

**Considerations for Conducting a Thorough Analysis of Options to  
Minimize the Adverse Effects of Fishing on EFH  
October 2002**

This document discusses the various steps involved in analyzing a range of options to minimize adverse effects of fishing on Essential Fish Habitat (EFH) as required by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the National Environmental Policy Act (NEPA). It was prepared by staff of the National Marine Fisheries Service (NMFS) Office of Habitat Conservation as an informal discussion document to assist staff involved in completing these analyses by providing a step-by-step listing of some of the principal tasks for complying with both MSA and NEPA.

**1. Identify all fishing activities.**

Start by developing a list of all fishing activities that occur in EFH for the fishery, species, or species group at issue, including different types of fishing gear, different configurations of the gear, different ways of using the gear, etc. The list should include all fishing activities managed under the FMP you are analyzing, other federally managed fishing activities, and fishing activities that are not managed under a federal FMP (e.g., state managed fisheries). A useful way to do this is to develop brief descriptions of each fishing activity, including a short narrative to describe the physical attributes of the gear, the manner in which it is used, the type of bottom on which it is fished (if applicable), the season in which it is used (if relevant), etc.

While the EFH final rule requires that FMPs identify non-FMP fishing activities that adversely affect EFH (600.815(a)(3)), there is no requirement to go through all of the steps outlined below for those activities. Adverse effects resulting from non-FMP fisheries should, however, be discussed and considered in the analysis of cumulative effects.

**2. Evaluate the potential adverse effects of each fishing activity.**

The EFH regulations at 50 CFR 600.815(a)(2)(i) offer the following guidance for this 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.

It may be useful to break the evaluation into four parts: a discussion of potential effects gear-by-gear or fishery-by-fishery; a discussion of cumulative effects of multiple gears/fisheries; a discussion of any past or pending management actions that reduce potential adverse effects; and a discussion of effects on HAPCs and any vulnerable habitats that may warrant HAPC designation. In addition to discussing potential adverse effects of fishing, the evaluation should note any beneficial effects for target species.

---

**Gear-by-Gear or Fishery-by-Fishery Evaluation.** The evaluation should build upon the narrative description of each fishing activity from step 1 above, so the end product for each fishing activity would be a paragraph or two describing the fishing activity followed by text discussing relevant information such as 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. The evaluation should include information on fishing effort – preferably quantitative information, but at least some qualitative discussion to help assess the use of each fishing activity relative to other fishing activities (e.g., “this gear accounted for 73% of the landings in the cod fishery from 1993-2001”). The discussion for each fishing activity should provide conclusions regarding whether and how the activity adversely affects EFH.

---

**Discussion of cumulative effects of multiple gears/fisheries.** The evaluation should indicate whether multiple fishing activities occurring within the same habitat may be resulting in cumulative effects that, when considered collectively, are more intense and/or lasting than the effects of the fishing activities when considered individually. This evaluation of cumulative effects should not be confused with the NEPA requirement to evaluate cumulative effects, which has a much broader scope than cumulative effects resulting from only fishing activities.

---

**Discussion of any past or pending management actions that reduce potential adverse effects.** The evaluation should list any past or pending fishery management actions that may reduce the potential for adverse effects to EFH. For example, an FMP might include gear restrictions, closed areas or seasons, limitation on fishing effort, or other measures that have the effect of limiting habitat disturbance. Even if such measures were instituted for purposes other than habitat conservation (e.g., to reduce bycatch), it is relevant to

discuss the benefits of those actions to EFH. This information will highlight existing management measures that contribute to determining whether the FMP minimizes to the extent practicable the adverse effects of fishing on EFH. By including relevant pending management measures, the evaluation will also take into account specific, planned changes to the management regime.

---

**Discussion of effects on HAPCs and on any vulnerable habitats that may warrant HAPC designation.** The evaluation should discuss explicitly any adverse effects of fishing on HAPCs, and should identify any habitats that are particularly vulnerable to disturbance from fishing since those areas may warrant designation as HAPCs.

Finally, be sure the evaluation addresses the effects of all fishing activities on all EFH. This includes effects of fishing activities regulated under the FMP you are analyzing on EFH designated by all FMPs, as well as effects of fishing activities regulated under other FMPs on EFH designated under the FMP you are analyzing.

**3. Eliminate from further consideration any fishing activities that do not adversely affect EFH in a manner that is more than minimal and not temporary in nature.**

The EFH regulations at 50 CFR 600.815(a)(2)(ii) establish a threshold for determining which fishing activities warrant analysis to minimize to the extent practicable the adverse effects of fishing on EFH:

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.

As discussed in the preamble to the EFH final rule at 67 FR 2354, management action is warranted to regulate fishing activities that reduce the capacity of EFH to support managed species, not fishing activities that result in inconsequential changes to the habitat. The “minimal and temporary” standard in the regulations, therefore, is meant to help determine which fishing activities, individually and cumulatively, cause inconsequential effects to EFH.

In this context, temporary effects are those that are limited in duration and that allow the particular environment to recover without measurable impact. The following types of factors should be considered when determining if an impact is temporary:

- The duration of the impact;
- The frequency of the impact;

Minimal effects are those that may result in relatively small changes in the affected environment and insignificant changes in ecological functions. Whether an impact is minimal will depend on a number of factors:

- The intensity of the impact at the specific site being affected;
- The spatial extent of the impact relative to the availability of the habitat type affected;
- The sensitivity/vulnerability of the habitat to the impact;
- The habitat functions that may be altered by the impact (e.g., shelter from predators)
- The timing of the impact relative to when the species or life stage need the habitat.

In general, if the effects of fishing are not clearly less than minimal and temporary, to ensure a thorough analysis and a strong administrative record it is best to proceed with an evaluation of potential management measures to minimize adverse effects to the extent practicable.

**4. For the remaining fishing activities, determine which factors appear to be most relevant for addressing adverse effects.**

Based on the evaluation completed in step 2 above, identify the most relevant factors for consideration in devising a range of potential management measures. For example, the evaluation may indicate that certain habitat features such as coral, other biogenic structures, or high relief bottoms are key variables in determining where adverse effects may occur. Alternatively, the evaluation might indicate that certain specific fishing activities are important determinants of adverse effects even if those activities occur over a range of habitat types. Considering the nature of the effects to be minimized (whether based on habitat type, gear type, some other factor, or a combination of factors) will help to inform the identification of a range of alternative actions to minimize adverse effects.

**5. Develop a list of potential management measures.**

The EFH regulations at 50 CFR 600.815(a)(2)(ii) state that “FMPs should identify a range of potential new actions that could be taken to address adverse effects on EFH...” In light of the most important factors that influence potential adverse effects (as identified in step 4 above), develop a list of potential management measures that would help to prevent, mitigate, or minimize the adverse effects of fishing on EFH. The range of potential alternatives should include extremely precautionary measures (e.g., banning specific gear types), taking no action, and intermediate alternatives (e.g., gear modifications or area closures). It may be useful to start by identifying a wider range of potential management measures than would need to be analyzed in detail, and then trim the list down to a more manageable number.

**6. Package potential management measures into alternatives to be analyzed further.**

For purposes of analysis under the National Environmental Policy Act and other applicable laws and Executive Orders, develop suites of management measures that would constitute

discrete alternative actions. Each alternative might include a number of different management measures, and some specific management measures might appear in more than one alternative. Alternatives should be packaged such that the public can distinguish amongst the consequences of each alternative. Be sure the alternatives selected for further analysis represent a reasonable range of measures for addressing the identified adverse effects to EFH.

**7. Evaluate the practicability of the identified range of alternative management measures.**

The EFH regulations at 50 CFR 600.815(a)(2)(iii) provide guidance on evaluating the practicability of management measures:

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.

In evaluating the practicability of the identified management measures, one should consider the economic and ecological costs and benefits of those measures. NMFS has not identified a preferred methodology for conducting the practicability analysis.

**8. Explain the reasons for the Council's conclusions.**

The EFH regulations at 50 CFR 600.815(a)(2)(ii) require that “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.” Therefore, the analysis of options to minimize adverse effects of fishing on EFH should be presented as a comparison between alternatives, sharply defining the issues and providing a clear basis for choice among options by decision-makers and the public as required by NEPA at 40 CFR 1502.14. The analysis should conclude with an explicit discussion of the Council’s rationale, linking the adverse effects identified in step 2 above to the alternative management measures identified in steps 5 and 6 and the practicability analysis conducted in step 7. The analysis should state clearly that the FMP minimizes to the extent practicable the adverse effects of fishing on EFH, as required by Section 303(a)(7) of the Magnuson-Stevens Act, and should explain the reasons behind this conclusion.