

## **Appendix G**

### **National Marine Fisheries Services Draft Terms and Conditions**

#### RPMs

1. BOEM will have measures in place to monitor and report all interactions with any protected species resulting from the proposed action. Reports shall be sent to the Assistant Regional Administrator (Mr. David Bernhart) for NMFS's Protected Resources Division, Southeast Regional Office, 263 13th Avenue South, St. Petersburg, Florida 33701-5505.
2. BOEM will require NMFS-approved observers to monitor dredged material inflow and overflow screening baskets on the hopper dredge.
3. If hopper dredging is used once SST are above 10°C (50° F) in the area, then sea turtle abundance trawling will be used prior to dredging. Depending on the results of abundance trawling, relocation trawling may be required.
4. BOEM will require the use of rigid sea turtle deflectors on all hopper dragheads. The hopper dredge's sea turtle deflector draghead is to be inspected prior to startup of hopper dredging operations. In addition, BOEM shall ensure that all contracted personnel involved in operating hopper dredges receive thorough training on measures of dredge operation that will minimize sea turtle takes.

#### T&Cs

1. A project report summarizing the results of the dredging and the sea turtle take (if any) must be submitted to NMFS within 30 working days of completion. Reports shall contain information on project location, start-up and completion dates, cubic yards of material dredged, problems encountered, incidental takings (include photographs, if available) and sightings of protected species, mitigating actions taken (if relocation trawling, the number and species of turtles relocated), screening type (inflow, overflow) utilized, daily water temperatures, name of dredge, names of endangered species observers, percent observer coverage, and any other information the BOEM and/or contractor deems relevant. This report must be provided to NMFS's Protected Resources Division at the address provided in RPM No. 1 above and notification of take shall be provided to NMFS at the following email address within 24 hours, referencing the present Opinion by NMFS identifier number (SER-2013-11187), title, and date: **[takereport.nmfsser@noaa.gov](mailto:takereport.nmfsser@noaa.gov)**. BOEM shall provide NMFS's Southeast Regional Office (address provided in RPM No. 1 above) with an end-of-project relocation trawling report within 30 days of completion of relocation trawling. This report may be included within the project report (RPM No. 1).
2. The BOEM project manager shall notify the Sea Turtle Stranding and Salvage Network (STSSN) state representative (contact information available at <http://www.sefsc.noaa.gov/seaturtleSTSSN.jsp>) of the start-up and completion of hopper dredging operations and ask to be notified of any sea turtle strandings in the project area that, in the estimation of the STSSN personnel, bear signs of potential draghead impingement or entrainment. Information on any such strandings shall be reported in writing within 30 days of project end to NMFS's Southeast Regional Office (address

provided in RPM No. 1 above), or included in the project report (Term and Condition No. 1). (RPM No. 1).

3. BOEM shall arrange for NMFS-approved protected species observers to be aboard the hopper dredge to monitor the hopper bin, screening, and dragheads for sea turtles and their remains. For the proposed action, 100% observer monitoring is required. Beach observers cannot be used in place of shipboard observers for hopper dredging of borrow areas (RPM No. 2).
4. Abundance trawling will be employed five days prior to the commencement of hopper dredging if SST is above 10°C, to determine relative abundance of sea turtles in the area. An abundance of a minimum of one turtle captured during preliminary abundance trawling will trigger the need for relocation trawling to be employed during the remainder of the dredging operation. If no turtles are captured during abundance trawling, relocation trawling shall not be required and dredging may proceed. The taking of one sea turtle of any species during hopper dredging will trigger the need for relocation trawling to be enacted for the remainder of the dredge operation. The dredge will shut down until relocation trawling can commence. If during subsequent months of relocation trawling no turtles are taken the County may ask BOEM to confer with NMFS for a cessation of relocation trawling (RPM No. 3).
5. If relocation trawling is used then the following conditions must be observed during relocation trawling (RPM No. 5):
  - a. *Trawl Time*: Trawl tow-time duration shall not exceed 42 minutes (doors in-doors out) and trawl speeds shall not exceed 3.5 kt.
  - b. *Handling During Trawling*: Sea turtles and smalltooth sawfish<sup>1</sup> captured pursuant to relocation trawling shall be handled in a manner designed to ensure their safety and viability, by implementing the measures below.
  - c. *Captured Turtle Holding Conditions*: Captured turtles shall be kept moist, and shaded whenever possible, until they are released. They may be held for up to 24 hours if opportunistic, ancillary, “piggy-back” data gathering (e.g., opportunistic satellite tagging) is proposed. This Opinion provides the authority to NMFS-approved observers to satellite tag captured sea turtles without the need for an ESA Section 10 permit.
  - d. *Weight and Size Measurements and Tagging*: All turtles shall be measured (standard carapace measurements including body depth), tagged (PIT or Inconel), and weighed prior to release when safely possible; smalltooth sawfish shall be measured (fork length and total length) and, when safely possible, tagged, weighed, and a tissue sample taken prior to release. Only NMFS-approved observers or observer candidates in training under the direct supervision of a NMFS-approved observer shall conduct the tagging/measuring/weighing/tissue sampling operations.

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<sup>1</sup> Although smalltooth sawfish trawl captures are not expected, these terms and conditions are included for such an eventuality. Any take of sawfish would require immediate reinitiation of consultation with NMFS.

*Flipper Tagging:* All sea turtles captured by relocation trawling shall be flipper-tagged prior to release with external tags that shall be obtained prior to the project from the University of Florida's Archie Carr Center for Sea Turtle Research. This Opinion serves as the permitting authority for any NMFS-approved endangered species observer a relocation trawler to flipper-tag with external tags (e.g., Inconel tags) captured sea turtles. Columbus crabs or other organisms living on external sea turtle surfaces may also be sampled and removed under this authority.

*PIT Tagging and Scanning:* All sea turtles captured by relocation trawling or dredges shall be thoroughly scanned for the presence of PIT tags prior to release using a scanner powerful enough to read dual frequencies (125 and 134 kHz) and read tags deeply embedded deep in muscle tissue (e.g., manufactured by Biomark or Avid). Turtles which have been previously PIT tagged shall nevertheless be externally flipper-tagged. PIT tagging may only be conducted by observers with PIT-tagging training or experience. This Opinion provides the authority to NMFS-approved observers to PIT tag captured sea turtles without the need for an ESA Section 10 permit. The data collected (PIT-tag scan data and external tagging data) shall be submitted to NOAA, National Marine Fisheries Service, Southeast Fisheries Science Center, Attn: Lisa Belskis, 75 Virginia Beach Drive, Miami, Florida 33149. All data collected shall be submitted in electronic format within 60 working days to Lisa Belskis at the following email address: [Lisa.Belskis@noaa.gov](mailto:Lisa.Belskis@noaa.gov).

e. *Take and Release Time During Trawling - Turtles:* Turtles shall be kept no longer than 12 hours prior to release (except as noted in 5.c. above) and shall be released not less than 3 nmi from the dredge site. Recaptured turtles shall be released not less than 5 nmi away and shall be released over the side of the vessel, away from the propeller, and only after ensuring that the vessel's propeller is in the neutral, or disengaged, position (i.e., not rotating). If it can be done safely, turtles may be transferred onto another vessel for transport to the release area to enable the relocation trawler to keep sweeping the dredge site without interruption.

f. *Take and Release Time During Trawling - Smalltooth Sawfish:* Smalltooth sawfish shall be released immediately after capture, away from the dredge site or into already dredged areas, unless the trawl vessel is equipped with a suitable well-aerated seawater holding tank (e.g., plastic "kiddie pool" not less than 1 ft in depth by 5 ft in diameter), where a maximum of 1 smalltooth sawfish may be held for not longer than 30 minutes before it must be released or relocated away from the dredge site.

g. *Injuries and Incidental Take Quota:* Any protected species injured or killed in federal waters during or as a consequence of relocation trawling shall count toward the incidental take quota. Minor skin abrasions resulting from trawl capture are considered non-injurious. Injured sea turtles shall be immediately transported by Dare County or its contractor at its own expense to the nearest sea turtle rehabilitation facility; all rehabilitation costs and sea turtle transportation costs shall be borne by Dare County or its contractor. If it is determined that the turtle cannot be released NMFS and the rehab

facility will determine the best course of action along with a cost estimate for continued care.

h. *CMTTP*: External flipper tag and PIT-tag data generated and collected by relocation trawlers shall also be submitted to the Cooperative Marine Turtle Tagging Program (CMTTP), on the appropriate CMTTP form, at the University of Florida's Archie Carr Center for Sea Turtle Research.

i. *Tissue Sampling*: All live or dead sea turtles captured by relocation trawling or dredging shall be tissue-sampled prior to release, according to the protocols described in Appendix II or Appendix III of the November 19, 2003, Gulf of Mexico Regional Biological Opinion on Hopper Dredging, as revised through Revision No. 2, included as Appendix C of this opinion. Tissue samples shall be sent within 60 days of capture to: NOAA, National Marine Fisheries Service, Southeast Fisheries Science Center, Attn: Lisa Belskis, 75 Virginia Beach Drive, Miami, Florida 33149. All data collected shall be submitted in electronic format within 60 working days to [Lisa.Belskis@noaa.gov](mailto:Lisa.Belskis@noaa.gov). A copy of the Protected Species Incidental Take Form should accompany the sample. The present opinion to BOEM serves as the permitting authority for any NMFS-approved endangered species observers aboard relocation trawlers or hopper dredges to tissue-sample live- or dead-captured sea turtles, without the need for an ESA Section 10 permit.

8. For the proposed action, 100% shipboard observer monitoring of inflow screens is required year-round. If conditions disallow 100% inflow screening, inflow screening can be reduced gradually, but effective, 100% overflow screening is then required, and an explanation must be included in the project report, and NMFS notified beforehand.

If the dredge is not using UXO screening, then the hopper's inflow screens should initially have 4-inch by 4-inch screening, for effective screening and capture of entrained protected species body parts. NMFS believes this is workable for sand mining operations, where a minimum of debris is expected to be encountered. However, if BOEM, in consultation with observers and the draghead operator, determines that the draghead is clogging and reducing production substantially, the mesh size may be increased after prior consultation with and approval by NMFS, to 8-inch by 8-inch; if this still clogs, then 16-inch by 16-inch openings. NMFS believes that this flexible, graduated-screen option is prudent since the need to constantly clear the inflow screens will increase the time it takes to complete the project; therefore, it will increase the exposure of sea turtles to the risk of impingement or entrainment. Inflow screen clogging should be greatly reduced with these flexible options; however, further clogging (e.g., as when encountering heavy clay or debris) may compel removal of the inflow screening altogether, in which case *effective* 100% overflow screening is mandatory.

BOEM shall notify NMFS *beforehand* if inflow screening is going to be reduced or eliminated, and provide details of how effective overflow screening will be achieved. NMFS, in consultation with the dredging company and BOEM, shall determine what constitutes effective overflow screening (RPM No. 6).

*Harm Avoidance and Minimization Measures that will be Required by BOEM for Activities in Federal Waters: Relocation Trawling, Protected Species Observers Aboard Dredges; Right Whale Monitoring*

BOEM has proposed to implement the following actions designed to avoid or minimize harm to listed species from hopper dredging in federal waters.

The occurrence and distribution of sea turtles along the Atlantic coast is tied to sea surface temperature (SST) (Coles and Musick, 2000; Braun-McNeill *et al.*, 2008). Throughout the region, water temperatures increase rapidly in March and April and decrease rapidly in October and November; these temperature changes are quicker in nearshore waters. An analysis of historical tracking and sightings data conducted by the Turtle Expert Working Group (TEWG) indicates that the shelf waters (out to the 200-meter isobaths) off North Carolina are seasonally “high-use areas” for certain life stages of loggerhead sea turtles (TEWG, 2009). Braun-McNeill *et al.* (2008) show that loggerhead turtle presence off Cape Hatteras (based on sightings, strandings, and incidental capture records) occurred when 25% or more of the area exceeded SST of 11°C.

If hopper dredging is used once SST are above 10°C (50° F) in the area, then sea turtle abundance trawling be used. Abundance trawling will be employed five days prior to the commencement of hopper dredging to determine relative abundance of sea turtles in the area. An abundance of a minimum of one turtle captured during preliminary abundance trawling will trigger the need for relocation trawling to be employed during the remainder of the dredging operation. If no turtles are captured during abundance trawling, relocation trawling shall not be required and dredging may proceed. The taking of one sea turtle of any species during hopper dredging will trigger the need for relocation trawling to be enacted for the remainder of the dredge operation. The dredge will shut down until relocation trawling can commence. If during subsequent months of relocation trawling no turtles are relocated, the County may ask BOEM to confer with NMFS for a cessation of relocation trawling.

Essentially, this method employs a capture-relocation technique, and is targeted at the active dredging site within the borrow area. If relocation trawling is used, it will begin no later than 24 hours in advance of any hopper dredging at the borrow site(s). Once dredging begins, relocation trawling will continue simultaneous with dredging operations. Relocation trawling will occur ahead of the dredge(s) throughout the duration of dredging. Any turtles captured during relocation trawling will be photographed, measured, biopsied for genetics, tagged, and relocated at least 3 nautical miles (nmi) away. During relocation trawling, 1 trawling vessel per dredge will operate 24 hours/day, 7 days/week. Tow times (i.e., the duration that the trawl net will be in the water and capable of trapping sea turtles) during relocation trawling will be strictly limited to less than 42 minutes total time.

In addition, during dredging activities, the applicant has agreed to comply with NMFS’s *Sea Turtle and Smalltooth Sawfish Construction Conditions*. As part of these conditions, if a sea turtle is observed within 100 yards (yd) of construction operations, all appropriate precautions shall be implemented to ensure protection of the species, including cessation of operation if an animal moves within 50 feet (ft) of any moving equipment. Additionally, the conditions require avoiding collisions with swimming sea turtles, monitoring of siltation barriers for entanglement,

operation at “no wake/idle” speeds in the construction area, and reporting any collision with and/or injury to a sea turtle to NMFS’s Protected Resources Division and the local sea turtle stranding/rescue organization.

The contractor is required to participate in the Right Whale Early Warning System to protect North Atlantic right whales. If a right whale or any other species of whale is reported within the area, then the contractor will be required to follow the enclosed NMFS's *Southeast Region Vessel Strike Avoidance Measures and Reporting for Mariners* (revised February 2008) (Appendix B), except where specific measures below are in conflict, in which case the measures in this Opinion govern (e.g., a speed restriction to a maximum of 10 knots (kt) at all times in right whale calving areas [i.e., federally-protected areas off the southeastern U.S. coast designated and implemented for the protection of right whales and their calves during their calving/migration season] for vessels 65 ft in length or greater). By law, vessels shall maintain a 500-yd buffer between the vessel and any North Atlantic right whale [as required by federal regulation 50 CFR 224.103 (c)].

Protected species observers will live aboard the dredges, monitoring dredge loads 24 hours a day for evidence of impacts to endangered and threatened species, as well as recording water temperatures, bycatch information, and any sightings of species in the area (see RPM Nos. 1-4). Screening will be placed on all points of dredged material inflow into the hopper prior to work beginning, and protected species observers will monitor the screens for evidence of protected species interactions.

Hopper dredges will be required to have rigid turtle deflectors installed on all dragheads (See RPM No. 6). The rigid deflector was developed under controlled conditions by the USACE’s Waterways Experimental Station (WES), now known as the Engineering Research and Development Center (ERDC). V-shaped, sea turtle deflector dragheads prevent an unquantifiable yet significant number of sea turtles from being entrained and killed in hopper dredges each year. Without them, turtle takes during hopper dredging operations would unquestionably be higher. (Draghead tests conducted in May-June 1993 by the USACE’s WES in clear water conditions on the sea floor off Fort Pierce, Florida, with 300 mock turtles placed in rows, showed convincingly that the newly-developed WES deflector draghead performed exceedingly well at deflecting the mock turtles. Thirty-seven of 39 mock turtles encountered were deflected, 2 turtles were not deflected, and none were damaged. The V-shape reduced forces encountered by the draghead, and resulted in smoother operation [WES, Sea Turtle Project Progress Report, June 1993]. V-shaped deflecting dragheads are now a widely accepted conservation tool, the dredging industry is familiar with them and their operation, and they are used by all USACE Districts conducting hopper dredge operations where turtles may be present. To prevent impingement of sea turtles within the water column, every effort will be made to keep the dredge pumps disengaged when the hopper dredge dragheads are not firmly on the bottom. Also, the rotating cutterhead will not be lifted from the sediment surface during operations.

Due to the possibility of encountering munitions and explosives of concern (MEC, or unexploded ordinance (UXO)) within the offshore borrow areas, BOEM may require the contractor to use UXO screening. The purpose of the screening is to prevent an ordnance from being placed on the beach. This is accomplished through the use of: 1) a screening device placed

on the dredge intake or in a pipeline section prior to reaching the dredge pump, and 2) a screen at the discharge end of the pipeline on the beach. The screening device on the dredge intake prevents the passage of any material greater than 1.25 in in diameter. The openings on the screening device may have one dimension greater than the other. The maximum allowable opening size is 1.25 in by 6 in. The screening device on the discharge end (on the beach) is designed to retain all items 0.75 in in diameter and larger. The openings on the screening device are of uniform dimension, slotted openings are not permitted. Visual inspection of the screens and sand placement are performed at all times. Intake or pipeline screening is inspected at a minimum of once every 8 hours.

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