates, and foraging habitat. Disturbance to manatees at significant thermal refuge sites during the cold season could cause catastrophic losses to regional manatee populations. Additionally, routine disturbances to significant foraging areas, travel corridors and calving areas could have significant negative effects to regional manatee populations.*

**Seagrass and Submerged Aquatic Vegetation (SAV):** Seagrass resources are also commonly abundant near inlets due to the exceptional water clarity, suitability of sediments and prominence of shallow flood shoals near ocean inlets. Activities such as dredging may increase turbidity, reduce water clarity, and disturb existing sediments causing the destruction or reduced health of seagrass communities.

*Seagrass resources provide significant habitat for a diverse group of organisms and provide vital foraging resources for manatees. Activities resulting in the degradation or loss of seagrass should not be an acceptable practice. Seagrass in close proximity to thermal refugia, where manatees are dependent upon food resources being nearby, should be considered essential habitat and receive the highest level of protection.*

### **Review of Proposed In-water Activities by the Bureau of Protected Species Management (BPSM)**

When in-water construction activities are proposed, the effects of these activities can often be minimized by implementing procedures developed by the BPSM and other organizations involved in the permitting process. However, there are projects proposed in areas that are determined to be critical to manatee survival, and avoiding adverse effects to manatees or their habitat cannot be reasonably assured. In such cases, the BPSM will recommend denial. The following permit conditions are examples of procedures that can minimize the adverse effects of in-water construction. This list is not all inclusive and these conditions are not suitable for all projects, therefore each project must be reviewed on a case by case basis.

Construction vessels shall operate at “no wake/idle speeds within the construction area and where the draft of the vessel provides less than a four-foot clearance from the bottom.”

Manatee observers shall be deployed on vessels in the construction area. If manatees are sighted within 50 feet of in-water construction equipment, all work shall cease until the manatee departs the area of its own accord.

Temporary manatee and manatee habitat warning signs shall be deployed at the perimeter of the construction site or existing habitat.

Nighttime activities shall not occur in some circumstances.

Implementation of a construction window (e.g. “no in-water construction from November through March”) is instituted to avoid manatee aggregation periods at a given site.

After reviewing the major ports of Florida, the BPSM has identified those ports that are currently in the immediate vicinity of manatee aggregation areas or significant manatee habitat. The identified ports include;

Jacksonville Ports	Port Canaveral
Port of Ft. Pierce	Port of Palm Beach
Port Everglades	Port of Miami and the Miami River if applicable
Port of Tampa	Port Manatee

Listed below is a short synopsis of the manatee and seagrass concerns at each of these ports. In addition to these ports the Bureau has concerns of possible port development in several other areas. Preliminary review for port facilities has occurred for Ponce inlet. Additional areas that may consider this type of facility include Collier and Lee Counties. The Bureau would have grave concerns regarding new port developments in areas that provide significant manatee habitat.

**Jacksonville Port:** Port facilities are located at various locations along the St. Johns River including Blount Island, Tallyrand and Mayport.

Travel corridors: Manatees use the St. Johns River extensively as a migratory corridor traveling in and out of this river system.

**Port Canaveral:** Port facilities are located immediately adjacent to the inlet and east of the navigation lock. Many manatees have suffered watercraft caused mortalities in the vicinity of these locks.

**Aggregations:** Manatee counts at the Cape Canaveral power plant in Titusville have ranged as high as 585 on a single day count during the winter season

Feeding habitat: Manatees use the Banana and Indian Rivers as primary feeding areas.

Travel corridor: Manatees travel regularly through the port facilities as they move from the Banana and Indian Rivers to the Atlantic Ocean via the navigation locks and the inlet at Port Canaveral.

**Port of Ft. Pierce:** Port facilities are located directly to the west of the Ft. Pierce Inlet on the eastern edge of the city of Ft. Pierce.

Aggregation: The Ft. Pierce Power Plant located approximately 0.5 miles from port facilities has had a high count of manatees during the cold season. Taylor creek is an important freshwater source with documented heavy manatee use located about the same distance to the north as the power plant is to the south.

Feeding habitat: Seagrass resources are located in the Lake Worth Lagoon in the immediate vicinity of the port including Peanut Island. Other feeding locations favored by manatees using this area are located north in Jupiter and Hobe Sounds.

Travel corridor: Manatees travel past these port facilities during their seasonal migration to warm water refuge areas, their feeding areas north and south of Palm Beach. Manatees also travel out the inlet.

**Port Everglades:** Port facilities are located just south of the inlet.

Aggregation: The port Everglades power plant has had single day counts of 276 manatees. The discharge canal is longer than most (1 mi. approximately) and flows into the ICW south of the port.

Feeding Habitat: Manatees travel south from this area during the winter, to feed in Biscayne Bay in Dade County.

Travel corridor: Manatees travel north and south past the port facilities as well as out the inlet.

**Port of Miami:** Port facilities are located on Dodge and Lummus Islands in downtown Miami just north of the mouth of the Miami River. Extensive port facilities are located upstream on the Miami River, however they are not managed by the Port of Miami and operate as many small individual facilities serving modest size ocean going vessels that trade mostly with Caribbean nations.

Feeding habitat: Manatees feed particularly on the extensive seagrass meadows located immediately south of the Port of Miami. Other feeding locations are located throughout Biscayne Bay.

Travel corridors: Manatees move from feeding locations in Biscayne Bay into the Miami River and the Little River throughout the year. They also travel through Government Cut.

**Port of Tampa:** Port facilities are located at the mouth of Old Tampa Bay on the southwest corner of the Interbay Peninsula adjacent to MacDill Air Force Base. Aerial survey data indicate that manatees frequent the areas immediately adjacent to and across from the port both in open water and associated with extensive seagrass communities.

**Aggregation:** The maximum count of manatees using warm water refuge sites in Tampa Bay was 190 animals. Bartow Power Plant (Florida Power Corporation) is located directly across the mouth of Old Tampa Bay from the Port of Tampa, and this plant had a high count of 75 manatees during the cold season.

**Feeding habitat:** Manatees feed on seagrass found in shallow waters along the shoreline throughout Tampa Bay. Manatees move up from more southerly waters and down from more northerly waters to use the Tampa Bay system.

**Travel corridor:** Manatees travel north and south past port facilities and across open waters of Old Tampa Bay in the vicinity of the port placing them in shipping lanes associated with this facility.

**Port Manatee:** Port facilities are located just south of the Hillsborough/Manatee County Line and Piney Point along southeastern Tampa Bay. The port is approximately two miles north of Bishop Harbor and is surrounded by vast seagrass communities with a lack of seagrass evident along the channel path leading into the port.

**Aggregation:** The maximum count of manatees using warm water refuge sites in Tampa Bay was 190 animals. The high manatee count at the Tampa Electric Company's (TECO) Big Bend Power Plant located on the eastern shore of Tampa Bay to the north of the port was 120 animals during the cold season.

**Feeding habitat:** Abundant seagrass communities flourish at the mouth of the port and in a wide band (1/2-1 mile wide) along the shoreline to the north and south of port facilities. Manatees forage on these seagrasses throughout the year, but these seagrass meadows are especially important to manatees that move south from the TECO power Plant during the passage of cold fronts during the winter.

**Travel corridor:** Manatees feed on seagrass at the entrance to the port and move north and south along past port facilities as they move around Tampa Bay.

**Port Sutton:** Port facilities are located in extreme northeastern Hillsborough Bay southeast of Davis Island and to the south of Rockport. The port is part of part of urbanized city of Tampa and extends into the entrance of McKay Bay.

**Aggregation:** A high count of 12 manatees was made at the port and port facilities are close to other aggregation sites in Hillsborough Bay including the Alifa River and Tampa Electric Company's Big Bend Power Plant.

**Feeding habitat:** Manatee travel south and west from the port to feed on seagrass in Tampa Bay and Old Tampa Bay. Seagrass has returned to southern Hillsborough Bay due to improving water quality, so manatees have to use these foraging resources as well.

**Travel corridor:** Manatee move into and out of McKay Bay by port facilities where the water body is relatively constricted. Manatees also must pass the port facilities when entering and leaving the Hillsborough River.