trophic structure, species richness, stability, resilience, contamination levels, and the frequency of diseased organisms.

*Overfished* means any stock or stock complex, the status of which is reported as overfished by the Secretary pursuant to section 304(e)(1) of the Magnuson-Stevens Act.

(b) *Word usage.* The terms ''must'', ''shall'', ''should'', ''may'', ''may not'', ''will'', ''could'', and ''can'' are used in the same manner as in § 600.305(c).

**§ 600.815 Contents of Fishery Management Plans.**

(a) *Mandatory contents*—(1) *Description and identification of EFH*—(i) *Overview.* FMPs must describe and identify EFH in text that clearly states the habitats or habitat types determined to be EFH for each life stage of the managed species. FMPs should explain the physical, biological, and chemical characteristics of EFH and, if known, how these characteristics influence the use of EFH by the species/life stage. FMPs must identify the specific geographic location or extent of habitats described as EFH. FMPs must include maps of the geographic locations of EFH or the geographic boundaries within which EFH for each species and life stage is found.

(ii) *Habitat information by life stage.* (A) Councils need basic information to understand the usage of various habitats by each managed species. Pertinent information includes the geographic range and habitat requirements by life stage, the distribution and characteristics of those habitats, and current and historic stock size as it affects occurrence in available habitats. FMPs should summarize the life history information necessary to understand each species' relationship to, or dependence on, its various habitats, using text, tables, and figures, as appropriate. FMPs should document patterns of temporal and spatial variation in the distribution of each major life stage (defined by developmental and functional shifts) to aid in understanding habitat needs. FMPs should summarize (e.g., in tables) all available information on environmental and habitat variables that control or limit distribution, abundance, reproduction, growth, survival, and productivity of the managed species. The information should be supported with citations.

(B) Councils should obtain information to describe and identify EFH from the best available sources, including peer-reviewed literature, unpublished scientific reports, data files of government resource agencies, fisheries landing reports, and other sources of information. Councils should consider different types of information according to its scientific rigor. FMPs should identify species-specific habitat data gaps and deficits in data quality (including considerations of scale and resolution; relevance; and potential biases in collection and interpretation). FMPs must demonstrate that the best scientific information available was used in the description and identification of EFH, consistent with national standard 2.

(iii) *Analysis of habitat information.* (A) The following approach should be used to organize the information necessary to describe and identify EFH.

(*1*) *Level 1: Distribution data are available for some or all portions of the geographic range of the species.* At this level, only distribution data are available to describe the geographic range of a species (or life stage). Distribution data may be derived from systematic presence/absence sampling and/or may include information on species and life stages collected opportunistically. In the event that distribution data are available only for portions of the geographic area occupied by a particular life stage of a species, habitat use 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. Habitat use may also be inferred, if appropriate, based on information on a similar species or another life stage.

(*2*) *Level 2: Habitat-related densities of the species are available.* At this level, quantitative data (i.e., density or relative abundance) are available for the habitats occupied by a species or life stage. Because the efficiency of sampling methods is often affected by habitat characteristics, strict quality assurance criteria should be used to ensure that density estimates are comparable among methods and 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 stage. The habitats contributing the most to productivity should be those that support the highest growth, reproduction, and survival of the species (or life 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 stage to habitat type, quantity, quality, and location. Essential habitats are those necessary to maintain fish production consistent with a sustainable fishery and the managed species' contribution to a healthy ecosystem.

(B) Councils should strive to describe habitat based on the highest level of detail (i.e., Level 4). If there is no information on a given species or life stage, and habitat usage cannot be inferred from other means, such as information on a similar species or another life stage, EFH should not be designated.

(iv) *EFH determination.* (A) Councils should analyze available ecological, environmental, and fisheries information and data relevant to the managed species, the habitat requirements by life stage, and the species' distribution and habitat usage to describe and identify EFH. The information described in paragraphs (a)(1)(ii) and (iii) of this section will allow Councils to assess the relative value of habitats. Councils should interpret this information in a risk-averse fashion to ensure adequate areas are identified as EFH for managed species. Level 1 information, if available, should be used to identify the geographic range of the species at each life stage. If only Level 1 information is available, distribution data should be evaluated (e.g., using a frequency of occurrence or other appropriate analysis) to identify EFH as those habitat areas most commonly used by the species. Level 2 through 4 information, if available, should be used to identify EFH as the habitats supporting the highest relative abundance; growth, reproduction, or survival rates; and/or production rates within the geographic range of a species. FMPs should explain the analyses conducted to distinguish EFH from all habitats potentially used by a species.

(B) FMPs must describe EFH in text, including reference to the geographic location or extent of EFH using boundaries such as longitude and latitude, isotherms, isobaths, political boundaries, and major landmarks. If there are differences between the descriptions of EFH in text, maps, and tables, the textual description is ultimately determinative of the limits of EFH. Text and tables should explain pertinent physical, chemical, and biological characteristics of EFH for the managed species and explain any variability in habitat usage patterns, but the boundaries of EFH should be static.

(C) If a species is overfished and habitat loss or degradation may be contributing to the species being identified as overfished, all habitats currently used by the species may be considered essential in addition to certain historic habitats that are necessary to support rebuilding the fishery and for which restoration is technologically and economically feasible. Once the fishery is no longer considered overfished, the EFH identification should be reviewed and amended, if appropriate.

(D) Areas described as EFH will normally be greater than or equal to aquatic areas that have been identified as ''critical habitat'' for any managed species listed as threatened or endangered under the Endangered Species Act.

(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. EFH must be designated for each managed species, but, where appropriate, may be designated for assemblages of species or life stages that have similar habitat needs and requirements. If grouping species or using species assemblages for the purpose of designating EFH, FMPs must include a justification and scientific rationale.

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 are necessary to maintain a sustainable fishery and the managed species' contribution to a healthy ecosystem.

(F) If degraded or inaccessible aquatic habitat has contributed to reduced yields of a species or assemblage and if, 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 stream or river blockages), improved water quality measures (removal of contaminants or increasing flows), and similar measures that are technologically and economically feasible, EFH should include those habitats that would be necessary to the species to obtain increased yields.

(v) *EFH mapping requirements.* (A) FMPs must include maps that display, within the constraints of available information, the geographic locations of EFH or the geographic boundaries within which EFH for each species and life stage is found. Maps should identify the different types of habitat designated as EFH to the extent possible. Maps should explicitly distinguish EFH from non-EFH areas. Councils should confer with NMFS regarding mapping standards to ensure that maps from different Councils can be combined and shared efficiently and effectively. Ultimately, data used for mapping should be incorporated into a geographic information system (GIS) to facilitate analysis and presentation.

(B) Where the present distribution or stock size of a species or life stage is different from the historical distribution or stock size, then maps of historical habitat boundaries should be included in the FMP, if known.

(C) FMPs should include maps of any habitat areas of particular concern identified under paragraph (a)(8) of this section.

(2) *Fishing activities that may adversely affect EFH*—(i) *Evaluation.* Each FMP must contain an evaluation of the potential adverse effects of fishing on EFH designated under the FMP, including effects of each fishing activity regulated under the FMP or other Federal FMPs. This evaluation should consider the effects of each fishing activity on each type of habitat found within EFH. FMPs must describe each fishing activity, review and discuss all available relevant information (such as information regarding the intensity, extent, and frequency of any adverse effect on EFH; the type of habitat within EFH that may be affected adversely; and the habitat functions that may be disturbed), and provide conclusions regarding whether and how each fishing activity adversely affects EFH. The evaluation should also consider the cumulative effects of multiple fishing activities on EFH. The evaluation should list any past management actions that minimize potential adverse effects on EFH and describe the benefits of those actions to EFH. The evaluation should give special attention to adverse effects on habitat areas of particular concern and should identify for possible designation as habitat areas of particular concern any EFH that is particularly vulnerable to fishing activities. Additionally, the evaluation should consider the establishment of research closure areas or other measures to evaluate the impacts of fishing activities on EFH. In completing this evaluation, Councils should use the best scientific information available, as well as other appropriate information sources. Councils should consider different types of information according to its scientific rigor.

(ii) *Minimizing adverse effects.* Each FMP must minimize to the extent practicable adverse effects from fishing on EFH, including EFH designated under other Federal FMPs. Councils must act to prevent, mitigate, or minimize any adverse effects from fishing, to the extent practicable, if there is evidence that a fishing activity adversely affects EFH in a manner that is more than minimal and not temporary in nature, based on the evaluation conducted pursuant to paragraph (a)(2)(i) of this section and/or the cumulative impacts analysis conducted pursuant to paragraph (a)(5) of this section. In such cases, FMPs should identify a range of potential new actions that could be taken to address adverse effects on EFH, include an analysis of

the practicability of potential new actions, and adopt any new measures that are necessary and practicable. Amendments to the FMP or to its implementing regulations must ensure that the FMP continues to minimize to the extent practicable adverse effects on EFH caused by fishing. FMPs must explain the reasons for the Council's conclusions regarding the past and/or new actions that minimize to the extent practicable the adverse effects of fishing on EFH.

(iii) *Practicability*. In determining whether it is practicable to minimize an adverse effect from fishing, Councils should consider the nature and extent of the adverse effect on EFH and the long and short-term costs and benefits of potential management measures to EFH, associated fisheries, and the nation, consistent with national standard 7. In determining whether management measures are practicable, Councils are not required to perform a formal cost/benefit analysis.

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

(A) *Fishing equipment restrictions*. These options may include, but are not limited to: seasonal and areal restrictions on the use of specified equipment, equipment modifications to allow escapement of particular species or particular life stages (e.g., juveniles), prohibitions on the use of explosives and chemicals, prohibitions on anchoring or setting equipment in sensitive areas, and prohibitions on fishing activities that cause significant damage to EFH.

(B) *Time/area closures*. These actions may include, but are not limited to: closing areas to all fishing or specific equipment types during spawning, migration, foraging, and nursery activities and designating zones for use as marine protected areas to limit adverse effects of fishing practices on certain vulnerable or rare areas/species/life stages, such as those areas designated as habitat areas of particular concern.

(C) *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.

(3) *Non-Magnuson-Stevens Act fishing activities that may adversely affect EFH*. FMPs must identify any fishing activities that are not managed under the Magnuson-Stevens Act that may adversely affect EFH. Such activities may include fishing managed by state agencies or other authorities.

(4) *Non-fishing related activities that may adversely affect EFH*. FMPs must identify activities other than fishing that may adversely affect EFH. Broad categories of such activities include, but are not limited to: dredging, filling, excavation, mining, impoundment, discharge, water diversions, thermal additions, actions that contribute to non-point source pollution and sedimentation, introduction of potentially hazardous materials, introduction of exotic species, and the conversion of aquatic habitat that may eliminate, diminish, or disrupt the functions of EFH. For each activity, the FMP should describe known and potential adverse effects to EFH.

(5) *Cumulative impacts 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. To the extent feasible and practicable, FMPs should analyze how the cumulative impacts of fishing and non-fishing activities influence the function of EFH on an ecosystem or watershed scale. An assessment of the cumulative and synergistic effects of multiple threats, including the effects of natural stresses (such as storm damage or climate-based environmental shifts) and an assessment of the ecological risks resulting from the impact of those threats on EFH, also should be included.

(6) *Conservation and enhancement*. FMPs must identify actions to encourage the conservation and enhancement of EFH, including recommended options to avoid, minimize, or compensate for the adverse effects identified pursuant to paragraphs (a)(3)

through (5) of this section, especially in habitat areas of particular concern.

(7) *Prey species.* Loss of prey may be an adverse effect on EFH and managed species because the presence of prey makes waters and substrate function as feeding habitat, and the definition of EFH includes waters and substrate necessary to fish for feeding. Therefore, actions that reduce the availability of a major prey species, either through direct harm or capture, or through adverse impacts to the prey species' habitat that are known to cause a reduction in the population of the prey species, may be considered adverse effects on EFH if such actions reduce the quality of EFH. FMPs should list the major prey species for the species in the fishery management unit and discuss the location of prey species' habitat. Adverse effects on prey species and their habitats may result from fishing and non-fishing activities.

(8) *Identification of habitat areas of particular concern.* FMPs should identify specific types or areas of habitat within EFH as habitat areas of particular concern based on one or more of the following considerations:

(i) The importance of the ecological function provided by the habitat.

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

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

(iv) The rarity of the habitat type.

(9) *Research and information needs.* Each FMP should contain recommendations, preferably in priority order, for research efforts that the Councils and NMFS view as necessary to improve upon the description and identification of EFH, the identification of threats to EFH from fishing and other activities, and the development of conservation and enhancement measures for EFH.

(10) *Review and revision of EFH components of FMPs.* Councils and NMFS should periodically review the EFH provisions of FMPs and revise or amend EFH provisions as warranted based on available information. FMPs should outline the procedures the Council will follow to review and update EFH information. The review of information should include, but not be limited to, evaluating published scientific literature and unpublished scientific reports; soliciting information from interested parties; and searching for previously unavailable or inaccessible data. Councils should report on their review of EFH information as part of the annual Stock Assessment and Fishery Evaluation (SAFE) report prepared pursuant to §600.315(e). A complete review of all EFH information should be conducted as recommended by the Secretary, but at least once every 5 years.

(b) *Development of EFH recommendations for Councils.* After reviewing the best available scientific information, as well as other appropriate information, and in consultation with the Councils, participants in the fishery, interstate commissions, Federal agencies, state agencies, and other interested parties, NMFS will develop written recommendations to assist each Council in the identification of EFH, adverse impacts to EFH, and actions that should be considered to ensure the conservation and enhancement of EFH for each FMP. NMFS will provide such recommendations for the initial incorporation of EFH information into an FMP and for any subsequent modification of the EFH components of an FMP. The NMFS EFH recommendations may be provided either before the Council's development of a draft EFH document or later as a review of a draft EFH document developed by a Council, as appropriate.

(c) *Relationship to other fishery management authorities.* Councils are encouraged to coordinate with state and interstate fishery management agencies where Federal fisheries affect state and interstate managed fisheries or where state or interstate fishery regulations affect the management of Federal fisheries. Where a state or interstate fishing activity adversely affects EFH, NMFS will consider that action to be an adverse effect on EFH pursuant to paragraph (a)(3) of this section and will provide EFH Conservation Recommendations to the appropriate state or interstate fishery management agency on that activity.