

**DRAFT REPORT TO THE COUNCIL**  
from the  
**Essential Fish Habitat (EFH) Committee**  
December, 2001

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**INTRODUCTION**

The Council's EFH Committee met in Juneau during the week of November 5-9, in conjunction with NMFS EFH workshop (see Attachment 1 for list of attendees). The following EFH Committee members were present:

Linda Behnken, Stosh Anderson, Gordon Blue, Ben Enticknap, John Gauvin, Earl Krygier, Heather McCarty, Michael Payne, Glenn Reed, Michelle Ridgway, Scott Smiley.

The primary purpose of this meeting was to develop specific alternatives for EFH and HAPC designation, and significance criteria for analysis. The Committee met first to establish their rules of operation, and, working from the platform paper developed by Council staff, developed an initial set of both EFH and HAPC alternatives for the scientific advisors to review (Attachment 2). The Committee met over the next two days in conjunction with the scientific advisors to synthesize the range of alternatives for both EFH and HAPC and to review the significance criteria for analyses. On the last meeting day the committee arrived at the following preliminary recommendations.

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**EFH ALTERNATIVES**

**Alternative 1 - No Action - No EFH Designation**

EFH would not be designated. This is not a viable alternative as it is in violation of Magnuson Stevens Fishery Conservation Management Act (MSFCMA). It is not the status quo. However, according to the Department of Justice ( see January 22, 2001, Hogarth memo), it is the no action alternative and must be considered as an alternative. The resulting action of this alternative would result in changing the FMP's from the current EFH amendment measures.

## **Alternative 2 - Status Quo**

EFH is defined on a species by species basis for a species life stage, based on the general distribution of that species life stage. Status quo is described in the Environmental Assessment for fishery management plan Amendments 55/55/8/5/5, January, 1999. Note that the legal definition of EFH is the written definition (text) not the accompanying maps.

## **Alternative 3 - Species Based**

This alternative would specify EFH designations in accordance with the criteria established in the interim final rule. This approach would dictate that EFH be designated on the basis of the highest level of information available. Areas for each species/species group and life stage would be separately designated and overlaid according Option A & B. The levels could be applied species by species or by lifestage, thus, a species would not be limited to level 1 for all lifestages if higher level of information exists for that lifestage.

Level 0 - No information is available to infer the species general distribution

Level 1 - EFH is general distribution and its associated habitat.

Level 2 - EFH is known concentrations and its associated habitat.

Level 3 - EFH is the habitat contributing to the survival, reproduction, and growth of a species (including those used at each lifestage).

Level 4 - EFH is the habitat with the highest biological productivity.

Options:

(A) for species and life stage

(B) for species groups based on taxonomic grouping

Suboptions:

(a) if a stock falls below a threshold for stock abundance, provide for a reversion to a lower EFH classification level, broadening the designated area.

(b) include a specific process (or framework) that includes a research and monitoring program for updating attributes and filling data gaps.

*Additional Committee notes: Increased knowledge mandates moving up a level which changes it from status quo. Scientist's advice suggests that statistical techniques such as a cluster analyses done only on taxonomically related groups (eg. sculpin or rockfish species) not phylogenetically unrelated species (eg coral, ray and irish lord) could be an appropriate method for Option B.*

*The committee discussed how the concept changes from a species based approach to a habitat based one in the move from level 2 to 3. A Level 2 indicates some understanding of known*

*concentrations. With Level 2 data, habitat can be described. In Level 3 data implies a better understanding about the function of habitat than in level 2; i.e., how habitat contributes to survival, reproduction, and growth. Legal Counsel advised the committee that an option for area or regional levels of information for the crab and salmon FMP's may be necessary.*

*The committee discussed the addition of level 0 data as included in the original EFH EA on pg.8. The EFH EA states that the Alaska Technical teams needed to add a level 0, 'as a subset of level 1, to define a level of knowledge less than level 1, which requires presence/ absence data sufficient for applying analyses of frequency occurrence:'. The groundfish technical team described level 0 as 'no systematic sampling has been conducted for this species and life stage; may have been caught opportunistically in small numbers during other research'. The EFH Committee voted to include a level 0 designation. GC and NMFS staff advised that under the EFH Final Rule, once it becomes guidance, Level 1 would include the Alaska Regions previous designations of Level 0a and 0b. A Level 0, would by default, be Level 0c as described under the 1999 EFH FMP amendments.*

#### **Alternative 4 - Ecosystem / Habitat Based**

This alternative would specify EFH designations relative to classification of habitat types occurring in the region and the assemblages of species and lifestages associated with them. Habitat types would be defined by the relevant physical and biotic data, including depth, substrate, and structure forming biota. (see Attachment 3 fo a more additional explanation).

Stage 1 - Ecosystems and all the species/species groups that occur there (i.e., watershed, freshwater, marine).

Stage 2 - Ecoregions and all species/species groups that occur there (i.e., Bering Sea, Aleutian Islands).

Stage 3 - Subcoregions (may include existing management areas) and all species/species groups that occur there (i.e., southeast, Bristol Bay).

Stage 4 - Habitat strata (nearshore, offshore) and all species/species groups that occur there.

Stage 5 - Habitat strata as clarified by habitat modifiers (i.e., substrate structure, vegetation, salinity, depth, sea ice, biotic factors).

Current knowledge of habitat features may limit initial designation to broad types that are primarily defined by depth and area, such as the strata currently used in groundfish assessment surveys. Analysis of species assemblages may be used to refine classification. Habitat classification and resolution can be further refined with improved knowledge of habitat use by fish and the distribution of habitat features.

A catalog of species and life stages using each habitat would be compiled, using the knowledge level criteria developed in the interim final rule. Thus the assignment of a species to the list for a habitat type may be altered based on improved knowledge of its use of that habitat. Species may be

combined into assemblages where sufficient associations are demonstrated to establish the likelihood that protection of the assemblage would assure protection of each component species. The essential fish habitat for each species would be defined as the combination of all habitat types in which that species is included.

Option:

a) Alternative would include a specific process (or at least a framework for the process) that includes a research and monitoring program for updating attributes and filling data gaps.

*Additional Committee notes: The committee noted that we need a discussion on the merits of this ecoregion habitat approach as an ecosystem approach from Pat Livingston (NMFS-AFSC) and Kay Koski (NMFS-ABL) to hear their rationale for the development of this alternative (see Attachment 3). If not, then an alternative 6 will be designated for an ecosystem approach. The committee raises the following concerns: Does a species move up the stages (1-6) if data are available? Examples are needed to fully explain this alternative. The committee expressed concern on the procedures of how to change designations once the information became more refined. Questions also arose on validation information, and defined metrics to quantify habitat species associations.*

### **Alternative 5 – Core Area**

Designation of EFH for this alternative is limited to those core areas known to be crucial to the production of species or species groups. Each phase is based on our level of understanding of the relationship between habitat and productivity. Under this alternative, we would need to know the link between habitat and fish productivity (i.e., level 4 information). If the intent is to provide maximum sustainable yield, it would be very difficult to know what areas could be eliminated and still provide for MSY. The scientists concluded that until much more is known about a species productivity, all habitats used by the stock should be considered essential for sustaining maximum yield. [Note that this alternative is essentially the interim final rule suggestion for stocks with level 4 data.]

Phase 1 - Specify the habitat areas or locations that have encompassed the highest known concentrations of all lifestages of each species over time.

Phase 2 - Specify the habitat area that encompasses the highest known concentration of the critical life stages that are most limiting to the recruitment to the adult population.

Phase 3 - Specify and designate only the habitat area that contributes most production.

Option:

a) Alternative 5 would include a specific process (or at least a framework for the process) that includes a research and monitoring program for updating attributes and filling data gaps.

*Additional Committee notes: The committee raised the following concern “What are the differences between a species approach and a core approach at the higher levels?” i.e, does the core approach*

*only apply to species with level 4 information. Methodology on the starting point of known concentration for the species, which restricts the initial spatial extent of the designation. If there is no 'core' level specified does that mean no EFH defined for that species type?*

## **HAPC ALTERNATIVES**

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Habitat areas of particular concern (HAPC) are those areas of special importance that may require additional protection from adverse effects. The interim final rule states “In determining whether a type, or area of EFH is a HAPC, one or more of the following criteria must be met:

- The importance of the ecological function provided by the habitat.
- The extent to which the habitat is sensitive to human-induced environmental degradation.
- Whether, and to what extent, development activities are, or will be, stressing the habitat type.
- The rarity of the habitat type

A history of HAPC designations to date is attached as Attachment 4.

### **Alternative 1 - No HAPC**

Under this alternative there would be no designation of HAPC in the region

### **Alternative 2 - Status Quo (Habitat Type)**

This is the current system where specific habitat types are designated as HAPC. In January 1999 the Secretary approved several habitat types as HAPC within the essential fish habitat amendments 55/55/8/5/5. Habitat types, rather than specific areas, were designated as HAPC because little was known at the time regarding where these habitat types were located. These HAPC types are:

1. Living substrates in shallow waters (nearshore areas of intertidal submerged vegetation, e.g., eelgrass)
2. Living substrates in deep waters (offshore areas with substrate of high micro habitat diversity, e.g., sponges, coral, anemones)
3. Freshwater areas used by anadromous fish (includes all anadromous streams, lakes, and other freshwater areas used by Pacific salmon and other anadromous fish (such as smelt), especially in urban areas and in other areas adjacent to intensive human-induced developmental activities)

### **Alternative 3 - Species Specific “Core” Based/Key Distribution Concept**

This alternative starts with the assumption that the distribution and abundance of the FMP species (and other species important to FMP species) gives some indication of critically important habitat types or sites that require special protection. At low levels of information we start with species distribution and abundance, filter it through the four criteria and if one or more applies HAPC may apply. As more information on the interaction between habitat and FMP species/ecosystem productivity becomes available HAPC could be refined to a core habitat that could be a type or a site that might be a bottleneck or key habitat.

*Additional Committee notes: The Committee remains concerned over data limitations.*

#### **Alternative 4 Habitat – Eco-region / Ecological Based Concept**

This alternative identifies habitat types or sites of ecological significance within eco-regions (tiering down from Alternative 4 EFH). This alternative incorporates the ability of both habitat types and site specific designation, and allows management action at both levels. The alternative would allow for potentially different management actions among the types, sites, and regions.

*Additional Committee notes: Habitat for the prey species may have to be a HAPC. In other words salmon HAPC might include herring habitat. The committee has concerns over data limitations.*

#### **Alternative 5 - Site Specific Based Concept**

This alternative starts with the assumption that individual sites meeting one or more of the criteria maybe designated HAPC sites. It does not allow for designation of types of habitat but constrains HAPC designation to specific defined sites or locations, such as a particular seamount.

#### **Alternative 6 - Type/Site Based Concept**

This alternative establishes HAPCs as individuals sites. Sites are selected as sub-sets of HAPC types. This is done through a two-step process:

Step A) Types are selected based on the regulatory criteria.

Step B) Management action is applied to sites within types to achieve specific objectives.

The sites are selected based on the regulatory criteria or a combination of the regulatory criteria and additional criteria. As appropriate. Specific sites are then selected and accompanied with management objectives.

#### **Additional Committee Notes Relative to HAPC Alternatives**

The Committee is concerned about data limitations for the HAPC alternatives. Specific to Alternative 5 and six the EFH committee is concerned about how to distinguish among sites. For Alternatives 2 and 6 the Committee is concerned about how to distinguish among sites within a type. At the NMFS EFH Workshop the crab breakout group offered the following as potential discriminators:

Geographical isolation, Uniqueness, Number of FMP species, Diversity, Vulnerability, Key or bottleneck, Fragility and sensitivity

The Committee believes additional or alternative discriminators should be considered.

## **SIGNIFICANCE CRITERIA**

The Committee, scientific advisors, and FW representatives spent considerable time reviewing and discussing significance criteria. The list of significant issues drafted by NMFS is included as Attachment 2. The EFH Committee identified the following additional issues:

1. Consider employing a trigger to invoke EFH (and HAPC) management alternatives. The trigger should be based on population levels and should be determined by the Council. Thus the Council maintains management authority until population levels are low then the authority defaults to the EFH management alternative. We will need a population modeling mechanism to distinguish between population declines provoked by natural circumstances from those associated with fishing.
2. Consider requiring Adaptive Management for all EFH (or HAPC) management alternatives. So the EFH management alternative has been specifically tested to ascertain that it will provide the population benefits expected and have no unforeseen consequences.
3. EFH (and HAPC) management alternatives need set goals to ascertain whether they are achieving their promise.
4. Consider sunseting EFH (and HAPC) management alternatives. So that when the population has recovered to a pre-determined level, FMP reverts to the normal council process.

The Committee also made four recommendations relative to the impact of EFH designations on non-fishing industries (in response to presentation from SEALASKA). Those recommendations are intended for the Council to pass on to the Agency and were:

1. The EIS should include the impact of EFH designations on non-fishing industries, and the burden it puts on the agency.
2. Use best available information
3. Duplication of regulations should be avoided wherever possible.
4. The Agency should schedule a meeting with the non-fishing industry to facilitate communication and incorporation of their concerns (Note: NMFS, HCD staff met with the non-fishing industry in Anchorage, on Wednesday, November 28, 2001).



## OTHER COMMITTEE ISSUES

The Committee met by teleconference on November 27 and 29, to review and finalize these recommendations. The Committee raised these four specific questions for consideration by NOAA GC:

(1) Does Status Quo have to be an alternative (recognizing that at least one of the other alternatives identified may effectively mirror the status quo)?

(2) Does each alternative have to be a discrete, stand-alone alternative?

(3) Related to 2 above, can the Council 'mix and match' from among the various alternatives when reaching a final recommendation?

(4) Do the alternatives as recommended by the Committee cover a sufficient range for analysis?

Depending upon answers to these questions, the Committee may revise its recommendations contained in this draft report. NMFS staff was requested to provide additional details on the ecosystem/habitat alternative for EFH (Alternative 4). Additional information was provided to the committee by Jeff Fujioka and incorporated into this report.

# Essential Fish Habitat (EFH) Workshop

November 6 - 9, 2001

## Workshop Attendees:

### North Pacific Fisheries Management Council (NPFMC)

David Benton, Council Chairman

Dr. Clarence Pautzke, Executive Director

David Witherell, BSAI Plan Coordinator (attending Monday only)

Chris Oliver, Deputy Director, (attending Thursday only)

### National Marine Fisheries Service (NMFS)

Ron Berg, Deputy Regional Administrator, Alaska Region

### NMFS, Habitat Conservation Division (HCD)

Michael Payne - Assistant Regional Administrator, HCD, Juneau

Cindy Hartmann - EFH Coordinator, HCD, Juneau

Matthew Eagelton - HCD, Anchorage

John Olson - HCD, Anchorage

Korie Johnson, F/HC, Habitat Protection Division

### NMFS, Sustainable Fisheries (SF)

Melanie Brown

Gretchen Harrington

Nina Mollett

Ben Muse, economist (attending Tuesday only)

### NMFS, Alaska Fisheries Science Center (AFSC)

Dr. Robert Otto, AFSC, RACE, Kodiak Lab Director

Dr. Pat Livingston - AFSC, REFM, Seattle

Rebecca Reuter - AFSC, REFM, Seattle

Dr. Craig Rose - AFSC, RACE, Seattle

Dr. Jon Heifetz - AFSC, ABL, Juneau

Dr. K Koski, AFSC, ABL, Juneau

Participating by Tele-Conference from the AFSC in Seattle

Dr. Anne Hollowed, AFSC, REFM

Tom Wilderbuer, AFSC, REFM

Lowell Fritz, AFSC

**National Oceanic and Atmospheric Administration (NOAA)**

**General Counsel (GC)**

Lauren Smoker

**Foster Wheeler Environmental Corporation (FWEC)**

Lon Hachmeister, Project Manager

Dr. Ellen Hall, NEPA Coordinator and Economics/Socioeconomics Task Lead

Alan Olson, Fisheries Task Leader

**Natural Resources Consultants, Inc. (NRC)**

Dr. Gregory Ruggerone

Jeffrey June

**Alaska Department of Fish and Game (ADF&G)**

Earl Krygier, Extended Jurisdiction

Jeff Hartmann, Extended Jurisdiction, economist (attended Tuesday only)

Herman Savikko, Extended Jurisdiction (attended Tuesday only)

Kate Troll, Extended Jurisdiction

Doug Woodby, Chief Fisheries Scientist, shellfish

Shareef Siddek (attended Tuesday only)

**United States Department of Agriculture (USDA), Forest Service (FS)**

Ron Dunlap, Regional Fisheries Program Leader

Bill Lorenz, FHR Program Coordinator

**United States Department of Interior (USDI), Fish and Wildlife Service (FWS)**

Sue Walker, fisheries biologist, Juneau Field Office

**University of Alaska Fairbanks (UAF), School of Fisheries and Ocean Sciences**

Dr. Tom Shirley (attended Tuesday only)

**Other Scientists**

Franz Mueter, Sigma Plus Consulting

**NPFMC, EFH Committee**

Linda Behnken, Chair EFH Committee  
Stosh Anderson, Vice-chair EFH Committee  
Gordon Blue  
Ben Enticknap (attended November 7 & 8)  
John Gauvin  
Earl Krygier, ADF&G  
Heather McCarty  
Michael Payne, NMFS  
Michelle Ridgway  
Glenn Reed  
Scott Smiley

**Members of the Public in Attendance**  
**(attending the EFH Workshop and/or the EFH Committee Meeting)**

Dorothy Childers, Executive Director, Alaska Marine Conservation Council (AMCC)  
Dan Falvey, Council AP member, longline fisherman, affiliated with Alaska Longline Fisherman's Association (ALFA)  
Stephanie Madsen, Council member, affiliated with Pacific Seafood Processors Association (PSPA)  
Thorn Smith, Executive Director of the North Pacific Longline Association (NPLA)  
Paula Terrel, Southeast Director of AMCC  
Jon Tillinghast with the law firm Simpson, Tillinghast, Sorensen & Longenbaugh, representing Sealaska Corporation (attended the Monday EFH Committee meeting only)

## **Draft Approaches to Alternatives for Designating EFH**

EFH Committee reviewed the Witherell Platform Paper, agency documents, scoping comments and members of the public to arrive at a range of approaches to be reviewed by the technical team..

Committee requests input from the technical team on the following:

Feasibility for analysis

- \* Scientific merits of each approach
- \* Efficacy of option in meeting requirements of Magnuson-Stevens Act (spawning, feeding, breeding, and growth to maturity)
- \* Data availability
- \* Possible consolidation of options
- \* Should one approach work for all FMP species or do individual species require a distinct approach to EFH designation?

1. **No designation of EFH.** This is not a viable alternative as it is in violation of MSFCMA. It is not the status quo. However, according to the Department of Justice (see Hogarth memo), it is the no action alternative and must be considered as an alternative.
2. **General distribution.** This is the status quo alternative. EFH is all habitat within a general distribution for a species life stage.

When amendments 55/55/8/5/5 were adopted, NMFS recommended this to the Council as the preferred alternative, and the Council adopted it. Extensive rationale for recommending this alternative was provided on pages 50 and 51 of the EA/RIR.

3. **Known concentration.** EFH is the habitat encompassed in areas of known concentration for life stages with level 2 or higher information. For level 0 and 1, EFH is general distribution.

The interim final rule dictated that the extent of EFH be based on the quantity and quality of habitat that is necessary to maintain a sustainable fishery and the managed species contribution to a healthy ecosystem, and that EFH be designated in a risk averse fashion to ensure adequate areas are protected as EFH. Given these requirements, scientists concluded in amendments 55/55/8/5/5 that there was no basis to reduce EFH from general distribution, even for life stages where level 2+ information was available. So this alternative was not recommended and not adopted.

4. **Habitat based concept:** EFH may be defined as the habitat where physical information can be related to the species or multispecies.

Under this alternative, we would need to know the link between physical habitat (e.g., substrate, depth, temperature, salinity, current velocity, etc.) and use of this habitat by fishes. In other words, use physical characteristics to define EFH. For example, the EFH for adult GOA slope rockfish might be defined as "EFH is the areas of mud, sand, rock, sandy mud, cobble, muddy sand, and gravel at depths ranging from 200 to 500 m and the lower third of the water column, of the outer

continental shelf and upper slope of the Gulf of Alaska from Dixon Entrance to 170 °W". This is our status quo definition of EFH. The difference is that we can map the distribution of fish, but not the distribution of habitat because substrate locations are unknown for most of the EEZ off Alaska.

5. **Core habitat concept:** EFH may be defined as the minimum habitat required to sustain maximum yield.

Under this alternative, we would need to know the link between habitat and fish productivity (i.e., level 4 information). If the intent is to provide maximum sustainable yield, it would be very difficult to know what areas could be eliminated and still provide for MSY (see rationale on pages 50 and 51 of the EA/RIR). The scientists concluded that until much more is known about a species productivity, all habitats used by the stock should be considered essential for sustaining maximum yield. Note that this alternative is essentially the interim final rule suggestion for stocks with level 4 data.

6. **Suboption 5:** Core approach is not based on MSY but rather EFH is indispensable and critical to the survival to the species.

7. **HAPC concept:** EFH may be defined as a range of unique habitat types of special concern.

Under this alternative, EFH would be defined as special vulnerable areas that may require additional protection. At first blush, this seems to be quite different from the MSFCMA definition of EFH: those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. It is unlikely that all fish species rely on a unique habitat type for these life functions.

8. **Ecosystem concept (Fujioka/Witherell):** EFH may be defined as the area required by multispecies associations or assemblages to maintain diversity and sustainability includes abiotic and biotic parameters.

This approach may require an incredible amount of scientific knowledge about the ecosystem and multi-species interactions. This concept as written may not be possible at this time, given a paucity of detailed information required.

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**Habitat Ecosystem based definitions (Fujioka)** - Describe multi-species assemblages and role in ecosystem of particular habitats (fish residence, food production, geographic stability).

-where we have surveys, use survey strata, which are based on region, depth and type (slope, shelf, gully), as basic habitats, with more resolution if possible. For each habitat type can describe species assemblages, depth, slope, maybe bottom type in some cases, and indicate an ecosystem role(s) for the habitat.

-for habitats not in survey area we would need to categorize, find available data on species assemblages and biological observations on the various habitats, and extrapolate or infer species assemblages on unsampled, unobserved habitats, and indicate the habitat types' role in the ecosystem of FMP species.

9. **Classification Alternative**

An alternative variation that should be considered would bring together both the EFH and HAPC designations into one Precautionary Ecosystem-based Approach alternative. As envisioned, this alternative would specify EFH designations in accordance to the criteria established in the interim final rule. This would allow for finer scale resolution as our information improves.

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**Essential Fish Habitat Classification**

Level 1 EFH is the general distribution, defined as the area encompassing 90% of the abundance (or some other percentage). Level 2 EFH is the known concentrations, defined as the core area encompassing 50% of the abundance (or some other percentage).

Level 3 EFH is the habitat contributing to the survival, reproduction, and growth of a species (or life stage). The total area would be less than defined under level 2 data.

Level 4 EFH is the habitat with the highest productivity. The total area would be less than defined under level 3 data.

10. **Classification Approach** - Thresholds established for stock abundances (such as minimum stock size thresholds) to be used to adapt EFH classification levels, providing for reversion to a lower classification level in response to reduced stock abundance. .
11. **Use various approaches for species-specific EFH designations.** Alternative identification approaches for different species would be based on distinct differences in natural history.

## **Draft Approaches to Alternatives for HAPC Designation**

The EFH committee recommends the following nomenclature for HAPC to define terms (type, site, area, category) and facilitate consistent use of the terms in future EFH documents.

- Habitat Area (as in the term Habitat Area of Particular Concern ) - can refer to habitat type or site.
- Habitat Type - general habitat description (such as deep water living substrate, or gorgonian coral beds as a particular example of living substrate). Distribution of habitat types can be described using geographic or oceanographic data.
- HAPC. Sites can be stand-alone places selected based on HAPC criteria or sites can be specific places selected from within a habitat type meeting HAPC criteria.
- HAPC Category (as applied in Alternative 4) - Classification of HAPC type or site according to combinations of criteria (rarity, sensitivity, exposure & ecological importance)

The committee requests input from the technical team on the following:

- Comments requested on EFH alternatives
- Feasibility for analysis
- Scientific merits of each approach
- Efficacy of option in meeting requirements of EFH regulations (rarity, sensitivity, vulnerability, ecological importance)
- Data availability
- Possible consolidation of alternatives
  
- Data or method used to prioritize HAPC sites within a habitat type

1. **HAPC is defined as habitat types.** This is the status quo alternative.

The habitat types adopted under amendments 55/55/8/5/5 (living substrates in shallow waters, living substrates in deep waters, and freshwater areas used by anadromous fish) were based on the criteria specified in the rule (ecological importance, sensitivity, exposure, rarity). HAPC was designated as types, rather than sites, because there was a paucity of information on the distribution and location of these substrates and habitat types. Additional types that have been proposed are seamounts/pinnacles, shelf edge, ice edge and biologically consolidated fine grain sediments. Preliminary analysis done for Amendments 65/65 suggested that seamounts and pinnacles qualified as HAPC based on the criteria and the methodology suggested in the technical guidance manual. They were identified as very rare habitat types and ranked medium relative to sensitivity, exposure, and ecological importance. See pages 16-17 in amendment 65/65 analysis.

2. **HAPC is a subset of EFH.** HAPC sites where the highest concentrations would occur.

Under this alternative, HAPC would be designated based on EFH designations. There may be locations where EFH distributions overlap for several species, or locations where there is 'essential' EFH for individual life stages (e.g, discrete spawning or nursery areas), or locations within a species' EFH that contain the highest abundance levels.

3. **HAPC designations would be site-specific with specific management measures.** Candidate HAPC sites would be proposed with specific management objectives, geographic locations, and management measures to achieve those objectives. **HAPC are discrete sites of special importance.** Designated HAPC sites would be those that require additional protection from adverse effects.

HAPC sites previously proposed included: deep basin in Prince William Sound, the Chirikov Basin north of St. Lawrence Island, and the red king crab bycatch areas around Kodiak Island. Preliminary analysis done for Amendments 65/65 suggested that the deep basin in PWS would qualify as a HAPC site based on the criteria and the methodology suggested in the technical guidance manual. It was identified as very rare and ranked medium relative to sensitivity, exposure, and ecological importance. See pages 16-17 in amendment 65/65 analysis.



The preliminary analysis for amendment 65/65 examined the distribution of living substrates. The analysis identified several sites of high gorgonian coral abundance. Because HAPCs are defined on the basis of their ecological importance, sensitivity, exposure and rarity of the habitat, gorgonian corals epitomize this type of special habitat. These corals have been shown to be 1) important shelter for rockfish and other fish species; 2) very long lived; 3) easily damaged by fishing gear; and 4) slow to recover from damage.

4. **HAPC designations would be site-specific with specific management measures.** Candidate HAPC sites would be proposed with specific management objectives, geographic locations, and management measures to achieve those objectives.
5. **HAPC would be designated as habitat types of special importance (sea mounts, coral beds, etc.)**  
**Specific sites within those types would be selected for management plans** containing specific management objectives, geographic location, and management measures to achieve those objectives. (This alternative is a hybrid of selecting types in addition to selecting sites within those types that would be candidate areas for management measures).
6. **Habitat based concept:** HAPC may be defined as the habitat where physical information can be related to the species or multispecies.

Under this alternative, we would need to know the link between physical habitat (e.g., substrate, depth, temperature, salinity, current velocity, etc.) and use of this habitat by fishes. In other words, use physical characteristics to define HAPC. For example, HAPC for adult GOA slope rockfish might be defined as "HAPC is the areas of mud, sand, rock, sandy mud, cobble, muddy sand, and gravel at depths ranging from 200 to 500 m and the lower third of the water column, of the outer continental shelf and upper slope of the Gulf of Alaska from Dixon Entrance to 170W". This is our status quo definition of HAPC. The difference is that we can map the distribution of fish, but not the distribution of habitat because substrate locations are unknown for most of the EEZ off Alaska.

7. **Core habitat concept:** HAPC may be defined as the minimum habitat required to sustain MSY.

Under this alternative, we would need to know the link between habitat and fish productivity (i.e. level 4 information). If the intent is to provide MSY, it would be very difficult to know what areas could be eliminated and still provide for MSY (See rationale on pp 50-51 of the EA/RIR). The scientists concluded that until much more is known about a species productivity, all habitats used by the stock should be considered essential for sustaining maximum yield. Noted that this alternative essential the interim final rule suggestion for stocks with level 4 data.

8. **Core habitat concept:** HAPC is defined as habitat that is indispensable and critical to the survival to the species.

9. **Ecosystem concept:**

HAPC may be defined as the area (types or sites) required by multi-species associations or assemblages to maintain diversity and sustainability- includes abiotic and biotic parameters.

Describe multi-species assemblages and role in ecosystem of particular habitats (fish residence, food production, geographic stability).

2. where we have surveys, use survey strata, which are based on region, depth and type (slope, shelf, gully), as basic habitats, with more resolution if possible. For each habitat type can describe species assemblages, depth, slope, maybe bottom type in some cases, and indicate an ecosystem role(s) for the habitat.
  3. for habitats not in survey area we would need to categorize, find available data on species assemblages and biological observations on the various habitats, and extrapolate or infer species assemblages on unsampled, unobserved habitats, and indicate the habitat types' role in the ecosystem of FMP species.
10. **HAPC areas (types and/or sites) based on Ecosystem Committee criteria** (keystone habitats; habitats vulnerable to fishing impacts; habitats important for specific species).
11. **Classification:** This alternative would specify HAPC designations in accordance to the criteria established in the interim final rule. This would allow for finer scale resolution as our information improves.

**Habitat Areas of Particular Concern Classification**

- Category A: HAPC is defined as those areas that are considered very rare, and have some ecological importance.
- Category B: HAPC is defined as those areas that are considered relatively rare and relatively sensitive to human disturbance, and have some ecological importance.
- Category C: HAPC is defined as those areas that are considered relatively rare, relatively sensitive to human disturbance, have high exposure to human impacts, and have some ecological importance.
- Category D: HAPC is defined as those areas that are considered relatively rare, relatively sensitive to human disturbance, have high exposure to human impacts, and have very important ecological importance.

Using this approach, HAPC would be defined as sites or types, and would be based on ecological importance and vulnerability. Our level of concern would be relative to the category number. Under the HAPC categories listed, the following examples appear to meet the criteria at this time: Category A = PWS deep basin; Category B = seamounts and pinnacles; Category C = gorgonian coral aggregations; Category D = urbanized freshwater streams used by anadromous fish.

## SIGNIFICANT ISSUES THAT SUGGEST ALTERNATIVE ACTIONS

<b>Table 1. Summary Count of Comments within Comment Categories.</b>		
<b>Issue</b>	<b>Number of comments</b>	<b>Number of unique comments</b>
<b>Significant Issues That Suggest Alternative Actions</b>		
Criteria for Designation of EFH	24	15
Suggested Alternative for Salmon EFH	4	1
Mitigation Measures to Minimize the Adverse Effects of Fishing on EFH	36	30
HAPC	7	6
Scientific Information, Research, and Uncertainty	13	7
<b>Significant Issues to be Analyzed in the SEIS</b>		
Effects of EFH Designations on Non-Fishing Interests	18	4
Data Used to Analyze and Develop EFH Designations	5	5
Effects of Fishing on EFH and Mitigation Measures	12	10
Economics/Socioeconomics	15	5
Ecosystem, Wildlife and Other Non-targeted Marine Species	13	13
Regulatory Compliance	8	3
<b>Non-Significant Issues to be Considered in the SEIS</b>		
General Comments	13	13
Scientific Information/Research	5	5
NEPA Document and Process	20	10
<b>Non-Significant Issues Not Considered in the SEIS</b>		
Regulatory Compliance and Duplication	11	2
General Comments	8	4
Scientific Information/Research	2	2
NEPA Document and Process	16	6
Economics/Socioeconomics	2	2
<b>Total</b>	<b>230</b>	<b>143</b>

The following significant issues can provide guidance when formulating alternatives in the SEIS.

### **Criteria for Designation of Essential Fish Habitat**

One type of action to be addressed in the SEIS is to "identify and describe EFH." Many commenters were concerned about what criteria would be used to define "essential." They wanted only essential components of fish habitat to be included as EFH.

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Several commenters were concerned about the level of economic and environmental risk that would be acceptable when designating EFH, especially given the uncertainty in the available scientific information. One commenter suggested that any approach that includes zero risk of adversely affecting fish habitat is inappropriate. Other commenters suggested taking a precautionary approach that would preserve a diverse marine environment and EFH.

Many commenters were concerned about the scope of EFH designations. Some commenters suggested that EFH designations should be specific locations. In contrast, other commenters suggested that EFH designations should be broadly defined and might include both the general distribution and core habitat areas for managed species. Others suggested that broad EFH designations should be further refined to include more specific habitat types within EFH so that management strategies might be more appropriately applied. Suggested habitat types included the following:

- Nurseries and rearing grounds
- Spawning beds
- Feeding areas
- Freshwater tributaries and estuaries
- Kelp beds
- Upwelling zones
- Prey habitat

One commenter suggested that EFH defined as the geographic location where a species is merely known to occur is too broad. Several commenters suggested that the current EFH definitions were adequate and should not be changed without supporting scientific information and analysis.

Many commenters suggested that an ecosystem approach be considered within the SEIS. Some commenters were primarily concerned with diverse fish communities beyond those targeted by the fishing industry, while others were concerned with a broad ecosystem approach that also includes non-fish species. One commenter suggested that a precautionary approach be taken to protect marine ecosystems. One commenter suggested that bycatch be considered in the determination of EFH. One commenter suggested that water quality be considered in developing EFH designations.

### **Suggested Alternative for Salmon EFH**

Several commenters with non-fishing interests suggested that EFH for salmon be limited to marine and estuarine waters within the EEZ.

### **Mitigation Measures to Minimize the Adverse Effects of Fishing on EFH**

Another type of action to be addressed in the SEIS is to "minimize to the extent practicable, adverse effects on EFH caused by fishing." The plan is for the SEIS to identify and analyze several alternative approaches to minimizing adverse effects. The alternatives will likely comprise different combinations of mitigation measures. Thus, comments recommending various mitigation measures are addressed here as comments that suggesting alternative actions.

Several commenters suggested that marine protection areas (MPAs) and reserves should be used as mitigation measures to protect EFH, biological diversity, and sustainable fisheries. Some commenters suggested that these include major representative habitats in coastal and offshore areas, including pelagic habitats. Several commenters recommended specific areas for added protection, including the World Wildlife Fund's priority areas for biodiversity conservation in the Bering Sea, the Council's Southeast Alaska trawl closure area, and the Sitka pinnacles.

Some commenters suggested that artificial reefs be considered for habitat enhancement. One commenter recommended habitat restoration as a mitigation measure.

Many commenters suggested that mitigation measures include monitoring, gear restrictions and modifications, and partial-to-complete area and timing restrictions. Another commenter suggested specific modifications to trawl gear to reduce adverse effects to habitat (e.g., size limits on rockhopper and roller gear). Some commenters suggested that low impact fishing gears replace high impact fishing gears. One commenter suggested that incentives be investigated for voluntary switching from high to low impact gear types. Several commenters wanted few gear modifications and asked that timing restrictions and year-around area closures to be considered actions of last resort. Another commenter suggested that mitigation measures should be aggressively implemented. One commenter suggested a reduction in the trawl fleet, targeting the large and powerful trawlers.

Several commenters suggested that one alternative include no additional mitigation measures. Other commenters implied that adequate scientific information is not currently available to support implementation of additional mitigation measures. One commenter suggested that the alternatives should range from a reduction in the amount of area currently closed to trawling to the status quo (i.e., no increase in areas closed to trawling). Several commenters suggested that if the distribution of areas closed to trawling was redefined, the total area should not exceed 20 percent of the GOA and BSAI fishing grounds. One commenter suggested that areas currently closed to trawling be analyzed for fish habitat (depth and environment).

One commenter suggested that "a reasonable and fair standard of precaution" be used when assessing options for minimizing the effects of fishing on habitat and stated that the analysis should be focused on habitat protection rather than gear allocation issues. Another commenter cautioned that poorly conceived mitigation measures might have an adverse effect on EFH, rather than providing the intended protection.

### **Habitat Areas of Particular Concern**

A third type of action to be addressed in the SEIS is to identify habitat areas of particular concern (HAPC)

within EFH.

Several commenters were concerned that pelagic habitat be included in HAPC designations. Some commenters recommended that specific areas be included as HAPCS, including the World Wildlife Fund's priority areas for biodiversity conservation in the Bering Sea, the Council's Southeast Alaska trawl closure area, and Sitka pinnacles. These areas were also suggested for consideration as mitigation measures. Another commenter suggested that a HAPC be designated near Knik, Alaska, to protect existing fisheries threatened by proposed and existing activities. Several commenters suggested that some HAPC be designated as marine protection areas (MPAs).

One commenter suggested that HAPCs be used as tools for the protection of EFH.

One commenter suggested that HAPCs be designated for areas that contained the highest historical abundance of a particular stock. One commenter suggested that HAPC designations consider vulnerability and resilience to disturbance, ecological function, and rarity or uniqueness.

### **Scientific Information, Research, and Uncertainty**

Many letters included comments about the uncertainty of existing scientific information and the need for additional research. These comments were often related to criteria for designating EFH and HAPC, assessing the effects of fishing on EFH, and the effectiveness of mitigation measures to minimize the effects of fishing on EFH. Although not explicitly stated, these comments in combination suggest an approach commonly termed "adaptive management."

One commenter suggested that the SEIS discuss the limitations of the available data and determine if and when such data could be available. Several commenters suggested that additional mitigation measures that could have an adverse effect on fishery economics should not be implemented until scientific research has been completed that shows that such measures are necessary.

Several commenters suggested that additional research is needed. Suggested areas of research included the following:

- Improvement to stock assessment techniques
- Understanding of fish habitat and behavior
- General fisheries management
- Effects of fishing on EFH
- Mitigation measures to minimize the effects of fishing

One commenter suggested that scientific information was adequate for justifying the development of marine reserves as a way to preserve EFH. Another commenter suggested that a network of habitat research areas should be developed.

Several commenters suggested that measures to minimize the adverse effects of fishing on EFH incorporate experimental designs and controls that would increase scientific understanding of fishery management.

## **SIGNIFICANT ISSUES TO BE ANALYZED IN THE SEIS**

The following issues are significant, but do not suggest alternatives. These issues will be addressed by in-depth analysis within the SEIS.

### **Effects of EFH Designations on Non-Fishing Interests**

Many commenters were concerned about how the designation of EFH would affect nonfishing interests. They suggested that all non-fishing activities that might be affected by EFH designations be identified in the SEIS. They also suggested that only non-fishing activities that have significant effects on EFH be analyzed in the SEIS.

### **Data Used to Analyze and Develop EFH Designations**

Several commenters expressed concern about the data used for developing EFH designations. One commenter suggested that catch per unit effort (CPUE) data are inappropriate to use for developing EFH designations because the data may be confounded by regulations, bottom characteristics, and temporary aggregations that might not reflect essential habitat characteristics. Another commenter suggested that catch data from foreign fleets be used in the analysis. One other commenter suggested that bycatch data be considered in the determination of EFH.

### **Effects of Fishing on EFH and Mitigation Measures**

Several commenters were concerned about the uncertainty of scientific information related to the effects of fishing on fish habitat and species diversity. They suggested that uncertainty should be quantified and that thresholds should be developed for weighing the tradeoffs between economic and ecological costs. Several commenters suggested that fixed gear impacts have not been adequately researched. Two commenters were concerned about the scientific information available to determine the relative adverse effects of fixed and mobile fishing gear. They were concerned that uncertainty in the available scientific information be perceived equally for the gear types. That is, limited information should not be used to assume low adverse effects from one gear type, but high adverse effects from another. One commenter stated it is important to consider both differences between various gear types and intensity of fishing effort.

Two commenters suggested that the analysis of gear effects include direct, indirect, and cumulative adverse effects of physical, biological, and chemical disturbances. One commenter suggested that adverse effects from foreign fleet fishing be included in the cumulative effects analysis.

Many commenters were concerned about the level of precaution needed for the protection of EFH. One commenter was concerned about how the concept of "adequate precautionary" would be used in the analysis of fishing effects on EFH. Several commenters were concerned that the level of precaution needed to protect EFH was reasonable and warranted based upon the available scientific information and that mitigation measures were not overly precautionary.

### **Economic/Socioeconomics**

Many commenters were concerned about the tradeoffs between economic costs and EFH protection. Also, many commenters were concerned that mitigation measures would result in reallocation of catch among gear types.

Many commenters were concerned about the potential adverse effects of the SEIS actions on the human relationship to the fishery resource. Several commenters suggested that all alternatives analyzed in the SEIS should minimize the potential adverse effects on the human relationship to the fishery resource. One commenter suggested these effects be evaluated in the SEIS.

Many commenters suggested that the cost of conducting EFH consultations be included in the economic analysis.

### **Wildlife and Other Non-targeted Marine Species**

Several commenters were concerned about a variety of non-targeted species potentially affected by fisheries. These included Steller sea lions, northern fur seals, whales, albatross and other seabirds, herring, kelp beds, sea grasses, and gorgonian coral.

### **Regulatory Compliance**

Several commenters were concerned that EFH amendments comply with requirements in the Magnuson-Stevens Act and other federal regulations such as the Alaska Native Claims Settlement Act (ANCSA). Several commenters suggested that the preferred alternative in the EIS should meet the national standards identified in Section 301 of the Magnuson-Stevens Act.

One commenter was concerned that EFH designations could have an adverse effect on energy supply. It was suggested that a "Statement of Energy Effects" be prepared as required by Presidential Executive Order (May 18, 2001).

### **NON-SIGNIFICANT ISSUES**

Several issues did not suggest an alternative, an effects analysis, or mitigation measure. They are, therefore, considered non-significant according to NEPA. Some of the following non-significant issues may, however, be incorporated into the SEIS (Section 4.1), whereas others may not (Section 4.2).

#### **Non-significant Issues to be Considered in the SEIS**

Several issues did not suggest an alternative, an effects analysis, or mitigation, but are nevertheless components included in the SEIS.



## **General Comments**

Several commenters suggested that a full range of alternatives be considered in the SEIS.

Several commenters suggested that specific types of information such as observer data, habitat data, gear impact information, ecosystem health, socioeconomic information, and specific reports or theses be included in the SEIS.

One commenter requested that Senator Frank Murkowski's testimony to Congress on May 4, 2001, and a five-part series beginning April 22, 2001, from the Sacramento Bee be included as seeping comments. The series from the Sacramento Bee, which was quoted in Senator Murkowski's testimony, suggested that environmental advocacy groups slow down legitimate conservation efforts by focusing agency resources on litigation rather than biology.

## **NEPA Document and Process**

Several commenters expressed a preference for one entity or the other in leading the process. Several commenters suggested that objective and unbiased scientists prepare the SEIS analysis and management options. One commenter suggested that the following specific fields of expertise be included: biology, ecology, oceanography, and fisheries biology. Another commenter suggested that the SEIS analysis not rely heavily on prior EFH and NEPA analyses and that conclusions be based upon the best scientific information available.

Several commenters were concerned that knowledge and experience from fishermen and local area managers be included in the SEIS. Several commenters were also concerned that all potentially affected parties, including both direct and indirect stakeholders, be provided with an opportunity to participate in the NEPA process.

## **Scientific Information**

One commenter suggested that the definition of EFH should be backed with good science.

## **Non-significant Issues Not Considered in the SEIS**

The following issues were considered to be non-significant because of one or more of the following reasons and will not be considered within the SEIS:

- The issue is outside the scope of the NEPA analysis.
- The issue suggests analysis at an inappropriate level of detail.
- The issue suggests an approach that would be contrary to federal regulations.

## **Regulatory Compliance and Duplication**

Several commenters were concerned that EFH designations would duplicate current laws and regulations, such as the following:

- The Endangered Species Act
- Clean Water Act
- State and local forest practices
- Mining, land use, and agricultural laws and regulations
- The Coastal Zone Management Act

**General Comments**

One commenter suggested that alternatives be limited to past actions considered by the Council.

**Scientific Information/Research**

One commenter suggested that the observer program and coverage be modified to include habitat monitoring.

**NEPA Document and Process**

Many commenters were concerned about the type of NEPA document to be prepared and the process used to prepare the document and analysis. Several commenters suggested that the proposed SEIS document was inappropriate. Several commenters suggested that an EA should be adequate and that the previously prepared EA could be used as the basis for preparing a new EA. One commenter suggested that an EIS was the appropriate document to prepare.

Several commenters suggested that the NEPA process should be delayed until the EFH guidelines are finalized.

Several commenters were concerned that NMFS was conducting private negotiations with the plaintiffs and circumventing the public NEPA process. Several commenters were concerned that the public and specific stakeholders and communities be included in the NEPA process. Several commenters were concerned about what roles the Council and NMFS would play in guiding the NEPA process.

**Economic/Socioeconomics**

One commenter suggested that subsistence use continue in MPAs.

One commenter suggested that the analysis specifically include the community of Knik, Alaska.

## EFH Alternative 4

### **ECOSYSTEM/HABITAT BASED DESCRIPTION OF EFH** - Describe habitats based on their role in the ecosystem of FMP species (provided by Jeff Fujioka and Jon Heifetz)

Some of the reason for breaking out regions or types of areas are based on data availability. The area covered by NMFS groundfish surveys are unique in the uniform coverage and extent, so we made that a major subdivision. Knowledge or expertise in regions or types of habitat may be specific to different groups/agencies. For eg., the Center marine fish scientists (RACE/REFM or ABL Marine Fish) could do the trawl survey region descriptions, ABL Marine Fish could collaborate on Southeast Nearshore descriptions, other groups are more knowledgeable about Prince William Sound, Cook Inlet, Kodiak nearshore, Alaska Peninsula, etc. It would make sense for different groups to cover the regions or habitats of their expertise when the work gets doled out.

First divide into:

**Freshwater Ecosystem** and **Marine Ecosystem** - within the Marine Ecosystem, divide into types:

1. Slope and Shelf waters where we have periodic NMFS groundfish surveys. These would be divided into the Bering Sea, Aleutian Islands, and Gulf of Alaska Ecoregions.

- Within the ecoregions survey strata will be categorized into **habitats**, pooling and distinguishing as deemed appropriate. For eg. for the GOA, there may be Yakutat deep slope (500-100m), upper slope (100-500m), CGOA Gullies, CGOA Shelf, Southeast Shelf, etc. Depth, geography, species composition will be likely criteria for grouping survey strata.
- The groundfish species composition for each habitat within ecoregion is readily available, as well as some information on other organisms such as other fish species, invertebrates, and other benthic organisms from the survey databases. With this information along with any associated information on depth, currents, bottom, fish life history, etc the habitat will be described along with its species assemblage and its role in the ecosystem described (inferred, speculated).

2. Nearshore waters where there is no current NMFS groundfish survey. Divide these waters into the three ecoregions and further subdivide geographically as appropriate. For eg. within the GOA likely subregions are: Prince William Sound, Southeast Inside, Southeast Outside nearshore, Yakutat nearshore, Central Gulf nearshore, Cook Inlet, etc.

- Within the subregions, habitat would be categorized using a system and resolution as appropriate to the subregion. In the Southeast Outside for eg., there may be exposed rocky bottom, exposed smooth bottom, rocky (or smooth) bottoms in bays, kelp, eelgrass, or sand shorelines, etc. Available data and other observations may determine the degree to which habitats are distinguished or not distinguished and will be at the discretion of the analyst.
- For some areas there are State fish and shellfish surveys, fisheries, site specific studies, opportunistic samples or observations, or local knowledge available from which to describe habitats and species composition. In most cases the species composition and likely ecosystem role of habitat in specific areas will be extrapolated from knowledge inferred from

sparsely distributed data sources.

3. Pelagic waters and waters beyond NMFS groundfish surveys. These could be divided by appropriate geographic or oceanographic features. There are egg and larvae samples from limited specific areas, pelagic net sampling (primarily for salmonids), and probably opportunistic observations from these waters.

## **NMFS Response to the EFH Committee's request for clarification on whether Alternative 4 represents a Ecosystem/Habitat Based Alternative or if it is better described as a Ecoregion/Habitat Based Alternative**

**Cindy Hartmann wrote (November 28, 2001, e-mail to NMFS scientists):**

K, Pat, Craig and Gretchen; during the EFH Committee teleconference yesterday the EFH Committee wondered whether Alternative 4 for EFH, as it came out of the EFH Consolidation Breakout Group, represents a Ecosystem/Habitat Based alternative or is it better titled a Ecoregion/Habitat Based Alternative? The EFH Committee thought that it seemed to be more of a habitat based approach and did not readily see that it also look an ecosystem approach to defining EFH.

I've attached the EFH Alternative descriptions that the Consolidation Breakout Group developed and the further definition of alternative 4 that Jeff Fujioka sent to Dan Falvey.

Pat, K, or anyone else could you explain to me and the EFH Committee your thoughts on if you consider this alternative an ecosystem alternative and why or why not. If possible, it would be nice to have an initial response from you by Thursday at 1 PM AK time when the EFH Committee meets, or at least by the Council meeting. The Council will want to know how NMFS feels this alternative is responsive to the issue of taking an ecosystem approach to designating EFH. Thanks.

### **Response from Pat Livingston on November 29, 2001**

Cindy, I don't know if there is a definitive answer to your question since it might be partly a matter of terminology but I will give you an opinion on what I think the alternative encompasses. First, I think there is some different usages of the word "ecosystem" and "ecoregion" in the description of the alternative. Although the further definition that Jeff Fujioka provided talks about the "freshwater ecosystem" and the "marine ecosystem," and then talks about the Bering Sea, Aleutian Islands, and Gulf of Alaska "ecoregions" - I think it would be more accurate to describe the Bering Sea, Aleutian Islands, and Gulf of Alaska as separate marine ecosystems. That's just a terminology comment.

I am of the opinion that the alternative is ecosystem-based because it directly links physical characteristics of areas with species assemblages/communities associated with the area and includes species' ecosystem roles. Those are the main components of what constitutes an ecosystem. Of course, it has to do these descriptions at a finer regional level than at the whole ecosystem because of the heterogeneity of the subareas comprising ecosystems and the way species assemblages and communities distribute themselves spatially within an ecosystem. The alternative gives a more community/assemblage level description, that when aggregated, comprise an ecosystem.

### **Response from K Koski on November 29, 2001**

Cindy - I agree with Pat's answer to your question. This alternative is ecosystem-based because it

is based on physical characteristics that are linked with different communities and species assemblages associated with the areas. The terminology certainly could be modified as needed for clarification, but the concept seems to be correct for an ecosystem approach. Habitat types and habitat components are all part of an ecosystem description.

K

### **Response from Craig Rose on November 29, 2001**

Hi folks,

While a little late, I did want to put my two bits worth in. I agree with the comments of Pat and K. This alternative is unique for its emphasis on habitat for categorization instead of species. This organization facilitates consideration of interlinks between species as well as their connections to their environments. (Awkward sentence, but you get the point) It becomes an ecosystem as these considerations are connected into a more regional perspective.

I am unclear on whether Jeff's fine clarification is a replacement or an addition. You may want to consider including the last paragraph of the original (and maybe something like the second sentence) to Jeff's if it is to be a replacement. I think that those address points that are not covered otherwise.

Craig

### **Response from Jeff Fujioka on November 29, 2001**

I also agree pretty much with what Pat and K have said about whether it's an "ecosystem" approach or not. I think it should be called an ecosystem based approach and strive to make it such as best can be done with what is known. If it turns out not to be, they can call it something else.

In regards to Craig's question of whether my explanation was meant to be a replacement or not - Dan Falvey has asked for clarification so it was just a stab at explaining the approach that I thought was intended in the original. It wasn't meant to be appropriate if it's to replace anything, though that wasn't the intention.

## History of HAPC Designation and Analysis

prepared by Dave Witherell 11/29/01

Habitat areas of particular concern (HAPC) are those areas of special importance that may require additional protection from adverse effects. The interim final rule states “In determining whether a type, or area of EFH is a HAPC, one or more of the following criteria must be met:

- The importance of the ecological function provided by the habitat.
- The extent to which the habitat is sensitive to human-induced environmental degradation.
- Whether, and to what extent, development activities are, or will be, stressing the habitat type.
  
- The rarity of the habitat type.”

In June 1998, the Council adopted several habitat types were identified as HAPC within the essential fish habitat amendments 55/55/8/5/5. Habitat types, rather than specific areas, were designated as HAPC because little was known at the time regarding where these habitat types were located. These HAPC types included:

1. Areas with living substrates in shallow waters (e.g., eelgrass, kelp, mussel beds, etc.)
2. Areas with living substrates in deep waters (e.g., sponges, coral, anemones, etc.)
3. Freshwater areas used by anadromous fish (e.g., migration, spawning, and rearing areas)

In October 1998, the Council approved for analysis several proposals regarding habitat areas of particular concern (HAPC). These proposals requested that a gap analysis be prepared, and additional habitat types and areas be designated as HAPC. Proposed HAPC habitat types included seamounts and pinnacles, the ice edge, the shelf break, and biologically-consolidated fine-grained sediments. Proposed specific HAPC areas included a deep basin in Prince William Sound, the Chirikov Basin north of St. Lawrence Island, and the red king crab bycatch areas around Kodiak Island.

At the February 2000 meeting, the Council reviewed an initial draft of a proposed amendment that would consider identifying additional HAPC, and two management measures to protect HAPC from fishing effects. The first management measure considered would potentially prohibit directed fishing for certain HAPC biota (corals, sponges, kelp, rockweed, and mussels). The second measure would establish several marine protected areas where Gorgonian corals are found in abundance. Gorgonian corals have been shown to be important shelter for rockfish and other fish species, are very long lived, easily damaged by fishing gear, and slow to recover from damage. Based on public testimony, and input from its advisory committees, the Council dropped the proposed closure areas for gorgonian coral protection, and voted to split the remaining portions of the amendment and associated analysis into two parts: Part 1 would have allowed for control on the harvest of HAPC biota and Part 2 would have developed a more comprehensive and iterative process for HAPC identification and habitat protection involving researchers, stakeholders and management agencies.

At the April 2000 meeting, the Council took final action on Harvest Control measures of HAPC Part 1. The Council adopted alternative 2 of the analysis which will add corals and sponges to the prohibited species category. This action would have essentially split prohibited species into two types: the first type will continue to allow no retention for halibut, salmon, and crab species, and the second type would include only corals and sponges as prohibited species whose management would be specified in the regulations. The HAPC prohibited species would allow retention, but will prohibit the sale, barter, trade or processing of corals and sponges. Kelp (including rockweed), and mussels would not be subject to any management actions. This action would apply to both the Bering Sea and Gulf of Alaska groundfish fisheries in the EEZ; other fisheries may be considered for HAPC biota protection in the future. The Council also relayed their concerns to the Alaska Board of Fisheries regarding protection of HAPC biota in state waters.

In February 2001, NMFS informed the Council they they would not be pursuing Amendment 65 regulations, and instead suggested that the most efficient option would be for the Council to request the State to prohibit commercial fishing for these HAPC species in the exclusive economic zone (EEZ) outside of State waters. Section 306(a)(3) of the Magnuson-Stevens Act provides authority for the State to regulate a vessel in the EEZ, even if it is not registered under State of Alaska laws, if it is operating in a fishery in the EEZ for which there "was no fishery management plan in place on August 1, 1996, and the Secretary and the North Pacific Council find that there is a legitimate interest of the State of Alaska in the conservation and management of such fishery." The State could use this authority to prohibit a commercial fishery for HAPC species in the EEZ beyond State waters, provided that the necessary determinations are made under Magnuson-Stevens Act Section 306(a)(3).

Some progress was made on Part 2 of the HAPC amendments, which was to develop a more comprehensive and iterative process for HAPC identification and habitat protection involving researchers, stakeholders, and management agencies. A scientific committee was supposed to be tasked to develop a discussion paper that identifies possible management approaches to meet habitat protection objectives and the pros and cons of each. Council staff, with Ecosystem Committee input, was tasked to expand the analysis of HAPC categories, and define the process initiated by submission of a HAPC proposal, through the steps of evaluation, identification, stakeholder involvement and, where indicated, management actions. Once these actions had been taken, the stakeholder process was to be initiated to better define high density Gorgonian coral areas and develop appropriate management alternatives. A process was developed for HAPC identification (see discussion paper at <http://www.fakr.noaa.gov/npfmc/HAPC/hapcdisc.pdf>), and stakeholder meetings were held in Sitka and Yakutat in January 2001. No additional meetings had occurred prior to the formation of the EFH Committee.