## Statement of Work

### Background

The Magnuson-Stevens Fishery Conservation and Management Act requires that every fishery management plan describe and identify Essential Fish Habitat (EFH) for the fishery, minimize to the extent practicable the adverse effects of fishing on EFH, and identify other measures to promote the conservation and enhancement of EFH. NMFS and the North Pacific Fishery Management Council recently developed a draft environmental impact statement (DEIS) to consider the impacts of incorporating new EFH provisions into the Council's fishery management plans. The DEIS evaluates three actions: (1) describing and identifying EFH for fisheries managed by the Council; (2) adopting an approach for the Council to identify Habitat Areas of Particular Concern within EFH; and (3) minimizing to the extent practicable the adverse effects of Council-managed fishing on EFH. Most of the controversy surrounding the level of protection needed for EFH concerns the effects of fishing on sea floor habitats. Substantial differences of opinion exist as to the extent and significance of habitat alteration caused by bottom trawling and other fishing activities. Although an increasing body of scientific literature discusses the effects of fishing on habitat, there is no consensus within the scientific community on an appropriate methodology for analyzing potential adverse effects.

The national EFH regulations (50 CFR 600.815(a)(2)) require an evaluation of the effects of fishing on EFH, and this evaluation appears in Appendix B to the DEIS. The evaluation has two components: a quantitative mathematical model to show the expected long term effects of fishing on habitat, and a qualitative assessment of how those changes affect fish stocks. The model estimates the proportional reductions in habitat features relative to an unfished state, assuming that fishing will continue at the current intensity and distribution until the alterations to habitat and the recovery of disturbed habitat reach equilibrium. The model provides a tool for bringing together all available information on the effects of fishing on habitat, such as fishing gear types and sizes used in Alaska fisheries, fishing intensity information from observer data, and gear impacts and recovery rates for different habitat types. Due to the uncertainty regarding some input parameters (e.g., recovery rates of different habitat types), the results of the model are displayed as point estimates as well as a range of potential effects.

After considering the available tools and methodologies for assessing effects of fishing on habitat, the Council and its Scientific and Statistical Committee concluded that the model incorporates the best available scientific information and provides a good approach to understanding the impacts of fishing activities on habitat. Nevertheless, the model and its application have many limitations. Both the developing state of this new model and the limited quality of available data to estimate input parameters prevent drawing a complete picture of the effects of fishing on EFH. The model incorporates a number of assumptions about habitat effect rates, habitat recovery rates, habitat distribution, and habitat use by managed species. The quantitative outputs of the analysis

may convey an impression of rigor and precision, but the results actually are subject to considerable uncertainty.

One major limitation of the model is that it does not consider the habitat requirements of managed species or the distribution of their use of habitat features. Therefore, DEIS analysts were asked to use the model output to address whether continued fishing at the current rate and intensity is likely to alter the ability of a managed species to sustain itself over the long term. In other words, are the fisheries, as they are currently conducted, affecting habitat that is essential to the welfare of each managed species? To help answer that question, the analysts considered available information about the habitats used by managed species. The analysts also considered the ability of each stock to stay above its minimum stock size threshold (MSST), after at least thirty years of fishing at equal or higher intensities. MSST is the level below which a stock is in jeopardy of not being able to produce its maximum sustainable yield on a continuing basis.

The DEIS analysis concludes that despite persistent disturbance to certain habitats, the effects on EFH are minimal because there is no indication that continued fishing activities at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The DEIS finds that no Council-managed fishing activities have more than minimal and temporary adverse effects on EFH, which is the regulatory standard requiring action to minimize adverse effects under the Magnuson-Stevens Act. Additionally, the analysis concludes that all fishing activities combined have minimal, but not necessarily temporary, effects on EFH. These findings suggest that no additional management actions are required pursuant to the EFH regulations.

Expertise Needed for the Review

The review panel shall comprise six individuals. Panelists shall have expertise in benthic ecology, fishery biology, fishing gear technology, ecological modeling, and/or closely related disciplines.

Information to be Reviewed

The CIE panel shall review the following materials:

- The Executive Summary from the *Draft Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska* (11 pages plus tables and figures);
- The evaluation of fishing activities that may adversely affect EFH (Appendix B to the DEIS; 76 pages plus tables and figures);
- EFH sections of the minutes of the Council's Scientific and Statistical Committee meetings in October 2002, December 2002, February 2003, April 2003, June 2003, and October 2003 (each is approximately 2 pages);
- Section 303(a)(7) of the Magnuson-Stevens Act;

- Pertinent excerpts from the NMFS regulations for EFH (50 CFR 600.10 and 600.815(a)(2)) and the associated preamble (67 FR 2354-2355);
- Pertinent excerpts from the Magnuson-Stevens Act National Standard 1 Guidelines (50 CFR 600.310(d)); and
- Selected public comments on the DEIS that are pertinent to Appendix B, including criticisms of the analytical approach (comments to be selected by NMFS after the close of the public comment period on April 15, 2004).

Panelists should refer to the following website to access all background material.

http://www.fakr.noaa.gov/habitat/efh.htm

Questions to be Answered

Given the context of the Magnuson-Stevens Act requirements and the EFH regulations, the CIE reviewers shall address the following issues:

1. Does the model incorporate the best available scientific information and provide a reasonable approach to understanding the effects of fishing on habitat in Alaska?

2. Does the DEIS Appendix B analysis provide a reasonable approach for identifying whether any Council-managed fishing activities adversely affect EFH in a manner that is more than minimal and not temporary in nature? (For purposes of this question, the terms "temporary" and "minimal" should be interpreted consistent with the preamble to the EFH regulations: "Temporary impacts are those that are limited in duration and that allow the particular environment to recover without measurable impact. Minimal impacts are those that may result in relatively small changes in the affected environment and insignificant changes in ecological functions.") To answer this question, the panel shall address at least the following issues:

    a. Does the DEIS Appendix B analysis apply an appropriate standard (including the consideration of stock status relative to MSST) for determining whether fishing alters the capacity of EFH to support managed species, a sustainable fishery, and the managed species' contribution to a healthy ecosystem?

    b. Does the DEIS Appendix B analysis give appropriate consideration to localized habitat impacts that may reduce the capacity of EFH to support managed species in a given area, even if those impacts do not affect a species at the level of an entire stock or population?

3. What if any improvements should NMFS consider making to the model, or to its application in the context of the DEIS, given the limited data available to use for input parameters?

Review Process, Deliverables, and Schedule

The review panel shall consist of six members, five panelists and one Chair, with duties as specified below.

**Duties of the Panelists**

1. Each panelist shall attend in person and participate in a one-day meeting with the scientists who developed the fishing-effects model and the analytical approach used to evaluate the effects of fishing in the DEIS. The meeting will be held at the Alaska Fisheries Science Center in Seattle on June 29, 2004. The meeting will be open to the public to attend, but there will be no opportunity for public testimony. The lead authors of the model, Dr. Jeffrey Fujioka and Dr. Craig Rose, will provide an overview of the model, how it was developed, how it was refined in response to comments from the Council's Scientific and Statistical Committee and other reviewers, and how it was used in the DEIS. The panel will have an opportunity to question Dr. Fujioka and Dr. Rose, as well as Dr. Anne Hollowed, who assisted in designing the analytical approach used to evaluate the effects of fishing in the DEIS. The panel shall meet in executive session at the Best Western University Towers Hotel on June 30, 2004 to discuss the information presented, and to identify any unanswered questions.

2. Prior to the meeting, each panelist shall review the materials specified above. Panelists may submit written questions via e-mail to Jon Kurland (Jon.Kurland@noaa.gov), with copies to the Contracting Officer's Technical Representative (COTR), Stephen Brown (Stephen.K.Brown@noaa.gov), and to the CIE manager, Manoj Shivlani (mshivlani@rsmas.miami.edu), at least two weeks before the meeting to ensure topics of particular interest will be covered during the presentation.

3. Each panelist shall deliver an individual final written report containing answers to the questions posed above and any recommendations. These individual reports shall be submitted the Chair and to Dr. David Die of the University of Miami via e-mail at ddie@rsmas.miami.edu, and to Mr. Manoj Shivlani via email at mshivlani@rsmas.miami.edu no later than July 15, 2004. The reports shall include the following sections: executive summary, background, description of review activities, summary of findings, conclusions/recommendations, bibliography of any materials relied upon by the panel, and a copy of this statement of work. Please refer to the following website for additional information on report generation: http://www.rsmas.miami.edu/groups/cimas/Report_Standard_Format.html.

**Duties of the Chair**

1. The Chair shall moderate the June 29 meeting with the NMFS scientists, as well as all other meetings the panel may have to conduct its work, including the June 30 executive session.

2. The Chair shall compile all of the panelists' input from the meetings and from their review reports to prepare a summary report, and shall provide the summary report to Dr. David Die via e-mail at ddie@rsmas.miami.edu, and to Mr. Manoj Shivlani via email at mshivlani@rsmas.miami.edu. This summary report shall follow the same outline as the panelists' reports, shall accurately present all the opinions and findings of each individual panelist in an easily read summary, and shall not represent a consensus report. The Chair shall provide the summary report to the CIE no later than July 23, 2004.

3. The Chair shall present the results of the review to the North Pacific Fishery Management Council and its Advisory Panel and Scientific and Statistical Committee at a meeting on October 6, 2004, in Sitka, Alaska. The Chair shall provide the CIE with a digital copy of the presentation to the Council.

NMFS anticipates that the review will require approximately 12 days of work per panelist (3 days to review specified materials, 1 day to review other pertinent materials, 2 travel days, 1 day for the NMFS meeting, 2 days for panel meetings, 3 days to prepare the report) for a total of approximately 60 reviewer days. Additionally, the Chair shall require 12 days to prepare for and moderate the panel, 3 days to compile the summary report, and 4 days (including preparation and travel) to attend the October 2004 Council meeting. Thus, the total level of effort shall not exceed 79 days.

**Submission and Acceptance of CIE Reports**

The CIE shall provide the five final individual reports in pdf format for approval by NOAA Fisheries to the COTR, Dr. Stephen K. Brown, no later than July 29, 2004. The COTR shall notify the CIE via e-mail regarding acceptance of the individual reports. Following the COTR's approval, the CIE shall provide final pdf copies of the individual reports with digital signed cover letters.

In addition, the CIE shall provide the five final panelist reports to the Chair, to ensure that the Chair has the final reports to work from to complete the Chair's summary report.

The CIE shall provide the Chair's final summary report for approval by NOAA Fisheries to the COTR no later than August 2, 2004. The COTR shall notify the CIE via e-mail regarding acceptance of the summary report. Following the COTR's approval, the CIE shall provide final pdf copies of the summary report with a digital signed cover letter.

The CIE shall also provide the COTR with a courtesy digital copy of the Chair's October 6 presentation to the Council.