

ECOSYSTEM WORKGROUP REPORT ON MARINE PLANNING

In September 2020, the Pacific Fishery Management Council (Council) directed the Ecosystem Workgroup (EWG) to transition what had been Chapter 5 of the 2013 Fishery Ecosystem Plan and which had provided Council guidance to other agencies authorizing or conducting non-fishing activities in offshore waters, to a new and separate Council guidance document. In March 2021, the EWG presented an outline for a standalone guidance document on the Council's priorities for federal and state agencies analyzing or permitting non-fishing activities in the California Current Ecosystem (CCE, Agenda Item I.3.a, EWG Report 2). After receiving comments on that outline from its advisory bodies and the public, the Council asked the EWG to return in March 2022 with an updated document.

In June 2021, the Council created a new ad hoc Marine Planning Committee (MPC) to track and advise the Council on marine planning issues and their effects on Council-managed fisheries, data collection surveys, habitat, and coastal communities. By November 2021, the MPC was reporting to the Council on a variety of issues, including planning for offshore wind, offshore aquaculture, ocean navigation challenges, and other issues. Currently, the MPC and the Habitat Committee (HC) are in the process of drafting additional guidance documents on offshore non-fishing activities.

The attached draft standalone guidance document is intended to follow the March 2021 instructions from the Council to the EWG, including comments from advisory bodies and the public. The EWG recommends that the Council provide its advisory bodies (EWG, MPC, and HC, and others) with guidance at this March 2022 meeting on:

- Transitioning responsibility for the attached draft standalone guidance document to the MPC;
- Whether there are any parts of the attached draft document that should be included in the Council's marine planning documents going forward.

The EWG is recommending that the Council move the responsibility for drafting and maintenance of the standalone guidance document, or other similar policy or guidance document, to the MPC to minimize confusion for the Council, its advisory bodies, and the public. We remain willing to participate in the Council's marine planning process, are always available for questions, and plan to comment on and support work on future marine planning issues that may arise in the Council process.

PFMC
02/16/22

DRAFT

Pacific Fishery Management Council Guidance on Agency Activities in the California Current Ecosystem

This document is aimed at Federal and state agencies, regional and national marine use planning bodies, and international fishery and ocean resource management bodies that permit or conduct activities affecting marine resources occurring in the California Current Ecosystem (CCE).

The Pacific Fishery Management Council (Council) is one of eight regional fishery management councils authorized by the Magnuson Stevens Fishery Conservation and Management Act (MSA) and is responsible for the management of fisheries of the U.S. Exclusive Economic Zone (EEZ, 3-200 nm) off the coasts of Washington, Oregon, and California. The Council executes its statutorily authorized responsibilities through four fishery management plans (FMPs) for: [Coastal Pelagic Species](#) (CPS, which include northern anchovy, market squid, Pacific sardine, Pacific mackerel, and jack mackerel); [Highly Migratory Species](#) (HMS, which include tunas, billfish, and oceanic sharks); [Groundfish](#) (covering more than 100 species of rockfish, Pacific hake, sablefish, and other principally demersal species); and, [Pacific Salmon](#) (principally Chinook and coho). Through these FMPs, the Council develops fishery-specific management measures that are implemented through Federal regulations, and by cooperating state and tribal agencies developing conforming or linked regulations, as appropriate. The Council addresses its holistic, ecosystem-wide management responsibilities through its [Fishery Ecosystem Plan](#), which the Council uses to better understand the CCE and to develop policies and science priorities for the varied species, habitat types, fisheries, and ecological functions within the CCE.

The MSA requires U.S. fisheries to be managed so that “a supply of food and other products may be taken and that recreational benefits may be obtained, on a continuing basis; irreversible or long-term adverse effects on fishery resources and the marine environment are avoided; and there will be a multiplicity of options available with respect to future uses of these resources.” [16 U.S.C. §1802]. Thus, fisheries management must look forward to ensure that future generations of Americans may benefit from natural marine resources and from healthy marine ecosystems. The ecosystem service that most concerns the Council is fishing – in other words, the ability of the CCE to support, on an ongoing basis, sustainable fisheries that provide food and cultural benefits to the nation’s human population. While the Council is charged with ensuring that fishing itself is sustainable, it is also concerned with any non-fishing activities that may jeopardize the roles of fish, animals, and plants within the CCE, and their dynamic relationships to each other and to humans. The Council is concerned with and interested in any non-fishing activities that have the potential to jeopardize the Council’s short- or long-term ability to manage West Coast fisheries to provide food, recreation, and other socioeconomic benefits to this and future generations of Americans.

When authorizing activities that may have potential adverse effects on living marine resources and the ecosystem services they provide, the Council encourages other permitting agencies and management entities to fully consider those effects and any necessary mitigation measures. Non-fishing activities could affect the biological diversity of marine life, the functional integrity of the marine ecosystem, marine habitat or associated biological communities, and the effective prosecution of fisheries. When conducting or permitting activities, agencies should consider direct

effects, such as the killing of fish, marine mammals, or sea turtles; indirect effects, such as the siting of facilities that may impinge on fishing grounds and displace fishing effort; and cumulative effects, taking into account both the subject action and other activities affecting the same resources.

This document discusses potential impacts to CCE resources from regulated human activities. Guidance in this document is provided for agencies reviewing projects for permits or directly implementing projects intended to take place in or that may affect the CCE. The Council's Habitat Committee (HC) and ad hoc Marine Planning Committee (MPC) have also drafted guidance documents which might be of use to those planning activities that might impact living marine resources. The HC and MPC guidance documents are Agenda Item C.2.a, HC Report 1 and Agenda Item C.2.a, MPC Report 2, respectively. Table 1, at the end of this document, lists examples of human activities -- other than fishing -- that may affect CCE resources.

Below, this document discusses the major issues of Council concern for these broad-scale ecosystem components under Council responsibility: fish species, habitat, fisheries and fishing communities. The potential direct, indirect, and cumulative effects of non-fishing activities on marine ecosystem components should be analyzed under the environmental review processes required by applicable federal and state laws, including the National Environmental Policy Act (NEPA). Agencies are also encouraged to consult the Council's Fishery Ecosystem Plan, which contains a wealth of information on resources and ecological processes occurring in the CCE. Finally, agencies are encouraged to directly engage with the Council by, for example, briefing the Council at one of its meetings during the scoping phase of environmental review. The Council and its advisory bodies can be an effective mechanism for soliciting input from a broad array of fishery-related stakeholders, thus contributing to project scoping.

Species of Particular Interest for Protection from the Effects of Non-Fishing Activities

The Council has jurisdiction over fish, which the MSA defines as "finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds" within the West Coast EEZ. National Oceanic and Atmospheric Administration (NOAA) and the United States Fish and Wildlife Service (USFWS) administer recovery programs for all marine and anadromous species listed as threatened or endangered under the Endangered Species Act (ESA), and administer protection programs for marine mammals under the Marine Mammal Protection Act (MMPA). The USFWS manages protection programs for bird species, including seabirds, under the Migratory Bird Treaty Act.

The Council is concerned with the potential effects of non-fishing activities that could directly or indirectly harm or kill any of its managed species at any of their life stages, which are identified and discussed in detail in the Council's Fishery Management Plans (FMPs). There are, however, some species and species groups that are likely to be more vulnerable to the effects of non-fishing activities on their life cycles and habitats. Across all managed stocks, the Council is particularly concerned with non-fishing activities that may:

- Block, through physical, chemical, or other means, fish species' access to or from the entryways (mouths) of rivers or estuaries;
- Physically harm or directly kill fish through entrainment in man-made devices;

- Physically or otherwise alter essential fish habitat (EFH, see further discussion below) for managed species in a way that reduces the functionality of that habitat;
- Reduce the availability or alter the ecosystem functions of the prey species of our managed species through their removal by physical, chemical, or other means;
- Serve to alter, through auditory herding or other means, migratory paths of either managed species or their predators such that predators have increased access to wild fish populations;
- Introduce non-native species that would compete with, prey upon, have the potential to introduce diseases to, or which could alter the genetic composition of native species; or
- Have the effect of concentrating wild fish stocks, wild stock parasites, or diseases.

While this list of impacts apply to all Council-managed stocks, they also should be considered in the specific contexts highlighted in the sections below.

Anadromous Species

Among species within Council FMPs, salmon are unique in that they are obligated to spend the spawning, incubation, juvenile, and a portion of both juvenile migration and adult-spawning migration stages of their lives in freshwater. Thus, the survival of individual populations and stocks of salmon are dependent on not only responsible fisheries management practices, but also on conservation of water quality and quantity for each spawning and rearing tributary, and on land-based activities taking into account the unique challenges and life cycles of salmonid species within each tributary.

NOAA and the USFWS work with the states, tribes, municipalities, and private entities to develop recovery plans for salmon species listed under the ESA. Each of these recovery plans is intended to take into account the unique needs of particular runs of salmon within the geographic areas addressed by the plans. Recovery efforts for threatened and endangered West Coast salmon runs guide how and where non-fishing activities may affect salmon populations, especially activities that may affect salmonids as they leave or approach their natal rivers, and the application of related mitigation measures.

Species protected through an overfished species rebuilding program

The MSA requires that fishery management councils identify species that are overfished, prevent overfishing, and rebuild those stocks that have been identified as overfished. Since 1998, the Council has developed and implemented rebuilding plans for several of its managed species. To date, species managed through overfished species rebuilding programs have included long-lived, slow-to-mature rockfish species and selected runs of salmon.

For species with solely marine life cycles (i.e., not anadromous), the Council's rebuilding programs focus on minimizing or eliminating directed catch and minimizing opportunities for incidental catch. Together with its concerns for anadromous species, above, the Council would be particularly concerned with non-fishing activities taking place within rebuilding species' EFH that might jeopardize the ability of those species to rebuild to their optimum population levels.

Species dependent upon a specific habitat type

The Council's FMPs define [EFH for managed species](#). Some species have widely-varying and diverse habitat requirements, while others are dependent on fixed habitat types, and in many cases those dependencies change with a species' life stage. Species dependent upon fixed habitat types may range in type from site-loyal rockfish species that, as adults, exist only in specific depth ranges on rocky habitats, to species that are pelagic as adults but which require fixed habitat for spawning, to species that can only exist within specific seawater temperature ranges.

For species that depend on a specific habitat type, the Council would be particularly concerned with non-fishing activities taking place within species-specific EFH that might jeopardize the ability of managed species to use that habitat for spawning, feeding, breeding, or growth to maturity. Damage to EFH could range from crushing biogenic bottom habitat to altering electromagnetic fields in ocean currents to concentrating fish via attraction to artificial structures. Discussions of non-fishing activities that may affect managed species' EFH may be found within the Council's FMPs, and the potential for those activities to affect EFH is not repeated here. Links to the four fishery management plans and EFH descriptions can be found on the Council's [website](#).

Species with additional or unusual jurisdictional issues

There are numerous western Treaty Tribes that have both exclusive and shared authority to manage a variety of fish species and marine areas with the West Coast states and the U.S. government, and which participate in Council management processes. Fishing rights for Treaty Tribes are connected with the Usual and Accustomed (U&A) fishing areas of those tribes, meaning that an action that affects the status of a managed species that occurs within a particular tribe's U&A fishing area must be assessed not just for its effects on the status of the species and its habitat as a whole, but also for its effects on the availability of that resource to tribal fisheries within the particular U&A fishing area. For example, a non-fishing activity that does not affect the overall status of the West Coast sablefish stock, but which could reduce the sablefish available for harvest off the northern Washington coast either through displacement of the stock or fishing effort, would be subject to additional scrutiny for its effects on tribal treaty rights. For tribal treaty species, the Council would have the same concerns as those discussed above under the types of non-fishing activities with the potential to affect salmon and species managed under rebuilding plans, but with particular focus on effects that might occur within tribal U&A fishing areas.

Several Council-managed species range across the U.S. EEZ boundaries into the EEZs of other nations, or into international waters. Non-fishing activities that may affect the status of internationally-managed stocks could frustrate fulfillment of obligations the U.S. may commit to in various international forums. The Council would be particularly interested in coordination on and concerned with non-fishing activities taking place within the West Coast EEZ or within managed species EFH that might affect the status of Pacific halibut, Pacific whiting/hake, salmon, and highly migratory species managed through bilateral and multilateral processes.

Habitats Needing Protection from the Effects of Non-Fishing Activities

Under the MSA, fishery management councils must describe, identify, conserve and enhance EFH for species managed under a Federal FMP. The MSA defines EFH as "those waters and substrate

necessary to fish for spawning, breeding, feeding or growth to maturity,” which includes physical and chemical water column properties and biological communities of both water and substrate [16 U.S.C. §1802]. That definition, in combination with the diverse life histories of the 100+ species under Council management and the fact that many physical, chemical, and biological properties are dynamic, has necessarily resulted in much of the waters and substrate in the West Coast EEZ to be defined as EFH. The Council is authorized to comment on non-fishing activities that may affect the EFH designated in its FMPs, and is required to comment on activities that are likely to substantially affect the habitat of an anadromous species under its authority (i.e., salmon).

As noted above, the Council is concerned with non-fishing activities that may affect species with strong linkages to and dependency upon fixed or specific habitat. Similarly, the Council would be concerned with non-fishing activities that have the potential to affect habitat that is itself vulnerable to long-term alteration. Each of the Council’s FMPs, their EFH appendices, and applicable NEPA analyses should be consulted for assessments of the types of human activities expected to have a potential negative effect on EFH for Council-managed species. While all fish habitat is of interest to the Council, some habitat types, the habitat needs of some species, and some types of habitat disturbance are of particular concern to the Council for their effects on the ecosystem as a whole, such as activities that:

- Disturb or kill structure-forming invertebrates or vegetation in a manner that either prevents those species from recovering within the affected area within their mean generation times, or which reduces the known distribution of those species;
- Alter the geological structure of the habitat such that the habitat cannot maintain or recover its functionality unaided;
- Alter the chemical composition, turbidity, or temperature of the seawater such that the habitat cannot recover to its pre-disturbance state; or
- Restrict a species’ access to its EFH.

Communities that Depend on Fishery Resources

Norman and colleagues (2007) provided [summary descriptions of communities](#) that, for West Coast and Alaska fisheries, meet the MSA’s definition of a fishing community: “substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and U.S. fish processors that are based in such community” (16 U.S.C. §1802). Information from the foundational Norman et al. 2007 document is supplemented by an [online social indicators mapping site](#). West Coast fishing communities vary in their levels of involvement in fisheries and dependency on fishery resources (Sepez et al. 2007). Involvement and dependence dictate a community’s vulnerability to exogenous factors. The [Annual California Current Ecosystem Status Reports](#) present metrics that can be used to assess community vulnerability.

Although the Council’s direct management authority is exercised through its four FMPs, it has a broader interest in state, tribal, and international management processes for West Coast species outside of the FMPs. Given this broad perspective, the Council is concerned not only with activities that may impede the prosecution of Council-managed fisheries but with activities affecting all fishing opportunities for West Coast fishing communities. Communities need viable ports and infrastructure to successfully participate in fisheries. These needs extend beyond just those

communities that depend on fishing, although some fishing communities and fishing types may be more vulnerable to disturbance by non-fishing activities than others, as detailed below.

For fisheries management, the Council must balance the needs of a wide variety of West Coast fishing communities; therefore, the Council would be concerned with non-fishing activities that disproportionately affect fisheries' access to fishery resources in a particular community or geographic area, and with activities that may have more broad-scale effects. Activities of potential concern to the Council include those that:

- Directly take or otherwise deplete local populations of marine species;
- Block or significantly change, whether temporarily or permanently, a fishing community's access to its marine fishing grounds, safe harbors, and port infrastructure, taking into account the needs of those communities to access fishing locations that change with interannual and interdecadal climate variability and longer-term climate change;
- Increase pollutant loads in the habitats of managed species such that those pollutants may bioaccumulate in the flesh of targeted species;
- Increase the hazards to navigation for vessels; or
- Have not undergone local consultation with the affected communities before implementation.

Fisheries Constrained by Time or Area Restrictions

Fishing seasons can be time-constrained for a variety of reasons, often because the target species is migrating through the fishing area and may only be harvested at certain times of year, or as an indirect result of management measures like closed periods or limited harvest quotas. A variety of factors, ranging from changes in system productivity to shifting markets for seafood, can lead to management measures that cause season length to fluctuate from year to year. Historically, commercial and recreational fisheries for Pacific halibut and salmon, as well as commercial fisheries for Pacific sardine, have been subject to short seasons, while species like albacore and Pacific whiting can have notably different distributions from year to year. Time-constrained fisheries sometimes make up a large proportion of the revenue of individual fishing businesses, or even particular fishing ports. Activities that interfere with fishing during a short season thus could be economically devastating for fishery participants. Non-fishing activities that interfere with fishing vessels in transit to or from port, or while in the process of deploying or retrieving gear, can be hazardous to the safe operation of those vessels at sea. Activities like port facility construction or improvement of port facilities, interruptions in supplies like fuel and ice, and dredging or jetty operations that impede bar crossings can compromise a fishing vessel's participation in a time-constrained fishery. Activities that affect fishing vessel access to port can also prevent fish receivers and processors from receiving landed fish, which in turn affects land-based employment opportunities in fisheries.

Many West Coast fisheries are also limited to particular geographic areas either due to regulations or the biology and/or distribution of the target stock. West Coast groundfish fisheries are subject to a variety of closed area restrictions intended to protect EFH. Salmon fisheries often target a particular species or run by fishing in areas near river mouths or in specific depths. Fisheries for Pacific halibut and groundfish can tend to concentrate on areas with benthic structure, such as banks and rocky reefs. Fisheries for CPS, particularly market squid and to a lesser extent Pacific

sardine, often rely on aggregations of individuals in areas of favorable temperature, food sources, or spawning habitat. Location-constrained fisheries can be particularly vulnerable to non-fishery ocean uses that also require specific locations (aquaculture facilities, marine protected areas, offshore energy development, military operations, undersea cable placement, etc.). The Council would be concerned with non-fishing activities that restrict or displace place-based fishing opportunities, which are difficult to relocate. The Council would also be concerned with non-fishing activities that displace fishing, whether through permitting, regulation or through installation of objects that limit fishing vessels' access to ocean space.

The Council often considers ocean zoning matters and is interested in coordinated spatial planning efforts as a means of considering non-fishing marine activities while preserving fishing opportunities and protecting areas that are critical to fisheries. To further its engagement, the Council participates in regional and national marine spatial planning and coordination initiatives, and welcomes briefings from and discussions with agencies considering and permitting non-fishing activities within the West Coast EEZ.

References

Norman, K., J. Sepez, H. Lazrus, et al. 2007. Community profiles for West Coast and North Pacific fisheries – Washington, Oregon, California, and other U.S. states. U.S. Department of Commerce NOAA Technical Memorandum NMFS-NWFSC-85, 602 p.

Sepez, J., K. Norman, and R. Felthoven. 2007. A quantitative model for ranking and selecting communities most involved in commercial fisheries. NAPA Bulletin 28: 43-56.

Table 1. Non-fishing activities that may affect California Current Ecosystem resources. These activities may affect species, habitats, fisheries, fishing communities, and other ecosystem components of particular interest to the Council.

Non-fishing Activities of Particular Interest for their Potential Effects on the Marine Environment	Marine Environment Impacted
Alternative Offshore Energy Development	Coastal/Marine
Aquaculture, Artificial Propagation of Fish and Shellfish	Coastal/Marine and Freshwater/Land-Based
Bank Stabilization	Freshwater/Land-Based
Beaver removal and Habitat Alteration	Freshwater/Land-Based
Climate Change and Ocean Acidification	Coastal/Marine and Freshwater/Land-Based
Construction/Urbanization	Freshwater/Land-Based
Culvert Construction	Freshwater/Land-Based
Dam Construction/Operation	Freshwater/Land-Based
Desalination	Coastal/Marine and Freshwater/Land-Based
Dredging and Dredged Spoil Disposal	Coastal/Marine and Freshwater/Land-Based
Estuarine Alteration	Coastal/Marine and Freshwater/Land-Based
Flood Control Maintenance	Freshwater/Land-Based
Forestry	Freshwater/Land-Based
Grazing	Freshwater/Land-Based
Greenhouse gas emissions increases	Coastal/Marine and Freshwater/Land-Based
Habitat Restoration Projects	Coastal/Marine and Freshwater/Land-Based
Introduction/Spread of Nonnative Species	Coastal/Marine
Irrigation/Water Management	Freshwater/Land-Based
Jetsam	Coastal/Marine
Light Pollution	Freshwater/Land-Based
Military Exercises	Coastal/Marine and Freshwater/Land-Based
Mineral Mining	Freshwater/Land-Based
Natural Gas Projects	Coastal/Marine
Nonnative Species Introduction/Spread	Freshwater/Land-Based
Nutrient Pollution and Eutrophication	Freshwater/Land-Based
Offshore Mineral Mining	Coastal/Marine
Offshore Oil and Gas Drilling and Liquefied Natural Gas	Coastal/Marine
Offshore Wind Development	Coastal/Marine
Over-Water Structures	Coastal/Marine
Pesticide Use	Freshwater/Land-Based
Pile Driving	Coastal/Marine
Power Plant Intakes	Coastal/Marine
Road Building and Maintenance	Freshwater/Land-Based
Sand and Gravel Mining	Coastal/Marine and Freshwater/Land-Based
Shipping Traffic and Ocean-based Flotsam and	Coastal/Marine
Sound Pollution	Coastal/Marine
Vessel Operation	Coastal/Marine and Freshwater/Land-Based
Wastewater/Pollutant Discharge	Coastal/Marine and Freshwater/Land-Based

Non-fishing Activities of Particular Interest for their Potential Effects on the Marine Environment	Marine Environment Impacted
Wetland and Floodplain Alteration	Freshwater/Land-Based
Woody Debris/ Structure Removal	Freshwater/Land-Based
Legacy Pollution	Freshwater and Coastal and Marine