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July 28, 2020

Secretary Kathleen Theoharides
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Alex Strysky, EEA No. 16231
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Theoharides:

The Division of Marine Fisheries (MA DMF) has reviewed the Environmental Notification Form (ENF) by Vineyard Wind LLC for the Vineyard Wind Connector 2 project, which is part of the larger Park City Wind Project. The overall Park City Wind project includes an 800 MW wind turbine array (50-81 turbines) in the central section of BOEM Lease Area OCS A-0501, an offshore electrical service platform, 2 offshore export cables, and an onshore substation in Barnstable. A third phase of buildout, in the southern section of BOEM Lease Area OCS A-0501 is anticipated, and the third phase would use the same or similar offshore export cable corridor (OECC) with a different, currently unidentified, landfall location.

The Vineyard Wind Connector 2 project (VW2) represents the portion of the Park City Wind project that is within Massachusetts state waters (the OECC is 63 miles long with approximately 23 miles in Massachusetts) and includes only the OECC. VW2 will largely utilize the OECC developed for the Vineyard Wind Connector 1. The cable route would travel between Martha's Vineyard and Nantucket through Muskeget Channel, then continue north through Nantucket Sound to landfall at Craigville Beach or Covell's Beach in the Town of Barnstable. The proposed OECC would contain two 220-kV three-core alternating current (AC) cables. It would go through the town waters of Edgartown, Nantucket, Barnstable, and possibly Mashpee. The OECC would range in width between 3,100 and 5,100 feet across its range with an approximate average width of 3,800 feet.

One difference from the Vineyard Wind Connector 1 (VW1) is that the OECC has been widened by approximately 985 feet (300 meters [m]) to the west, and along a segment through the Muskeget Channel area it has also been widened by approximately 985 feet (300 m) to the east.

Within the OECC, individual offshore export cables would be spaced approximately 330 feet away from the Vineyard Wind 1 cables, and 165 feet apart from each other. The target burial depth is 5 to 8 feet. Approximately 112 acres of seafloor is estimated to be impacted. In areas containing sand waves, dredging is anticipated to achieve adequate burial depth, resulting in estimated potential dredge volumes in state waters up to 106,000 cubic yards across a 25 acre area. An additional 18.4 acres and 12.7 acres of impact are anticipated from trenching and anchoring, respectively. For areas where burial is not feasible, hard structures may be used as cable protection in the form of rock, gabion rock bags, concrete mattresses, or half-shell pipes. Offshore cable installation is proposed using jetting, jet plow, plow, or mechanical trenching. Proposed dredging methods consist of trailing suction hopper dredge (TSHD) or jetting by controlled flow excavation. If TSHD is used, dredge material would be transported and deposited elsewhere within the surveyed area containing sand waves. Horizontal directional drilling (HDD) will be used for the approximate 1,000 to 1,200 foot section reaching the landfall site. A trenchless approach (microtunnel) is also proposed to traverse the Centerville River to avoid and minimize impacts to salt marsh at that river crossing.

Existing marine fisheries resources and potential project impacts are described in Attachment 1. The primary resources of concern in Nantucket Sound that are vulnerable to the adverse effects of cable laying and EMF include (but are not limited to) shellfish, longfin squid and squid eggs, knobbed and channeled whelk, and flatfish. Both commercial and recreational fisheries are active throughout the OECC area.

The ENF alludes to additional project information that will be included in the upcoming Draft Environmental Impact Report (DEIR) with an anticipated Fall 2020 submission timeline (Page 24[1]). MA DMF offers the following comments on DEIR content referenced in the ENF for consideration in developing the DEIR:

<u>MA DMF permits and affected activities</u>

- Through the "Nantucket Sound exception" included within the Magnuson Act, MA DMF exerts fisheries jurisdiction across all waters within Nantucket Sound [1]. A Letter of Authorization from MA DMF will be needed for any activities that could result in the collection of fishing gear in Nantucket Sound and Massachusetts state waters. A Scientific Permit from MA DMF will be needed for any activities that could result in the collection of marine plants or animals in Nantucket Sound and Massachusetts state waters.
- The MA DMF bottom trawl survey operates throughout Nantucket Sound annually during spring and fall. Coordination with MA DMF is recommended to ensure lack of direct conflict with this survey during survey activities and cable installation.

<u>An up-to-date description of the Affected Environment</u>

[1] Page numbers reference the pdf document page numbers, not the printed document page numbers.

- Dredging and cable trenching will likely impact existing marine resources that are sessile or with limited mobility (e.g., shellfish, whelks, squid eggs). These vulnerable species should receive particular attention in terms of documenting their distribution along the OECC as well as strategies for minimizing impacts to these resources. Many species trends have been affected due to warming waters, so characterization of these resources should be informed by up to date analyses of trawl survey data and interviews with fishermen. When anecdotal information is used, the source should be cited.
- Provide a map that identifies the VW1 OECC and the changes associated with the VW2 corridor. Is the widening of the corridor for survey work and for cable laying, and does it extend the length of the corridor?
- Through the Ocean Plan, the Commonwealth established a standard substrate map. We would like to see that the data produced by this effort be compatible with that substrate map, since it underlies the interpretation of hard/complex seafloor. The maps shown in the ENF are useful and illustrative, but it is more helpful to have the data in an online viewer and available for viewing in our own GIS systems. Toward that end, substrate analyses from project survey work should be produced in the same Excel spreadsheet as the Commonwealth's substrate data and interpreted substrate units should be produced as an ArcGIS shapefile or geodatabase. All data should be provided digitally in formats compatible with ArcGIS to enable comparison with existing datasets. Acoustic mosaics should be provided as geotiffs at the maximum resolution possible. There should be at least four geotiffs provided: multibeam backscatter, sidescan sonar backscatter, multibeam bathymetry, and backscatter draped on bathymetry. The date of data collection should be easily discernable for all products.
- The DEIR should also include detailed descriptions of the existing benthic habitat. Surveys of sediment type and benthic invertebrates should be conducted and included in the DEIR to weigh the alternatives; benthic shear stress and bathymetry are also important variables when describing benthic habitats.
- The DEIR should use seafloor mapping methods that are up to date with interpretation methods being developed by NOAA and adaptable to CMECS.
- The DEIR should include more recent eelgrass survey data for the nearshore waters adjacent to the potential landfall sites and meadows potentially impacted by turbidity. Eelgrass surveys should follow the guidance in DMF TR-43, "Technical Guidelines for the Delineation, Restoration, and Monitoring of Eelgrass in Massachusetts Coastal Waters" [2]. The ENF states that "no eelgrass will be impacted by this project" (Page 179) but there are areas of eelgrass in Nantucket Sound and close to Martha's Vineyard that could be affected by turbidity. This potential should be addressed in the DEIR.
- According to the ENF: "Marine surveys completed in 2017, 2018, and 2019 confirmed that portions of the OECC contain sand waves. Portions of the sand waves may be mobile over time; therefore, the upper portions of the sand waves may need to be removed via dredging so the cable-laying equipment can achieve the proper burial depth below the stable seabed to ensure cables stay buried" (Page 41). The proponent should describe the sand wave mobility using those marine surveys and should indicate how experience with VW1 will be utilized to modify the VW2 approach.

<u>An expanded discussion of how scheduling, sequencing, and communication can be used to minimize impacts to fish and fisheries</u>

- Many potential impacts to marine resources and associated fisheries can be minimized by timing cable installation activities to avoid seasons of vulnerable life history phases and/or concentrated fishing effort along the OECC. The DEIR should describe planned timing of cable-laying activities with regards to co-occurring marine resources and stakeholders. The proponent's experience with VW1 should be used to identify the communication mechanisms and stakeholder partners that will enhance coordination with fishermen.
- Potential prohibition or relocation of fishing (fixed or mobile gear) for any length of time as a result of survey, installation, or repair procedures should also be described. The size, length, and potential economic impact of closures should be included in the description.
- Centerville River has an alewife run and American eels. The microtunnel approach will not affect these resources, but the bridge superstructure replacement might. This should be taken into account in the DEIR. If turbidity-causing activities are planned in Centerville River, those activities should be identified and minimized through the use of a time of year restriction to limit work during the fish runs.

<u>Description of overall economic impact to fishing industries</u>

- The DEIR should present an analysis describing the potential economic impact on Massachusetts fishing industries associated with the Park City Wind Project and VW2. The analysis should include impacts on individual ports, as well.
- Economic analyses should rely on the most up-to-date methods and datasets developed through the Mass CEC pilot studies projects and/or NOAA analyses.
- Providing a range of potential impacts, including a no-fishing alternative, is needed.
- A clear explanation of how the proponent is working toward mitigation agreements and how it is supporting regional impact monitoring is needed.

<u>An expanded discussion of cable covering</u>

- Anticipated areas requiring covering should be described in greater detail, both in terms of the spatial distribution and existing habitat characteristics. The DEIR should also describe the likelihood of concrete mattresses or rock material affecting fishing activities.
- Information related to the habitat equivalency of rock placement, gabion rock bags, concrete mattresses, or half-shell pipes of cables should be provided and should cite relevant literature. The concrete mattresses are estimated to occupy less seafloor, but if the rock cover has a higher habitat value, it may be the preferred alternative despite occupying more seafloor

<u>A detailed discussion of all installation methods proposed for offshore cables</u>

- MA DMF recommends that the proponent develop a comprehensive contingency plan in the DEIR outlining response protocols for a frac out event for the horizontal directional drilling (HDD) alternative for nearshore installation. Plans should include how frac outs will be avoided, as well as actual response and containment plans.

<u>Presentation of monitoring plans</u>

- Many impacts are described as temporary, but monitoring is needed to confirm that they are (for example, impacts on salt marsh at Centerville River, eelgrass that gets impacted

by turbidity from the project, and seafloor topography/bathymetry and sediment type). The DEIR should describe the monitoring plans.

- Monitoring plans should be developed with input from the Agencies and should include annual reporting.
- All monitoring plans should clearly identify the questions being addressed (i.e. the objectives of the monitoring plan).

Electric and magnetic fields (EMF) and cable burial

- Since cable burial will be relied upon to minimize adverse effects associated with EMF transmission, the EMF analysis should include a thorough description of how cable burial will be monitored on a regular basis to ensure the entire length of the cable will remain buried.

Cumulative impacts

- Shared transmission and maximizing power coming in to landfall substations will lessen environmental impacts. The possibility of shared transmission was discussed on Page 24. The shared transmission is not preferred by the proponent due to the timing of the project (i.e. shared transmission will take longer to develop causing delays in delivering power). The proponent also described why a fully separate landfall at Craigville Beach is preferred over the Covell's Beach VW1 substation (Page 75). The DEIR should describe in more detail what is being done to minimize additional offshore export cable laying and landfalls. For example, can one cable come to shore at Covell's Beach and the other at Craigville, leaving more space at Craigville for future build out? Our understanding is that there are some legitimate limitations but we want to be sure that the substations and cable corridor are being used to the greatest advantage since that will limit future environmental disturbances.
- Multiple cable laying activities over time increase seafloor impacts and impacts to fishing activities. The DEIR should include a proposed schedule that clarifies how this project's timing compares to VW1.

Questions regarding this review may be directed to John Logan or Kathryn Ford in our New Bedford office at john.logan@mass.gov and kathryn.ford@mass.gov.

Sincerely,

Daniel J. McKiernan

Director

cc: Barnstable Conservation Commission
Edgartown Conservation Commission
Mashpee Conservation Commission
Nantucket Conservation Commission
Holly Carlson Johnston, Epsilon Associates, Inc.
Amy Croteau, Barnstable Natural Resource Officer and Shellfish Constable
Sue Tuxbury, Alison Verkade, NMFS
Robert Boeri, CZM
David Wong, DEP
Ed Reiner, Tim Timmerman, EPA
Bev Vucson, DFG
Mike Pol, Eileen Feeney, Tracy Pugh, Steve Wilcox, Derek Perry, Erin Burke, Robert Glenn, Tom Shields, DMF

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1. Bennett T. 2013 Navigating complex state and federal fisheries jurisdictions. Sea Grant Fellows Publications. Paper 65. http://docs.rwu.edu/law_ma_seagrant/65.
2. Evans NT, Leschen AS. 2010 Technical guidelines for the delineation, restoration, and monitoring of eelgrass (*Zostera marina*) in Massachusetts coastal waters. Massachusetts Division of Marine Fisheries Technical Report TR-43. http://www.mass.gov/eea/docs/dfg/dmf/publications/tr-43.pdf.

DM/JL/KF/sd

Attachment 1: Description of the Affected Environment, Nantucket Sound

The waters within Nantucket Sound and adjacent state waters along the proposed cable routes traverse habitat for a variety of finfish and invertebrate species (Figures 1 and 2). The Massachusetts Ocean Plan [1] identified several areas of important fish resources based on MA DMF trawl survey data (2015 Massachusetts Ocean Plan Figure 15). In particular, commercially and recreationally important species with high abundance in this region include channeled whelk (*Busycotypus canaliculatus*), knobbed whelk (*Busycon carica*), longfin squid (*Doryteuthis pealeii*), summer flounder (*Paralichthys dentatus*), scup (*Stenotomus chrysops*), and windowpane flounder (*Scophthalmus aquosus*) (Figures 1 and 2). Of these species, summer flounder, scup, and knobbed whelk are abundant throughout Nantucket Sound while channeled whelk, longfin squid, and windowpane flounder are in greater abundance further east along Nantucket Sound.

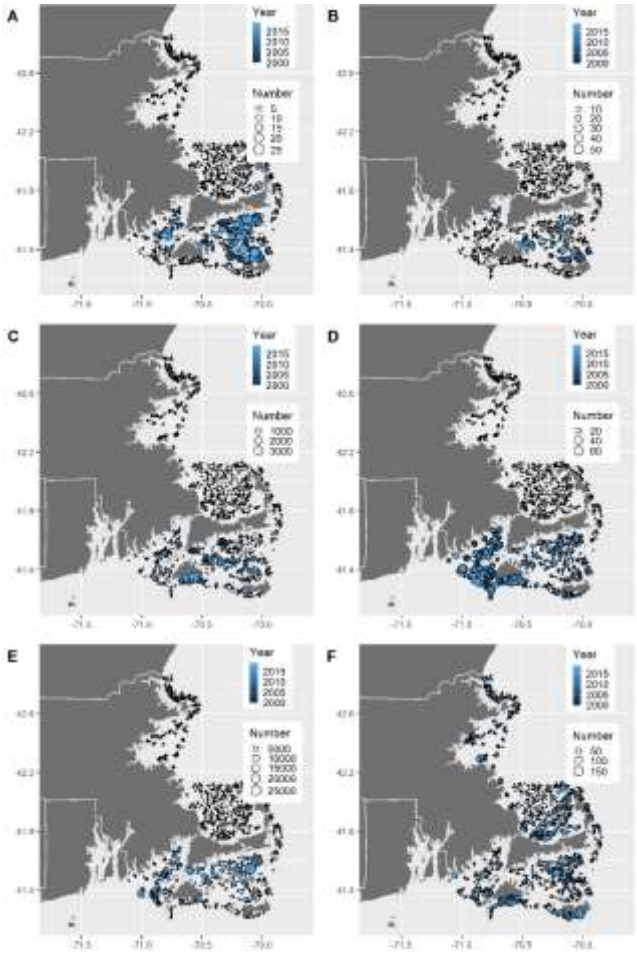

Figure 1. Abundance of select recreationally and commercially important fish and invertebrate species in Massachusetts spring bottom trawl surveys from 2000-2019. Tows for which the species of interest were absent are indicated by (+). Panels represent seasonal abundance of A) channeled whelk, B) knobbed whelk, C) longfin squid, D) summer flounder, E) scup, and F) windowpane flounder.

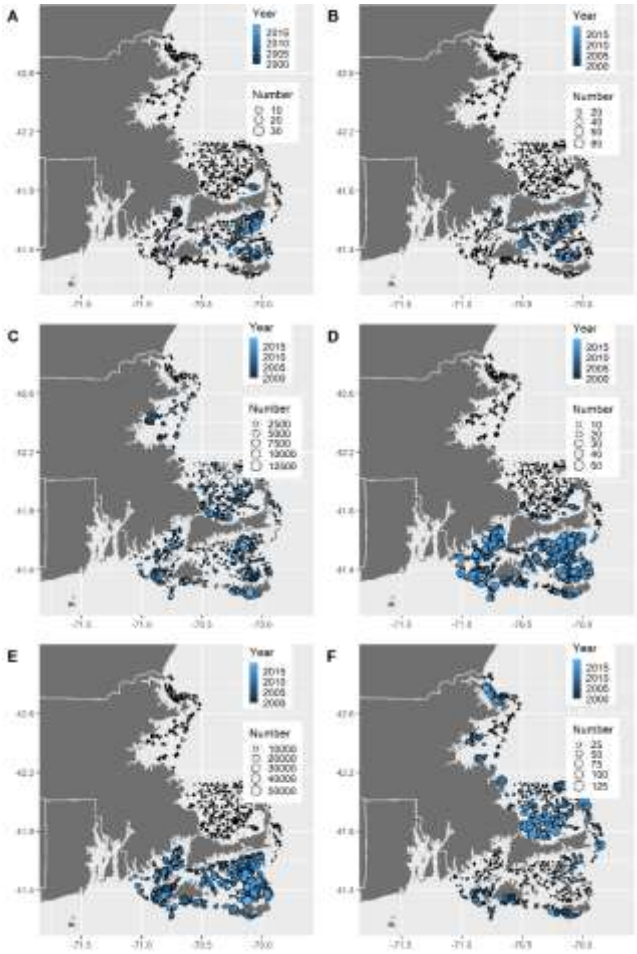

Figure 2. Abundance of select recreationally and commercially important fish and invertebrate species in Massachusetts fall bottom trawl surveys from 2000-2019. Tows for which the species of interest were absent are indicated by (+). Panels represent seasonal abundance of A) channeled whelk, B) knobbed whelk, C) longfin squid, D) summer flounder, E) scup, and F) windowpane flounder.

Of the species identified in trawl survey data, whelks and squid are particularly sensitive to benthic habitat disturbance due to limited mobility and deposition of demersal eggs, respectively. Recent stock assessments indicate that the whelk stock in Nantucket Sound is overfished and

overfishing is still occurring. The biomass index based on the MA DMF trawl survey has declined by over 70% since the early 1980s. Longfin squid spawn in the spring in Nantucket and Vineyard Sounds and lay demersal egg clusters (i.e., mops) with peak activity in May [2-4; Fig. 3]

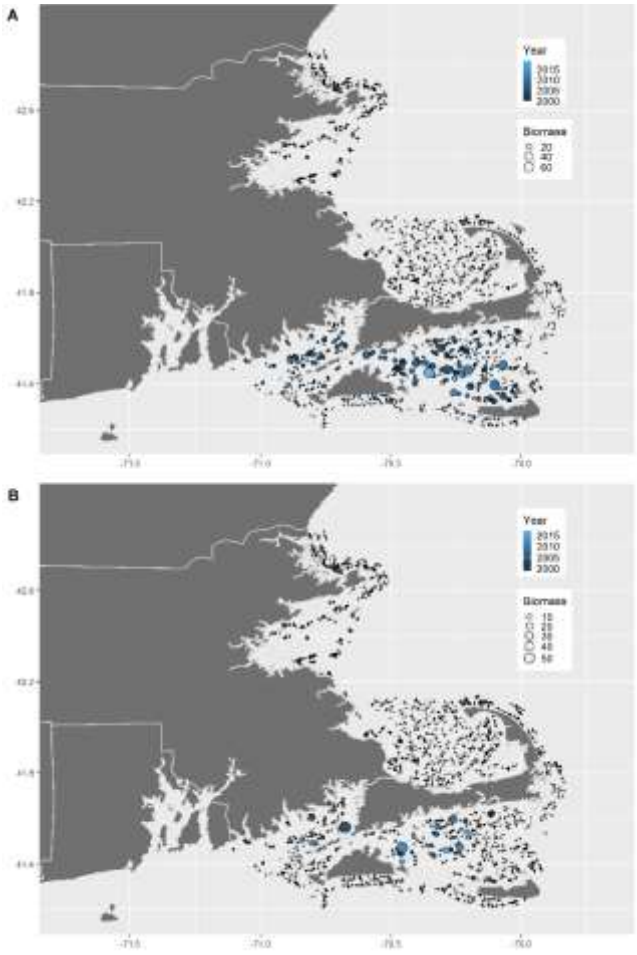

Figure 3. Biomass (kg per tow) of A) longfin squid and B) longfin squid demersal egg in Massachusetts spring bottom trawl surveys from 2000-2019. Tows for which the species of interest were absent are indicated by (+).

The cable route through Nantucket Sound also includes habitat for a variety of shellfish species. The offshore waters between Martha's Vineyard and Nantucket are mapped surf clam (*Spisula solidissima*) habitat. The OECC also closely borders sea scallop (*Argopecten irradians*), quahog (*Mercenaria mercenaria*), and blue mussel (*Mytilus edulis*) habitat.

The various finfish and invertebrate resources along the cable corridors also support a variety of associated fisheries. The Massachusetts Ocean Plan [1] identified several areas of medium and high commercial fisheries activity and concentrated recreational fishing activity within the proposed cable route (2015 Massachusetts Ocean Plan Figures 16 and 28). Nantucket Sound waters within and adjacent to the proposed cable route are also classified as areas of high

recreational boating density [5]. The commercial whelk fishery targets both channeled and knobbed whelk and is an important state-waters only fishery in Massachusetts that has expanded in recent years due to declines in southern New England lobster resources and increased whelk prices [6]. The channeled whelk fishery is of particular economic importance and annually ranks among the top fifteen in terms of ex-vessel value landings in Massachusetts. Based on dealer reports, nearly two million pounds of channeled whelk were landed in 2016 with an estimated value of $4.8 million USD. Most of these landings are derived from fisheries in Nantucket Sound (Figures 4 and 5). Blue mussel (*Mytilus edulis*) and kelp (*Saccharina latissima*) aquaculture operations are also present or in the process of being permitted for deployment within Horseshoe Shoals in close proximity to the proposed cable corridors.

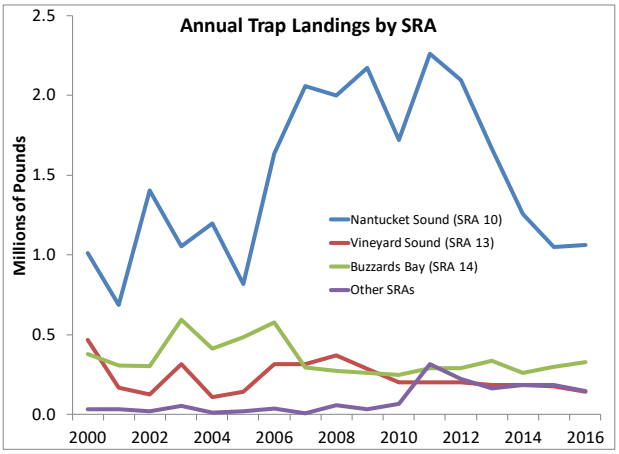

Figure 4. MA channeled whelk landings 2000 – 2016 Source: MA Commercial Catch Reports [6].

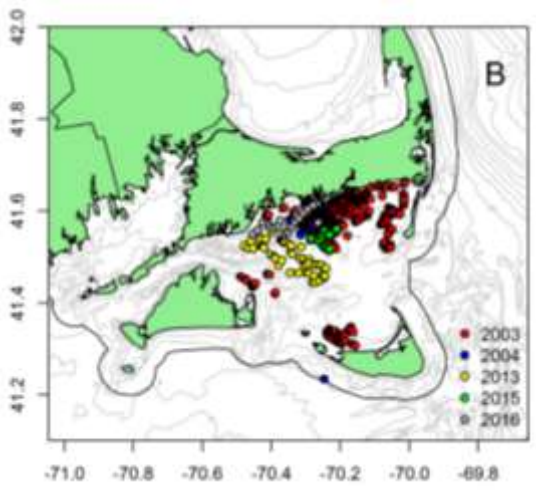

Figure 5. Locations of yearly commercial sampling effort in the Massachusetts whelk fishery, MA DMF [6].

Nantucket Sound is also the epicenter of the horseshoe crab (*Limulus polyphemus*) fishery for the state of Massachusetts with > 80% of landings derived from this general region (Figure 6).

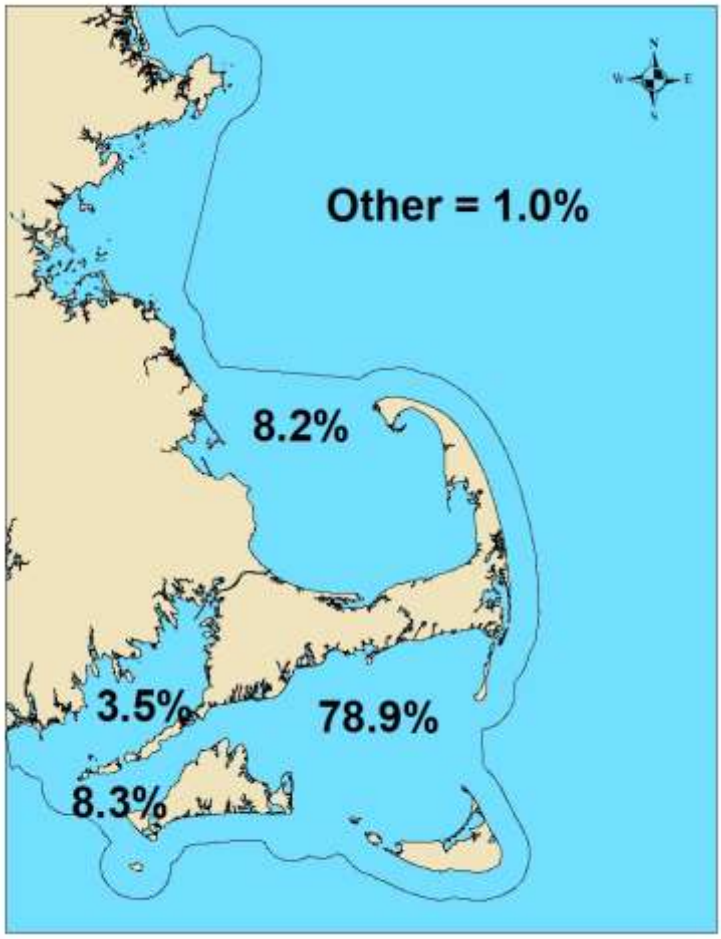

Figure 6. Landings data for the 2018 Massachusetts horseshoe crab fishery reported as percentages by region. The Nantucket Sound region accounted for 83% of state landings.

Waters within Nantucket Sound also provide habitat for a variety of whale and sea turtle species. An area of right whale (*Eubalaena glacialis*) core habitat is present south of Martha's Vineyard in close proximity to the proposed cable corridor (2015 Massachusetts Ocean Plan Figure 24) while loggerhead (*Caretta caretta*) and leatherback (*Dermochelys coriacea*) sea turtles have been observed throughout Nantucket Sound [1,7].

Nearshore waters off the proposed Craigville Beach and Covell's Beach landfall sites provide habitat for a variety of marine flora and fauna. The shoreline at both considered landfall sites is mapped as a horseshoe crab nesting beach. Horseshoe crabs deposit their eggs in the upper

intertidal regions of sandy beaches from late spring to early summer during spring high tides [8]. Adult crabs congregate in deep waters such as channel areas and troughs during the day while waiting to move on to the beaches at night to spawn. Adults will also overwinter in these deeper water areas. Recent stock assessments conclude that horseshoe crab abundance in the New England region has improved from poor to neutral [9]. The waters offshore of the eastern and western ends of the landfall sites have been mapped previously by the Massachusetts Department of Environmental Protection (MA DEP) as eelgrass (*Zostera marina*) meadows (Fig. 7). Eelgrass beds provide one of the most productive habitats for numerous marine species [8] but have declined statewide in the past decade [10]. The waters offshore of the landfall sites are also mapped surf clam (*Spisula solidissima*) habitat.

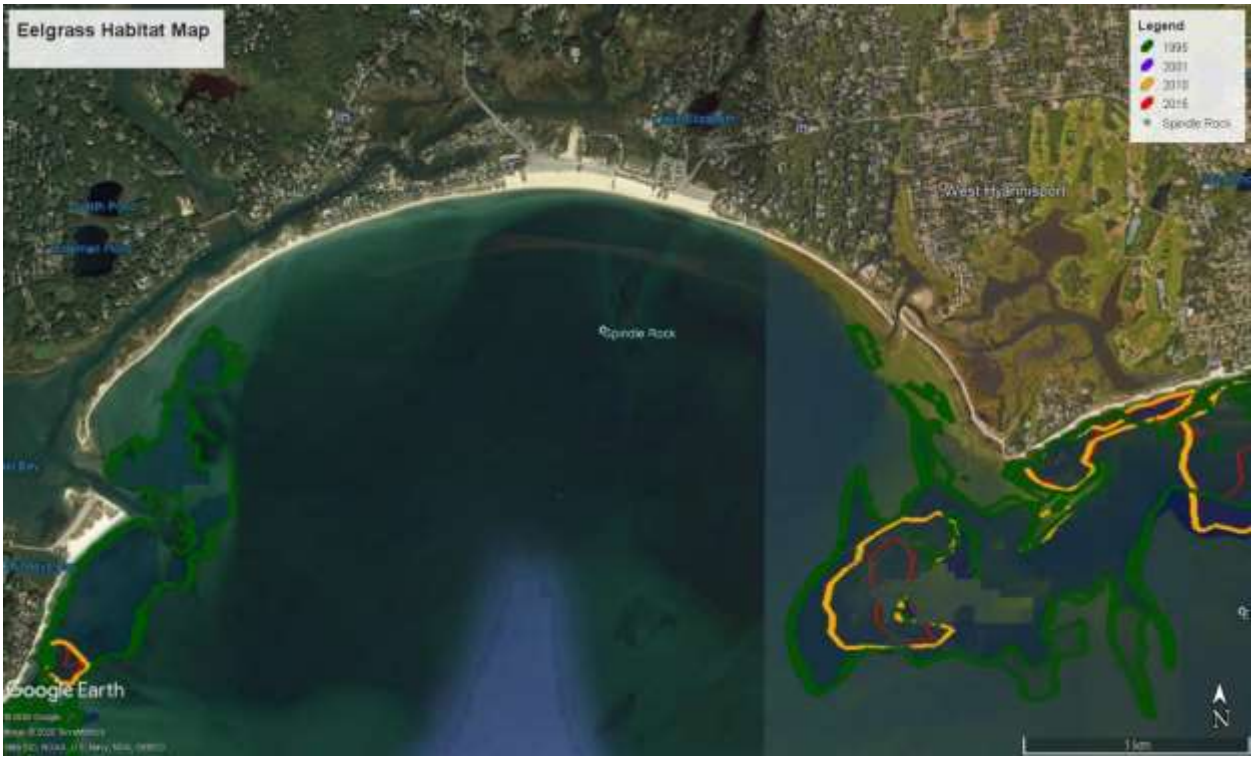

Figure 7. Waters near the Craigville Beach and Covell's Beach landfall sites previously (1995-2015) mapped by the Massachusetts Department of Environmental Protection (MA DEP) as eelgrass (*Zostera marina*) meadows.

References

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