December 22, 2020

Lou Chiarella  
Assistant Regional Administrator  
NOAA Fisheries Greater Atlantic Regional Office  
Habitat Conservation and Ecosystem Services Division  
Via e-mail

Dear Lou,

Please accept these comments from the New England Fishery Management Council (Council) regarding Blue Water Fisheries aquaculture project in federal waters off Massachusetts and New Hampshire. As you know, the Council has primary management jurisdiction over 28 marine fishery species in federal waters and is composed of members from Connecticut to Maine. Many of the fisheries and species we manage occur in and around the identified project area.

We appreciate the opportunity to engage with staff from NOAA, the Environmental Protection Agency, the U.S. Army Corps of Engineers, and the developer on this project during the pre-application phase. Council staff reviewed the November 2020 siting analysis prepared by NOAA’s National Centers for Coastal Ocean Science and attended the December 10 interagency pre-application meeting. Below, we provide some specific comments on this analysis. We are also enclosing the Council’s new aquaculture policy, which was approved on December 1. We would be happy to discuss specific ideas for socializing the site amongst the fishing and fishery management community in more detail in the coming months, including at our own meetings.

Per our aquaculture policy, the Council has concerns about siting aquaculture operations in sensitive habitat types. The Council recommends that aquaculture development avoid areas of complex seafloor habitat when possible, complex meaning pebble, cobble, or boulder-sized sediments, especially those with attached epifauna. In terms of epifauna, we recommend avoiding deep-sea coral and sponge habitats in particular. These species do occur in the Gulf of Maine although not, to our knowledge, at this location. These recommendations seem consistent with the developer’s desire to site the project on areas of soft bottom.

The challenge will be determining exactly where these complex habits occur. We know from our habitat conservation work that data on coarse grained sediments in offshore location can be somewhat sparse. It seems that that bathymetric data collected by the University of New Hampshire and evaluated in the siting report are detailed and will be useful for identifying seafloor features at relevant spatial scales, but we are concerned the U.S. Geological Survey (USGS) sediment texture and usSEABED databases may be missing areas of coarse sediment in the project area, given that these sources rely mostly on grab samples which are not well suited to identifying larger grain sizes. Looking briefly at the USGS data sets, there seem to be a relatively small number of observations from these sources in and around the eight candidate sites. We recommend that the environmental survey plan includes a detailed characterization of sedimentary features. We expect that acoustic methods would be used to characterize the site and
suggest that the developer should consider verifying acoustic data with seafloor imagery if possible.

Moving into the baseline environmental surveys phase, we suggest that GARFO habitat staff be included in conversations about seafloor mapping efforts to ensure that the data gathered are useful for evaluating potential impacts to essential fish habitat. As you are aware, in the context of offshore wind development, your office has developed habitat mapping recommendations that should allow us to understand seafloor characteristics in project areas in relation to the sorts of habitat features used by fishes. These recommendations (which we have shared via our offshore wind website) include suggested substrate classifications under the Coastal and Marine Ecological Classification Standard (CMECS) framework. Aquaculture projects are developed within smaller areas than offshore wind farms, so the wind-oriented recommendations may not map exactly to this issue in terms of spatial scale, but we expect many elements of those recommendations to be useful in an aquaculture context.

In addition to avoiding areas of complex benthic habitat, we are very concerned about potential intersections between the project area and spawning locations used by Atlantic cod. Gulf of Maine cod stock biomass is low, and the Council has enacted many restrictions on harvest, including catch limits and spatial and temporal fishery closures, to protect the resource. The Whaleback closure (formally known as the Gulf of Maine Cod Spawning Protection Area) was developed by the Council around ten years ago to minimize fishery interactions with spring spawning fish. We know that cod are sensitive to physical and acoustic disturbance when aggregating to spawn. We also know that they exhibit site fidelity, returning to specific seafloor features over multiple years. While an aquaculture installation might have a relatively small footprint, it would nonetheless be problematic if one of the arrays were located on or close to one of these features. Maintenance of all inshore spawning components is important, in part because there is movement of fish between spawning sites (e.g., Whaleback) and within and among spawning grounds (e.g., Ipswich Bay, Massachusetts Bay) which allows for genetic exchange in the population.

The Council’s aquaculture policy also recommends caution around siting aquaculture projects in areas with substantial amounts of fishing activity or vessel transit that could be impeded by the presence of fish cages and mooring lines. In terms of characterizing fishing activity, we recommend using a combination of vessel trip report (VTR), vessel monitoring system (VMS), and automatic identification system (AIS) data, since each source has limitations and gaps. Desktop analyses should be combined with discussions with participants in potentially affected fisheries to understand patterns of activity in more detail. We have found that looking at both


catch and revenue information is useful to provide a more complete perspective on activity, because some fisheries are higher volume and some are higher value.

VMS data are useful for showing where many types of fishing vessels are located, but do not cover all fleets. Relative to this site, activity of vessels targeting lobster and whiting will most likely be missing from VMS data, underscoring the importance of investigating activity using VTRs. Filtering VMS data for vessel speed can better indicate locations likely to represent fishing activity, and different filters are appropriate for different gear types. With the aquaculture gear generally below the surface, it may be that transiting vs. fishing near the net pens and mooring system would pose distinct concerns, which might vary by type of gear (fixed or mobile). If this is the case, it would be useful to distinguish transiting vs. fishing behavior as clearly as possible.

VTR data provide much more information including landings by species and are readily linked to dealer data to estimate ex-vessel revenues. GARFO and the Northeast Fisheries Science Center’s fishing activity analysis tool uses the VTR- and observer-based ‘fishing footprints’ data products referenced on page 17 of the siting report. See here and here for more information. While the tool was developed for offshore wind siting analysis, it should be possible to evaluate fishing information for any set of coordinates, including Blue Water Fisheries’ area of interest. We understand that Ben Galuardi and Doug Christel at GARFO are good contacts for providing products based on the fishing footprints data.

Below, we provide some additional information on fishing activity in fisheries that we manage, plus the lobster fishery, based on VTR data from 2014-2018, unless otherwise noted. We also looked at clam dredge data and note that this fishery does not appear to overlap the area of interest. Neither VTR nor VMS data provide information on private angler recreational fishing activity.

- **Groundfish:** Groundfish are caught commercially in bottom trawls, gillnets, longlines, and handlines. In terms of the commercial fleet, this location appears to be an important area for bottom trawl fishing (Map 1) for species including American plaice, witch flounder, and Atlantic cod. This activity is concentrated along the western/landward edge of the area of interest. Gillnet and longline fishing activities seem to occur outside of the area, to the east. In addition, the groundfish fishery includes a recreational hook and line component, which is active in this general location. Unfortunately, spatial data depicting recreational fishing activity, both in the for-hire fleet and among private anglers, is limited regardless of data source. During development of the Whaleback spawning closure, there were many comments that this general area is frequently used by private anglers who do not use VMS or AIS, and who do not submit VTRs. An effort should be made to contact these fishermen to determine areas that may be of particular interest to them.

- **Whiting:** Whiting are harvested with small mesh bottom trawls, which means that the fishery requires an exemption from broader regulated mesh areas to operate. All eight candidate areas are within the whiting exemption area referred to as Small Mesh Area I. This area is open to fishing between July 15 and November 15 and is one of a few locations in the Gulf of Maine where whiting can be targeted. Small mesh multispecies revenue appears to have a strong degree of overlap with the area of interest (Map 2; data are from 2013-2017). In this location, the spatial distribution of revenue associated with all bottom trawls (Map 1) is similar to revenue associated with just small mesh multispecies (Map 2), suggesting that the whiting fishery is a major contributor to bottom
trawl revenues in this location. The two maps diverge in other locations (see map insets for comparison)

- **Herring:** Purse seine fishing occurs to the northeast of the area of interest, and mid-water trawling occurs to the southeast (both sets of data are overlaid on Map 3). Thus, at least for the period 2014-2018, this specific location does not seem to be used by the herring fishery.

- **Sea Scallops:** We compared the plots in the siting report to recent estimates of activity based on VMS data prepared for our scallop fishery management plan. The data were filtered to represent vessel speeds between 2-5 kts and binned into three-minute squares. Grids indicating less than 20 hours annual fishing activity, or within state waters, were removed. This evaluation, for calendar years 2015, 2016, 2018, 2019, and 2020 (through mid-October; we did not have these data for 2017 on hand) suggested little overlap between scallop fishing and the general area of interest for the project. VTR data show similar patterns (both VMS and VTR data are shown on Map 4). Overall, the scallop fishery in Ipswich Bay appears to occur southwest of the project site. More information on the scallop resource in this region is available in a 2018 stock assessment workshop document, starting on page 199.

- **Lobster:** Based on VTR data (Map 5), there appears to be lobster pot activity in and around the sites, especially 1, 6, 7, and 8. Since not all lobster fishermen are required to submit VTRs, it is possible that other sites are fished as well. From our experience, many pot fishermen have very specific and consistent spatial patterns of activity.

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

Sincerely,

Thomas A. Nies
Executive Director

cc: Kevin Madley, Eric Nelson, Rick Kristoff, Chris Moore, Scott Flood
Enclosure: NEFMC Aquaculture Policy, approved December 1, 2020
Map 1 – Bottom trawl revenue from VTR, sum of 2014-2018 data. Includes both large mesh (groundfish, and any other large mesh species) and small mesh (whiting, and any other small mesh species).
Map 2 – Small mesh multispecies revenue from VTR (mostly whiting, also referred to as silver hake; this data set also includes red and offshore hake). As shown in the inset, effort in this fishery is associated with specific exemption areas, outlined in blue.
Map 3 – Purse seine (green/brown) and midwater trawl (pink/blue) revenue from VTR. These data sets are likely to represent the Atlantic herring fishery, although other species harvested by these gears would also be reflected in these data.
Map 4 – Scallop revenue (VTR, by 500 m grids) overlaid on hours of effort (VMS, by larger three-minute squares). These data suggest that scalloping occurs just south and west of the area of interest. There is also a state waters fishery for scallops off this part of Massachusetts (data not shown).
Map 5 – Lobster pot revenue based on VTR. Lobster vessels are not required to submit VTRs unless they hold another federal permit; our understanding is that data for the areas offshore MA and NH are fairly complete, but data off Maine are spotty.
New England Fishery Management Council
Aquaculture Policy

Approved December 1, 2020

Introduction
NOAA Fisheries defines aquaculture as the breeding, rearing, and harvesting of fish, shellfish, algae, and other organisms in all types of water environments. Aquaculture activities occur in onshore, nearshore, and offshore environments. Construction and operation of aquaculture facilities can have both positive and negative impacts on marine habitats, species, and fisheries. Various state and federal agencies are involved in permitting aquaculture projects. Potential impacts are considered during the siting and environmental review process, and in many cases can be mitigated via project siting or design choices. NEFMC’s Aquaculture Background Document provides more information on current and future aquaculture activities in the New England region, the process for permitting aquaculture projects, and the potential impacts of aquaculture on marine fishery species and their habitats.

The NEFMC’s Habitat Policy (Operations Handbook) recognizes that all species are dependent on the quantity and quality of their habitat, and therefore establishes that the NEFMC shall assume an active role in the protection of such habitats. As required under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) implementing regulations (CFR Part 600 Subpart J), the NEFMC designates essential fish habitat for each of the species it manages, and for some species and in some locations, identifies habitat areas of particular concern. Part 600 Subpart K of the MSA regulations detail NOAA Fisheries and Regional Fishery Management Council responsibilities to consult with federal agencies when their activities may affect essential fish habitats. Beyond habitat considerations, as a steward of the species it manages, the NEFMC has an interest in ensuring that these species are not negatively affected by non-fishing activities occurring in the marine environment. The NEFMC also has an interest in promoting safe operation of commercial and recreational fisheries for these species. To this end, the Council provides input and guidance on the conduct of other marine activities in a way that promotes compatibility with fishing.

Given the NEFMC’s regulatory responsibilities, interests, and expertise, the Council is committed to consulting with NOAA Fisheries, other federal and state agencies, and aquaculture developers to ensure that aquaculture activities in New England are developed in a manner that is compatible with the protection of Council-managed species and their habitats, and with commercial and recreational fishing activities. This includes but is not limited to providing input on project siting or design, based on the following list of considerations and best management
practices. Consultation should take an “early and often” approach, whenever possible, to communicate concerns during the design phase, thus increasing opportunities for modification, rather than mitigation, of impacts. Given that Council-managed species and their EFH occur both nearshore and offshore, projects in various locations and of both smaller and larger scales are of interest to the Council. Because individual aquaculture operations do not occur in isolation from one another, or from other types of development, it is very important to consider the potential for cumulative effects to species under management, habitats, and fisheries when siting and designing projects. Cumulative effects analyses are the responsibility of the lead federal agency preparing the National Environmental Policy Act document, but the Council will commit to raising specific concerns for possible incorporation into those analyses. The Council recognizes that, like wild capture fisheries, aquaculture contributes to food production and food security, and that aquaculture is a valid and valuable use of the coastal zone and the EEZ.

The primary audience for this policy is the Council itself, as it engages in these consultations. Secondary audiences include NOAA Fisheries, other federal agencies (including those responsible for enforcing permit conditions), state agencies, fishermen, aquaculture developers, and other members of the public.

Specific considerations and best management practices

The remainder of this policy is organized around general, higher-level principles for project design, followed by specific considerations and best management practices. The general principles encompass the Council’s major areas of concern. The lists of specific considerations are not exhaustive but provide examples of best practices. Generally, projects should comply with local, state, and federal permitting guidelines, and adhere to existing best management practices relevant to the type of operation being considered (see background document for a list of BMP resources). Where BMPs cannot be met, proponents should provide a rationale as to why in the application materials.

1. General principle: Aquaculture projects should be sited and designed in the context of ecosystem functions and services, including biodiversity, with no degradation of these beyond their resilience.
   a. Siting should consider the intersection between aquaculture facilities and designated essential fish habitat and habitat areas of particular concern and avoid installations in areas where adverse effects are more than minimal or more than temporary. Developers and action agencies should document how conclusions regarding magnitude and duration of impacts were reached.
   b. Siting should consider interactions with fishery management areas including those designated for habitat and spawning protection and consider whether installation compromises achievement of these conservation objectives, with a particular focus on maintaining function of rocky habitats.
c. Siting should consider oceanographic conditions such as currents, waves, and the potential for severe weather. For projects producing effluents, modeling should be conducted to ensure adequate dispersal of wastes. In addition, structures should be designed to withstand routine and historic weather events to minimize the risk of escapement of cultured animals and formation of marine debris from storm related damage.

d. Siting should avoid marsh and seagrass habitats to minimize adverse effects on these habitats. Allow for a buffer between these habitats and any infrastructure where possible, as recommended by state and federal resource managers. If sensitive habitats such as seagrasses cannot be avoided, consider whether an alternative type of gear could be used to minimize effects. Specific to seagrasses, since these habitats are reduced relative to their historic distribution but recovering in some locations due to water quality improvements, siting should ideally avoid locations where these habitats historically occurred. Current site conditions should be confirmed via on-site inspection. State resource managers can provide information about past habitat distributions. Because resource managers are interested in the restoration of habitat value associated with seagrass, operators should communicate if they notice that seagrasses are regrowing at the site, so that operational impacts to seagrasses can be minimized.

e. Siting should avoid habitat types and other resources including existing shellfish beds that could be sensitive to the discharge of organic material or effluent from aquaculture operations. Even if facilities are installed in the water column, discharges could affect both the water column and seabed near or below the facility.

f. Siting should avoid areas where coral and sponge habitats occur, including within the Council’s coral protection zones. Anchoring of vessels and grow out structures, as well as deposition of organic material, could negatively impact deep-sea corals and sponges, which are in many cases long-lived and fragile. These habitats are spatially rare and therefore possible to avoid. NOAA Fisheries can serve as a resource in terms of identifying coral habitats.

g. In addition to relying on existing data, site surveys may be required to determine exactly where specific habitats occur.

2. General principle: Adopt operational practices that minimize adverse environmental effects wherever possible.
    a. All proposed gear and structures should be designed and secured in a manner sufficient to withstand routine and episodic site conditions in order to reduce the risk of creating marine debris or other hazards that could result in negative interactions with sensitive habitats, vessels, and/or marine species.
b. If the addition of unconsolidated materials or fill (e.g. sediments, cultch) is proposed, ensure they are compatible with those naturally occurring at the site.
c. Minimize indirect impacts (i.e. increased turbidity and siltation in adjacent areas, access through sensitive areas, etc.) associated with maintenance and harvest activities.
d. Gear maintenance and husbandry practices should be conducted in a manner that minimizes the potential for culled and fouling organisms to negatively impact sediment and water quality or exacerbate the spread of invasive species.
e. Disease testing and other practices should be adopted to minimize the risk of the introduction or spread of shellfish or fish diseases or parasites that could negatively impact wild populations.
f. Whenever possible, use only native or naturalized species unless the best available science demonstrates that the use of non-native or other species would not cause undue harm to wild species, habitats, or ecosystems, in the event of an escape.
g. Emergency response plans should be developed to minimize the likelihood of escapement in the event of gear damage.
h. Gear and any in-water structures should be removed completely if a facility is taken out of service.

3. General principle: Development should consider the cumulative effects of multiple aquaculture facilities on the ecosystem, within the context of ecosystem change and resilience.
   a. Resilience refers to both the aquaculture operation itself and the associated ecosystem perturbations.
   b. Consider whether there is a synergistic relationship with other ocean uses.

4. General principle: Aquaculture operators should contribute positively to local and regional coastal communities. This could include actions such as:
   a. Creating jobs in coastal communities.
   b. Supporting traditional fishing communities.
   c. Revitalizing working waterfronts.
   d. Restoring depleted species and habitats.
   e. Supporting efforts to reduce runoff and improve coastal water quality at both local and regional scales.

5. General principle: Aquaculture should be developed in the context of other sectors, policies, and goals.
   a. Planning and zoning should consider safety and compatibility with other marine operations.
b. Siting and project design should consider coastal access for other users of the area.
c. Aquaculture siting should rely on high-quality information about both regional and local environmental conditions and the distribution and characteristics of other human uses in the area.
d. Facilities should be sited to avoid well-known vessel transit lanes, including those used by fishermen.
e. Facilities should be sited to avoid fishing grounds if adverse interactions are expected, considering such factors as the number of individuals participating in commercial or recreational fishing, the type of fishing gear used, the number of fishing days, and the amount of harvest. Developers should consider multiple years of fishery usage data to determine overlaps, as fishing activities can vary over time.
f. Facilities should be physically marked to be visible from a vessel approaching the site, in accordance with state and U.S. Coast Guard guidelines. Facilities should also be marked on electronic navigational charts as appropriate.
g. Pilot or demonstration-scale projects are encouraged to better evaluate impacts of novel types of operations (e.g. species not previously cultured in the region, or in locations not previously used for aquaculture).
h. Analysis of projects under the National Environmental Policy Act should address Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This order provides guidelines to ensure that potential impacts on these populations are identified and mitigated, and that these populations can participate effectively in the NEPA process (EO 12898 1994).

6. General principle: Clear and ongoing communication between all parties is important. These parties include fishery management councils, commercial and recreational fishermen, developers, regulating and consulting agencies, and members of the public.
   a. Information about the project should be provided to the public (including the Council and its stakeholders) during the project design phase to allow for early input and mitigation of impacts to fish habitats and fisheries.
   b. Aquaculture developers should consult with the fishing community, early and often, when identifying potential sites. Organizations like the NEFMC, NOAA Fisheries, ASMFC, or state agencies may be able to provide information on spatial distribution of fishing activity at broad scales, but local fishing organizations will be important contacts when determining use patterns at spatial scales relevant to aquaculture projects.
   c. Permitting agencies should consider the need for public scoping sessions during the siting process to understand the concerns that stakeholders may have.
d. Permitting agencies and developers should describe how project design choices avoid or mitigate impacts on fish, fish habitats, and fisheries.
e. Developers should provide advisories about at-sea construction, survey, and maintenance operations to mariners.