Technical Guidance to Implement the Essential Fish Habitat Requirements for the Magnuson-Stevens Act

This document provides technical assistance for the description, identification, conservation, and enhancement of essential fish habitat (EFH), and is designed to aid Fishery Management Councils (Councils) in implementing the EFH requirements of sections 303 and 305 of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act, 16 U.S.C. et seq.). This manual also describes how the National Marine Fisheries Service (NMFS), acting on behalf of the Secretary of Commerce (Secretary), will implement its EFH requirements under the Magnuson-Stevens Act. These requirements include developing and providing information and recommendations to the Councils to assist in identifying EFH, adverse impacts to EFH (including adverse impacts from fishing), and actions to conserve and enhance EFH. Additionally, the manual elaborates on the procedures for the statutorily required consultations for actions undertaken by any state or Federal agency that may adversely affect EFH. Finally, it is intended to be updated regularly as new and innovative methods are available in habitat identification and mapping.

The text of the proposed regulation is marked as "Regulatory Text". Where additional guidance, explanation, or examples are provided, that material follows the appropriate section of the proposed regulation and is identified as "Additional Information".

Definition of EFH

Regulatory Text

Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. For the purpose of interpreting the definition of essential fish habitat: "waters" includes aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include 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 a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

Additional Information

As defined in section 3(10) of the Magnuson-Stevens Act, EFH is those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Examples of "waters" that may be considered EFH include open waters and wetlands, estuarine and riverine habitats, wetlands hydrologically connected to productive water bodies. Water quality is interpreted to be a component of this definition. EFH should consider water to provide the appropriate parameters of quality such as physical, chemical, and biological properties. This may address nutrient levels, oxygen concentrations, turbidity levels, among others. The interpretation of "substrate" includes artificial reefs and shipwrecks if those areas provide EFH. Substrate may also include entirely or partially submerged structures, such as jetties. "Biological communities" could include mangroves, tidal marshes, mussel beds, cobble with attached fauna, mud and clay burrows, coral reefs, and submerged aquatic vegetation. Migratory routes such as rivers and passes serving as passageways to and from anadromous fish spawning grounds should be considered EFH. The definition of EFH may include habitat for an individual species or an assemblage of species, whichever is appropriate within each FMP.

Purpose and Introduction

Regulatory Text

(a) Purpose. This subpart provides guidelines for the description, identification, conservation, and enhancement of, and adverse impacts to, EFH. These guidelines provide the basis for Councils and the Secretary to use in adding the required provision on EFH to an FMP, i.e., description and identification of EFH, adverse impacts on EFH (including minimizing, to the extent practicable, adverse impacts from fishing), and other actions to conserve and enhance EFH. This subpart also includes procedures to implement the consultation requirements for all Federal and state actions that may adversely affect EFH.

Additional Information

Section 305(b)(1)(A and B) of the Magnuson-Stevens Act mandates that,

(A) The Secretary shall, within 6 months of the date of enactment of the Sustainable Fisheries Act, establish by regulation guidelines to assist the Councils in the description and identification of essential fish habitat in fishery management plans (including adverse impacts on such habitat) and in the consideration of actions to ensure the conservation and enhancement of such habitat. The Secretary shall set forth a schedule for the amendment of fishery management plans to include the identification of essential fish habitat and for the review and updating of such identifications based on new scientific evidence or other relevant information.

(B) The Secretary, in consultation with participants in the fishery, shall provide each Council with recommendations and information regarding each fishery under that Council's authority to assist it in the identification of essential fish habitat, the adverse impacts on that habitat, and the actions that should be considered to ensure the conservation and enhancement of that habitat.

The role of habitat in supporting the productivity of organisms has been thoroughly documented in the ecological literature, and the linkage between habitat availability and fishery productivity has been clearly established for several fishery species. Because habitat is an essential element for sustaining the production of a species, the goals of FMPs cannot be achieved if the managed species do not have a sufficient quantity of suitable habitat.

From the broadest perspective, fish habitat is the geographic area where the species occurs at any time during its life. That area should be described in terms of ecological characteristics including biological, physical, and chemical parameters, location, and time. Ecologically, essential habitat includes structure or substrate that focus distribution (e.g., coral reefs, marshes, or kelp beds) and other characteristics that are less distinct (e.g., turbidity zones, thermoclines, or fronts separating water masses). Spatially, habitat use may shift over time due to climatic change, human uses, or other factors. Habitat not currently used should be considered when establishing long-term goals for EFH and species productivity. Habitat restoration will be a vital tool to recover degraded habitats, improve habitat quality and quantity, with benefits to the species and society.

Fishery species use habitat for spawning, breeding, migration, feeding and growth, and for shelter to increase survival. However, most habitats provide only a subset of these functions. Fish habitat utilized by a species can change with life history stage, abundance of the species, competition from other species, and environmental variability in time and space. The type of habitat available, its attributes, and its functions are important to species productivity and societal benefits.

The health and productivity of fish populations are dependent on habitat quantity and quality. As defined in section 3 of the Magnuson-Stevens Act, fish includes finfish, mollusks, crustaceans, and all other forms of marine animal and plant life, other than marine mammals and birds. Congress stated that habitat considerations should receive increased attention for the conservation and management of fishery resources (section 2(a)(9)). This manual describes how NMFS interprets the statutory definition of EFH and outlines procedures to assist

Councils in describing, identifying, conserving, and enhancing EFH.

This manual and the included proposed regulations are based on five general principles. First, the description and identification of EFH must be based on the best information available. Second, in cases where little information is available, the guidelines require a conservative approach to describing and identifying EFH, erring on the side of inclusiveness, to ensure adequate habitat protection. Third, the guidelines must be sufficiently broad for many different species in many different areas, as well as for varied physical and ecological processes that affect habitat quantity and quality. Fourth, the procedures for describing and identifying EFH should be scientifically defensible. Finally, the ecological relationships among species and between the species and their habitat require, where possible, that an ecosystem approach be used in assessing EFH of a managed species or species assemblage. Where possible, this ecosystem approach should be used in assessing the EFH of a given species or assemblage.

Requirements of the Magnuson-Stevens Act

he Magnuson-Stevens Act requires several actions to be taken by the Secretary, Fishery Management Councils, and other Federal agencies.

The Magnuson-Stevens Act requires the Secretary to undertake several actions regarding fish habitat:

- Develop guidelines, by regulation, to assist the Councils to describe and identify EFH (including adverse effects) and conservation and enhancement measures, by April 11, 1997.
- Develop schedules for amending FMPs for EFH, and for future periodic review of EFH amendments.
- After consulting with fishing participants and other interested parties, provide each Council with recommendations and information regarding EFH for each fishery under that Council's authority.
- Review programs administered by the Department of Commerce and ensure that relevant programs further the conservation and enhancement of EFH.
- Provide information to other Federal agencies to further the conservation and enhancement of EFH.
- Recommend conservation measures for any action undertaken by any state or Federal agency that may adversely affect EFH.

The Magnuson-Stevens Act requires or authorizes actions by the Councils, including:

- Councils are required to submit FMP amendments to the Secretary to implement the EFH and other new FMP requirements, by October 11, 1998.
- Councils may comment on and make recommendations to the Secretary and any Federal or state agency concerning any activity, or proposed activity, authorized, funded, or undertaken by any Federal or state agency that may adversely affect the habitat, including EFH, of a fishery under its authority.
- Councils must comment on, and make recommendations to, the Secretary and any Federal or state agency concerning an activity that is likely to substantially affect the habitat, including EFH, of an anadromous fishery.

The Magnuson-Stevens Act requires actions by Federal agencies, including:

Federal agencies must consult with the Secretary regarding any activity, or proposed activity, authorized, funded, or undertaken by the agency that may adversely affect EFH.

- Within 30 days of receipt of a recommendation, Federal agencies are required to provide the Secretary and any Council that comments on an activity, or proposed activity, with a written description of the measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on EFH. If this response is inconsistent with the recommendations of the Secretary, the agency must explain why it is inconsistent.

The statutory requirements of the Magnuson-Stevens Act affect those fisheries managed by a FMP. Presently, there are 36 FMPs managed by the Councils and 3 Secretarial FMPs. For those Secretarial plans, NMFS is responsible for implementing the EFH requirements for plan amendments.

I. EFH FMP Amendments

Scope of EFH

Regulatory Text

(b) Scope. An EFH provision in an FMP must include all fish species in the Fishery Management Unit (FMU). An FMP may describe, identify, and protect the habitat of species not in an FMU; however, such habitat may not be considered EFH for the purposes of sections 303(a)(7) and 305(b) of the Magnuson Act.

Additional Information

The Councils must describe and identify EFH for only those species managed under a FMP. According to the Magnuson-Stevens Act, EFH may only be designated through an amendment to a FMP. However, Councils are not precluded from identifying the habitat required by other species not covered in a FMP and taking steps to protect it. To the extent that such habitat requirements enhance the ecosystem approach to FMPs, the Councils are encouraged to identify such habitat. However, those habitats of currently non-managed species may not be considered EFH.

The proposed regulation requires that EFH be described and identified for all species in a FMU. In order to address this task, the Councils and NMFS may elect to prioritize their actions.

The Councils and NMFS may: 1) describe and identify EFH for the dominant species in the management unit and infer the habitat requirements for the other species in the management unit from that of the dominant species, if appropriate; 2) group species with similar habitat requirements and make one EFH determination for the group; or 3) establish a method to streamline the amendment process to assist in amending all FMPs by the October 11, 1998, deadline in the Magnsuon-Stevens Act.

Caution should be taken when inferring the habitat requirements of a group of species. Care should be given to ensure that habitat requirements of the dominant species truly reflects the habitat requirements of other species within that group. If this is not addressed, habitat that is important to a subset of a group could be diminished because that subset is a smaller but still important component of the entire group of species.

Description and Identification of EFH

Regulatory Text

Section 600.810 Contents of Fishery Management Plans.

(a) Mandatory contents -- (1) Habitat requirements by life history stage. FMPs must describe EFH in text and with tables that provide information on the biological requirements for each life history stage of the species. These tables should summarize all available information on environmental and habitat variables that control or limit distribution, abundance, reproduction, growth, survival, and productivity of the managed species. Information in the tables should be supported with citations.

(2) Description and identification of EFH -- (i) Information requirements. (A) An initial inventory of available environmental and fisheries data sources relevant to the managed species should be useful in describing and identifying EFH. This inventory should also help to identify major species-specific habitat data gaps. Deficits in data availability (i.e., accessibility and application of the data) and in data quality (including considerations of scale and resolution; relevance; and potential biases in collection and interpretation) should be identified.

(B) To identify EFH, basic information is needed on current and historic stock size and on the geographic range of the managed species. Information is also required on the temporal and spatial distribution of each major life history stages (defined by developmental and functional shifts). Since EFH should be identified for each major life history stage, data should be collected on the distribution, density, growth, mortality, and production of each stage within all habitats occupied by the species. These data should be obtained from the best available information, including peer-reviewed literature, data reports and "gray" literature, data files of government resource agencies, and any other sources of quality information.

Additional Information

"Other sources" of information may include fishers with local or traditional knowledge of the status and trends in particular fisheries. In many instances, this information may not be available via refereed journals or scientific research. These sources may provide information in areas where scientific information has not been collected or documented. These non-traditional data sources may be incorporated into data collection processes via workshops conducted during development of EFH recommendations. Additional data sources may include Federal, state and local agencies, universities, non-governmental organizations, refereed journals, etc.

Regulatory Text

(C) The following approach should be used to gather and organize the data necessary for identifying EFH. Information from all levels will be useful in identifying EFH, and the goal of this procedure should be to include as many levels of analysis as possible within the constraints of the available data. Councils should strive to obtain data sufficient to describe habitat at the highest level of detail (i.e., Level 4).

(1) Level 1: Presence/absence distribution data are available for some or all portions of the geographic range of the species. At this level, only presence/absence data are available to describe the distribution of a species (or life history stage) in relation to existing and potential habitats. Care should be taken to ensure that all habitats have been sampled adequately. In the event that distribution data are available for only portions of the geographic area occupied by a particular life history stage of a species, EFH can be inferred on the basis of distributions among habitats where the species has been found and on information about its habitat requirements and behavior.

(2) Level 2: Habitat-related densities of the species are available. At this level, quantitative data (i.e., relative densities) are available for the habitats occupied by a species or life history stage. Because the efficiency of sampling gear is often affected by habitat characteristics, strict quality assurance criteria are required to ensure that density estimates are comparable among habitats. Density data should reflect habitat utilization, and the degree that a habitat is utilized is assumed to be indicative of habitat value. When assessing habitat value on the basis of fish densities in this manner, temporal changes in habitat availability and utilization should be considered.

(3) Level 3: Growth, reproduction, or survival rates within habitats are available. At this level, data are available on habitat-related growth, reproduction, and/or survival by life history stage. The habitats contributing the most to productivity should be those that support the highest growth, reproduction, and survival of the species (or life history stage).

(4) Level 4: Production rates by habitat are available. At this level, data are available that directly relate the production rates of a species or life history stage to habitat type, quantity, quality, and location. Essential habitats are those necessary to maintain fish production consistent with a sustainable fishery and a healthy ecosystem.

Additional Information

The process for gathering information should be initiated at Level 1 and progress through the various levels as more information on habitat functions becomes available. Information from all levels will be useful in identifying EFH, and the goal of this procedure should be to include as many levels of analysis as possible within the constraints of the available data. The approach presented herein for describing and identifying EFH relies upon the best available information regarding species distribution, abundance, habitat usage, physical, chemical, and biological habitat parameters, and habitat function. Where the best available information is subject to differing interpretations, or is limited in scope, best professional judgement should be used. Councils should strive to obtain data sufficient to describe habitat at the highest level of detail (i.e., Level 4) and provide the regulated community (i.e., those individuals proposing activities that may adversely effect EFH) with an unambiguous interpretation of the description and identification EFH. This approach provides a framework for identifying research needs and collecting additional information to improve our understanding of EFH.

To identify EFH, basic information is needed on current and historic stock size and on the geographic range of the managed species (and prey species where appropriate). Information is also required on the timing and location of major life history stages (defined by developmental and functional shifts). Since EFH should be identified for each major life history stage, data should be collected on the distribution, density, growth, mortality, and production of each stage within all habitats occupied by the species. Different levels of data may be available for different life history stages of a species (e.g., data for eggs may be at Level 1, while data for adults may be at Level 3). Information on the physical, chemical, and biological parameters of habitats is also needed. These data should be obtained from the peer-reviewed literature, data reports and "gray" literature, data files of government resource agencies, and any other potential source of quality information.

Using Level 1 data, the only scientifically defensible statement that can be made about the importance of a habitat may be that the species (or life history stage) does or does not occur in the habitat. At this level of data availability, EFH is everywhere a species has been found.

At the Level 1 of data availability, the risk-averse approach is to define EFH as everywhere the species is likely to occur, noting any areas of known significance to reproduction, feeding, or growth to maturity.

Regulatory Text

(ii) EFH determination. (A) The information obtained through the analysis in paragraph (a)(2)(I) of this section will allow Councils to assess the relative value of habitats. Councils should apply this information in a risk-averse fashion, erring on the side of inclusiveness to ensure adequate protection for EFH of managed species. If only Level 1 information is available, EFH is everywhere a species is found. If Levels 2 through 4 information is available, habitats valued most highly through this analysis should be considered essential for the species. However, habitats of intermediate and low value may also be essential, depending on the health of the fish population and the ecosystem.

(B) If a species is overfished or recovering from a population decline, all habitats used by the species should be considered essential in addition to certain historic habitats that are necessary to support the recovery of the population and for which restoration is feasible.

(C) EFH will always be greater than or equal to the "critical habitat" for any managed species listed as threatened or endangered under the Endangered Species Act.

(D) Where a stock of a species is considered to be healthy and sufficient information exists to determine the necessary habitat to support the target production goal, then EFH for a species should be a subset of all existing habitat for the species.

(E) Ecological relationships among species, and between the species and their habitat, require, where possible, that an ecosystem approach be used in determining the EFH of a managed species or species assemblage. The extent of the EFH should be based on the judgment of the Secretary and the appropriate Council(s) regarding the quantity and quality of habitat that is necessary to maintain a managed species or species assemblage at a target production goal that supports a sustainable fishery and a healthy ecosystem. Councils must establish target production goals for the fish species in the FMU of an FMP as a goal of the FMP. In determining a target production goal that supports a sustainable fishery and a healthy ecosystem, the Secretary and the appropriate Council(s) should consider: (1) The prey requirements of the managed species; (2) the extent to which the managed species is prey for other managed species or marine mammals; (3) the production necessary to support a sustainable fishery; and (4) other ecological functions provided by the managed species. If degraded or inaccessible habitat has contributed to the reduced yields of a species or assemblage, and in the judgment of the Secretary and the appropriate Council(s), the degraded conditions can be reversed through such actions as improved fish passage techniques (for fish blockages), improved water quality or quantity measures (removal of contaminants or increasing flows), and similar measures that are feasible, then EFH should include those habitats that would be essential to the species to obtain increased yields.

Additional Information

The information obtained through this analysis will allow Councils to assess the relative value of habitats in relation to the productivity of a fish species. Habitats valued most highly through this analysis should be considered essential for the species. Habitats of intermediate and low value, however, may also be essential. For example, low-value habitat may be extensive in its geographic coverage, and the productivity derived from the cumulative habitat area may be essential in meeting target productions levels. Similarly, if a species is recovering from a population decline, all habitats used by the species should be considered essential in addition to some historic habitats that are potentially valuable. Additionally, intermediate and low value habitats may be valuable for mitigation, enhancement, or restoration.

Mapping EFH

Regulatory Text

(iii) EFH Mapping Requirements. The general distribution and geographic limits of EFH for each life history stage should be presented in FMPs in the form of maps. Ultimately, these data should be incorporated into a geographic information system (GIS) to facilitate analysis and presentation. These maps may be presented as fixed in time and space but they should encompass all appropriate temporal and spatial variability in the distribution of EFH. If the geographic boundaries of EFH change seasonally, annually, or decadally, these changing distributions should be represented in the maps. Different types of EFH should be identified on maps along with areas used by different life history stages of the species. The type of information used to identify EFH should be included in map legends, and more detailed and informative maps should be produced as more complete information about population responses (e.g., growth, survival, or reproductive rates) to habitat characteristics becomes available. Where the present distribution or stock size of a species or life history stage is different from the historical distribution or stock size, then maps of historical habitat boundaries should be included in the FMP, if known. The EFH maps are a means to visually present the EFH described in the FMP. If the maps and information in the description of EFH varies, the description is ultimately determinative of the limits of EFH.

Additional Information

Different types of habitats may be presented using maps. For example, if submerged aquatic vegetation (SAV) has been identified as EFH for a species, the general distribution of SAV should be mapped over the geographic range of the species. If EFH for a species includes habitat that supports a specific prey organism, this prey habitat should be identified separately and presented on the habitat maps as well.

The number and integration of multiple data layers into individual maps will be dependent upon the type of information, as well as data format, of the available data. Where possible, overlapping layers of information displayed on a single map will be useful. However, in early stages of this process, individual maps of information may be practical. As more information becomes available, map products should be enhanced.

Maps are intended to be used in consultation process, especially in the development of EFH assessments. These maps are intended to assist project applicants in understanding the distribution of EFH for managed species. As noted in the regulation above, however, information displayed via a map is intended only to provide supplementary information. Descriptions of EFH included in FMPs provide the statutorily required determination of the limits of EFH.

Adverse Effects to EFH: Non-fishing Related

This section provides guidance concerning the identification in FMPs of potential adverse effects of Federal and state activities on EFH, as well as conservation, management and enhancement opportunities associated with such activities.

EFH provisions in FMPs must identify and describe the following: (1) activities with known or potential adverse effects on EFH (threats); (2) actions required to counter threats to the existing and historic EFH; and (3) actions to conserve, restore or enhance EFH. In this context, "restore" means to reestablish the habitat and associated functions to a desired level that ensures the greatest long-term continued productivity of fish stocks and that is based on feasibility and historic information; and "enhance" means to improve the habitat and associated functions to a desired level that is based on feasibility and historic information. EFH amendments should assess impacts cumulatively and individually for all activities that adversely affect EFH. The ultimate goal in the identification of potential adverse effects is to incorporate the highest level of analysis possible, e.g., cumulative impacts on a watershed basis, including some form of ecological risk assessment. The steps involved in identifying and describing adverse effects on EFH, and a suggested process to avoid them, should be presented in a hierarchical fashion.

Regulatory Text

(3) Non-fishing related activities that may adversely affect EFH -- (i) Identification of adverse effects. FMPs must identify activities that have potential adverse effects on EFH quantity and quality. Broad categories of activities may include, but are not limited to: dredging, fill, excavation, mining, impoundment, discharge, water diversions, thermal additions, runoff, placement of contaminated material, introduction of exotic species, and the conversion of aquatic habitat that may eliminate, diminish, or disrupt the functions of EFH. If known, an FMP should describe the EFH most likely to be affected by these activities. For each activity, the FMP should describe the known or potential impacts to EFH. These descriptions should explain the mechanisms or processes that cause expected deleterious effects and explain the known or potential impacts on the habitat function.

(ii) Cumulative impacts analysis. To the extent practicable, FMPs should identify and describe those activities that can influence habitat function on an ecosystem or watershed scale. This analysis should include a description of the ecosystem or watershed, the role of the managed species in the ecosystem or watershed, and the impact on the ecosystem or watershed of removal of the managed species. An assessment of the cumulative and synergistic effects of multiple threats, including natural adverse effects (such as storm damage or climate-based environmental shifts), and an ecological risk assessment of the managed species' habitat should also be included. For the purposes of this analysis, cumulative impacts are impacts on the environment that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

Additional Information

For the identification and description of adverse effects on EFH, FMPs should provide a scientific basis for concluding that the potential or known adverse effects are a result of the identified activities. Examples of scientific justification include, but are not limited to: peer-reviewed articles and reports; resource agency publications that have been subjected to internal agency review; agency data products, such as research findings, on-going evaluations and scientific knowledge of species, ecosystems, or watershed systems; ocean temperature, dissolved oxygen and salinity logs; fish landings reports; satellite and aerial imagery data products; and testimonies of individuals with a demonstrated expertise regarding the appropriate resources.

Potential biological and physical impacts resulting from adverse impacts on habitat may include, but are not limited to carcinogenic effects, bioaccumulation of toxic materials, clogged gills, reduced visibility for prey capture, or reduced cover from predators.

Regulatory Text

(iii) Mapping adverse impacts. The use of a GIS or other mapping system to analyze and present these data in an FMP is suggested for documenting impacts identified under paragraph (a)(3)(i) of this section and required when the analysis in paragraph (a)(3)(ii) is conducted.

Additional Information

When mapping/GIS is used, Councils should strive to develop compatible applications. Mapping of cumulative impacts may include: Corps of Engineers permits, nationwide general permit activities, state programmatic general permits, National Pollutant Discharge Elimination System permits, power and other facilities, agricultural sites, hydropower facilities, and others. Assessment of cumulative impacts may be completed at the watershed level, with the tracking of activities by watershed, county, or other appropriate scale.

Regulatory Text

(iv) Conservation and enhancement. FMPs should include options to minimize the adverse effects identified pursuant to paragraphs (a)(3)(i) and (ii) of this section and identify conservation and enhancement measures. Generally, non-water dependent actions should not be located in EFH. Actions not in EFH but that may result in significant adverse affects on EFH should be avoided if less environmentally harmful alternatives are available. If there is no alternative, these actions should be minimized. If avoidance and minimization will not adequately protect EFH, mitigation to conserve and enhance EFH will be recommended. These recommendations may include, but are not limited to:

(A) Avoidance and minimization of adverse impacts on EFH. Environmentally sound engineering and management practices (e.g., seasonal restrictions, dredging methods, and disposal options) should be employed for all dredging and construction projects. Disposal of contaminated dredged material, sewage sludge, industrial waste or other materials in EFH should be avoided. Oil and gas exploration, production, transportation, and refining activities in EFH should be avoided, where possible, and minimized and mitigated if unavoidable.

(B) Restoration of riparian and shallow coastal areas. Restoration measures may include: Restoration of functions of riparian vegetation by reestablishing endemic trees or other appropriate native vegetation; restoration of natural bottom characteristics; removal of unsuitable material from areas affected by human activities; and replacement of suitable gravel or substrate to stream areas for spawning.

(C) Upland habitat restoration. This may include measures to control erosion, stabilize roads, upgrade culverts or remove dikes or levees to allow for fish passage, and the management of watersheds.

(D) Water quality. This includes use of best land management practices for ensuring compliance with water quality standards at state and Federal levels, improved treatment of sewage, and proper disposal of waste materials.

(E) Watershed analysis and subsequent watershed planning. This should be encouraged at the local and state levels. This effort should minimize depletion/diversion of freshwater flows into rivers and estuaries, destruction/degradation of wetlands, and restoration of native species, and should consider climate changes.

(F) Habitat creation. Under appropriate conditions, habitat creation may be considered as a means of replacing lost EFH. However, habitat creation at the expense of other naturally functioning systems must be justified (e.g., marsh creation with dredge material placed in shallow water habitat).

Additional Information

Activities addressed by the above recommendations may affect living marine resources directly and indirectly through habitat loss and/or modification. These effects, combined with cumulative effects from other activities in the ecosystem, may contribute to the decline of some species. In general, maintenance of naturally functioning habitats should always be the preferred option. This may be accomplished by avoiding the action or relocating it to a less environmentally sensitive location. Then, remaining adverse effects should be minimized through changes in project design. Finally, mitigation should be used to offset any remaining impacts to EFH. The preferred type of mitigation is enhancement, then restoration, and finally creation of new habitat.

Provided below are three examples of activities that may adversely affect EFH (construction activities, forestry practices, and sand and gravel mining), as well as conservation and enhancement measures. These examples are provided to demonstrate what types of information may be included within EFH recommendations and amendments.

1. Construction Activities

Construction activities within watersheds and in coastal marine areas can impact fish habitat. These activities affect living marine resources directly and indirectly through habitat loss and/or modification. Many of these projects are of sufficient scope to singly cause significant long-term or permanent adverse impacts on aquatic habitat; however, most are small-scale projects causing minor losses or temporary disruptions. The significance of small-scale projects lies in the cumulative and synergistic effects resulting from a large number of these activities occurring in a single watershed.

Construction, in and adjacent to, waterways often involves dredging and/or filling activities, which result in elevated suspended solids emanating from the project area. The distance the turbidity plume moves from the point of origin is dependent upon tides, currents, nature of the substrate, scope of work, and preventive measures employed by the contractor. Excessive turbidities can abrade sensitive epithelial tissues, clog gills, decrease egg buoyancy, and reduce light penetration, thereby affecting photosynthesis of phytoplanktonic and submerged vegetation thereby causing localized oxygen depression. Suspended sediments subsequently settle, which can destroy or degrade productive shellfish beds and spawning sites.

Dredging can degrade productive shallow water and destroy marsh habitat or resuspend pollutants, such as heavy metals, pesticides, herbicides, and other toxins. Concomitant with dredging is spoil disposal, which traditionally occurred on marshes or in open water where temporary or permanent degradation or destruction may occur. Shoreline stabilization can cause gross impacts when intertidal and sub-tidal habitats are filled, or when benthic habitats are scoured by reflective wave energy. It can also cause subtle effects that result in gradual elimination of the ecological zone between the shore and the water.

An example of an adverse impact of a specific activity follows. Construction activities associated with development result in a loss of habitat diversity along the water's edge. Bulkheading, filling, and construction of attendant port features result in general water quality degradation that reduces the biotic diversity of important productive areas. Dredging and dredged material disposal, filling of aquatic habitats to create fastland for port improvement or expansion, and degradation of water quality are the most serious perturbations arising from port development.

Conservation Measures:

I* when reviewing open water disposal permits for dredged material, state and Federal agencies should identify the direct and indirect impacts such projects may have on EFH.

* filling of wetlands should not be permitted in or near nursery areas. Mitigating or compensating measures should be employed where filling is unavoidable. Project proponents must demonstrate that project implementation will not negatively affect EFH.

* best engineering and management practices (e.g., seasonal restrictions, dredging methods, disposal options, etc.) should be employed for all dredging and in-water construction projects. Such projects should be permitted only for water dependent purposes when no feasible alternatives are available. Project proponents should demonstrate that project implementation will not negatively affect EFH.

* the disposal of contaminated dredge material, sewage sludge, and industrial waste should not be allowed in EFH.

* facilities should be relocated upland when possible.

Enhancement Measures:

* explore use of clean dredged material to restore/rebuild oyster reefs, wetlands, cover benthic waste sites, and other beneficial use opportunities.

* the creation of new habitat at the expense of another naturally functioning system (e.g., marsh creation with dredge material placed in shallow water habitat) must be justified, given best available information, through a demonstrated net gain in EFH.

2. Forestry Practices

Federal lands management has allowed activities to occur which have degraded riparian and riverine habitat in the National Forests, thereby contributing to the decline of marine and anadromous fishes. The effects of forest activities conducted within the framework of these land use plans include effects on marine and anadromous species and significant habitat from timber harvest, road construction, grazing, mining, outdoor recreation, small hydropower development, and water conveyance permitting. These actions have reduced physical, biological and channel connectivity between streams and riparian areas, floodplains, and uplands; increased sediment yields (leading to pool filling and elimination of spawning and rearing habitat); reduced or eliminated large woody debris; reduced or eliminated the vegetative canopy (leading to increased temperature fluctuations); altered peak flow timing; increased water temperature, decreased dissolved oxygen, caused streams to become straighter, wider, and shallower; and have degraded water quality by adding toxic chemicals through mining and pest control. These effects, combined with cumulative effects from activities on nonfederal lands, have contributed to the decline of marine and anadromous fish species.

Conservation Measures:

* riparian buffer zones of appropriate size and design should be required on any forested land adjacent to waterways that include EFH. The buffers should provide all processes that create and maintain fish habitat, particularly shade, stream bank integrity, and recruitment of large woody debris.

* enforcement of best forestry management practices for ensuring water quality standards at state and Federal levels should be strongly encouraged.

* watershed analysis and subsequent watershed planning at the local and state levels should be strongly encouraged.

Enhancement Measures:

* upland habitat restoration should be encouraged. Restoration of upland habitat should include measures to control erosion, stabilize roads, upgrade culverts for fish passage, and manage watershed uses.

* restoration of riparian areas should be encouraged. Restoration goals should restore functions of riparian vegetation by reestablishing mature conifers or other appropriate vegetation.

* fence to protect riparian areas from grazing/trampling.

* revegetate riparian areas with stable vegetation.

(See Murphy, M.L. 1995. Forestry Impacts on Freshwater Habitat of Anadromous Salmonids in the Pacific Northwest and Alaska -- Requirements for Protection and Restoration, U.S. Dept. of Commerce, NOAA, Coastal Ocean Office)

3. Sand and Gravel Mining

Mining for sand, gravel, and shell stock in coastal and estuarine waters can result in the loss of infaunal benthic organisms, modifications of substrate, changes in circulation patterns, and decreased dissolved oxygen concentrations at deeply excavated sites where flushing is minimal. Sand and gravel mining tends to result in suspended materials at the mining sites, and turbidity plumes may move several kilometers from individual sites. Resuspended sediments may contain contaminants such as heavy metals, pesticides, herbicides and other toxins. Mining also results in changes in sediment type or sediment quality, often over areas measurable in square kilometers. Deep borrow pits created by mining may become seasonally or permanently anaerobic.

Conservation Measures:

* gravel extraction sites should be situated outside the active floodplain and the gravel should not be excavated from below the water table.

* larger rivers and streams should be used preferentially to small rivers and streams.

*** braided river systems should be used preferentially to other river systems.**

*** gravel and/or sand removal quantities should be strictly limited so that gravel recruitment and accumulation rates are sufficient to avoid extended impacts on channel morphology and anadromous fish habitat.**

*** gravel bar skimming should only be allowed under restricted conditions.**

*** pit excavations located on adjacent floodplain or terraces should be separated from the active channel by a buffer designed to maintain this separation for two or more decades.**

*** prior to extraction, a thorough review should be undertaken of potentially toxic sediment contaminants in or near the stream bed where gravel removal operations are proposed or where bed sediments may be disturbed (upstream and downstream) by the operations. Also, extracted aggregates and sediments should not be washed directly in the stream or river within the riparian zone.**

*** removal or disturbance of instream roughness elements during gravel extraction activities should be avoided. Those that are disturbed should be replaced or restored.**

*** gravel extraction operations should be managed to avoid or minimize damage to stream/river banks and riparian habitats.**

*** the cumulative impacts of gravel and sand extraction should be addressed by Federal, state, and local resource management and permitting agencies and considered in the permitting process.**

*** an integrated environmental assessment, management, and monitoring program should be a part of any gravel or sand extraction operation, and encouraged at Federal, state, and local levels.**

*** plan and design mining activities to avoid significant resource areas (such as consolidated sand ledges, sand dollar beds, or algae beds).**

*** plan and design mining activities with minimum area and depth to minimize recolonization times (deep holes should be avoided).**

*** mitigation and restoration should be an integral part of the management of gravel and sand extraction policies.**

Enhancement Measures:

*** remove unlike material as part of the mining operation to help restore natural bottom characteristics.**

*** remove material from areas where accumulation is caused by human activities.**

*** return gravel to stream areas needing such for additional spawning.**

(See NMFS National Gravel Extraction Policy, 1996. National Marine Fisheries Service).

Adverse Effects to EFH: Fishing Activities

Regulatory Text

(4) Fishing activities that may adversely affect EFH. -- (i) Adverse effects from fishing may include physical disturbance of the substrate, and loss of and injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem.

(ii) FMPs must include management measures that minimize adverse effects on EFH from fishing, to the extent practicable, and identify conservation and enhancement measures. The FMP must contain an assessment of the potential adverse effects of all fishing gear types used in waters described as EFH. Included in this assessment should be consideration of the establishment of research closure areas and other measures to evaluate the impact of any fishing activity that physically alters EFH.

(iii) Councils must act to prevent, mitigate, or minimize any adverse effects from fishing, to the extent practicable, if there is evidence that a fishing practice is having a substantial adverse effect on EFH, based on the assessment conducted pursuant to paragraph (a)(4)(ii).

(iv) In determining whether it is practicable to minimize an adverse effect from fishing, Councils should consider whether, and to what extent, the fishing activity is adversely impacting the marine ecosystem, including the fishery; the nature and extent of the adverse effect on EFH; and whether the benefit to the EFH achieved by minimizing the adverse effect justifies the cost to the fishery.

(5) Options for managing adverse effects from fishing. Fishing management options may include, but are not limited to:

(i) Fishing gear restrictions. These options may include, but are not limited to: limit seasonal and areal uses of trawl gear and bottom longlines; restrict net mesh sizes, traps, and entanglement gear to allow escapement of juveniles and non-target species; reduce fish and shellfish traps set near coral reefs and other hard bottoms; limit seasonal and areal uses of dredge gear in sensitive habitats; prohibit use of explosives and chemicals; restrict diving activities that have potential adverse effects; prohibit anchoring of fishing vessels in coral reef areas and other sensitive areas; and prohibit fishing activities that cause significant physical damage in EFH.

(ii) Time/area closures. These actions may include, but are not limited to: closing areas to all fishing or specific gear types during spawning, migration, foraging and nursery activities; and designating zones to limit effects of fishing practices on certain vulnerable or rare areas/species/life history stages.

(iii) Harvest limits. These actions may include, but are not limited to, limits on the take of species that provide structural habitat for other species assemblages or communities, and limits on the take of prey species.

Additional Information

Harvest limits could address the take of "live rock," SAV including eelgrass, kelp beds, and other marine habitats.

Adverse impacts from fishing may include direct, large-scale substrate damage that leads to habitat destruction through alteration of sediment types, or losses of benthic organisms.

FMPs should include management options that minimize adverse impacts, to the extent practicable, and identify potential conservation and enhancement measures. Because fishing activities fall within the regulatory control of the Councils and the Secretary, it is incumbent upon NMFS and the Councils to gather sufficient information to support evaluation of these options, however, the assessment to be included in the FMP will be limited to the best available information at the time.

Prey Species

Regulatory Text

(6) Prey species. Loss of prey is an adverse effect on a managed species and its EFH; therefore, FMPs should identify the major prey species for the species in the FMU and generally describe the location of prey species' habitat and the threats to that habitat. Adverse effects on prey species may result from fishing and non-fishing activities.

Additional Information

The habitat of prey species should not be included as EFH for managed species. Rather, Councils should identify the prey species for the species managed under the FMP, and should describe the habitat of those significant prey species to help in determining if there are activities that would adversely affect their habitat. This analysis should be included in the "adverse effects" section of the EFH FMP amendment, rather than in the description and identification of EFH section. The Councils should consider loss of prey habitat with the resultant loss of prey, as an adverse effect on a managed species.

Regulatory Text

(7) Identification of vulnerable habitat. FMPs should identify vulnerable EFH. In determining whether a type of EFH is vulnerable, Councils should consider:

(i) The extent to which the habitat is sensitive to human-induced environmental degradation.

(ii) Whether, and to what extent, development activities are, or will be, stressing the habitat type.

(iii) The rarity of the habitat type.

(8) Research and information needs. Each FMP should contain recommendations, preferably in priority order, for research efforts that the Councils and NMFS view as necessary for carrying out their EFH management mandate. The need for additional research is to make available sufficient information to support a higher level of description and identification of EFH under paragraph (a)(2)(i) of this section. Additional research may also be necessary to identify and evaluate actual and potential adverse effects on EFH, including, but not limited to direct physical alteration; impaired habitat quality/functions; or indirect adverse effects such as sea level rise, global warming and climate shifts; and non-gear fishery impacts. The Magnuson-Stevens Act specifically identifies the effects of fishing as a concern. The need for additional research on the effects of fishing gear on EFH should be included in this section of the FMP. If an adverse effect is identified and determined to be an impediment to reaching target long-term production levels, then the research needed to quantify and mitigate that effect should be identified in this section.

Additional Information

An initial inventory of available environmental and fisheries data sources relevant to the managed species should be useful in describing and identifying EFH. This inventory should also help to identify major species-specific habitat data gaps. Gaps in data availability (i.e., accessibility, use and application of the data) and in data quality (including considerations of scale and resolution; relevance; and potential biases in collection and interpretation) should be identified. The recommendations may include basic life history information that will result in the comprehensive identification of the habitat requirements of the species (or species assemblages), including all life stages, as well as habitat-related information that defines the interrelationship between the species, its environment and the food web (e.g., drifter studies to determine current flows, and tagging studies for determination of migratory pathways and habitat-use patterns).

Review of EFH in FMPs

Regulatory Text

(9) Review and revision of EFH components of FMPs. Each Council and NMFS are expected to periodically review the EFH components of FMPs. Each EFH FMP amendment should include a provision requiring review and update of EFH information and preparation of a revised FMP amendment if new information becomes available. The schedule for this review should be based on an assessment of both the existing data and expectations when new data will become available. Such a review of information should be conducted as recommended by the Secretary, but at least once every five years.

Optional Components of EFH

(b) Optional components. An FMP may include a description and identification of, and contain management measures to protect, the habitat of species under the authority of the Council, but not contained in the FMU. However, such habitat may not be considered EFH.

Additional Information

Councils may elect to address the habitat needs of species that are not included within a FMU. In those cases, NMFS does not preclude the Councils from doing so. FMPs exist that use this process to address the importance of those habitats or those species to the FMU. According to the Magnuson-Stevens Act, however, habitat of non-managed species is not considered EFH. Therefore, the EFH consultation requirements would not apply for NMFS with respect to those additional habitats for non-managed species.

(C) Development of EFH recommendations. After reviewing the best available scientific information, and in cooperation with the Councils, participants in the fishery, interstate commissions, Federal agencies, state agencies, and other interested parties, NMFS will develop written recommendations for the identification of EFH for each FMP. Prior to submitting a written EFH identification recommendation to a Council for an FMP, the draft recommendation will be made available for public review and at least one public meeting will be held. NMFS will work with the affected Council(s) to conduct this review in association with scheduled public Council meetings whenever possible. The review may be conducted at a meeting of the Council committee responsible for habitat issues or as a part of a full Council meeting. After receiving public comment, NMFS will revise its draft recommendations, as appropriate, and forward written recommendation and comments to the Council(s).

Additional Information

The process of developing recommendations should coordinate with existing Council procedures as much as possible. NMFS and the Councils should collaborate to implement existing methods for FMP amendment development and modify these methods as necessary to accommodate the EFH requirements according to the Magnuson-Stevens Act.

The contents of EFH identification recommendations may vary depending on the amount of supporting information available for the species being considered. For EFH, presence/absence data for a species with "Level 1" information (see Section IV.B.2.i) will support a simple graphical display, while the more complex data sets expected at "Level 3" will support more detailed comparison of life history stages and habitat types to yield displays of distribution over time. For mitigative measures, the level of detail will be dictated by a combination of species and impact information. Point source discharges, designated disposal sites, and known pollutant loads may provide sufficient information to develop mitigative measures for certain impacts in specific areas, perhaps even with seasonal restrictions. Such determinations will be made by NMFS and the Councils based on the available information for each species or species assemblage.

FMP Amendment Schedule

The Magnuson-Stevens Act requires that NMFS develop a schedule for amending FMPs. NMFS will develop the amendment schedule based on discussions with each Council, thereby balancing pressures from other priorities and staff availability. NMFS will use the schedule to anticipate when its contributions will be needed by each Council. Several factors are likely to affect EFH amendment schedules:

- **Is there sufficient information to prepare an EFH amendment early in the 18-month period or is the amount and quality of habitat data available expected to improve later in the amendment period?**
- **Can the EFH amendment be combined with a FMP amendment that may already be anticipated within the 18-month amendment period?**
- **Could certain aspects of the information available on life history, adverse effects, EFH, and/or mitigative measures for one species be applied to more than one FMP, thereby expediting the amendment process?**
- **Will staff resources constrain the pace or order of work on EFH amendments?**
- **How will preparation and approval tasks for all EFH amendments be distributed over the 18-month period, both for the Councils and NMFS?**
- **Does the FMU occupy a unique habitat or does it overlap with other FMUs?**

To arrange workloads during the 18-month amendment period, each Council should notify NMFS of its intended EFH amendment schedule within 1 month of publication of final guidelines in the Federal Register. NMFS will combine those schedules into a master list of all proposed EFH amendments and make the schedule available to the public. Further discussion may be needed to balance amendment schedules with resource availability.

NMFS and the Councils will develop processes to coordinate in the development of EFH recommendations and amendments. Processes to collect, assess, and implement information for the recommendations should include meetings and conferencing. Workshops are suggested in order to involve interested participants and to ensure that adequate and appropriate information is considered in the development of EFH recommendations and amendments. As noted previously, NMFS and the Councils should implement, as possible, current procedures for amending FMPs.

II. Consultation Procedures

This section of the regulation addresses the coordination and consultation requirements of the Magnuson-Stevens Act. These include the requirement that: Federal agencies must consult with the Secretary on all activities, or proposed activities, authorized, funded, or undertaken by the agency, that may adversely affect EFH; and the Secretary and the Councils provide recommendations to conserve EFH to Federal or state agencies on such activities. EFH conservation recommendations are measures recommended by the Councils or NMFS to a Federal or state agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency. These actions are mandated by sections 305(b)(2-4) of the Magnuson-Stevens Act. The following guidance for a coordination and consultative process should assist all parties involved to clearly and consistently interpret and implement the requirements of the Magnuson-Stevens Act.

The following diagram is included to clarify the overall consultation procedure identified in the regulation.

Diagram of Essential Fish Habitat Consultation Process

Regulatory Text

Section 600.815 Coordination and consultation on actions that may adversely affect EFH.

(a) General -- (1) Scope. One of the greatest long-term threats to the viability of the Nation's fisheries is the decline in the quantity and quality of marine, estuarine, and other riparian habitats. These procedures address the coordination and consultation requirements of sections 305(b)(1)(D) and (305(b)(2-4) of the Magnuson-Stevens Act. The consultation requirements of the Magnuson-Stevens Act provide that: Federal agencies must consult with the Secretary on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH; and the Secretary and the Councils provide recommendations to conserve EFH to Federal or state agencies. EFH conservation recommendations are measures recommended by the Councils or NMFS to a Federal or state agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency. The coordination section requires the Secretary to coordinate with, and provide information to, other Federal agencies regarding EFH. These procedures for coordination and consultation allow all parties involved to understand and implement the consultation requirements of the Magnuson-Stevens Act.

(2) Coordination with other environmental reviews. Consultation and coordination under sections 305(b)(2), and 305(b)(4) of the Magnuson-Stevens Act may be consolidated, where appropriate, with interagency coordination procedures required by other statutes, such as the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Clean Water Act, Endangered Species Act, and the Federal Power Act, to reduce duplication and improve efficiency. For example, a Federal agency preparing an environmental impact statement (EIS) need not duplicate sections of that document in a separate EFH assessment, provided the EIS specifically and fully evaluates the effects of the proposed action on EFH, notes that it is intended to function as an EFH assessment, is provided to NMFS for review, and meets the other requirements for an EFH assessment contained in this section. NMFS comments on these documents will also function as its response required under section 305(b)(4) of the Magnuson-Stevens Act.

(3) Designation of Lead Agency. If more than one Federal or state agency is involved in an action (e.g., authorization is needed from more than one agency), the consultation requirements of sections 305(b)(2-4) of the Magnuson-Stevens Act may be fulfilled through a lead agency. The lead agency must notify NMFS in writing that it is representing one or more additional agencies.

(4) Conservation and enhancement of EFH. To further the conservation and enhancement of EFH, in accordance with section 305(b)(1)(D) of the Magnuson-Stevens Act, NMFS will compile and make available to other Federal and state agencies information on the locations of EFH, including maps and/or narrative descriptions. Federal and state agencies empowered to authorize, fund, or undertake actions that could adversely affect EFH should contact NMFS and the Councils to become familiar with the designated EFH, and potential threats to EFH, as well as opportunities to promote the conservation and enhancement of such habitat.

(b) Council comments and recommendations to Federal and state agencies -- (1) Establishment of procedures. Each Council should establish procedures for reviewing activities, or proposed activities, authorized, funded, or undertaken by state or Federal agencies that may affect the habitat, including EFH, of a species under its authority. Each Council may identify activities of concern by: directing Council staff to track proposed actions; recommending that the Council's habitat committee identify activities of concern; entering into an agreement with NMFS to have the appropriate Regional Director notify the Council of activities that may adversely impact EFH; or by similar procedures. Federal and state actions often follow specific timetables which may not coincide with Council meetings. Councils should consider establishing abbreviated procedures for the development of Council recommendations.

(2) Early involvement. Councils should provide comments and recommendations on proposed state and Federal activities of interest as early as practicable in project planning to ensure thorough consideration of Council concerns by the action agency.

(3) Coordination with NMFS. The Secretary will develop agreements with each Council to facilitate sharing information on actions that may adversely affect EFH and in coordinating Council and NMFS responses to those actions.

(4) Anadromous fishery resources. For the purposes of the consultation requirement of section 305(b)(3)(B) of the Magnuson-Stevens Act, an anadromous fishery resource under a Council's authority is an anadromous species where some life stage inhabits waters under the Council's authority.

Additional Information

In cases of species that may be considered anadromous, but are not typical anadromous species, the Councils may wish to consult with NMFS to determine whether that species should be treated as a anadromous species in the same context as traditional anadromous species such as salmon.

As a result of this interpretation of section 305(b)(3)(B) of the Magnuson-Stevens Act, adverse impacts to anadromous fish habitat under the authority of a Council will include all anadromous species, not just those that are managed under an FMP. Therefore, Councils should consult on activities that may have an adverse impact on the habitat of an anadromous species that is found in waters under their jurisdiction, even if an FMP for the anadromous species does not exist.

Regulatory Text

(C) Federal agency consultation -- (1) Interagency coordination. Both Federal and state agencies are encouraged to coordinate their actions with NMFS to facilitate the early identification of potential adverse effects on EFH. This will allow consideration of measures to conserve and enhance EFH early in the project design. The consultation requirements of sections 305(b)(2) and 305(b)(4) of the Magnuson-Stevens Act differ for Federal and state agencies. Only Federal agencies have a mandatory statutory requirement to consult with NMFS regarding actions that may adversely affect EFH, pursuant to section 305(b)(2) of the Magnuson-Stevens Act. NMFS is required under section 305(b)(4) to provide EFH recommendations regarding both state and Federal agency actions that could adversely affect EFH (see Section 600.810(a)(3) for further guidance on actions that could adversely affect EFH). Both Federal and state agencies are encouraged to develop agreements (or modify existing agreements) with NMFS to meet the consultation requirements in a manner to increase efficiency and to fully meet the requirements of the EFH provisions.

(2) Designation of non-Federal representative. A Federal agency may designate a non-Federal representative to conduct an abbreviated consultation or prepare an EFH assessment by giving written notice of such designation to NMFS. If a non-Federal representative is used, the Federal action agency remains ultimately responsible for compliance with sections 305(b)(2) and 305(b)(4) of the Magnuson-Stevens Act.

(3) General Concurrence -- (I) Purpose. The General Concurrence process identifies specific types of Federal actions that may adversely affect EFH, but for which no further consultation is generally required because NMFS has determined, through an analysis of that type of action, that it will likely to result in minimal adverse effects individually and cumulatively. General Concurrences may be national or regional in scope.

(ii) Criteria. (A) For Federal actions to qualify for General Concurrence, NMFS must determine, after consultation with the appropriate Council(s), that the actions meet all of the following criteria:

(1) The actions must be similar in nature and similar in their impact on EFH.

(2) The actions must not cause greater than minimal adverse effects on EFH when implemented individually.

(3) The actions must not cause greater than minimal cumulative adverse effects on EFH.

(B) Categories of Federal actions may also qualify for General Concurrence if they are modified by appropriate conditions that ensure the actions will meet the criteria in paragraph (c)(3)(ii)(A) of this section. For example, NMFS may provide General Concurrence for additional actions contingent upon project size limitations, seasonal restrictions, or other conditions.

(iii) General Concurrence development. A Federal agency may request a General Concurrence for a category of its actions by providing NMFS with a written description of the nature and approximate number of the proposed actions, an analysis of the effects of the actions on EFH and associated species and their life history stages, including cumulative effects, and the Federal agency's conclusions regarding the magnitude of such effects. If NMFS agrees that the actions fit the criteria in paragraph (c)(3)(ii) of this section, NMFS, in consultation with the Council(s), will provide the Federal agency with a written statement of General Concurrence that further consultation is not required, and that preparation of EFH assessments for individual actions subject to the General Concurrence is not necessary. If NMFS determines that individual actions that fall within the General Concurrence would adversely affect EFH, NMFS will notify the Federal agency that abbreviated or expanded consultation is required. If NMFS identifies specific types of Federal actions that may meet the requirements for a General Concurrence, NMFS may initiate and complete a General Concurrence.

(iv) Notification and further consultation. NMFS may request notification for activities covered under a General Concurrence if NMFS concludes there are circumstances under which such activities could result in more than a minimal impact on EFH, or if it determines that there is not a process in place to adequately assess the cumulative impacts of activities covered under the General Concurrence. NMFS may require further consultation for these activities on an individual action. Each General Concurrence should establish specific procedures for further consultation.

(v) Public review. Prior to providing a Federal agency with a written statement of General Concurrence for a category of Federal actions, NMFS will provide an opportunity for public

review through the appropriate Council(s), or other reasonable opportunity for public review.

(vi) Revisions to General Concurrences. NMFS will periodically review and revise its findings of General Concurrence, as appropriate.

(4) EFH Assessments -- (I) Preparation requirement. Federal agencies (or designated non-Federal representatives) must complete an EFH assessment for any action that may adversely affect EFH, except for those activities covered by a General Concurrence. Where appropriate, Federal agencies may combine requirements for environmental documents such as Endangered Species Act Biological Assessments pursuant to 50 CFR part 402 or National Environmental Policy Act documents and public notices pursuant to 40 CFR part 1500, with their EFH Assessment. This document must include all of the information required in paragraph (c)(4)(ii) of this section and the requirements for other applicable environmental documents to be considered a complete assessment.

(ii) Mandatory contents. The assessment must contain:

(A) A description of the proposed action.

(B) An analysis of the effects, including cumulative effects, of the proposed action on EFH and the managed and associated species, including their life history stages.

(C) The Federal agency's conclusions regarding the effects of the action on EFH.

(iii) Additional information. If appropriate, the assessment should also include:

(A) The results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.

(B) The views of recognized experts on the habitat or species that may be affected.

(C) A review of pertinent literature and related information.

(D) An analysis of alternatives to the proposed action, including alternatives that could avoid or minimize adverse effects on EFH.

(E) Proposed mitigation.

(F) Other relevant information.

(iv) Incorporation by reference. The assessment may incorporate by reference a completed EFH Assessment prepared for a similar action, supplemented with any relevant new project specific information, provided the proposed action involves similar impacts to EFH in the same geographic area or a similar ecological setting. It may also incorporate by reference other relevant environmental assessment documents. These documents must be provided to NMFS.

(5) Abbreviated consultation procedures -- (I) Purpose. Abbreviated consultation allows NMFS to quickly determine whether, and to what degree, a Federal agency action may adversely affect EFH. The abbreviated consultation process is appropriate for Federal actions that would adversely affect EFH when, in NMFS' judgment, the adverse effect(s) of such actions could be alleviated through minor modifications to the proposed action.

(ii) Notification by agency. The Federal agency must notify NMFS and the appropriate Council in writing as early as practicable regarding proposed actions that may adversely affect EFH. Notification will facilitate discussion of measures to conserve the habitat. Such early consultation must normally occur during pre-application planning for projects subject to a Federal permit or license, and during preliminary planning for projects to be funded or undertaken directly by a Federal agency.

(iii) Submittal of EFH Assessment. The Federal agency must submit a completed EFH assessment to NMFS for review in accordance with paragraph (c)(4) of this section. If either the Federal agency or NMFS believes expanded consultation will be necessary, the Federal agency must initiate expanded consultation concurrently with submission of the EFH Assessment. Federal agencies will not have fulfilled their consultation requirement under paragraph (a)(1) of this section until timely notification and submittal of a complete EFH Assessment.

(iv) NMFS response. NMFS must respond in writing as to whether it concurs with the findings of the assessment. NMFS' response shall indicate whether expanded consultation is required. If additional consultation is not necessary, NMFS' response must include any necessary EFH conservation recommendations to be used by the Federal action agency. NMFS will send a copy of its response to the appropriate Council.

(v) Timing. The Federal action agency must submit its complete EFH Assessment to NMFS as soon as practicable, but at least 60 days prior to a final decision on the action, and NMFS must respond in writing within 30 days. If notification and the EFH Assessment are combined with other environmental reviews required by statute, then the statutory deadline for those reviews apply to the submittal and response. If NMFS and the Federal action agencies agree, a compressed schedule will be used in cases where regulatory approvals cannot accommodate 30 days for consultation, or to conduct consultation earlier in the planning cycle for proposed actions with lengthy approval processes.

(6) Expanded consultation procedures -- (I) Purpose. Expanded consultation is appropriate for Federal actions that would result in substantial adverse effects to EFH and/or require more detailed analysis to enable NMFS to develop EFH conservation recommendations.

(ii) Initiation. Expanded consultation begins when NMFS receives a written request from a Federal action agency to initiate expanded consultation. The Federal action agency's written request must include a completed EFH Assessment in accordance with paragraph (c)(4) of this section. Because expanded consultation is required for activities that may potentially have substantial adverse impacts on EFH, Federal action agencies are encouraged to provide the additional information identified under paragraph (c)(4)(iii) of this section. Subject to NMFS's approval, any request for expanded consultation may encompass a number of similar individual actions within a given geographic area.

(iii) NMFS response. NMFS will:

(A) Review the EFH Assessment, any additional information furnished by the Federal agency, and other relevant information.

(B) Conduct a site visit, if appropriate, to assess the quality of the habitat and to clarify the impacts of the Federal agency action.

(C) Evaluate the effects of the action on EFH, including cumulative effects.

(D) Coordinate its review of the proposed action with the appropriate Council.

(E) Formulate EFH conservation recommendations and provide the recommendations to the Federal action agency and the appropriate Council.

(iv) Timing. The Federal action agency must submit its complete EFH Assessment to NMFS as soon as practicable, but at least 120 days prior to a final decision on the action, and NMFS must conclude expanded consultation within 90 days of submittal of a complete Assessment unless extended by NMFS with notification to the Federal action agency. If notification and the EFH Assessment are combined with other statutorily required environmental reviews, then the statutory deadlines for those reviews apply to the submittal and response. NMFS and Federal action agencies may agree to use a compressed schedule in cases where regulatory approvals cannot accommodate a 60 day consultation period.

(v) Best scientific information. The Federal action agency must provide NMFS with the best scientific information available, or reasonably accessible during the consultation, regarding the effects of the proposed action on EFH.

(vi) Extension of consultation. If NMFS determines that additional data or analysis would provide better information for development of EFH conservation recommendations, NMFS may request additional time for its expanded consultation. If NMFS and the Federal action agency agree to an extension, the Federal action agency must provide the additional information to NMFS, to the extent practicable. If NMFS and the Federal action agency do not agree to extend consultation, NMFS must provide EFH conservation recommendations to the Federal action agency using the best scientific data available to NMFS.

(7) Responsibilities of Federal action agency following receipt of EFH conservation recommendations -- (I) Federal action agency response. Within 30 days after receiving an EFH conservation recommendation (or at least 10 days prior to final approval of the action, if a decision by the Federal agency is required in less than 30 days), the Federal action agency must provide a detailed response in writing to NMFS and the appropriate Council. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the recommendations of NMFS, the Federal action agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

(ii) Dispute resolution. After receiving a Federal action agency response that is inconsistent with the recommendations of NMFS, the Assistant Administrator may request a meeting with the head of the Federal action agency, as well as any other agencies involved, to discuss the proposed action and opportunities for resolving any disagreements. Memoranda of agreement with Federal action agencies will be sought to further define such dispute resolution processes.

(8) Supplemental consultation. A Federal action agency must resume consultation with NMFS following either abbreviated or expanded consultation if the agency substantially revises its plans for the action in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations. Additionally, where Federal oversight, involvement, or control over the action has been retained or is authorized by law, the Federal action agency must resume consultation if new EFH is designated that may be adversely affected by the agency's exercise of its authority.

(d) NMFS recommendations to state agencies -- (1) Establishment of Procedures. Each Region should establish procedures for identifying actions or proposed actions authorized, funded, or undertaken by state agencies that may adversely affect EFH, and for identifying the most appropriate method for providing EFH conservation recommendations to the state agency.

(2) Coordination with Federal consultation procedures. When an activity that may adversely affect EFH requires authorization or funding by both Federal and state agencies, NMFS will provide the appropriate state agencies with copies of EFH conservation recommendations developed as part of the Federal consultation procedures in paragraph (C) of this section.

Relationships Between the Magnuson-Stevens Act and ESA

According to the ESA, areas have been identified as "critical habitat" for species that are listed as threatened or endangered. Many of the terms used in the Magnuson-Stevens Act and the ESA are similar but have different interpretations. This section provides clarification of the similarities, differences and interrelations between the two laws, and information on how NMFS will combine consultation requirements pursuant to ESA and EFH into one process.

Geographic Scope of ESA and EFH

For the purposes of the ESA, "critical habitat" includes areas occupied by the species at time of listing, as well as those unoccupied areas that are deemed "essential for the conservation of a species."

In most cases, NMFS has determined that the listed species' current range should be designated as critical habitat since these areas are necessary for the conservation of the species. As a result, NMFS' application of critical habitat has been broad in predominantly freshwater areas. However, NMFS has not always designated critical habitat in marine areas for salmonid species. This is representative of one difference in the scope of these laws.

"Essential fish habitat" as defined in the Magnuson-Stevens Act includes "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." NMFS interpretation of "necessary" is "the habitat required to support a sustainable fishery and a healthy ecosystem".

EFH will be designated on the basis of information which indicates that certain habitat areas or conditions are necessary to sustain the fishery and a healthy ecosystem. One component of the data used will likely consist of presence/absence information when more detailed information does not currently exist. Use of presence/absence data may result in the designation of broad geographic areas, similar to critical habitat designations. EFH may be broader if historic habitat areas (e.g., areas above dams or diversions) are deemed necessary to sustain harvestable population levels. In some cases, EFH will also be broader than critical habitat if EFH includes marine areas.

Where critical habitat and EFH co-occur for the same species, they will likely overlap significantly, at least in the near term. This is primarily due to the current lack of data which could permit refinement of critical habitat to key production areas sufficient to conserve listed populations. Even if such data were available, it is not clear if such a refined habitat designation would be greater or less than habitat which is necessary to sustain harvestable population levels.

Species Units

NMFS' policy of applying the ESA definition of "species" to anadromous salmonid species is based on Evolutionarily Significant Units (ESU), or populations that: (1) are reproductively isolated from other population units of the same species, and (2) represent an important component in the evolutionary legacy of the biological species.

Under the Magnuson-Stevens Act, EFH will be designated for all fisheries managed by Councils in fishery management plans (FMP). The management unit in the Pacific Fisheries Management Council's FMP for ocean salmon fisheries off Washington, Oregon, and California includes "those stocks of salmon and steelhead that are harvested in the fishery conservation zone off the coasts of Washington, Oregon, and California." The stocks are based on geographic zones. For example, for coho salmon, the FMP covers two management units, one south of Leadbetter Point (WA) and one north of Cape Falcon (OR). The æsouth of Leadbetter Point' unit is comprised of the stocks: Columbia River, Oregon coastal, and California coastal. The ænorth of Cape Falcon' unit is comprised of the stocks: Columbia River, Washington coastal, Puget Sound, and southern British Columbia. For purposes of ESA listings and management, this same geographic area covered by the two FMP management units is divided into six ESUs (one is listed as threatened, two are proposed for listing, two are

candidates for listing, and one is not a candidate). Thus, overlap between essential fish habitat and listed species will be patchy in the case of salmonids.

Definition of Effects in ESA and EFH

Neither law provides an explicit definition of "adverse effect". The definitions for "levels of effect" as applied to ESA Section 7 consultations are:

No effect: if the proposed action will literally have no effect whatsoever on the species and/or critical habitat, not a small effect or an effect that is unlikely to occur. Furthermore, actions that result in a 'beneficial effect' do not qualify as a no effect determination."

May affect, not likely to adversely affect: when effects on the species or critical habitat are expected to be beneficial, discountable, or insignificant. Beneficial effects have positive effects without resulting in any adverse effects to the species or habitat over a short- or long-term period.

May affect, likely to adversely affect: more than a negligible potential to have adverse effects on the species or critical habitat.... For the purposes of Section 7, any action which has more than a negligible potential to result in ætake' is likely to adversely affect a proposed/listed species.

Jeopardy: to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." (50 CFR, Section 402.2).

There are two levels of effect mentioned in Section 305(b)(3) of Magnuson-Stevens Act: "may adversely affect habitat" and "likely to substantially affect habitat."

Force of the Recommendations for ESA and EFH

Under the ESA, action agencies must comply with: "reasonable and prudent measures" issued in cases of "no jeopardy" where there may be take; and with "reasonable and prudent alternatives" in cases of "jeopardy". Action agencies may comply when NMFS issues conservation "recommendations" in cases of "no jeopardy."

Under the ESA, the action agency makes the initial determination of whether a proposed activity will have an adverse effect on a listed species. NMFS intervenes only if the action agency determines that an action "may affect" a listed species. The action agency is motivated to address the effects determination under the ESA, due to the legal provisions of the ESA.

According to the Magnuson-Stevens Act, action agencies must provide a detailed response in writing to any Council commenting on the action, as well as to the Secretary. The response shall include a "description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on such habitat." If the response is inconsistent with the recommendations of the Secretary, the agency shall explain its reasons for not following the recommendations. Under the Act each Federal agency "shall consult" with NMFS regarding any Federal or federally-funded or state or state-funded action that "may affect" any essential fish habitat or is "likely to substantially affect" an anadromous fishery resource under its authority.

Consultative Processes for ESA and EFH

Under sections 305(b)(1)(D), 305(b)(2), and 305(b)(4) of the Magnuson-Stevens Act, consultation on EFH is required. This consultation may be consolidated with interagency coordination procedures required by other statutes. In the case of concurrent ESA review processes, consultation activities will be coordinated to the extent possible.

NMFS will coordinate EFH and ESA consultations in the following manner:

- **NMFS will state in the Biological Opinion or consultative letter that the consultation fulfills both ESA and EFH requirements;**
- **When critical habitat and EFH are the same, and the biological assessment fulfills the requirements of the EFH assessment, the ESA consultative process will apply and will satisfy the EFH consultation requirements;**
- **In joint ESA/EFH consultations with the U.S. Forest Service and the BLM, the Level 1 team review done under ESA will cover the EFH consultation requirement;**
- **Where there are no listed species, EFH and other statutorily required consultations will be done concurrently, pursuant to NMFS' authority under the Magnuson-Stevens Act and other appropriate statutes;**
- **Projects that go forward under ESA section 7 because they are covered by a previous consultation to which they are tiered and which resolved effects on EFH at the programmatic level (i.e. programmatic consultations, nationwide permits, State Programmatic General Permits) or because the action agency has determined "no effect", are determined to be in compliance with the EFH consultation requirements.**