

## **CRRT BEST MANAGEMENT PRACTICES for OIL SPILL RESPONSE OPERATIONS**

The CRRT is committed to implementing measures to reduce and avoid potential impacts on federally listed and managed species, designated critical habitat and Essential Fish Habitat (EFH). The CRRT has compiled the following collection of Best Management Practices (BMPs) to avoid and/or minimize impacts to trust resources under the Marine Mammal Protection Act and Migratory Bird Treaty Act, to serve as recommendations under the Endangered Species Act Section 7 consultation regulations to avoid and minimize effects to endangered and threatened species and critical habitat, and to minimize and avoid adverse effects on identified categories of EFH under the Magnuson-Stevens Act.

All best management practices (BMPs) are provided as recommendations and guidance, developed in coordination with FWS and NOAA, to avoid and minimize impact to fish and wildlife resources during a response to an oil spill. This document is not intended to cover all possible scenarios or every individual species. Due to area, environmental, and situational differences amongst potential operation areas, the CRRT maintains this list of BMPs as an appendix to the Regional Contingency Plan, and will update and revise the list as additional BMPs are developed, and/or updated information becomes available regarding the effectiveness and feasibility of implementing the BMPs.

This compilation of BMPs includes measures applicable to:

- Dispersant Operations
- In-Situ Burning Operations
- Booming Operations
- Air Operations
- Vessel Operations
- Grounded Vessel Salvage Operations
- Shoreline Response Operations
- Historic and Cultural Resources

## **Dispersant Operations Best Management Practices**

### **Dispersant Operations**

Approved dispersants may be used in designated preapproved zones in the Caribbean to 200 nautical miles offshore (Exclusive Economic Zone boundary). The state territorial boundary for Puerto Rico is 9 nautical miles, and for the US Virgin Islands is 3 nautical miles. Under existing Letters of Agreement, the following waters are designated as preauthorized areas for the initiation of dispersant application:

- a. For Puerto Rico:
  - Waters at least 0.5 miles seaward of any shoreline; and
  - Waters at least 30 feet (ft) in depth.
  
- b. For U.S. Virgin Islands:
  - Waters at least 1.0 miles seaward of any shoreline or at least one mile from any reef which is less than 20 feet from the water's surface.; and
  - Waters at least 60 ft in depth.

The use of dispersants may also be potentially beneficial, and should be considered for use, in waters with the following depth and distance from shore (known as the Consensus Conditional Zones):

- a. For Puerto Rico:
  - Waters 30 ft in depth or more, regardless of distance from shoreline
  
- b. For U.S. Virgin Islands:
  - Waters at least 1.0 mile seaward of any shoreline; and
  - Waters 30 ft in depth or more.

It is important to emphasize that the identification of these Consensus Conditional Zones does NOT constitute preauthorization to apply chemical countermeasures. The intent of this designation is to identify waters where there is general consensus that dispersant usage may significantly reduce the negative short-term and long-term environmental impacts of oil spills; as well as to expedite the decision-making process to concurrently initiate the mobilization of resources for operational use, the concurrence and consultation requirements under Subpart J of the NCP, and the applicable ESA and EFH consultation procedures, as soon as possible.

When dispersant application is proposed in an area that is adjacent to or near waters less than 30 feet in depth, due consideration shall be given to the trajectory of the dispersed oil. If resources in adjacent shallow areas are at risk, consultation with the trustees must be conducted.

Dispersants or chemical agents should not be used in, on, or over waters containing reefs; waters designated as marine reserves; mangrove areas; or waters in coastal wetlands; except with the

prior and express concurrence of the commonwealth/territory and EPA, in consultation with DOC and DOI. Coastal wetlands are identified as including:

- Submerged algae beds (rocky or unconsolidated bottom)
- Submerged seagrass beds
- Coral reefs

Prior to commencing dispersant application operations, an on-site survey should be conducted, in consultation with natural resource specialists, to determine if any threatened or endangered species are present in the projected application areas or otherwise at risk from dispersant operations. Measures should be taken to prevent impacts to wildlife, especially threatened and endangered species.

Survey flights in the area of application should be conducted during dispersant operations. No approved dispersant application operations should be conducted within 0.5 nautical miles of marine mammals and sea turtles identified through aerial spotting. Watch for marine mammals and sea turtles while operating. Record each sighting event, including GPS location, species (if known) and description of the encounter.

If the detection of species is not possible during certain weather conditions (e.g., fog, rain, wind), the biological monitor/natural resource trustees will assess conditions and will coordinate with the Unified Command to determine what operational adjustments may be feasible.

Do not apply dispersants to areas known to contain rafting birds.

## **In-Situ Burning Operations Best Management Practices**

If possible, avoid burn operations where sea turtles or marine mammals have been spotted. If a sea turtle or marine mammal is spotted during operations, stop the operations if possible, until the animal is outside the operations area.

If possible, send wildlife rescue vessels (with trained rescue personnel if available) into the projected burn area to search for and rescue turtles in accordance with the attached Sea Turtle Observer and Retrieval protocols (Attachment 1). Feasibility will depend on the size of the projected area and whether material has already been boomed or otherwise collected. If this is not possible, then the following should be considered:

- Have a trained observer (if available) or a crew member dedicated to looking for sea turtles and marine mammals during burn operations and record each sighting event, including GPS location, species (if known), and description of encounter on the Marine Species Observation Form (Attachment 1). The observer or crew member should be looking for marine mammals and sea turtles that may be affected by the burn or are impacted by oil.
- A survey for marine mammals/sea turtles must be conducted by the ignitor vessel by a designated observer or other personnel as assigned. The sea turtle and marine mammal observer on the ignition vessel will monitor the following areas prior to the burn:
  - The area in front of the collection vessels,
  - The oil concentrated in the boom, and
  - Any oil trailing behind the boom.
- If conditions on the burn platform allow (e.g. size and space of vessel), without risk to human safety, collect live and dead sea turtles according to the attached Sea Turtle Retrieval Protocols.
- Report distressed or dead wildlife to the appropriate agency and/or hotline. Contact the Sec 7 Resources at Risk (RAR) Specialist to report the turtle/marine mammals immediately.
- If marine mammals/sea turtles are sighted in the in-situ burn safety zone, measures must be taken to prevent harm such as implementing sea turtle retrieval protocols, relocating the burn area, or standing down until the animals exit the area.
- Observers will submit a Marine Species Observation Form (Attachment 1) to the Environmental Unit (EU) RAR Specialist at the end of each burn day.

A survey should be conducted in the burn area after the burn is complete. Any dead sea turtles or marine mammals should be counted and collected if possible. Contact the Environmental Unit or your supervisor to report any sea turtle or marine mammal that is impacted by burn operations or that has signs of oil impacts also report this to the Wildlife Branch as quickly as possible.

NOAA's Vessel Strike Avoidance Measures and Reporting for Mariners (Attachment 2) should be implemented to reduce the risk associated with vessel strikes or disturbance of protected species to discountable levels. If a sea turtle or marine mammal is seen within 100 yards of the vessel, all appropriate precautions shall be implemented to ensure its protection. Operations should cease if a marine mammal approaches within 100 yards of the vessel until the marine mammal moves away from the operational area of its own volition. Operations should cease if a sea turtle approaches within 50 yards of a vessel until the turtle moves away from the operational area of its own volition.

Any collision with and/or injury to a marine mammal or sea turtle shall be reported immediately to the NMFS Southeast Regional Office by email ([takereport.nmfsser@noaa.gov](mailto:takereport.nmfsser@noaa.gov)), using the attached Ship Strike Reporting form (Attachment 3). Any collision with a manatee should be reported to USFWS Caribbean Ecological Services Field Office and Puerto Rico Department of Natural and Environmental Resources Marine Resources Division. In addition, the local authorized sea turtle and marine mammal stranding/rescue organizations should be also be notified. For manatee strandings, contact the Puerto Rico Manatee Conservation Center at InterAmerican University's Bayamon Campus: 787-400-2782, 787-279-1912 ext. 2070 ([www.manatipr.org](http://www.manatipr.org)). Additional contact information can be found in the Antillean Manatee Response Plan Annex of the PR & USVI Area Contingency Plan.

Avoid burning unoiled or lightly oiled sargassum.

Do not burn areas known to contain rafting birds.

### **Comatose Sea Turtles**

If a turtle appears to be comatose (unconscious), crews should attempt to revive it before release per 66 CFR 67495, December 31, 2001. Place the turtle on its plastron (lower shell) and elevate the hindquarters several inches to permit the lungs to drain off water. A comatose but live sea turtle may, in some cases, exhibit absolutely no movement or signs of life (no muscle reflexes). In other cases, an unconscious turtle may show some evidence of eyelid or tail movement when touched. Sea turtles may take some time to revive; do not give up too quickly.

Contact the Section 7 RAR Specialist and Wildlife Group for recovery.

Regulations allow holding a sea turtle on deck up to 24 hours for resuscitation purposes without a permit. Even turtles successfully resuscitated benefit from being held as long as possible to allow toxins that built up as a result of stress to dissipate from the body. Keep the skin, and especially the eyes, moist while the turtle is on deck by covering the animal's body with a wet towel, periodically spraying it with water, or by applying petroleum jelly to its skin and carapace.

## **Booming Operations Best Management Practices**

All personnel associated with boom deployment, operation, maintenance, and recovery, should be briefed daily on the potential presence of wildlife (bird colonies, sea turtles and marine mammals such as whales, dolphins and manatees), and the need to avoid collisions with, and injury to, these species from vessels and equipment.

All vessels shall operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow deep-water routes whenever possible.

An observer should be assigned to spot wildlife (sea turtles, marine mammals and bird colonies) during operations. If an observer is not available, all personnel should be aware of, and report the presence of these animals.

Any collision with and/or injury to sea turtles or marine mammals should immediately be reported to the NMFS Southeast Regional Office by email ([takereport.nmfsser@noaa.gov](mailto:takereport.nmfsser@noaa.gov)), using the attached Ship Strike Reporting form (Attachment 3)

Any floating boom-like structures placed in waters adjacent to beaches should be placed as far offshore as possible and should remain floating at all times.

Barriers should be made of material in which a sea turtle or marine mammal cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment.

Barriers, including all floating oil absorbent material or material placed to stop oil movement in the water, should be made of material in which wildlife cannot become entangled, and should be properly secured. Barriers should be checked daily prior to nightfall to ensure they remain floating at all times, do not create a barrier to animal movement, and avoid protected species entrapment. Oiled boom should be replaced when observed. Boom should be maintained in position and strengthened if wave action is moving boom onto the shore or coastal wetlands.

Boom should be marked and lighted in accordance with U.S. Coast Guard policy where and when required to ensure boater and commerce safety. Use lights that minimize effects to sea turtles and other wildlife.

If a sea turtle or marine mammal is seen within 100 yards of daily operational area or a vessel, all appropriate precautions should be implemented to ensure its protection. These precautions should include cessation of operation of any equipment within 50 feet of a sea turtle or marine mammal. If necessary, sea turtles should be rescued in accordance with the Sea Turtle Retrieval Protocol (Attachment 1). Activities should not resume until the protected species has departed the project area on its own.

When practicable, all fabric panels deployed below the water surface should be monitored for entrapped fish and wildlife.

Follow these best management practices for protection of West Indian manatees:

- All work must be in accordance with USFWS Standard Manatee Conditions for In-Water Work (2011).
- Instruct all personnel, associated with boom deployment, operation, and recovery, of the potential presence of manatees and the need to avoid collisions with and injury to manatees. Advise all response personnel that there are civil and criminal penalties for harming, harassing, or killing manatees.
- All personnel are responsible for observing water-related activities for the presence of manatees.
- Barriers and containment/sorbent boom shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not block manatee entry to, or exit from, essential habitat.
- All vessels associated with the construction project shall operate at “no wake/idle” speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- If manatees are seen within 100 yards of the active daily boom deployment, operation, recovery, or vessel movement, all appropriate precautions shall be implemented to ensure their protection. These precautions shall include: no operation of any moving equipment within 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area on its own. Manatees must not be herded away or harassed into leaving.
- Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed upon completion of the work. One sign which reads “Caution: Boaters” must be posted. A second sign measuring at least 8½" by 11" explaining the requirements for “Idle Speed/No Wake” and the “Shut Down” of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities.
- Any collision with and/or injury to a manatee shall be reported immediately to the FWS RAR Specialist and appropriate state trustee. Likewise, report any stranded, injured, trapped, entangled, or dead manatee to the EU as soon as possible. The EU will make further notifications to the appropriate agency contacts. Contact the EU through the Situation Unit (SITL).

Injured/dead/distressed wildlife should be reported to the appropriate agency and/or hotline.

Watercraft landings should be at designated entries and minimized in coordination with land managers or property owners.

Land or stage boats to avoid crushing vegetation.

Booms should be anchored in a way that avoids entanglement or abrasion of corals.



## **Air Operations Best Management Practices**

Avoid and minimize aircraft disturbance to bird nesting colonies and roosting aggregations. Limit overflights to a minimum 1,000 feet altitude over colonies and roosts and limit excessive disturbance (e.g., repeated low passes, hovering, circling). If birds are flushed by aircraft, move away from the area and maintain a higher floor over other observed colonies and aggregations.

**Clarification/Rationale** – Hovering or landing aircraft will flush adult birds from nests, leaving chicks or eggs vulnerable to the elements and predators; or may alter vital behaviors such as roosting, foraging, courtship, and nest-site selection. Operating aircraft within close proximity to birds increases the potential for aircraft strikes that kill birds and endanger aircraft and crews.

Unless previously authorized, overflights to identify locations of oiled wildlife should not fly below 500 feet over Wildlife Refuges, Management Areas, bird rookeries, or National Parks without prior authorization from the land manager or Natural Resource Trustee. Unless previously authorized, all other aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface of lands and waters of such areas. Federal Aviation Administration (FAA) Advisory Circular (AC 91-36C), "Visual Flight Rules (VFR) Near Noise Sensitive Areas," defines the surface as: the highest terrain within 2,000 feet laterally of the route of flight, or the uppermost rim of a canyon or valley.

All aircraft flying over water are to be aware of marine mammals/sea turtles, and report sightings.

Dead wildlife spotted from aircraft should be reported to the appropriate agency and/or hotline.

## **Vessel Operations Best Management Practices**

All response vessels should be required to comply with NMFS's *Vessel Strike Avoidance Measures and Reporting for Mariners*. (Attachment 2)

Operate vessels at appropriate speeds to watch for and avoid collision with wildlife, and to avoid accidental groundings. Report all turtle sightings, all distressed or dead birds, sharks, rays, and marine mammals to the appropriate incident hotline.

**Clarification/Rationale** – Operate all vessels at speeds that minimize the likelihood of hitting any wildlife (e.g., shorebirds, seabirds, marine mammals, nesting or hatching sea turtles) or accidentally grounding the vessel. Report distressed or dead wildlife to the appropriate agency and/or hotline. Any clearly visible band or tag numbers encountered on dead or injured birds should be reported to [www.reportband.gov](http://www.reportband.gov). Only freshly oiled intact bird carcasses should be reported to the hotline. All other bird carcasses should be left in situ. Report vessel groundings to the USCG.

If operating vessels in shallow water, avoid impacts to seagrass beds, reef or colonized hard ground. This could be an issue for some nearshore clean-up efforts

**Clarification/Rationale** – Minimize impacts to sensitive habitats by avoiding them to the maximum extent practicable by maintaining a distance of no less than 10 feet, and traveling through established corridors

Operation of vessels only during daylight hours is recommended. If nighttime operations are necessary, avoid night-time activities in identified exclusion areas to allow longer periods without disturbance to wildlife and to minimize vessel damage to within optimal habitat. In areas where sea turtle nesting is known to occur, deck lighting at night should be minimized so as not to attract sea turtle hatchlings or disorient nesting females. Lighting of night operations should be shielded to avoid attracting in-water sea turtle hatchlings to the response area.

**Clarification/Rationale** – Night work increases the likelihood of accidental encounters with wildlife, as well as movement into areas with coral colonies. Generally, adult sea turtle nesting and egg hatching occurs at night. Nesting shorebirds and seabirds are more sensitive and prone to nest abandonment when disturbed at night.

All vessels shall operate at “Idle Speed/No Wake” at all times while in water depths with less than a four-foot clearance from the bottom, and after a protected species has been observed in and has departed the area. All vessels shall follow marked channels and/or routes using the maximum water depth whenever possible.

**Clarification/Rationale** – The intent of this BMP is to avoid and minimize scouring and prop-scarring of submerged aquatic vegetation and coral habitats, as well as collision with marine mammals or other aquatic life. When not feasible, vessel operators should

take all precautions to avoid impacts to submerged aquatic vegetation and coral habitats. Operate in idle within 50 feet of shorelines to avoid damage from wakes. Use caution in areas where sea turtles marine mammals are frequently observed.

When sea turtles or marine mammals 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.

Reduce speed to 10 knots or less when mother/calf pairs or groups of marine mammals are observed, when safety permits.

Land or stage boats to avoid crushing the shoreline vegetation.

**Clarification/Rationale** – The intent of this BMP is to avoid and minimize adverse impacts to important shoreline habitat during cleanup operations.

For actions such as towing of vessels, anchoring, and spudding, areas shall be selected in coordination with NMFS and based on benthic surveys, in order to minimize impacts to EFH, ESA-listed species, and designated critical habitat.

Anchoring of all response vessels should be in uncolonized sand bottoms only. The installation of mooring pins or other anchor systems that eliminate the use of non-floating line and minimize impacts to bottom substrate is preferred if uncolonized sand areas are not available or are not large enough to anchor the vessels. Anchor methods and anchor and spud locations should be selected in coordination with NMFS for all response vessels associated with a particular response action.

The response area should be surveyed daily by divers to ensure proper placement of anchors, lines, and other equipment, and to remove debris and other materials to avoid damage to EFH and ESA resources, including corals, sea turtles, and designated critical habitat.

Properly tie-down or secure all equipment in designated areas to prevent accidental loss of equipment into the water. Any debris that accidentally falls into the water during response actions should be retrieved immediately.

In shallow waters, in order to minimize the potential for propeller wash damage to EFH and ESA resources, the use of propulsion systems and high RPMs should be avoided. If this is not possible, then areas for these operations should be selected in coordination with NMFS and based on benthic surveys of the site.

## **Grounded Vessel Salvage Operations Best Management Practices**

In June 2012, the *M/V Jireh* grounded on the west side of Mona Island, Puerto Rico. The area contains designated critical habitat for elkhorn and staghorn corals and for hawksbill sea turtles; the area also contains ESA-listed corals and hawksbill sea turtle nesting habitat. The response was closely coordinated with NMFS, USFWS, and other local and federal resource agencies, and local and federal trustees. Despite the implementation of avoidance and minimization recommendations to protect EFH and ESA resources, some impacts occurred to nesting sea turtles related to disorientation from lights, and to corals related to anchoring by response vessels, anchoring of boom, and the movement of the vessel during storms. Below are the recommendations NMFS developed to inform the USCG during future response actions. These are general recommendations only and some of these BMPs are also included in other sections of this document. BMPs specific to a particular response may also be necessary based on site-specific conditions.

- NMFS should be included in early conversations with the salvor to discuss specifics of the response operation in order to select which BMPs are most appropriate or develop BMPs relevant to a particular response as necessary.
- Based on the methodology for the salvage operation, areas shall be selected in coordination with NMFS and based on benthic surveys for actions such as towing of vessels, anchoring, and spudding in order to minimize impacts to EFH, ESA-listed species, and designated critical habitat.
- Cargo should be assessed early in the process and organics should be removed quickly to avoid hazardous build-up of gases in the hold and the potential use of chemicals to reduce hazardous levels of the gas to protect response workers as these chemicals could impact marine resources. If cargo cannot be removed quickly, then a seawater pumping and filtering system similar to that used during the *M/V Jireh* response should be designed and implemented in coordination with NMFS and USFWS.
- Fuel and cargo should be offloaded from the grounded vessel to reduce the vessel's draft and minimize the potential for environmental hazards, such as spills.
- Boom should be deployed around the grounded vessel to minimize the potential for transport of materials outside the immediate area of the grounding. The location of boom anchors should be coordinated with NMFS based on surveys of the area immediately following the grounding as long as sea state permits the safe completion of these surveys. Booms and other underwater equipment should be monitored during the response action to ensure they do not cause damage to EFH and ESA-listed species, including breakage or abrasion of corals and entrapment of sea turtles.
- All response vessels should be required to comply with NMFS's *Vessel Strike Avoidance Measures and Reporting for Mariners*. (Attachment 2)

- When applicable to the response action, compliance with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* should be required.
- Anchoring of all response vessels should be in uncolonized sand bottoms only. The installation of mooring pins or other anchor systems that eliminate the use of non-floating line and minimize impacts to bottom substrate is preferred if uncolonized sand areas are not available or are not large enough to anchor the vessels. Anchor methods and anchor and spud locations should be selected in coordination with NMFS for all response vessels associated with a particular response action.
- Salvage activities should be conducted at high tide to facilitate refloating the grounded vessel over areas containing EFH, ESA-listed species, and designated critical habitat.
- The response area should be surveyed daily by divers to ensure proper placement of anchors, lines, and other equipment, and to remove debris and other materials to avoid damage to EFH and ESA resources, including corals, sea turtles, and designated critical habitat.
- Properly tie-down or secure all equipment in designated areas to prevent accidental loss of equipment into the water. Any debris that accidentally falls into the water during response actions should be retrieved immediately.
- A protected resources monitor should be on-site to monitor response impacts, BMP compliance, protected species sightings, and prepare daily summaries so that steps can be taken to address issues such as BMP non-compliance or unanticipated impacts to EFH and ESA resources that require the implementation of additional BMPs.
- In areas where sea turtle nesting is known to occur, deck lighting at night should be minimized so as not to attract sea turtle hatchlings or disorient nesting females. Lighting of night operations should be shielded to avoid attracting in-water sea turtle hatchlings to the response area. Similarly, lighting of night operations along the coastline should be minimized and a lighting plan developed in coordination with NMFS and USFWS to ensure that nesting females are not affected by light pollution.
- If a vessel will be refloated and towed out of an area, an extraction path having the least impact on EFH and ESA resources shall be selected in coordination with NMFS and based on benthic surveys of the area. This path may not be the same as the ingress path. Once the extraction path has been agreed upon, temporary buoys should be used to mark the extraction path and GPS plots of the path should be input into the grounded vessel's GPS and all towing vessels' navigation systems to assist the salvors in staying on course.
- In shallow waters, in order to minimize the potential for propeller wash damage to EFH and ESA resources, the use of propulsion systems and high RPMs should be avoided. If this is not possible, then areas for these operations should be selected in coordination with NMFS and based on benthic surveys of the site.

- If a vessel will be scuttled, after obtaining all required permissions, alternative locations for scuttling the vessel both close to the grounding site in deep water and further offshore in deep water should be selected in case the vessel proves too unstable to float a long distance from the grounding site. Appropriate measures should also be taken to secure the vessel at the scuttling location to minimize the risk of movement of the sunken vessel during storms.
- The BMPs required for the protection of EFH and ESA resources for a particular response shall be included in the salvage plans and IAPs for each response.
- Removal/salvage measures to avoid:
  - Use of in-water explosives.
  - Trawling for debris removal.
  - Deployment of anchored items that do not float. Use floating lines for anchoring and salvage operations or secure lines to prevent line sweeping of coral and sea bed. If non-floating lines are used, document the reason and ensure line sweeping is accounted for within the designated anchorage area.
  - Dragging derelict vessels, debris, lines, cables, or other items across coral, hardbottom, or seagrass areas. Items should be hoisted or refloated if possible.

## **Shoreline Response Activities Best Management Practices**

If field personnel cannot follow a particular BMP because of safety or logistical reasons, this needs to be recorded and information provided on why it was not possible to implement the BMP. If a particular BMP is inconsistent with a Shoreline Treatment Recommendation (STR) developed under the Shoreline Cleanup Assessment Technique (SCAT) program, the STR supersedes that BMP. However, it must still be recorded and an explanation provided. Also, corrective actions may be listed by SCAT or the Endangered Species Section 7 Resources at Risk (RAR) Specialist to help mitigate the effect of not implementing that BMP.

If field personnel cannot follow a BMP because the BMP does not pertain to a specific (1) type of location, (2) activity or (3) timeframe in a particular STR, this should be recorded. If field personnel are not following a particular BMP, this should be recorded, and the Operations notified immediately of the issue and the need to find an alternative method/route to complete their work, then this incident needs to be documented. If Operations does not correct the course of action, immediately notify the Section 7 RAR Specialist.

Watch for and avoid collision with wildlife. Report all turtle sightings and all distressed or dead birds, sharks, rays, and marine mammals on the shoreline or visible from shore to the appropriate incident hotline.

**Clarification/Rationale** – Operate heavy equipment, boats, Utility Terrain Vehicles (UTVs) and All-Terrain Vehicles (ATVs) at speeds that minimize the likelihood of hitting any wildlife (e.g., shorebirds, seabirds, marine mammals, nesting or hatching sea turtles). Report distressed or dead wildlife to the appropriate agency and/or hotline. Any clearly visible band or tag numbers encountered on dead or injured birds should be reported to [www.reportband.gov](http://www.reportband.gov). Only freshly oiled intact bird carcasses should be reported to the hotline. All other bird carcasses should be left in situ.

Avoid trampling any dune/beach vegetation, wetland vegetation or soils, with foot traffic/boats/equipment, maintain a distance of 10 feet or contact the section 7 RAR Specialist to minimize impact. Use existing travel corridors.

**Clarification/Rationale** – Minimize impacts to sensitive habitats by avoiding them to the maximum extent practicable by maintaining a distance of no less than 10 feet, and traveling through established corridors. If intrusion into the 10 foot buffer is necessary for safe operations and/or to recover tar and/or oil within the parameters of the Shoreline Treatment Recommendation (STR), then minimize the number of people, the area and duration of disturbance; avoid motorized vehicle use; consult with the RAR Specialist about appropriate pathway to follow; and document activities in BMP checklist and 214 report.

Cleanup operations during daylight hours is recommended. If nighttime operations are necessary confine operations to the landward side of the intertidal zone. Avoid night-time activities in

identified exclusion areas to allow longer periods without disturbance to wildlife and to minimize vehicle damage to within optimal habitat.

**Clarification/Rationale** – Night work increases the likelihood of accidental encounters with wildlife. Generally, adult sea turtle nesting and egg hatching occurs at night. Plovers and other shorebirds may roost in the intertidal zone. Nesting shorebirds and seabirds are more sensitive and prone to nest abandonment when disturbed at night.

**Sea Turtle Nesting:** Observe a 10 foot buffer from marked sea turtle nests. If a nest area is contaminated/oiled, contact the RAR Specialist for further instructions.

**Clarification/Rationale** – If sea turtle nests are documented, all nests in PR/VI must be staked and flagged by sea turtle permit holders, with a 10-foot buffer so the nests are not inadvertently impacted by vehicle traffic or otherwise disturbed. This BMP applies year round since some species like the hawksbill sea turtles are known to nest year round with a peak during August/September. Clean up crews should be made aware that at any time during the year they may encounter a sea turtle nest.

**Sea Turtle Nesting:** Verify sea turtle nesting activities with agency experts and assure that the start of daily onshore cleanup operations begin during daylight hours after nesting surveys/conservation activities are completed. If nighttime cleanup operations will be conducted, Wildlife Observers must be present.

**Clarification/Rationale** – Three species of sea turtles commonly nest in the Caribbean: leatherback, green and hawksbill. Leatherback sea turtles have a defined nesting season, but hawksbills can nest all year round with a peak in the August/September time frame. During the nesting season, ensure that sea turtle permit holders or trained personnel complete daily sea turtle nesting surveys before crew work begins each morning. The sea turtle monitors will document, stake, and flag any new nests that work crews and equipment should avoid.

Utilize existing or established access/egress areas and roadways. UTV's should remain within the established travel path when possible, to minimize beach topographic alterations.

**Clarification/Rationale** – The intent of this BMP is to minimize habitat modification or destruction. Altering beach topography can impede sea turtle hatchling ability to make it to the water, or obscure lines of sight for nesting shorebirds making them more vulnerable to predators. Vehicle travel outside of existing transport corridors can damage dune structure and vegetation.

Use low pressure tire (10 psi) vehicles (e.g., ATV's gators) on the beach or in wetlands or contact a qualified biologist to minimize impact.

**Clarification/Rationale** – Use of low pressure tire vehicles such as ATVs and gators reduce sand compaction and rutting. Compacted sand may deter a female from nesting and may crush an unknown nest. Ruts alter the line of sight of hatchling turtles and may



prevent them from reaching the water, exposing them to predators and desiccation. Ruts may also serve as a gathering place for plovers and other shorebirds, making them more likely to be hit by vehicles. Ruts can reduce line of sight for these birds, making them more vulnerable to predation.

Restore beach topography, if altered, to natural beach profiles by 2000 hours each night, if feasible and per appropriate guidance.

**Clarification/Rationale** – While required during sea turtle nesting season, this BMP is also recommended outside of the season. Ruts (long linear indentations in the sand deeper than 2”) can deter an adult female sea turtle from nesting and it may abandon the attempt. Ruts can also block the line of sight of hatchlings such that they can’t find or get to the water because they are trapped in the ruts. As ruts or other topographic alterations can also affect other wildlife outside of the sea turtle nesting season, such as shorebirds by impeding their line of sight (making them vulnerable to predators), beach topography restoration to natural profiles is recommended year round.

Minimize removal of clean sediments and natural organic matter.

**Clarification/Rationale** – Sediments and organic matter, provide foraging habitat for shorebirds, seabirds, and micro-fauna, and serve as a nutrient source for the beach ecosystem.

Avoid hovering or landing aircraft near posted bird sites and dunes.

**Clarification/Rationale** – Hovering or landing aircraft will flush adult birds from nests, leaving chicks or eggs vulnerable to the elements and predators; or may alter vital behaviors such as roosting, foraging, courtship, and nest-site selection. Operating aircraft within close proximity to birds increases the potential for aircraft strikes that kill birds and endanger aircraft and crews.

If a sea turtle or marine mammal is observed trapped or entangled in a boom(s), open the boom carefully until the animal leaves on its own.

**Clarification/Rationale** – This is intended to minimize impacts to sea turtles and marine mammals. Even after all boom has been declared removed, there may still be some occasional stray boom in the area.

No flights below 500 feet over Wildlife Refuges, Management Areas, bird rookeries, or National Parks without prior authorization from the land manager or Natural Resource Trustee.

**Clarification/Rationale** – These sensitive wildlife habitats should be avoided to minimize flushing of birds (which could leave eggs and chicks vulnerable to the elements and predators), or altering vital bird behaviors such as courtship, feeding, resting, and nest site selection. This also decreases the risks of bird strikes that would endanger aircraft and crew members.

Staging areas and waste collection areas should be examined prior to set up and should be located to avoid beaches, dunes, inlets or ephemeral tidal pools, salt ponds, scrub and other vegetated areas. Contact the Section 7 RAR Specialist if assistance is needed.

**Clarification/Rationale** – Staging areas receive heavy foot and vehicle traffic, are noisy, and, if placed in sensitive natural habitats, can cause adverse impacts to the wildlife and the habitats. Staging areas must be at least 200 feet from sea turtle nests and at least 50 feet from nesting shorebirds. Staging areas should also be at least 200 feet from known colonial seabird nesting locations.

Activities that may require removal of forested and shrub or scrub habitat should be minimized.

**Clarification/Rationale** – Although these habitat types are not generally oiled, they may be impacted through the construction of staging areas, access roads, waste disposal sites, etc. Maritime forest and scrub habitat (such as tertiary dunes) provide potential habitat for rookeries, and nest sites for seabirds and upland species white crowned pigeons or listed upland bird species These habitats also take longer to restore or recover from impacts.

Remove all trash or anything that would attract wildlife to work areas on a daily basis.

**Clarification/Rationale** – Trash and garbage can attract predators such as rats and mongoose. Attracting predators to an area will increase the likelihood that imperiled wildlife such as sea turtle hatchlings, and ground-nesting birds and their eggs will be predated.

If a sea turtle is spotted on the beach, maintain at least 200 feet between the turtle and any beach clean-up activities.

**Clarification/Rationale** – To avoid disturbing turtles and/or hatchlings a distance of 200 feet should be maintained until the turtles and/or hatchlings have reached the water.

Existing stakes or flagging should not be removed or destroyed anywhere on the beach.

**Clarification/Rationale** – Unauthorized persons should not remove stakes and flagging placed to identify highly sensitive areas, turtle nests, and breeding bird nests and rookeries. Crews should avoid these areas to minimize impacts to wildlife. Only sea turtle permit holders and resource agency personnel should remove stakes and flagging placed to delineate sea turtle nests after the nests have hatched and remove flagging they have placed to protect sensitive areas and delineate travel corridors when necessary.

Resuscitate any live, unresponsive sea turtles according to the attached sea turtle resuscitation guidelines (Attachment 4).

**Clarification/Rationale** – Turtles may appear dead, but actually can remain comatose for up to 24 hours due to trauma or distress. Turtles are reptiles and do not physiologically react the same way as mammals. If a turtle is held underwater, it may go into shock or a "coma", in which the reflexes are suppressed and often there are no signs of breathing. A comatose turtle may revive itself after a period of time, depending on the trauma. NMFS developed the resuscitation guidelines in response to interactions with fisheries where many turtles were caught by gear and held underwater. The resuscitation guidelines indicate the correct positioning of a turtle to increase the likelihood that they will be revived.

Sea turtle crawls should not be impacted until nest sites have been appropriately documented.

**Clarification/Rationale** – This BMP only applies during sea turtle nesting season. Sea turtle nest locations are found through daily surveys for crawls (the tracks left in the sand as turtles crawl onto the beaches to lay their eggs). Volunteers survey many beaches daily during nesting season; however, some areas are not surveyed daily. Wildlife Observers shall walk ahead of equipment to search for crawls and document potential nests. If the nesting female is still present, work must be temporarily shut down until she returns to the water.

Avoid known or observed seabird, shorebird, and wading bird nesting colonies and roosting aggregations to the extent possible. Many smaller offshore islands, some shoreline areas, some mangroves, and most salt ponds may be nesting or roosting sites. Do not enter sites with active bird nesting colonies or roosts. If birds are flushed, move away from the area and observe a larger buffer distance to avoid and minimize disturbance. If vessel removals are likely to impact nesting colonies or roosting sites, contact the EU for further guidance.

Avoid the dunes, both vegetated and non-vegetated. Establish a buffer zone, with flagging if necessary, from the toe of the slope of the dune to a distance of 10 feet. Where vegetation extends off the dune onto the beach, the buffer should extend 10 feet from the vegetation. Mechanical activity (equipment, UTV, etc.) should not occur in the buffer or on the dune. Contact the Section 7 RAR Specialist for additional information.

**Clarification/Rationale** – Dunes are extremely fragile ecosystems held together by the roots of plants. If these plants are killed, the dune may start to erode. Trampling can cause dune erosion. Dunes provide storm protection for the habitats and structures behind them. In situations where large amounts of oil are present in the buffer, contact the section 7 liaison for additional guidance.

Land or stage boats to avoid crushing the vegetation.

**Clarification/Rationale** – The intent of this BMP is to avoid and minimize adverse impacts to important habitat during cleanup operations.

Wildlife Observers, trained individuals, or biologists should accompany all cleanup crews (both daytime and nighttime operations) in appropriate numbers to ensure BMPs are implemented properly. Contact the Section 7 coordinator for recommendations on appropriate numbers.

**Clarification/Rationale** – Management must ensure that this BMP is followed to the maximum extent practicable. As cleanup crews likely lack training in biology, they may not understand the directions, purpose, or need for a BMP. Their job is to clean, and they need guidance to ensure that their actions do not result in additional adverse impacts to threatened and endangered species and other wildlife, or the habitats that support these species. This also assists FWS and NOAA in documenting and monitoring impacts to federal trust wildlife species as a result of spill response.

## **Historic and Cultural Resources Best Management Practices**

The following BMPs are intended to ensure compliance with Section 106 of the National Historic Preservation Act, and should be coordinated with the respective State Historic Preservation Officer (SHPO):

Cease all activities involving subsurface disturbance, and immediately contact the Environmental Unit (EU), if prehistoric/historic artifacts, such as pottery or ceramics, lithic artifacts, 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). Response activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during response activities, stop all work immediately and report to the Unified Command (UC) and EU through the Situation Unit.

Contact the EU prior to conducting any removal or recovery efforts that require substantial ground disturbance beyond the initial disturbance caused by the disaster event (additional SHPO coordination required).

Ensure that removal activities have been coordinated with a submerged aquatic archaeologist and the EU.

## ATTACHMENTS

Attachment 1: In-Situ Burning Sea Turtle and Marine Mammals Protocols and Procedures

- In-Situ Burn Sea Turtle Observer Protocol
- Sea Turtle at Sea Retrieval Protocol
- Marine Species Observation Form

Attachment 2: Vessel Strike Avoidance Measures and Reporting for Mariners; NOAA Fisheries Service, Southeast Region; revised February 2008.

Attachment 3: NOAA Fisheries Service Southeast Region Ship Strike Report

Attachment 4: Sea Turtle Handling and Resuscitation Requirements - 50 CFR 223.206 (d)(1)