



Pacific Fishery Management Council

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

December 9, 2021

Dr. Rodney E. Cluck
Chief, Division of Environmental Sciences
Bureau of Ocean Energy Management
U.S. Department of the Interior

Dear Dr. Cluck:

Thank you for the opportunity to comment on the Bureau of Ocean Energy Management's (BOEM) 2023 – 2024 Studies Development Plan. We offer these comments in the context of the ongoing planning process for offshore wind (OSW) energy development in Federal waters off the United States West Coast.

The Pacific Fishery Management Council (Council) is charged with sustainably managing West Coast fisheries and does so under the authority of the Magnuson-Stevens Fishery Conservation and Management Act. In accordance with this Act, the Council works to attain the optimum yield of fishery harvests, conserve essential habitats, and develops measures which provide for fishery harvests that benefit coastal communities and the nation. Achieving these objectives requires that the Council use a deliberative, participatory, and transparent process that is rooted in science and considers the perspectives and needs of stakeholders and communities. The Council notes that the Outer Continental Shelf Management Act and Magnuson-Stevens Fishery Conservation and Management Act both contain mandates to responsibly manage ocean resources.

Although we are not proposing specific study ideas at this time, we offer two general recommendations that are based on our long-standing experience in the region and our desire to better understand the natural and human environment of the Pacific coast and adjacent waters:

- First, BOEM should consider priority study areas previously identified in Council communications with BOEM. These include: analyzing potential impacts of OSW energy development on commercial and recreational fishing opportunities; assessing impacts to important physical and biogenic habitats; evaluating potential impacts to the economies of coastal communities; and analyzing the potential cumulative impacts of ongoing OSW energy development off the Pacific Coast. Details regarding these can be found in two September 13, 2021 letters to BOEM that offer details regarding these concerns, attached here.
 - Second, we suggest that BOEM consider the Council's [Research and Data Needs document](#) that identifies priority research areas. These priorities were identified to support the Council's responsibilities, but this information would also prove valuable to OSW
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development processes. These priorities include but are not limited to 1) evaluating the response of habitat to spatial closures (pg. 7); 2) improving data on the location of catch and effort for commercial and recreational fisheries (pg. 21); and 3) gathering baseline information of fisheries and habitat resources at the initial stages of offshore energy development projects (pg. 46).

We appreciate the opportunity to provide comments as BOEM develops research priorities. Please contact Kerry Griffin of my staff if you have any questions or need further information (Kerry.griffin@noaa.gov; 503-820-2409).

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Burden', is written over a light yellow rectangular highlight.

Merrick J. Burden
Executive Director

KFG:kma

Enclosures

Cc: Council Members
Mr. Mike Conroy
Ms. Susan Chambers



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September 13, 2021

Regional Supervisor
Office of the Environment
Bureau of Ocean Energy Management
760 Paseo Camarillo Suite 102
Camarillo, CA 93010

To Whom it May Concern:

On October 19, 2018, the Bureau of Ocean Energy Management (BOEM) published in the *Federal Register* a Call for Information and Nominations for Commercial Leasing for Wind Power Development on the Outer Continental Shelf (OCS) Offshore California. BOEM delineated three geographically distinct Call Areas: Morro Bay and Diablo Canyon off the Central Coast, and Humboldt off the North Coast. On July 28, 2021, BOEM designated the Humboldt Call Area as a Wind Energy Area (WEA). The WEA begins at 21 miles offshore the City of Eureka in northern California and is approximately 132,369 acres (206.8 square miles).

BOEM will conduct an Environmental Assessment (EA) of the WEA, as required by the National Environmental Policy Act (NEPA). As part of BOEM's scoping process, the agency is seeking public comments through September 13, 2021 on scope and content of the EA. The EA will consider potential environmental consequences of site characterization activities (e.g., survey activities and core samples) and site assessment activities (e.g., installation of meteorological buoys) associated with issuing wind energy leases in the WEA. The EA will also consider project easements associated with each potential lease issued, and grants for subsea cable corridors through state tidelands. As described in the Northern California Area Identification Memorandum, "BOEM will conduct further analysis under the Outer Continental Shelf Lands Act and NEPA at subsequent stages of its regulatory process, including if and when leases are offered for sale, and if and when wind energy facilities are proposed on any leases."

The Pacific Fishery Management Council (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 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 Magnuson-Stevens Fishery Conservation and Management Act both contain mandates to responsibly manage ocean resources.

The extent to which BOEM has been engaging with members of the fishing community in the Humboldt Bay area is not clear. BOEM should prioritize engagement with the fishing industry as it moves forward with site characterization and lease issuance activities.

BOEM's Humboldt Area ID Memo aggregates all fisheries together for discussion. However, the assessment of impacts should be broken out by fishery and be done in such a way to show trends over time. This will allow for a more robust and useful analysis of impacts to fisheries. The California Department of Fish and Wildlife (CDFW) has identified the following fisheries as potentially impacted within the WEA: sablefish, Pacific hake, spot prawn, coastal pelagic species finfish, krill, California halibut (mostly nearshore), Pacific halibut, and hagfish. An initial CDFW depth analysis suggests that given the OCS location of the WEA, some commercial fisheries may not experience notable preclusion from fishing grounds as a result of wind energy development in the area. However, fishing representatives of the Ad Hoc Marine Planning Committee (MPC) state that numerous fisheries operate in and around the Humboldt WEA. Nearshore fisheries including market squid, sardine, Dungeness crab, and other Federal or state-managed fisheries could be directly impacted by site assessment and characterization activities.

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).

Essential Fish Habitat Conservation Areas (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. Habitat areas of particular concern (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.

The Humboldt WEA appears to overlap with designated Rocky Reef HAPCs and with the Mad River Rough Patch EFHCA for Pacific groundfish. This and several other newly designated or modified EFHCAs are not included in the online mapping tool (California Offshore Wind Energy Gateway) that appears to be informing the wind energy siting process. The groundfish EFHCAs were updated in 2020 under Amendment 28 of the Pacific Groundfish Fishery Management Plan, replacing EFHCAs designated in 2006 under Amendment 19. (NOAA Fisheries 2020). The Mad River Rough Patch EFHCA was proposed through a collaborative effort of fishing industry and environmental representatives which identified significant ecological resources there. The area is characterized by a rocky ridge, complex topography, diverse habitats, and abundant fauna. Research dives conducted by the Monterey Bay Aquarium Research Institute and inventoried by the NOAA Deep Sea Coral and Technology Program identified an abundance of corals, sponges, and sea pens (pennatulids).

EFHCA and HAPC designations signify the ecological significance of this portion of the WEA and the need for protective measures from activities that can damage the habitats of Council-managed species and structure-forming invertebrates. 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 offshore wind (OSW) projects will not cause significant harm to these designated areas. 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.

The MPC assembled the following comments (see attached table), applicable to site characterization activities and lease issuance to be undertaken as part of BOEM's OSW planning process. The MPC considered many other comments not included below that apply more directly to the construction and operation of wind turbines and transmission cables. We look forward to a future opportunity to provide those suggestions.

Future Engagement and Consultation with the Council

The Council, through the MPC, intends to stay fully engaged in this process going forward. The Council appreciates BOEM participation in the September MPC and Council meetings. We look forward to working with BOEM further, to ensure that fisheries and fish habitat are fully considered throughout the process.

As noted during the September Council meeting, 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.

We appreciate consideration of these issues as BOEM develops its Environmental Assessment for site characterization activities and lease issuance. Please contact Mr. Kerry Griffin (kerry.griffin@noaa.gov) of my staff with any questions.

Sincerely,



Marc Gorelnik
Pacific Council Chair

KFG:kma

Enclosure

- Cc: Pacific Council Members
Regional Fishery Management Council Executive Directors
Ad Hoc Marine Planning Committee
Ms. Necy Sumait
Mr. Rick Yarde

Attachment: Summary of Issues to Include in Scope of Environmental Assessment

Scoping Issue	Rationale
Recreational fishing activities	<p>The sport fishing stakeholders (albacore tuna, salmon, Pacific halibut, rockfish, etc.) may be affected by site characterization activities, especially in terms of transit to and from fishing grounds. Sport fishing is an important economic driver in the area and consideration should be given to minimizing impacts to the sport fishing fleet. The scope of the EA should include locations, number of trips, revenues and revenue multipliers, and characterization of how recreational fishing may be impacted by the presence of a wind farm.</p>
Benthic habitat	<p>Rocky substrate, corals and sponges are present in part of the Humboldt Bay area. These habitats may be sensitive to seismic testing, drilling, or other site characterization activities, and should be avoided, as should the Mad River EFHCA. The EA scope should include consideration of Essential Fish Habitat Conservation Areas (EFHCAs) and Habitat Areas of Particular Concern, both of which indicate especially important habitat for dozens of species of groundfish and other fishery resources.</p>
Whale and bird migrations	<p>The high use of much of the shelf and shelf break as both a foraging area and a migratory corridor is a concern. The potential for disruption of along-shore movement especially of seabirds and marine mammals is not well understood, and there is potential for significant impacts. The EA scope should include characterization of migration pathways and use by birds, whales, and other marine life. This should include characterization of timing windows for use and migration.</p>
Commercial Fishing Activities	<p>Much of the Humboldt WEA is in actively fished trawl grounds. Several trawlers in Eureka derive most of their winter income from the area in the WEA, and three trawlers from Brookings, OR also fish extensively in that area. One Eureka trawl captain described the area in the Humboldt WEA as, “some of the best grounds on the west coast for dover, blackcod, long spine & short spine thornyheads”. Consideration should be given to commercial fishing activities as BOEM conducts site characterization activities.</p> <p>The Northern California Area Identification Memorandum aggregates all fisheries together for discussion. However, the assessment of impacts should be broken out by fishery and be done in such a way to show trends over time. This will allow for a more robust and useful analysis of impacts to fisheries. The California Department of Fish and Wildlife (CDFW) has identified the following fisheries as potentially impacted within the WEA: albacore, sablefish, Pacific hake, spot prawn, krill, California halibut (mostly nearshore), Pacific halibut,</p>

	<p>groundfish, and hagfish. However, given the OCS location of the WEA, a depth analysis reveals that many commercial fisheries are not likely to experience notable preclusion from fishing grounds as a result of wind energy development in the area. Nearshore fisheries including market squid, sardine, salmon, sea cucumber, coastal pelagic species, and Dungeness crab could be directly impacted by transmission cable construction and operation.</p>
<p>Core Samples and Cables</p>	<p>Cables supporting the Block Island OSW facility (East Coast) were originally buried at a depth of 4-6 feet. Shifting sediment caused sections of the cable to become unburied and in October of last year, the developer (Orsted) stated it intended to rebury the cables at a depth of 25 - 50 feet. Given ocean conditions along the North Coast of California - it is foreseeable that cables will need to be buried at similar depths. Any EA needs to account for core samples being taken from that depth - as opposed to something shallower (i.e., five feet as the original Block Island cables - and the proposed burial depth for the Vandenberg projects)</p>
<p>Community and Socio-Economic Impacts</p>	<p>There is concern that a future wind farm could negatively impact fishing activity, which would have ripple effects across the community. Processing plants could be forced to curtail operations and lay off employees, which would decrease economic activity and potentially the local tax base. The EA scope should include a thorough evaluation and characterization of the socio economics of the coastal communities that derive revenues from commercial fishing and processing.</p>



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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

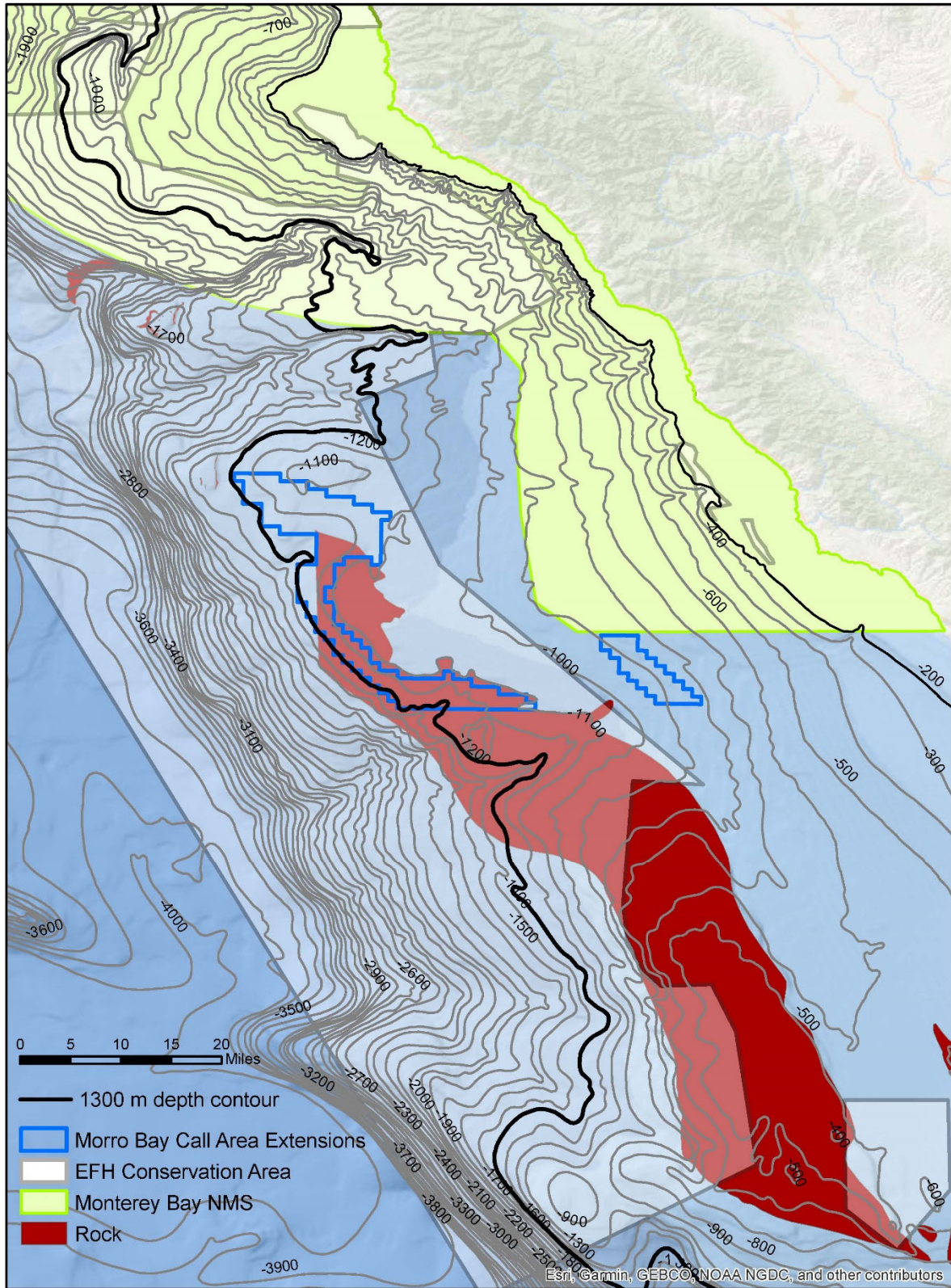


Figure 1: Overlay of rocky reef Habitat Area of Particular Concern and the Big Sur Coast/Port San Luis EFH Conservation Area, with Morro Bay West Extension