List of files documenting *Endangered Species Act* consultation between the U.S. Environmental Protection Agency and National Oceanic and Atmospheric Administration National Marine Fisheries Service for LOC-NESS Phase 1

A. Biological Assessment for LOC-NESS Phase 1 prepared and submitted by the EPA to NOAA Fisheries (June 11, 2024)
B. Response from NOAA Fisheries concurring on the EPA's Effects Determination from the Biological Assessment under ESA for LOC-NESS Phase 1 (August 2, 2024)
C. Correspondence between the EPA and NOAA Fisheries regarding LOC-NESS Phase 1 project updates (July 22, 2024 – August 12, 2024)

A. Biological Assessment for LOC-NESS Phase 1 prepared and submitted by the EPA to NOAA Fisheries (June 11, 2024)

OFFICE OF WETLANDS, OCEANS AND WATERSHEDS
WASHINGTON, D.C. 20460

June 11, 2024

NOAA Fisheries
Greater Atlantic Regional Fisheries Office
Protected Resources Division
55 Great Republic Drive
Gloucester, Massachusetts 01930

Attn: Ms. Jennifer Anderson

Re: LOC-NESS Phase 1 (Tentative Research Permit EPA-HQ-MPRSA-2024-001)

Dear Ms. Anderson:

The U.S. Environmental Protection Agency is proposing to authorize the project as described below pursuant to the *Marine Protection, Research and Sanctuaries Act.* This letter is to request *Endangered Species Act* concurrence from your office for the "LOC-NESS Phase 1" project. ESA concurrence on Phase 2 of the proposed research study, which would be authorized under a separate MPRSA permit, will be requested separately. The EPA has made the determination that the proposed Phase 1 activities may affect, but are not likely to adversely affect, any species listed as threatened or endangered by NMFS under the ESA of 1973, as amended. The supporting analysis is provided below. Please refer to the public docket on the Federal Rulemaking Portal at Regulations.gov (Docket ID: EPA-HQ-OW-2023-0591) for additional supporting information including the research permit Phase 1 application and appendices, the EPA Fact Sheet for the proposed LOC-NESS Phase 1 and Phase 2, and the tentative permit (EPA-HQ-MPRSA-2024-001) for the proposed study which are referenced in our analysis below.

Proposed Project

The applicant has proposed a two-phased ocean alkalinity enhancement research study as part of Woods Hole Oceanographic Institution's Locking Ocean Carbon in the Northeast Shelf and Slope (LOC-NESS) Project that would involve the transportation and disposition of 50 percent sodium hydroxide solution at two locations offshore of Massachusetts. The proposed LOC-NESS Project activities are designed to 1) evaluate the effectiveness of the applicant's approach to monitoring changes in alkalinity and any subsequent carbon dioxide uptake by the ocean resulting from the sodium hydroxide additions, and 2) collect scientific information to better understand any potential adverse impacts to human health, the environment or other uses of the ocean resulting from the alkalinity enhancement activity. This Biological Assessment addresses the proposed Phase 1 activities for the research study.

Phase 1 is designed to evaluate the monitoring methods and environmental impacts from a small-scale alkalinity addition. Phase 1 would occur over approximately five days between August 2 and 12, 2024, south of Martha's Vineyard and approximately 9.5 miles south of the nearest shoreline of Nomans Land Island, Massachusetts. During Phase 1, up to 6,600 gallons of a 50 percent sodium hydroxide solution would be transported by tug-and-barge (transport vessel) from the Port of New Bedford, Massachusetts, to the release location south of Martha's Vineyard. The sodium hydroxide solution would be released at a controlled rate (approximately 4.6 L/s) from the transport vessel into surface ocean waters (via a hose/pipe 1-2 meters below the surface) for about 90 minutes to establish a patch of increased alkalinity in the surface waters. During the release, the transport vessel would be traveling in an outward spiral pattern at approximately 2 knots, beginning at 41°8'8.31"N by 70°44'4.58"W. Rhodamine Water Tracer dye would be released along with the sodium hydroxide solution to allow the applicant and research team to track the movement and dispersion of the alkalinity patch as it mixes with surrounding ocean waters.

The transport vessel would be operated by 41 North Offshore. Examples of the type of vessels that could be used include: Tugboat "SITKA" (length 88.3', breadth 27.1', USCG Official Number 502116); Tugboat "KODIAK" (length 61', breadth 23', USCG Official Number 583332); Barge "ATLANTIC" (length 150', breadth 54.8', USCG Official Number 1203836); or a sectional barge (estimated length 50' and breadth 33'). Additional specifications about these vessels are available in the Phase 1 application appendices. The transport vessel would make one trip to and from the release location (36 nautical miles one way) and would be present within the Action Area for up to 24 hours (see travel routes in Figure 1). A marine mammal observer would be present prior to and during the release of the sodium hydroxide solution into ocean waters. All monitoring and research activities would be conducted from the R/V *Connecticut* (length 90' with a beam of 26') operated out of the University of Connecticut Avery Point campus in Groton, Connecticut. The research vessel would make one trip to and from the Action Area and would be present within the Action Area for up to five days.

The initial alkalinity patch resulting from the release of the sodium hydroxide solution is estimated to be 500 meters in diameter, and the anticipated final patch is estimated to be 5,000 meters in diameter. This alkalinity patch is expected to stay within the mixed layer (up to 10 meters deep in the surface waters). Due to the prevailing south-west movement of currents in this region, the anticipated movement of the patch is towards the south or west, away from shore. Though the sodium hydroxide solution would have a pH of 14 prior to release, the release method described in the Phase 1 application and the EPA Fact Sheet is expected to result in a rapid dilution of the sodium hydroxide solution within the surface waters, resulting in seawater pH below 9 within two minutes.

The EPA has evaluated the applicant's proposed monitoring plan to ensure that relevant chemical, physical and biological endpoints would be measured to adequately monitor for potential environmental impacts resulting from the proposed release of the 50 percent sodium hydroxide solution into ocean surface waters. The research team would monitor the alkalinity patch using a range of techniques (described in the Phase 1 Application and summarized in the EPA Fact Sheet Section IV). Monitoring equipment that may be deployed from the research vessel would include: ship-board sensors; a Conductivity, Temperature, Depth (CTD) rosette sampler; Niskin bottles; towed underwater vehicles; plankton tow nets; free-drifting sensor buoys (drifters); and aerial drones for tracking the

alkalinity patch. The EPA has determined that because monitoring activities are not expected to impact ESA-listed species, effects from monitoring will not be considered further in this analysis.

Any effects within the Action Area resulting from the Phase 1 activities are expected to be temporary. Temporary changes in water chemistry and water quality are expected to return to baseline conditions (i.e., undetectable from baseline variability in the Action Area) within five days of the release of the sodium hydroxide solution. The proposed release is a discrete event, release lasting approximately 90 minutes and all monitoring activities lasting five days or fewer and would be constrained to activities within the upper surface waters of the Action Area. The Phase 1 activities would not involve the construction of any structures and is not anticipated to cause any measurable indirect consequences such as future increases in vessel traffic within the Action Area.

Specific conditions are included in the tentative permit to minimize or mitigate potential adverse environmental impacts to listed species or sensitive habitats. A certified marine mammal observer would be present prior to and during the release of the sodium hydroxide solution. Before commencing any release of the sodium hydroxide solution and tracer dye, the certified spotter would look for presence of marine mammals in the vicinity. If a marine mammal is spotted, the research team and vessel crew would temporarily delay or cease any release activities and adjust the vessel positions with the aim of maintaining a distance of at least 500 yards from any North Atlantic right whale, 100 yards from any other whales and 50 yards from other marine mammal(s) or sea turtles observed during the release activities. If marine mammals were spotted during the monitoring period after the release of the sodium hydroxide solution and tracer dye, the research team and research vessel operator would adjust the position of vessels and other monitoring equipment to avoid interference. If the presence of sea turtles or critical fish events (such as schools of fish or fish eggs masses) are spotted in the vicinity during release, the transport vessel position and release activities would be adjusted to avoid interference with these organisms. The permitting conditions for observations of marine mammals and sea turtles reflect NOAA's Marine Life Viewing Guidelines. The release activities would only occur during daylight hours, increasing the chances of spotting animals in the vicinity. The tentative permit also includes conditions requiring the applicant or their designee to adjust the dispersal rate of the sodium hydroxide solution to achieve the target pH dilution factor and limit the time that seawater pH within the alkalinity patch would be above 9, based on real-time seawater pH monitoring within the alkalinity release path. Refer to the tentative permit and the EPA Fact sheet in the public docket for additional details about contingency and mitigation actions.

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 C.F.R. Section 402.02). For this project, the Action Area includes the approximately 36 nautical mile transit route and the applicant's proposed "study area" (an 8-mile radius centered at 41°4'27.43" N by 70°46'27.78" W off Martha's Vineyard, Massachusetts), which would include the alkalinity patch as well as the area where monitoring activities could potentially take place (Figure 1). The release of the sodium hydroxide solution and Rhodamine WT dye would occur in the top 1 to 2 meters of the surface water; the resulting alkalinity patch is expected to remain in the mixed layer (top 10 meters of the surface seawater) due to the highly stratified waters in the Action Area during the summer months.

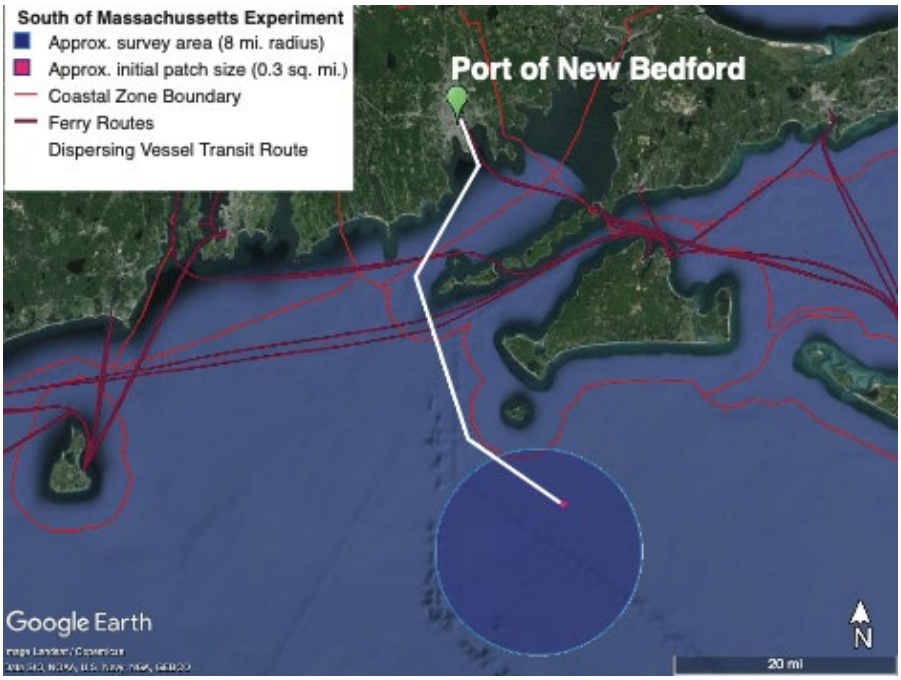

Figure 1: Location of the study area (Action Area) for Phase 1. The pink point represents the initial alkalinity patch located within the larger survey area (blue circle). The white line represents the transit route for the transport vessel from the Port of New Bedford, Massachusetts, to the initial release coordinates.

The Action Area for Phase 1 is in waters approximately 38 meters deep. The prevailing mean surface ocean currents move southwestward in the survey area, away from Nomans Land Island and Martha's Vineyard. The Action Area experiences strong seasonal stratification, intensifying in the late spring and remaining fully stratified until the fall. The expected surface waters in early-August would have an average temperature of 19.4 degrees Celsius, an average salinity of approximately 31.4 ppt and a mixed layer depth of approximately 7-10 meters. The timing of the proposed release in early August coincides with increased opportunities for clear skies, and therefore higher chances of capturing satellite and aerial drone imagery. By late August, hurricanes and post-tropical storms may introduce large swells and changes to local currents and deeper mixed layer depths.

The Action Area for Phase 1 varies seasonally and has favorable chemical characteristics for the intended research during summertime months. These characteristics include relatively low total alkalinity (approximately 2135 µmol/kg), pH (approximately 8.0) and dissolved inorganic carbon concentrations (approximately 1937 µmol/kg) in the summertime due to decreased solubility of carbon dioxide in the warmer waters and increased biological activity compared to other seasons. These values were estimated by the applicant using historical carbonate chemistry data and neural network analysis of a data assimilative global ocean reanalysis product (GLORYS12V1) that predicted carbonate chemistry for the survey area from these historical data on a regional scale (Phase 1 Application Section 5). These summertime chemical characteristics, along with the physical stratification of the water column, meet the applicant's criteria for the intended research study.

According to information provided by the applicant, the Phase 1 Action Area exhibits seasonal fluctuations in planktonic community composition. The planktonic community is dominated by diatoms

which account for over 65 percent of phytoplanktonic biomass. The smaller size class of picophytoplankton is dominated by cyanobacteria in the genus *Synechococcus*, which are the numerically most abundant phytoplankton in the Action Area. Nanophytoplankton are dominated by coccolithophore species, such as the abundant *Emiliania huxleyii*. Temperature and light availability drive the success of the planktonic organisms, with blooming events in spring (diatom-dominated) and fall (flagellate-dominated). Phase 1 would be during a time with high net primary productivity but before the fall bloom. The zooplankton are dominated by the ecologically important copepod *Calanus finmarchicus* in this area. Zooplankton abundances increase simultaneously with phytoplankton stocks and remain high throughout summer. These copepods are the preferred food source for early-stage fish stocks and higher trophic levels, but the research activities would not coincide with the spring bloom for the copepods that sets the base of the food web.

The Phase 1 Action Area is subject to high amounts of vessel traffic associated with other commercial and recreational activities. However, the Action Area is outside of major commercial shipping lanes, navigation areas and ferry routes (See Section VI, Subpart E of the EPA Fact Sheet). According to publicly available data listed by the Bureau of Ocean Energy Management for the North Atlantic Wind Energy Areas, there are several planned wind farm leases in the vicinity of the Phase 1 Action Area. Further, commercial fishing activities are known to occur in the vicinity of the Phase 1 Action Area, including fishing vessel transit and active fishing activities. Vessel Monitoring System data made publicly available by NOAA suggests that there is significant fishing activity for groundfish (demersal) species in the region, for which bottom trawling is most common. Other fishing activities that may occur within or near the Action Area may include the use of longlines, gillnets, pots, traps or dredging.

Additional details on the physical, chemical and biological characteristics and overlapping areas of critical amenities of the Phase 1 Action Area are provided in the Phase 1 application (Phase 1 Application Section 5) and summarized in the EPA's Fact Sheet (Section III-A).

NMFS Listed Species (and Critical Habitat) in the Action Area

Whales

North Atlantic right whale (*Eubalaena glacialis*) (73 FR 12024, 81 FR 4838; Recovery Plan: NMFS 2005)
Fin whale (*Balaenoptera physalus*) (35 FR 18319; Recovery Plan: NMFS 2010)

Sea Turtles

Green sea turtle (*Chelonia mydas*) (81 FR 20057; Recovery Plan: NMFS & USFSW 1991)
Kemp's ridley sea turtle (*Lepidochelys kempii*) (35 FR 18319; Recovery Plan: NMFS et al. 2011)
Leatherback sea turtle (*Dermochelys coriacea*) (35 FR 849; Recovery Plan: NMFS & USFWS 1992)
Loggerhead sea turtle (*Caretta caretta*) (76 FR 58868; Recovery plan: NMFS & USFWS 2008)

Fish

Atlantic sturgeon (*Acipenser oxyrinchus*) (77 FR 5880 and 77 FR 5914; Interim Recovery Outline: NMFS 2018)
Shortnose sturgeon (*Acipenser brevirostrum*) (32 FR 4001; Recovery Plan: NMFS 1998)

Critical Habitats

No critical habitats were identified in the Action Area.

A. North Atlantic Right Whale

North Atlantic right whales are listed as Endangered under the ESA and occur near the Action Area year-round. Adult and juvenile North Atlantic right whales forage, winter and migrate throughout the continental shelf and slope waters near the Action Area (NMFS 2023a). Two critical habitats for the North Atlantic right whale were established to cover the prominent foraging area off the coast of New England (Unit 1) and the prominent calving areas from Cape Fear, North Carolina, to Cape Canaveral, Florida (Unit 2). The Action Area does not overlap with either critical habitat.

North Atlantic right whales are generally found in Atlantic coastal waters where they migrate from calving to foraging between New England and Florida. Due to the water temperature, calving is unlikely to take place in waters associated with the Action Area; therefore, newborn life stages are not likely to be present off the coast of Massachusetts in waters associated with the Action Area. The best available information suggests North Atlantic right whale adults and their newborn calves begin the migration to New England waters at the end of winter and are likely to be present in the New England region by the start of spring (NMFS 2018). Juvenile and adult whales are known to be present in the vicinity of coastal Massachusetts and may be present year-round (January 1st to December 31st) for foraging. While the Action Area of this study does not overlap with critical foraging grounds for the whales, the whales may opportunistically be in or adjacent to the Action Area. The timing of the proposed activities (August) would not co-occur with when the whales may be overwintering. The EPA has determined that adult and juvenile right whales could opportunistically forage in the waters in the vicinity of the Action Area during the time of the proposed Phase 1 activities. However, right whale feeding dives are typically characterized by a rapid descent to a depth between 80 and 175 meters, followed by a prolonged feeding and rapid ascent back to the surface (Baumgartner and Mate 2003); these typical feeding behaviors would further limit potential interaction of right whales with the proposed Phase 2 activities which would be constrained to the upper surface waters within the Action Area.

Presence of a certified marine mammal spotter prior to and during the Phase 1 release activities would ensure that (1) any observed presence of a whale within the release area result in postponing or pausing the release activities until the individual is no longer spotted, and (2) the transport vessel would take action to maintain an appropriate distance from any spotted individual whale(s).

B. Fin Whale

Fin whales are listed as Endangered under the ESA and occur near the Action Area year-round. Adult and juvenile fin whales forage, migrate, winter and calve throughout the continental shelf and slope waters near the Action Area (NMFS 2023a). U.S. fin whales are divided into four stocks 1) Hawaii; 2) California/Oregon/Washington; 3) Alaska; and 4) Western North Atlantic with a total of approximately 82,000 whales in the entire Northern Hemisphere (NMFS 2019). Of the three subspecies of fin whale, *B. physalus* is known to occur in the North Atlantic Ocean, migrating annually from foraging habitats near the Arctic to calving habitats in sub-tropical regions.

Calving is not likely to take place in waters associated with the Action Area due to the water temperature; therefore, it is unlikely that newborn life stages would be present in the Action Area (NMFS 2010). The best available information suggests that adult fin whales and their newborn calves begin the migration to New England waters at the end of winter and are likely to be present in the

vicinity of coastal New Hampshire by the start of spring (NMFS 2019). Further, juvenile and adult fin whales have been spotted off the coast of Massachusetts in the vicinity of Action Area year-round, either foraging (January 1st to December 31st) or overwintering (November 1st to March 31st). The timing of the proposed activities (August) would not co-occur with when the whales may be overwintering. The EPA has determined that adult and juvenile fin whales could opportunistically forage in the Action Area at the time of the proposed Phase 1 activities.

C. Green Sea Turtle

Adult and juvenile green sea turtles are known to forage near the Action Area. Eleven distinct population segments (DPSs) of the green sea turtle were listed under the ESA in 2016, superseding the 1978 final listing rule for green turtles and applying existing protective regulations to the DPSs. The North Atlantic DPS is listed as threatened and may be present near the Action Area from May to November. The additional critical habitat areas proposed in 2023 do not overlap with the Action Area (88 FR 46572). Juveniles are omnivorous along coasts, in protected bays and lagoons, and adults are herbivorous in nearshore regions (NMFS 2023b).

The distribution of green sea turtles ranges throughout the Atlantic and Pacific Oceans. In the Atlantic, green turtles range from Texas to New England with important feeding grounds throughout Florida and the Florida Keys. Nesting areas are primarily in tropical or sub-tropical areas of coastal Costa Rica and the Great Barrier Reef in Australia. Juvenile hatchlings swim to offshore areas after leaving the nest and return from open ocean habitats to nearshore foraging grounds as they mature. Green sea turtles are known to migrate along the eastern Atlantic seaboard (NMFS 2015). Due to their nesting habits, eggs and spawning green turtles are unlikely to come in contact with the Action Area. It is possible for transient adult green turtles from the North Atlantic DPS to move through and opportunistically forage near the Action Area from May 1st through November 30th, which would include the proposed timing of the Phase 1 activities (August). The EPA has determined that juvenile and adult green turtles of the North Atlantic DPS could be present in the Action Area during the proposed Phase 1 activities.

D. Kemp's Ridley Sea Turtle

Kemp's ridley sea turtles are listed as Endangered under the ESA and occur near the Action Area from May to November. Adult Kemp's ridley sea turtles are distributed throughout the Gulf of Mexico and the U.S. Atlantic seaboard from Florida to New England (NMFS 2023b). Both males and females are known to migrate throughout this range for foraging and nesting (NMFS 2023b). Juvenile Kemp's ridley sea turtles are also known to occur near the Action Area. Juveniles will forage for benthic invertebrates in protected coastal areas along the U.S. Atlantic seaboard. Due to their nesting habits, eggs and spawning Kemp's ridley sea turtles are unlikely to come in contact with the Action Area (NMFS et al. 2011). The EPA has determined that juvenile and adult Kemp's ridley sea turtles could be present in the Action Area, as they may be migrating and foraging near the study site from May 1 through November 30. However, foraging activities below the mixed layer (e.g., foraging in the benthic, epibenthic or lower pelagic areas) are unlikely to be affected by the proposed activities. Based on the habitat available in the Action Area, the EPA has determined that transient adult and juvenile Kemp's ridley sea turtles may move through or forage in the vicinity of the Action Area during the time of the proposed activities.

E. Leatherback Sea Turtle

Leatherback sea turtles are listed as Endangered under the ESA and occur near the Action Area from May to November (NMFS 2023b). Adult and juvenile leatherback sea turtles are known to forage for jellyfish in offshore oceanic or coastal neritic areas in the vicinity of the Action Area (NMFS 2023b). Juvenile and spawning Atlantic leatherbacks are primarily concentrated in southern tropical locations (NMFS & USFWS 2020) and are not found near the Action Area. Due to their nesting habits, eggs and spawning leatherbacks are unlikely to be present in the vicinity of the Action Area, however, juveniles can be found in the vicinity of the Action Area (NMFS 2023b). Adult leatherbacks have been reported in all world oceans and throughout coastal areas of the U.S. due to their large migratory and foraging dispersion. Atlantic leatherbacks are known to have foraging ranges extending from their nesting grounds in the Caribbean to Nova Scotia (NMFS & USFWS 2020). The EPA has determined that juvenile and adult leatherbacks could be moving through or foraging within the Action Area during the time of the proposed Phase 1 activities.

F. Loggerhead Sea Turtle

Loggerhead sea turtles are listed as Endangered under the ESA and occur near the Action Area from May to November (NMFS 2023b). Loggerhead sea turtles are the most abundant sea turtle in U.S. Atlantic waters with a range extending from Newfoundland to Argentina (NMFS 2023b). Juveniles, subadults and adults in the Northwest Atlantic DPS are known to forage near the Action Area. Pelagic and benthic juveniles are omnivorous and forage the benthos and in surface waters (NMFS 2023b). Sub-adults and adults also forage for benthic invertebrates along the coast. Loggerhead nesting habitats are primarily concentrated in tropical and sub-tropical ocean regions, mostly between coastal North Carolina and Southern Florida (NMFS & USFWS 2023). Due to their nesting habits, eggs and spawning loggerheads are unlikely to be present in the Action Area. Loggerheads are known to migrate and forage in the shallow coastal waters of the northwestern Atlantic Ocean, which would include the Action Area. Based on the habitat available in the Action Area, the EPA has determined that transient adult and juvenile loggerheads could move through and opportunistically forage in the waters associated with the Action Area during the time of the proposed Phase 1 activities.

G. Atlantic Sturgeon

Individuals from any of the five listed DPSs (Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic) could occur near the Action Area throughout the year. Atlantic Sturgeon DPSs are listed as Endangered (Carolina DPS, Chesapeake Bay DPS, New York Bight DPS, and South Atlantic DPS) or Threatened (Gulf of Maine DPS) under the ESA. Atlantic sturgeon are long-lived (approximately 60 years), late maturing, estuarine dependent, anadromous fish (Bigelow and Schroeder 1953). Rivers and bays within 50 miles of the Action Area are known to host adults and subadults, and potentially eggs, larvae, young-of-year and juveniles (NMFS 2023c). Individuals from any of the five listed DPSs could occur near the Action Area. Atlantic sturgeon forage along the mouth of the river and lower island regions, feeding on mollusks, gastropods, amphipods, annelids, decapods, isopods and fish such as sand lance (Bigelow and Schroeder 1953; ASSRT 2007; Guilbard *et al.* 2007; Savoy 2007). Juvenile Atlantic sturgeon feed on aquatic insects, insect larvae and other invertebrates (Bigelow and Schroeder 1953; ASSRT 2007; Guilbard et al. 2007). Juvenile sturgeon inhabit brackish waters and do not enter marine waters until they become subadults (NMFS 2023c).

Only subadult and adult life stages of the Atlantic sturgeon occur in marine waters, where they are typically found in waters 5-50 meters in depth (ASMFC 2017, NMFS 2023c); subadults and adults may travel long distances in marine waters, aggregate in both ocean and estuarine areas at certain times of the year, and exhibit seasonal coastal movements in the spring and fall. Atlantic sturgeon eggs cannot tolerate high salinity (ASMFC 2017); thus, spawning is not expected to occur in the Action Area due to high salinity. No early life stage sturgeon are expected to be present within the Action Area. Based on the habitat available in the Action Area, the EPA has determined that transient adult and subadult Atlantic sturgeon could move through and opportunistically forage in the waters associated with the Action Area, year-round. The action would occur in surface waters, however, and is not anticipated to affect Atlantic surgeon feeding, which occurs near the seafloor.

H. Shortnose Sturgeon

Shortnose sturgeon are listed as Endangered under the ESA and may occur near the Action Area in the summer through the winter. However, shortnose sturgeon tend to spend relatively little time in the ocean and generally stay close to shore when in marine waters (NMFS 2024). The range of federally endangered shortnose sturgeon *(Acipenser brevirostrum)* extends from the Minas Basin in Nova Scotia, Canada to St. Johns River in Florida (NMFS 1998). Shortnose sturgeon are known to inhabit rivers within 50 miles of the Action Area, where they spawn, rear young, forage and overwinter. Spawning of shortnose sturgeon is not expected in the Action Area due to the high salinity (SSSRT 2010); and therefore, no early life stages are expected to occur within the Action Area. Only adults are expected to occur in marine waters, with some adults making coastal migrations between river systems including from the Merrimack River, north of Boston Harbor, to Narragansett Bay and the Connecticut River, south of Boston Harbor, via the Gulf of Maine. Based on the habitat available in the Action Area, the EPA has determined that transient adult shortnose sturgeon could migrate through and opportunistically forage in the Action Area during the time of the Phase 1 activities. The action would occur in surface waters, however, and is not anticipated to affect shortnose sturgeons feeding on the seafloor.

Effects Determination

Adverse effects from the proposed research activities would include temporary, localized changes in water chemistry (e.g., increases in pH and total alkalinity) resulting from the controlled addition of sodium hydroxide to surface ocean waters and temporary vessel traffic to, from and within the Action Area. Due to the controlled nature of the proposed release and the short duration of the Phase 1 activities, impacts due to water quality changes or vessel traffic are not expected to be long-lasting or severe. Refer to the EPA Fact Sheet in the public docket for the EPA's detailed assessment of the potential environmental impacts.

A. Water Quality

During Phase 1, up to 6,600 gallons of 50% sodium hydroxide solution and 250 gallons of tracer dye solution would be released into ocean waters from the transport vessel beginning at 41°8'8.31"N, 70°44'4.58"W (NAD83) over an approximately 90-minute period. The 50% sodium hydroxide solution would be released from the transport vessel at approximately 4.6 liters per second and a vessel speed of about 2 knots. The tracer dye would be released concurrently at a maximum rate of 0.1 liters per second. Temporary changes to carbonate and ocean chemistry, such as an increase in alkalinity and pH, during Phase 1 of the research study are expected at the immediate release location of the sodium

hydroxide solution into the ocean surface waters and, to a lesser extent, within the enhanced alkalinity patch for a limited period (hours to days). The applicant provided dilution estimates based on the applicant's initial tracer dye experiment (Phase 1 Application Section 2) that suggests that the sodium hydroxide solution released into the surface waters (pH 14) would rapidly mix and disperse within surrounding seawater such that seawater pH within the alkalinity release path would be below 10 in a matter of seconds. Seawater pH is not expected to exceed 9 for more than two minutes after the release of the solution (Figure 2). Based on their calculations, the applicant expects seawater pH would return to near baseline values within 24 hours and would not be detectable beyond 48 to 72 hours after the release in both phases (Phase 1 Application Section 2). Similarly, the sodium hydroxide addition should result in alkalinity concentrations within 10 percent of naturally occurring background conditions and no more than approximately 0.2 pH units above baseline conditions after the initial mixing period (4 hours after release). Changes in seawater pH in the alkalinity patch are expected to be within the range of the EPA's Recommended Water Quality Criteria for Aquatic Life (pH 6.5 to 9) within approximately two minutes after the release of the sodium hydroxide from the transport vessel (Figure 2).

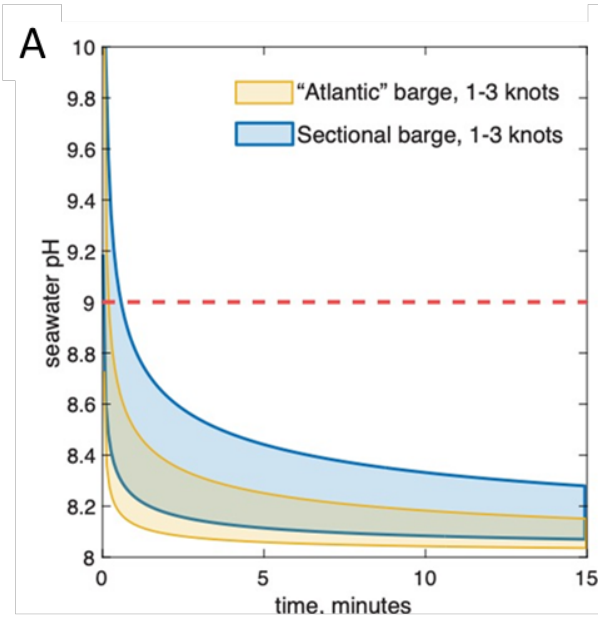

Figure 2. A) Dilution curve representing the Phase 1 dilution of 50 percent sodium hydroxide solution directly into the vessel wake using the formula from Chou (1996) and parameters for the two proposed barge configurations (Sectional barge, 33' wide; Atlantic barge, 54' wide), traveling at a speed between 1 and 3 knots. Calculations used the target discharge rate of 4.6 L/s, to ensure maximum dilution by the ship's wake in the first 10 minutes of dispersal after the release of the sodium hydroxide solution. See Phase 1 Application Section 2 for more information.

The resulting increase in bicarbonate ions after the sodium hydroxide release would lead to elevated total alkalinity within the Action Area that may persist after the conclusion of the study; this net increase would likely be undetectable from baseline concentrations by the end of the monitoring period of Phase 1. The proposed activities are not expected to result in measurable increases in turbidity, total suspended solids or significant movements of precipitated minerals below the mixed layer depths (10 meters) of the water column. Although the applicant plans to monitor dissolved

oxygen concentrations throughout the experiment, ocean alkalinity enhancement with sodium hydroxide is not expected to impact dissolved oxygen concentrations for several reasons. The primary reaction pathways of forming bicarbonate ions does not involve oxygen at any stage. Further, the predominant controls of dissolved oxygen in seawater are biological (e.g., photosynthesis and respiration), which are largely influenced by nutrient availability, light, and temperature. Ocean alkalinity enhancement is not expected to severely impact the photosynthetic biologic communities in such a way that would alter dissolved oxygen concentrations (Pederson and Hansen 2003, Federer et al. 2022, Subhas et al. 2022).

Up to 250 gallons of Rhodamine WT dye solution would be released along with the sodium hydroxide solution to "label" the patch of high alkalinity. Rhodamine WT dye is commonly used in water tracing studies and is not expected to cause any toxicity effects at the concentrations proposed in the study (Skjolding et al 2021). The tracer dye would appear as a red or pink color within the surface ocean for hours to days but is unlikely to impact feeding capabilities of organisms in the area. The Rhodamine WT dye solution would not result in a change in water turbidity or total suspended solids.

Adverse impacts to listed species (and life stages) that may be present in the Action Area are discountable (extremely unlikely to occur) due to the nature of the proposed activities and the contingency actions incorporated into the tentative permit conditions. Due to the proposed release methods and the rapid dilution expected within the surface waters, the highest pH values (i.e., above pH 10) would likely be present for no more than several seconds immediately following the release of the sodium hydroxide solution along the release path (Figure 2). Therefore, potential exposure of organisms to elevated pH or high alkalinity conditions would be highly localized to the immediate area of the sodium hydroxide discharge and would persist for a short period of time (minutes). The various contingency actions incorporated into permitting conditions (including actions to be taken if marine mammals, sea turtles or critical fish events are observed) should minimize the potential risk of exposure to significantly elevated pH during the proposed release of the sodium hydroxide solution.

Listed species that happen to be present within the mixed layer of the release area of the sodium hydroxide solution are extremely unlikely to be immediately behind the tug-and-barge vessel during the short window (release lasting approximately 90 minutes) when release of the solution would occur. Therefore, as discussed above, due to rapid dilution that would occur, it is unlikely ESA-listed species will be exposed to seawater with a pH above 9 and elevated alkalinity. There is a possibility of transient individuals of the listed species to be opportunistically foraging or migrating through the Action Area during the time of the proposed activity. These individuals could include adult and juvenile right whales; adult and juvenile fin whales; adult green sea turtles; adult and juvenile Kemp's ridley sea turtles; adult and juvenile leatherback sea turtles; adult and juvenile loggerhead sea turtles; adult and subadult Atlantic sturgeon; and adult shortnose sturgeon. As detailed above, early life stages, such as eggs, calves and juvenile fish, are not expected to be present within the Action Area during the time of Phase 1.

A short-term (minutes) exposure to elevated pH (above 9) and elevated alkalinity is unlikely to result in adverse impacts to the adult and subadult NMFS ESA-listed species that may be foraging or transiting within the immediate area of the release of the sodium hydroxide solution during Phase 1. Further, the Action Area represents a very small area relative to the area available for foraging for all species,

therefore the impact to foraging area will be minimal. The Phase 1 activities are also not expected to significantly affect phytoplankton, zooplankton or prey species at the base of the food web, and therefore the EPA does not anticipate adverse indirect impacts to NMFS ESA-listed species via trophic-level interactions. For more details on the EPA's assessment of potential impacts to phytoplankton, zooplankton or prey, see the EPA Fact Sheet Section VI Part C. While it is known that low pH can be harmful to the development of larvae, fish eggs and juvenile fish when exposed for long periods of time (Clements and Chopin 2017), elevated pH has been shown to have either no impact or positive impacts on fish development and aquaculture, when kept below 9 (Boyd et al. 2016, dos Santos et al. 2020). Sustained seawater pH above 9.0 can be stressful to fish and prolonged exposure to pH above 9.5 can be life-threatening (Mariu et al. 2023, Menon et al. 2023). Accidental spills of sodium hydroxide have resulted in minor impacts to fish populations (The EPA Fact Sheet Table 2), but these events involved the uncontrolled release of thousands of gallons of sodium hydroxide solution. The EPA is not aware of any publication regarding the impacts of short-term increases of pH or alkalinity (less than 1 hour), as is proposed in this research study, on marine animals at any life stage. While fish gills are a potential site of action for exposure to elevated seawater pH, it is expected that the mobility of the adult and juvenile stages of these organisms would minimize time spent interacting with the elevated pH waters. Therefore, the elevated pH that may cause adverse impacts to more sensitive species or life stages (e.g., pH above 9) would only be present for two minutes within the initial alkalinity patch (a much smaller area within larger Action Area).

Therefore, the EPA has determined that the temporary water quality changes that would result from the proposed Phase 1 activities are not likely to adversely affect NMFS ESA-listed species that may be present in the Action Area and that any adverse effects would be insignificant as to be unable to be meaningfully measured, detected or evaluated.

B. Vessel Traffic

The EPA considered three elements in its analysis: (1) the existing baseline conditions, (2) the proposed activities and what it would add to existing baseline conditions, and (3) new baseline conditions (the existing baseline conditions and the action together). The EPA has determined that vessel traffic added to baseline conditions as a result of the proposed project is not likely to adversely affect the NMFS ESA-listed species for the following reasons. The Phase 1 project would involve one round trip transit of a tug-and-barge to and from the Port of New Bedford, Massachusetts, to the release location south of Martha's Vineyard (approximately 36 nautical miles one way). The transport vessel would be present for 24 hours or less within the Action Area to conduct the release of the sodium hydroxide solution and Rhodamine WT dye. A research vessel conducting monitoring activities would also make one round trip transit to and from the Action Area and would remain in the Action Area for up to five days. The Phase 1 activities are a discrete, one-time event and would not lead to an increase in future vessel traffic within the area. The Phase 1 study area is located outside of major commercial shipping lanes, navigation areas and ferry routes, though it is subject to moderate amounts of vessel traffic due to commercial and recreational activities, including fishing (Figure 3).

Due to the vessel traffic already associated with the Action Area, the Phase 1 activities should not result in a meaningful increase above the baseline vessel traffic within the area. Adding one to three project vessels to the existing baseline will not increase the risk that any vessel in the area will strike an

individual or will increase it to such a small extent that the effect of the action (i.e., any increase in risk of a strike caused by the project) cannot be meaningfully measured or detected. The increase in traffic associated the proposed project would be extremely small. During the project, only one or two project vessels will be added to the baseline. The addition of project vessels will also be temporary (one trip to and from the Action Area) and restricted to a small portion of the overall Action Area. Given the nature of the Action Area, the low baseline risk of vessel strikes in the area, and the extremely small, intermittent and temporary increase in vessel traffic that would be added to existing traffic in the Action Area as a result of the project, it is extremely unlikely for a vessel strike in the action area. Given that the Action Area is in a coastal environment where listed species are able to disperse widely, the risk of vessel strike is extremely unlikely. As a result, the effect of the action on the risk of a vessel strike in the action area is extremely unlikely to occur.

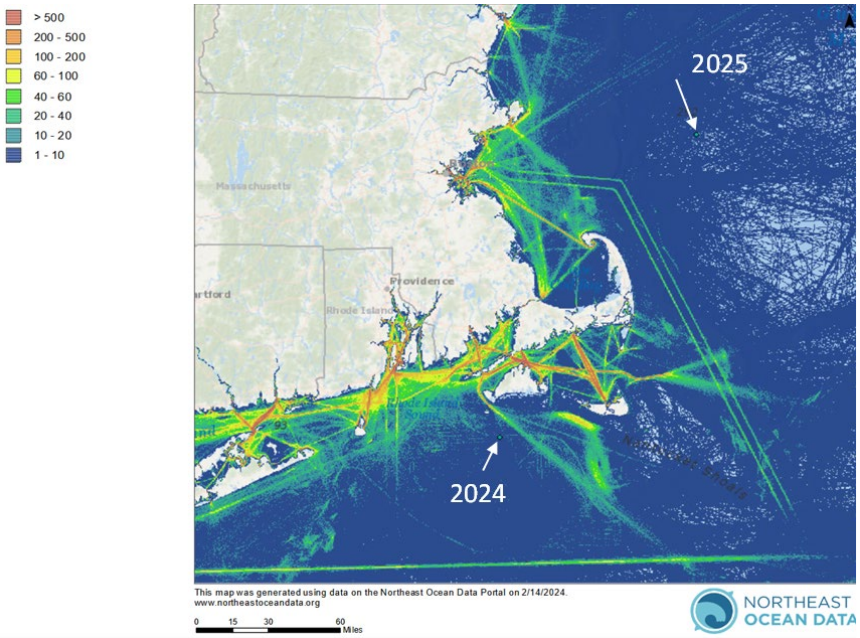

Figure 3: Heat map of reported vessel traffic in the vicinity of Phase 1 (2024) and Phase 2 study areas for 2022. Colors indicate number of vessel transits. The initial release coordinates of Phase 1 are denoted by the "2024" arrow; the initial release coordinates of Phase 2 are denoted by the "2025" arrow. Source: Image adapted from Phase 2 permit application, data source: Northeast Ocean Data Portal.

Conclusions

Based on the analysis that all effects of the proposed activities would be insignificant, the EPA has determined that the proposed Phase 1 activities that would be authorized by the tentative permit may affect, but is not likely to adversely affect, any listed species or critical habitat under NOAA Fisheries' jurisdiction. The EPA relies on the best scientific and commercial data available to complete this analysis. The EPA requests that NOAA respond in writing within approximately 30 days whether NOAA concurs or does not concur with the EPA's determination that the activities authorized by the tentative permit are not likely to have an adverse effect on any listed species or critical habitat. For additional information, please contact Betsy Valente at the address listed above, by phone at 202-564-9895, or email at valente.betsy@epa.gov.

Sincerely,

CLAYTON MILLER

Digitally signed by CLAYTON MILLER
Date: 2024.06.11 13:39:06 -04'00'

Clay Miller
Acting Chief,
Freshwater and Marine Regulatory Branch

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B. Response from NOAA Fisheries concurring on the EPA's Effects Determination from the Biological Assessment under ESA for LOC-NESS Phase 1 (August 2, 2024)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

August 2, 2024

Betsy Valente
Chief, Freshwater and Marine Regulatory Branch
Office of Wetlands, Oceans, and Watersheds
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20004

Re: EPA-HQ-MPRSA-2024-001 LOC-NESS Phase 1

Dear Ms. Valente:

We have completed our consultation under section 7 of the Endangered Species Act (ESA) in response to your letter received May 30, 2024, and revised on June 7, 2024, regarding the above-referenced proposed project. We reviewed your consultation request document and related materials. Based on our knowledge, expertise, and your materials, we concur with your conclusion that the proposed action is not likely to adversely affect any NMFS ESA-listed species or designated critical habitat. Therefore, no further consultation pursuant to section 7 of the ESA is required.

We would like to offer the following clarifications to complement your incoming request for consultation. From your email dated July 12, 2024, we understand that this action, occurring in the Atlantic Ocean south of Martha's Vineyard, MA, is separate from a project proposed to occur in the Wilkinson Basin, a separate action area, in 2025 or 2026. This letter of concurrence applies only to EPA-HQ-MPRSA-2024-001 and the action area south of Martha's Vineyard, MA.

The biological assessment (BA) received on June 7, 2024, noted that the loggerhead sea turtle Northwest Atlantic DPS is listed as endangered, but it is actually listed as threatened under the ESA. Additionally, shortnose sturgeon presence in the action area is described in your analysis as being from summer through winter, and we would like to specify that shortnose sturgeon could be present in the action area from April 1 – November 30 of any given year.

We agree that the addition of vessels in the action area as a result of this project has an insignificant effect on the risk of vessel interaction with ESA-listed species. In addition to the points mentioned in the BA (only three vessels added to baseline for a very short duration of time), we would like to add that the action area is a migratory area used for opportunistic feeding by ESA-listed species, which are expected to be limited to infrequent, transient individuals. Given the size of the action area, and its location in the open Atlantic Ocean, we agree that species can disperse widely and easily, if present, and any effects are too small to be meaningfully measured or detected.

Your incoming analysis states that the barge will be traveling at approximately two knots as it discharges the sodium hydroxide solution into the water. We would also like to make note of the speed restriction agreed upon in subsequent discussions, following receipt of your analysis that vessels will adhere to when transiting to and from the action area. Email communications on July 11, and 12, 2024, document the added vessel speed restriction of 10 knots during all transiting for all project activities (including to and from the discharge site) in your permit. Both the research vessel and barge are not permitted to travel faster than 10 knots at any time.

We would also like to add a few clarifying statements regarding effects to water quality. The pH of an aqueous solution is determined by the hydrogen ion concentration, and is represented by a value between 0 and 14 standard units (S.U.), using a logarithmic scale. Solutions with pH 7.0 S.U. are neutral, those with pH less than 7.0 S.U. are acidic, and those with pH greater than 7.0 S.U. are basic (NOAA, 2020). A discharge with a significantly higher (more basic) pH value from the receiving water body's pH can have a detrimental effect. The EPA considers a water body to have high pH if the pH exceeds 9 for prolonged periods of time, or with high frequency of occurrence (EPA, 2024). Your analysis notes that the pH in the action area will reach above 9 for an expected two minutes after discharging the sodium hydroxide solution. Because the discharging vessel will be moving in an outward spiral pattern, the alkaline patch with a pH exceeding 9 will be present directly behind the transport vessel. So, although pH in the action area will be above 9 for approximately 90 minutes, the continuous movement of the vessel means that no one patch of discharge area is expected to experience it for more than two minutes. This project will cause the pH to be elevated for an extremely short period of time and with a low frequency (one isolated event).

As mentioned above, pH within the alkalinity plume is expected to settle below a pH of 9 within two minutes of discharge. Table 5 of the fact sheet attached predicts the pH will measure approximately 8.34 one hour after discharge. Therefore, effects to aquatic life susceptible to sudden pH changes would be limited to an extremely short amount of time and would have insignificant effects (not able to be meaningfully measured or detected) to adult and subadult Atlantic sturgeon, adult shortnose sturgeon, adult and juvenile leatherback, loggerhead, Kemp's ridley and green sea turtles, adult and juvenile North Atlantic right and fin whales and their prey.

Phytoplankton and zooplankton (i.e., the base of the marine trophic web, with zooplankton serving as right whale prey (*Calanus finmarchicus*)) are more likely to be impacted by a sudden change in pH than ESA-listed species, and their larger invertebrate and vertebrate prey, that consume them. When exposed to high pH levels for extended periods of time (e.g., several days), these prey species can experience a decrease in biomass and growth rates. However, they will be subject to the same very short, isolated event in a large, open ocean action area in which the discharged solution will dilute rapidly. Table 5 of the fact sheet also notes that the radius of the alkaline patch will reach 268 meters one hour after discharge. Therefore, its radius within two minutes of discharge (the time period in which pH is expected to be above 9) will be considerably smaller, and may affect only phytoplankton and zooplankton located directly in the discharge area. This would represent an extremely small number of phytoplankton and zooplankton available in the greater action area for opportunistically foraging ESA-listed species or their prey. As such, the changes in pH may only impact a very small portion of zooplankton

and phytoplankton, and any effects to ESA-listed species will be too small to be detected or measured, and are therefore, insignificant.

On July 22, 2024, we received notice from EPA that the applicant proposes modifications to the project, namely delaying the study for 6-8 weeks from the original start date, and with the addition of one more monitoring vessel. Originally planned to take place during a five-day window between August 2 – 12, 2024, the study will now occur over a five-day window between September 19 – 30, 2024. The applicant notes that this shift to September will not impose additional pressure on phytoplankton or zooplankton, and could impact them less than if the study occurred in August, citing the naturally declining primary production during the late summer/fall. Vessel related changes are also proposed. The transport and monitoring vessels planned for the original August timeframe are not available in September. Therefore, instead of the proposed tug and barge configuration, the offshore supply vessel Peter M Mahoney will be discharging the solution. Originally, one monitoring vessel was proposed to leave from UCONN, but the modifications include two monitoring vessels departing from Woods Hole, MA. The applicant does not anticipate any changes to possible impacts to whales, sea turtles, or sturgeon due to the shift in timing of the experiment. We agree that these modifications would not alter the conclusion that the impacts of this study would have insignificant impacts to ESA-listed species.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 FR 24268). We are applying the updated regulations to this consultation. The 2024 regulatory changes, like those from 2019, were intended to improve and clarify the consultation process, and, with one exception from 2024 (offsetting reasonable and prudent measures), were not intended to result in changes to the Services' existing practice in implementing section 7(a)(2) of the ESA (84 FR at 45015; 89 FR 24268). We have considered the prior rules and affirm that the substantive analysis and conclusions articulated in this letter of concurrence would not have been any different under the 2019 regulations or pre-2019 regulations.

Reinitiation of consultation is required and shall be requested by the federal agency or by us, where discretionary federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; or (c) if a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, reinitiation would be required. Should you have any questions about this correspondence please contact Emma Koch at (978) 281-9110 or by email at Emma.Koch@noaa.gov.

For questions related to Essential Fish Habitat, please contact Mike Johnson with our Habitat and Ecosystem Services Division (978) 281-9130 or by email at Mike.R.Johnson@noaa.gov.

Sincerely,

Jennifer Anderson

Jennifer Anderson
Assistant Regional Administrator
for Protected Resources

CC: Mike Johnson, NMFS/HESD
ECO: GARFO-2024-01251
File Code: H:\Section 7 Team\Section 7\Non-Fisheries\EPA\Informal\2024\WHOI LOC-NESS South of MV

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C. Correspondence between the EPA and NOAA Fisheries regarding LOC-NESS Phase 1 project updates (July 22, 2024 – August 12, 2024)

From:	Valente, Betsy
To:	christine.vaccaro@noaa.gov
Cc:	Emma Koch - NOAA Affiliate; Lanpher, Kaycie (she/her/hers); McCrory, Sena
Subject:	Status updates for LOC-NESS Phase 1 (Martha's Vineyard) and Phase 2 (Wilkinson Basin)
Date:	Monday, July 22, 2024 1:06:32 PM
Attachments:	Proposed modifications to LOC-NESS Phase 1_11Jul2024.pdf

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Hi Chris,

I hope you are doing well. I am writing to ask for a status update regarding the ESA consultations for LOC-NESS Phase 1 (Martha's Vineyard) and Phase 2 (Wilkinson Basin).

I also would like to provide you with an update regarding the LOC-NESS Phase 1 (Martha's Vineyard) project. The LOC-NESS research team has proposed a few modifications to the LOC-NESS Phase 1 activities which we have reviewed. A summary of the proposed changes (attached) and our review of these changes is provided below. The proposed changes involve a one-month delay to initiate the work and the addition of a second research vessel. As explained below, EPA does not believe that the proposed changes to Phase 1 substantively alter our prior assessment of impacts to protected species.

The research team has proposed to shift the Phase 1 activities from a 5-day period within August 2-11, 2024, to a 5-day period within September 19-30, 2024. The oceanographic conditions in the Action Area for the new dates should be similar to those anticipated in the original permit application and also more similar to the time of year when baseline data were collected during the LOC-NESS research team's September 2023 tracer dye experiment. Important environmental conditions for the research—such as a stratified water column and shallow mixed layer depth and an expectation for the sodium hydroxide solution and tracer dye to be contained to the upper ~12 meters—remain very similar to the environmental conditions described in the permit application. Other oceanographic conditions such as temperature and carbonate chemistry are also expected to very similar in August and September (see attached). Hurricane risk is higher in September than August; however, the proposed permit conditions would prevent the research activities from occurring in unsafe sea or weather conditions, at the discretion of the master of the transport vessel. Hurricane risk would remain effectively managed under the permit.

The LOC-NESS research team also plans use a different transport vessel, the offshore supply vessel "Peter M Mahoney" (length 150', breadth 36') operated by Goodwin Marine Services, LLC, for transport and release of the sodium hydroxide and tracer dye because the vessels originally proposed in the application are not available during the September dates. The original permit application described similarly sized tug-and-barge type vessels to transport and release to the sodium hydroxide solution (length 150', breadth 54' or length 50', breadth 33'). The applicant has supplied the EPA with updated dilution calculations (see Updated Table 4, Updated Figure 9a in attached) which show that the change in transport vessel would not substantively change the expected dilution rates or expected seawater pH ranges described in EPA's biological assessment for the Phase 1 (Martha's Vineyard) research activity. The shift in project dates also means that the associated monitoring activities would occur on the R/V *Hugh Sharp* (length 146', beam 32') because as the vessel originally identified, R/V *Connecticut* (length 90', beam 26'), is unavailable during the new project dates.

Finally, the applicant anticipates chartering a second research vessel, the R/V *Tioga* (length 60', beam 27'), to be on site at the Action Area for 24 hours or fewer at the start of the study in order to expand the monitoring capabilities of the research team during the release activities. The R/V *Tioga* would depart from Woods Hole, Massachusetts, alongside the R/V *Hugh Sharp* and be on site at the Action Area only on the day when the sodium hydroxide solution is released and would return to port at the end of the day. The EPA does not expect that this second research vessel would result in a meaningful increase in baseline vessel traffic within the Action Area.

The 4-to-6-week shift in the timing of the proposed activities does not change the EPA's assessment of potential impacts to the plankton communities in the Action Area. According to the information provided by the applicant and as supported by scientific literature (see NOAA NMFS resource here), the later September dates correspond with the start of the natural decline of primary production at the late summer/fall blooming events, where the phytoplankton community shifts from being dominated by larger eukaryotes, such as diatoms, to smaller picophytoplankton and dinoflagellates.

Zooplankton abundance is also expected to be naturally in decline following the phytoplankton decline for these later dates. Pressure on ichthyoplankton, such as epipelagic spawning fish larvae and eggs, may decrease in September because there are generally fewer larvae species in the Northeast Slope and Shelf region in the early fall than in the summer.

The EPA has reviewed the proposed changes and information provided by the applicant to confirm that the proposed shift in project start dates does not change the presence of NMFS managed ESA-listed species and does not alter the EPA's assessment of potential impacts to these species.

Based upon this information, please let me know if further action is needed by NMFS to consider the updated project information for Phase 1 (Martha's Vineyard).

Also, could you provide a status update for the ESA consultation for the LOC-NESS Phase 2 (Wilkinson Basin) activities? Has NMFS PRD initiated consultation for Phase 2 (Wilkinson Basin) at this time?

Thank you,

Betsy

Betsy Valente
Chief, Freshwater and Marine Regulatory Branch
Office of Wetlands, Oceans, and Watersheds
Office of Water | U.S. Environmental Protection Agency
Tel: 202-564-9895 | valente.betsy@epa.gov
Telework: 202-557-6635

From:	Christine Vaccaro - NOAA Federal
To:	Valente, Betsy
Cc:	McCrory, Sena; Lanpher, Kaycie (she/her/hers); Gabrielle Marangell - NOAA Federal; Mike R Johnson - NOAA Federal; Jennifer Anderson - NOAA Federal; Emma Koch - NOAA Affiliate
Subject:	Re: LOC-NESS Phase 1 (Martha"s Vineyard) Letter of Concurrence
Date:	Monday, August 12, 2024 12:20:59 PM
Attachments:	image001.png

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hi Betsy,
Thanks for the clarification. We will save this email to the record. At this time, we do not have any issues with this clarification and this does not change the analysis or concurrence with the project.

Cheers,
Chris

Chris Vaccaro
ESA Section 7 Branch Chief
Protected Resources Division
NOAA Fisheries, Greater Atlantic Region
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930
Phone: 978-281-9167
Email: christine.vaccaro@noaa.gov

For additional ESA Section 7 information and Critical Habitat guidance, please see:
www.greateratlantic.fisheries.noaa.gov/protected/section7

On Mon, Aug 12, 2024 at 11:56 AM Valente, Betsy <Valente.Betsy@epa.gov> wrote:

> Hi Chris,
>
> Thank you for providing NMFS's Letter of Concurrence for the LOC-NESS Martha's Vineyard study (Phase 1). I am following up with one clarification regarding communications between the EPA and NMFS that were referenced in the Letter.
>
> The Letter of Concurrence states "[w]e would also like to make note of the speed restriction agreed upon in subsequent discussions, following receipt of your analysis that vessels will adhere to when transiting to and from the action area. Email communications on July 11, and 12, 2024, document the added vessel speed restriction of 10 knots during all transiting for all project

activities (including to and from the discharge site) in your permit. Both the research vessel and barge are not permitted to travel faster than 10 knots at any time."

I would like to clarify, as confirmed by our email exchanges on July 11 and 12, 2024, that the EPA noted that a permit condition could be included in the proposed permit to limit the speed of the vessel *used to transport and release the material into ocean waters* ("the transport vessel") during transit to and from the project study area and during the release activities. The transport vessel is not capable of transiting faster than 12 knots, but the applicant has agreed to a limit of 10 knots. The email exchange did not reference vessels other than the transport vessel, like the research vessels, involved in the monitoring activities in the project study area. Additionally, we are not aware of any generally applicable speed restriction zones, including seasonal management areas, along the transit route during the time window for the proposed research activities. We understand from the applicant that the research vessels are not likely to be moving at a speed faster than 10 knots in the project study area during the monitoring activities, especially while deploying any scientific equipment from the vessel.

Does this clarification present a concern to NMFS? Please let me know whether we should discuss in more detail at your earliest convenience.

Best regards,

Betsy

Betsy Valente

Chief, Freshwater and Marine Regulatory Branch

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Subject: LOC-NESS Phase 1 (Martha's Vineyard) Letter of Concurrence

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Hi all,

Please find the LOC for ESA Section 7 consultation for the MV study attached.

Thanks!

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Emma Koch

NOAA Affiliate | Environmental Specialist

Integrated Statistics, Inc. | In support of NOAA Fisheries

Greater Atlantic Regional Fisheries Office
Protected Resources Division