



State of Rhode Island and Providence Plantations
Coastal Resources Management Council
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September 20, 2018

Joelle Gore, Chief Stewardship Division
Office of Ocean and Coastal Management
National Oceanic and Atmospheric Administration
1305 East-West Hwy., SSMC4 N/OCM6
Silver Spring, Maryland 20910

Dear Ms. Gore:

The Rhode Island Coastal Resources Management Council (CRMC) completed and adopted the Rhode Island Ocean Special Area Management Plan (Ocean SAMP) in October 2010. The Ocean SAMP is a marine spatial plan to guide future uses, particularly renewable energy projects, in offshore waters that may affect Rhode Island coastal uses and resources. The National Oceanic and Atmospheric Administration's (NOAA's) Office of Ocean and Coastal Management (OCM) approved on September 30, 2011 CRMC's request to incorporate a geographic location description (GLD) that encompassed the Ocean SAMP boundary and an associated list of federal licenses and permits for federal consistency review as part of the Rhode Island Coastal Resources Management Program (RICRMP).

In more recent years the Bureau of Ocean Energy Management (BOEM) has issued outer continental shelf (OCS) leases for renewable energy projects for the Massachusetts wind energy area (MA WEA), which abuts the current Rhode Island GLD. There is significant Rhode Island-based commercial fishing interests that operate within the MA WEA, and the potential for impacts to Rhode Island coastal uses and resources from the construction and operation of renewable energy projects. Hence, the CRMC is seeking to amend its GLD to include the MA WEA and an area of federal waters immediately north of the MA WEA where the Rhode Island based commercial fisheries operate. Attached hereto is our analysis of future renewable energy activities in federal waters that potentially affect the uses and resources of Rhode Island's coastal zone. Accordingly, the CRMC has proposed an amended GLD which describes a geographic area in federal waters where certain federal license or permit activities, under NOAA's Coastal Zone Management Act (CZMA) regulations at 15 CFR Part 930, Subpart D, and Outer Continental Shelf (OCS) authorizations, under 15 CFR Part 930, Subpart E, will be subject to Rhode Island review under the CZMA Federal Consistency provisions and the existing enforceable policies of the Rhode Island Coastal Resources Management Program.

Pursuant to 15 CFR § 930.53(c) and 15 CFR Part 923 Subpart H, CRMC must notify the affected federal agencies in writing at least 60 days before submitting the GLD to OCRM for incorporation into the federally approved RICRMP. The CRMC's amended GLD was sent to the Bureau of Ocean Energy Management (BOEM) on July 19, 2018 (copy enclosed) for their review and comment. BOEM provided their comments with proposed edits to the CRMC on September 10, 2018. The CRMC accepted many of the BOEM edits, and in some cases we provided further clarification and editing for accuracy of content. The CRMC will be responding concurrently to BOEM with a letter explaining the integration of BOEM's comments into the amended GLD analysis document.

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I am requesting OCM to approve the incorporation of the amended GLD and the associated changes to our Federal Consistency list into our federally approved coastal management program as a routine program change pursuant to CZMA regulations at 15 CFR Part 923, Subpart H, and OCM Program Change Guidance (July 1996) and its November 2013 Addendum. Enclosed please find the final proposed amended GLD, which identifies the involved federal license or permit activities, the proposed geographic location, and an analysis of the reasonably foreseeable effects of these federal activities on the uses and resources of Rhode Island's coastal zone.

Thank you for your consideration. If you have any questions, please contact me at gfugate@crmc.ri.gov or telephone 401-783-3370.

Sincerely,


Grover J. Fugate, Executive Director
Coastal Resources Management Council

/lat

Enclosures

cc: Allison Castellan, NOAA Office for Coastal Management
Walter Cruickshank, Ph.D., Acting Director, Bureau of Ocean Energy Management
James Bennett, Chief, BOEM Office of Renewable Energy Programs

PROPOSED AMENDMENT TO RHODE ISLAND'S GEOGRAPHIC LOCATION DESCRIPTION

Analysis of Reasonably Foreseeable Effects of Federal Actions Occurring within the Amended GLD on Uses or Resources of Rhode Island's Coastal Zone

Proposed by the RI Coastal Resources Management Council, July 19, 2018

In accordance with 15 CFR § 930.53, this document describes a geographic area in federal waters where certain federal license or permit activities under 15 CFR Part 930, Subpart D, and Outer Continental Shelf (OCS) authorizations under 15 CFR Part 930, Subpart E that are listed in the Rhode Island Coastal Resources Management Program (RICRMP) will be subject to Rhode Island review under the Coastal Zone Management Act (CZMA) federal consistency provisions. CZMA federal consistency will apply in the amended geographic location description (GLD) after the Rhode Island Coastal Resources Management Council (CRMC) submits the amended GLD to the National Oceanic and Atmospheric Administration's (NOAA's) Office for Coastal Management as a program change and the Office for Coastal Management approves under 15 CFR Part 923, Subpart H.

This document also identifies the listed federal license or permit activities and OCS authorizations that will be subject to CRMC review when proposed within the amended geographic area as described herein within federal waters. An effects analysis is provided justifying the amended GLD and the specified listed federal actions based on reasonably foreseeable effects to coastal uses or resources of Rhode Island's coastal zone. Please note that federal consistency review of the federal licenses and permits listed herein are subject to the identified thresholds and exclusions.

Pursuant to 15 CFR Part 930, a federal action is subject to federal consistency review if the action will affect a state's coastal uses or resources. As stated in 15 CFR § 930.11(g), "The term 'effect on any coastal use or resource' means any reasonably foreseeable effect on any coastal use or resource resulting from a Federal agency activity or federal license or permit activity." "Coastal effects" is shorthand for these reasonably foreseeable effects, which include effects on any land or water use or resource of the coastal zone, even if the federal action, the coastal effects, or the coastal use or resource occur outside the coastal zone. Coastal effects also include both direct and indirect (secondary and cumulative) effects. This document provides an analysis of the reasonably foreseeable effects of listed federal license or permit activities under 15 CFR Part 930, Subparts D and E that may be proposed in the federal waters of the amended GLD on coastal uses or resources of Rhode Island's coastal zone.

A. Amended Geographic Location Description

Rhode Island's proposed amended GLD includes a new area of federal waters that is contiguous with Rhode Island's existing GLD as shown in Figure 1. This new area encompasses 797 square miles of the Atlantic Ocean in federal waters south of Martha's Vineyard and includes BOEM OCS Lease Blocks OCS-A 0500 and OCS-A 0501 (Bay State Wind and Vineyard Wind, respectively). The amended GLD's northernmost limit is the seaward extent of Massachusetts state jurisdiction (3 miles offshore). The closest distance of the amended GLD to the Rhode Island mainland is 23.2 miles and the furthest distance is 54.6 miles. Its longest dimension along a north-south axis is 36.5 miles, and its longest dimension along an east-west axis is 33.6 miles. Coordinates marking key points around the boundary's perimeter are listed below in Table 1 and shown in Figure 1. If the precise location of a project within the amended GLD is of concern, the CRMC has on file the thousands of geographic coordinates that are the basis for the amended GLD boundary, and can make these available on a project by project basis.

Table 1: Coordinates for Amended GLD Area

Coordinates in decimal degrees for the thirteen (13) red points shown in Figure 1	
-70.8669701 41.2126455	-70.4300000 41.2660000
-70.4289022 41.0960287	-70.3717621 41.0967233
-70.3701911 41.0210765	-70.7198643 40.7461532
-70.7482793 40.7457261	-70.7508329 40.8429731
-71.0069121 40.8388010	-71.0026895 40.6983530
-71.0452743 40.6976061	-71.0543644 40.9924959
-70.8489868 41.0276451	

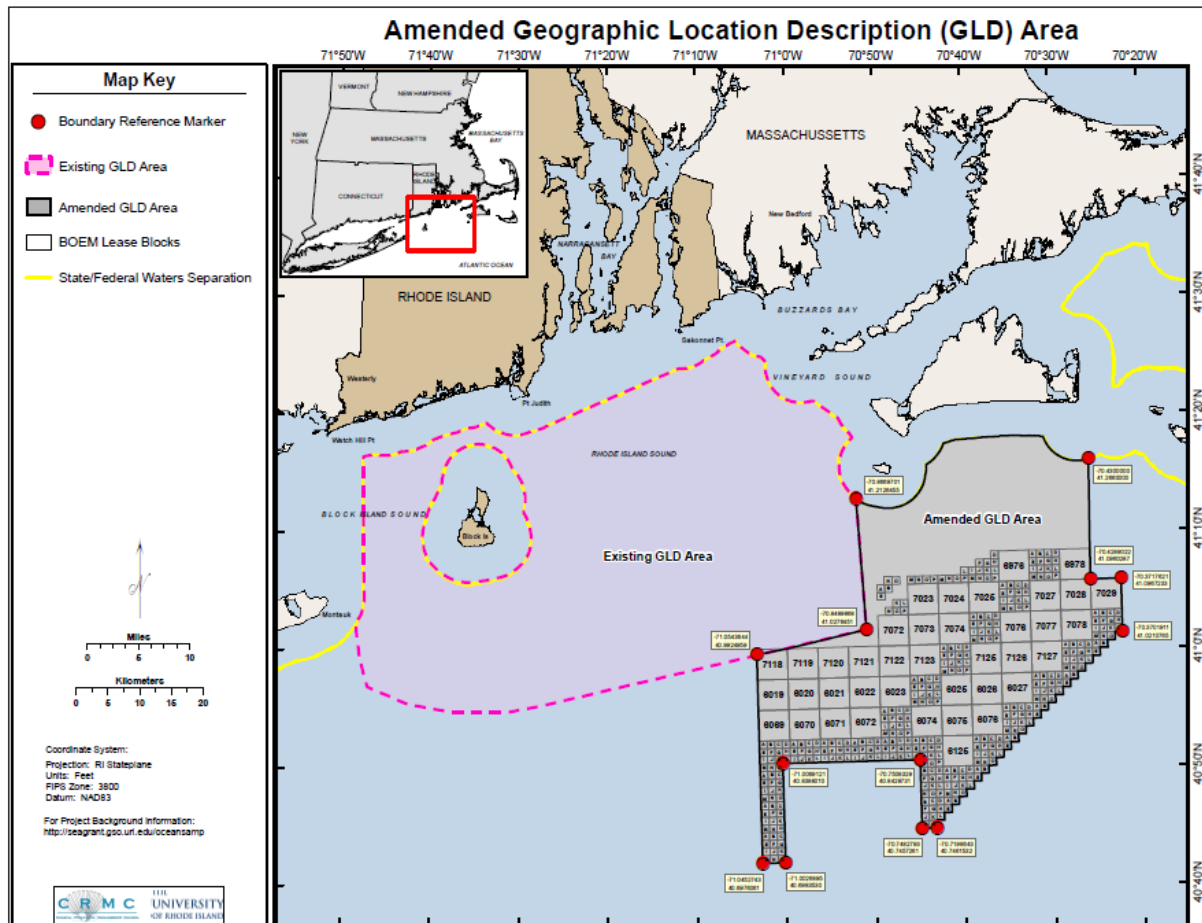


Figure 1: Amended GLD (gray-shaded) including BOEM OCS Lease Blocks shown in context with Rhode Island’s existing GLD

Description of Rhode Island coastal zone and connection to the GLD

Rhode Island’s amended GLD comprises portions of Rhode Island Sound and a section of the Atlantic Ocean out to the mid-Continental Shelf. This area is a rich, environmentally sensitive marine ecosystem with an abundance of natural resources. This area is ecologically unique because it is a transition zone characterized by the mixing of deeper offshore waters with the shallower, more productive estuarine waters of Narragansett Bay and Long Island Sound. It is also unique in that it is at the boundary of two distinct biogeographic provinces, the Acadian to the North and the Virginian to the South. The mix of cold northern waters and warmer southern waters allows for rich biodiversity but also draws attention to the vulnerability of the area’s natural resources to water temperature increases that may be associated with global climate change. For example, species such as American lobster, Atlantic cod, black sea bass, summer flounder (fluke) and winter flounder are at the extreme ends of their ranges in this amended GLD. Notably, warming temperatures are causing decreases in the abundance of American

lobster, Atlantic cod and winter flounder, which are important commercial species within this area (Hare *et al.* 2010, Nye *et al.* 2009, Perry *et al.* 2005).

Rhode Island's coastal zone includes tidal waters out to 3 nm, shoreline features, and areas contiguous to shoreline features (See RICRMP; 650-RICR-20-00-1.1.4). Coastal waters include Narragansett Bay, a semi-enclosed estuary, as well as portions of Block Island Sound and Rhode Island Sound. Specifically, Rhode Island's coastal waters include the waters out to 3 nm of Rhode Island's south coast, as well as the waters out to 3 nautical miles surrounding Block Island (See Figure 1 above). These waters are part of a larger ecosystem comprising the two Sounds, and are dynamically connected to Narragansett Bay, Buzzards Bay, Long Island Sound, and the Atlantic Ocean via the Continental Shelf. Much of this ecosystem, including portions of Block Island Sound, Rhode Island Sound, and the Atlantic Ocean, is in federal waters. It is also important to note that there is a band of federal waters in Block Island Sound separating Block Island from mainland Rhode Island (See Figure 1 above). Natural resources such as fish and marine mammals regularly migrate between these state and federal waters, and many human uses, including fishing, shipping, passenger transportation, and recreation, similarly move back and forth between the state and federal waters of this area. Because Rhode Island's coastal uses and resources are part of this broader ecosystem, Rhode Island needs to consider the uses and activities taking place in the adjacent federal waters. This ecosystem connection and effects to uses and resources of Rhode Island's coastal zone are described below using the NOAA recommended GLD effects analysis steps.

1. The affected uses (e.g., commercial and recreational fishing, boating, tourism, shipping, energy facilities) and resources (e.g., fish, marine mammals, reptiles, birds, landmarks).

The primary affected coastal use is the Rhode Island commercial fishing fleet that fishes and navigates within the existing and amended GLD. Another affected coastal use is the Rhode Island ports, especially the industrial waterfront port facilities of Providence and Quonset/Davisville. Commercial shipping into Narragansett Bay from offshore waters is primarily facilitated by these two ports. Rhode Island-based commercial fishing vessels rely on fishing-related infrastructure located in the ports of Point Judith, Newport, and Block Island, and several other smaller Rhode Island ports.

The affected coastal resources include species targeted by the commercial fishing industry using mobile gear (*e.g.*, squid, herring, whiting, mackerel, butter fish, cod, winter flounder and scallops) and fixed gear (lobster, Jonah crab (traps) and monkfish (gillnets)). Glacial moraines are also coastal resources important for fish habitat. Other affected coastal uses, to a lesser degree, include tourism (whale and bird watching) and recreation (sailing and sailing races, boating, fishing and scuba diving). Additional affected coastal resources include endangered

large whales (*e.g.*, Fin whale, Humpback whale, Sei whale, Sperm whale, and North Atlantic Right whale) and birds. Despite all these affected uses and resources, this analysis is focused primarily on the reasonably foreseeable coastal effects on the Rhode Island-based commercial fishing industry.

Much of this marine life relies on the rich benthic habitats found in Rhode Island's amended GLD. Glacial moraines are important habitat areas for a diversity of fish and other marine plants and animals because of their relative structural permanence and structural complexity. Glacial moraines create environments that exhibit some of the highest biodiversity within the Rhode Island's existing and amended GLD areas. The glacial moraines, and other unique physical oceanographic and structural features, create and define the value of Rhode Island's amended GLD for fisheries, tourism, recreation, and other human uses, as well as its ecological value to the Eastern North Atlantic ecosystem. In particular, Rhode Island's commercial fishing industry relies heavily on fishery resources located throughout this entire region; see below for detailed discussion.

2. Where and in what densities the uses and resources are found.

Rhode Island's amended GLD is a biologically productive area, replete with an abundance of finfish, shellfish and crustacean species, marine mammals, sea turtles, and birds. Rhode Island Sound is characterized by a seasonal flux of offshore organisms: every spring and summer, there is an influx of planktonic organisms from offshore. Larger organisms, including commercially and recreationally important finfish and crustacean species as well as whales and other marine mammals, follow this source of food inshore. This seasonal influx of plankton also includes larvae of commercially important species such as lobster and menhaden, which spawn offshore but grow to adulthood further inshore. An abundance of both longfin and shortfin squid are found in this area, which includes the Massachusetts Wind Energy Area (WEA) (see BOEM 2014 and the resources cited therein). Longfin squid spawn in and around the amended GLD in the summer and early fall (Petruny-Parker et al. 2015).

Commercial fishing activity resulting in landings in Rhode Island is most heavily concentrated south of Martha's Vineyard. The densities of the commercial fishing activity and fish resources are best summarized by Figures 2, 5, 6 and 7 for 2015-2016 Vessel Monitoring System (VMS) data associated with commercial vessels fishing for squid (squid, mackerel and butterfish FMP), multi-species, monkfish, and scallop. Figures 2, 5, 6 and 7 were prepared by the Rhode Island Department of Environmental Management (RIDEM) Marine Fisheries Division using data from the Northeast Ocean Data portal (<https://www.northeastoceandata.org/>). The species of highest value to the state of Rhode Island are squid (both longfin and northern shortfin squid),

and importantly for this analysis the vast majority of Rhode Island's longfin squid fishery takes place in federal offshore waters, including the amended GLD.

Commercial fisheries VMS mapping activities conducted by the Northeast Regional Ocean Council indicate that the highest density of the squid fishery in this region takes place in the amended GLD south of Martha's Vineyard and shown in Figure 2. The highest density of the squid fishery during 2015-2016 occurred just north of the BOEM lease areas. However, the graphic also shows medium-high to very high squid harvest activity throughout BOEM lease blocks OCS-A 0500 and OCS-A 0501 during this period. Trawling speeds (fishing activity) is shown as < 4 knots. Because of the method by which the VMS data is captured, sorted and analyzed, it is not possible to isolate Rhode Island vessels only in these map figures. However, the fact remains that the majority of the squid harvested in the amended GLD is landed in Rhode Island ports by both Rhode Island-based and out of state vessels. This is supported by the VMS maps not limited by speed cutoff, to differentiate fishing from transiting activity, that demonstrate the link between the fishing activity area south of Martha's Vineyard and Point Judith, where the majority of the U.S. Atlantic Coast's harvested squid are landed and processed. Note that there is a distinct transiting path directly between these high value fishing grounds of the amended GLD and the port of Point Judith, RI.

Additionally, the Town Dock, a Rhode Island-based commercial fishing business, provided to the CRMC a graphic (Figure 3) showing GPS chart plotter tracks for five (5) of its commercial fishing vessels that harvested squid within the amended GLD. Figure 3 depicts the mobile gear towing tracks for these Rhode Island-based commercial vessels fishing during the squid run (June, July and August) for the period of 2011 through 2017. In addition, the Commercial Fisheries Center of Rhode Island (CFCRI) provided Figure 4 showing 18,000 vessel plot tracks over a 20-year period within the same region for 22 squid harvesting vessels based in Point Judith, RI. It is important to note that these vessel track plots under-represent the actual number of vessel trips, as once a specific track plot is established subsequent track plots over the previously established plot line are often deleted (Fred Mattera (CFCRI), pers. comm. 7/26/18). The density of vessel towing tracks demonstrates the importance of the amended GLD to this specific fishing effort to harvest squid. Fishing activity for squid as shown by VMS data in Figure 2 has a similar pattern, in that the density is greatest directly south of Martha's Vineyard and just north of the BOEM lease areas, but there are two pockets of very high activity in the center and southern portion of the amended GLD that are within the BOEM lease areas (Figure 2). A similar spatial pattern exists for the Northeast Multispecies complex (Figure 5), while monkfish activity is localized mostly to the northern portion of the amended GLD (Figure 6). Additionally, the sea scallop fishery is of fairly high value to the state of Rhode Island, though this fishery's spatial activity is not heavily localized within the amended GLD (Figure 7). Nevertheless, the sea

scallop fishery is of such high economic value to Rhode Island that even the limited amount of spatially-distributed activity occurring within the amended GLD amounts to over a million dollars in Rhode Island landings.

The commercial harvesting of American lobster and Jonah crab by Rhode Island-based vessels also occurs within the amended GLD. However, as further detailed in Step 3, exact landings and values of these two species specifically within the amended GLD are estimated for this analysis because fixed gear fishermen who exclusively harvest these species are not covered within the VMS data, and they are not required to file Vessel Trip Reports (VTR). The American lobster and Jonah crab fishery consists of fixed gear (pots) that are distributed throughout Lobster Management Area 2 (established by the Atlantic States Marine Fisheries Commission) in which the amended GLD is located. The fixed gear typically involves 30 pots strung together with a ground line (trawls) and marked at both ends with surface buoys (typically a high-flyer buoy) to mark the location of the pot trawls.

In the analysis of Rhode Island-based landings from the amended GLD, Julia Livermore, Principal Marine Biologist with the RIDEM Division of Marine Fisheries, used the GPS shapefile for the amended GLD to spatially define the locations fished by Rhode Island-based commercial fishing vessels and commercial fishing vessels from other states that landed fish in Rhode Island. In short, the RIDEM analysis used three datasets (VMS, VTR, and landings) obtained from their respective sources to analyze and quantify Rhode Island-based landings for species harvested within the amended GLD. See RIDEM 2017 for details on data analysis. Commercial fishing effort data collected by the Atlantic Coastal Cooperative Statistics Program (ACCSP) and processed by RIDEM indicate that between 2011 and 2016 there were a total of 75 federally permitted commercial fishing vessels that fished for squid/mackerel/butter fish (under that Fishery Management Plan) in the amended GLD and landed in Rhode Island. Those 75 vessels had a total of 114 federally permitted fishermen aboard that sold their catch to 22 Rhode Island-based fish dealers (Julia Livermore (RIDEM), personal communication, June 26, 2018).

The Port of Providence is Rhode Island's principal commercial port, handling the majority of the cargo entering Narragansett Bay via federally maintained navigation channels, and is of particular importance, both locally and regionally, for its role in supplying petroleum energy products to southern New England. Shipping operations into the Port of Providence are reliant on port facilities located in both Providence and East Providence. Most of the port's maritime activity is concentrated in ProvPort (a private port facility located in Providence), though these industries depend on support services provided by tugboat, shipyard, and other services located throughout Providence Harbor. ProvPort has maximized the current area for operations and there is extremely limited area for expansion. Petroleum import facilities and tank farms

are located on both sides of the Harbor in Providence and East Providence. Marine transportation into the Port of Providence is facilitated by a federally maintained navigational channel, which was dredged in 2005 to a 40-foot depth, allowing Providence to accommodate larger-draft vessels. The deep draft channel—as well as its intermodal capabilities, connecting water, rail, and land transportation—together make the Port of Providence attractive to both domestic and international vessels. Providence is one of the few New England ports that can accommodate large ocean-going vessels and can offer direct access to interstate highways (I-95 and I-195), making it an attractive port for cargo destined for inland Northeastern cities.

The Quonset/Davisville port facilities includes the Port of Davisville, which is the second intermodal shipping terminal in Rhode Island, a ferry terminal used by Vineyard Fast Ferry, and several other commercial maritime businesses. The Port of Davisville offers direct access to rail service and major highways from the port facilities. Automobile imports comprise the majority of the cargo handled by the port, which is home to the 12th largest automobile importing, processing, and distribution center in the U.S., with approximately 100 car-carrier ships handled by the port per year. In peak months Davisville handles up to 13 vessels and in slower months as few as four vessels. See Chapter 7, CRMC Ocean Special Area Management Plan, 2010.

Several passenger ferry services operate to and from Rhode Island ports on a year-round basis. The following table shows passengers carried between 2003 and 2005 aboard ferries operating within state and nearby federal waters (United States Coast Guard 2006).

Ferry	Passengers	Daily Transits	
		Maximum	Minimum
New London to Block Island (High-Speed)	132,500	10	8
Montauk to Block Island	8,700	10	4
Point Judith to Block Island (High-Speed)	66,605	12	6
Point Judith to Block Island (Traditional)	520,000 (plus 64,000 vehicles)	18	2
Newport to Block Island	6,500	2	2

Recreational boating is one of the most popular uses within state and federal waters, attracting Rhode Island residents and tourists to the water for sailing, power boating, and fishing and diving activities. Sailors and power boaters use these waters to cruise between recreational harbors and other destinations, sightsee, race, fish, or participate in other recreational activities. Recreational fishing (which includes recreational fishing aboard private boats and

party and charter boats) is one of the most popular recreational boating activities in state and federal waters. Much recreational boating within these waters originates in and/or is supported by Rhode Island's recreational port and harbor facilities and marine trades businesses.

Newport, RI is a very well established and very busy recreational and competitive sailing mecca with a world-wide reputation. Indeed, sailboat racing is a time-honored tradition in offshore waters and a significant part of Rhode Island's history and culture. Some of the world's most famous and most competitive sailboat races, including the America's Cup, the Newport-Bermuda Race and more recently the Volvo Ocean Race, have been held in state and federal waters since the early 20th century. Much of the recreational sailing that takes place in federal waters is within the context of offshore sailboat races, or regattas. While it is likely that the majority of Rhode Island-based sailboat racing takes place within Narragansett Bay, many such races, primarily those involving larger vessels, ranging in length from 30 to 90 feet, occur offshore within the existing and amended GLD each year.

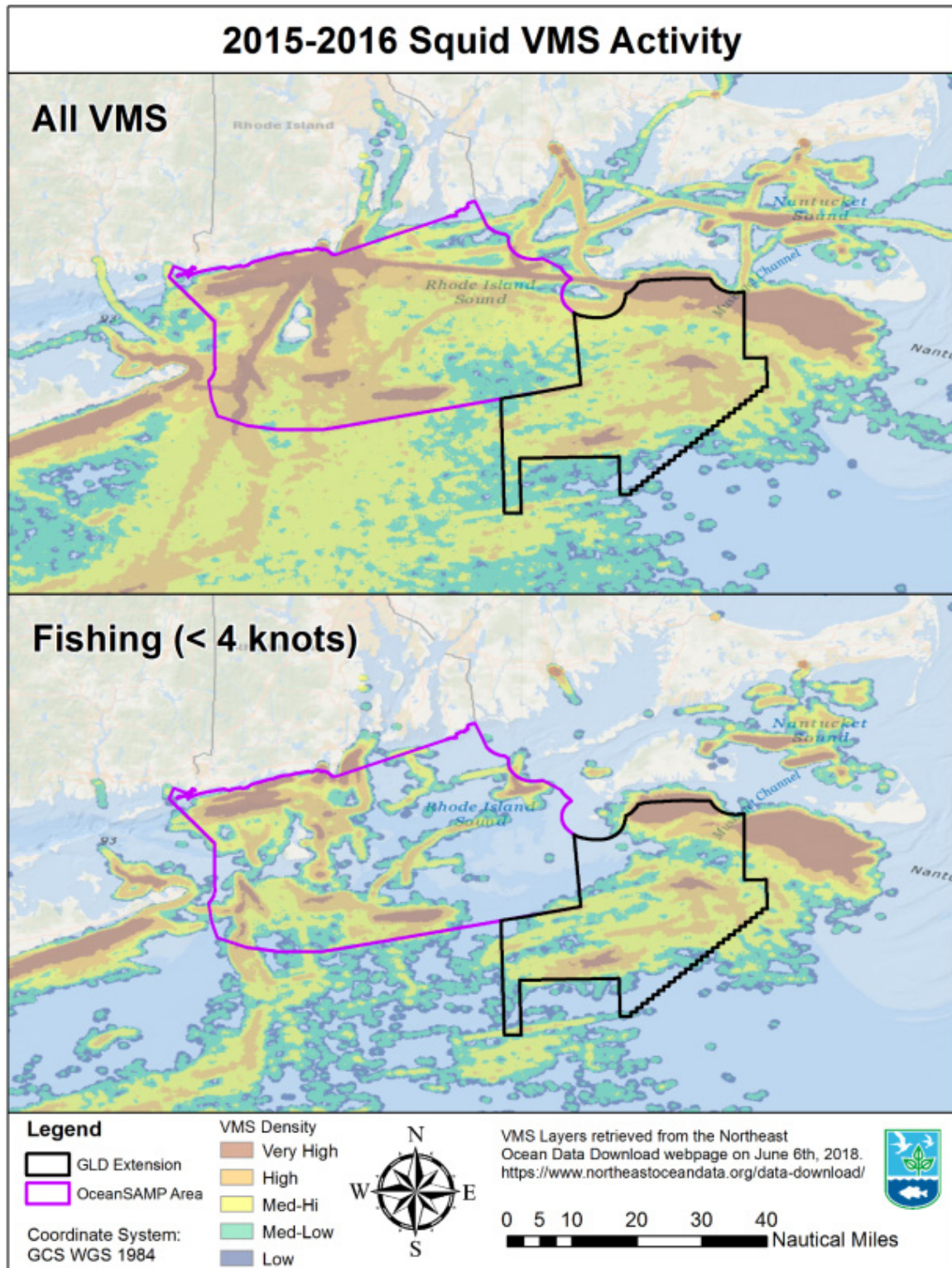


Figure 2: Vessel Monitoring System-recorded fishing activity in the amended GLD and existing GLD for vessels harvesting under the **Squid, Mackerel Butterfish FMP** in 2015-2016. This FMP is overwhelmingly dominated by squid catch. Figure prepared by RIDEM. VMS layers courtesy of the Northeast Ocean Data Portal (accessed 6/6/2018).

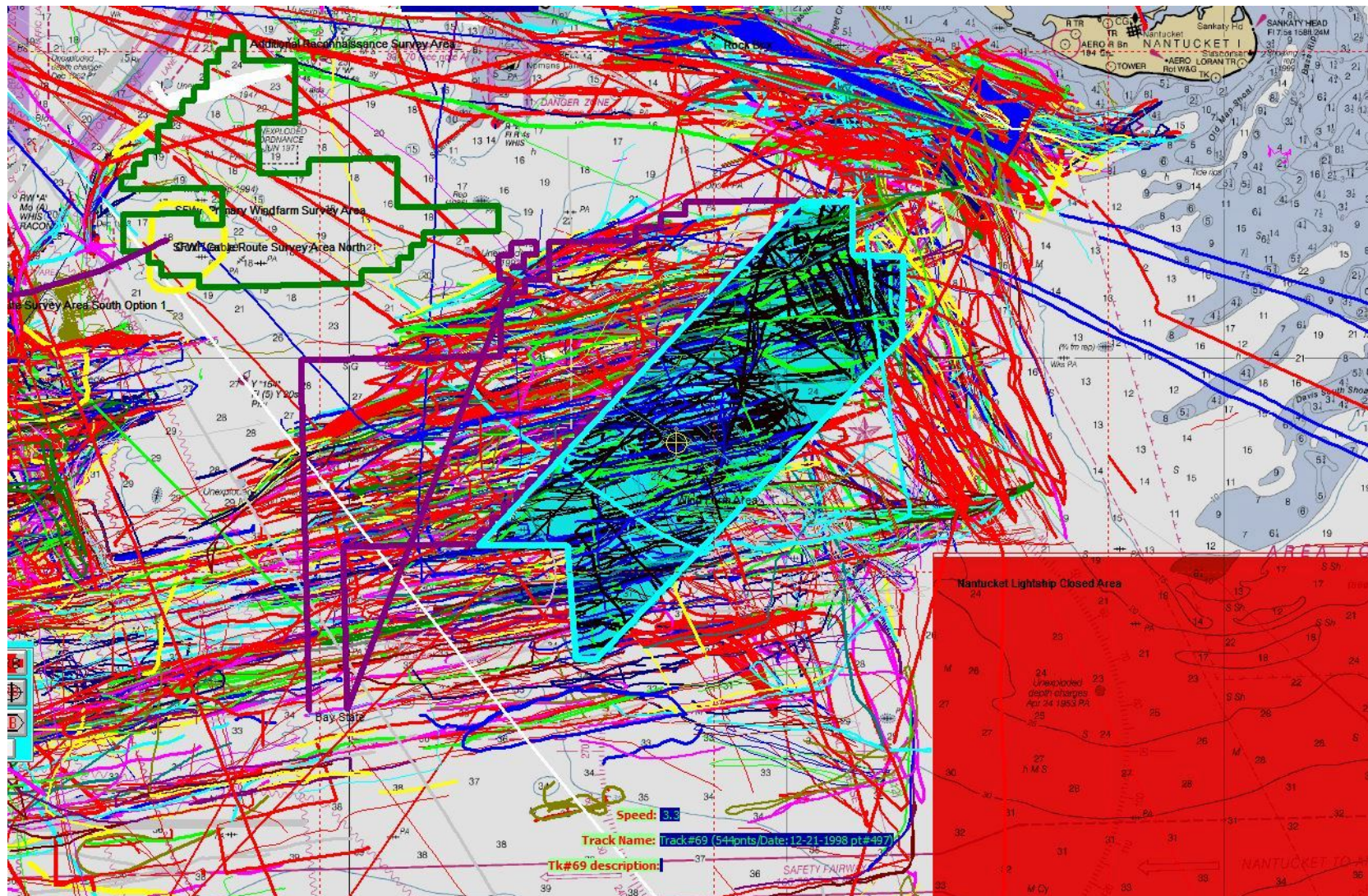


Figure 3: Rhode Island-based commercial squid fishing vessel towing tracks within the amended GLD. The colored lines represent the mobile gear towing tracks for five (5) Rhode Island-based vessels during the squid run (June, July and August) for the period of 2011 through 2017. BOEM Lease Block OCS-A 0501 is shown as the lightblue outlined and shaded rectangular area. Figure provided by The Town Dock, Narragansett, RI (04/26/2018).

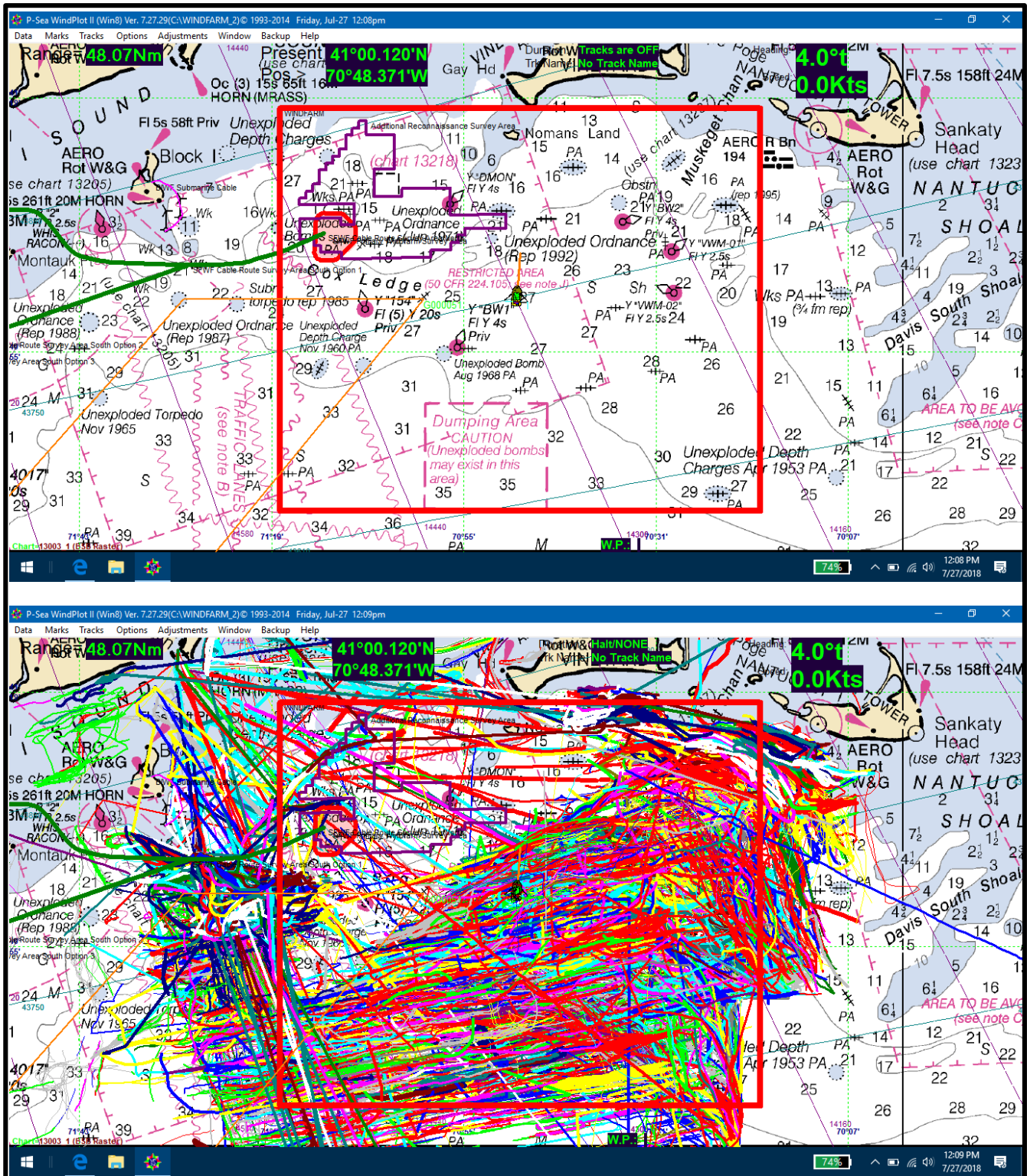


Figure 4: Rhode Island-based commercial squid fishing vessel towing tracks within the amended GLD. The colored lines represent 18,000 mobile gear towing tracks for twenty-two (22) Point Judith, RI-based vessels over a 20 year period within the amended GLD including BOEM Lease Blocks OCS-A 0500 and 0501. Figure provided by the Commercial Fisheries Center of Rhode Island (07/30/2018).

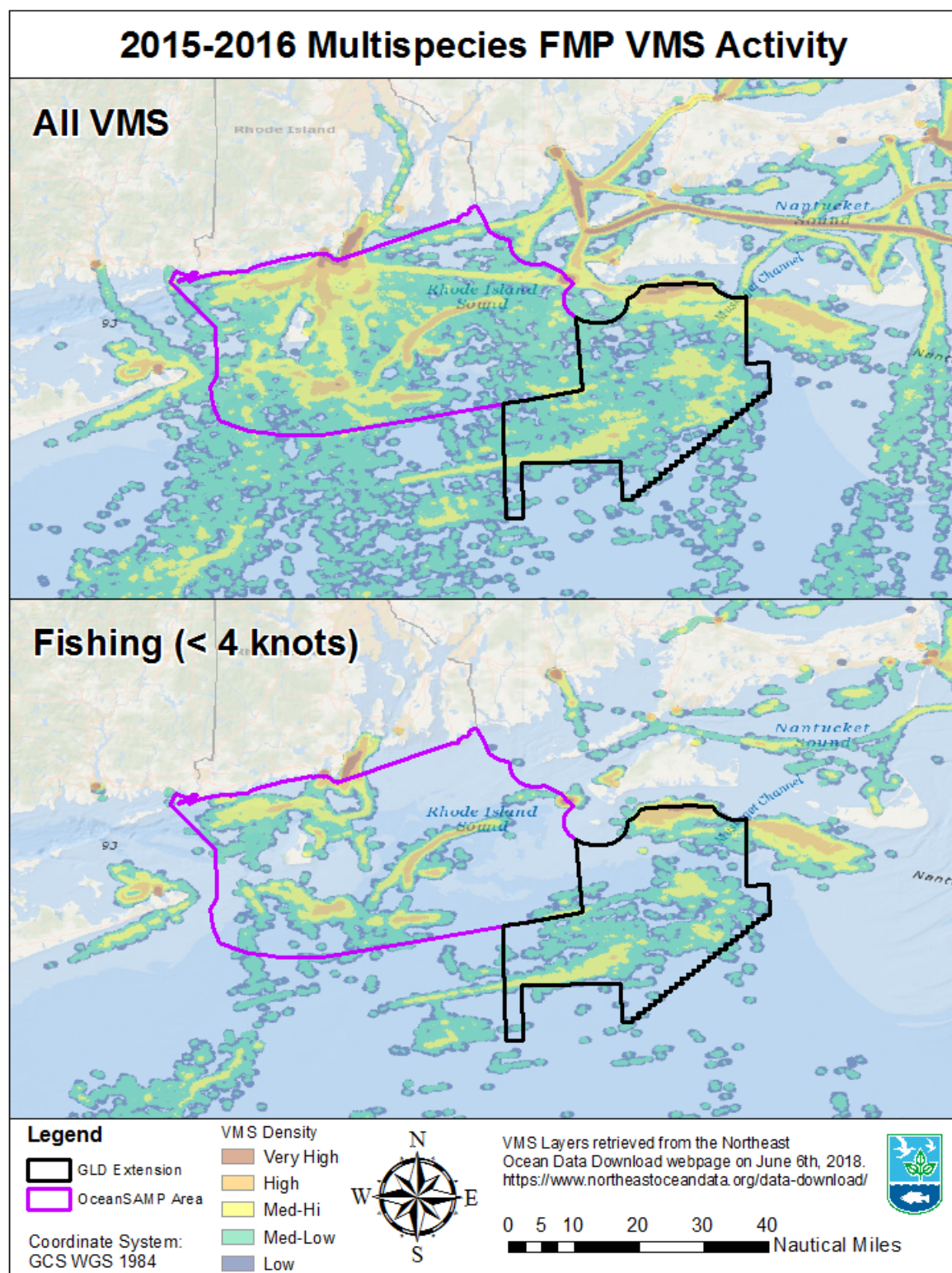


Figure 5: Vessel Monitoring System-recorded fishing activity in the amended GLD and existing GLD for vessels catching **species in the Northeast Multispecies complex** in 2015-2016. Figure prepared by RIDEM. VMS layers courtesy of the Northeast Ocean Data Portal (accessed 6/6/2018).

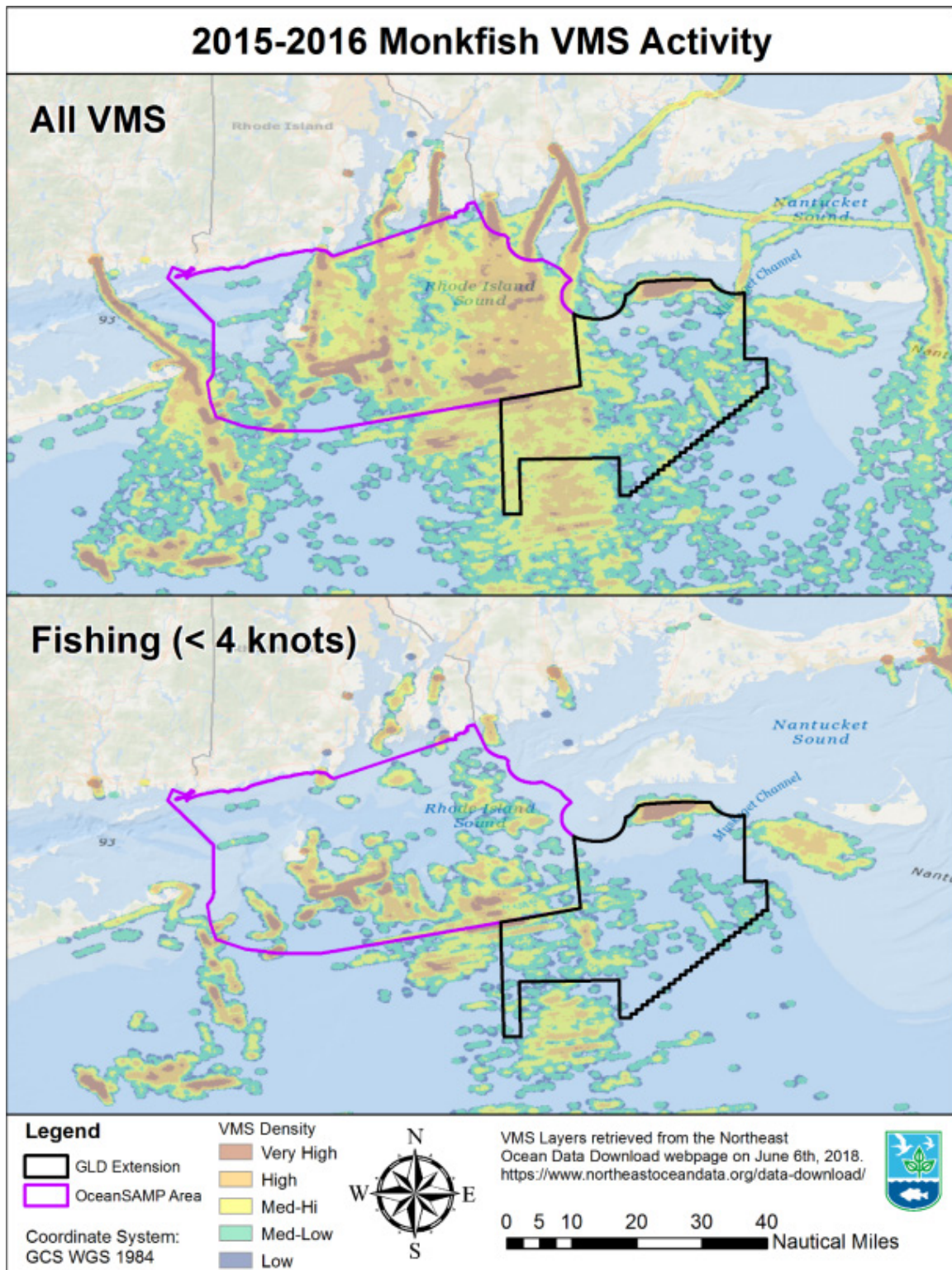


Figure 6: Vessel Monitoring System-recorded fishing activity in the amended GLD and existing GLD for vessels catching **monkfish** in 2015-2016. Figure prepared by RIDEM. VMS layers courtesy of the Northeast Ocean Data Portal (accessed 6/6/2018).

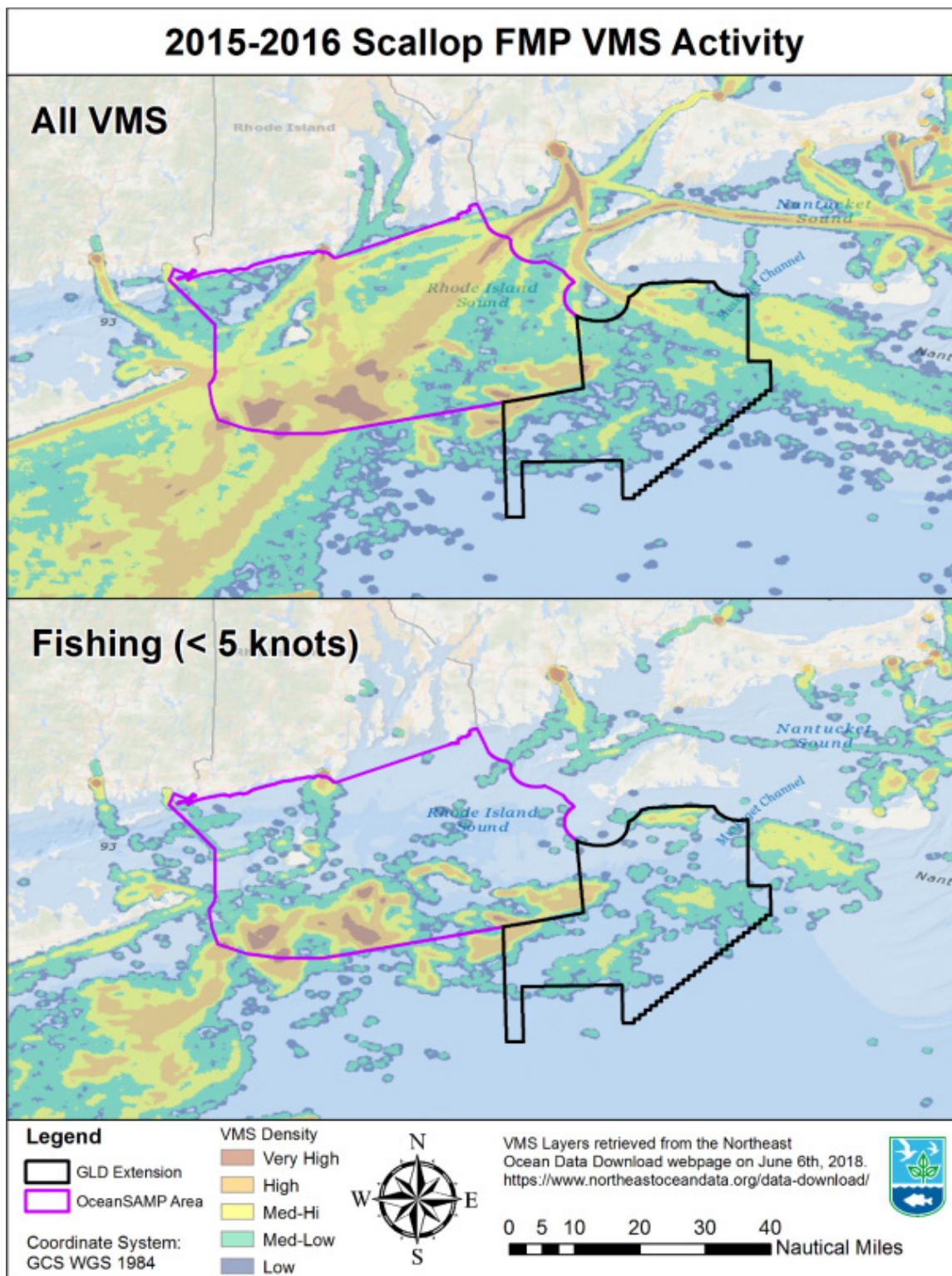


Figure 7: Vessel Monitoring System-recorded fishing activity in the amended GLD and existing GLD for vessels catching **sea scallops** in 2015-2016. Figure prepared by RIDEM. VMS layer courtesy of the Northeast Ocean Data Portal (accessed 6/6/2018).

3. How the state has a specific interest in the resource or use. Be specific in showing their connection to the coastal zone of the state (e.g., economic values, harvest amounts, vulnerabilities, seasonal information relevant to the proposed activity).

Commercial fishing is of special importance within the amended GLD south of Martha's Vineyard. Rhode Island commercial fishermen rely heavily on these waters to support their livelihoods. Rhode Island commercial fishermen working in this area conduct both mobile and fixed gear fisheries. Mobile gear fisheries in the amended GLD primarily is comprised of trawling for squid and include, to a lesser extent, other fish species including herring, whiting, mackerel, butterfish, and scallop. Fixed gear fisheries in this area include American lobster and Jonah crab fishing, as well as gillnetting for monkfish.

Squid is the largest of Rhode Island's commercial fisheries. Although RI-based commercial vessels target longfin and shortfin squids, the vast majority of squid landings harvested from the amended GLD is longfin squid. As determined from ACCSP data, longfin squid was the top species landed in Rhode Island by dollar value (\$14,795,851), with shortfin squid coming in as the second highest value (\$13,536,617) in 2017. By weight, shortfin squid was the top species in (23,055,000 lbs.), followed by longfin squid (10,701,185 lbs.). Due to the short life history and high interannual variability in the species' geographic distributions, Rhode Island's squid fishery fluctuates in value year by year, but has generally grown considerably over the last few years (see Table 3), with 2016 longfin squid catches being the largest in the past ten years.

Table 2 shows that the total U.S. Atlantic commercial landings of longfin squid during the years 2011 through 2016 were 166,921,779 pounds, while Table 3 shows that the commercial landings of longfin squid in Rhode Island ports during the same years totaled 87,430,234 pounds. Importantly, fifty-two (52) percent of the entire U.S. Atlantic longfin squid harvest was landed and processed in Rhode Island ports representing nearly \$100, 000,000 of economic activity from this species alone to the state of Rhode Island or more than \$16,000,000 annually averaged over this period. Importantly, the value of Rhode Island-based landings for the squid/mackerel/butterfish Fishery Management Plan (FMP) (of which squid accounts for the overwhelming majority of value within this FMP) that are verifiably attributable to the amended GLD during the period of 2011 through 2016 were \$13,549,086. The total value of Rhode Island-based landings for longfin squid from all federal waters during the same period were \$98,558,493. **Thus, approximately 14% of all longfin squid landings in Rhode Island ports during the period of 2011 through 2016 were harvested from within the amended GLD.**

Table 2: U.S. Atlantic longfin squid landings. Data source: NOAA National Marine Fisheries Service statistics (<https://www.fisheries.noaa.gov/topic/commercial-fishing>)

Year	U.S. Atlantic Longfin Squid Landings (Pounds)	Value in Dollars
2011	21,033,971	24,868,071
2012	28,237,564	31,314,325
2013	24,680,894	26,493,409
2014	26,533,276	25,925,321
2015	26,329,574	31,207,038
2016	40,106,500	50,090,776
Grand Totals	166,921,779	189,898,940

Table 3: Rhode Island longfin squid landings. Data source: ACCSP Data Warehouse (<http://www.accsp.org/data-warehouse>)

Year	Rhode Island Longfin Squid Landings (Pounds)	Value in Dollars
2011	9,917,954	11,343,937
2012	11,689,318	12,743,727
2013	12,608,731	13,207,489
2014	14,647,268	13,975,266
2015	16,063,020	18,864,261
2016	22,503,943	28,423,813
Grand Totals:	87,430,234	98,558,493

Overall, landings coming into Rhode Island from the amended GLD are made primarily into the Port of Point Judith as shown in Table 4. Individual year values between 2011 and 2016 range between \$1,091,183 and \$6,816,047. Other ports with landings from the amended GLD are Little Compton, Newport, North Kingstown, Providence, Tiverton, and Wakefield. The overall total coming into Point Judith during the 6-year time period for which Vessel Monitoring System, Vessel Trip Reports (VTR) and dealer reports (landings) data have all been analyzed in conjunction with one another is \$17,026,083 as shown in Table 5. See RIDEM 2017 for details on data analysis. The total value of landings from the amended GLD into the state of Rhode Island between 2011 and 2016 is \$18,306,556. The largest annual landings coming from the amended GLD by species or fishery management plan were for squid, mackerel, and butterfish, with the highest value of \$6,396,885 occurring in 2016 as show in Table 6. The 6-year total for

that fishery FMP was \$13,549,088 (Table 7). Unsurprisingly, the otter trawl was the highest grossing gear from the amended GLD, with the highest value also occurring in 2016 (\$6,888,469; Table 8). The 6-year total for the otter trawl was \$16,773,034 (Table 9).

Table 4: Annual landings value of all species caught in the amended GLD and landed in RI Ports. These data meet the ACCSP Rule of Three. C = confidential landings. Little Compton, North Kingstown, Providence, Tiverton, and Wakefield all had confidential individual year landings.

Port	2011	2012	2013	2014	2015	2016
Newport	C	C	\$889,581	C	C	C
Point Judith	\$1,588,143	\$1,091,183	\$1,142,626	\$2,811,732	\$3,576,349	\$6,816,047

Table 5: Total landings value, 2011-2016, of all species caught in the amended GLD and landed in RI ports. These data meet the ACCSP Rule of Three.

Port	Total Dollar Value (2011-2016)
Little Compton	\$42,984
Newport	\$917,234
North Kingstown	\$131,279
Point Judith	\$17,026,083
Providence	\$8
Tiverton	\$330
UNKNOWN	\$188,327
Wakefield	\$311
TOTAL	\$18,306,556

Table 6. Annual landings value of each species caught in the amended GLD and landed in Rhode Island. These data meet the ACCSP Rule of Three. C = confidential landings. There were also confidential landings of Atlantic bonito, cunner, smooth dogfish, American John Dory, American eel, spotted hake, Atlantic halibut, tautog, blueline tilefish, triggerfishes, and little tunny.

SPECIES	2011	2012	2013	2014	2015	2016
Bluefish FMP	\$9,292	\$7,022	\$1,977	\$10,128	\$10,100	\$6,586
Dogfish, Spiny	C	\$344	\$781	\$717	\$219	\$126
Dory, American John	C	C	C	C	\$229	C
Eel, Conger	C	C	\$2.34	C	\$7	C

Monkfish FMP	\$34,211	\$25,128	\$24,354	\$65,688	\$37,605	\$10,830
Northeast Multispecies FMP	\$68,754	\$2,199	\$34,090	\$428,474	\$273,411	C
Northeast Small Mesh Multispecies FMP	\$67,672	\$48,761	\$125,422	\$140,581	\$139,328	\$163,852
Robins, Sea	\$102	C	C	\$24	\$18	C
Sea Scallop FMP	C	C	\$1,045,039	\$1,447	\$402,893	\$4,605
Skate FMP	C	C	\$637	\$15,009	\$5,919	\$1,847
Squid Mackerel Butterfish FMP	\$1,355,953	\$947,321	\$527,539	\$1,715,711	\$2,605,677	\$6,396,885
Summer Flounder, Scup, Black Sea Bass FMP	\$87,726	\$76,989	\$272,242	\$457,264	\$294,138	\$307,461
TOTAL	\$1,623,710	\$1,107,764	\$2,032,083	\$2,835,043	\$3,769,544	\$6,892,192

Table 7. Total landings value, 2011-2016, of each species caught in the amended GLD and landed in RI ports. These data meet the ACCSP Rule of Three. There were also confidential landings of Atlantic bonito, cunner, smooth dogfish, American eel, spotted hake, Atlantic halibut, tautog, blueline tilefish, triggerfishes, and little tunny.

SPECIES	Non-Confidential Total
Bluefish FMP	\$45,107
DOGFISH, SPINY	\$2,188
DORY, AMERICAN JOHN	\$229
EEL, CONGER	\$9
Monkfish FMP	\$197,819
Northeast Multispecies FMP	\$806,930
Northeast Small Mesh Multispecies FMP	\$685,619
ROBINS, SEA	\$145

Sea Scallop FMP	\$1,453,986
Skate FMP	\$23,414
Squid Mackerel Butterfish FMP	\$13,549,088
Summer Flounder, Scup, Black Sea Bass FMP	\$1,495,823
TOTAL	\$18,260,357

Table 8. Annual landings values of all species caught using different gear types in the amended GLD and landed in Rhode Island. These data meet the ACCSP Rule of Three. C = confidential landings; - = no landings that year. There were also confidential landings in individual years for vessels using hand line/rod & reel, otter trawl (bottom, shrimp), and crab/lobster pots.

GEAR TYPE	2011	2012	2013	2014	2015	2016
Dredge, Scallop	-	-	\$1,044,889	-	\$402,791	C
Gill Net, Sink	C	C	\$5,326	\$23,391	\$6,685	C
Otter Trawl, Bottom, Fish	\$1,627,076	\$1,094,391	\$987,087	\$2,814,082	\$3,361,927	\$6,888,469

Table 9. Total Landings Value from 2011-2016 of all species caught using different gear types in the amended GLD and landed in Rhode Island. These data meet the ACCSP Rule of Three. There were also confidential landings in individual years for vessels using hand line/rod & reel, otter trawl (bottom, shrimp), and crab/lobster pots.

GEAR	Non-Confidential Total
Dredge, Scallop	\$1,447,681
Gill Net, Sink	\$35,403
Otter Trawl, Bottom, Fish	\$16,773,034

Landings and values for American lobster and Jonah crab fishing from the amended GLD are estimated using best available data for this analysis because fixed gear fishermen who exclusively harvest these two species are not covered within the VMS data. The current federal and state reporting requirements, along with broad lobster harvesting effort management areas, are not sufficiently specific to determine the fishing locations and landings for lobster and Jonah crab from within the amended GLD. Nonetheless, the American lobster and Jonah

crab landings in Rhode Island for 2011 through 2016 are shown in Tables 10 and 11. The total value of lobster and Jonah crab landings in Rhode Island were \$86,165,610 during the period 2011-2016. The annual value of these landings averaged over the same period was \$14,360,935 of economic activity for the state of Rhode Island. There are Rhode Island-based landings for this fixed gear fishery within the amended GLD as reported by vessel captains. However, under the current federal and state reporting requirements for these two species it is difficult to exactly quantify such landings without confidential fishing vessel location and harvest data that could be provided by VMS data.

More specific harvest data for Jonah crab is available from the Atlantic States Marine Fishery Commission's 2015 Interstate Fishery Management Plan for Jonah Crab. It reports that Massachusetts and Rhode Island fishermen accounted for over 94% of all Jonah crabs commercially harvested in the U.S. during 2014, with MA landing 11.9 million pounds worth \$9.3 million and RI landing 4.1 million pounds worth \$3.1 million. The Jonah crab harvest occurs predominantly within federal waters. And, between 2012 and 2014, 71.5% of the combined Jonah crab landings from Massachusetts and Rhode Island came from NMFS statistical area 537 (ASMFC 2015), which includes the amended GLD and BOEM lease blocks OCS-A 0500 and OCS-A 0501. Rhode Island based vessels harvested \$2,216,500 of Jonah crabs from NMFS statistical area 537 in 2014. Thus, it can be concluded that a significant portion of RI landed Jonah crabs harvested in 2014 were caught within the amended GLD.

Table 10: Total Rhode Island landings value for American lobster from 2011-2016. Data source: NOAA National Marine Fisheries Service statistics (<https://www.fisheries.noaa.gov/topic/commercial-fishing>)

Year	Rhode Island American Lobster Landings (Pounds)	Value in Dollars
2011	2,754,086	12,765,219
2012	2,706,402	12,118,598
2013	2,155,774	9,731,980
2014	2,412,887	11,709,412
2015	2,315,716	12,344,549
2016	2,260,346	11,889,301
Grand Totals:	14,605,211	70,559,059

Table 11: Total Rhode Island landings value for Jonah crab from 2011-2016. Data source: NOAA National Marine Fisheries Service statistics (<https://www.fisheries.noaa.gov/topic/commercial-fishing>)

Year	Rhode Island Jonah Crab Landings (Pounds)	Value in Dollars
2011	2,540,338	1,499,986
2012	3,286,572	2,297,722
2013	4,397,735	3,179,956
2014	4,128,161	3,098,119
2015	3,861,259	2,655,378
2016	3,669,939	2,875,390
Grand Totals:	21,884,004	15,606,551

A 2004 economic impact study of Rhode Island’s navigation-dependent industries conducted in connection with the 2002 Rhode Island Region Long-Term Dredged Material Disposal Site Evaluation Project found that navigation-dependent activity in Rhode Island has a significant impact on the state’s economy as a whole that goes beyond the navigation-dependent sectors. The study found that navigation-dependent marine transportation industries as well as recreational and fishing-related industries had an economic impact of \$586 million on the gross state product .If indirect and induced gross state product were considered, the economic impact of navigation-dependent activities in Rhode Island totaled \$1.1 billion (See Chapter 7 of the CRMC Ocean Special Area Management Plan, 2010). Recreational boaters and commercial and recreational fishing vessels use state and adjacent federal waters for fishing or other recreational uses. These uses support Rhode Island’s marine-related industry, as well as coastal economies, through the sale of fuel, supplies, and marina services.

Rhode Island’s marine recreation and tourism industry supports a number of jobs within the state and has been reported to have paid over \$161 million in wages and produced \$393 million in gross domestic product in 2004 (See Chapter 6 of the CRMC Ocean Special Area Management Plan, 2010). A state-wide study conducted in 2006 found that the 43,000 boats registered in Rhode Island at that time generated approximately \$182 million worth of spending each year. It should be noted that this figure excludes transients, mega-yachts (very large yachts), and regatta participants and therefore likely underestimates the economic impact of this industry. In 2007 the Rhode Island Marine Trades Association reported that there are over 2,300 businesses within Rhode Island involved in marine-related industries, providing over 6,600 jobs and \$260 million in wages (See Chapter 6 of the CRMC Ocean Special Area Management Plan, 2010). A 2017 National Marine Fisheries Service (NMFS) report indicated that Rhode Island-

based recreational fishing generated \$332 million in sales, \$141 million in income, \$216 million in value added to the economy, and supports 3,554 jobs (NMFS, 2017).

4. Where the proposed activity overlaps with these resources, uses and values.

The BOEM federal lease area for renewable energy projects within the amended GLD overlaps with Rhode Island coastal uses as verified by VMS commercial fishing activity shown in Figures 2, 5, 6 and 7 above. Additionally, Figure 3 depicts specific Rhode Island-based commercial vessel GPS trawl tracks showing a high intensity of effort within the amended GLD and the BOEM lease blocks. There are no BOEM OCSLA lease blocks identified for oil and gas leasing in the North Atlantic Ocean, however, should BOEM include any of the lease blocks in the amended GLD for oil and gas leasing in the Five Year OCS Oil and Gas Leasing Program for 2019-2024, then any oil and gas infrastructure would also overlap with the Rhode Island fishing industry.

5. Impacts to the resources or uses from the proposed activity.

This section describes expected impacts to coastal uses or resources. Section 6 describes whether some of these impacts result in reasonably foreseeable effects to coastal uses or resources. BOEM licenses and permits listed herein for the construction, placement, or operation of any offshore wind facilities, regardless of size, underwater cables and other associated energy-related structures within the amended GLD could have numerous impacts to the aforementioned coastal uses and resources.

Impacts on fishing access and activity: The potential impact on fisheries from offshore energy development and operation has been a particular concern in the waters off New England and along the Atlantic coast. This issue has been recognized by BOEM and has been the focus of recent study initiatives funded by the agency (Kirkpatrick *et al.* 2017; Petruncy-Parker *et al.* 2015; Farrell *et al.* 2014; Minerals Management Service 2009).¹ BOEM has further recognized that conflicts can arise between commercial fishing activities and renewable energy projects located in the OCS. BOEM's 2007 OCS Alternative Energy Final Programmatic EIS states "[c]ommercial fishing methods with the highest potential for conflicts with OCS operations are bottom trawling (potential for snagging on cables, pipelines, and debris) and surface longlining (potential for space-use conflicts with OCS construction and service vessels). Both fishing

¹ Dating back to 2009, with regard to Cape Wind: "The draft environmental impact statement and public hearings for the Cape Wind Energy project revealed that commercial fishing is a critical area that must be investigated thoroughly prior to any type of siting. Currently many of the shallow shoals that provide fish resources are also areas where wind developers are interested in placing wind parks. These areas also have potential to be recreational areas where boaters and recreational fisherman frequent. Therefore studies are needed that assess the impact from OCS alternative energy activities with respect to commercial fishing and recreation. This information will undoubtedly be needed for planning purposes and decision making."

methods could have space-use conflict interactions if fixed OCS facilities were to be located in previously fished areas.” See Section 4.2.23.1 of FPEIS at 4-123. In anticipation of the expected installation of offshore wind power projects² within BOEM lease blocks associated with the amended GLD, an area of existing commercial fishing activity, we expect that such projects will result in impacts to commercial fishing vessel operations because of the potential for hundreds of wind turbine generator (WTG) structures to be located within BOEM lease blocks associated with the amended GLD. In accordance with statements made by Rhode Island-based commercial fishermen, space-use conflicts will arise as WTGs are installed within the amended GLD, as existing commercial fishing mobile and fixed-gear operations will be constrained by the location and spacing of wind turbine foundations as presently proposed.

Offshore construction and the placement of offshore structures will potentially have short- and long-term impacts on commercial fisheries. The construction and placement of new WTG structures in the amended GLD will temporarily **displace** fishermen from their traditional operating areas as a result of construction safety exclusion zones surrounding turbine foundations. Displacement may also take place through the general increase in vessel traffic that may be associated with an offshore project (*e.g.*, Mackinson *et al.* 2006, MMS 2007). As a matter of fact, this temporary displacement of commercial fishing activity did indeed occur during the installation phase of the Block Island wind farm in 2015. We anticipate similar temporary displacement during WTG construction activities within the BOEM lease blocks associated with the amended GLD, but on a much larger scale considering the potential for hundreds of WTGs within this area. Commercial mobile gear operations such as squid fishing is particularly susceptible to displacement both on a temporary and permanent time scales due to the nature of the gear, the ability to transit the area and bottom obstructions (*e.g.*, cable protection) for bottom trawls. Even temporary displacement during construction phases could have a significant disruption of the RI-based commercial fishing industry given the scale of development which will occur over many years.

As noted above, BOEM recognizes the potential for commercial fishing trawl nets to be snagged on exposed cables, which presents a logistical and financial impact to commercial fishing vessel operators. With the potential for hundreds of WTGs to be installed within the BOEM lease blocks associated with the amended GLD there will be many miles of cable connecting the WTGs (inter-array) and export cables connecting offshore wind farms to the mainland. For example, Vineyard Wind presented in its 2018 COP filed with BOEM that up to 141 miles of export cable and 171 miles of inter-array cables could be installed for their 800MW wind farm project (located within the amended GLD). Vineyard Wind also indicated that up to ten (10)

² The Commonwealth of Massachusetts has already awarded Vineyard Wind a renewable energy contract for an 800MW wind farm within BOEM Lease OCS-A 0501, which is located within the amended GLD.

percent of these cables may not achieve proper burial installation depth and require cable protection consisting of rock placement or concrete mats. This potentially results in more than 18 linear miles of cable protection within the amended GLD (installed in an existing area of intense commercial fishing activity) that would become permanent, long-term bottom obstructions that could snag commercial fishing trawl nets. Anecdotal evidence suggests that this may already be an issue with the existing Block Island wind farm export cable where cable protection was installed in sections where insufficient cable burial depth occurred.

Impacts on navigation and ports: Based on current state contracts between NY, CT, RI and MA and offshore renewable energy companies the expected construction of 1500MW of offshore wind energy (almost 200 WTGs at current technology limitations), it is anticipated that significant navigational impacts may occur by special purpose construction vessels, crew transport vessels, WTG component vessels, and other support vessels navigating between proposed wind farms within the amended GLD, state waters, and nearby ports. The level of offshore renewable energy construction activity that will occur in and around the amended GLD is unprecedented for the Federal OCS, and at present the region's port side infrastructure is not sufficient to accommodate the expected level of wind energy needs for laydown areas, component fabrication, equipment storage, and shoreside dockage for special purpose vessels. Indeed, BOEM cautions that where there is a need for shoreside facility improvements "consideration should also be given to enhancing facilities not directly connected to the operation of offshore renewable energy development – especially if the renewable energy industry pushes other ocean users out of an existing port." See OCS Study BOEM 2012-083 at 201.

It is anticipated that wind energy companies will have to use RI port facilities for material lay-down areas, fabrication, equipment storage, crew transportation and construction vessels. Given the limited space and current high usage of Rhode Island port facilities, the use of these facilities by the offshore wind energy companies may impact RI coastal uses by disrupting and competing for existing port uses and dockage. Additionally, the expected significant offshore wind industry navigation activity from construction, support and crew vessels may have impacts to Rhode Island coastal uses by disrupting commercial and recreational boating traffic, scheduled sailing events and other navigational uses including ferry service in Rhode Island.

Environmental impacts on fisheries resources: It is important to point out that there has never been the scale of offshore development in southern New England waters that is being contemplated now. Many of the environmental impacts that have been cited are from European or Gulf of Mexico studies which are totally different environments. We need to be cautious in drawing inferences from those studies to the New England environment, which is on the border of two major ecotones, making this environment more susceptible to change. Rhode Island's interest in the offshore resources is obvious, and given the state's dependence of this

resource the CRMC's participation and consultation are critical to this process given our experience in this industry and our need to bring in this new industry in a manner that balances these interests to maintain the viability of existing coastal uses.

Offshore construction and the placement of offshore structures may impact fish stocks and the habitats upon which they rely. Offshore construction activities, which may include pile-driving and the disturbance or removal of bottom sediments, can have significant impacts on marine life and habitats. Habitat changes associated with offshore construction may include loss of natural habitats; the addition of high-relief habitats around offshore structures; redistribution or displacement of habitats important for fish spawning, nursery, or foraging activities; the creation of micro habitats from shading effects; and the introduction of new electromagnetic fields; these are all likely to affect fish and invertebrate species at all life stages in a variety of ways (Petruny-Parker *et al.* 2015). Habitat disturbance may include sediment disturbance and settling, resultant increased turbidity of the waters in the construction area, and the installation of new infrastructure (MMS 2007a). Disturbances may also include changes in circulation patterns at the surface and the seafloor that could affect patterns of larval drift and settlement, upwelling events and productivity cycles that influence fish production, and sedimentation processes that affect trophic interactions and species assemblages (Petruny-Parker *et al.* 2015).

Construction development phases are expected to have the greatest impacts on fishery resources because of pile driving and cable installation activities (Bailey *et al.* 2014). For example, pile-driving and increased vessel traffic associated with these activities can result in significant underwater noise. Potential impacts of sound on marine fish species include pathological, physiological, and behavioral effects (BOEM 2014). Underwater noise has the potential to affect fish species by affecting animal feeding reproductive, vocalization, and other behaviors necessary for survival, or causing injury or death (Thompson *et al.* 2006). It could also result in increased larval mortality for fish and invertebrate species or could affect migration patterns, reproductive behaviors, or species distributions (Petruny-Parker *et al.* 2015). McCauley and Salgado Kent (2008), cited in BOEM's 2014 Environmental Assessment (EA) of the Massachusetts WEA (in which the amended GLD is included), reported that intense impulsive signals such as pile driving can cause fish kills, and that less intense signals can cause behavioral changes (see further discussion and resources in BOEM 2014). This EA also concluded that MET tower noise alone could disturb normal fish behaviors (BOEM 2014). Studies have shown that squid are expected to avoid the WEAs during all development phases (Degraer *et al.* 2013 and NEFMC 2014). There are concerns about the possible impact of noise and vibration on squid, which rely on statocysts, which act like accelerometers, for balance and motion detection (Mooney *et al.* 2010). Another study has illustrated that cod, another targeted species within this area and part of the Multispecies FMP, alter their behavior in response to pile driving

sounds (Mueller-Blenkle *et al.* 2010). Underwater noise may also cause some fish species to leave the area (Weilgart 2018).

Once construction is completed, offshore structures may still have a variety of impacts on fisheries resources. The introduction of new structures in the water column may affect water flow around the structures, which may result in scour holes in the sea bed. Scouring and sediment transport is a particular concern at offshore wind sites (*e.g.*, Nielsen 2014; Vanhellemont and Ruddick 2014). The new structures may become colonized by non-mobile organisms and may ultimately attract nuisance species or alter fish feeding and aggregation behaviors (Wilhelmsson *et al.* 2006, Gill and Kimber 2005). The possible introduction of invasive species is always a potential issue when introducing new structure into the environment. Some offshore structures, such as wind turbines, may generate some operational noise that, while significantly less than construction noise, may affect some fish species (Gill 2005).

Environmental impacts of submarine cables on fisheries resources: The installation of submarine cables may result in benthic habitat disturbance through the process of plowing trenches for the cables and then burying them with new sediment; subsequent repairs and modification of these cables would create additional habitat disturbance. These disturbances, which include sediment disturbance, turbidity, construction-related underwater noise, and conversion to new habitat types, are most problematic for sessile benthic organisms (Johnson *et al.* 2008). Submarine electrical cables associated with offshore developments may also emit electromagnetic fields (EMF), which may have some effects on some fish species, especially sharks, rays, and bony fishes (Bailey *et al.* 2014; Gill *et al.* 2005). EMF may affect some fishes' ability to navigate, which could in turn affect fish feeding, breeding, migration, or other behaviors necessary for survival (Bailey *et al.* 2014; Gill *et al.* 2005, DONG Energy and Vattenfall 2006).

6. The causal connection to the proposed activity, including how any impacts from the activity results in reasonably foreseeable effects on the state's coastal uses or resources.

Based on the CRMC's analysis, including the statements from the RI commercial fishing industry during a meeting with BOEM on April 19, 2018 (CRMC Fishermen's Advisory Board (FAB) meeting) and at the FAB meeting of July 26, 2018 for the proposed Vineyard Wind 800MW wind farm project, the proposed wind farm turbine locations and placement patterns within the BOEM lease blocks associated with the amended GLD will impact Rhode Island-based commercial fishing operations through the disruption of well-established mobile and fixed gear activity within the amended GLD. The reasonably foreseeable coastal effect is that RI-based mobile commercial fishing gear operations will need to avoid turbine foundations or risk snagging nets causing damage to equipment and costly repairs. In addition, cable protection (rock or concrete mats), when cable burial depth cannot be achieved, is also a significant issue with RI-based mobile gear operations, particularly the squid fishery. With the potential for

many linear miles of cable protection (possibly more than 18 linear miles alone as estimated by the Vineyard Wind COP), the reasonably foreseeable effect is that the risk of trawl net snags increases the potential for costly repairs and lost fishing time, along with a corresponding decrease in Rhode Island based fishing revenues. Without review and input from the CRMC there could be permanent exclusion of the squid fishery within BOEM lease blocks associated with the amended GLD. The reasonably foreseeable effect will be a loss of fishing revenues to Rhode Island-based commercial fishing businesses and Rhode Island coastal uses. Absent any data or studies to the contrary showing no impact, there will likely be impacts to fish stocks from the turbine construction activity, especially with the acoustics from pile driving. Weilgart (2018) has shown that there are impacts to both juvenile and adult fish, including squid, resulting from various levels of anthropogenic generated underwater noise. The reasonably foreseeable coastal effect is that such activity may diminish the coastal resources that RI-based commercial fishermen rely upon, thereby decreasing the economic viability of the RI-based commercial fishing industry.

Additionally, based on testimony from RI commercial fishermen during the CRMC July 26, 2018 FAB meeting, the wind turbine arrays will likely disrupt established commercial fishing navigation patterns as described in Section 5 above and as shown in Figures 2 through 7. The likely use of RI ports by wind energy companies for material lay-down areas, fabrication, equipment storage, crew transportation and construction vessels will have a reasonably foreseeable effect on RI coastal uses by disrupting commercial and recreational boating, scheduled events and other navigational uses including ferry service in Rhode Island and southern New England waters. The anticipated construction of hundreds of WTG foundations, transition sections, nacels and turbine blades associated with current state contracts between RI, MA, NY, and CT with offshore wind companies will result in significant construction and navigation activity that will have reasonably foreseeable effects on Rhode Island coastal uses. The likely level of intense construction activity has clearly foreseeable effects to coastal uses in Rhode Island from the increased construction vessel traffic between ports and the WEA from special use ships, support vessels, barges, crew transport ships, etc. Fixed gear fishermen have reported increased gear damage and loss every time marine transportation has increased to or from RI port facilities. For example, increased vessel traffic from offshore dredge disposal barges resulted in fixed gear losses. In addition, the fixed-gear commercial fishing industry reported many complaints of missing and damaged lobster and gillnet gear during the construction of the five wind turbines for the Block Island Wind Farm. Accordingly, it is likely that the increased vessel traffic from construction and operation of wind farms within the amended GLD will result in the snagging of Rhode Island fixed gear in offshore waters consisting of lobster pots and gill nets, along with high-flyer buoys and other buoys, resulting in significant damage and equipment loss to RI-based commercial fishing vessels. This fixed gear loss can occur anywhere from the WEAs to the ports.

Offshore wind projects cannot happen without adequate landside and port infrastructure. With 1500MW of wind energy presently proposed within the existing and amended GLD and likely another 1200MW to be awarded by southern New England states this fall within these same areas, it is likely that Rhode Island ports will be heavily relied upon due to proximity to the amended GLD during construction of presently contracted offshore wind farms. This reliance will place a heavy burden on existing RI ports with competition for pier docking space and adjacent lay down area sufficient for wind farm component construction and assembly activities. The wind energy construction vessel traffic will also potentially jeopardize ongoing traditional RI coastal uses by affecting scheduled RI sailing events, RI ferry services, recreational boating traffic patterns, and commercial shipping transit into and out of Narragansett Bay. The reliance on Rhode Island ports by the offshore wind energy industry will have reasonably foreseeable coastal effects on Rhode Island coastal uses.

While construction-related exclusion zones may be temporary, the loss of even two or three fishing seasons has the potential to permanently shut down some of Rhode Island's commercial fishing businesses. Even if exclusion zones around offshore structures are not formally designated, fishermen may find it dangerous or impractical to operate around the offshore structures, in cases of poor weather, in reduced visibility or when operating fishing equipment. In particular, the presence of offshore structures and related anti-scour devices, submarine cables, and other equipment may prohibit mobile gear fishermen, including draggers and scallopers, from safely operating and deploying their gear around these structures (National Academies of Sciences, Engineering, and Medicine 2017; Mackinson et al. 2006). Such structures may also deter fixed gear fishermen from operating in the area because of concerns about potential collision with the structures, insurance coverage, or problems operating their fishing, navigation, and radar equipment (Mackinson et al. 2006).

The reasonably foreseeable effect of even the temporary displacement of a small number of fishing vessels due to offshore structures may result in cascading effects throughout Rhode Island's entire commercial fishery; those displaced vessels will move elsewhere to fish, potentially increasing localized fishing effort and more likely creating gear conflicts in areas already fished by other fishing operations. Displacement occurred on a temporary basis during the construction of the Block Island wind farm (BIWF) as observed by the CRMC, but no permanent displacement. Current wind farm proposals within the amended GLD, consisting of many more WTGs than BIWF, will temporarily displace and could permanently displace mobile gear fishermen who currently trawl in the area for multiple species, especially squid, Rhode Island's most valuable fishery. Rhode Island's CZMA federal consistency review has the potential to reduce or eliminate these impacts through developing and requiring mitigation measures in accordance with its enforceable policies.

Fishermen reported similar issues regarding displacement in the case of an offshore LNG terminal installed off the coast of Gloucester, MA in the mid-2000s (see Dorry 2005; Rosenberg 2005). The reasonably foreseeable effect is that RI-based trawlers may need to relocate to other areas currently used by other fishermen - possibly fixed gear fishermen who harvest lobsters and Jonah crabs, another of the state's most valuable fisheries. Such fishing conflicts have been managed in the past due to longstanding "gentlemen's agreements" between the two gear types, but these agreements may be rendered ineffective by the installation of new offshore wind structures within BOEM lease blocks associated with the amended GLD. These concerns have been identified in recent BOEM offshore wind-related publications, workshops, and public comments (see e.g., Ecology and Environment 2014, Farrell 2012, Jedeke 2018). Since there are currently four (4) significant offshore renewable projects being proposed within the existing and amended GLD that may occur over the coming years, even temporary displacements, given the length of time for construction, would have significant impacts, thus extending the effects to RI-based coastal uses.

Rhode Island's fisheries are uniquely vulnerable to potential impacts on fishing access and activities. As discussed above, spatial data analysis conducted for the amended GLD indicates that Rhode Island commercial fishermen operate in the amended GLD and rely on this area for their livelihoods. In particular, Rhode Island's most lucrative commercial fishery, the squid fishery, relies disproportionately on this particular area of federal waters within the amended GLD for their landings.

Moreover, Rhode Island ports land and process more than half of all longfin squid harvested along the U.S. Atlantic coast, and 14% (or 1/7) of this RI-landed squid is harvested within the amended GLD. Beyond squid, Rhode Island's commercial fisheries rely on the waters south of Martha's Vineyard for their livelihoods. A 2017 BOEM study of the potential socioeconomic impact of Atlantic wind energy area (WEA) development on fisheries, which included the Massachusetts WEA (in which the amended GLD is located), found Rhode Island to be among the most exposed and potentially impacted fisheries with regard to WEA development (Kirkpatrick *et al.* 2017). The port of Point Judith, RI was among the most exposed ports in terms of total revenue, and Rhode Island ports were among the most exposed in terms of percentage of total fishing revenue from WEAs. Rhode Island fixed gear (pot and gillnet) vessels less than 50 feet in length were among the most exposed gear and vessel classes. Further, Rhode Island pot and gillnet vessels were predicted to expect "measurable impacts" from WEA development (Kirkpatrick *et al.* 2017).

Indeed, we can reasonably foresee the temporary displacement of RI-based commercial fishing activity within the amended GLD, as temporary displacement of commercial fishing operations did occur during the installation phase of the Block Island wind farm in 2015. We anticipate similar temporary displacement during WTG construction activities within the amended GLD,

but on a much larger scale considering the potential for hundreds of WTGs within this area. In addition, the displacement when taken in total for the extent of affected area and time scale, will be significant and may adversely affect the fishery based in Rhode Island ports. Many of the current small scale fisheries are marginally profitable operations and any perturbation that occurs over a period of several years will potentially put these RI-based operations out of business. As such, the reasonably foreseeable coastal effect is that the construction and placement of new offshore structures within the amended GLD has the potential to significantly disrupt RI-based commercial fishing access and operations throughout the amended GLD resulting in a reduction in total Rhode Island fish harvested and fishing related revenues.

All of the aforementioned impacts may affect commercially targeted fish species in and around the amended GLD, thereby affecting Rhode Island fisheries that rely on these fish species. The reasonably foreseeable coastal effect is that the cumulative impacts may result in the short- or long-term displacement of fish species that sustain Rhode Island's commercial fishing businesses, reducing the quantity of harvest and income to Rhode Island-based commercial fishing operations.

7. Why any proposed mitigation may be inadequate.

At the leasing stage for BOEM lease blocks OCS-A 0500 and 0501, BOEM excluded some lease blocks to accommodate feedback from the Massachusetts Fisheries Working Group. There were, however, no substantive discussions with the Rhode Island commercial fishing industry regarding the Massachusetts Wind Energy Area (MA WEA) at that time and consequently additional areas were not considered for removal within the MA WEA as was done for the Rhode Island/Massachusetts Wind Energy Area. Nevertheless, the dominant commercial fishery within the amended GLD, including BOEM lease blocks OCS-A 0500 and 0501, is the Rhode Island-based squid fishery. The first Construction and Operations Plan (COP) from the MA WEA has now been submitted (the Vineyard Wind 800MW project), posted to BOEM'S website, and the environmental review process has begun. Feedback during scoping for the draft Environmental Impact Statement indicates that initial removal of lease blocks primarily reflected the interests of the offshore scallop industry, primarily New Bedford, MA based vessels. Since the DEIS is still under development BOEM has not proposed any mitigation measures for commercial fishing interests. The combination of the type of commercial fishing operations by Rhode Island-based commercial fishermen, which is consistent with methods used by other commercial fishermen throughout southern New England ports, and the placement of wind turbines within the amended GLD does not exist anywhere else in the world. Because the specific circumstances of southern New England wind energy development is unlike that in the North Sea, or elsewhere in Europe, Rhode Island based fishermen believe that the situation in Europe is different than in the U.S. Thus, any proposed mitigation must be designed for local U.S conditions. BOEM's 2007 OCS Alternative Energy Final Programmatic EIS

(FPEIS) provides for several program-level mitigation measures for commercial fishing activities as follows:

- Avoid locating energy facilities and cables near known sensitive fish habitats and within known high-use fishing areas;
- Require lessees to review planned activities with potentially affected fishing organizations and port authorities to prevent unreasonable fishing gear conflicts; and
- Where possible, bury cables to prevent conflicts with fishing gear.

See Section 5.2.23.6 of BOEM FPEIS at 5-138.

The BMPs identified in the FPEIS were initial, minimum mitigation measures. The FPEIS goes on to state “As projects are developed and new information is collected, the MMS will update these policies and BMPs” (see Chapter 2.7). Since the DEIS for the first COP within the proposed GLD is currently under development by BOEM, it is unclear what project specific mitigation measures may be imposed by BOEM in the EIS. In addition, individual lessees in the RI and MA WEAs must include BMPs and mitigation measures in their COPs per BOEM’s regulations at 30 CFR §§ 585.621 and 585.626. Nevertheless, it appears at the present time that the BOEM program-level mitigation measures for commercial fishing activities and the currently proposed COP mitigation measures are inadequate to mitigate coastal effects to RI-based coastal uses, the commercial fishing industry.

The enforceable policies in Section 1160.8 of the Ocean SAMP impose a specific obligation on the Council for mitigation. Section 1160.8 states,

For the purposes of Fisheries Policies and Standards as summarized in Chapter 5, Commercial and Recreational Fisheries, sections 560.1-560.2, mitigation is defined as a process to make whole those fisheries user groups that are adversely affected by proposals to be undertaken, or undertaken projects, in the Ocean SAMP area. Mitigation measures shall be consistent with the purposes of duly adopted fisheries management plans, programs, strategies and regulations of the agencies and regulatory bodies with jurisdiction over fisheries in the Ocean SAMP area, including but not limited to those set forth above in 1150.4.2. Mitigation shall not be designed or implemented in a manner that substantially diminishes the effectiveness of duly adopted fisheries management programs. Mitigation measures may include, but are not limited to, compensation, effort reduction, habitat preservation, restoration and construction, marketing, and infrastructure improvements. Where there are potential impacts associated with proposed projects, the need for mitigation shall be presumed. Negotiation of mitigation agreements shall be a necessary condition of any approval or permit of a project by the Council. Mitigation shall be negotiated between the Council staff, the FAB, the project developer, and approved by the Council. The reasonable costs associated with the negotiation, which may include data

collection and analysis, technical and financial analysis, and legal costs, shall be borne by the applicant. The applicant shall establish and maintain either an escrow account to cover said costs of this negotiation or such other mechanism as set forth in the permit or approval condition pertaining to mitigation. This policy shall apply to all Large-Scale Offshore Developments, underwater cables, and other projects as determined by the Council.

Since there is no specific mitigation provided by BOEM or the State of Rhode Island prior to the BOEM environmental review process having taken place, and this type of commercial fishing combined with the placement of offshore wind farms does not yet exist to serve as a model for mitigation, it will be up to the CRMC staff working with the Fishermen's Advisory Board to develop and propose mitigation absent consultation with adjacent states and Federal authorities, should the amended GLD be approved by NOAA. It is the intent of the State of Rhode Island to reach mitigation agreements with each project that meets the needs of RI-based commercial fishing interests that may operate in the amended GLD in accordance with the enforceable policy of Ocean SAMP Section 1160.8. A case in point is the recent 3-month status letter (issued pursuant to 15 CFR § 930.78(a)) on the proposed Vineyard Wind 800MW wind farm project where CRMC working with the Fishermen's Advisory Board developed an alternative wind farm array layout that would reduce conflicts between the wind facility and RI-based commercial fishery operations within the WDA. This alternative layout as part of the 3-month status letter was provided to Vineyard Wind on July 2, 2018.

As a cooperating agency on the BOEM Vineyard Wind EIS and subsequent EISs for other offshore wind facilities, RI CRMC will have the ability to review and comment on all environmental analysis and BOEM proposed mitigation measures prior to the documents being published. This role allows RI CRMC to provide input and have it potentially implemented before EIS documents are published and/or finalized. However, without NOAA approval of the amended GLD and due to the timing of any federal consistency review, the CRMC cannot solely rely upon the BOEM cooperating agency process. Therefore, the state seeks NOAA approval of the amended GLD to ensure that listed activities will be subject to CRMC federal consistency review.

8. Empirical data and information that supports the effects analysis and: can be shown to be reliable such as NEPA EIS documents; visualizes the affected area, resources and uses with maps; and shows intensities, concentrations, values, trends and vulnerabilities.

The analysis relies upon BOEM studies, RIDEM fisheries data, Northeast Ocean Data Portal data, and other reliable sources of data cited within the attached references section. This analysis has provided well documented maps developed from reliable data sources showing intensity of uses and resources within the amended GLD. Additionally, concentrations and economic values of the coastal resources that Rhode Island commercial fishermen rely upon that are located

within the amended GLD area are provided within tables 2 through 11 and are based upon ACCSP reported landings within Rhode Island.

Data sources are as follows:

1. Commercial fishing activity shown in Figures 2, 5, 6, and 7 depict specific commercial fishing sectors within the amended GLD and surrounding area with data obtained from the Northeast Regional Planning Body data portal at: <https://www.northeastoceandata.org/data-download/>.
2. Rhode Island-based commercial squid fishing activity within the amended GLD as shown in Figures 3 and 4 depict multiple Rhode Island vessel chart plotter tracks in a single graphic provided by The Town Dock, Narragansett, RI and the Commercial Fisheries Center of Rhode Island via email attachments: <http://www.towndock.com/> and <https://cfcri.org/home>, respectively.
3. Rhode Island commercial fishing landings represented in Tables 4 through 11 were processed by Julia Livermore, RIDEM Division of Marine Fisheries Principal Marine Biologist, using data derived from the Atlantic Coastal Cooperative Statistics Program (ACCSP) Data Warehouse portal: <http://www.accsp.org/data-warehouse>.

B. List of Federal License or Permit Activities (15 CFR Part 930, Subpart D), and Outer Continental Shelf (OCS) Authorizations (15 CFR Part 930, Subpart E) Subject to CRMC CZMA Review within the Amended GLD

1) License and Permit Activities and OCS Authorizations

Department of the Interior

- Permits and licenses for drilling and mining and related facilities on public lands
- Permits required for pipelines crossing federal lands, including OCS lands, and associated activities pursuant to the OCS Lands Act (43 U.S.C. 1334) as well as 43 U.S.C. 931(c).
- Permits to drill, rights-of-use, rights-of-way, and easements for construction and maintenance of pipelines, gathering and flow lines and associated structures pursuant to 43 U.S.C. 1334, explorations and development plans, and any other permits or authorizations granted for activities described in detail in OCS exploration, development, and production plans.
- Permits for the granting of outer continental shelf corridor rights-of-way (43 USC 931(c))
- Issuance or approval of leases, permits, easements, rights-of-way, exploration plans, development plans, production plans, and other authorizations, as appropriate,

pursuant to the Outer Continental Shelf Lands Act (43 U.S.C. 1331 *et seq.*) as amended by the Energy Policy Act of 2005 (42 U.S.C. 15801 *et seq.*) for the construction, operation, maintenance and/or support activities related to OCS energy development.

2) Thresholds and Exclusions

Federal consistency review of the licenses and permits listed above is sought only for the following project types proposed for the Amended GLD. The following thresholds apply to all of the licenses and permits listed herein:

- i. Any offshore wind facilities of a permanent nature, regardless of size; and
- ii. Underwater cables.

The CRMC proposes to exclude federal consistency review for floating meteorological buoys only (*e.g.*, Fugro SEAWATCH Wind LiDAR metocean buoy) within the Amended GLD.

C. Routine Program Change Analysis for Amended GLD

The CRMC has determined that the addition of the amended GLD to the RICRMP is not a substantial change to the RICRMP in accordance with 15 CFR § 923.84(b) and requests OCM's concurrence that it is a routine program change. The amended GLD is an extension of the implementation of the Ocean SAMP and existing approved GLD. The Ocean SAMP contains the enforceable policies and information that would be applied in federal waters through the CZMA federal consistency provisions. In 2011 OCM approved the incorporation of the Ocean SAMP into the RICRMP as a routine program change including the approved original GLD. We, therefore, conclude that the amended GLD should also be a routine program change. Moreover, the CRMC already has the ability to review the listed federal license or permit activities in federal waters on a case-by-case basis pursuant to 15 CFR § 930.54. The amended GLD provides the state with greater surety that it will be able to review these activities that have reasonably foreseeable effects on Rhode Island coastal uses and resources. The amended GLD would also provide greater predictability to federal agencies and applicants for federal authorizations regarding CRMC's CZMA interests and, in fact, excludes some activities from CRMC review.

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