CORRESPONDENCE

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

June 8, 2022

Paul Maniccia
Chief, Regulatory Branch
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

RE: Amitié Fiber Optic Submarine cable installation

Dear Mr. Maniccia:

We have reviewed the EFH Assessment and associated project information for the Amitié Fiber Optic Submarine Cable System (NAE-2019-01014). The applicant (Edge Cable Holdings, LLC) seeks to install a fiber optic cable between Lynn, Massachusetts, Bude (United Kingdom) and Gironde (France). The method of installation includes a combination of directional drilling, plow and jet burial technology. Approximately one month prior to cable burial, pre-lay grapnel runs (PLGR) and route clearance (RC) will be performed. Horizontal Directional Drilling (HDD) will be used to install the steel conduit and cable from the upland location in Lynn to the HDD exit point, 0.8 miles offshore. Seaward of the HDD section, the cable will be installed with a submarine plow (SMD Heavy Duty HD3 Plow) that is controlled from a surface cable ship. The plow burial process would displace a wedge of seabed approximately 0.7 ft wide x 6 ft deep and leave a track from the plow skids approximately 19.65 ft wide. After the cable is laid in the trench, the same submarine plow will replace the displaced soil over the cable. Jet burial will take place in areas where existing cables preclude the ability for the submarine plow to be used. Additional armoring may be required in areas where desired cable depths cannot be met due to substrate type or existing cable presence and if rock were to be used for hard armor, it would consist of freshly crushed granite in the grade size range between 2 to 8 inches (50 to 200 millimeters).

The applicant has selected a preferred alternative which avoids the Gerry E. Studds Stellwagen Bank National Marine Sanctuary, but traverses Stellwagen Bank Dedicated Habitat Research Area (DHRA). DHRA's are designated by the New England Fishery Management Council (NEFMC) and approved by the Secretary of Commerce, and are intended to facilitate coordinated research on gear impacts, habitat recovery, natural disturbance, and productivity. In addition, the proposed route traverses the Western Gulf of Maine Closure Area (WGoMCA), a habitat management protection area that was implemented in 1998, the juvenile Atlantic cod Habitat Area of Particular Concern (HAPC), GOM Cod Protection Closures (I,II,III and V) and two Massachusetts Cod Conservation Zones. In addition, winter flounder spawning habitat will be traversed by the nearshore cable burial activities. The EFH Assessment identified potential

project impacts on federally managed species and their required habitats located along the cable route and concludes that installation of the fiber optic cable would adversely affect EFH. We offer the following comments for your consideration.

Resources in the Project Area

The project area is designated as Essential Fish Habitat (EFH) by the New England Fishery Management Council (NEFMC), the Mid-Atlantic Fishery Management Council (MAFMC) and NOAA Fisheries, for multiple federally managed species. These species include Acadian redfish (Sebastes fasciatus), American plaice (Hippoglossoides platessoides), Atlantic butterfish (Peprilus triacanthus), Atlantic cod (Gadus morhua), Atlantic halibut (Hippoglossus hippoglossus), Atlantic herring (Clupea harengus), Atlantic mackerel (Scomber scombrus), Atlantic sea scallop (Placopecten magellanicus), Atlantic surfclam (Spisula solidissima), Atlantic wolffish (Anarhichas lupus), Barndoor skate (Anarhichas lupus), Basking shark (Cetorhinus maximus), Black sea bass (Centropristis striata), Bluefin tuna (Thunnus thynnus), Common thresher shark (Alopias vulpinus), Bluefish (Pomatomus saltatrix), Haddock (Melanogrammus aeglefinus), Little skate (Leucoraja erinacea), Longfin inshore squid (Doryteuthis pealeii), Monkfish (Lophius americanus), Northern shortfin squid (Illex illecebrosus), Ocean pout (Zoarces americanus), Ocean quahog (Arctica islandica), Pollock (Pollachius virens), Porbeagle shark (Lamna nasus), Red hake (Urophycis chuss), Sand tiger shark (Carcharias taurus), Scup (Stenotomus chrysops), Silver hake (Merluccius bilinearis), Smooth skate (Malacoraja senta), Spiny dogfish (Squalus acanthias), Summer Flounder (Paralichthys dentatus), Thorny skate (Amblyraja radiata), White hake (Urophycis tenuis), White shark (Carcharodon carcharias), Windowpane flounder (Scophthalmus aquosus), Winter flounder (Pseudopleuronectes americanus), Winter skate (Leucoraja ocellata), Witch flounder (Glyptocephalus cynoglossus), and Yellowtail flounder (Pleuronectes ferruginea).

Some species and life stages may be more vulnerable to effects of the project. Species with benthic life stages as designated EFH may be more vulnerable, particularly those such as Atlantic cod (Gadus morhua), Winter flounder (Pseudopleuronectes americanus), Atlantic sea scallop (Placopecten magellanicus), Atlantic surfclam (Spisula solidissima), little skate (Leucoraja erinacea), longfin inshore squid (Doryteuthis pealeii), ocean quahog (Arctica islandica), scup (Stenotomus chrysops), white hake (Urophycis tenuis), red hake (Urophycis chuss), and winter skate (Leucoraja ocellata). Species that are habitat limited, aggregate to spawn, or have benthic eggs and larvae may be more vulnerable to the effects from the project. Project effects are of particular concern for Atlantic cod, a species with benthic life history stages dependent upon complex structured habitats that are vulnerable to project related impacts. Atlantic sea scallop, Atlantic surfclam, and ocean quahog are also particularly vulnerable due to their benthic existence and limited mobility. Winter flounder, ocean pout, Atlantic wolffish and longfin squid are benthic spawners with demersal eggs, making reproduction for these species particularly vulnerable. Atlantic cod and longfin squid aggregate to spawn and may be more vulnerable to longer term impacts if spawning behavior is disrupted.

Atlantic cod

Atlantic cod are an iconic species in New England waters and a highly sought-after catch for recreational fishermen. In 2013, the recreational marine bait and tackle industry in New England

was estimated to contribute $200 million in total sales, $78.9 million in income, and 1,256 jobs to the local economy (Hutt et al. 2015). Atlantic cod was reported to be the fifth greatest generator of sales (Hutt et al. 2015). In the 2020 Fisheries of the United States report, commercial landings were valued at $4.8 billion, with approximately $1.5 billion of the landings from New England (NOAA, 2022). In the most recent Status of Stocks report, U.S. commercial and recreational fishing supported 1.8 million jobs and $255 billion in sales across the broader economy in 2019, while landings from New England totaled approximately $1.5 billion in 2019 and 1.2 billion in 2020 (NOAA, 2022). Atlantic cod remains one of the key recreational species in New England and is highly prized by recreational fishermen (NMFS, 2022); in 2020 recreational anglers landed 386,000 pounds of Atlantic cod (recreational fishing landings database). In 2020, commercial landings of Atlantic cod totaled 1.6 million pounds and were valued at more than $3.5 million (commercial fishing landings database). However, Gulf of Maine Atlantic cod remains on the overfished and overfishing lists (NMFS, 2022). Despite recent emergency management actions and severe reductions in fishery resource allocations, cod stocks in the region remain at less than 10% of the target sustainable spawning stock biomass, with the latest stock status report for Atlantic cod GOM stocks estimate at 6-9 percent, respectively, of the target for maximum sustainable yield (National Marine Fisheries Service - 1st Quarter 2022 Update Table A. Summary of Stock Status for FSSI Stocks). The Atlantic cod stock most affected by the project area is the Gulf of Maine stock, which includes cod found in federally designated inshore juvenile Cod HAPC, GOM Cod Protection Closures, Massachusetts Cod Conservation Zones, on Tillies Bank and within the Western Gulf of Maine Closed Area.

Depletion of individual spawning groups of cod is being driven by overfishing and climate change (Mieszkowska et al. 2009), so further reductions in spawning habitat from development activities pose an additional, cumulative, threat to local cod resources. Unanticipated potential loss of recruitment due to coastal development projects, such as submarine cables, pose additional threats to cod stocks. Given the state of Atlantic cod stocks and the economic importance of the species to recreational and commercial fisheries, it is essential to minimize adverse impacts to habitats that can support and increase survivorship of critical life stages for cod identified as occurring within the project area.

Juvenile Atlantic Cod

Areas along the cable corridor are particularly important for the survival of newly settled juvenile cod, specifically the “gravel bar” and “focal point” southwest of Saturday Night Ledge, as well as the GOM Cod Protection Zones. Multiple studies have demonstrated that despite the potential that juvenile cod may initially settle to the substrate indiscriminately, age-0+ juveniles are more abundant in complex habitats (e.g. rocky or vegetated habitats) (Cote et al. 2004; Fraser et al. 1996; Gotceitas et al. 1997; Gotceitas and Brown 1993; Grant and Brown 1998; Keats et al. 1987; Lazzari and Stone 2006; Linehan et al. 2001; Lough et al., 1989). Tupper and Boutilier (1995) found settlement of cod did not differ between habitat types, but post settlement survival and juvenile densities were higher in more structurally complex habitats, with cod survival highest on rocky reefs and cobble bottoms. A mark-recapture study found a level of site fidelity exhibited by the age-0+ juvenile cod sampled indicating that once settled into complex habitat juvenile cod maintain a level of residency within that habitat (Grant and Brown 1998). Further, rocky habitats provide a substrate for epibenthic growth that provides additional complexity and serves as refuge for juvenile fish that has been shown to significantly increase survivorship of

juvenile cod (Lindholm et al. 1999 and 2001). These complex benthic habitats are vulnerable to disturbance that may range from long-term to permanent, with extended recovery times on the order of years to decades (Auster and Langton 1999; Collie et al. 2005; NRC 2002; Tamsett et al. 2010). Permanent losses of these complex habitats or disturbances that result in a reduction of structural complexity, either the physical or biological component of the habitat, during and just after settlement occurs, are likely to have substantial impacts on the recruitment of juvenile cod in the project area. The timing of benthic disturbances including boulder clearing, cable installation, armoring and anchoring could impact settlement of juvenile cod in this area through direct disturbance of habitat.

Winter Flounder

Winter flounder, a federally managed species with EFH designated in the project area, may be more vulnerable to project impacts, particularly inshore construction associated with the HDD punch-out point. Winter flounder typically spawn in the winter and early spring, although the exact timing is temperature dependent and thus varies with latitude (Able and Fahay 1998); however, movement into these spawning areas may occur earlier, generally from mid- to late November through December. Winter flounder have demersal eggs that sink and remain on the bottom until they hatch. After hatching, the larvae are initially planktonic, but following metamorphosis they assume an epibenthic existence. Winter flounder larvae are negatively buoyant (Pereira et al. 1999) and are typically more abundant near the bottom (Able and Fahay 1998). Young-of-the-year flounder tend to burrow in the sand rather than swim away from threats. Increased turbidity and the subsequent deposition of the suspended sediments can smother the winter flounder eggs and adversely affect their EFH.

Longfin Squid

Longfin squid also have EFH designated in the project area, including for sensitive early life stages. Squid egg mops are attached to the seabed and may be impacted by project construction through direct loss, dislodging, turbidity and sedimentation. Scientific literature indicates that jarring of egg masses that are near the late stages of embryonic development results in premature hatching and high mortality of the embryos. The egg masses require clear, well-oxygenated overlying water for normal embryonic development so sediment resuspension during cable laying is expected to impact squid eggs within the cable corridor (Boletzy and Hanlon, 1983; Vidal et al. 2002). Impacts to squid eggs will be dependent upon the time of year the project is constructed. Squid mop biomass is highest between May and August. Construction activities during this time, while not anticipated according to project documentation, would likely result in adverse effects to longfin squid eggs.

Protected Habitat in the Project Area

Juvenile Atlantic Cod HAPC

The project HDD exit point and the first approximately 2 miles of the cable route would be within the area and depths potentially exhibiting juvenile Atlantic cod HAPC. Juvenile Atlantic cod HAPC includes intertidal and sub-tidal benthic habitats consisting of gravel and cobble habitats and adjacent sandy habitats for young-of-the-year juveniles; and gravel, cobble, and boulder habitats for older juveniles.

Western Gulf of Maine Closure Area (WGoMCA)

The proposed cable route passes through the Western Gulf of Maine Closure Area (WGoMCA), a habitat management protection area that was implemented in 1998, and designated Atlantic cod spawning areas. The WGoMCA consists of complex and unique habitat conditions that support a wide range of marine resources. This area provides habitat for feeding, spawning, and development of federally managed species, and supports commercial and recreational fisheries and associated communities. On August 29, 2019, we provided early coordination comments through the MEPA process summarizing the necessary survey requirements for a complete EFH Assessment and concluded that "impacts to sensitive habitats, particularly hard-bottom habitats, within the Western Gulf of Maine Closure Area should be fully avoided. Work within the designated cod spawning areas should occur during periods when spawning is not actively occurring". The Western GOM Habitat Management Area (HMA) is closed year-round to all bottom-tending mobile gears to minimize habitat disturbance. Bottom-tending mobile gear is defined as gear in contact with the ocean bottom, and towed from a vessel, which is moved through the water during fishing in order to capture fish, and includes otter trawls, beam trawls, hydraulic dredges, non-hydraulic dredges, and seines (with the exception of a purse seine). The Western Gulf of Maine (GOM) Groundfish Closure, which shares the same boundaries as the HMA, is closed year-round to all fishing vessels with exceptions for certain gear types, charter and party or recreational vessels; vessels fishing with exempted gears and vessels participating in the mid-water trawl exempted fishery. The listed exemptions are in place because they result in less demersal habitat impacts than bottom-tending gear types. Impacts to complex habitats are known to result in long recovery times and may take years to decades to recover from certain impacts. Such impacts may result in cascading long term to permanent effects to species that rely on this area and the fisheries and communities that target such species. Of particular concern, this area is known to support aggregations of adult Atlantic cod. Due to the protections afforded by the HMA and groundfish closure, the areas traversed by the cable route will experience greater benthic disturbance than currently is allowed within these regions.

Stellwagen Bank Dedicated Habitat Research Area (DHRA)

The Stellwagen Bank National Marine Sanctuary was designated to protect unique and ecologically important resources within the area, and has regulations and guidelines for activities occurring within its boundary. These include special use permits, fair market value calculations, guidance for long term monitoring and decommissioning plans. Sanctuary DHRA's are intended to facilitate coordinated research on gear impacts, habitat recovery, natural disturbance, and productivity. Disruptions within this area may interfere with research being conducted.

Cod Conservation Zones

The proposed preferred cable route will traverse both the Massachusetts Bay winter and Cape Cod spring Cod Conservation zones (332 Code of Massachusetts Regulations [CMR] 8.06), as well as the GOM Cod Protection Closures which are closed to all fishing vessels during the time periods identified in Figures 1-4. Within the GOM, fisheries-based protection measures such as mortality and spawning protection closures, provide habitat benefits through protecting habitats during certain times of the year that are important for supporting specific life history functions. Habitat management areas typically do not have provisions included that apply to non-fishing activities. However, our regional fishery management councils have developed recommended

policies for non-fishing activities that do put forward recommendations for consideration when conducting activities in HMAs.

Spawning cod form dense aggregations (known as "haystacks") prior to and during spawning that last for days to weeks. Cod spawning aggregations are easily disrupted and disturbances may result in the dispersion of spawning aggregations for extended periods. In the Gulf of Maine, subsequent to the dispersion of a spawning aggregation by bottom gillnet fishing, the dispersed cod did not return to the spawning site for the duration of the spawning season (Dean 2012). The "gravel bar" and "focal point" southwest of Saturday Night Ledge, off of Manchester-by-the-Sea, MA, represent juvenile Atlantic cod spawning areas which were avoided based on coordination with Massachusetts Division of Marine Fisheries. Within the Gulf of Maine, "winter" spawning peaks in November-December, while "spring" spawning peaks in May-June near the 50 m isobath in the western Gulf of Maine, primarily along the Massachusetts and New Hampshire coasts (Dean et al, in review). For Gulf of Maine Spring Spawners, the time between peak spawning (~June 1st) and when 3-5 cm juveniles are first observed (~September 1st) is 90 days; in contrast, the time between peak spawning (~December 1st) and first observed settlement (~May 1st) is approximately 150 days for GOM winter spawners (Dean et al., in review). Due to the presence of major cod spawning aggregations within the project locus, in-water work should not take place from November 1 to January 31 in the GOM Cod closure III (figure 1), from May 1 to June 30 in the GOM Cod Closure areas I and II (figure 2, figure 3), and from March 1 to March 30 within groundfish closure V (Figure 4) (NEFSC 2020).

Unique Habitats in the Project Area

Complex Rocky Habitats

The project area overlaps with structurally complex habitats, including natural rocky habitats that have been identified as occurring throughout most of the project area. Rocky habitats provide three-dimensional structure that plays an important ecological role for fish as shelter and refuge from predators (Auster 1998; Auster and Langton 1999; NRC 2002; Stevenson et al. 2004). The relationship between benthic habitat complexity and demersal fish community diversity has also been positively correlated (Malek et al. 2010). Rocky habitats are inherently complex, where their physical complexity provides crevices for species to seek shelter from predation and flow, these habitats also provide a substrate for macroalgal and epibenthic growth that can increase the functional value of these habitats as refuge for juvenile fish. Multiple managed fish species have life history stages that are dependent on, or mediated by, rocky habitats and their associated attributes (Gotceitas et al.1995, Lindholm et al. 1999, Auster 2001, Auster 2005, Methratta and Link 2006). Rocky habitats are particularly sensitive to disturbances that reduce their fundamental complexity, with impacts ranging from long-term to permanent where extended recovery times of biological components are on the order of years to decades (Auster and Langton 1999; Bradshaw et al. 2000, Collie et al. 2005; NRC 2002; Tamsett et al. 2010). Physical habitat disturbance occurring during spawning may interfere with mating behavior and egg production (Dean et al 2014, Siceloff and Howell 2013). Due to their important role for multiple marine organisms and vulnerability to disturbances, impacts to rocky habitats should be avoided wherever feasible.

Soft Bottom Habitats

Sand and mud habitats serve important functions for the fish and invertebrate species that rely on them for refuge, feeding, and reproduction. These habitat types support distinct benthic communities that serve as EFH for managed fish species by directly providing prey and foraging habitat, or through emergent fauna providing increased structural complexity and shelter from predation. Habitat attributes within fine grained substrates also provide important functions for managed fish species including shelter, foraging, and prey. For example, biogenic depressions, shells, moonsnail egg cases, anemone, and polychaete tubes within mud and sand habitats serve as shelter for red hake (Able and Fahay 1998; Wicklund 1966; Ogren et al. 1968; Stanley 1971; Shepard et al. 1986). In addition, spawning cod also congregate over specific substrate types, gravel during the day when resting and adjacent muddy areas at night (Siceloff and Howell 2013). Impacts to soft bottom habitats would affect EFH for multiple managed fish species, however these habitats are expected to recover more quickly than other more complex habitats.

Sand waves

In addition to complex habitats, sand waves provide structural complexity and are specified as components of EFH for multiple managed fish species. Sand ripples and sand waves are found in along the cable route. Sand waves (ripples and megaripples) found in sandy, high flow environments provide fish with shelter and opportunities for feeding and migration (Gerstner 1998). In addition to providing flow refugia, sand waves may also play an important role in mediating fish-prey interactions and providing shelter from predation (Auster et al. 2003). Disruptions of these features during sensitive life history stages may result in disproportionate impacts to the species that rely upon their mediating effects.

Adverse Effects from the Proposed Project

Habitat Conversion and Community Structure

According to the EFH assessment, “the movement of the ROV and plow skids over the seafloor could also displace cobbles and boulders from its path. Where surface cobbles and boulders are displaced, such changes may persist for years (Guarinello and Carey, 2020), although a gravelly substrate remaining in the disturbed area would still be considered a hard-bottom habitat”. Given that the 300Hz SSS resolution was 0.2m and the geotechnical campaign spacing was 10km for cores and only one core was taken within the WGoMCA, it is unclear how this conclusion is justified. The three-dimensional physical structure of rocky habitats creates a diversity of complex crevices within piled pebble, cobble and boulder habitats, as well as areas of refuge in the crevices between gravels in pavement habitats and along emergent rock surfaces for species that use the habitats for shelter from predation and flow. As noted above, these habitats provide a substrate for epibenthic growth that can increase the functional value of these habitats as refuge for juvenile fish. It also takes time to establish the epifauna and macroalgae that play an important role in mediating the spatial distribution and success of multiple managed fish species. In addition, turbidity in these habitats can limit or alter the complexity of the habitat present, thereby limiting their utility to managed species. Of particular concern are impacts to species such as Atlantic cod that use fine-scale features of natural rocky habitats as shelter from flow and to mediate predation risk.

The EFHA states that "because habitat impacts would primarily be temporary and rocks or boulders shifted during installation would remain available as habitat, and since the disturbance would occur over a relatively limited spatial extent relative to the available surrounding habitat

and compared to other offshore activities such as bottom trawling or large-scale dredging (OSPAR, 2012), impacts would be minor". This is an oversimplification of the impacts of the proposed work on habitats within the WGoMCA, which has been closed to bottom-tending fishing gear since 1998, thereby allowing recovery for the past 24 years.

According to Table 5-4 in the Expanded EFHA, there are 0 acres of substrate meeting the 'Rocky: Pebble/Gravel/Cobble (2 – 256 mm) size class' within the WGoMCA. However, research conducted by the University of New Hampshire, Center for Coastal and Ocean Mapping along Jeffries Ledge to the north of the cable route, reveals the sediment substrate group to be primarily gravel-mixes, within areas of similar backscatter to the cable route. This dataset includes bottom photos revealing pebble-gravel-cobble mixes throughout low reflectivity (light grey regions) of the study area. In contrast, the EFHA and associated documentation for the proposed project indicates that "generally, fine grained sediments like clay / silt are characterized by acoustic low reflectivity (light grey) in the side scan sonar images, while coarse sediments, such as gravel and cobbles, are imaged by high acoustic reflectivity (dark grey). Sand shows a medium reflectivity (medium grey). Exposed rock is generally imaged by significantly increased reflectivity with irregular relief and acoustic shadows". We disagree with the interpretation of the geotechnical campaign that there is no pebble/ gravel/ cobble habitat within the cable route in the WGoMCA.

Sedimentation & Turbidity Effects
Installation will result in the suspension and redeposition of fine-grained sediments. Sedimentation impacts will be most impactful for epibenthic invertebrate species and sensitive life stages of fish, such as demersal eggs. Sedimentation impacts vary by habitat type and the depth of deposition. Adverse impacts in soft bottom habitats typically occur as a result of substantial deposition events or burial of demersal eggs, whereas adverse sedimentation impacts in hard habitats may occur even with limited deposition of sediments. The deposition of fine-grained sediments within rocky habitats may result in adverse impacts ranging from the loss of attached epifauna due to smothering, to inhibiting the settlement of larvae resulting from even small depths of deposition on rock surfaces. Demersal eggs are sensitive to sedimentation impacts (Berry et al. 2011; Newcombe and Jensen 1996) and are expected to be impacted by grappling, cable laying and armoring. Species with designated EFH with demersal eggs include winter flounder, longfin squid, and ocean pout. Avoiding in-water construction activities when early life stages are present, would avoid and minimize adverse effects to winter flounder EFH for these early life stages.

Installation will result in both turbidity from the suspension of fine grain sediments and entrainment impacts to pelagic habitats. Elevated suspended sediments in the water column have been documented to result in adverse impacts to various life stages of fish. High turbidity can impact fish by requiring greater utilization of energy, gill tissue damage and mortality (Newcombe and Jensen 1996; Wilber and Clark 2001). The cable route is designated EFH for sensitive life history stages of multiple managed fish species, including Atlantic cod and several demersal shellfish species including surf clam, ocean quahog and sea scallops. Demersal eggs, larvae, and juveniles are also sensitive to turbidity and sedimentation (Berry et al. 2011, Newcombe and Jensen 1996) and are expected to be impacted by project construction with effects ranging from direct mortality to behavioral impacts. Shellfish are susceptible to elevated

levels of suspended sediments which can interfere with spawning success, feeding, and growth (Newcombe and MacDonald 1991; Wilber and Clark 2001).

The project is expected to result in up to 0.8 acres of habitat conversion due to armoring of surface laid cables and 64.9 acres of impact to winter flounder habitat, according to the EFHA. An additional 994.92 acres of habitat within the WGoMCA could be impacted by cable laying activities, which includes the impact due to turbidity, according to additional information provided by the applicant. Additional permanent impacts of the project will result from the addition of crushed granite for cable armoring, boulder clearing, and anchoring within complex habitats. The addition of crushed granite to armor cables in structurally complex rocky habitats will result in a loss of both physical and biological structural complexity provided previously by natural rocky habitats. The introduction of hard substrate into soft bottom habitats will provide more habitat within the project area for species such as black sea bass and red hake, but will result in habitat loss for other species, particularly bivalves such as ocean quahog and surf clams.

While it is unclear whether armoring will be used, the presence of artificial hard substrates for cable protection may also affect macrobenthic communities. Epibenthic colonization of installed artificial hard substrates may vary widely based on the structure and composition of the installed substrate. For example, benthic monitoring at the Block Island Wind Farm found that three years post-construction installed concrete mattress used as cable protection supported no epifaunal growth, indicating that deployment of these devices would have an overall negative effect on organisms that inhabit natural hard bottom substrates (HDR 2019). Further, impacts to benthic communities of adjacent natural rocky habitats during installation of artificial substrates are expected to be long-term, with recovery times of the biological components ranging from years to a decade or more.

Essential Fish Habitat Conservation Recommendations

Section 305(b)(2) of the MSA requires all federal agencies to consult with us on any action authorized, funded, or undertaken by that agency that may adversely affect EFH. We recommend, pursuant to Section 305(b)(a)(A) of the MSA, that you adopt the following EFH conservation recommendations:

1. The proposed cable route should be redirected to avoid the Western Gulf of Maine Closed Area. This area has been closed to bottom-tending fishing gear since 1998 and benthic habitat recovery is ongoing.

   Should CR#1 not be met, please adopt the following conservation recommendations:

2. Fine scale resolution benthic surveys capable of detecting sediment with grain sizes 2 – 256mm should be conducted prior to any in-water activities (including PLGR/ RC) within the Western Gulf of Maine Closure Area. Specifically, sidescan sonar and multibeam backscatter data should be used to delineate areas of high, medium and low backscatter return for targeted benthic sampling using ROV video transects and still imagery (see Appendix A). The results of these surveys should be used to fully delineate and characterize natural rocky habitats (habitat with sediment grain sizes >2mm) within the WGoMCA. A benthic sampling plan should be provided to us for review and comment prior to planning field survey activities.

3. Results from CR#2 should be used to avoid impacts to sensitive habitats, particularly biogenic and natural rocky habitats, within the WGoMCA should be fully avoided.
4. Compensatory mitigation should be provided for any unavoidable impacts to hard-bottom / natural rocky habitat within the WGoMCA. Mitigation should be in the form of on-site, in-kind mitigation if possible, and plans should be submitted to us for review and comment. If pre-construction surveys completed in accordance with CR1 are not adequate to delineate and characterize natural rocky bottom habitat (sediment grain sizes >2mm), compensatory mitigation should be provided for the full area of impact within WGoMCA (994.92 acres of habitat).
5. Due to the presence of major cod spawning aggregations within the project locus, in-water work should not take place from November 1 to January 31 in the GOM Cod closure III (figure 1), from May 1 to June 30 in the GOM Cod Closure areas I and II (figure 2, figure 3), and from March 1 to March 30 within groundfish closure V (Figure 4). Coordinates for these areas may be accessed here: https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/northeast-multispecies-closed-area-regulations-gulf
6. Work in Winter Flounder habitat should be minimized from February 15 to May 31 to minimize adverse effects to winter flounder eggs and larvae. In the event this CR cannot be fully met, sedimentation and turbidity at punch-out point of HDD should be minimized through the use of turbidity controls or other applicable Best Management Practices (BMP's).
7. Post deployment multibeam backscatter and bathymetric surveys, sidescan sonar, ROV video and still imagery should take place within 30 days following installation, as well as 1, 3, 5 years post burial to allow for pre and post-impact analysis (see appendix A). Pending the results of the post-deployment surveys, subsequent years may not be necessary once recovery is met.
8. Armored or surface-laid cable within EEZ should be overlaid with natural rounded stone

a) Armoring within complex habitats should use natural, rounded stone of consistent grain size to match existing conditions.
b) Armoring placed within soft-sediment habitats should incorporate natural, rounded cobble and boulders (2.5-10 inches in diameter for cobble or >10-inch diameter for boulder).
c) Engineered stone should be designed and selected to provide three-dimensional structural complexity that creates a diversity of crevice sizes. Descriptions and specifications for any proposed engineered stone should be provided to USACE for agency comment and review prior to final design selection.

Fish and Wildlife Coordination Act Comments

1. All cable burial should achieve a sufficient depth to avoid fisheries interactions within the United States EEZ. If sufficient depth cannot be achieved within the EEZ, over-lay armored or surface-laid cable with natural rounded stone to minimize fisheries interactions.
    a) Armoring within complex habitats should use natural, rounded stone of consistent grain size to match existing conditions.

b) Armoring placed within soft-sediment habitats should incorporate natural, rounded cobble and boulders (2.5-10 inches in diameter for cobble or >10-inch diameter for boulder).
c) Engineered stone should be designed and selected to provide three-dimensional structural complexity that creates a diversity of crevice sizes. Descriptions and specifications for any proposed engineered stone should be provided to USACE for agency comment and review prior to final design selection.

2. We recommend silt-producing activities associated with nearshore construction be minimized to the greatest extent practicable from June 1 to October 31 to minimize adverse effects to American lobster (Homerus americanus), Atlantic surf clam (Spisula solidissima, Sea Scallop (Placopecten magellanicus), Ocean quahog (Arctica islandica), and Blue Mussel (Mytilus edulis).

Please note that Section 305(b)(4)(B) of the MSA requires you to provide us with a detailed written response to these EFH conservation recommendations, including a description of measures you have adopted that avoid, mitigate, or offset the impact of the project on EFH. In the case of a response that is inconsistent with our recommendations, Section 305(b)(4)(B) of the MSA also indicates that you must explain your reasons for not following the recommendations. Included in such reasoning would be the scientific justification for any disagreements with us over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects pursuant to 50 CFR 600.920(k).

Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(1) if new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

Conclusion

We look forward to your response to our recommendations for this project. If you have any questions regarding EFH and FWCA comments and recommendations, please contact Kaitlyn Shaw at 978-282-8457 or at kaitlyn.shaw@noaa.gov.

Sincerely,

(for)
Louis A Chiarella
Assistant Regional Administrator
for Habitat and Ecosystem Services

cc: Jason Kahn, NOAA Endangered Species Act Interagency Cooperation Division
Ruthann Brien, ACOE
Tom Nies, NEFMC
Chris Moore, MAFMC
Lisa Havel, ASMFC

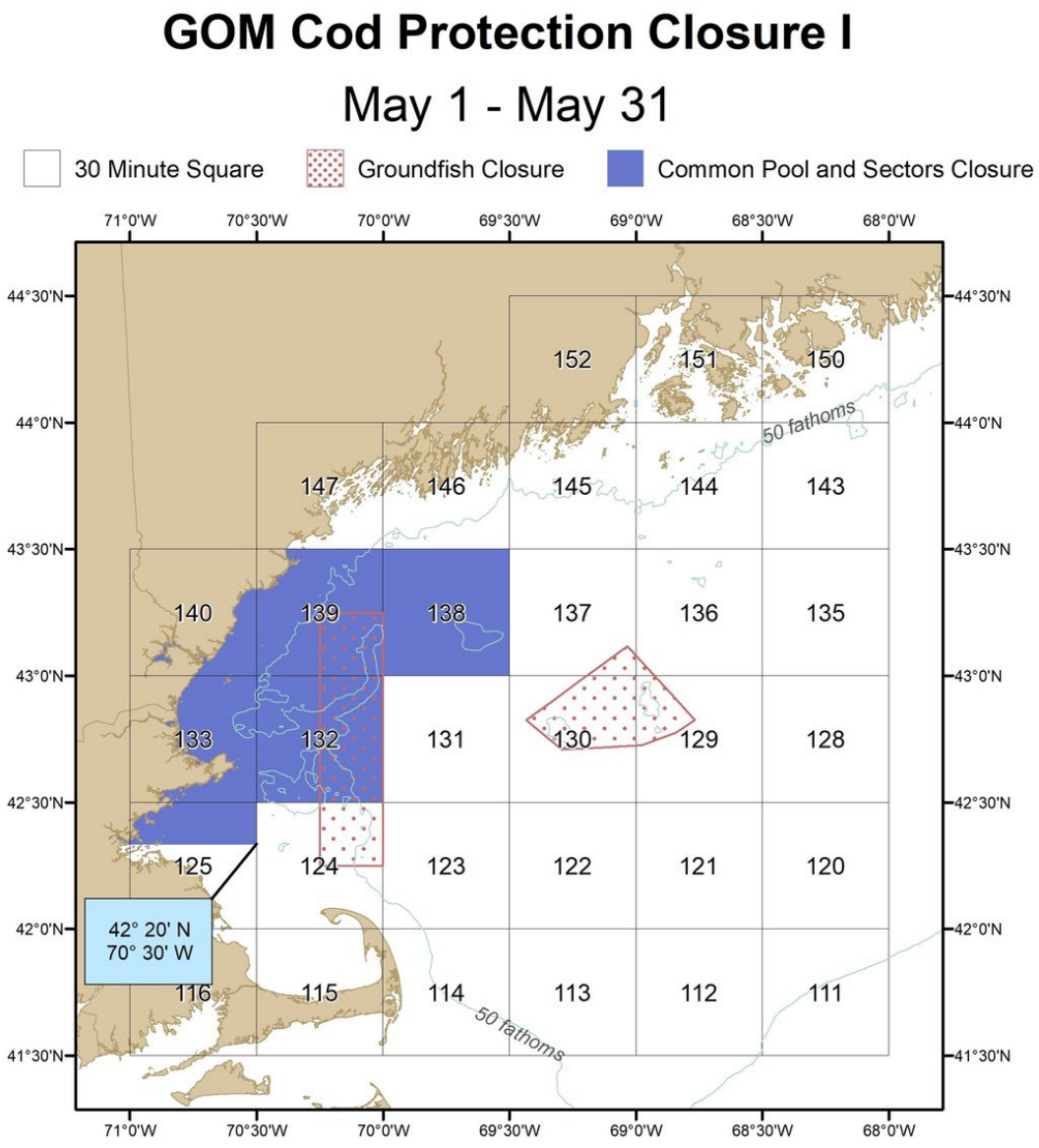

Figure 1. GOM Cod protection closure I

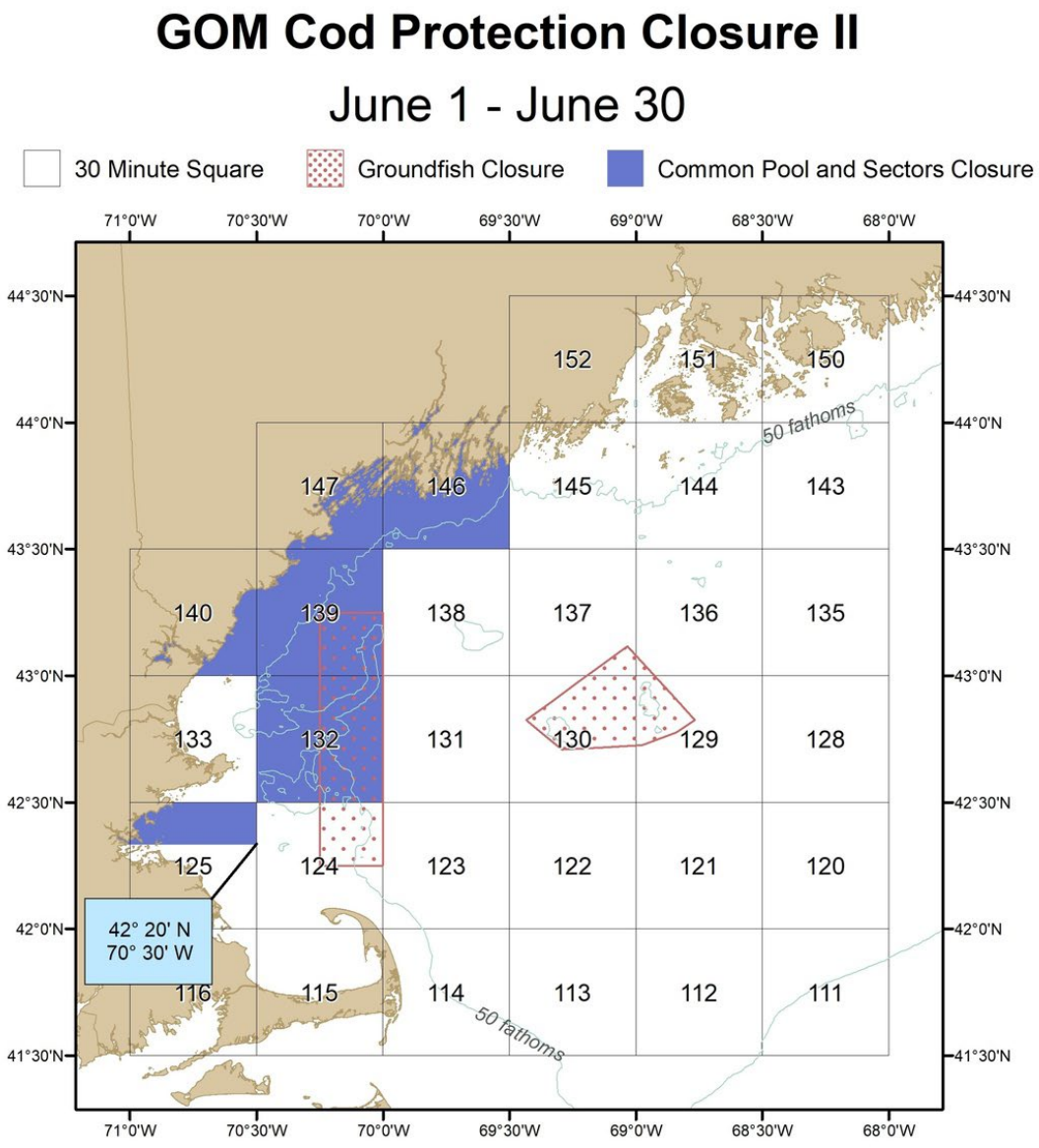

Figure 2. GOM Cod protection closure II

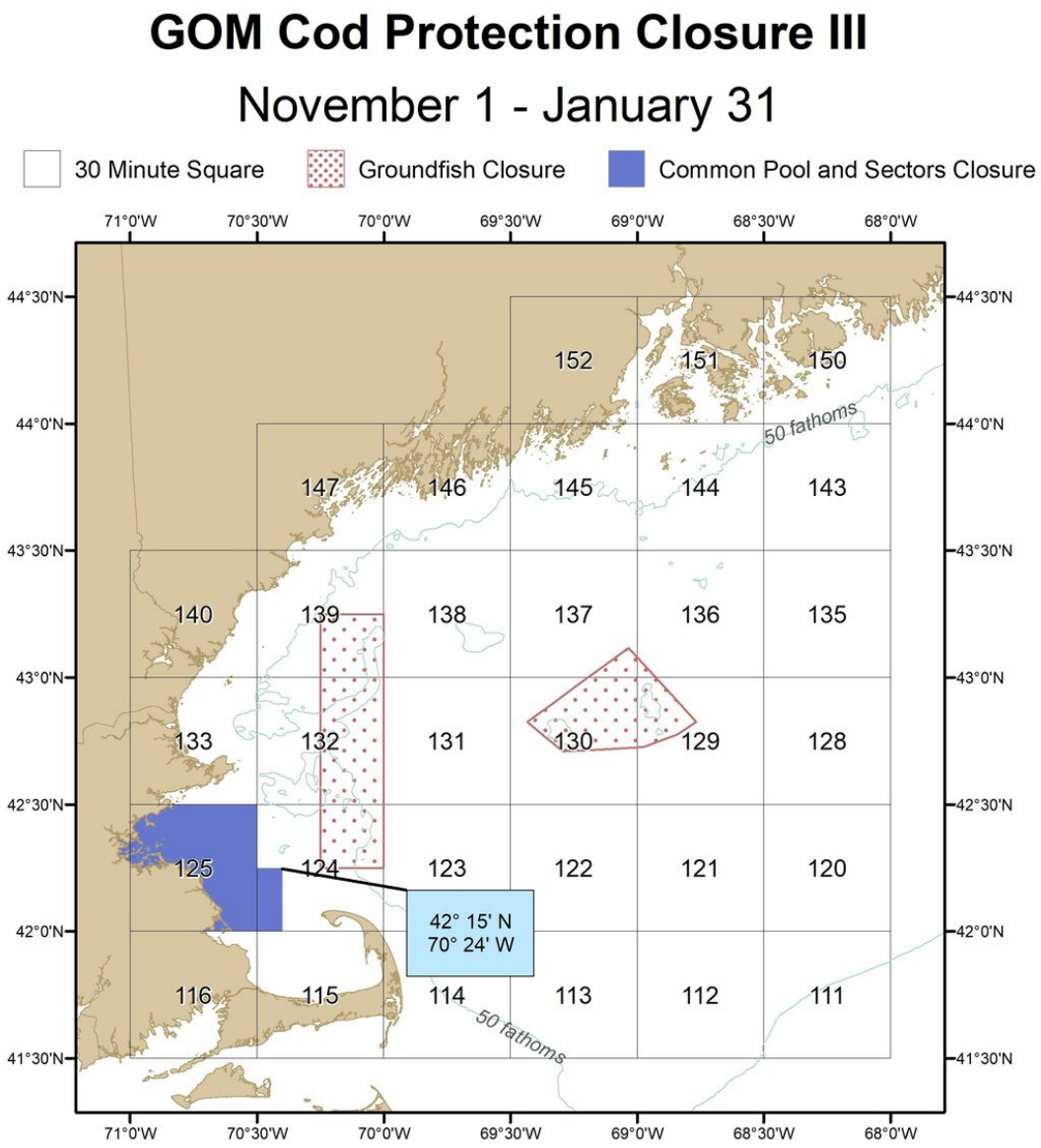

Figure 3. GOM Cod protection closure III

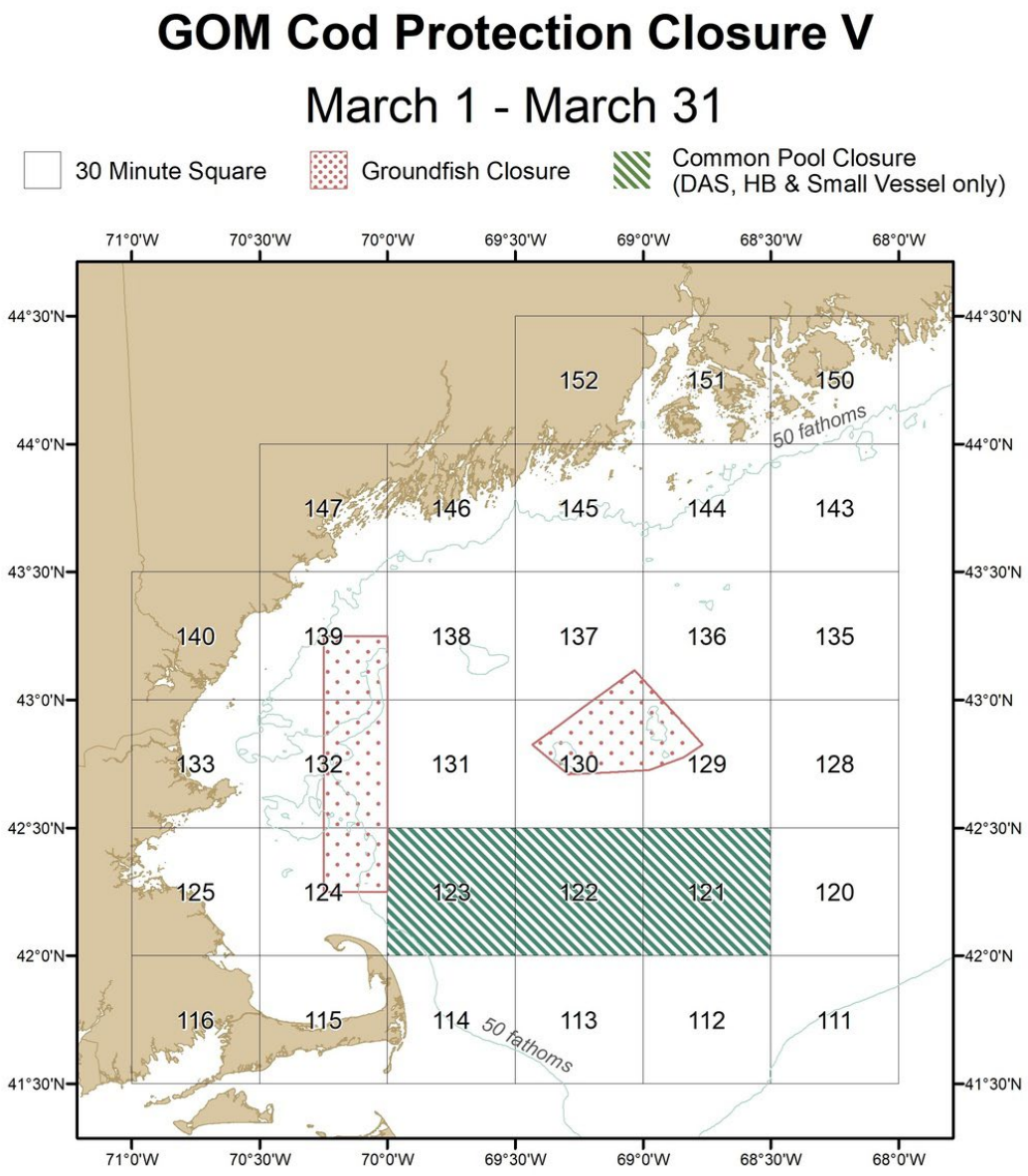

Figure 4. GOM Cod protection closure V.

Appendix A: Specifications for a survey of the proposed cable route located in the Western Gulf of Maine Closure Area (WGoMCA)

(Note: these specifications are pursuant to conservation recommendation #4)
Survey objectives:

1. Survey the entire length of the cable route within WGoMCA with side scan sonar
2. Conduct a visual survey of the cable route with a remotely operated vehicle to assess physical attributes of surrounding seafloor, fauna, flora.

Side scan survey specifications:

- Purpose: To confirm substrate types along the cable route.
- Resolution: 400kHz or higher
- Range: 50m swath width (both channels)
- Altitude: 10m maximum altitude
- Speed: 3.5-4 knots maximum towfish speed
- Data: The report should include the following data:
  - Copy of field log notes
  - Raw data in .XDF and .SDF formats

Other Considerations:
ROV survey specifications:

Purpose: To obtain video and photos of sufficient resolution to depict and characterize seafloor communities on or surrounding the cable route.
Resolution: 4k video and 3840 x 2160 or higher for still images (derived from 4K video or digital still camera)
Data:

Image data should be transmitted to surface support vessel via fiber optic cable to maximize resolution in the recorded files.
Frame captures in JPEG or TIFF format should be produced from the real-time video to ensure image clarity.
Excel spreadsheet of coordinates in decimal degrees for start and end of ROV transects
Copy of field log notes

The report should contain the above information, data and a summary of the findings. Additional conservation recommendations may be provided upon receipt of report.

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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

June 6, 2022

Frank J. DelGuidice
Chief, Permits and Enforcement Branch
Regulatory Division
U.S. Army Corps of Engineers
New England District
696 Virginia Road Concord, MA 01742-2751

Re: Kingfish Maine, Inc. NAE-2020-1651

Dear Mr. DelGuidice,

We have reviewed your EFH worksheet and additional information for the proposed Kingfish Maine land-based aquaculture facility in Jonesport, Maine. Specifically, the proposed work involves construction, operation and maintenance of a land-based yellowtail amberjack (*Seriola lalandi)* aquaculture facility utilizing a recirculating aquaculture system (RAS). The goal of the proposed project is to produce 8000 metric tons of farm-raised yellowtail amberjack for market per year. The proposal also involves constructing a trench in the intertidal and shallow-subtidal zones to install two pipes to discharge treated facility water and two pipelines serving as saltwater intakes. At full operational capacity the facility will discharge 28.7 million gallons per day (mgd) of treated wastewater, which includes 6.5 mgd of fish culture or process water and 22.2 mgd of water used for heat recovery in the facility. The facility will withdraw 19,812 gallons per minute (gpm) of seawater, which equates to ~28.53 mgd. According to the information provided, the proposed project would impact wetlands, mud, gravel/cobble intertidal and subtidal habitats in order to install the seawater intake and discharge pipes. The project also will contribute to elevated nutrient levels within Chandler Bay and result in entrainment/ impingement of resident larval and potentially juvenile fish from intake operations.

According to the information you provided, installation of the pipelines will necessitate excavating a trench through the intertidal and subtidal zones. The trenching and placement of the seawater pipelines would impact a total of 44,366 square feet (sf) of benthic habitat in the intertidal/ subtidal zones, including 8620 sf of intertidal and subtidal zones for trenching and back filling the intake/outfall pipes, 7136 sf of subtidal substrate for the install of precast Econcrete collars to hold the pipes in place and 28,610 sf from laying pipe on the bottom in subtidal mud, sand, and gravel/cobble habitat. A total of 7l36 sf of subtidal mud, sand, and gravel/cobble habitat will be displaced by the concrete collars, which project proponents plan to monitor for recolonization.

As you are aware, the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act require federal agencies to consult with one another on projects such as this. Insofar as a project involves essential fish habitat (EFH), as this project does, this process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure. We appreciate your response to our information request and offer the following comments and recommendations on this project pursuant to the above referenced regulatory process.

Resources in the Project Area

Chandler Bay supports species and habitats that are critical to a healthy marine ecosystem. The area supports wetlands, intertidal mudflat and rocky bottom habitats, and subtidal habitats including eelgrass beds. Federally-managed species containing EFH in the project area include, but not limited to, all life stages of; winter flounder, Atlantic cod, windowpane flounder, red hake, and Atlantic wolfish, and at least one or more life stages of little skate, ocean pout, Atlantic herring, pollock, silver hake, ocean pout and Atlantic sea scallop. In addition, gravel, cobble, and structurally-complex rock bottom habitats with attached macroalgae and epifauna present in the project area are important habitats for a number of life stages of federally-managed species, including juvenile Atlantic cod and juvenile sea scallops (Packer et al. 1999). American lobster also use cobble substrate (ASMFC 1997) for shelter from predation and for feeding during early benthic phases (Barshaw and Bryant-Rich 1988; Wahle and Steneck 1991). The project area is considered a Habitat Area of Particular Concern (HAPC) for inshore juvenile cod in the Gulf of Maine, which is defined as structurally-complex, rocky-bottom habitat from mean high water to water depths of 20 meters (NEFMC 2018). This habitat type provides two key ecological functions for juvenile cod: protection from predation, and readily available prey. Based on our most current stock assessment, the Gulf of Maine Atlantic cod stock is overfished and below the target biomass level, and there were no indication of positive trends in recruitment of juveniles into the fishery (NMFS 2021). Given the poor condition of Gulf of Maine cod stock, we believe a risk averse approach to protecting spawning and juvenile cod EFH and HAPC related to this project is warranted.

The nearshore vegetated and unconsolidated bottom habitat in the project area are important habitat for adults and early life stages of federally-managed species. Larvae of species with demersal eggs are less likely to be transported away from nearshore nursery grounds than those species with pelagic eggs, suggesting that the shallow-water habitats of Chandler Bay play an important role in spawning and egg development, but also as nursery areas for a number of important recreational and commercial species. A study by Lazzari and Stone (2006) found direct evidence of shallow water habitat (<6 m depth) in the Gulf of Maine, as critical facultative nursery habitat for economically and ecologically important species. This study also reported larvae and young-of-year juveniles of species that also spawn in deeper, offshore areas, such as Atlantic cod, Atlantic herring, and windowpane flounder, utilize shallow water habitats as nursery areas.

Comments Related to Proposed Pipeline Installation
According to the information you provided, the trenching for the seawater pipelines would impact approximately 44,366 sf of mud, sand, and gravel/cobble habitats in the intertidal and subtidal transition zones. Furthermore, the applicant's agent indicated impacts from the pipeline trenching in the intertidal zone are temporary and the elevation of the intertidal zone will be restored to pre-project conditions. The applicant should provide a detailed monitoring plan of the gravel/cobble rocky habitat impacted by the pipeline installation, with a pre- and post-construction assessment and photo documentation. The assessment should include a comparison of the pre- and post-construction rocky bottom habitat area, grain size, and complexity. Compensatory mitigation for temporal losses and for any reduction in the area and the grain size and complexity of the rocky bottom habitats should be required.

According to the information provided, the four pipelines will emerge from the subsurface in the transition zone and will be supported by concrete collars over the remaining length in the subtidal zone. Depending on scour post installation, the additional fill (e.g., concrete mats, riprap) may be needed to protect the pipes from scour and erosion in areas where the pipelines emerge from the subsurface bottom and is only shallowly buried or resting close to the bottom. These areas may be subjected to scour and erosion, especially during storms and strong currents. Therefore, an assessment of potential scour and erosion should take place and if deemed necessary, mitigation should be provided for excess fill associated with pipe protection.

A geotechnical survey of this area was performed, showing basalt and granite rock at varying depths below the surface. The applicant anticipates that blasting will not be required for pipeline installation. However, should blasting be required for this project, a blasting plan should be developed by the applicant and the USACE should re-initiate EFH consultation in order for us to review and comment on the blasting plan. In addition, all surficial rocky bottom habitat that is removed from the pipeline corridor should be offset with compensatory mitigation.

Regarding turbidity and sedimentation control during trench excavation and backfilling, the EFH worksheet states that, "increased turbidity is expected during construction. This effect will rapidly diminish upon project completion". However, details regarding the use of turbidity controls, or when and how turbidity monitoring will be conducted, have not been provided. A detailed plan for how turbidity and sedimentation will be controlled should be prepared and employed during trenching, backfilling and all turbidity and sedimentation producing activities.

The proposed in-water work window for this project is from November 8 to April 30 of any year for trenching and backfilling, and between November 8 and May 7 pf any given year
For placement of pipes and concrete collars. Winter flounder adults spawn in the Gulf of Maine region from March to May. Demersal eggs could be directly affected by elevated suspended sediments, turbidity, and by mechanical impacts from dredging, including delayed hatching, developmental defects on larvae, and mortality (Klein-MacPhee 2004; Berry et al. 2004, 2011; Wilber et al. 2005). In addition, the proposed in-water work window could adversely affect spawning and egg development habitat for winter flounder. Therefore, the work window should be modified to end on March 14, rather than May 7.

Comments Related to Aquaculture Operations

Entrainment Impacts

The proposed seawater access piping includes two intake pipes that at full operational capacity will withdraw 28.53 mgd of seawater. The EFH assessment states that the intake is designed to minimize impingement of fish and invertebrates by installing wedgewire intake screens with a 1-inch slot size and a maximum through-screen velocity of less than 0.5 ft/sec. While this configuration may minimize impingement, it will not avoid entrainment of eggs and larvae. Ichthyoplankton studies have not been conducted for this project to quantify the numbers of eggs and larvae that will be entrained, or the species and life stages that will be impacted by the proposed project. In an attempt to assess the entrainment impacts to fish and bivalve eggs and larvae, we compared the entrainment data from the Seabrook Station Nuclear Power Plant (Seabrook Station) for 2019 (Nextera Energy 2019). With a volume of 592 mgd, the Seabrook Station cooling water intake system is approximately 20 times greater than the proposed Kingfish aquaculture facility. Assuming a linear relationship between water intake volume and incidents of egg and larvae entrainment, we calculated the projected annual entrainment impacts for the Kingfish aquaculture project, shown in the table below.

Taxa/Life Stage	**Seabrook Station 2019 Entrainment Data**	**NMFS Estimated Annual Kingfish aquaculture Entrainment**
Fish Eggs	575 million	20 million
Fish Larvae	253 million	8.87 million
Bivalve Larvae	$1{,}435 \times 10^9$	50×10^9

While the fish and invertebrate populations offshore of Seabrook Station are arguably distinct from those in the Kingfish project area, this estimate provides a reasonable, although conservative estimate for Kingfish entrainment impacts, given that Chandler Bay is a highly diverse and productive estuary that supports large fish and invertebrate populations, as well as several species of diadromous fish that spawn in the Chandler River and nearby Machias River. Furthermore, the marine fish and invertebrate populations in Chandler Bay are likely of higher in density and productivity than those in the offshore area where the Seabrook Station cooling water intake is located. As discussed above, Chandler Bay represents important spawning and nursery areas for species such as winter flounder, windowpane flounder and Atlantic herring. In addition, the larvae and young-of-year juveniles of species that also spawn in deeper, offshore areas utilize shallow water habitats in Chandler Bay as nursery areas (Lazzari and Stone 2006). These estimates for entrainment suggests the impacts are not trivial, and we believe the applicant should conduct an assessment of entrainment impacts based on the productivity of fish and invertebrate populations in the Chandler Bay. We are available to assist the applicant in providing relevant ichthyofauna information.

Discharge Outfall Impacts

We have remaining concerns regarding the potential impact to habitats from the proposed aquaculture wastewater discharge. The assumed background concentration of nitrogen is 0.26 mg/l per information provided by Maine Department of Environmental Protection (MEDEP). Given the critical water quality threshold protective of eelgrass is set at 0.32 mg/L, MEDEP has determined that the proposed nitrogen discharge from the Kingfish facility will result in a

lowering of water quality as it relates to eelgrass habitat.

According to the Maine Pollutant Discharge Elimination System Permit and Waste Discharge License Proposed Draft Fact Sheet, the projected nitrogen concentrations in the area of discharge is 6.6 mg/l. These projected nitrogen concentrations from the discharge effluent appear to be 25x higher than ambient levels. Higher nutrient levels in estuaries are associated with higher biological oxygen demands and lower dissolved oxygen concentrations (Kennish 1998), can trigger macroalgae blooms (Shaw et al. 2018), fish kills, reduced water clarity (O'Reilly 1994; Johnson et al. 2007), and can lead to eelgrass bed mortality and disease (Short and Burdick 1996; Goldsborough 1997). While the response to early coordination comments provided by Kingfish indicated that denitrification via upflow sludge bioreactors (USBs) will be employed, specifics on the quantitative nitrogen reductions achieved by this process were not provided.

The Maine Department of Environmental Protection's Pollutant Discharge Elimination System permit and Waste Discharge License requires the following monitoring requirements:

1. Technology-based numeric limitations for flow, biochemical oxygen demand (BOD), total suspended solids (TSS) and pH;
2. A requirement to seasonally (May – October) monitor the effluent for total phosphorus, total ammonia (as N), total kjeldahl nitrogen, nitrate + nitrite nitrogen;
3. A monthly average water quality-based mass limitation for total nitrogen;
4. A requirement for the permittee to conduct a dye study to more accurately determine the mixing characteristics of the treated effluent discharge from the facility with the receiving water;
5. A requirement to conduct seasonal (May – October) ambient water quality monitoring in Chandler Bay;
6. A requirement for the facility to develop and maintain an Operations & Maintenance (O&M) Plan for the production facility and the wastewater treatment facility;
7. Daily maximum concentration limits for formalin based off of 1-hour or 24-hour treatment types; and
8. A finding by the Department pursuant to the antidegradation provisions under Classification of Maine waters, 38 M.R.S. § 464(4)(F), for nitrogen as it pertains to eelgrass as an indicator.

Essential Fish Habitat Conservation Recommendations

Section 305(b)(2) of the MSA requires all federal agencies to consult with us on any action authorized, funded, or undertaken by that agency that may adversely affect EFH. The proposed project area in Belfast Bay and adjacent areas have been identified as EFH under the MSA for several federally-managed species. We recommend, pursuant to Section 305(b)(a)(A) of the MSA, that you adopt the following EFH conservation recommendations:

1. Compensatory mitigation should be provided for all temporary and permanent adverse effects resulting from the trenching and backfilling for the installation of the intake and

outfall pipes in the intertidal and subtidal zone (44,366 sf adverse effects to EFH and HAPC).

2. Monitoring plans that incorporate an undisturbed control and ECOncrete sites should be developed and shared with resource agencies for review and comment. Compensatory mitigation should be provided for areas that do not meet established mitigation targets. The monitoring program should include an assessment of pre- and post-construction conditions to determine the effects of the pipeline on the marine ecosystem, including physical and biological effects. Data should be collected to characterize the benthic habitat(s) as it is now (e.g., predominant sediment grain size, bottom uniformity, vegetation, etc.) as well as the existing benthic biological community (epi and infaunal organisms). The organisms should be classified (by species, preferably, and also whether they're resident or non-resident/invasive) and quantified to understand changes in both absolute abundance and relative abundance as a result of the project. The monitoring plan should include an invasive species monitoring plan and contingencies for case-specific control of invasive species.
3. To estimate the entrainment impacts to eggs and larvae from the proposed project, an assessment should be conducted based on the ichthyofauna of Chandler Bay and the proposed recirculating aquaculture system. We are available to provide information on relevant fish and invertebrate ichthyofauna present in Chandler Bay, and request an opportunity to review the assessment prior to issuance of any permits.
4. To protect spawning and egg development habitat for winter flounder, the work window should be modified to end on March 14, rather than May 7 and a time-of-year restriction should be required for in-water work between March 15 and June 30.
5. An assessment of potential scour and erosion in the areas where the buried section of the pipeline transitions to the exposed and anchored section, and measures to mitigate scour and erosion should be required. Any areas of additional fill should require compensatory mitigation.
6. Should blasting be required for this project, a blasting plan should be developed by the applicant and the USACE should re-initiate EFH consultation in order for us to review and comment on the blasting plan.
7. A detailed plan for how turbidity and sedimentation will be controlled should be prepared and employed during trenching, backfilling and all turbidity and sedimentation producing activities.

Please note that Section 305(b)(4)(B) of the MSA requires you to provide us with a detailed written response to these EFH conservation recommendations, including a description of measures you have adopted that avoid, mitigate, or offset the impact of the project on EFH. In the case of a response that is inconsistent with our recommendations, Section 305(b)(4)(B) of the MSA also indicates that you must explain your reasons for not following the recommendations. Included in such reasoning would be the scientific justification for any disagreements with us over the anticipated effects of the proposed action and the measures needed to avoid, minimize,

mitigate, or offset such effects pursuant to 50 CFR 600.920(k). Please also note that a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(1) if new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

Endangered Species Act
Threatened and endangered species under our jurisdiction may be present in the action area, and consultation pursuant to section 7 of the Endangered Species Act of 1973 is required. If you have any questions regarding the status of this consultation, please contact Roosevelt Mesa at 978-281-9186 or roosevelt.mesa@noaa.gov.

We appreciate the opportunity to provide these EFH conservation recommendations. If you have any questions regarding our conservation recommendations or information in this letter, please contact Kaitlyn Shaw at 978-282-8457 or at kaitlyn.shaw@noaa.gov.

Sincerely,

Louis A. Chiarella
Assistant Regional Administrator
for Habitat and Ecosystems Services

cc: Roosevelt Mesa, PRD
Shawn Mahaney, USACE
Mike Marsh, USEPA
Tom Nies, NEFMC

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Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 101 Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Marc Gorelnik, Chair | Merrick J. Burden, Executive Director

6 May, 2022

Ms. Janet Coit, Assistant Administrator
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Ms. Amanda Lefton, Director
Bureau of Ocean Energy Management
1849 C Street, NW
Washington, D.C. 20240

Dear Ms. Coit and Ms. Lefton:

The Pacific Fishery Management Council (Pacific Council, Council) has reviewed the *NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy – Northeast U.S. Region* (Draft Strategy) and provides these comments in response to the Request for Comments. The Pacific Council is one of eight Regional Fishery Management Councils established by the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The Council is charged with sustainably managing West Coast fisheries and the habitats upon which they depend and develops fisheries management actions for Federal fisheries off the United States West Coast.

The Council commends the Bureau of Ocean Energy Management (BOEM) and the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) on the development of the Draft Strategy to address anticipated impacts from offshore wind energy (OSW) development on scientific surveys in the northeast and look forward to engagement in the development of a similar document for the Pacific region. We are extremely concerned about the potential impacts on scientific surveys, including both NOAA surveys and a host of other scientific surveys conducted by state agencies, universities, and others, which are critical to our mission of sustainable fisheries management. We also feel that, while this Atlantic strategy may serve as a model as the NOAA website indicates, a separate and significant strategy development process is necessary for the Pacific coast. We offer the following comments on the Draft Strategy.

The MSA includes 10 National Standards (NS)[1] that must be followed in the development and implementation of fishery management plans (FMPs) to ensure sustainable and responsible fisheries management. We highlight three of the NS that are particularly relevant to the development and potential impacts related to OSW development to scientific surveys:

- Optimum Yield (NS1): "Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the

[1] https://www.fisheries.noaa.gov//national/laws-and-policies/national-standard-guidelines

U.S. fishing industry." OY is defined as "…a decisional mechanism for resolving the Magnuson-Stevens Act's conservation and management objectives, achieving an FMP's objectives, and balancing the various interests that comprise the greatest overall benefits to the Nation."

- Scientific Information (NS2): "Conservation and management measures shall be based upon the best scientific information available." This includes the need for high quality and timely biological, ecological, environmental, economic, and sociological scientific information to effectively conserve and manage living marine resources. And further requires evaluation of the potential impact that conservation and management measures will have on living marine resources, essential fish habitat (EFH), marine ecosystems, fisheries participants, fishing communities, and the nation.

- Communities (NS8): "Conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are based upon the best scientific information available in order to (1) Provide for the sustained participation of such communities; and (2) To the extent practicable, minimize adverse economic impacts on such communities."

The Council is highly dependent on scientific surveys to ensure accurate, credible information on which to base management decisions. Fisheries science in particular is subject to a high degree of uncertainty and requires adaptive management with regularly conducted surveys and assessments to ensure sustainable management of fisheries and habitat resources. When surveys are unable to operate as planned, the Council may be required to address the added uncertainty by adopting more precautionary harvest guidelines and management measures that protect fish stocks, habitats, and the marine ecosystem. These precautionary management measures may come with a possible cost of foregone harvest opportunities. As stated in the Draft Strategy, "*the greater uncertainty in the science, the more restrictive the management measures.*"

Any strategy, however, should not only consider impacts to scientific surveys, but impacts to data generated from fishing activities (fishery dependent data) and to the fisheries themselves. In addition to direct impacts to the fisheries (greater uncertainty equals lower allowable harvest), there are potential secondary impacts as well. For example, there are numerous constraining species such as Endangered Species Act (ESA)-listed species, protected marine mammals and seabirds, and fish stocks with restrictive harvest limits. Fishermen carefully avoid these species in choosing where, when, and how to fish, and they depend on the information generated by scientific surveys to guide their decisions. Greater scientific uncertainty results in great risk of such interactions and will cause fishery participants to take even more precautions.

For all potential impacts to fisheries, fish stocks, habitat, and ecosystem resources, the Council prioritizes avoidance of such impacts as a primary goal for agencies and industries undertaking non-fishing activities that may impact important fisheries activities and habitats. Only when impacts are unavoidable should minimization and mitigation measures be pursued. The Draft Strategy lists five goals, beginning with the goal of mitigating impacts. **We suggest that the first**

goal should be to avoid impacts whenever practicable. In cases where impacts to scientific surveys and fisheries are unavoidable, there should be early and significant engagement to ensure the goal of minimizing impacts is achieved.

The Draft Strategy states that "*For offshore wind developments with approved Construction and Operations Plans (COPs), the opportunity to avoid impacts has passed…[but] for developments without COPs and for new lease areas, there is opportunity to avoid or minimize the impacts for NOAA Fisheries surveys."* The Pacific Council considers the potential impacts to surveys and fishery-dependent data collection matters of great urgency. Based on the Draft Strategy's statement, it is imperative to begin development of a separate *West Coast Strategy* as soon as possible. We cannot afford to lose the opportunity to avoid impacts early in the process. We encourage BOEM to address the concerns of NMFS, the Council, and others, and before approving COPs to avoid survey impacts. **This requirement should be included in lease stipulations in Proposed Sale Notices for OSW lease sales**, so that OSW developers have an incentive to avoid impacts to scientific surveys and fishery-dependent data collection.

International and Government-to-Government agreements with foreign nations and with Native American Tribes depend on scientific surveys to determine harvest specifications. Disruptions to these surveys could negatively impact the implementation of such agreements. **The Council recommends that BOEM give special consideration to the potential impacts of OSW on scientific surveys that are crucial to international or Tribal agreements as well as those surveys that address nearshore, state-managed stocks that are likely to occur in areas where wind turbines may be placed**.

The Draft Strategy describes numerous objectives and actions that will require substantial agency resources. These objectives and actions are critical for the continuity of surveys that are impacted by OSW development, and without concerted efforts to avoid and mitigate impacts, the value of those surveys could be lost. The Draft Strategy's Objective 1.2 describes the need to identify funding gaps and resources needed to implement key Objectives and Actions. **The Council urges BOEM and NOAA Fisheries to ensure necessary resources are secured.**

Action 3.2.1 calls for completion of a "Synthesis of the Science" report based on an October 2020 workshop. Action 5.2.1 calls for completion of a document entitled "*Principles and Best Practices for Developing Regional Survey Mitigation Implementation Strategies and Program Plans*." The Council fully supports both these efforts and is willing to assist in development of the Principles and Practices document.

In summary, we re-iterate the critical role of scientific surveys in fisheries management decisions developed by the Council. The following points summarize our recommendations regarding the Draft Strategy.

- Ensure that whatever strategy is selected for the Northeast takes into consideration the broader implications that may affect separate strategy development in other regions
- Include a goal to avoid impacts first, before identifying minimization and mitigation measures
- Require lessees to work with NMFS on proposed COPs to avoid survey impacts early, and definitely prior to final approval of COPs

- Give special consideration to the potential impacts of OSW on scientific surveys that are crucial to international or Tribal agreements as well as those surveys that address nearshore, state-managed stocks
- We urge BOEM and NOAA Fisheries to ensure necessary resources are secured for implementation of the Strategy
- Complete the documents described in Actions 3.2.1 and 5.2.1

Thank you for considering the comments of the Pacific Council. Please do not hesitate to contact Mr. Kerry Griffin (Kerry.griffin@noaa.gov) on Council staff with any questions.

Sincerely,

Marc Gorelnik
Chairman

KFG/ael

New England Fishery Management Council

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

May 6, 2022

Jonathan Hare
Science and Research Director
National Oceanic and Atmospheric Administration
Northeast Fisheries Science Center
166 Water Street
Woods Hole, Massachusetts 02543

Brad Blythe
Chief, Branch of Biological and Social Sciences & BOEM Scientific Integrity Officer
Bureau of Ocean Energy Management
Office of Renewable Energy Programs
45600 Woodland Road (VAM-OREP)
Sterling, Virginia 20166

Dear Dr. Hare and Dr. Blythe,

Please accept these comments from the New England Fishery Management Council (New England Council) and the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) regarding the NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy for the Northeast U.S. Region. The Councils rely heavily on NOAA's scientific surveys for development of key management measures, including measures required by law such as annual catch limits. We strongly support efforts to understand and mitigate the negative impacts of offshore wind development on these surveys.

The New England Council has primary management jurisdiction over 28 marine fishery species in federal waters and is composed of members from Maine to Connecticut. The Mid-Atlantic Council manages more than 65 marine species[1] in federal waters and is composed of members from the coastal states of New York to North Carolina (including Pennsylvania). In addition to managing these fisheries, both Councils have enacted measures to identify and conserve essential fish habitats (EFH), protect deep sea corals, and sustainably manage forage fisheries. The Councils support efforts to mitigate the effects of climate change, including the development of renewable energy projects, provided risks to the health of marine ecosystems, ecologically and economically sustainable fisheries, and ocean habitats are avoided.

While the Councils recognize the importance of domestic energy development to U.S. economic security, it is important to note that marine fisheries throughout New England and the Mid-Atlantic are profoundly important to the social and economic well-being of communities in the Northeast U.S. and provide numerous benefits to the nation, including domestic food security.

[1] Fifteen species are managed with specific Fishery Management Plans, and over 50 forage species are managed as "ecosystem components" within the Mid-Atlantic Council's FMPs.

Both Councils updated their policy on wind energy development in December 2021, working together on policy development and adopting the same language. Our comments in this letter build upon this policy.

Summary of Recommendations

- As time and resources allow, consider impacts to the Northeast Area Monitoring and Assessment Program (NEAMAP) and other partner surveys as part of the mitigation strategy.
- Provide additional detail on the intent and differences between certain objectives.
- Clarify the feasibility of implementing mitigation program and survey-specific plans given resource and funding constraints.
- Recommend data sharing strategies.
- Establish new, long-term monitoring surveys.
- Analyze cumulative effects on NOAA surveys from all wind projects.
- Streamline and facilitate process for obtaining the necessary incidental take authorizations for endangered and protected species for surveys completed by wind developers.
- Bring in the Northeastern Regional Association of Coastal Ocean Observing Systems (NERACOOS) and Mid-Atlantic Coastal Ocean Observing System (MARACOOS) as partners.
- Seek Council participation on work groups and consult with Councils on effectiveness of monitoring efforts.
- Develop a NOAA website to host updated implementation strategy materials, announcements of public meetings and comment opportunities, and a tracking dashboard measuring progress and effectiveness of mitigation measures.

Completeness of Strategy, Impacts, and Components

This strategy should more explicitly consider implications for other partner surveys such as the Northeast Area Monitoring and Assessment Program (NEAMAP). Such evaluations might be more limited than those completed for core NOAA Fisheries surveys, but it would be useful to estimate the extent to which these surveys may be impacted by development and what the effects might be on fisheries management.

The draft mitigation strategy states it is too late to avoid impacts to NOAA Fisheries surveys from offshore wind projects with approved Construction and Operations Plans (i.e., Vineyard Wind 1 and South Fork Wind). The magnitude of survey impacts from these projects is unclear and should be clarified. To avoid loss of data quantity, accuracy, and precision, with associated downstream impacts, the impacts of these projects will need to be mitigated through this implementation strategy. Clarity should be provided on the feasibility of redesigning surveys or deploying new types of surveys at sites where projects have already been permitted.

Goals, Objectives, and Actions

We agree that a "workflow for identifying federal survey mitigation needs in a timely manner as part of the permitting and leasing framework" (Action 1.1.2) is important. However, we would

appreciate more detail on what this means. Is this action envisioned as part of the EIS development process, where impacts of specific projects on surveys are identified? Action 3.1.1 under Goal 3 is to "Document and analyze impacts of offshore wind energy development on NOAA Fisheries surveys during the environmental review process for individual projects", so we assume something different is envisioned here. Or is this action intended to be a broader effort, thinking across multiple projects and timelines? The reference to the leasing framework suggests that the idea is to begin considering survey mitigation needs early in the process, as lease areas are being developed. We would agree with this. This might be especially important in the Gulf of Maine or in other deep-water areas if vessel access for alternative surveys is challenging due to floating arrays (this relates to Action 3.2.3).

Given the complexity and importance of mitigating impacts to NOAA Fisheries surveys, it will be important to obtain all necessary resources, including funding, to achieve all the outlined goals and objectives (objectives 1.2 and 1.3 in the draft strategy). Section 8 in the draft strategy includes a list of potential funding sources, which are not guaranteed. Table 2 includes numerous actions with completion dates beginning this fall that are not yet funded. If all the outlined goals, objectives, and actions cannot be achieved using federal funds or other grants, we recommend any applicable survey mitigation measures be required as part of lease and permit conditions for wind projects (Action 1.3.2). Alternatively, NOAA and BOEM could prioritize and complete a focused subset of the actions versus partially addressing all actions.

As part of either Objective 2.2 or Goal 4, we suggest considering new, long-term monitoring surveys to be conducted by NOAA Fisheries. Long-term monitoring is important to adequately sample new habitats created by offshore wind energy development, species regime shifts because of climate change, etc.

Cumulative effects on NOAA Fisheries surveys from all offshore wind energy projects should be analyzed as part of Objective 3.1, Action 3.1.1. Documenting and analyzing impacts for individual projects is important; however, the aggregate effects are critical to understanding regional impacts.

Objectives 4.1 and 4.2 are similar. It would be helpful to outline specific review tasks to be completed quarterly (strategy review) vs. annually (program and survey-specific plan reviews). We assume that survey-specific plan reviews will be done after the survey is conducted each year, but in time to adapt the mitigation plan for the following year. Since surveys are done on different schedules, this could argue for a rolling review survey by survey, rather than a larger annual evaluation.

Consideration of new survey technologies will be important but issuing and evaluating responses to an annual request for information for survey technologies (Action 4.4.1) could be quite time-consuming. It would be useful to know more about what this process might entail, and how alternative survey technologies would be evaluated by NOAA Fisheries. This seems like an area of work where identifying partners who are also exploring or using these technologies would be worthwhile.

We are encouraged that Objective 4.5 includes monthly tracking and reporting on wind energy development in the U.S. This product will be useful beyond survey mitigation. As part of Action

4.5.1, we strongly urge BOEM to include downloadable GIS layers with proposed project layouts including cable routes as part of the dashboard for stakeholders to understand the regional cumulative effects of all proposed projects more easily.

Additional detail and specificity should be provided for Objective 4.6 as it is not clear if the intention is to adapt surveys to reflect ecosystem changes. If survey adaptation due to climate change is already planned for, this should be integrated with offshore wind survey mitigation work.

Goal 5 (coordinated execution and sharing knowledge) is essential. Ideally NOAA and BOEM staff and other partners from outside the region will be integrated into the process at the outset so knowledge sharing can occur on an ongoing basis.

Developer Monitoring Surveys

We strongly support evaluation and integration of developer monitoring surveys with NOAA Fisheries surveys (Goal 2), regional standards (Objective 2.1), and compatibility with NOAA surveys (Objective 2.2). Data sharing strategies, including plans for distributing developer-collected data, should be further elucidated. The strategy should clarify whether and how developer-collected monitoring data will be combined with or aligned with data from the NOAA Fisheries surveys. We recommend that all project-specific monitoring studies be shared with NOAA Fisheries, made publicly available, and integrated with the existing survey data where possible. When these studies cannot be integrated with NOAA Fisheries survey data to support fisheries management, an explanation for why should be provided for future data users.

We understand that surveys conducted by developers may require authorizations under the Marine Mammal Protection Act and the Endangered Species Act. Especially as these surveys can represent continuous time series, timely issuance of any required authorization is important to avoid temporal gaps in coverage. The mitigation strategy should consider ways to facilitate and streamline this process.

Working with Partners

We appreciate that the draft strategy identifies the Councils as partners in the survey mitigation process. We understand that the strategy was intentionally left open-ended as to how stakeholders including the Councils might be involved. Suggested paths for Council involvement include:

- Council member and/or staff participation in work groups addressing specific issues (e.g., the Scallop Survey Working Group), based on resource availability and expertise.
- Consultation on the effectiveness of long-term monitoring efforts to adequately measure impacts of offshore wind development on Council-managed species.

NERACOOS and MARACOOS (Northeast and Mid-Atlantic Regional Association Coastal Ocean Observing Systems) would also be useful partners in this work.

Communication and outreach recommendations

Survey mitigation is a complex, long-term issue that will involve multiple teams working across NOAA, BOEM, and partner organizations. Offshore wind development is complex and fast-moving. We suggest the following ways to improve communication on these issues:

- We agree that a NOAA website (Action 5.3.3) is essential. This site should host the final strategy, a routinely updated copy of the Goals, Objectives, and Actions table, announcements of public meetings and comment opportunities, and other related reports and information. The website should also include Objective 4.3's dashboard for tracking how the mitigation measures are being implemented and adapted, and whether the measures have been effective at achieving the stated goals and objectives.
- NOAA should identify a staff member to liaise with the Councils and serve as a point of contact on survey mitigation issues (perhaps the program coordinator noted in Action 5.1.2). This individual should provide periodic updates to the Councils during their meetings at appropriate intervals, perhaps twice per year.
- Communications and outreach should not focus just on scientific publications and scientific presentations. The strategy should more explicitly acknowledge that communications and outreach to non-technical audiences will be prioritized. For example, BOEM and NOAA should provide easily digestible information on the likely impacts survey changes will have on stock assessments and scientific uncertainty levels used in management, where possible. Impacts on assessments will be important for Councils (including their Scientific and Statistical Committees) to understand. The issue of survey mitigation is complex, and detailed materials will be important for scientific stakeholders; however, other users will appreciate higher-level summaries of changes made and their implications.

Minor errors noted in the draft strategy

The following errors in the document are not substantive to the overall conclusions drawn but should be corrected in the final strategy document.

- Councils should be referred to as Fishery (not Fisheries) Management Councils on page 18 and throughout the document.
- The document refers to the Management and Conservation Act on page 18; this should be corrected to Magnuson-Stevens Fishery Conservation and Management Act.
- Page 18 and page 25 refer to the Atlantic States Marine Fisheries Commission as "the Interstate Fisheries Commission" and the "Marine Fisheries Commission", respectively. The phrase Atlantic States Marine Fisheries Commission would be clearer.
- The role of states in fisheries management is downplayed on page 19. The Atlantic States Marine Fisheries Commission (ASMFC) is composed of "member states", not "representatives from coastal states." The states' role in ASMFC should also be noted under the state bullet on page 19 given that the states manage fisheries.

Conclusion

We look forward to working with NOAA and BOEM on these important issues. Please contact us if you have any questions.

Sincerely,

Thomas A. Nies
Executive Director, New England Fishery Management Council

Dr. Christopher M. Moore
Executive Director, Mid-Atlantic Fishery Management Council

cc: J. Beaty, M. Luisi, W. Townsend

North Pacific Fishery Management Council

Simon Kinneen, Chair | David Witherell, Executive Director
1007 W. 3rd Avenue, Suite 400, Anchorage, AK 99501
Phone 907-271-2809 | www.npfmc.org

May 2, 2022

Ms. Janet Coit, Assistant Administrator
NOAA Fisheries
1315 East-West Highway
Silver Spring, MD 20910

Ms. Amanda Lefton, Director
Bureau of Ocean Energy Management
1849 C Street, NW
Washington, D.C. 20240

Dear Ms. Coit and Ms. Lefton:

On behalf of the North Pacific Fishery Management Council, I am pleased to provide comments on the Draft Federal Survey Mitigation Strategy to address anticipated impacts of offshore wind energy development on NOAA Fisheries' scientific surveys. While we are not aware of any proposed offshore wind energy projects off Alaska's coasts, we are grateful for an opportunity to be engaged early and benefit from the experience in other regions, including a review of the framework mitigation strategy developed for the Northeast U.S. region.

The North Pacific Council has a successful record of science-based, sustainable fisheries management since the Magnuson-Stevens Fishery Conservation and Management Act was implemented in 1976. Each year for the past 40 years, the sustainable harvest of groundfish in the North Pacific totals 2,200,000 metric tons or greater. This level of harvest accounts for about 60% of the total U.S. harvest of wild seafood and is critical to ensuring food security for the nation due to the both the size and the stability of the annual yield.

NOAA Fisheries surveys are the foundation of our sustainable management approach and continue to be essential to ensure that sustainable harvests are maintained in the North Pacific. These surveys are the fundamental data source for groundfish stock assessments and ecosystem assessments, and are the most critical responsibility of the Alaska Fisheries Science Center to meet its mission of monitoring the health and sustainability of living marine resources and their habitat. In addition, the state of Alaska and other entities partner with NOAA Fisheries on surveys to provide critical information for management of crab and salmon fisheries. Based on review of the draft mitigation strategy and interactions with other regional fishery management councils, we understand that offshore wind energy projects can create vast areas where traditional survey stations are modified or can no longer be accessed, which reduces the survey data available and jeopardizes critical data time series used for science-based fisheries management. Data loss also can increase uncertainty in assessments and result in reduced catch limits due to the need for precautionary management with greater uncertainty. We appreciate that your agencies recognize these impacts and are developing an advanced planning and mitigation process to ensure that wind energy project development does not impede NOAA Fisheries from achieving its mission.

Our understanding is that the Implementation Strategy developed for the Northeast and Mid-Atlantic will be used as a model to address the impacts of offshore wind projects on NOAA fisheries surveys nationwide. However, it is not clear if similar implementation plans will then be developed for each region. We encourage development of regional offshore wind energy mitigation plans at the appropriate time to ensure the plans are tailored to the NOAA Fisheries surveys, partner agencies and stakeholders in each region. In addition, we appreciate the stated intent in the Draft Implementation Strategy to share experiences and lessons learned from other regions and countries to develop a framework mitigation strategy.

We appreciate the clear goals and objectives of the Draft Implementation Strategy, which could serve as a foundation for all regional plans. Of particular interest is the plan for communication, coordination and outreach to implement regional plans. It is essential for all plans to ensure that early communication and coordination is provided for potential development projects, and the implementation strategy should provide for meaningful consultation and collaboration with the NOAA Fisheries science centers, regional fishery management councils, affected state agencies, and impacted fishery stakeholders and fishing communities. The communication and outreach plans must be transparent with respect to information availability and participation opportunities and should use existing NOAA Fisheries and regional fishery management council structures along with the methods proposed in the Draft Implementation Strategy. Additionally, the Draft Implementation Strategy notes that the effort to mitigate the impact of offshore wind energy development on NOAA Fisheries surveys will be complex and take extensive resources. This is concerning because resources available to NOAA and State agencies are already constrained, and a survey mitigation strategy for the North Pacific could require extensive resources to develop, and later to review proposed lease sales and wind farm plans. We recommend due consideration of these resource constraints in developing regional plans and suggest that project proponents be required to contribute funding for the scientific evaluation of the impacts to surveys and development of a mitigation plan.

Again, thank you for the opportunity to comment on the Draft Federal Survey Mitigation Strategy. The North Pacific Council looks forward to working with your agencies as a key partner in ensuring that we continue our obligations under the Magnuson-Stevens Act and other federal laws to provide sustainably harvested fisheries resources in support of U.S. food production and food security goals.

Sincerely,

Simon Kinneen
Council Chair

cc: Dr. Robert Foy

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

April 27, 2022

Dan Burgess, Director
State of Maine Governor's Energy Office
62 State House Station
Augusta, Maine 04333

Dear Mr. Burgess,

Please accept these comments from the New England Fishery Management Council (Council) regarding Maine's Offshore Wind Roadmap Draft Initial Recommendations.

The Council generally supports the draft recommendations, especially those of the Fisheries and Environment & Wildlife Working Groups. More specifically, we support the numerous recommendations on clear stakeholder communication and notification procedures between the fishing industry and offshore wind developers. We also support siting recommendations to avoid, minimize, and mitigate offshore wind development impacts on fish, habitat, and the fishing industry overall. Please note that our comments should not be interpreted as supporting Offshore Wind development in the Gulf of Maine, as the Council has not taken a stance on that issue.

More specific recommendations on the draft Offshore Wind Roadmap Recommendations include the following:

- Recommendation 1 of the Energy Markets and Strategies Working Group is to "Establish and initiate a floating offshore wind requirement and procurement process." We recommend that requirements include measures to avoid, minimize, and mitigate impacts to marine habitats, species, and fisheries, consistent with the recommendations of the Fisheries and Environment and Wildlife Working Groups. As part of the procurement process, we also suggest that draft solicitation be made available for public comment prior to issuance, as some other states have done.
- Related to Fisheries Working Group Recommendation #4, when available, include NOAA Fisheries' ongoing work on habitat monitoring recommendations for offshore wind projects. The purpose of these recommendations is to provide a framework for habitat monitoring studies that will improve our understanding of projects impacts. This work is still in development, but a draft document may be available as soon as summer 2022. In addition, we suggest clarifying recommendations #4c and #4k (*independent review and analysis of survey and monitoring plans and data*) to include a list of suggestions for who or which group would conduct this review.
- Fisheries Working Group Recommendation #6 entails *compiling and mapping areas of known concentration of priority species, habitat, and fishing activity to appropriately site wind lease areas.* This is an important early step and the results of this analysis should be useful for developing recommendations 9 and 11. It will be important to clarify whether the focus here is on Maine-based fishing operations, or if it includes vessels based in any state that fish off the coast of Maine. We recommend taking a regional view of fishing

activity, identifying home ports and landing ports where needed. We suggest providing rationale and criteria for determining why historic fishing (namely the cold-water shrimp fishery) in the last 20 years should be identified and included as part of Fisheries Working Group Recommendation #6b. It is unclear if, and to what extent, historical fisheries from decades prior will return as future fisheries.

- Fisheries Working Group recommendation #7 requests a navigational study; we note that since these recommendations were published, the United States Coast Guard has initiated a Port Access Route Study for Maine/New Hampshire/Massachusetts. We hope that Maine will participate in this effort. The scenarios in the PARS are not well defined, and the study could benefit from information such as which ports might serve as staging areas.
- Fisheries Working Group Recommendation #11 focuses on equity in participation of fishing industry members in the offshore wind development process. We agree that the issues raised under Recommendation #11 are important to consider and we understand from our own experience in offshore wind that it can be challenging to provide effective input on these very complex issues. Recommendation #9 focuses on avoidance of development inshore, which could impact/benefit some members of the fishing industry over others. The Working Group should discuss whether these recommendations conflict and should clearly explain the rationale for recommending inshore exclusion zones.
- We support the Environment and Wildlife Working Group's recommendations on benthic habitat surveys (#2) and ecological baseline monitoring (#3). Based on our own work on habitat management in the Gulf of Maine, existing data will not be sufficient for siting wind energy areas, or estimating or minimizing impacts to habitats and fisheries.

We look forward to continued engagement on fisheries issues as the Roadmap work moves forward. Please contact Michelle Bachman on my staff (mbachman@nefmc.org; 978-465-0492 x 120) if you need further information.

Sincerely,

Thomas A. Nies

Thomas A. Nies
Executive Director