

Environmental Concerns in Coastal Areas

There are several animals and plants in coastal areas that are protected under the Federal and State laws for the protection of Threatened and Endangered species (i.e., “listed species”). All construction or maintenance projects that will occur in coastal areas are reviewed during design to ensure that no impacts to listed species will occur. This sometimes results in work being done in such a manner as to avoid potential harm to the listed species. Notes and/or permit conditions address this. Therefore, to avoid the likelihood of impacts, it is essential that construction occurs according to the notes and permit conditions. Following is information about commonly encountered listed species.

Manatee Protection

Manatees are protected under the “Florida Manatee Sanctuary Act”, which was adopted by the Florida Fish and Wildlife Conservation Commission (FWC) to protect manatees from disturbance, harassment, or injury. Manatees are attracted to seagrasses and warm waters. Manatee protection zones have been placed in areas where manatees are frequently sighted or known to inhabit. Activity, without restrictions, is considered to be a threat if there is:

- Injury or death to manatees
- Harassment of manatees
- Destruction of essential manatee habitat (i.e. seagrasses)



If construction activity results in impacts affecting manatees and their habitat, certain measures must be taken. The following instructions from FWC “Standard Manatee Conditions for all In Water Work” (for more detailed information visit: http://myfwc.com/docs/WildlifeHabitats/Manatee_StdCondIn_waterWork.pdf).



- All personnel associated with the construction project shall be instructed of the potential for the presence of manatees. All personnel are responsible to observe water-related activities for the presence of manatees. (It is also commonly required to have a certified manatee observer on site during construction activities.)
- All personnel must be made aware of the civil and criminal penalties associated with the harming, harassing, or killing of manatees.
- At least two temporary signs concerning manatees must be installed prior to commencement of construction. A sign, measuring at least 3’ by 4’, reading “*Caution: Manatee Area*” should be placed in a prominent location visible to water related crew. If vessels are required for the project, a sign, at least 8½” by 11”, reading *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shut down if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. The U.S Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580 x 127) for north Florida or in Vero Beach (1-772-562-3909) for south Florida.* All signs must be removed by the permittee at the completion of the project.
- Erosion control structures must be constructed of materials that will not lead to the entrapment or entanglement of manatees. The structures cannot block manatee access to any manatee habitat.
- All vessels associated with the construction project shall operate at a “no wake/idle” speed at all times in the area of construction and in water where the draft of the vessel provides less than a four-foot clearance from the bottom. Whenever possible, all vessels should follow routes of deep water.
- If a manatee is observed within 100 yards of activity associated with the project, precautions must be taken to ensure the safety of the manatee. Operation of all moving equipment must cease if a manatee approaches within 50 feet of the activity. Operations shall not resume until the manatee has departed the project area on its own volition.

Sea Turtles

Although the occurrence of sea turtles is not as likely as that of manatees, the possibility must be considered when working in coastal areas. Juvenile turtles have been known to utilize the Intercoastal Waterway seagrass beds as nurseries. Therefore, the presence of seagrass could indicate the potential for juvenile sea turtles, and the following measures should be taken ensure their safety:

- The construction crew needs to be made aware of the potential for the presence of sea turtles
- An observer is required to be on site to watch for the presence of turtles during any blasting activity.
- Any construction lighting at the beach or on roads adjacent to a sea turtle nesting beach (e.g., for night work) must take measures to prevent light from trespassing onto nearby beaches, such as having a shielded point source. Lighting can cause sea turtles to become disorientated, which is in violation of Federal and State laws protecting sea turtles.



Benthic Resources (e.g. seagrasses, corals, oyster beds, etc)

Seagrasses and other benthic resources are common in shallow waters that receive ample sunlight. Impacts to benthic resources caused by the operating of vessels or equipment in shallow water, or activities that result in excess sedimentation or the loss of sunlight must

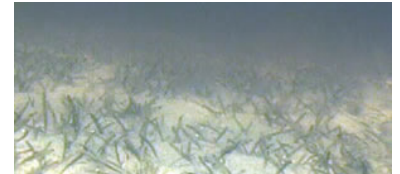


be avoided. Generally, a benthic resources survey is conducted during design and the plans will show the location of the benthic resources in the water. Barges and equipment cannot be stored or maneuvered in areas with seagrasses or corals. The protection of benthic resources is important due to the roles they play in the aquatic environment, which include:

- Providing forage for manatees, sea turtles, and other aquatic wildlife
- Providing shelter for juvenile marine reptiles, finfish and shell fish
- Stabilizing sediments and filtering nutrients that could have a negative impact on coastal habitats, such as coral reefs.

As a result, benthic resources contribute to a higher population of marine species and a healthier environment and economy (i.e. fishing, nature and wildlife tourism). To minimize the impacts to benthic resources during construction, implement the following:

- Avoid navigating watercraft or heavy equipment through shallow waters.
- Avoid placing staging areas (i.e., docks, barges) above seagrass beds. Sunlight is vital for the existence of seagrass.
- Reduce the amount of siltation in areas where seagrasses are present.



If seagrasses or other benthic resources are impacted, for example, by grounding, civil penalties and costs for damage assessment, restoration and long term monitoring could be incurred.

A federally threatened species, Johnson's seagrass (*Halophila johnsonii*), is found between Biscayne Bay and Sebastian Inlet in tidal deltas, sandy shoals and at the mouth of canals. It is typically found at a depth no greater than 9 feet. If there is potential impact to Johnson's seagrass, a seagrass survey will be required by the US Army Corps of Engineers. For more details visit:

<http://sero.nmfs.noaa.gov/pr/docs/JSG%20Survey%20Guidelines.pdf>

Mangroves

Mangroves serve as a habitat for many marine and estuarine species, providing food, shelter and nesting areas, and contributing to the overall health of coastal areas by stabilizing shorelines and protecting them from storms. This improves water quality. Although not listed as Threatened and Endangered, mangroves are protected by state and municipal agencies. Generally, a mangrove survey is conducted during design, and the plans will show the location of the mangroves. Materials and equipment cannot be stored in mangroves, and trimming is not allowed (see below). Three species of mangroves are found in Florida:

- Red mangroves (*Rhizophora mangle*): commonly located near the water's edge and identified by the tangled, reddish roots.
- Black mangroves (*Avicennia germinans*): commonly found in more upland areas at a higher elevation than the red mangrove. This mangrove can be identified by pneumatophores, i.e., projections around the trunk of the tree that resemble fingers.
- White mangrove (*Laguncularia racemosa*): a mangrove occupying areas at high elevations. The tree is identified by light, yellow-green leaves. The root system is not visible.



Red mangroves (*Rhizophora mangle*)



Black mangroves (*Avicennia germinans*)



White mangrove (*Laguncularia racemosa*)

When there is potential for impact to mangrove habitat, it is necessary to notify the appropriate regulatory agencies. Any impacts to mangroves, including removal, trimming, defoliation, or destruction requires a permit that includes application fees, as well as mitigation compensation either in the form of replacement or monetary donation. Fines can be levied by both state and local agencies if mangroves are impacted without obtaining a permit. For details regarding mangrove trimming, including application fees and mitigation visit: <http://www.dep.state.fl.us/water/wetlands/mangroves/index.htm>

For details regarding environmental resource permitting for removal of mangroves visit:

<http://www.dep.state.fl.us/water/wetlands/erp/forms.htm>.

Florida Fish and Wildlife Conservation Commission: Hotline: (888) 404-3922

Questions regarding sea turtles and manatees: (850) 922-4330

Florida Department of Environmental Protection: (850) 245-2118

WPB General Number: (561) 681-6600 *It is recommended to call this office regarding seagrasses.*

Questions regarding mangroves: (850) 245-8482

Florida Department of Transportation: Fernando Ascanio: (954) 777-4665

