

DRAFT

PROPOSED POLICY GUIDANCE FOR OFFSHORE DEVELOPMENT ACTIVITIES

Purpose

The purpose of this guidance is to identify for the Pacific Fishery Management (Council), its advisory bodies, agencies, and ocean industry developers the range of issues associated with offshore development that are likely to affect Council fisheries, fish and habitat resources, and coastal fishing communities. This guidance documents the Council's expectations of action agencies and industry developers to address these issues and is intended to be consistent with current Council policies and actions.

Objectives

The Council has responsibility, with the National Marine Fisheries Service (NMFS), to manage marine commercial and recreational fisheries in a manner that:

- Ensures a sustainable and safe domestic seafood supply and cultural benefits from fisheries, by achieving and maintaining, on a continuing basis, the optimum yield from each fishery;
- Protects ecosystem health and sustainability, including protection of essential fish habitat (EFH) and ecosystem services; and.
- Minimizes long-term economic and social effects to fisheries and fishing-dependent communities, in part by improving the ability to adapt to climate change and competing ocean uses.

The intent of this guidance is to document the Council's expectations for analysis of impacts resulting from actions such as offshore wind (OSW) energy, aquaculture, and other offshore development that may affect habitat, fisheries, or coastal communities. In this context, "offshore" refers to any development project in the ocean environment, which could be anywhere in Pacific Coast ocean waters. The Council is responsible for developing fishery management plans (FMPs) that describe potential adverse effects of fishing activities on habitats, and for developing regulations to minimize the negative effects of fishing activities on habitats. This document focuses on the effects and potential impacts of non-fishing activities on habitats and fisheries. Federal agencies must consult with the Secretary of Commerce, via NMFS, on any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.

The Council's approach, similar to that of the National Environmental Policy Act (NEPA), is to first avoid impacts when practicable, then minimize impacts to the extent possible. For those impacts which cannot be avoided, appropriate mitigation measures should be implemented. When impacts are unavoidable and cannot be sufficiently mitigated by minimizing, rectifying, reducing, or eliminating the impact over time, compensatory mitigation should be considered. For social and economic impacts from offshore development that are unavoidable, the Council may recommend that financial compensation should be considered. While the Council typically uses the NEPA structure to consider effects of development activities on the marine environment, including social

and economic effects, the interests of the Council and the scope of potential impacts can extend beyond the structure of NEPA¹. In all cases, it is very important to consider the cumulative effects to Council-managed species and their habitats, when siting and designing projects.

Council authorities on non-fishing impacts

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) EFH implementing regulations at 50 CFR §600.805 *et seq.*, address the effects of both fishing and non-fishing activities on EFH. Regarding effects from non-fishing activities, Federal regulations require that FMPs describe and identify EFH, identify non-fishing activities that may adversely affect² EFH, develop conservation measures to minimize impacts, analyze how the cumulative impacts of non-fishing activities influence the function of EFH on an ecosystem or watershed scale, and consider identifying Habitat Areas of Particular Concern (HAPC) for species under its authority. EFH is defined at 50 CFR §600.10³.

HAPCs are specific types or areas of especially important habitat within EFH, such as areas that serve as nursery grounds for multiple species, rare or unusual habitat types, habitats that support vulnerable species or life stages, or that serve other unusual roles in the ecosystem. The identification of HAPCs emphasizes those areas or habitats, especially in the context of the Council's authority to provide comment and recommendations under MSA 305(b)(3)(A) 305(b)(3)(B). Identification of HAPCs should be based on consideration of:

1. The importance of the ecological function provided by the habitat;
2. The extent to which the habitat is sensitive to human-induced environmental degradation;

¹ 40 CFR § 1508.1(s)

(s) Mitigation means measures that avoid, minimize, or compensate for effects caused by a proposed action or alternatives as described in an environmental document or record of decision and that have a nexus to those effects. While NEPA requires consideration of mitigation, it does not mandate the form or adoption of any mitigation. Mitigation includes:

- (1) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (5) Compensating for the impact by replacing or providing substitute resources or environments.

² 50 CFR §600.810(a) defines Adverse Effect as follows, any impact that reduces quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.”

³ Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. For the purpose of interpreting this definition of essential fish habitat: “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.

3. Whether, and to what extent, development activities are, or will be, stressing the habitat type; and,
4. The rarity of the habitat type.

The MSA further authorizes the Council to comment on any Federal or state agency activity that may affect the habitat, including EFH, of a fishery resource under its authority, and requires the Council to comment on any action or activity that is likely to substantially affect EFH of an anadromous fishery resource, such as salmonids, under its authority.

National Standards

The MSA includes ten National Standards (NS) that are principles that must be followed in any FMP to ensure sustainable and responsible fishery management. NMFS has developed regulatory guidance for the ten National Standards (50 CFR Part 600 Subpart D). We highlight three here that may be particularly relevant when considering the effects of offshore non-fishing activities on fishery resources:

- Optimum Yield (NS1): “Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the U.S. fishing industry.” OY is defined as “...a decisional mechanism for resolving the Magnuson-Stevens Act's conservation and management objectives, achieving an FMP's objectives, and balancing the various interests that comprise the greatest overall benefits to the Nation.” (50 CFR § 600.310).
- Communities (NS8): “Conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are based upon the best scientific information available in order to (1) Provide for the sustained participation of such communities; and (2) To the extent practicable, minimize adverse economic impacts on such communities.” (50 CFR § 600.310).
- Safety (NS10): “Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.” (50 CFR § 600.310).

Habitat and Fishery resources potentially impacted by offshore development activities

This section describes habitats and fishery resources potentially affected by offshore development. Habitat resources include EFH, as well as any habitat or ecosystem functions on which fish and other marine species depend. Fisheries resources include individual commercial and recreational fishermen and vessels, and port facilities necessary to support fishing, and associated businesses such as processors and transportation related to seafood production.

Pacific Coast Groundfish

The Pacific Coast Groundfish FMP includes over 100 species, including rockfish, flatfish, and roundfishes such as Pacific hake and sablefish. Groundfish fishing effort occurs coastwide and mostly shallower than the 1300 m depth contour, although some fisheries such as Pacific hake and albacore tuna have a much broader spatial range than most other groundfish fisheries. The groundfish fishery is dependent on access to specific, highly productive areas for two reasons. First, many groundfish stocks exhibit some degree of site fidelity, meaning that the target fisheries have limited locations in which to find target stocks. Second, there are many areas where bottom

trawling and/or all bottom contact fishing gear is prohibited, thus further limiting the areas open to groundfish fishing. Offshore development in areas that are currently open to groundfish fishing would substantially curtail the ability of groundfish participants to continue operating effectively.

The overall spatial extent of Pacific Coast Groundfish EFH is defined as:

- depths less than or equal to 3,500 m (1,914 fm) to mean higher high water level or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 ppt during the period of average annual low flow;
- Seamounts in depths greater than 3,500 m; and
- Areas designated as HAPCs not already identified by the above criteria.

Groundfish EFH is further defined by a Habitat Suitability Probability model that includes the HAPCs below as well as prey species, habitat use by life stage, and methane seeps, as described in Appendix B Part 2 of the Groundfish FMP. Groundfish HAPCs include estuaries, canopy kelp, seagrass, rocky reefs, and areas of interest. The Groundfish FMP also includes over 70 EFH Conservation Areas (EFHCAs) that prohibit groundfish bottom trawl gear and/or all bottom contact gear.

Pacific Salmon

The Pacific salmon fishery also operates coastwide, with multiple sectors targeting different stocks in the spring through fall time frame. Chinook and coho are the main salmon species caught in Council-managed ocean salmon fisheries, although catch of pink salmon can also be significant in odd-numbered years, primarily off Washington and Oregon. The ocean fishery is dominated by troll gear in vessels typically less than 18 meters (or 58 feet) in length. Offshore development is likely to negatively affect salmon fisheries in times and areas where fishing vessels are preempted from access to fishing grounds.

The spatial extent of Pacific salmon EFH is defined as all water bodies currently or historically occupied by Council-managed salmon. In the estuarine and marine areas, salmon EFH extends from the extreme high tide line in nearshore and tidal submerged environments within state territorial waters out to the full extent of the Exclusive Economic Zone (EEZ) (200 nautical miles or 370.4 km) offshore of Washington, Oregon, and California north of Point Conception. Pacific Coast salmon EFH also includes the marine areas off Alaska designated as salmon EFH by the North Pacific Fishery Management Council (NPFMC). Appendix A to the Pacific Coast Salmon Fishery Management Plan contains the Council's complete identification and description of Pacific coast salmon EFH, along with a detailed assessment of adverse impacts and actions to encourage conservation and enhancement of EFH. A detailed description of salmon EFH is in [Appendix A](#) to the Pacific Salmon FMP.

The Pacific salmon FMP includes the following HAPCs:

- Complex channels and floodplain habitats
- Thermal refugia
- Spawning habitat
- Estuaries
- Marine and estuarine SAV

Highly migratory species

West Coast HMS vessels operate over a broad range of the Exclusive Economic Zone, using a variety of gears including hook-and-line, troll, deep-set buoy gear, drift gillnets, and purse seines. While some trolling may be possible within wind energy installations or other offshore development structures, it is not guaranteed. The other gears listed above may be precluded from fishing within OSW farms. In addition, there would be a de facto fishing buffer zone around any offshore development infrastructure, based on the risk of gear drifting too close to a facility.

EFH for most HMS, which is defined per species, is in U.S. EEZ waters, mostly south of the Oregon-California border. However, some species such as some sharks and albacore tuna, range from the U.S.-Mexico border to the U.S.-Canada border. Detailed descriptions and maps depicting HMS EFH can be found on the Council's [HMS FMP webpage](#).

Coastal pelagic species

The coastal pelagic species (CPS) fishery operates coastwide, with effort generally commensurate with stock abundance. Purse seine fishing is dominant for all CPS stocks and is not feasible to be operated in or near offshore infrastructure such as OSW installations. Therefore, CPS fisheries would also be precluded from fishing in potentially productive areas and would be forced to shift effort to possibly less productive areas.

The east-west geographic boundary of EFH for CPS is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10°C to 26°C. The southern boundary is the United States-Mexico maritime boundary. The northern boundary is more dynamic and is defined as the position of the 10°C isotherm, which varies seasonally and annually.

Other fisheries-related activities and resources likely to be impacted by offshore development

Scientific surveys and data collection

The Council's fishery conservation and management measures are based on a complex suite of scientific analyses, particularly fish stock assessments, and including habitat assessments and a variety of other science-based research activities and tools. These include activities conducted by Federal, state, university, and non-governmental entities. The data needed for fish stock assessments is collected both from fishing vessels and from fisheries-independent surveys. Offshore development that limits the access or timing survey vessels have to historic survey locations, or that otherwise interfere with the collection of data at sea, have the potential to significantly compromise the Council's science-based fisheries conservation and management programs. Loss of long-standing survey locations or indices will increase scientific uncertainty in stock assessments, which would result in overly precautionary harvest guidelines, causing harm to fishery participants and to fishing-dependent communities.

Impacts to fishing dependent businesses

As described above, MSA National Standard 8 addresses community impacts and requires that FMPs *"take into account the importance of fishery resources to fishing communities by utilizing economic and social data...in order to (a) provide for the sustained participation of such*

communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities.” Impacts to fishing-dependent businesses, port-side infrastructure, possible displacement of vessels, and disruptions related to increased vessel traffic, channel dredging, and other facilities/harbor improvements should be addressed. Many small businesses are directly or indirectly dependent on the fishing and seafood industries and should be considered in any impacts evaluation related to offshore development activities. Socio-economic information on fishing and coastal communities is available from the Council, from the NOAA NWFSC, and other sources.

Additional concerns and research needs

Several related effects may be associated with OSW development. These should be studied and considered as part of any pre-construction analysis.

OSW as fish-aggregating devices or artificial reefs: There is concern that floating wind turbines could act as fish aggregating devices, which could result in some fish becoming inaccessible to the fishery, if they show site affinity to those turbine or other structures and fishery participants are excluded from accessing those areas.

Electromagnetic field effects: Potential effects on fish and other marine species from altered electro-magnetic fields (EMF) associated with human development activities are a concern and should be addressed in analysis of impacts related to any offshore development. Concerns include the potential for EMF associated with transmission cables or other infrastructure to alter the behavior of ontogenetic or anadromous movement essential for spawning, rearing, foraging, or access to habitat.

Wind wake effects: Offshore wind farms could decrease wind speed, diminish wind stress, or alter wind direction enough to disrupt local hydrodynamics, stratification, surface currents, upwelling, and localized circulation. Both wind speed and wind stress may be lessened for several tens of leeward of a turbine. Such disruptions could alter nutrient availability, primary productivity, and could affect larval and egg transport of marine species that depend on such passive transport as part of their life cycle.

Potential impacts from offshore development activities

Several components of offshore development could affect habitat, marine ecosystems, fishery resources, commercial or recreational fishing activities, or fishery-dependent communities. Existing marine and estuarine habitat features can be impacted by the physical presence of OSW structures and other facilities, by transmission and inter-array cables, by construction and pre-development site preparation, by equipment staging or assembly, and by regular operations and maintenance activities. The presence of offshore development installations will likely displace fishing activities by constricting access to fishing grounds, and by negatively affecting vessel navigation and transit. Unburied seafloor cables and mooring lines in the water column are likely to preclude fishing activity due to risk of gear entanglement or vessel safety. Pre-development surveys and site assessment or characterization activities have the potential to interfere with fishing vessels transiting to or from port or may interrupt fishing activities or interact with fishing gear.

Potential impacts to habitats and species (including protected species under the Endangered Species Act and the Marine Mammal Protection Act) from offshore development activities include, but are not limited to:

- Physical alteration of habitat features
- Effects of noise, light, and vibration on marine life
- Release of marine debris
- Effects on water quality as it affects marine fauna and flora, resulting from biofouling removal, oil and hazardous materials spills, or other water quality parameters; including thermal changes resulting from cooling structures
- Drilling, embedding, or trenching into the sea floor to install anchors or cables
- Disturbance of species during construction, installation, operation, and maintenance
- Aggregation of fishes and their predators, with consequent changes in trophic interactions and potential increases in natural mortality
- Scouring and sediment plume formation caused by seafloor trenching and transmission
- Cable installation, as well as the continued presence of physical structures left in place
- Geological and geophysical surveys, including seismic surveys, that may be conducted at greater frequency or spatial extent to inform project design

Potential impacts to fishing activities include, but are not limited to:

- Displacement from fishing grounds
- Transit and navigation challenges
- Entanglement and gear loss
- Elevated risks related to safety at sea
- Shoreside and port infrastructure

Other potential impacts:

- Disruption and direct obstruction of scientific surveys conducted by NOAA and other agencies and organizations, which are critically important to inform fishery management decision
- Socio-economic changes associated with decreased fishing-related revenues
- Disruption to secondary industries (e.g., processing plants and transportation) and the seafood supply chain

Expectations for analysis, monitoring, and avoiding impacts to fisheries and habitats

Project siting and environmental review

1. Prioritize development (of non-fishing activities) outside known fishing areas, which can mean siting development in waters deeper than the 1300 m depth contour. Ensuring that offshore non-fishing activities occur outside of the most-used fishing areas will help minimize interaction with Council-managed fisheries as well as minimize potential impacts to important habitats.
2. Avoid disturbance to important habitats, including Essential Fish Habitat Conservation Areas (EFHCA), Habitat Areas of Particular Concern (HAPC), EFH, and habitats supporting structure-forming invertebrates such as deep-sea corals and sponges.
3. If negative impacts cannot be avoided, agencies and project developers should implement mitigation measures to minimize impacts, such as (but not limited to) the following:

- a. Buffer zones of sufficient size surrounding important physical and oceanographic habitat features (e.g., rocky reefs, banks, canyons, methane seeps, localized eddies etc.), fishing activity, transit lanes, etc.;
 - b. Construction and operations timing windows to minimize impacts to spawning/rearing, migration, and important fishery seasons and locations;
 - c. Technologies and actions to minimize and mitigate impacts including, cable burial, noise reduction, and minimizing pollutants; and
 - d. Locate structures and cables to minimize overlap with important habitats and fisheries activities.
4. Analyze the duration, intensity, and magnitude of potential impacts to the fishery as well as potential impacts to habitat or other resources resulting from displacement of fishing activities.
 5. Analyze potential impacts to both commercial and recreational fishing sectors, using landings data, angler trips, revenues, downstream economic losses to fishing communities, reduction in value of permits and vessels, and associated costs incurred by fishery participants. Use logbooks, vessel monitoring, fish tickets, and other data to accurately characterize the fishery for at least the most recent 10 years.
 6. Use a community vulnerability index or similar tool to assess impacts to fishing-dependent communities and to evaluate impacts related to Environmental Justice.
 7. Evaluate potential impacts to the seafood supply chain.
 8. Analyze potential impacts to fishery sectors and habitats resulting from the presence of offshore facilities, interarray and transmission cables, construction activities, and site characterization and survey activities.
 9. Describe impacts in terms of lost revenues, increased costs, changes in required effort, and risks to non-target stocks.
 10. Analyze the cumulative effects associated with past, present, or reasonably foreseeable future ocean development activities.

Research and Monitoring

11. Detailed research and monitoring plans should include baseline assessments 2-3 years prior to construction and continue throughout the life of the project, including the eventual decommissioning of the project.
12. Monitoring should include elements sufficient to inform short-term and cumulative effects on habitats, ecosystems, fishing activities and marine species.
13. Monitoring data and research conducted from that data should be shared with other government agencies and the public and should be provided in formats compatible with broad shared use.

Outreach and community engagement

14. Agencies and lessees should provide a detailed engagement plan that includes multiple opportunities for information exchange with a variety of stakeholders, especially in the commercial and recreational fishing sectors. Engagement should begin early in the process and occur often throughout the process. Outreach should not be limited to large group or online meetings. In some cases, individual engagement is a highly effective way to gain important local knowledge.

15. The local labor pool, fishing participants, and vessels should be given opportunities for construction and operations activities.
16. Lessees should employ a fishery liaison who has the trust and confidence of the local community.
17. Lessees should develop a long-term community benefits agreement to ensure that local communities have the lasting financial resources to offset negative impacts to the fishermen and the local community.

Navigation, transit, and safety

18. OSW developers should identify a configuration that accommodates transit lanes for commercial and recreational fishing vessels, maritime commerce, and for safety and rescue activities.
19. Lessees should work with affected fishermen, port authorities, and the United States Coast Guard on optimum layout and configuration, including interarray and transmission cables.
20. Lessees should work with the United States Coast Guard on developing safety communication protocols that ensure that all mariners are adequately notified when and where offshore exploration and development activities are planned to occur.
21. Lessees should evaluate impacts to navigational radar and identify alternative/backup aids to navigation.

PFMC
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