



Pacific Fishery Management Council

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Marc Gorelnik, Chair | Charles A. Tracy, Executive Director

September 13, 2021

Ms. Jean Thurston-Keller
BOEM California Intergovernmental Renewable Energy Task Force Coordinator
Bureau of Ocean Energy Management
Office of Strategic Resources
760 Paseo Camarillo, Suite 102
Camarillo, CA 93010

RE: Docket No. BOEM-2021-0044

Dear Ms. Thurston-Keller:

The Pacific Fishery Management Council (Council) appreciates the opportunity to provide comments in response to the Bureau of Ocean Energy Management's (BOEM) Call for Information and Nominations on "Offshore Morro Bay, California, East and West Extensions."

In September of 2018, the BOEM initiated a Call Area scoping process for offshore wind (OSW) energy development in Federal waters off Morro Bay, California. The Council provided [comments](#) in January 2019. After consideration of potential conflicts, BOEM modified the initial Call Area with the East and West Extensions. On July 29, 2021, BOEM issued a call for information and nominations, requesting comments on potential offshore wind energy development on areas adjacent to the Morro Bay Call Area previously announced in 2018.

The Council is charged with sustainably managing West Coast fisheries, which includes conserving and enhancing habitats in support of sustainable fisheries and managed species. The Council is one of eight Regional Fishery Management Councils (RFMCs) established by the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA). The Council develops management actions for Federal fisheries off Washington, Oregon, and California, and is required to achieve optimum yield for public trust marine resources. Optimizing the yield of our nation's fisheries requires safeguarding these resources, their habitats, and the fishing communities that rely on their harvest. The Council notes that the Outer Continental Shelf Management Act and MSA both contain mandates to responsibly manage ocean resources.

Essential Fish Habitat and Council authorities

The MSA authorizes the Council to identify, conserve, and enhance essential fish habitat (EFH) for species managed under the Council's fishery management plans (FMPs). The MSA defines EFH as "*those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.*" The MSA includes additional provisions to designate Habitat Areas of Particular

Concern (HAPC) for habitats of ecological significance, sensitivity, vulnerability to degradation, or rare occurrence. The Council has identified EFH throughout the Pacific Coast region for species managed under each of its FMPs, and has designated HAPCs for groundfish (rocky reefs, estuaries, canopy kelp, seagrasses, offshore banks, seamounts, canyons, and areas of interest) and salmon (including estuaries and marine and estuarine submerged aquatic vegetation). The Council has also designated Essential Fish Habitat Conservation Areas (EFHCAs) in its Groundfish FMP, which are spatially discrete areas closed to bottom trawling and, in some cases, other types of bottom contact gear, to protect the important habitat features found there.

The MSA further authorizes the Council to comment on any Federal or state activity that may affect the habitat, including EFH, of a marine or anadromous fishery resource under its authority. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The proposed West Extension, as well as the original Morro Bay Call Area, are located in designated EFH for Pacific Coast groundfish, coastal pelagic species, salmon, and highly migratory species, and both areas overlap considerably with Council-designated rocky reef HAPC (Figure 1). Additionally, the West Extension is completely within the “Big Sur Coast/Port San Luis” EFHCA, and roughly 50 percent of the main Call Area is in that EFHCA (Figure 1). The EFHCA extends from Santa Lucia Bank to Monterey Bay Canyon and encompasses an expansive and geologically complicated region of contiguous rock, mixed substrates, submarine canyons, rocky banks, and steep slope terrain. As evidenced by the EFHCA and HAPC designations, this region is comprised of ecologically important habitat features. By definition, the EFHCA and HAPC designations convey the need for protection from human activities, including wind energy installations, that can impact seafloor habitats for Council-managed species.

Habitat, Fish, and the Marine Environment

Some areas may be particularly susceptible to changes in oceanographic processes, such as the West Extension situated in the oxygen minimum zone of the upper slope of the continental shelf (1,000-1,300 m), a unique area where oxygen concentrations are naturally and consistently low. Periodically, these low oxygen waters move onto the shelf and contribute to widespread hypoxic events. Wind-driven coastal upwelling is a primary driver of productivity in the California Current. As documented in Europe, wind power generation can reduce wind speed downwind of turbine arrays. Disruption of upwelling could also exacerbate deepwater hypoxia, since upwelling (and downwelling) processes are a major driver of renewal of oxygen conditions in coastal environments. Reduced wind speed downwind of turbine arrays could inhibit upwelling, which is a primary driver of productivity in the California Current. The potential effects of altered wind speeds on ocean processes in an area as large as the Call Area, in a region dominated by and dependent on upwelling have not been studied. The Council **recommends** that BOEM conduct scientific analyses and/or modeling to assess potential wind-generated effects on ocean processes in this region of the California Current.

There are two moderate canyon features along the western boundary of the West Extension that may be important for transporting sedimentary material from the upper slope to the lower slope.

The Council **recommends** that BOEM investigate to determine if wind energy farms would interfere with these physiographic processes.

Considering the extensive amount of rocky reef habitat currently mapped in the Santa Lucia region and the complex topography and physiography noted in existing bathymetric data, it is conceivable that additional high-resolution mapping of this region would reveal more rock and greater complexity than is currently identified in existing coarse-scale mapping products. Based on the information currently available for this area, the Council **suggests** that wind energy installations in the West Extension may be incompatible with the physical habitat resources there.

If BOEM decides to move ahead with including the West Extension in the Morro Bay Call Area, then BOEM **should** obtain updated, high-resolution seafloor mapping data for the entire expanded Call Area, followed by observational surveys (in coordination with the National Oceanic & Atmospheric Administration's (NOAA's) Deep Sea Coral Research and Technology Program) in the southwestern portion of the West Extension where NOAA's habitat suitability modeling indicates the potential presence of coral and sponge biogenic habitat. The Council **recommends** that these reconnaissance surveys be conducted in advance of the Area ID stage to identify areas where wind energy farms would be incompatible with the ecological resources and thus eliminated from further consideration and planning efforts.

Fish spawning habitat

The main Call Area and both the West and East Extensions are in the depth range of commercially important deepwater bottom fish. Dover sole, thornyhead and sablefish (DTS complex) adults occupy water depths from 800-1,300 meters. Spawning occurs in depths between 600-1,000 meters. Wind energy development could disrupt fish migration and spawning in these areas. The Council **recommends** that BOEM consult the National Marine Fisheries Service (NMFS) Northwest and Southwest Fisheries Science Centers for survey data on species abundance and spawning habitat in this region, as well as consult fishers for their local knowledge of DTS adult distribution, spawning habitat, and fishing locations in the Call Area and the two proposed extensions. The Council **suggests** that potential impacts to DTS spawning areas be carefully analyzed. DTS spawning areas may be incompatible with wind energy planning and development.

Transmission Cable and Infrastructure

Transmission cables and other offshore wind infrastructure continue to be a primary concern of the Council due to a myriad of potential impacts to EFH, benthic species and sound-sensitive species. Potential adverse effects during installation of infrastructure include vibration and noise generated by subterranean drilling; destruction of habitat features; destruction of deep-sea corals; impacts to fish and mammal species; scouring and plume caused by seafloor trenching and transmission cable burial; habitat damage during installation of mooring anchors; damage from mooring chain sweep; potential acoustic impacts; and impacts of electromagnetic fields from suspended midwater cables.

Where high-resolution seafloor data do not already exist within or shoreward of the final Call Area, BOEM **should** obtain additional seafloor mapping data to identify habitat-compatible and fishing-

compatible cable route options. In addition, cable route options should be identified prior to the Area ID stage. Doing so may prevent selecting lease areas that do not have viable cable routes.

Fisheries and Fishing

The Council anticipates that wind farm and transmission cable installations, maintenance, and decommissioning are likely to affect small fishing businesses that participate in fisheries managed under all four of the Council's FMPs, in addition to a suite of state-managed fisheries, including those for high-value crustacean species. The Council notes that the Vessel Monitoring System data addresses a relatively small percent of West Coast fishing trips and **recommends** that BOEM seek assistance from the NMFS Northwest and Southwest Fisheries Science Centers to better assess the social and economic effects of wind farm installations on fishing activities, businesses, and coastal economies adjacent the Call Area.

The Call Area is one of historic importance for albacore and swordfish fisheries. Between 1978 and 2017, the Morro Bay call area accounted for 227.2 metric tons of albacore for commercial harvesters and 8,234 fish for commercial passenger carrying vessels targeting albacore. In recent years there has been a shift in fishing effort of albacore to locations north of the Call Area, but it is unknown whether that is a long-term shift or one related to recent warm-water conditions prevalent in the area (the marine heatwave and El Niño which predominated in the mid-2010s). Likewise, the swordfish fishery was heavily dependent on areas in and around the Call Area. Due to regulatory pressures and the creation of the Pacific Leatherback Sea Turtle Conservation Area, effort has diminished. However, with Deep-Set Buoy Gear likely to be authorized as a gear type for targeting swordfish, it is foreseeable that the area in and around the Call Area will see both an increase in effort and harvest of swordfish. In recent years, Southern California fishermen are documenting increased abundance of Pacific Bluefin Tuna in the Southern California Bight. If that stock is taking a more northerly migratory pattern, it is foreseeable that the waters in and around the Call Area will become important for the California-based Pacific Bluefin fisheries, both commercial and recreational.

The East Extension overlaps with valuable deepwater groundfish fishing grounds. This area was historically important for trawl harvest of dover sole and sablefish and is currently an important area for fixed gear sablefish harvest. Currently there is no large-scale market for groundfish trawl vessels; however, this could change in the future. Historic production from trawl vessels in the East Extension should be considered as a placeholder for future fisheries impacts. According to one commercial fisherman, during 1990-2006, 75 percent of the Morro Bay fleet's landings were from groundfish, one of the top three fisheries for that area.

The Council is concerned that recent fishery management changes made to minimize effects on marine mammal and turtle migrations and offshore seabirds may be compromised by offshore wind installations. There are concerns that a wind energy farm as large as the Call Area may alter migratory patterns of these and other marine species, and in order to avoid interactions with them, fishery participants would need to relocate or alter fishing methods in response. The Council **recommends** that BOEM investigate potential impacts to marine mammal and turtle migratory patterns from large offshore wind farms both during the construction phase, during normal operations, and during decommissioning.

The Council expects that for safety and liability reasons, the layout of deep sea moored wind turbines will effectively prevent the use of some or all fishing gear in designated wind energy lease areas. The socioeconomic impacts of these exclusions to Council-managed fisheries and other parts of the human environment may be significant. Spatial data for many fisheries is lacking, making it difficult to estimate the economic impact these projects would have on the fishing industry. Wind energy farms will likely disrupt or displace many fishers from their traditional fishing grounds, causing a reduction in total fishing effort and lost productivity (i.e., economic impact) by having to fish in less productive or less safe areas. Displaced fishers would likely concentrate their efforts immediately outside the wind farm boundary, resulting in increased pressure on fish and habitat in those areas. The Council **recommends** that BOEM directly engage with the fishing community to incorporate their fishing knowledge at this stage in the process by documenting and quantifying fishing locations, effort and value on their fishing grounds, location of past and future fishing, and to better understand the socioeconomic effects of displacing them from their traditional fishing grounds.

Since many Council-managed fisheries are coastwide and considering that BOEM has also identified a Humboldt Wind Energy Area and will likely identify more West Coast areas for wind energy development, the Council **recommends** that BOEM conduct a *coastwide* cumulative effects analysis of all wind energy proposed areas (taking into consideration all areas in the region closed to fishing) on all commercial and recreational fisheries, fishing communities, and impacts to domestic seafood production (including port-based fishery-specific facilities and related services).

Fisheries management

As BOEM considers the effects of wind energy areas on fishing and fisheries, it will be important to consider the effect of spatial fishing regulations (past and present) on the distribution of fishing effort. As noted above regarding the albacore, swordfish and groundfish trawl fisheries, historical fishery information from logbooks and from direct discussion with local fishermen and processors will identify important fishing areas that won't necessarily be indicated in recent datasets. Fishermen are likely to return to some of these historic fishing grounds and should be consulted about areas they intend to return to and the anticipated economic value of those areas so BOEM can assess future impacts of wind energy farms and lost opportunity costs to the fishing industry.

Fisheries stock assessments and management measures depend largely on NMFS annual at-sea surveys fisheries. These scientific surveys are conducted on decades-old survey routes. Disruption or displacement of survey routes by wind energy farms would have direct consequences to stock assessments and fisheries management. Impacts to fisheries research and survey routes **should** be considered at this stage in the process.

Summary of Council Comments

The direct and indirect effects of wind energy areas on fisheries, habitats, socioeconomics, and ecological resources should inform all wind energy area planning processes, and should do so *in advance of* the leasing, permitting, and construction phases of wind energy development.

EFHCAs are spatially discrete areas closed to bottom trawling and, in some cases, other types of bottom contact gear, to protect the important habitat features found there. HAPCs are specific habitat features or spatially discrete areas representing high priority habitats for conservation, management, or research and are important for healthy ecosystems and sustainable fisheries. These features include areas identified as spawning habitat for sablefish and dover sole, other ecologically sensitive resources, EFHCAs, HAPCs, and important fishing grounds. It is the Council's opinion that wind energy planning and development may not be compatible with the presence of these important physical and biogenic habitat features, including EFHCAs, HAPCs, and major rocky structures elsewhere in the area. The Council recommends that BOEM conduct a careful impacts analysis relative to EFHCAs and HAPCs and provide demonstration that OSW projects will not cause significant harm to these designated areas.

Additional precautionary measures include establishing buffer zones to protect resources and fishing, where indicated; using location and design criteria to further minimize impacts to fishery resources from wind energy projects and cable routes; and any activities associated with the establishment or maintenance of those structures.

In summary, the Council offers the following recommendations:

- Before advancing to the Area ID stage for any Call Area, investigate whether wind energy farms could exacerbate hypoxic events occurring on the shelf by accelerating the wind and upwelling in the project area or conversely reduce winds speed downwind from wind farms enough to reduce upwelling critical to ocean productivity.
- The West Extension of the Morro Bay Call Area includes important physical and biological resources with existing habitat protections. The development of energy infrastructure may be incompatible with these important physical and biological resources. The Council recommends BOEM consider use of buffer zones to avoid HAPCs and EFHCAs and to minimize impacts to these areas, including from cable routing, construction, and maintenance activities.
- If the West Extension is designated, determine whether wind energy farms could interfere with the physiographic process of sediment transport in the moderate canyons there.
- Obtain updated, high-resolution seafloor mapping data for the entire expanded Call Area and data on biogenic species in the West Extension (if designated). Surveys should be conducted in advance of the Area ID stage for any Call Area process.
- Consult with NMFS Northwest and Southwest Fisheries Science Centers on DTS species abundance and spawning habitat in the Call Area and proposed Extensions.
- Consult fishermen for their local knowledge of DTS adult distribution, spawning habitat, and fishing locations in the Call Area and proposed Extensions.
- Analyze potential impacts and consider whether known spawning areas are compatible with wind energy areas.
- Obtain seafloor mapping data to identify habitat-compatible and fishing-compatible cable route options and do so prior to the Area ID stage.

- Investigate potential impacts to marine mammal migratory patterns from large offshore wind farms both during the construction phase, during normal operations, and during decommissioning.
- Directly engage with the fishing community at this stage in the process before further decisions are made, to incorporate and quantify their fishing knowledge of their fishing grounds for fishing effort, economic value, displacement effects of past, present and future fishing.
- Conduct a coastwide cumulative effects analysis of the totality of wind energy areas on fisheries, fishing communities, and impacts to domestic seafood production (including portside fishery-related facilities and services).
- Assess the full effect of wind energy areas on fishing by incorporating the effect of spatial fishing regulations (past and present) on the distribution of fishing effort, using historic logbook data (prior to spatial fishing regulations). Fisheries research and survey routes should be among the criteria at this stage in the process to assess impacts resulting from OSW planning and development
- Consult with NMFS Northwest and Southwest Fisheries Science Centers to better identify fishing location choices in the region and the potential effects of wind farm installations on small fishing businesses, seafood processors and the port businesses that rely on the seafood industry.

Future Engagement and Consultation with the Council

The Council recently convened an Ad Hoc Marine Planning Committee (MPC) comprised of members from its existing advisory bodies to directly engage on ocean energy development and other emerging ocean industries. The Council, through the MPC, intends to stay fully engaged in BOEM's process going forward. The Council appreciates BOEM's participation in recent informational webinars. We look forward to working with BOEM to ensure that fishery and fish habitat concerns are fully considered throughout the process.

Please note that the Council's meeting schedule and opportunities for its advisory bodies to inform the Council do not necessarily align with public comment periods of other public processes. In those cases, we appreciate your consideration of our comments outside the public comment window.

The Council looks forward to reviewing BOEM's National Environmental Policy Act document as it pertains to fishing activities on the West Coast, finding development options that minimize impacts to ecological and fisheries resources, and to achieving the long-term goal of responsible development of this industry.

Sincerely,

A handwritten signature in black ink, appearing to read "Marc Gorelnik". The signature is written in a cursive, flowing style.

Marc Gorelnik
Pacific Council Chair

KFG:rdd

Cc: Pacific Council Members
Ad Hoc Marine Planning Committee
RFMC Executive Directors
Ms. Nocy Sumait
Mr. Rick Yarde

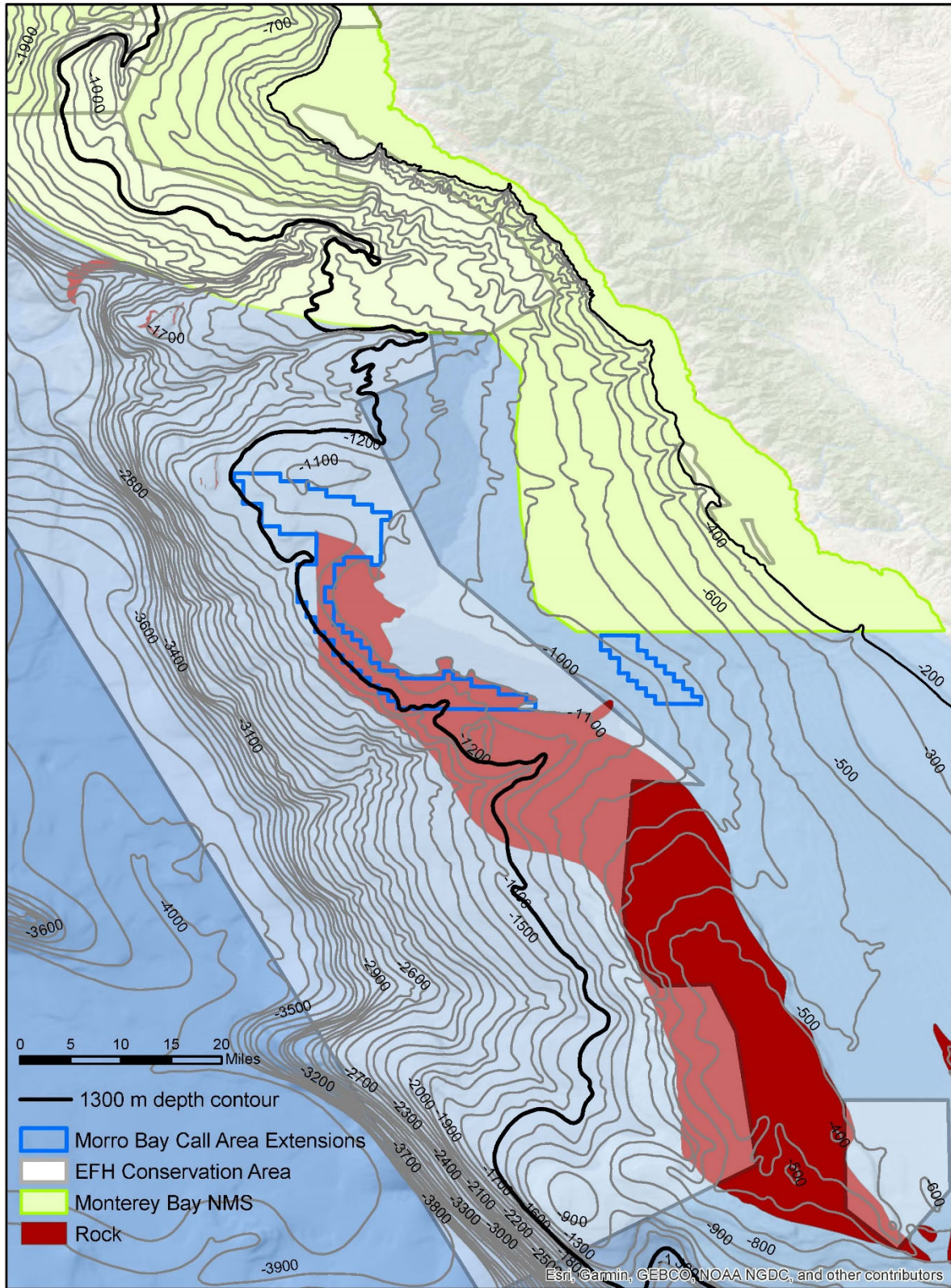


Figure 1: Overlay of rocky reef Habitat Area of Particular Concern and the Big Sur Coast/Port San Luis EFH Conservation Area, with Morro Bay West Extension