US Army Corps of Engineers®
New York District

LAKE MONTAUK HARBOR, EAST HAMPTON, NEW YORK

NAVIGATION IMPROVEMENTS

FINAL ENVIRONMENTAL ASSESSMENT

OCTOBER 2020

APPENDIX D:

Endangered Species Act - NMFS

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The U.S. Army Corps of Engineers (ACOE) is proposing to deepen and widen the existing Lake Montauk Harbor (LMH, see Figure 1) navigation channel from -12'MLLW and 150' width to -17' MLLW and 150 ' wide and the -12'MLLW deposition basin and 50' wide deposition basin to -17' MLLW and 100' wide. We have made the determination that the proposed activity, may affect, but is not likely to adversely affect any listed species that may occur or utilize the area of effect listed as threatened or endangered by NMFS under the ESA of 1973, as amended is provided below.

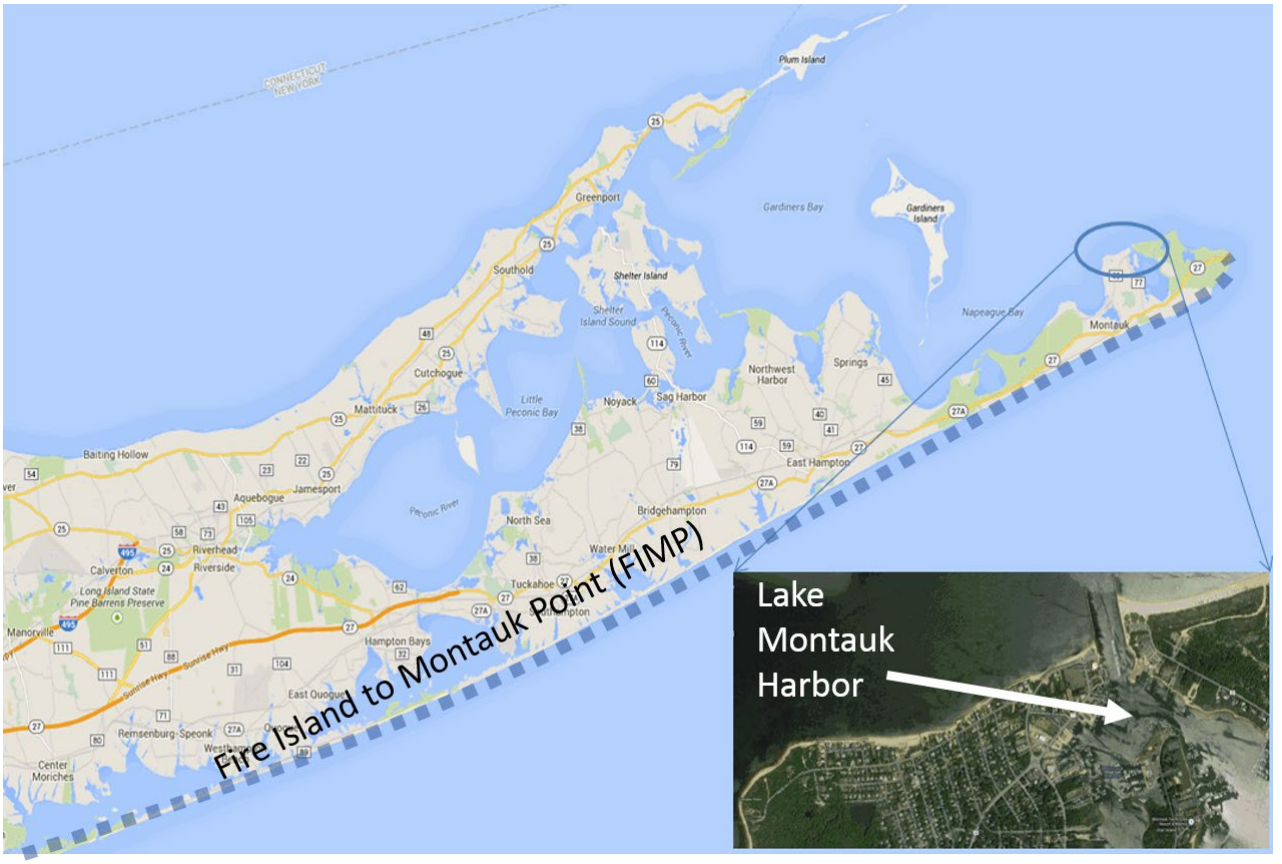

Figure 1: Lake Montauk Harbor Study Area

1. Proposed Project

The LMH Tentatively Selected Plan (TSP), now Recommended Plan (RP) as defined in the Final Feasibility Report/Environmental Assessment (FR/EA, see enclosure), provides for safe and efficient navigation at LMH. The Final FR/EA has undergone public review, policy review, Agency Technical Review (ATR), and Independent External Peer Review (IEPR). The USACE study team has responded to review comments, and presents the recommended plan in the Final FR/EA.

The proposed navigation will begin after 30 September and end by 14 January of any given year of construction and consist of deepening the Federal navigation channel and deepening and widening

the deposition basin. The construction of the project will involve use of a cutterhead dredge. Approximately 188,000 CY dredged material will be removed from the channel and deposition basin and be deposited onto the downdrift beach west of the jetty via a pipeline connected to the dredge. See Figure 2.

Figure 2: LMH Study Area and Proposed Project Area

In addition to any mitigation or BMPs that will be implemented specific to NOAA ESA concerns, construction activities will be seasonally restricted to occur between September 30 and 14 January to ensure protection of the designated essential fish habitat within the study area. Construction duration is anticipated to be no longer than between 60-90 days.

2. Description of the Action Area

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR§402.02). For this project, the action area includes the LMH channel and deposition basin,, the vessel transit route within the LMH action area, including the area of the pipeline from the dredge to the beach nourishment site on the beach west of the jetty, and the underwater areas where the effects of dredging and fill placement (i.e., increases in suspended sediment) will be experienced.

The sediments in the areas to be dredged consist of mostly sand and gravel (98% sand). Benthic resources within the channel and deposition basin areas is limited due to the constant scouring of the channel bottom by transiting vessels, and due to regular maintenance of both every four years, but may include a diversity of species including those types considered primary prey species for sturgeon and sea turtles (crustaceans and mollusks). There is a patch of Submerged Aquatic Vegetation (SAV) adjacent to the LMH Federal channel. See Figure 3.

Figure 3: SAV patch on east side of existing channel

3. NMFS Listed Species in the Project Area

3.1. Whales

Federally endangered North Atlantic right, humpback, and fin whales are seasonally present in the waters of New York. These species use the near shore, coastal waters of the Atlantic Ocean as they migrate to and from calving and foraging grounds. Humpback and fin whales primarily occur in the waters of New York during the spring, summer and fall months, while the North Atlantic right whale primarily occurs in these waters from November 1 through April 30, although transient right whales can be present outside of this time frame. Although humpback, right, fin whales are not expected to occur in the portions of the action area located within the shallow near shore channelized waters of LMH, ESA listed species of whales may occur in the portion of the action area from where the dredged material will be pumped onshore. Based on the information above, and the following factors, we conclude that the risk factors that increase the likelihood for whale entrainment are not present since cutterhead dredges pose no risk to whales.

Each species has a published recovery plan:

- Humpback whale (*Megaptera novaeangliae*)(35 FR 18319; Recovery plan: NMFS 1991)
- North Atlantic Right whale (*Eubalaena glacialis*)(73 FR 12024; Recovery plan: NMFS 2005)
- Fin whale (*Balaenoptera physalus*)(35 FR 18319; Recovery plan: NMFS 2010)

3.2. Sea Turtles

Four species of federally threatened or endangered sea turtles under our jurisdiction are found seasonally in the coastal waters of New York: federally threatened Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead *(Caretta caretta),* and the federally endangered Kemp's ridley *(Lepidochelys kempi),* green *(Chelonia mydas)* and leatherback *(Dermochelys coriacea)* sea turtles. In general, listed sea turtles are seasonally distributed in coastal U.S. Atlantic waters, migrating to and from habitats extending from Florida to New England, with overwintering concentrations in southern waters. As water temperatures rise in the spring, these turtles begin to migrate northward. As temperatures decline rapidly in the fall, turtles in northern waters begin their southward migration. Sea turtles are expected to be in the waters of New York in warmer months, typically when water temperatures are at least 15°C. This typically coincides with the months of May through November, with the highest concentration of sea turtles present from June-October (Morreale 1999; Morreale 2003; Morreale and Standora 2005; Shoop and Kenney 1992).

Several studies have examined the seasonal distribution of sea turtles in New York waters. In most years, sea turtles begin to arrive in New York waters in June (Morreale and Standora, 1993; Morreale and Burke, 1997). Tracking studies on juvenile Kemp's ridleys demonstrate that all tagged turtles had traveled south from New York coastal waters by the first week in November (Standora *et al.* 1992). In 2002 and 2003, Morreale conducted a study of loggerhead, Kemp's ridley and green sea turtles captured in pound nets fishing in the Peconic Bay area. Sea turtles were not encountered after the last week in October (Morreale 2003). Tracking studies summarized in Morreale and Standora (2005) indicate that loggerhead and Kemp's ridley sea turtles begin leaving New York waters in October and generally by the first week of November, turtles head southward past the Virginia border. Similar migratory patterns are expected for green and leatherback sea turtles (Shoop and Kenney 1992; Morreale 1999). Based on this information, sea turtles may occur in the action area between May through November.

Each species has a published recovery plan:

- Kemp's Ridley turtle (*Lepidochelys kempii*)(35 FR 18319; Recovery plan: NMFS et al. 2011)
- Leatherback turtle (*Dermochelys coriacea*)(35 FR 8491; Recovery plan: NMFS &USFWS 1992)
- Loggerhead turtle (*Caretta caretta*)(76 FR 58868; Recovery plan: NMFS & USFWS 2008)
- Green turtle (*Chelonia mydas*)(81 FR 20057; Recovery plan: NMFS & USFWS 1991)

3.3. Atlantic Sturgeon

There are five DPSs of Atlantic sturgeon listed as threatened or endangered. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered, while the Gulf of Maine DPS is listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida.

At around three years of age, subadults exceeding 2.3 feet in total length begin to migrate to marine waters (Bain et al. 2000). After emigration from the natal river/estuary, subadults and adult Atlantic sturgeon travel within the marine environment, typically in waters less than 164 feet in depth, using coastal bays, sounds, and ocean waters (ASSRT 2007). In rivers and estuaries, Atlantic sturgeon typically use the deepest waters available; however, Atlantic sturgeon also occur over shallow (8.2 feet), tidally influenced flats and mud, sand, and mixed cobble substrates (Savoy and Pacileo 2003). Occurrence in these shallow waters is thought to be tied to the presence of benthic resources for foraging.

Based on the above information, adult and subadult Atlantic sturgeon from any of five DPSs could occur in the project area; however, as Atlantic sturgeon spawn in freshwater portions of large rivers and early life stages are not tolerant of salinity, no eggs, larvae or juvenile Atlantic sturgeon occur in the action area.

4. Effects of the Action

The primary concerns for loggerhead, Kemp's ridley, and green sea turtles is entrainment and loss of forage, while the primary concern for leatherbacks is vessel collision as the dredge transits between the LMH and the downdrift beach. Due to their large size, whales are not vulnerable to entrainment in dredges; as such, effects of impingement or entrainment on whales will not be considered in this consultation. The primary concern for listed species of whales is the possible effects of total suspended solids (TSS), or water quality, and the potential for vessel collisions as the dredge transits between LMH and the downdrift beach. The primary concerns for Atlantic sturgeon is entrainment, loss of forage, and vessel collision as the dredge transits between LMH and the downdrift beach. The potential effects of a possible temporary increase in turbidity or TSS and sedimentation as a result of dredging and beach nourishment on listed species are also discussed below.

The pipeline connecting the dredge to the shore will float on the surface of the water or will be laid on the bottom, presenting no possibility of intake of an ESA-listed species or adverse interaction with an ESA-listed species, and will not present a barrier to ESA-listed species. These effects will not be discussed further in this consultation.

Below, we discuss the effects of cutterhead dredging on ESA-listed species and exposure to: (A) entrainment and impingement of Atlantic sturgeon and sea turtles; (B) alteration of listed species prey items and foraging behavior due to dredging; (C) suspended sediment (or TSS) associated with dredging operations, and the potential for interactions (i.e., vessel strikes) between project vessels and (D) individual Atlantic sturgeon, whales or sea turtles.

4.1. Effects of Impingement / Entrainment

4.1.1. Atlantic Sturgeon

Atlantic sturgeon are not known to be vulnerable to entrainment and/or impingement in cutterhead

dredges. Cutterhead dredges operate with the dredge intake buried in the sediment; therefore, in order to contact the dredge intake, sturgeon would have to be on the bottom. Factors that are believed to contribute to the risk of Atlantic sturgeon entrainment include: 1) dredge duration (e.g., greater number of interactions associated with longer duration dredging); 2) the location, habitat, and geography of the project site (e.g., open estuarine environment versus confined channel areas); and, 4) the species' use of, and behavior within, the affected location (e.g., foraging, overwintering, spawning, resting).

Information suggests that Atlantic sturgeon in the marine environment do not move along the bottom, but instead move further up in the water column during their migratory movements along the coast line. Atlantic sturgeon do, however, occur on the benthos while foraging. Atlantic sturgeon feed on benthic invertebrates (e.g., amphipods, gastropods, annelids, decapods) and occasionally on small fish. The benthos within the channel and deposition basin footprints area are limited, and has no known documented or potential shellfish beds due to constant scouring by transiting vessels and regular four year maintenance cycles. As such, the channel and deposition areas are unsuitable for Atlantic sturgeon foraging. Based on this information, Atlantic sturgeon are not expected to be foraging in this portion of the action area and thus, are not expected to be on the benthos where the cutterhead dredge will be operating. If, however, an Atlantic sturgeon is foraging opportunistically within this portion of the project area, there could be a risk of interacting with the dredge. However, because the dredge moves very slowly, and there is ample space for movements it is likely that subadult or adult Atlantic sturgeon can easily avoid the dredge. This assumption is supported by recent monitoring work, completed in the James River (Virginia) and the Delaware River (New Jersey) (Cameron 2010; ERC 2011), as well as work undertaken on a related species, the white sturgeon, in the Columbia River (Parsley and Popoff2004). During these studies, the movements of tagged Atlantic, white, and/or shortnose sturgeon were tracked near the dredge (mechanical and hydraulic). No interactions between sturgeon and the dredge occurred. Some tagged sturgeon moved through the area where the dredge was operating multiple times during the study, while others remained within the vicinity of the dredging operation with no incidence. The risk is further increased at overwintering areas because evidence suggests that sturgeon may be less responsive to stimuli while overwintering, which may make it less likely that sturgeon would avoid a dredge during this time period. However, overwintering grounds are not known to exist in the project area and therefore, no overwintering sturgeon were likely to occur in the portion of the project area where dredging operations will occur. As a result, these increased risk factors are not present.

Impingement or entrainment in hydraulic cutterhead dredges may kill or injure sturgeon. In order for sturgeon to be impinged or entrained in the cutterhead dredge, sturgeon would have to be on the bottom. Sturgeon do occur on the bottom, especially while foraging; however, studies indicate that small, juvenile sturgeon (less than 0.6 foot fork length) need to be within 4.9 feet to 6.6 feet of the cutterhead for there to be any potential entrainment (Boysen and Hoover 2009). Sturgeon in the action area are considerably bigger (subadults and adults), and as they are stronger swimmers, are even less vulnerable to being overcome by the suction of the dredge and to becoming

entrained. Because the dredge moves slowly and sturgeon are highly mobile, strong swimmers, it is likely that sturgeon would easily be able to avoid the dredge. This assumption is supported by recent monitoring work completed in the James River (Virginia) and the Delaware River (New Jersey) (Reine et al. 2014; ERC 2012). During these two studies, while the movements of tagged sturgeon were traced near a dredge, there were no interactions between tagged sturgeon and the dredge. Furthermore, tagged sturgeon moved through the dredge area during the study multiple times while the dredge was operating.

While entrainment of smaller sturgeon in cutterhead dredges has been observed (as evidenced by the presence of a few individual shortnose sturgeon at the Money Island Disposal Site in the Delaware River in 1996 and 1998), these instances are rare and have been limited to dredging events that occur near sturgeon overwintering areas where sturgeon are known to form dense aggregations. However, although sturgeon may be present in the action area year round, the action area is not a known overwintering area for Atlantic sturgeon. The risk of entrainment is also higher for small fish, including early life stages and small juveniles. Because these life stages are not present in the action area and the smallest sturgeon present would be at least 2.3 feet (the size at which we expect them to begin migrations from their natal river), the risk of entrainment is minimal in the action area. Increased risk factors (i.e., small fish, overwintering area) are not present in the action area, overall.

Atlantic sturgeon are expected to be using the action area only nominally as they move to other more prey-abundant areas since the density of Atlantic sturgeon in any portion of the project area is expected to be low between 30 September and 15 January, for the 60-90 day total duration construction of activities. If Atlantic sturgeon occur in the area to be dredged, there is ample space and ability for the sturgeon to avoid the dredge. Based on this information, combined with the fact that Atlantic sturgeon are not expected to occur at the bottom of the action area, the potential for an interaction with a dredge is further reduced.

Based on the information above, and the following factors, we conclude that the risk factors that increase the likelihood for Atlantic sturgeon entrainment are not present in the action area, cutterhead dredges historically have not posed significant risk to sturgeon, and sturgeon are unlikely to be utilizing the channel or deposition habitat within LMH For the 60-90 day total construction duration between 30 September and 15 January. Based on this information, it is extremely unlikely that any impingement or entrainment of Atlantic sturgeon will occur. Effects of cutterhead dredging on Atlantic sturgeon are discountable. Therefore, it is extremely unlikely that any sturgeon would be impinged or entrained in a cutterhead dredge operating within the study area, or project site; effects to sturgeon from the proposed short-duration and seasonally-restricted hydraulic dredging operations are discountable.

4.1.2. Sea Turtles

The proposed action area is situated within the near shore and inlet waters of the Atlantic Ocean. As cutterhead dredging operations will occur between 30 September and 15 January sea turtle presence will be unlikely since they will have already migrated to southeastern warmer waters.

Based on this information, the potential for an interaction with a dredge is reduced, or entirely eliminated.

Based on the information above, and the following factors, we conclude that the risk factors that increase the likelihood for sea turtle entrainment are not present since cutterhead dredges pose no risk to turtles since sea turtles are not known to be vulnerable to entrainment in cutterhead dredges, and due to the fact that turtles will likely not be in the action area during the time of year when dredging operation will commence and end (30 September through 15 January).

4.2. Effects of Alteration on Prey items and Foraging due to Dredging

4.2.1. Atlantic Sturgeon and Sea Turtles

Dredging can cause effects on Atlantic sturgeon and sea turtles by reducing prey species through the alteration of the existing biotic assemblages and habitat. As forage (e.g., polychaetes, bivalves, and gastropods) for both species are unlikely to be present in the action area due to frequent scouring of the channel by transiting vessels and regular four year maintenance of both the channel and deposition basin the assumption can be made that sturgeon and sea turtles are not likely to be more attracted to the waters of the action area than to other foraging areas in the waters of NY and were able to find sufficient prey in these alternate areas.

While dredging and beach placement activities may temporarily disrupt normal feeding behaviors for sturgeon and sea turtles by causing them to move to alternate areas, the proposed limited in scope and duration dredging and beach placement activities are not likely to remove critical amounts of prey resources. Based on this and the best available information, we believe the impacts of dredging and beach placement operations on Atlantic sturgeon and sea turtle foraging are insignificant.

During dredging operations, ESA-listed species will avoid the immediate area when dredging or fill placement takes place. The proposed action will not alter the habitat in any way that prevents sturgeon or sea turtles from transiting the action area to other near-by areas suitable for foraging.

Based upon the above assessment and the best available information, we believe the impacts of dredging and beach placement operations on Atlantic sturgeon and sea turtle migration are insignificant.

4.3. Effects on Water Quality: Dredging and Beach Nourishment

4.3.1. Dredging

Dredging operations cause sediment to be suspended in the water column. This results in a sediment plume in the water, typically radiating from the dredge site and decreasing in concentration as sediment falls out of the water column as distance increases from the dredge

site. The nature, degree, and extent of sediment suspension around a dredging operation are controlled by many factors including: the particle size distribution, solids concentration, and composition of the dredged material; the dredge type and size, discharge/cutter configuration, discharge rate, and solids concentration of the slurry; operational procedures used; and the characteristics of the hydraulic regime in the vicinity of the operation, including water composition, temperature and hydrodynamic forces (i.e., waves, currents, etc.) causing vertical and horizontal mixing (ACOE 1983).

4.3.2. Beach Placement

Beach placement operations for LMH are limited to the un-engineered placement of approximately 188,000 CY of dredged material sourced from the LMH channel and deposition basin on the downdrift beach west of the jetty. The placement site will encompass approximately 3,000 linear feet and the width of the berm will be approximately 44'.

The placement of dredged material along the downdrift beach could potentially cause an increase in localized turbidity in the nearshore environment. Nearshore turbidity impacts from the fill placement are directly related to the quantity of fines (silt and clay) in the nourishment material. As the material from the channel and deposition basin consists of 98% sand beach, and of similar composition as the indigenous beach sands, we expect short, if any, suspension time and containment of sediment during and after placement activities. As such, turbidity impacts would be short-term *(i.e.,* turbidity impacts will dissipate completely within several hours of the cessation of operations (Greene 2002) and will be spatially limited to the vicinity of the dredge outfall pipe, the pump out buoy/mooring station, and dredge anchor points.

4.3.3. Cutterhead Dredging

Information on sediment plumes associated with hydraulic cutterhead dredges indicates that the concentration of suspended sediments resulting from hydraulic dredging would be highest close to the bottom and would decrease rapidly downstream and higher in the water column. Based on a conservative (i.e., low) total suspended solids (TSS) background concentration of 5.0 mg/L, the modeling results indicated that elevated TSS concentrations (i.e., above background levels) would be present at the bottom 6.6 feet of the water column for a distance of approximately 1,150 feet (ACOE 1983). Based on these analyses, elevated suspended sediment levels are expected to be present only within 1,150 feet of the location of the cutterhead. Turbidity levels associated with cutterhead dredge sediment plumes typically range from 11.5 to 282.0 mg/L with the highest levels detected adjacent to the cutterhead and concentrations decreasing with greater distance from the dredge.

4.3.4. Effects on Whales, Atlantic Sturgeon, and Sea Turtles

No information is available on the effects of TSS on juvenile and adult sea turtles. Studies of the effects of turbid waters on fish suggest that concentrations of suspended solids can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993).

TSS is most likely to affect sea turtles, subadult and adult Atlantic sturgeon, or whales if a plume causes a barrier to normal behaviors or if sediment settles on the bottom affecting sea turtle or sturgeon prey. As whales, sturgeon, and sea turtles are highly mobile, they are likely to be able to avoid any sediment plume and any effect on their movements is likely to be insignificant. Additionally, the TSS levels expected from dredging (11.5 to 475.0 mg/L) or beach nourishment (34.0 to 64.0 mg/1) are below those shown to have an adverse effect on fish (580.0 mg/L for the most sensitive species, with 1,000.0 mg/L more typical; see summary of scientific literature in Burton 1993).

While the increase in suspended sediments may cause whales, Atlantic sturgeon, and sea turtles to alter their normal movements, any change in behavior is not able to be measured or detected, as it will only involve minor movements that alter their course out of the sediment plume which will not disrupt any essential life behaviors. Based on this information, we believe the effects of suspended sediment on whales, Atlantic sturgeon, and sea turtles resulting from increased turbidity from dredging and beach nourishment operations are insignificant.

4.4. Effects of Vessel Interactions

Whales, sea turtles, and sturgeon may be injured or killed as a result of being struck by boat hulls or propellers. The factors relevant to determining the risk to these species from vessel strikes vary, but may be related to the size and speed of the vessels, navigational clearance (i.e., depth of water and draft of the vessel) in the area where the vessel is operating, and the behavior of individuals in the area (e.g., foraging, migrating, overwintering, etc.). We have considered the likelihood that an increase in vessel traffic associated with the project increases the risk of interactions between listed species and vessels in the project areas, compared to baseline conditions. The use of one cutterhead dredge will not cause an increase in vessel traffic, but will actually reduce it during construction operations and will decrease the likelihood of vessel strikes upon completion of construction due to greater clearance between the vessel and the channel bottom post construction. Based on this information, we believe the effects of vessel traffic on whales, sea turtles, and sturgeon from dredging operations are insignificant.

There have not been any reports of dredge vessels colliding with listed species but contact injuries resulting from dredge movements could occur at or near the water surface and could therefore involve any of the listed species present in the area. Because the dredge will not be moving at great speeds during dredging operations, blunt trauma injuries resulting from contact with the hull are extremely unlikely during dredging. It is more likely that contact injuries during actual dredging would involve the propeller of the vessel. Contact injuries with the dredge are more likely to occur when the dredge is moving from the dredging area to its port, or between dredge locations.

The dredge vessel may collide with marine mammals and sea turtles when they are at the surface or, in the case of Atlantic sturgeon, in the water column when migrating. These species have been documented with injuries consistent with vessel interactions, and it is reasonable to believe that the dredge vessels could inflict such injuries on Atlantic sturgeon, marine mammals and sea turtles,

should they collide.

As mentioned, sea turtles are only found distributed throughout the action area in the warmer months, generally from May through November; Right whales primarily from November 1 through April 30; humpback and fin whales, spring, summer, and fall; and, Atlantic sturgeon throughout the year.

4.4.1. Whales

Large whales, particularly right whales, are vulnerable to injury and mortality from ship strikes. Ship strike injuries to whales take two forms: (1) propeller wounds characterized by external gashes or severed tail stocks; and (2) blunt trauma injuries indicated by fractured skulls, jaws, and vertebrae, and massive bruises that sometimes lack external expression (Laist *et al.* 2001). Collisions with smaller vessels may result in propeller wounds or no apparent injury, depending on the severity of the incident. Laist *et al.* (2001) reports that of 41 ship strike accounts that reported vessel speed, no lethal or severe injuries occurred at speeds below ten knots, and no collisions have been reported for vessels traveling less than six knots. Most ship strikes have occurred at vessel speeds of 13-15 knots or greater (Jensen and Silber 2003; Laist *et al.* 2001). An analysis by Vanderlaan and Taggart (2006) showed that at speeds greater than 15 knots, the probability of a ship strike resulting in death increases asymptotically to 100%. At speeds below 11.8 knots, the probability decreases to less than 50%, and at ten knots or less, the probability is further reduced to approximately 30%. As noted above, the speed of the dredge will not exceed 10-13.5 knots while transiting to and from the dredging areas. In addition, all vessels will have lookouts on board to avoid vessel strikes with all protected species. Based on this information, we believe the effects of vessel traffic on whales from dredging operations are insignificant.

4.4.2. Sea Turtles

Interactions between vessels and sea turtles occur and can take many forms, from the most severe (death or bisection of an animal or penetration to the viscera), to severed limbs or cracks to the carapace which can also lead to mortality directly or indirectly. Information is lacking on the type or speed of vessels involved in turtle vessel strikes. However, there does appear to be a correlation between the number of vessel struck turtles and the level of recreational boat traffic (NRC 1990). Although little is known about a sea turtle's reaction to vessel traffic, it is generally assumed that turtles are more likely to avoid injury from slower-moving vessels since the turtle has more time to maneuver and avoid the vessel. The speed of the dredge will not exceed 1 0-13.5 knots while transiting to and from the dredging areas. In addition, the risk of ship strike is influenced by the amount of time the animal remains near the surface of the water. The presence of an experienced endangered species observer who could advise the vessel operator to slow the vessel or maneuver safely if sea turtles were spotted will be on board for all the dredging operations which further reduces the potential risk for interaction with vessels. Finally, and most importantly, turtles will not be utilizing the action area during the late fall-winter since there is a seasonal restriction in the area limiting construction to between 30 September and 15 January of any given year. Based on

this information, we believe the effects of vessel traffic on sea turtles from dredging operations are insignificant.

4.4.3. Atlantic Sturgeon

The factors relevant to determining the risk to Atlantic sturgeon from vessel strikes are currently unknown, but they may be related to size and speed of the vessels, navigational clearance (i.e., depth of water and draft of the vessel) in the area where the vessel is operating, and the behavior of Atlantic sturgeon in the area (e.g., foraging, migrating, etc.). Large vessels have been implicated because of their deep drafts (up to 40-45 feet) compared to smaller vessels (15 feet), which increases the probability of vessel collision with demersal fishes like sturgeon, even in deep water (Brown and Murphy 2010). Smaller vessels and those with relatively shallow drafts provide more clearance with the ocean bottom and reduce the probability of vessel-strikes. Because dredges have shallow drafts relative to the offshore environment, the chances of vessel- related mortalities are low.

The majority of documented vessel strikes have been observed in the Delaware and James rivers and current thinking suggests that there may be unique geographic features in these areas (e.g., potentially narrow migration corridors combined with shallow/narrow river channels) that increase the risk of interactions between vessels and Atlantic sturgeon. These geographic features are not present in the project area, which is sufficiently wide and deep enough to allow sturgeon passage while vessels were in the project area. We have considered the likelihood that an increase in vessel traffic associated with the project increased the risk of interactions between Atlantic sturgeon and vessels in the project area, compared to baseline conditions. The use of dredges will cause a small, localized, temporary increase in vessel traffic. Given the large volume of traffic in the project area, the increase in traffic associated with the project is extremely small. Based on this information, we believe the effects of vessel traffic on Atlantic sturgeon from dredging operations are insignificant.

5. Conclusion

Based on the analysis that all effects of the proposed action will be insignificant and/or discountable, we have determined that the Lake Montauk Harbor TSP, which will be implemented as the Recommended Plan (RP) is not likely to adversely affect any listed species or critical habitat under NMFS' jurisdiction. We conclude that we have used the best scientific and commercial data available to complete this analysis. Concurrence by NMFS was received on 14 May 2019.

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