

Alliance of Communities for Sustainable Fisheries
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May 10, 2022

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, California 93010

Sent electronically

Re: BOEM Morro Bay Wind Energy Area Draft Environmental Assessment

Dear Ms. Thurston-Keller,

The Alliance of Communities for Sustainable Fisheries (ACSF) is a 501-c-3 non-profit formed to allow for an organized community voice for commercial and recreational fisheries and shoreside support industries in state and federal activities affecting our interests. We actively work with representatives from ports and harbors located on the Central Coast area of California, from Port San Luis in the south to Pillar Point Harbor in the north. Our mission statement is "Connecting Fishermen with their Communities".

Our members rely on healthy and well-managed coastal and marine finfish and shellfish resources. Any threat or adverse impacts to these resources or our access to them will affect their livelihoods and the coastal communities that depend on them to sustain their businesses. Therefore, it is critical that as BOEM, in conjunction with the State of California, begins to consider offshore wind (OSW) development, those efforts remain compatible with our interests.

We have reviewed the US Department of the Interior's Bureau of Ocean Energy Management (BOEM) draft Environmental Assessment (Draft EA) titled: *Commercial Wind Lease and Grant Issuance and Site Assessment Activities on the Pacific Continental Shelf Morro Bay Wind Energy Area, California Draft Environmental Assessment*. We offer the following general and specific comments on the document for the Morro Bay Wind Energy Area (Morro Bay WEA).

GENERAL COMMENTS

National Environmental Policy Act (NEPA) Procedures: We question the narrow scope of the assessment. The document argues that "[b]ased on the experiences of the offshore wind industry in northern Europe and the geographic distinction of resulting environmental impacts," it is "... premature to analyze environmental impacts related to potential approval of any future COP." We argue that without an accounting of those experiences, the ACSF does not know whether they are relevant to the Morro Bay WEA. Consequently, we request a full explanation of those experiences that BOEM believes are pertinent to their environmental evaluation rather than just offering citations from the literature. (A comment on those citations and others is addressed below). In addition, ACSF finds it troubling that BOEM uses examples of what occurred in Europe rather than reporting on the experiences of WEA activities on the US east coast. We believe that would be more relevant. Finally, we suggest that BOEM review the study prepared for the European Parliament's Committee on Fisheries that addresses the impact of offshore wind projects on European fisheries¹. This study documents significant impacts to fisheries from OSW development.

The Draft EA states that its preparation was undertaken "...to determine whether the issuance of a lease and grants within the Morro Bay WEA would lead to reasonably foreseeable significant impacts on the environment and, thus, whether an environmental impact statement (EIS) should be prepared before a lease is issued". An essential criterion for preparing an EIS is if the Federal agency's plan would result in a major action significantly affecting the quality of the human environment. BOEM concludes that the Morro Bay WEA action does not qualify by arguing that issuing a lease does not constitute an irreversible and irretrievable commitment of agency resources. We beg to differ. ACSF believes it is reasonably foreseeable that the leases will lead to the construction and operation of at least some OSW facilities both inside and outside of the WEA. We believe that questioning whether reasonably foreseeable significant impacts will or will not occur due to such leasing is a specious argument for several reasons.

The first reason is the interest expressed by Castle Wind LLC to BOEM for harnessing wind energies offshore of Morro Bay, as evidenced by their two nominations for installing and operating a commercial-scale OSW farm in the Morro Bay WEA (January 2019) and the East and West Extensions (September 2021) to the WEA². Castle Wind explains in their September 2021 letter that the company ".....plans to develop, install and operate the Project, an approximately 1,000 MW floating offshore wind project, within the Morro Bay 399 Area, taking advantage of a consistent wind resource with an average speed of > than 8.5 m/sec." Interest in the Morro Bay WEA was also expressed by Central California Offshore Wind LLC in their September 28, 2021, Financial Capabilities submission³.

BOEM also mentions in the Draft EA "... issuance of 1-3 leases within the Morro Bay WEA and the issuance of easements and grants associated with each lease for subsea cable corridors and areas for associated offshore collector/converter platforms". ACSF would like to know what information supports BOEM's mention of up to three leases and how that affects their analysis in the Draft EA. Is your analysis based on a single lease or several? Further, ACSF takes note of the \$4.3 billion that was recently bid for a

¹ Stelzenmüller, V. *et al.*, 2020, Research for PECH Committee – Impact of the use of offshore wind and other marine renewables on European fisheries. European Parliament, Policy Department for Structural and Cohesion Policies, Brussels. 104pp.

² <https://castlewind.com/studies-and-reports/>

³ [https://www.boem.gov/sites/default/files/documents// Central%20California%20Offshore%20Wind%20LLC%20Financial%20Submission%20to%20BOEM.pdf](https://www.boem.gov/sites/default/files/documents//Central%20California%20Offshore%20Wind%20LLC%20Financial%20Submission%20to%20BOEM.pdf)

small handful of leases on the East Coast⁴. We believe it is not credible to claim that such large amounts of money have been committed without the clear expectation that OSW projects will be built.

We are also aware of the political push for moving forward on OSW development at both federal and state levels. For example, the Secretary of the Interior Deb Haaland, National Climate Advisor Gina McCarthy, Under Secretary of Defense for Policy Dr. Colin Kahl, and California Governor Gavin Newsom announced an agreement to advance areas for OSW off the northern and central coasts of California on May 25, 2021. Further, in cooperation with the Department of Defense and the State of California, the Department of the Interior identified "the Morro Bay 399 Area" for supporting 3 gigawatts of offshore wind on roughly 399 square miles off California's central coast region, northwest of Morro Bay.^{5,6}

In addition, Governor Newsom signed Assembly Bill 525 on September 23, 2021, which initiated OSW energy development in waters offshore California and set the stage for floating OSW technology by requiring how the state intends to develop this technology. AB 525 also requires the California Energy Commission (CEC) to evaluate and quantify the maximum feasible OSW energy generation capacity in waters off the California coast. The CEC is also tasked with coordinating with specified state and local agencies to develop a strategic plan for offshore wind development. In our opinion, reasonable and foreseeable significant impacts in the Morro Bay WEA and adjacent coastal areas are not a question of *could* they occur but rather *when* they will occur (emphasis added).

Based on the high likelihood that leases granted within the Morro Bay WEA will be developed for future OSW energy production, we see the need to describe the types and degrees of impacts such operations and facilities could have on marine and coastal resources, the marine ecosystem, social and economic benefits derived from those resources, and dependent shoreside communities. This request is especially relevant given the expectation that both the Humboldt WEA and Morro Bay WEA will be holding lease sales later this year. Consequently, we challenge BOEM to take a more holistic approach and not piecemeal its efforts in addressing these potential impacts on coastal-related resources.

The agency can achieve an all-inclusive approach by preparing a programmatic EIS (PEIS) before issuing any leases to adequately address and inform the public of the cumulative impacts of OSW projects along the Pacific Coast. That would allow the public to understand the cumulative actions of these projects that, when viewed with other reasonably foreseeable or proposed agency actions, would provide a basis for evaluating their environmental consequences together. Such an approach would allow examining the ecological, aesthetic, historical, cultural, economic, social, and health impacts collectively, whether they be direct, indirect, or cumulative effects⁷.

This assessment effort should include and not be limited to site assessment survey activities, installation operations, maintenance activities of an operating wind facility, substation placement, and design, cable placement between turbines and from facilities to shore, and shoreside activities to determine the effects on water quality, the marine ecosystem, commercial and recreational fishing operations, food security, decommissioning, and the welfare of shoreside communities. The assessment must also

⁴ <https://www.doi.gov/pressreleases/biden-harris-administration-sets-offshore-energy-records-437-billion-winning-bids-wind>

⁵ <https://www.naturalgasintel.com/california-pushing-forward-with-humboldt-bay-wind-energy-development/>

⁶ <https://pasoroblespress.com/news/biden-harris-administration-advances-offshore-wind-off-morro-bay-coast/>
⁷ "We use the terms "effects" and "impacts" interchangeably in this letter as they are synonymous with respect to NEPA (40 C.F.R. § 1508.8).

include the potential for the abandonment of commercial fishing in the entire project area and suggest reasonable alternatives to avoid and mitigate the expected adverse effects. We believe this request is fair and reasonable, and anything less is an affront to the men and women who make their living directly or indirectly off the water in the MBPC. On May 2, 2022, several conservation groups on the East Coast submitted a letter to BOEM Director Amanda Lefton, strongly urging BOEM to adjust its NEPA process for these lease sales by conducting at the outset a PEIS pursuant to identifying WEAs.⁸ Our request is no different.

Should BOEM decide to ignore our request for a PEIS and continue with a Draft EA, then at the very least, we expect the Draft EA to describe the direct, indirect, and cumulative effects on the offshore and onshore environments expected to occur as a result of the implementation of the proposed action. The current Draft EA does not do this. BOEM's website provides information on the expected contents of agency prepared EAs, and we quote, "[d]escribe the direct, indirect, and cumulative effects on the offshore and onshore environments expected to occur due to the implementation of the proposal and alternatives to the proposal. Concentrate on those impacts that could be significant (40 CFR 1508.27). The analytical conclusions must identify the "significance" of potential effects⁹." Again, we reiterate that while BOEM contends that issuing a lease to the lessee conveys no right to proceed with developing an OSW facility, we find that argument to be naive. With the extreme political push for OSW development, it is only a matter of time before the OSW industry becomes a reality off the California Central Coast.

We are also mindful of the Council on Environmental Quality's October 7, 2021, proposed rule¹⁰ to restore NEPA regulatory provisions modified in 2020, including reaffirming the use of cumulative impacts in environmental reviews. The rule is now final and becomes effective on May 20, 2022¹¹. Therefore, BOEM needs to be accountable to the final rule and consider cumulative impacts now, including the permanent abandonment of commercial fishing in the entire project area.

SPECIFIC COMMENTS

The Morro Bay WEA is roughly 376 square miles and is located approximately 20 miles from shore, with water depths ranging from about 900-1300 m (2,953–4,265 ft). Our members and other commercial fishermen from the MBPC and other home ports fish this area. In our review of the document, we find many instances of incorrect, misleading, or missing information specifically about the fishing industry and overlooked potential impacts to it regarding OSW development. Therefore, we offer the following comments with the intent that BOEM uses them to become more informed and have a greater appreciation for how we operate and what is important to us. At the very least, the comments we provide establish an informational baseline from which BOEM should be working going forward.

Electromagnetic Frequency (EMF) Effects: We did not find this topic discussed in the Draft EA. BOEM should be aware that several taxonomic groups, elasmobranchs, crustacea, cetacea, bony fish, and marine turtles, are sensitive to electric and magnetic fields¹². These impacts can be physiological, such as

⁸ <https://www.clf.org/wp-content/uploads/2022/05/ENGO-Follow-up-Letter-to-BOEM-Re-Gulf-of-Maine-4881-9938-2046.125.pdf>

⁹ <https://www.boem.gov/environment/environmental-assessment/environmental-assessments>

¹⁰ <https://www.federalregister.gov/documents/2021/10/07/2021-21867/national-environmental-policy-act-implementing-regulations-revisions>

¹¹ <https://www.govinfo.gov/content/pkg/FR-2022-04-20/pdf/2022-08288.pdf>

¹² Copping, A., Sather, N., Hanna, L., Whiting, J., Zydlewski, G., Staines, G., Gill, A., Hutchison, I., O'Hagan, A.M., Simas, T., Bald, J., Sparling, C., Wood, J., Masden, E., 2016. Annex IV 2016 state of the science report: environmental effects of marine renewable energy development around the world. OES-Environmental 1–224.

altered development, and behavioral, such as attraction, avoidance, and impaired navigation and orientation. While some research has demonstrated the effect to be minor, we are aware of a certain crab species that were put to sleep and stopped feeding due to EMF effects¹³. In other words, substantive gaps still exist in understanding how EMF from subsea cables affect pelagic, demersal, and benthic species¹⁴. Therefore, BOEM cannot ignore EMF effects and thresholds for fish, crustaceans, and other species of concern. This issue needs to be a part of the established baseline.

References: On numerous occasions throughout the text, references are provided but not included in the References Section. For example, the document offers two citations (Michel et al. 2007; Musial and Ram 2010) regarding BOEM's comment about European offshore wind industry experiences. However, the citations, as well as others, are not provided in the Reference Section. ACSF requests that BOEM provide complete sources for all referenced material in a revised Draft EA. We are sure BOEM can understand why ACSF and the general public expect complete transparency in making a claim that can be verified independently. Such careless oversight does not instill great confidence in the thoroughness of the document.

2.2.2 MARITIME NAVIGATION

In this section, the Draft EA states that "BOEM analyzed AIS tracklines and density data within the WEA to determine vessel traffic patterns and identify how they may conflict with potential offshore wind energy development." ACSF counters that had BOEM studied this issue in-depth, it would have learned that existing large vessel traffic as characterized by AIS records largely goes right through the WEA. The NOAA Cape San Martin weather buoy near the outer edge of the WEA was set adrift by a collision with a large vessel in recent history which suggests the likelihood of future incidents. Based on the AIS maps, the statement that "higher traffic areas were excluded from the WEA" is demonstrably false.

We are aware that the US Coast Guard (USCG) is conducting a "Pacific Port Access Route Study" to evaluate safe access routes for the movement of vessel traffic proceeding to or from ports or places along the western seaboard of the United States and to determine whether a Shipping Safety Fairway and routing measures should be established, adjusted or modified. However, we are also realistic in assuming that for safety reasons, the installation of OSW facilities in the WEA will create an exclusive and permanent area for the OSW farm at the expense of fishing grounds (see below) and navigation routes. In addition, should navigation routes be shifted, additional areas may preclude or otherwise negatively impact fishing operations. These potential impacts on our members need to be acknowledged and evaluated.

In addition, we are concerned about OSW farms interfering with navigational radar used by our members' vessels. A recent study, conducted at the request of BOEM, concludes that wind turbines can affect marine vessel radar, with the most common impact being a substantial increase in strong, reflected energy cluttering the operator's display, leading to complications in navigation decision-making¹⁵. This could affect fishing and shipping operations as well as search and rescue operations by

¹³ https://www.researchgate.net/profile/Kevin_Scott23/publication/326632692_Understanding_the_effects_of_electromagnetic_field_emissions_from_Marine_Renewable_Energy_Devices_MREDS_on_the_commercially_important_edible_crab_Cancer_pagurus_L/links/5b5ae836458515c4b24a9507/Understanding-the-effects-of-electromagnetic-field-emissions-from-Marine-Renewable-Energy-Devices-MREDS-on-the-commercially-important-edible-crab-Cancer-pagurus-L.pdf

¹⁴ Farr, H., Ruttenberg, B., Walter, R. K., Wang, Y. H., & White, C. 2021. Potential environmental effects of deepwater floating offshore wind energy facilities. *Ocean & Coastal Management*, 207, 105611.

USCG vessels and helicopters for injured seaman. The National Academy's report offers several recommendations for mitigating these impacts, and we strongly encourage BOEM to pursue feasible options to mitigate the effects on marine vessel radar.

2.2.4 FORESEEABLE ACTIVITIES AND IMPACT-PRODUCING FACTORS

2.2.4.11 Decommissioning: BOEM states in this section that "The mooring chain would be recovered to the deck using a winching system, leaving the anchor on the seafloor." ACSF believes all equipment, including buoy anchors, should be promptly retrieved from the ocean. ACSF cannot understand how an anchor, by itself, could be left on the bottom without being brought to the surface to unshackle the mooring chain. If the anchor is brought to the surface for this purpose, would it not be sensible to bring the anchor on board as well? There is no reason to leave behind foreign objects on the seafloor. Should BOEM not make that a requirement and anchors are left on the bottom, then no line, chain, wire rope, or other length of mooring should be left on the bottom with the anchor. Such lines represent a potential entanglement risk for fishing gear and transitory marine organisms.

SECTION 3.3 WATER QUALITY

The Draft EA lists site assessment activities, including the temporary placement of meteorological buoys, scientific sampling equipment, vessel anchoring, coring, and collection of bottom samples that can impact water quality. These impacts would be vessel discharges, sediment disturbance from geotechnical surveys, benthic sampling, buoy installation/decommissioning, recovery of lost equipment, and oil spills. However, the Draft EA states that all of these impacts are expected to be minor.

ACSF questions how these impacts can be characterized as minor when BOEM does not provide information on these activities' quantity, frequency, duration, and geographical extent. For example, the Draft EA describes the anchor sweep impact area for meteorological buoys as approximately 8.5 ac per buoy. Short-term and localized resuspension of seafloor sediment into the water column is not expected to result in any lasting impact on water quality. However, this would not be the case for permanently installed moored floating OSW systems. Scouring and sediment resuspension would repeatedly occur due to these sweeps, but they would also mean permanent destruction of bottom habitat (see below). Therefore, these sedimentation events need to be evaluated.

SECTION 3.3 MARINE AND COASTAL HABITATS AND ASSOCIATED BIOTIC ASSEMBLAGES

The report pays little attention to essential fish habitat (EFH) and other habitat protections afforded to specific areas. For example, it ignores mentioning impacts to rocky-reef area habitats designated as habitat areas of particular concern (HAPCs) set within the Morro Bay WEA. Congress added the EFH mandate in 1996 to highlight the importance of healthy habitats for commercial and recreational fisheries and the ecosystem as a whole. HAPCs are those areas of special importance that may require additional protection from adverse effects. HAPCs are identified based on one or more of the following considerations: (i) The importance of the ecological function provided by the habitat; (ii) The extent to which the habitat is sensitive to human-induced environmental degradation; (iii) Whether and to what extent, development activities are, or will be, stressing the habitat type; and (iv) The rarity of the habitat type.¹⁶ Also, remember that EFH is defined in statute as "those waters and substrate necessary to fish

¹⁵ National Academies of Sciences, Engineering, and Medicine. 2022. Wind Turbine Generator Impacts to Marine Vessel Radar. Ocean Studies Board, Division on Earth and Life Studies Washington, DC: The National Academies Press. <https://doi.org/10.17226/26430>.

¹⁶ 50 CFR §600.815(a)(8)

for spawning, breeding, feeding, or growth to maturity.¹⁷ In other words, impacts can occur in both water column and bottom habitats.

Leasing within the WEA and associated activities will occur within designated EFH for species managed by the Pacific Fishery Management Council (Council) for four Federal Fishery Management Plans (FMPs). The EFH for species managed by the Council can be found in the FMPs for Pacific Coast Salmon, Coastal Pelagic Species, Highly Migratory Species, and Pacific Coast Groundfish. In addition, the Council has also designated EFH Conservation Areas (EFHCAs) in its Groundfish FMP. These spatially discrete areas are closed to bottom trawling and, in some cases, other types of bottom contact gear to protect the vital habitat features found there. BOEM should also study whether floating OSW structures, with their drooping electrical cables, would affect benthic species if located above EFHCA's and HAPC's, and if so, those areas should be avoided.

Portions of the Morro Bay WEA are located in designated EFH for coastal pelagic species and salmon. The WEA footprint lies entirely within EFH for groundfish and highly migratory species. It also overlaps with Council-designated rocky reef HAPCs and portions also lie within EFHCA designated for groundfish. Because these habitat designations signify ecologically important habitat features, they must be protected from activities that may harm their ecosystem roles and services. Habitat disturbance and destruction by mooring cables, cable lines, or anchors in contact with the seabed during site assessment and site characterization as well as project operation could significantly impact these habitats.

Deep-sea benthic communities, including deep-sea corals and sponges, provide habitat complexity and create aggregations of biodiversity and complex bottom communities. These benthic habitat communities are not adaptable to frequent disturbance from human activities.¹⁸ Because potential benthic impacts are incompatible with the ecological services these habitats provide to fishery resources our members harvest, ACSF believes that these areas should be avoided during site assessments and all future operations. Further, impacts on these habitats should be considered significant, not minor. We will be pleased to learn that BOEM has taken the California Coastal Commission's advice in Condition 2 in the Humboldt WEA for no bottom contact for areas of rocky structure¹⁹.

When a federal agency authorizes, funds, or undertakes an action that may adversely affect EFH, they must consult with NOAA Fisheries on that action. An adverse effect of EFH is any direct or indirect effect that reduces the quality and quantity of the habitat and ranges from large-scale ocean uses to small-scale projects along the coast. Consequently, ACSF is puzzled why BOEM "communicated with the NOAA Fisheries California Coastal Office (EFH) that the appropriate consultation strategy will be following when more detailed, project-specific information is available." An EFH consultation is not a strategy; it is a mandated obligation. The EFH regulations state that "[f]or any federal action that may adversely affect EFH, Federal agencies must provide NOAA Fisheries with a written assessment of the effects on EFH²⁰. This EFH Assessment should include analyses of all potential impacts of the proposed project, including temporary, permanent, direct, indirect individual, cumulative, and synergistic effects. Therefore, we do not believe that a full consultation with NOAA Fisheries can be delayed. ACSF will be

¹⁷ 16 USC §1802(11)

¹⁸ Harris, P.T., 2014. Shelf and deep-sea sedimentary environments and physical benthic disturbance regimes: a review and synthesis. *Mar. Geol.* 353, 169–184. <https://doi.org/10.1016/j.margeo.2014.03.023>.

¹⁹ <https://documents.coastal.ca.gov/reports/2022/4/Th8a/Th8a-4-2022%20staffreport.pdf>

²⁰ 50 CFR 600.920(e)).

pleased to learn when BOEM has begun early notification and coordination with the fisheries agency regarding actions that may adversely affect EFH as suggested in the EFH regulations.²¹

Reduced wind speed downwind of turbine arrays could inhibit upwelling, which is a primary driver of productivity in the California Current. As documented in Europe, wind power generation can reduce wind speed downwind of turbine arrays²². A recent study commissioned by the California Ocean Protection Council modeled potential impacts downwind of a large-scale wind farm off the California coast²³. This downstream effect could infer a 10-15 percent change in upwelled volume transport and resulting nutrient flux to the euphotic zone. Such changes in upwelling dynamics could impact phytoplankton productivity and further stress coastal resources on which ACSF members depend. These impacts also will extend well beyond the immediate footprint of any developed OSW farm.

ACSF recognizes that upwelling impacts require further study and requests that BOEM acknowledge this reality and address this concern in the form of appropriate modeling efforts based on observed data from existing OSW farms. Disruption of upwelling could also exacerbate deep-water hypoxia since upwelling (and downwelling) processes are a significant driver of the renewal of oxygen conditions in coastal environments. The potential effects of altered wind speeds on ocean processes in the Morro Bay WEA need to be studied as changes in primary productivity can impact the fishery resources our members depend on. These impacts could extend well beyond the WEA. BOEM did not address these potential impacts in the Draft EA.

Finally, we bring to your attention the issue of long-term benthic changes within the footprints of cable tethers caused by the colonization of these supporting structures from epifauna species, primarily by mussels. We do not view colonialization as the issue but rather the sloughing off and subsequently smothering of the benthic habitat²⁴. BOEM needs to evaluate this indirect effect.

SECTION 3.3 MARINE MAMMALS AND SEA TURTLES

This section states that the impacts on critical habitat and protected marine mammal and sea turtle species from project activities related to noise, collisions with project-related vessels, and entanglement from moorings are anticipated to range from negligible to minor. That conclusion may be presumptuous. While the Draft EA addresses the entanglement of marine mammals in mooring systems, it overlooks secondary entanglement to marine mammals and sea turtles caused by ensnared fishing gear or other marine debris caught on mooring lines or cables²⁵. It also does not examine the potential for floating turbines and associated infrastructure to aggregate prey species and thereby increase foraging habitat for marine animals, particularly marine mammals (and seabirds)²⁶. The potential for localized productivity hotspots or "fish aggregating devices" was either overlooked or determined

²¹ 50 CFR 920(a)(3)

²² Christiansen, N., Daewel, U., Djath, B., and Schrum, C. 2022. Emergence of large-scale hydrodynamic structures due to atmospheric offshore wind farm wakes. *Frontiers in Marine Science*, 64.

²³ https://www.opc.ca.gov/webmaster/media_library/2022/02/C0210404_FinalReport_12312021.pdf

²⁴ Hutchison, Z.L., Bartley, M.L., Degraer, S., English, P., Khan, A., Livermore, J., Rumes, B. and King, J.W. 2020. Offshore wind energy and benthic habitat changes. *Oceanography*, 33:58-69.

²⁵ Maxwell, S.M., Kershaw, F., Locke, C.C., Conners, M.G., Dawson, C., Aylesworth, S., Loomis, R. and Johnson, A.F., 2022. Potential impacts of floating wind turbine technology for marine species and habitats. *Journal of Environmental Management*, 307, p.114577.

²⁶ Bailey, H., Brookes, K.L. & Thompson, P.M. 2014. Assessing environmental impacts of offshore wind farms: lessons learned and recommendations for the future. *Aquat. Biosyst.* 10, 8

unimportant. We think the latter. It is easy to imagine that as small fishes are attracted to the new habitat represented by the turbines, so will seabirds, to their peril.

The Draft EA also fails to consider potential changes to migratory patterns of marine mammals or sea turtles due to OSW activities and whether modified routes are more likely to interact with fishing activities. The California commercial Dungeness crab fishery is managed to reduce entanglements of humpback whales, blue whales, and leatherback sea turtles. Under the Department of Fish and Wildlife's Risk Assessment and Mitigation Program, the opening of the fishery can be delayed or closed prematurely if there is an elevated risk of co-occurrence between those species and the fishery. To the extent OSW activities change migratory patterns of those animals shoreward of the WEA, one of the State's most valuable commercial fisheries could be significantly impacted. We also remind BOEM that our members are held to a very high standard regarding efforts to avoid and minimize our interactions with marine mammals and sea turtles. We expect the same from BOEM.

A substantial number of whales have been seen seasonally in the Morro Bay WEA, including, in order of frequency, humpback whales, blue whales, and beaked whales (one sighting of 3 beaked whales, species undetermined)²⁶. In addition, Dahl's porpoise, white-sided dolphins, right whale dolphins, grey grampus, and sea lions are regularly seen. Albatross are commonly found along with shearwaters, petrels, and fulmars. While all of these organisms are seen in the vicinity, it would be impossible to avoid them at any offshore location. BOEM needs to consider their presence when weighing development against the No Action Alternative.

Also, while the Draft EA examines noise impacts during site assessment, a broader examination of noise during operational phases cannot be delayed. Efforts to estimate operational noise levels have predominantly focused on fixed-bottom OSW farms, and whether these studies apply to floating farms has not been verified. Consequently, an in-depth examination of the acoustic characteristics of floating substructures and their associated moorings would enhance the current understanding of the interactions between these facilities and marine organisms²⁷. In addition, local fishermen have experienced past sound-producing survey work and reported that the fishing bite was off for months in the survey area and nearby following this work²⁸. Please add this impact to be addressed on your list.

SECTION 3.7 COMMERCIAL FISHING

To begin our comments on this section, ACSF finds it curious why Table 3-9, titled "Ex-vessel Value (2021\$) of Landings for Some California Commercial Fisheries," is included in the Draft EA. It does not add anything to the discussion on commercial fishing in the MBPC, with perhaps the first row that shows the average ex-vessel landings statewide for 2009-2018 in 2019 dollars to be \$216,128,424. Nothing else in the table is relevant to the current topic and perhaps may have been more helpful in evaluating the impacts of the Humboldt WEA. The table is also confusing in asserting in the title that ex-vessel values are based on 2021 dollars which conflicts with the 2019 dollars listed in the second column. Perhaps this serves as an example of BOEM's haste to produce the report without putting effort into its quality and thoroughness.

In this section, the Draft EA states that "[d]uring 2010–2019 period, the ex-vessel value of all marine commercial fisheries landings within California averaged approximately \$226 million per year while the

²⁷ Farr, H., Ruttenberg, B., Walter, R. K., Wang, Y. H., & White, C. 2021. Potential environmental effects of deepwater floating offshore wind energy facilities. *Ocean & Coastal Management*, 207, 105611.

²⁸ Tom Hafer, personal communication, April, 2022.

"Morro Bay Port Complex (MBPC) contributed about 4 [sic] percent to this total and ranked last in ex-vessel landings value among the nine port complexes defined by the SOC." It is not clear from the report what ports comprise the MBPC complex, but we will assume that it includes the ports of Morro Bay, Avila/Port San Luis, and San Simeon.

The report downplays the four percent contribution of the MBPC to California's total ex-vessel landing values. What BOEM is overlooking is that ex-vessel values translate into waterfront economic activity. As stated in a 2017 report prepared for the Morro Bay Commercial Fishermen's Organization (MBCFO), ex-vessel values from commercial fishing are: ".....directly responsible for approximately 200 jobs for skippers, deckhands, dock workers, and local seafood processors, and represents a success story in attracting and retaining businesses and supporting local business ownership and employment. The commercial fishing industry and the activity driven by the working waterfront make up the backbone of Morro Bay's robust and diverse economy"²⁹. In other words, the economic contributions generated by the commercial fisheries, including charter fishing and diving businesses, operating out of the MBPC should be viewed at the local level, not the state level.

We also believe that attempting to frame commercial fishing in the MBPC in this context also mischaracterizes its role in contributing to the Nation's food security. While perhaps sounding insignificant to some, we believe the Draft EA could be significantly improved by first recognizing the men and women harvesters landing their catch in the MBPC. Between 2012-2021, these harvesters contributed to feeding the Nation in terms of an average of 4.0 million pounds annually of shellfish and finfish at an ex-vessel value of \$7.4 million³⁰. (Recall that 2020-2021 were COVID years when fishing activity was depressed). Further, keep in mind that ex-vessel values only reflect the price received by the harvester at the point of landing. The added value gained through the economic chain supporting MBPC sector businesses relying on these landings, including distribution, retail, and dining, should have been considered. Was the omission of ex-vessel and added value benefits necessary to conclude potential impacts "to be minor and temporary in duration"?

Why is this contribution of seafood products to the MBPC significant? This all has to do with the Nation's seafood security. The US is assumed to import 62-68 percent of the seafood it consumes³¹. If the country is going to close that gap and reduce its dependence on foreign fishing sources, contributions from every fishing port are critical, regardless of the quantity. To assume that potential impacts to commercial fishing from the proposed action are expected to be minor downplays the significance that every fishing port in California makes to domestic seafood consumption.

It is further crucial to recognize the hard work of every US fisherman also contributes to replacing the seafood imported from foreign fleets³². These fleets are generally not held to the same environmental standards as the harvesters working in the MBPC and the entire country for that matter. Therefore, we argue that any losses in MBPC's contribution to food security be evaluated in terms of the increase in

²⁹ Lise Wise Consulting, Inc. 2017. Morro Bay 2017 Commercial Fisheries Economic Impact Report. 33pp. https://www.mbcfo.org/uploads/1/4/4/8/14484252/lwc_final_mb-econ2017_121817.pdf

³⁰ <https://wildlife.ca.gov/Fishing/Commercial/Landings>

³¹ Gephart, J.A., Froehlich, H.E. and Branch, T.A. 2019. Opinion: To create sustainable seafood industries, the United States needs a better accounting of imports and exports. *Proceedings of the National Academy of Sciences*, 116: 9142-9146.

³² Helvey, M., Pomeroy, C., Pradhan, N.C., Squires, D. and Stohs, S. 2017. Can the United States have its fish and eat it too? *Marine Policy*, 75, pp.62-67.

marine ecosystem impacts produced abroad that make up for the lost opportunities in the Morro Bay WEA.

The Draft EA reports that "...within the MBPC, commercial fishers primarily land their catch at two places, Morro Bay and Port San Luis, and use several smaller locations with less consistency." That would be an accurate statement for those harvesters fishing for sablefish, Dungeness crab, groundfish, and other bottom-dwelling organisms. However, pelagic species such as highly valuable swordfish, albacore tuna, bluefin tuna, and Chinook salmon transverse the area during their seasonal migrations and may be targeted within the WEA footprint depending on ocean conditions. Many of the harvesters targeting these transboundary species often originate from other ports, and while they may catch these species in the WEA area, they land their catch in ports other than MBPC. An example is swordfish, which was not mentioned in the Draft EA for some reason. Swordfish is a highly valuable and important fishery with many of its harvesters residing in southern California that will be displaced elsewhere by OSW development. So, while the Draft EA states that the Proposed Action "...may disproportionately impact some fishers compared to others", we believe this statement to be completely unacceptable.

We suggest that BOEM specifically identify fish removals by gear type within California Fish and Wildlife's fish blocks within the Morro Bay WAE (Figure 1). This effort will allow BOEM to understand what is harvested in the WEA and what fishing displacement may mean. Exclusion or displacement of our members' favored fishing grounds could mean increased costs and time at sea to relocate to new fishing areas, assuming these new areas would be similarly productive. It goes to say we would not want these new areas to occur within the migratory routes of marine mammals and sea turtles that our members work so hard to avoid. By knowing where the species we target are caught, not where they are landed, BOEM will better understand the direct, indirect, and cumulative effects on our fishing members and what exclusion from the area means.

While on the topic of exclusion, we should also note that there could be crowding or excessive waiting to utilize harbor facilities at the ports creating space-use conflicts. We would be especially interested in learning how BOEM intends to address these impacts.

On page 61 of the EA, BOEM cites a study (Miller et al. (2017)) that states, "[s]pecies that may be harvested within the WEA are part of fisheries that generally have extensive fishing grounds. Pacific groundfish that form at least 1 percent of a harbor's landings value during 2009-2018 (Table 3-9) include sablefish, Dover sole, petrale sole, thornyheads, hagfishes, and black rockfish." The first sentence implies that fishermen can just fish anywhere they like. This is not true as fishermen go where the fish are aggregating at the time of the trip to have profitable trips. Sometimes the fish are present and biting in the Morro Bay WEA, and that is the most desirable location to go. Fishing northwest out of Morro Bay always has an incremental advantage as fishermen who start a trip in good weather are frequently driven in as the prevailing northwest wind rises. This means a fuel-efficient, downhill ride where the catch and the crew and vessel are not getting beat up rolling in the trough or battling uphill against wind and seas on the way home. In addition, the second sentence seems to intentionally mischaracterize the importance of deepwater groundfish to the fishermen of Morro Bay. In a 2017 economic report²⁹, sablefish, Dover sole, and thornyheads, all groundfish, have been in the top 10 earning species since 1990.

Two issues overlooked in the Draft EA are future projections about emerging fisheries and extensions in the home ranges of fish due to changing ocean conditions. Fishermen have reported that during fishing excursions directed at hard bottom areas within the Morro Bay WEA, they have encountered substantial

bycatch of Tanner crab at times³³. While this fishery is not currently prosecuted because of the annual price for a permit, it has the potential to change and become a viable one. This is just one example of a living marine resource that remains untapped in the Morro Bay WEA. We also expect to see a greater presence of migratory fish such as bluefin tuna as that stock rebuilds and extends its home range due to changing water temperatures. The Draft EA not only needs to assess current impacts on fisheries operating in the Morro Bay WEA but also future fisheries and shifting migrations. This is another indirect effect overlooked by BOEM.

Scientific Research Affecting Commercial Fishing

The members of ACSF depend on regular stock assessments, which are the scientific foundation of successful and sustainable fishery harvest management. Stock assessments are used to set annual or biannual harvest levels or total allowable catch (TACs) catch levels biennially for the west coast groundfish fishery and annually for the CPS fisheries. These harvest levels, established by the Pacific Fisheries Management Council, set the maximum number of fish that can be caught annually while preventing overfishing. For many fish landed in the MBPC and beyond, stock assessments are derived from fishery-independent data collected from scientific research cruises conducted by NMFS and other institutions along fixed transect lines. The data collected on these cruises are used to estimate abundance, spatial distributions, sex, length, maturity, weight, and age structure. They are a crucial source of data necessary to support stock assessments of groundfish and coastal pelagic species. The surveys also contribute to NOAA's understanding of the California Current Ecosystem.

We are concerned that activities within the MBPC will interfere, disrupt or outright cancel scheduled cruises and therefore reduce the accuracy and precision of these data collection efforts. Underestimating biomass levels of targeted species extend beyond the MBPC as it affects all harvesters targeting the stock throughout its geographic range within US west waters. Therefore, we request that BOEM explain how these impacts can be avoided and provide information on how the agency will work with NOAA Fisheries and the California Cooperative Oceanic Fisheries Investigations (CalCOFI) organizers to minimize these impacts. For your information, we list the surveys we believe will be affected:

- **West Coast Groundfish Bottom Trawl Survey:** Collects data on the 90+ commercially fished groundfish stocks off Washington, Oregon, and California.
- **Joint U.S.-Canada Integrated Ecosystem and Pacific Hake Acoustic Trawl Survey:** Collects data to support sustainable populations of Pacific hake on the West Coast.
- **West Coast Pelagic Fish Survey:** This focuses on coastal pelagic species (e.g., sardine, anchovy, Pacific mackerel, jack mackerel, herring, and krill). It consists of both onshore-offshore oriented acoustic transects and directed trawl sampling.
- **CalCOFI Survey:** This survey conducts quarterly cruises from north of San Francisco Bay to San Diego from the coast to 300 miles (500 km) offshore and represents the longest time series of observations of the pelagic marine ecosystem and informs numerous status assessments.
- **Rockfish Recruitment and Ecosystem Survey:** Samples approximately 60 species of rockfish during a short window in their life history and informs several stock assessments.

SECTION 3.8 RECREATION AND TOURISM

This section in the Draft EA asserts that site assessment activities and site characterization surveys would not impact viewsheds and that overall impacts to recreation and tourism are expected to be

³³ Alan Alward, personal communication by email, April 29, 2022.

negligible. However, a 2017 report prepared for the MBCFO stated that: "The Morro Bay waterfront draws tourism that generates spending and employment in local restaurants, hotels, and shops. Fishermen report interactions with tourists have increased in recent years, and the number of visitors to Morro Bay has grown. Further, fishermen note increased public awareness and appreciation of the working waterfront. Morro Bay Tourism Business Improvement District Advisory Board estimates 1.47 million visitors to Morro Bay in FY14-15, with a total economic impact of almost \$50 million annually. The general view held by industry participants is that tourism has increased, and anecdotally some waterfront business owners report that sales are up as much as 40 percent since 2011²⁴." Again, with commercial fishing being such an important key driver for the local economic activity, any impact on the industry can have serious downsides.

In a study on the impacts of wind projects on European fisheries, the authors note that the harvesters are part of the coastal community. Their harvests sold or processed locally are all part of the value-added of the fishing sector to the local economy²⁵. They argue that while traditional fishing communities attract tourists who spend money on local businesses, offshore wind energy operations' direct or indirect economic impacts on local communities are barely understood. Accordingly, they suggest more research is needed on a broader scale to assess the possible effects of investments in offshore wind facilities on the fishing sector, local communities, and economic activities onshore. ACSF heartedly supports this recommendation and expects BOEM to take this endorsement seriously.

We also advise that impacts to shoreside businesses catering to recreational fishermen, including the commercial passenger fishing vessel (CPFV) industry and dive industry, be kept at the forefront. These businesses provide a recreational service to visitors and locals who do not have access to a boat. Morro Bay is considered one of the top charter ports in the state, and charter fishing trips generated up to \$3.7 million in 2015 and \$4 million in 2016.²⁶ We believe these estimates are much higher now.

SECTION 3.9 SOCIOECONOMICS

In this section, BOEM estimates that at least for site assessment activities, there would be temporary increases in employment such as surveying, tower, and buoy fabrication, and construction would occur in various local economies associated with onshore – and offshore-related industries coastal counties of California. BOEM also states that they expect any beneficial impacts on employment, population, and the local economies in and around San Luis Obispo and Ventura counties to be short-term and imperceptible. When OSW efforts move to the operational phase, we imagine that BOEM would predict beneficial impacts on the local economy. Assuredly, these benefits will be described as long-term and perceptible, with an expected increase in jobs and revenues flowing into the community. However, ASCF does not believe that such an industry will draw tourism and related business to the MBPC area to view offshore wind turbines as we currently have with the fishing industry. Such industrial development may even dampen tourism. So, while there may be some new types of job gains, there should be a recognition that job losses revolving around commercial fishing would be lost.

Morro Bay has a long commercial fishing history that dates back to the abalone industry in the early 1900s. In their historical review of its fishing industry, Liu et al.³⁴ assert that the current fishing industry of Morro Bay represents a powerful link to the past. They also add that it serves as an integral part of the city's fishing heritage identity that provides a great sense of pride for its residents. In a 2008 study

³⁴ Liu, J. A. Pham, Z. Stednitz, and E. Pranadjaya. 2019. The Rise and Fall of Commercial Fishing in Morro Bay. Hidden History Project, Cal Poly in San Luis Obispo, CA. 2pp. <http://historicalmorrobay.org/wp-content/uploads/2019/06/Hidden-History-Final-Project-Copy-1.pdf>

administered to community tourism professionals in the waterfront communities of Crescent City, Monterey, and Morro Bay for ACSF, 63 percent of the respondents indicated that the fishing heritage of their community was of great importance in attracting business to their community³⁵. Further, 74 percent of the respondents mentioned that having local, fresh seafood available was of great importance in attracting business to their community. Consequently, BOEM needs to examine the potential risks that could threaten MBPC's fishing heritage image and affect the availability of locally sourced seafood should there be a shift to a wind energy-based economy. Remember, the livelihoods and economic futures depend on our members being able to fish in the Morro Bay WEA project area.

BOEM should also be aware that several West Coast fisheries have some form of restricted access. These include limited access privilege programs such as for the groundfish trawl fishery and limited entry for the Coastal Pelagic Species and salmon fisheries. Many of our members possess permits for these fisheries, and because no new permits can be issued, they provide the permit owner another source of value when they sell their permit. Should there be a loss of access or potential reduction in quota due to stock assessment uncertainty resulting from OSW developments, these permits will lose value. Like all MBPC fishermen, our members do not have the flexibility to shift to other fisheries because of fishing gear type, fishing vessel size, and even access to a different fishery. These types of economic impacts go far beyond losses in fishing revenues. BOEM needs to be aware of this reality and address it appropriately in its analysis. A positive step forward would be for BOEM staff to engage in direct discussions with our members and other fishery leadership to understand our concerns better. The BOEM website states, "In addition to accepting public comments online, BOEM interacts with stakeholders and partners in state, local and tribal governments through task force meetings and small community meetings on specific issues." We would like to see that commitment formalized sooner rather than later, as we believe that future conflicts can be minimized through active communications.

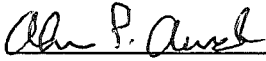
CONCLUSION

Based on experience gained over years of commercial fishing and previous experience with various scientific survey procedures, ACSF believes that OSW activities will make commercial fishing unprofitable in and surrounding the Morro Bay WEA. We assert that BOEM has made insufficient efforts to review commercial fishing and environmental impacts as part of its Draft EA. Therefore, we again restate that BOEM address all direct, indirect, and cumulative effects by preparing a PEIS to address the comprehensive impacts of proposed OSW projects along the Pacific Coast. We then suggest that specific EIS for each WEA be tiered off the programmatic. Should BOEM ignore our request, then, at the very least, prepare a complete EA that addresses all direct, indirect, and cumulative effects on our members' activities and livelihoods that incorporates the baseline information we have provided you in this letter. In addition, we have identified several incomplete or missing issues from the document that need to be addressed.

We trust that once BOEM undertakes these extra steps, the agency will have a thorough understanding and the necessary background for finding ways to avoid and mitigate the unique impacts of OSW off the Central California Coast. We believe this request reflects the spirit and intent of NEPA.

³⁵ Responsive Management. 2008. California Tourism and Fishing Heritage Assessment. Part 1: Summary of businesses, community leaders, and tourism professionals. Conducted for Alliance of Communities for by Responsive Management, Harrisburg, VA. 59pp.

Sincerely,



Alan Alward, ACSF Co-Chair



Frank Emerson, ACSF CO-Chair

CC

Amanda Lefton, Director, BOEM
Pacific Fishery Management Council
California Coastal Commission
State Lands Commission
California Energy Commission
California Department of Fish and Wildlife
ACSF Board of Directors

Attachment 1. Overlay of Morro Bay WEA and CDFW designated fish blocks.

