



**U.S. FISH & WILDLIFE SERVICE
CARIBBEAN ECOLOGICAL SERVICES FIELD OFFICE**

Conservation Measures for sea turtles in Puerto Rico and the U.S. Virgin Islands

Section 7 (a)(1) of the Endangered Species Act (ESA) charges Federal agencies to aid in the conservation of listed species, and section 7 (a)(2) requires the agencies, through consultation with the U.S. Fish and Wildlife Service (Service), to ensure their activities are not likely to jeopardize the continued existence of listed species or adversely modify designated critical habitats. Section 7 applies to the management of Federal lands as well as Federal actions that may affect listed species, such as Federal approval of private activities through the issuance of Federal funding, permits, licenses, or other actions. Any person that injures, captures, or kills a sea turtle, destroys a nest or eggs, are subject to penalties under the ESA. If Federal funds or permits are needed, the funding or permitting agency should initiate Section 7 consultation with the Service. To initiate a consultation under the Section 7 of the ESA, you must submit a project package with the established minimum requirements. These conservation measures should be incorporated into the project plans to minimize possible impacts to the species. Download the [project evaluations fact sheet](#) to learn more about the requirements or visit our [project evaluations webpage](#).

In Puerto Rico and the U.S. Virgin Islands (USVI), the three most common species of sea turtles nesting are: leatherback sea turtle “tinglar” (*Dermochelys coriacea*), hawksbill sea turtle “carey” (*Eretmochelys imbricata*), and green sea turtle “peje blanco” (*Chelonia mydas*). A few nests of the olive ridley “golfina” (*Lepidochelys olivacea*) have been documented in Puerto Rico and several nests of the loggerhead sea turtle “cabezona” (*Caretta caretta*) have been documented in St. Croix, USVI. All sand beaches, including mixed sand and gravel (shell, coral rubble) beaches and some mangrove areas, throughout Puerto Rico and the USVI have the potential for sea turtle nesting.

Coastal development without comprehensive sea turtle conservation measures may result in habitat degradation and destruction, resulting in adverse impacts to sea turtles and their nesting habitat. Some of the activities that may affect these species and their habitat are: destruction of native coastal vegetation, installation of permanent barriers or structures at their habitat, installation of artificial lights that can be seen from the beach, vehicular traffic or parking within the beach areas, increased predation or damage by pest species (rats, mongooses, dogs, horses, and ants), and root intrusion into nesting habitat from landscapes or exotic vegetation. Artificial lighting may keep females from coming onto the beach to nest and may cause disorientation or miss orientation of both adult female nesting turtles and emerging hatchlings, often resulting in their death. All projects should avoid affecting sea turtle nests and their nesting habitat.

The U.S Fish and Wildlife Service (Service) has developed the following sea turtle conservation measures with the purpose of assisting others to avoid and minimize adverse impacts of existing

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coastal development on sea turtles. These recommendations may be incorporated into new projects and under certain circumstances into existing projects. Depending on the project, additional recommendations can be made besides the ones presented in this document.

1. Avoid the removal of vegetation, fence installation, construction activities, and light installation within 50 meters inland from the high tide. Designate a buffer zone of additional 20 meters, for a total of 70 meters setback and buffer, to minimize indirect impacts from the project and plant salt tolerant native shrubs or trees within the zone (see #14). The setback recommendations do not apply if an existing road is located between the beach and project site. In that case, the road serves as the boundary of the beach.
2. Any temporary or permanent lighting associated to the project should utilize sea turtle friendly lights and fixtures to minimize possible adverse effects of direct, indirect and cumulative lighting on sea turtles, for example, adult or hatchling disorientation. Projects should develop and implement a comprehensive sea turtle lighting plan:
 - a. The concept of sea turtle friendly lighting is to use specific types of light sources that emit a wavelength of 560 nanometers or longer. This wavelength is virtually invisible to sea turtles if viewed indirectly. If the lights can be directly view from the beach, then the light source is paired with a lighting fixture that directly controls the direction and beam spread of the lighting within 70 degrees full cut off. This means that light is effectively and accurately directed at the areas of concern without wasteful light.
 - b. The comprehensive lighting plan should be designed to avoid detrimental impacts of artificial lighting on sea turtles. This plan should be sent to the Service for revision and approval prior to implementation. The plan should form part of the project construction plans outlining the luminaries to be used. The goal of the plan is that lights should not be seen directly, indirectly or cumulatively from the beach. Light management strategies such as shielding, lowering of the lights, locating the lights away from sight view of the beach, using an alternate light source such as Low Pressure Sodium Vapor lights, red or amber LEDs and planting of vegetation barriers are some of the available alternatives to reach the plan goal.
 - c. LEDs should be of the proper wavelength (true red or amber colored diode), shielded or recessed. Do not use white or blue lights with filter material, sleeves or other covering.
 - d. For more information on sea turtles and lighting you may also refer to the following Florida Fish and Wildlife Commission website: <https://myfwc.com/wildlifehabitats/wildlife/sea-turtle/lighting/>
 - e. In already constructed projects, all lights visible from the beach should be eliminated, modified or relocated so that are not visible from the beach.

3. For Puerto Rico, the project should also comply with Puerto Rico Law 218-2008, Control and Prevention of the Lighting Pollution of Puerto Rico and the PR EQB 2016 Regulation to Control and Prevent Light Contamination. These laws and regulations clearly establish public policy that acceptable illumination fixtures are those that shield the light source to minimize glare impact on habitats. This applies to existing and new construction and for private lighting systems, and is intended develop new strategies to eliminate excessive lighting in all areas, particularly in beach zones. For sea turtle beach areas this Regulations requires that lights have a 70 degree cut off in addition to being sea turtle friendly light.

For the U.S. Virgin Islands, the project must comply with VI Code Title 12, Chapter 2, Section 105, where it outlines the Prohibited Activities in regards to Endangered or Threatened wildlife. These laws state, "No person may harass, injure or kill, or attempt to do the same, of an endangered or threatened species". The use of non-friendly sea turtle lighting would be considered harassment towards these endangered and threatened species.

4. No vehicles, equipment, staging or debris shall be used, parked or stored on the primary dune or in vegetated areas. Staging/parking/storage areas should be located on paved surfaces as much as possible and outside vegetated areas or the primary dune.
5. Enhancing the coastal vegetation by planting native coastal species (e.g., sea grapes, buttonwood, icaco, etc.) is recommended within the maritime zone.
6. During nesting season (March 1 to November 30), a qualified sea turtle monitor shall survey each beach work area during the early morning hours for possible sea turtle nests. Any nests found within the area must be marked or flagged in place. Outside of peak nesting season, beaches where work will occur shall be surveyed during the early morning hours at least twice a week. If required, debris removal and construction activities on beaches shall initiate only after the sea turtle monitor has completed surveys that morning and nests are clearly marked.

Sea turtle trained personnel shall conduct surveys following PRDNER/USVI-DPNR protocols (see attached list of PR and USVI sea turtle groups). Nests located adjacent to the work area shall be clearly identified and a 10-foot square roped off buffer, and an unobstructed path seaward from the nest to the water shall be established. Sea turtle monitoring groups shall have site-specific information for nests in their areas and inform work crews of areas to avoid.

7. If a sea turtle crawl is encountered the working crew should not disturb the integrity of the crawl and a sea turtle monitor should be contacted and the Agencies should be notified. Care must be taken to avoid walking or driving equipment over or near a crawl, so potential nests are not damaged.
8. If silt fencing is going to be used during the highest nesting season (April through November), the agencies should be contacted for technical assistance.

9. If the beach topography is altered by construction activities during the nesting season, the sand should be re-accommodated at the end of each day, so that sea turtles are not impeded to come ashore. For example, raking of tire ruts, filling pits or holes, and smoothing out the sand. Any potential obstructions (e.g. construction debris, equipment) should also be removed from the beach by the end day.
10. If during project activities, a sea turtle nest is accidentally damaged, all activities should immediately stop and the PRDNER, the VIDPNR (if in USVI), and the USFWS should be contacted immediately. In addition, authorized sea turtle groups may also be contacted for assistance (see Appendix).
11. If a sea turtle (either adult or hatchling) is observed, maintain at least 50 feet between the turtle and project personnel and contact the PRDNER or VIDPNR and seek the assistance of an authorized sea turtle groups (see Appendix). Allow the sea turtles to crawl unobstructed to the water.
12. If a dead, injured, or sick sea turtle is found or if eggs or nests have been disturbed by other actions, stop all work and contact PRDNER, VIDPNR, USFWS, or the Caribbean Stranding Network.
13. For tourist, residential or hotel projects, remove beach chairs, umbrellas, surfboards, and any other recreational items from the beach on a daily basis and store these items in a designated area away from the nesting habitat.
14. All trash resulting from construction or operation activities should be removed from the beach area and be disposed properly at the end of the day.
15. All sea turtle monitoring activities and measures taken to implement the conservation measures should be clearly documented and included in the final project report.
16. If the project will result in take of sea turtles (kill, harm, harassment, wound, trap, capture or collect) a formal Section 7 consultation must be initiated.

Projects must comply with all State laws and regulations. Please contact the Puerto Rico Department of Natural and Environmental Resources (PRDNER, see Appendix) or the USVI Department of Planning and Natural Resources (VIDPNR), Fish and Wildlife Division (340-775-6762 St. Thomas, 340-773-1082 St. Croix). For projects that are within any USFWS Caribbean Islands National Wildlife Refuges, please contact 786-649-8830.

If you have any questions regarding the above conservation measures, please contact the Service:

- Office phone: 786-244-0081
- Marelisa Rivera, Deputy Field Supervisor
 - Email: marelisa_rivera@fws.gov or mobile 305-304-1814
- José Cruz-Burgos, Endangered Species Coordinator
 - Email: jose_cruz-burgos@fws.gov or mobile 305-304-1386

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APPENDIX

Volunteer sea turtle groups in Puerto Rico are authorized by the PRDNER to conduct certain sea turtle monitoring and management activities. If groups are available to help, coordination with these groups should be well documented as part of the planning and implementation of projects. Be aware that coordination with these groups may not represent an official PRDNER consultation process. Thus, proposed project still need to go through the PRDNER permit and project evaluation process.



In addition to the above listed numbers, you may also contact the DNER Rangers or the Caribbean Stranding Network in case of strandings and rescues.

- DNER Rangers (law enforcement, strandings, rescues):
787-724-5700
787-230-5550
787-771-1124
- Caribbean Stranding Network (strandings and rescues):
787-400-AQUA (2782)

For the U.S. Virgin Islands contact:

- VIDPNR Division of Fish and Wildlife
STX: 340-773-1082
STT/STJ: 340-775-6762
- Sea Turtle Assistance and Rescue (STAR)
Claudia Lombard
STX/STT/STJ: 340-690-0474
- Coral World Ocean Park
Erica Palmer
STT: 340-775-1555
- St. Croix Animal Welfare Center
Michele Mehalick
STX: 340-778-1650
- Virgin Islands National Park
Thomas Kelley
STJ: 340-690-2440