Backgrounder:
Essential Fish Habitat

This fact sheet answers the following questions:

- What is essential fish habitat (EFH)?
- What is the Habitat Committee?
- Do I need to do an EFH consultation for my project?

What is EFH?

"Habitat" is the environment where an animal lives and reproduces. Identifying fish habitat is complex because fish move through the ocean and use different types of habitats for different purposes. For example, a fish might spawn in one type of area and search for food in another.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) defines "essential fish habitat" as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." To clarify this definition, waters is defined as "aquatic areas and their associated physical, chemical, and biological properties that are used by fish," and may include areas historically used by fish. Substrate means "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 the full life cycle of a species.

The MSA requires that regional management councils describe EFH in their fishery management plans, that they minimize impacts on EFH from fishing activities, and that they and other federal agencies consult with the National Marine Fisheries Service about activities that might harm EFH. Actions that occur outside of EFH, but that might affect the habitat, must also be taken into account.

The Council has developed documents that describe and map EFH for coastal pelagic species, salmon, groundfish, and highly migratory species, and that suggest management measures to reduce impacts from fishing and non-fishing activities. The Council may use fishing gear restrictions, time and area closures, harvest limits, and other measures to lessen adverse impacts on EFH. When doing so, the Council considers whether the fishing activity is harming the habitat, the nature and extent of the damage, and whether management measures

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can be enforced. The Council also considers the long-term and short-term costs and benefits to the fishery, fishing communities, and the habitat.

In addition to EFH, the MSA encourages Councils to designate habitat areas of particular concern (HAPCs). These are specific habitat areas, a subset of the much larger area identified as EFH, that play a particularly important ecological role in the fish life cycle or that are especially sensitive, rare, or vulnerable. Designating HAPCs allows managers to focus their attention on conservation priorities during review of proposals, gives those habitats extra management protection, and gives the fish species within HAPCs an extra buffer against adverse impacts.

HAPCs are identified differently from EFH. EFH is identified for each species and life stage; in contrast, HAPCs are identified on the basis of habitat-level considerations, including the importance of the ecological function provided by the habitat, the extent to which the habitat is sensitive to human-induced environmental degradation, whether and to what extent development activities are or will be stressing the habitat, and the rarity of the habitat type.

EFH for groundfish is:

All areas from the high tide line (and estuaries) to 3,500 meters (1,914 fathoms) in depth

Habitat areas of particular concern: estuaries, canopy kelp, seagrass, and rocky reefs

The following "areas of interest":

Washington: All waters and sea bottom in state waters

Oregon: Daisy Bank/Nelson Island, Thompson Seamount, and President Jackson Seamount.

California: all seamounts, including Gumdrop Seamount, Pioneer Seamount, Guide Seamount, Taney Seamount, Davidson Seamount, and San Juan Seamount; Mendocino Ridge; Cordell Bank; Monterey Canyon; specific areas in the Federal waters of the Channel Islands National Marine Sanctuary; specific areas of the Cowcod Conservation Area.

Essential Fish Habitat for Groundfish

The Pacific Coast Groundfish Fishery Management Plan manages more than 82 species over a large and ecologically diverse area. Groundfish are fish such as rockfish, sablefish, flatfish, and Pacific whiting that are often (but not exclusively) found on or near the ocean floor or other structures.

The Council first identified groundfish EFH in 1998. Because information about each groundfish species' habitat was limited, EFH was defined to encompass the whole West Coast exclusive economic zone. However, in 2000, based on the American Oceans Campaign v. Daley court case, the Council was directed to revisit the question of groundfish EFH. Amendment 19 to the Groundfish Fishery Management Plan, completed in 2006, defines EFH and HAPCs for groundfish. In 2011, those definitions are being revisited, as required by the MSA.

To identify EFH for groundfish, NMFS developed a GIS-based assessment model that looked at the occurrence of groundfish in relation to depth, latitude, and substrate type. A detailed description of this model is included in Appendix B.1 to the groundfish fishery management plan (shortcut: http://tinyurl.com/37xxjwq).

Ultimately the Council identified groundfish EFH as all waters from the high tide line (and parts of estuaries) to 3,500 meters (1,914 fathoms) in depth. (For a more technical explanation, go to http://tinyurl.com/24kvnx7 section 7.2).

HAPCs are a subset of EFH used to focus management and restoration efforts. The Council identified six HAPC types. One of these types, certain oil rigs in Southern California waters, was disapproved by NMFS. The current HAPC types are: estuaries, canopy kelp, seagrass, rocky reefs, and "areas of interest" (a variety of submarine features, such as banks, seamounts, and canyons, along with Washington State waters.)

In addition to identifying EFH and describing HAPCs, the Council also adopted mitigation measures directed at the adverse impacts of fishing on groundfish EFH. Principal among these are closed areas to protect sensitive habitats. There are three types

of closed areas: bottom trawl closed areas, bottom contact closed areas, and a bottom trawl footprint closure. The 34 bottom trawl closed areas are closed to all types of bottom trawl fishing gear. The bottom trawl footprint closure closes areas in the EEZ between 1,280 meters (700 fathoms) and 3,500 meters (1,094 fathoms), which is the outer extent of groundfish EFH. The 17 bottom contact closed areas are closed to all types of bottom contact gear intended to make contact with bottom during fishing operations, which includes fixed gear, such as longline and pots.

Essential Fish Habitat for Coastal Pelagic Species

The coastal pelagic species (CPS) fishery includes four finfish (Pacific sardine, Pacific (chub) mackerel, northern anchovy, and jack mackerel), and market squid. CPS finfish generally live nearer to the surface than the sea floor. The definition of EFH for CPS is based on the temperature range where they are found, and on the geographic area where they occur at any life stage. This range varies widely according to ocean temperatures. The EFH for CPS also takes into account where these species have been found in the past, and where they may be found in the future.

EFH for coastal pelagic species is based on a specific temperature range that applies to all marine and estuary waters from the West Coast shoreline (and estuaries) to the limits of the EEZ.

The east-west boundary of CPS EFH includes all marine and estuary waters from the coasts of California, Oregon, and Washington to the limits of the EEZ (the 200-mile limit) and above the thermocline where sea surface temperatures range between 10° and 26° centigrade. (A thermocline is an area where water temperatures change rapidly, usually from colder at the bottom to warmer on top). The southern boundary is the U.S./Mexico maritime boundary. The northern boundary is more changeable and is defined as the position of the 10° C isotherm, which varies seasonally and annually. (The 10° C isotherm is a rough estimate of the lowest temperature where finfish are found, and represents their northern boundary). In years with cold winter sea surface temperatures, the 10° C isotherm during February is around 43° N latitude offshore, and slightly further south along the coast. In August, this northern boundary moves up to Canada or Alaska.

For more information about CPS EFH, see the CPS Fishery Management Plan (http://tinyurl.com/2ejzy5s).

Essential Fish Habitat for Salmon

Freshwater EFH for salmon includes all the lakes, streams, ponds, rivers, wetlands, and other water bodies that were historically accessible to salmon, including areas above artificial barriers, except for certain barriers and dams that fish cannot pass. Activities above these barriers that might affect salmon may also be affected by EFH rulings.

Salmon range from more than 1,000 miles inland to thousands of miles out at sea. Although the waters off Canada are salmon habitat, they are also not included in the description of salmon EFH because they are outside of U.S. jurisdiction. However, waters off Alaska are included in the description.

In estuaries and marine areas, salmon habitat extends from the shoreline to the 200-mile limit of the EEZ and beyond. In freshwater, salmon EFH includes all the lakes, streams, ponds, rivers, wetlands, and other bodies of water that have been historically accessible to salmon. The description of EFH also includes areas above artificial barriers, except for certain barriers and dams that fish cannot pass. However, activities that occur above these barriers, and that are likely to affect salmon below the barriers, may be affected by EFH rulings.

The Council is required to minimize the negative impacts of fishing activities on essential salmon habitat. The ocean activities that the Council is concerned with include the ef-

fects of fishing gear, removal of salmon prey by other fisheries, and the effect of salmon fishing on reducing nutrients in streams due to fewer salmon carcasses in the spawning grounds. The Council may use gear restrictions, time and area closures, and harvest limits to reduce negative impacts on salmon EFH.

The Council is also required to comment and make recommendations regarding other agencies' actions that may effect salmon EFH. This usually takes the form of endorsing an enhancement program or other type of program, requesting information and justification for actions that might effect salmon habitat, and promoting the needs of the salmon fisheries. The Council works with many other agencies to identify cumulative impacts on salmon habitat, to encourage conservation, and to take other actions to protect salmon habitat.

For more information about salmon EFH, see the Salmon Fishery Management Plan, Amendment 14 (http://tinyurl.com/2ebdykq).

Essential Fish Habitat for Highly Migratory Species

Defining EFH for highly mobile species such as tuna, swordfish, and sharks is a challenging task. These species range widely in the ocean, both in terms of area and depth. Highly migratory species are usually not associated with the features that are typically considered fish habitat (such as seagrass beds, rocky bottoms, or estuaries). Their habitat may be defined by temperature ranges, salinity, oxygen levels, currents, shelf edges, and seamounts. Little is known about why highly migratory species frequent particular areas. Nevertheless, these species may be affected by actions close to shore or on land, such as fishing, dredging, wastewater discharge, oil and gas exploration and production, aquaculture, water withdrawals, release of hazardous materials, and coastal development.

A more detailed description of EFH for highly migratory species is included in the Fishery Management Plan and Environmental Impact Statement for U.S. West Coast Fisheries for Highly Migratory Species (http://tinyurl.com/2cyorh4).

EFH for highly migratory species is defined by temperature ranges, salinity, oxygen levels, currents, shelf edges, and seamounts.

The Council's Habitat Committee

The Council's Habitat Committee works with other teams and panels on habitat issues that affect Council fisheries. The group helps develop ways to resolve habitat problems and avoid future habitat conflicts, and it makes recommendations for actions that will help achieve the Council's habitat objectives. The Habitat Committee includes one member each from National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the Pacific States Marine Fisheries Commission; one at-large member; one conservation representative; four members from the four state fishery agencies; two tribal representatives; two fishing industry members, and one National Marine Sanctuaries representative.

Check the Council website for upcoming Habitat Committee meeting dates. Meetings are open to the public.

EFH Consultation

Federal agencies are required to consult with National Marine Fisheries Service (NMFS) when any activity proposed to be permitted, funded, or undertaken by a federal agency may have adverse impacts on designated EFH. Only Federal actions require consultation. States are not required to consult, but if NMFS receives information on a State action that may adversely affect EFH, NMFS is required to provide EFH conservation recommendations to the State agency. States are not required to initiate consultation with NMFS nor respond to its recommendations.

Private landowners do not need to consult with NMFS on private land activities (however, such activities may be subject to Endangered Species Act or National Environmental Policy Act regulations). Only if the project is funded, permitted, or authorized by a Federal agency and the project may adversely affect EFH is consultation with NMFS required.

The EFH regulations define an adverse effect as "any impact which reduces quality and/or quantity of EFH...[and] may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific or habitat wide impacts, including individual, cumulative, or syunergistic consequences of actions."

Once NMFS learns of a federal or state project that may have an adverse effect on EFH, NMFS is required to develop EFH Conservation Recommendations for the project. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH. Federal agencies are required to respond to EFH Conservation Recommendations in writing within 30 days. For more information on federaconsultation requirements, see http://swr.nmfs.noaa.gov/hcd/efhprim.htm.

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For More Information

Have more questions about habitat and EFH? Please contact the following staff at 503-820-2280 or at the following email addresses:

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