

In the aftermath of the 2017 hurricane season, the United States Virgin Islands (USVI) has been dealing with a large amount of abandoned and derelict vessels as well as large-scale hurricane debris scattered along our coastlines. This debris negatively affects the natural resources the USVI relies on for tourism, food, shoreline protection, cultural value and other ecosystem services. Hurricanes Irma and Maria triggered Presidential Disaster Declarations and subsequent issuance of National Response Framework Emergency Support Function (ESF) – 10 mission Assignment #4340DR-VI-USCG-06 by the Federal Emergency Management Agency under which some vessels were removed. The goal of this project is to remove the vessels that were left behind after the completion of the mission as well as large scale debris such as roofs, beams, and appliances which are now continuing to damage fragile ecosystems throughout the territory.

With the help of federal surveys such as the Caribbean Environmental Response Management Application (ERMA), local government partners, and community organizations, the USVI Department of Planning and Natural Resources (DPNR) has been able to target priority areas that are still in dire need of debris removal as they are damaging priority coastal resources, creating safety hazards at popular recreational beaches, and causing a danger to boat navigation.

**Target Vessel Removals**

ID	Description	Island	Location
STX001	17.7506119944155, -64.6974950004369	STX	Altona
STX002	17.7503870241343, -64.69771200791	STX	Altona
STX003	17.749949991703, -64.697579992935	STX	Altona
STX004	17.7497779950499, -64.6976600401103	STX	Altona
STX005	unidentified hull 1, half submerged	STX	Salt River
STX006	unidentified hull 2, interior mangroves	STX	Salt River

*\*Contractor may submit additional debris to be removed in addition to the vessels as a separate line item*

**Contractor Responsibilities:**

The contractor is being asked to remove derelict vessels and associated loose debris from marine habitats surrounding St. Croix.

1. The contractor will be responsible for providing a detailed proposal including:
  - a. an inventory of vessels to be removed and time schedule (not to exceed 12 months)
  - b. extraction and disposal methods
  - c. a detailed budget.
2. The contractor is required to inspect, identify, and remove any potential environmental hazards that exist in each vessel. This includes fuel, oil, chemicals, and debris surrounding each vessel.

3. The contractor is responsible for obtaining the appropriate disposal permits and costs associated with the disposal.
4. The contractor is required to record data on pounds of debris removed, acreage of cleared debris, and categorical records of debris removed as guided by the Division. All data must be provided to the Department with GPS records and photo documentation.
5. All contractors must follow environmental best management practices which will be provided by the Department, as created by the funding source (NOAA).

**Qualifications** The Department is seeking contractors with local knowledge of each removal site and the surrounding natural resources. Contractors must be licensed and insured to work in the US Virgin Islands. It must be stated which equipment is currently in possession of the contractor or if it must be sub-contracted.



Vessels to be removed from Salt River.

**ENVIRONMENTAL BEST MANAGEMENT PRACTICES (BMPs) / PROJECT DESIGN CRITERIA (PDC) CHECKLIST  
NOAA-FUNDED HURRICANES IRMA-MARIA MARINE DEBRIS REMOVAL PROJECTS – US VIRGIN ISLANDS**

**Executive Summary**

- Avoid and minimize impacts and disturbance to sensitive shoreline, intertidal, and benthic habitats including mangroves, salt marshes, salt ponds, other wetlands, beaches, dunes, tidal flats, natural rocky shorelines, seagrasses, hard-bottom reefs, corals, and coral reefs.
- Avoid and minimize impacts and disturbance to wildlife and fisheries species and their habitats, including all protected species and critical habitat.

**USACE Section 404 Clean Water Act and Section 10 Rivers and Harbors Act Permits**

- Permits may be required if temporary structures or discharge of dredged or fill material are required during marine debris removal activities, including the use of mechanical equipment for marine debris removal.
- If permits are required, several Nationwide Permits may apply for marine debris removal, including NWP #22 (derelict vessel removal). Refer to the NWP corresponding limits, pre-construction notice requirements, and general and regional conditions, as applicable.
- Contact the USACE Jacksonville Regulatory District, Antilles Permit Section (787-289-7040), for specific federal permitting guidance.

**USVI DPNR Permitting and Related**

- DPNR permits or authorizations may be required for some marine debris removal activities. For instance, mangrove trimming for marine debris removal may require DPNR approval. Contact DPNR for specific guidance.

**USVI SHPO Section 106 National Historic Preservation Act**

- Cease all activities involving subsurface disturbance, and immediately contact the SHPO at (340) 776-8605 or by email at sean.krigger@dpnr.vi.gov, if prehistoric/historic artifacts, such as pottery or ceramics, lithic artifacts, historic shipwrecks, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Pre-Columbian, early European, or Colonial settlement are encountered at any time (and leave all artifacts in place). Marine debris removal activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during marine debris removal activities, stop all work immediately and contact the SHPO and local law enforcement.
- For marine debris removal sites that were not already pre-screened during initial SHPO coordination, the SHPO shall be notified of marine debris removal efforts that require substantial ground or bottom disturbance beyond the initial disturbance caused by the marine debris event. The SHPO will be provided with project coordinates and will review the project area and provide notification if historic or archaeological sites are present or are likely present. If no sites are present or are unlikely to be present, the activity may proceed with inclusion of the unanticipated discoveries procedure. If sites are present or are likely present, the SHPO will provide recommendations to avoid or minimize potential effects to the sites. This may include monitoring of project activities by a professional archaeologist or other appropriate measures as determined in consultation with SHPO.
- Be aware of protected archaeological and historic resources in the following locations: Krum Bay Archaeological District and Grambokola Archaeological Site (both near Krum Bay); Columbus Landing Site National Historic Landmark (~5 ac on Salt River Bay). Information on these sites has been provided to DPNR. Contact the SHPO for additional information and assistance, particularly for ground disturbing activities that could affect these sites.

**NMFS Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), Essential Fish Habitat (EFH), and Fish and Wildlife Coordination Act (FWCA)**

**Specific Marine Debris Removal PDCs:**

- Marine debris removal activities are limited to marine debris that poses a threat to human health and safety and/or natural resources (flora, fauna, and their habitats), such as, but not limited to derelict vessels, derelict fishing gear, and various construction/demolition debris related to Hurricanes Irma and Maria.
- Removal of marine debris shall require visual confirmation (e.g., divers, swimmers, camera) that the item can be removed without causing further damage to natural resources.
- If marine debris cannot be removed without causing harm to surrounding coral (ESA-listed or non-listed), the item will be disassembled as much as practicable so that it no longer can accidentally harm or trap species (see further information below under Sensitive Habitat Guidance).

- Monofilament debris will be carefully cut loose from coral (ESA-listed or non-listed) so as not to cause further harm. Under no circumstance will line be pulled through coral since this could cause breakage of coral.
- Marine debris shall be lifted straight up and not be dragged through seagrass beds, coral reefs, coral, or hard-bottom habitats. Trawling also cannot be used as a means of marine debris removal. Debris shall be properly disposed of in appropriate facilities in accordance with applicable federal and territorial requirements.
- An absorbent blanket or boom shall be immediately deployed on the surface of the water around any derelict vessel to be removed if fuel, oil, or other free-floating pollutants are observed during the work. If reportable quantities of fuel, oil, or pollutants are released to the environment during removal operations, a National Response Center (NRC) report shall be filed with the US Coast Guard (800-424-8802).
- All marine debris removal activities must be conducted during daylight hours.

**General In-Water Work PDCs:**

Education and observation:

- All personnel associated with the project will be instructed about the potential presence of species and critical habitat protected under the ESA and MMPA, as well as Essential Fish Habitat (EFH) protected under the Magnuson–Stevens Fishery Conservation and Management Act (MSA). All on-site project personnel will be responsible for observing water-related activities for the presence of protected species and habitats. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing ESA-listed species or marine mammals. To determine which species and critical habitat may be found in the project area, please review the relevant Protected Species Lists at: [http://sero.nmfs.noaa.gov/protected\\_resources/section\\_7/threatened\\_endangered/index.html](http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/index.html). For more information on EFH see [https://sero.nmfs.noaa.gov/habitat\\_conservation/efh.html](https://sero.nmfs.noaa.gov/habitat_conservation/efh.html).

Vessel traffic and equipment:

- All vessel operators must watch for and avoid collision with species protected under the ESA and MMPA. Vessel operators must avoid potential interactions with protected species and operate in accordance with the following protective measures.
- All vessels associated with marine debris removal activities shall operate at “Idle Speed/No Wake” at all times while operating in water depths where the draft of the vessel provides less than a 4-ft clearance from the bottom, and after a protected species has been observed in and has departed the area.
- All vessels will follow marked channels and/or routes using the maximum water depth whenever possible.
- Operation of any mechanical construction equipment, including vessels, shall cease immediately if a listed species is observed within a 50-ft radius of construction equipment and shall not resume until the species has departed the area of its own volition.
- If the detection of species is not possible during certain weather conditions (e.g., fog, rain, wind), then in-water operations will cease until weather conditions improve and detection is again feasible.

All Vessels:

- a. Sea turtles: Maintain a minimum distance of 150 ft.
- b. Marine mammals (i.e., dolphins, whales, and porpoises): Maintain a minimum distance of 300 ft.
- c. When protected species are sighted while the vessel is underway (e.g., bow-riding), attempt to remain parallel to the animal’s course. Avoid excessive speed or abrupt changes in direction until they have left the area.
- d. Reduce speed to 10 knots or less when mother/calf pairs or groups of marine mammals are observed, when safety permits.

Turbidity control measures:

- Turbidity must be monitored and controlled; prior to in-water work turbidity curtains shall be installed as per below. Turbidity curtains may be waived if minimal turbidity will be generated during marine debris removal or if the current is too strong for curtains to stay in place (see #5 below for exceptions).
- 1. Install floating turbidity barriers with weighted skirts that extend to within 1 ft of the bottom around all work areas that are in, or adjacent to, surface waters.
- 2. Use these turbidity barriers throughout construction to control erosion and siltation and ensure that turbidity levels within the project area do not exceed background conditions (i.e., the normal water quality levels from natural turbidity).

- 3. Position turbidity barriers in a way that does not block species entry to or exit from designated critical habitat.
- 4. Monitor and maintain turbidity barriers in place until the authorized work has been completed and the water quality in the project area has returned to background conditions.
- 5. In the range of ESA-listed corals (all of USVI): projects that include upland earth moving must install sediment control barriers to prevent upland sediments from reaching estuarine or marine waters; in addition, turbidity curtain requirements cannot be waived for any in-water project that moves or removes sediments (note that USACE and/or DPNR permits may also be required in such instances, see above). If turbidity curtains are not feasible based on site conditions such as currents or high wave action, additional NMFS ESA consultation may be required.

Entanglement:

- 1. All turbidity curtains, hard and sorbent booms, buoys, anchors, and other in-water equipment must be properly secured with materials that reduce the risk of entanglement of marine species (described below). Turbidity curtains and booms likewise must be made of materials that reduce the risk of entanglement of marine species.
- 2. In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains and boom) must be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water.
- 3. Turbidity curtains, booms, and other in-water equipment must be placed in a manner that does not entrap species within the construction area or block access for them to navigate around the construction area.

Measures to avoid:

- 1. Use of in-water explosives.
- 2. Trawling for debris removal.
- 3. Deployment of anchored items that do not employ stiff, taut, and non-looping anchor lines.
- 4. Dragging marine debris across sensitive habitats - items shall be hoisted or refloated if possible (see further guidance below).

**Sensitive Habitats PDCs and BMPs:**

- Avoid and minimize disturbance to sensitive intertidal and benthic habitats including mangroves, salt marshes, salt ponds, other wetlands, tidal flats, seagrasses, hard-bottom reefs, corals, and coral reefs.

Mangroves:

- Avoid mangrove removal. Mangrove trimming is regulated by DPNR (see DPNR permitting above). Consistent with DPNR authorities, mangrove trimming refers to the minimal cutting (using hand equipment such as chain saws and/or pruners) of lateral branches (i.e., no alteration of the trunk of the tree) in a manner that ensures survival of the tree. Mangrove trimming will be limited to instances where trimming will lessen mangrove impacts during debris removal (e.g., trimming branches penetrating the hull of a derelict vessel or tangled in vessel rigging to prevent further breakage or tearing of branches or uprooting of the tree), or where trimming is necessary for temporary access or debris removal pathways. Mangrove trimming shall be minimized and unnecessary trimming avoided. Mangrove prop roots and pneumatophores will not be trimmed or excessively trampled. Refer to DPNR guidance on approved trimming methods and requirements.
- See also multiple/all sensitive habitat BMPs below.

Seagrasses:

- Impacts to native, non-invasive seagrasses shall be avoided and minimized.
- Be aware of the location of any seagrasses within critical habitat for the ESA-listed leatherback sea turtle at Sandy Point on St. Croix. (see: [https://sero.nmfs.noaa.gov/maps\\_gis\\_data/protected\\_resources/critical\\_habitat/images/leatherbackturtle\\_critical\\_habitat.pdf](https://sero.nmfs.noaa.gov/maps_gis_data/protected_resources/critical_habitat/images/leatherbackturtle_critical_habitat.pdf)). If native, non-invasive, seagrasses are present in marine debris removal sites in this area, follow all seagrass related PDCs and BMPs, with the added requirement that seagrass impacts shall be avoided in leatherback sea turtle critical habitat.

- Avoid/minimize shading of seagrasses with large vessels and barges for more than a few days; move large vessels and barges from over seagrasses and reposition over bare sand or mud substrates when not undergoing active debris removal operations (barge staging areas shall be located outside seagrass and other sensitive habitats).
- See also multiple/all sensitive habitat BMPs below.

Corals and hard-bottom:

- All impacts to corals and hard-bottom shall be avoided and minimized. To support this, coral and hard-bottom surveys shall be conducted in marine debris removal sites within appropriate habitats.
- Be aware of the potential presence of ESA-listed corals including critical habitat for Staghorn and Elkhorn Coral (*Acropora*) ([https://sero.nmfs.noaa.gov/maps\\_gis\\_data/protected\\_resources/critical\\_habitat/images/acropora\\_caribbean\\_critical\\_habitat.pdf](https://sero.nmfs.noaa.gov/maps_gis_data/protected_resources/critical_habitat/images/acropora_caribbean_critical_habitat.pdf)). ESA-listed coral surveys shall be conducted in marine debris removal sites within appropriate habitats. If ESA-listed corals or *Acropora* critical habitat are present, follow all coral and hard-bottom related PDCs and BMPs, with the added requirement that impacts to ESA-listed corals and the essential feature of *Acropora* critical habitat should be avoided.
- Be aware of the location of corals and hard-bottom within leatherback sea turtle critical habitat at Sandy Point, St. Croix, (see: [https://sero.nmfs.noaa.gov/maps\\_gis\\_data/protected\\_resources/critical\\_habitat/images/leatherbackturtle\\_critical\\_habitat.pdf](https://sero.nmfs.noaa.gov/maps_gis_data/protected_resources/critical_habitat/images/leatherbackturtle_critical_habitat.pdf)). If corals or hard-bottom habitats are present in marine debris removal sites in these areas, follow all coral and hard-bottom related PDCs and BMPs, with the added requirement that coral and hard-bottom impacts shall be avoided in sea turtle critical habitats.
- In coral reef and hard-bottom areas, coral relocation and/or emergency restoration will be considered in coordination with NOAA, prior to and during removal of derelict vessels or other large marine debris, to avoid and minimize ongoing and/or potential coral impacts in a manner that is protective of corals. Contact the NOAA MDP for initial coordination; if ESA-listed corals are involved, any relocation or restoration of these species will be conducted under the requirements of the Programmatic Biological Opinion on Threatened Caribbean Coral Research, Restoration and Relocation, initiated on October 18, 2016 (also known as the “3Rs” consultation). Actions covered under this Opinion require further coordination with the NOAA NMFS Protected Resources Division (PRD) (see Reporting Requirements/Contacts below).
- Impacts to two types of hard-bottom shall be avoided, specifically defined as: (1) natural consolidated hard substrate that is suitable to support corals, coral larval settlement, reattachment, and recruitment of asexual coral fragments. These areas of hard-bottom or dead coral skeleton must be free from fleshy or turf macroalgae and sediment cover; and (2) nearshore and surf-zone, low-profile hard-bottom outcroppings. This second type of hard-bottom habitat can be persistent or ephemeral, cycling through periods of exposure and cover by sand. It is an important developmental habitat for juvenile hawksbill and green sea turtles.
- Avoid coral damage due to coral contact and entanglement with traps, lines, and other gear when removing derelict fishing gear using vessel-based electronic or hydraulic trap haulers or when pulling traps by hand to a vessel. When traps are on or adjacent to corals, use divers to support removal.
- Minimize damage to coral during removal of derelict fishing gear or other small marine debris located on or within corals by carefully cutting away and hand removing it from the coral. If marine debris is wedged among, embedded, or has been overgrown by coral, leave it in place to avoid further damage; however, loose pieces should be cut away when possible to decrease entanglement risks.
- During diving operations in support of marine debris removal, divers shall maintain buoyancy control and avoid and minimize touching and physical contact with corals (except when coral relocation/restoration is authorized). Divers shall also minimize sediment disturbance in the vicinity of corals.
- See also multiple/all sensitive habitat BMPs below.

Multiple/all sensitive habitats:

- Avoid work vessel grounding; prop, bow, keel, and skeg scarring; and prop washing in sensitive habitats, especially locations with mangroves, seagrasses, hard-bottom, and corals.
- Avoid anchoring/spudding on corals and hard-bottom; avoid/minimize anchoring and spudding in seagrasses; anchor and spud on bare sand and mud bottoms. Use existing mooring balls when available and feasible. If spudding on seagrasses cannot be avoided, divers should fill spud holes to grade with clean sand from nearby sources, as feasible, to minimize impacts. Avoid spudding on native, non-invasive seagrasses in leatherback sea turtle critical habitat at Sandy Point on St. Croix.
- Avoid spreading invasive non-native seagrasses; inspect barge spuds, anchors, lines, rigging, etc. for seagrass fragments when repositioning, moving, and demobing work vessels and equipment; wash off spuds and anchors; collect and dispose of seagrass material brought on deck in covered trash receptacles. This is particularly important when working in invasive seagrass sites and when transiting between bays, islands, and demobing equipment out of USVI.
- Prior to hoisting, refloating, and removing marine debris, crews shall evaluate the immediate area and determine an ingress/egress path that will have the least impact on sensitive habitats. This shall include using divers or snorkelers when applicable, particularly in coral, hard-bottom, and seagrass habitats. Review of habitat maps, bathymetric charts, aerial photography, remote sensing images, and/or other appropriate data should also be used as available and applicable.
- Temporary stakes/buoys (with appropriate lines, see entanglement above) shall be used to mark the ingress/egress path, if applicable, to assist in staying on course and to avoid the areas with the greatest extent and quality of sensitive habitats.
- In shoreline and shallow nearshore areas with sensitive habitats, consider land-side access and removals from roads, bulkheads, or other developed or disturbed areas for marine debris removal, where feasible.
- Where equipment or crews must access marine debris sites in or across sensitive habitats, use shallow draft vessels, specialized equipment with low pressure/flotation tires or tracks, equipment mats, walk boards, or other comparable methods to minimize disturbance, including equipment and foot traffic, as applicable.
- Avoid pulling marine debris across or onto sensitive habitats - items shall be hoisted or refloated if possible. Use of lift bags, rollers, equipment mats, and other methods shall be evaluated to minimize impacts, such as bottom scarring and soil rutting and compaction.
- Cutting up or otherwise disassembling large debris in place into smaller pieces for removal, in part or whole, using less intrusive equipment or hand crews when applicable, shall be considered, to avoid and minimize sensitive habitat impacts.
- Avoid and minimize digging, excavation, jetting, use of pump hoses on sediments, and similar methods in and/or near sensitive habitats. If such methods must be used, turbidity barriers shall be deployed, even when working on bare sand and mud bottoms (see turbidity control measures, above). When using these methods, permits may be required (see USACE and DPNR permitting, above).

**Reporting/Contacts:**

- 1. Any collision(s) with and/or injury to any sea turtle, whale, dolphin, Nassau grouper, giant manta ray, ESA-listed coral, or other ESA-listed species, marine mammal, or critical habitat occurring during marine debris removal activities shall be reported as soon as possible to NMFS's PRD at 727-824-5312 or by email to [takereport.nmfsser@noaa.gov](mailto:takereport.nmfsser@noaa.gov).
- 2. Sea turtles and marine mammals: Report stranded, injured, trapped, entangled, or dead animals to 877-WHALE HELP (877-942-5343).
- 3. If derelict vessels or other large marine debris are located in areas with ESA-listed corals and the corals can be safely relocated or restored prior to or during debris removal, contact NOAA PRD at [jennifer.moore@noaa.gov](mailto:jennifer.moore@noaa.gov) or 727-551-5797.

**USFWS Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), Fish and Wildlife Coordination Act (FWCA)**

**Education and observation:**

- All personnel associated with the project will be instructed about the potential presence of species and critical habitat protected under the ESA and MBTA. All on-site project personnel will be responsible for observing work areas and activities for the presence of protected species. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing ESA-listed species and migratory birds. To review which ESA-listed species and critical habitat may be found in the project area, please see <https://ecos.fws.gov/ipac/>.

**Manatees (ESA-listed):**

- Observe the following recommended USFWS Antillean Manatee Conservation Measures for In-Water Projects (January 2012).
- All work personnel will be aware of the potential presence of manatees and the need to avoid vessel/equipment collisions with manatees.
- All work personnel will be advised that there are civil and criminal penalties for harming, harassing, or killing manatees.
- All work vessels will operate at “no-wake/idle” speed at all times in manatee areas; vessels should follow routes of deep water whenever possible.
- If manatees are seen within 100 yards (300 ft.) of an in-water work area, all appropriate precautions shall be implemented to ensure protection of manatees. These precautions shall include operating all work vessels and equipment in such a manner that vessels/moving equipment do not come any closer than 50 to 100 ft. of any manatee. If a manatee is within 50 ft. of in-water work, all in-water activities must shut down, until the manatee moves on its own at least 100 ft. away from the in-water work area. Manatees must not be herded or harassed into leaving the area.
- Siltation/turbidity barriers, hard/sorbent boom, anchor and tow lines, etc. will be made of materials in which manatees cannot become entangled; and will be properly secured and regularly monitored to avoid manatee entanglement/entrapment. Barriers must not block manatee movement.
- Any collision with or injury to a manatee shall be reported immediately to USFWS ES (787-851-7297) and DPNR. Likewise, report any stranded, injured, trapped, entangled, or dead manatee as soon as possible.

**Nesting Sea Turtles (ESA-listed):**

- Be aware of the potential for sea turtle nesting activity on all sand beaches, mixed sand and gravel (including coral rubble and shell) beaches, and some gravel beaches throughout USVI during all times of year.
- Adult sea turtles, crawls, nests, eggs, and hatchlings should be protected during marine debris removal activities on sea turtle nesting beaches, including hatchling turtles as they emerge from the nest and crawl to the sea.
- Sea turtle nesting surveys may be required prior to marine debris removal or staging activities on beaches. Contact USFWS (787-851-7297) and/or DPNR to coordinate sea turtle nesting beach surveys. Vehicle and equipment entry onto the beach will occur only after surveys have been conducted, if required. Surveys are typically completed in the early morning; all work on the beach should be conducted after nesting beach surveys are complete, in coordination with agency personnel or their authorized delegates.
- After the beach has been surveyed, agency personnel or their authorized delegates will direct work crews along the established travel corridor, as applicable.



- If an unmarked sea turtle crawl is encountered during or prior to debris removal activities, work crews will not disturb the integrity of the crawl or follow the crawl up the beach or into the dune/vegetation, and will contact agency personnel or their authorized delegates about the location of the crawl.
- Any marked nests within the areas where debris removal or equipment staging will occur (including access areas) shall be left in place. Marked nests shall be delineated by stake and survey tape or string around the nest. A circle with a 10-ft. radius centered at the nest is recommended for nest protection. Marked nests and nesting areas must be avoided during debris removal and equipment staging.
- If work activity will occur near a marked nest or in the wrack line, agency personnel or their authorized delegates shall be onsite during debris removal.
- Equipment and work crews will only transit the beach seaward of the nesting area on the lower beach (stay below the wrack line if present).
- Work shall only occur during daylight hours on nesting beaches.
- If a sea turtle (either adult or hatchling) is observed, maintain at least 200 ft. between the turtle and work personnel and equipment.
- If sea turtle hatchlings are encountered allow the hatchlings to crawl unobstructed to the water. Do not carry the hatchlings to the water.
- All work activity, equipment, and personnel shall observe a 10-ft. buffer from marked sea turtle nests. Care should be taken to avoid walking or driving equipment over a crawl so that a potential nest is not damaged.
- Any potential obstructions or entanglement hazards for sea turtles and hatchlings should be removed from the beach at the end of each day, this includes work vehicles, equipment, gear, lines, rigging, boom, etc.
- If altered, beach topography shall be re-established in all areas to the natural beach profile/grade at the end of work each day. Re-establishing beach topography includes raking of tire, track, and keel ruts; filling pits or holes where debris were removed; etc.
- Minimize lighting at night that may disorient sea turtle hatchlings and nesting females. Consult with USFWS and DPNR regarding lighting in staging areas near beaches.
- All trash resulting from work activities should be removed from the area as appropriate or disposed of properly in covered trash receptacles.
- Upon locating a dead, injured, or sick sea turtle, or if eggs or nests are inadvertently excavated or otherwise disturbed during marine debris removal activity, immediate notification must be made to USFWS ES (787-851-7297) and DPNR. In the event that nests or eggs are disturbed, immediately cease all work and contact the agencies above.

**Birds:**

- Avoid and minimize disturbance to seabird and waterbird nesting sites and colonies (including ESA-listed roseate tern nest sites), migratory and wintering shorebird concentrations (including ESA-listed piping plover and red knot), bird roosting sites, and other bird aggregation areas. Smaller offshore islands, shoreline areas, mangroves, and salt ponds may be nesting or roosting sites. Do not enter sites with active bird nesting colonies or roosts and maintain a minimum 300 ft. buffer from nest sites, nesting colonies, and roosting aggregations. If birds are flushed, move away from the area and observe a larger buffer distance. If marine debris removal activities are likely to disturb nesting birds, contact USFWS Ecological Services (ES) (787-851-7297) and DPNR for further guidance.
- If using airboats, maintain a distance of 1000 ft from bird nesting and roosting sites to limit disturbance.

- To limit disturbance to birds in shoreline areas work crews should be limited in size and number to the minimum number of personnel and equipment required to complete marine debris removal in an efficient time frame. Equipment and personnel should work as closely together as is feasible, and limit repetitive alongshore transits to and from work areas, to minimize disturbance.
- On beaches, if it is necessary to excavate debris or if equipment rutting occurs, return the beach to its original profile at the end of each day.
- Avoid and minimize disturbance of beach and dune vegetation and natural wrack deposits, equipment and personnel should use existing beach access locations and transit alongshore on the lower beach.
- Check under and around vehicles and heavy equipment parked on or near the beach before they are moved. Shorebirds are especially vulnerable when they are roosting at night, and extra care should be taken at these times.

**Additional Considerations:**

- Equipment and material staging areas should be located outside of areas of native vegetation and known endangered species habitats.
- Minimize the disturbance footprint when removing marine debris.
- Minimize the impact footprint of equipment by working from one location to the extent possible by grappling, hoisting, or lifting marine debris.
- Where possible, equipment should be operated from existing hard top or impacted sites to remove marine debris from natural habitats.
- Marine debris removal activities should be accomplished with the smallest equipment needed, including hand crews where possible, to minimize disturbance of habitat (especially when working within critical habitats).
- Ingress and egress corridors for vehicle and equipment operations and marine debris removal should minimize impact to natural habitats. Care should be taken to restrict equipment/vehicles to roadways and roadbeds and away from vegetated areas.
- When larger marine debris are collected from debris piles on less developed lands, natural shorelines, in mangroves, or other forested areas, the debris piles should be lightly disturbed and/or small portions removed first, to allow any protected species (e.g., ESA-listed Virgin Islands tree boa) hiding in the debris to escape. Consider having a monitor stationed to alert the equipment operator if ESA-listed species are observed.
- To the degree possible, the removal of forested vegetation should be limited to fallen trees only, and only if required to remove marine debris; otherwise, leave fallen trees in place (also applies to mangroves).
- Trimming of standing native trees during debris removal should be minimized (also applies to mangroves, see permitting and sensitive habitats above).
- The removal of healthy trees to remove embedded debris should be avoided or minimized (avoid removal of mangroves).
- All trash resulting from the marine debris removal should be removed from the area as appropriate or disposed of properly in covered trash receptacles.

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**Sources:** Primary sources for this BMP/PDC checklist were the USCG ESF-10 BMP checklists for Hurricanes Irma, Maria, Florence, and Michael (2017-2018); the NMFS Guidance for Endangered Species Act (ESA) Emergency Consultations for Hurricane Response Activities in the Southeast United States (2018); the NMFS USACE Jacksonville District's Programmatic Biological Opinion (JAXBO, 2017); the

NMFS Programmatic EFH Consultation for NOAA MDP Activities (2015); the NOAA MDP Programmatic Environmental Assessment (2013); and discussions and material provided by USFWS, DPNR, SHPO, and NMFS.