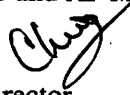


MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver   
Executive Director

DATE: March 25, 2004

SUBJECT: Habitat Areas of Particular Concern (HAPC)

ESTIMATED TIME 8 HOURS
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**ACTION REQUIRED:**

- (a) Receive reports on HAPC proposal evaluations
- (b) Draft a problem statement, purpose and need, and alternatives for analysis

**BACKGROUND**

In October, the Council issued a call for HAPC proposals, using the process outlined in the draft environmental impact statement (EIS) for EFH. The Council's initial HAPC proposal cycle focused on two priorities:

1. Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species.
2. Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species that include the following features: (a) sites must have likely or documented presence of FMP rockfish species; and (b) sites must be largely undisturbed and occur outside core fishing areas.

The request for proposals yielded 23 separate proposals. In February, the Council forwarded all of these proposals to the plan teams for review. The plan teams met March 8-9; their report is included as Item C-2(a). The plan teams reviewed the scientific and technical merit of each proposal, and evaluated how each proposal meets the Council's priorities and the HAPC considerations of the EFH Final Rule. The proposals were also evaluated for enforcement and socioeconomic considerations, and a report will be provided at the meeting. Note that the Enforcement Committee is scheduled to discuss the HAPC proposals on Tuesday morning.

The joint stipulation requires that "final regulations implementing HAPC designations, if any, and any associated management measures that result from this process will be promulgated no later than August 13, 2006, and will be supported by appropriate NEPA analysis." To meet this schedule, the Council will need to select final HAPC alternatives for analysis no later than the June 2004 Council meeting. To assist in development of these alternatives, staff has adopted a draft purpose and need section (Item C-2(b)), and has provided a 'strawman' list of possible HAPC alternatives (Item C-2(c)). Note that the 'strawman' has not made any attempt to narrow down the areas proposed for HAPC designation.

At this meeting, the Council will begin the process of refining the alternatives for analysis.

**Report of the NPFMC Joint Plan Teams' review of proposals  
for Habitat Areas of Particular Concern (HAPC)**

**March 8-9th, 2004**

**Compiled by the Plan Teams for the North Pacific Fishery Management Council:**

**BSAI Groundfish Plan Team**

**GOA Groundfish Plan Team**

**BSAI Crab Plan Team**

**Scallop Plan Team**

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## Introduction

This report represents a summary of the special joint NPFMC Plan Team meeting to review 23 different HAPC proposals. All four of the Plan Teams (BSAI groundfish, GOA groundfish, BSAI Crab and Scallop) convened concurrently on March 8 and 9<sup>th</sup>, 2004. The meeting was conducted from Seattle with video linkages to Kodiak and Juneau. Public notice for attendance was distributed in advance of the meeting. List of attendance is provided in the Appendix along with instructions for reviewing proposals and a copy of the letter of guidance sent to Plan Team members. To facilitate the review process, Council staff organized groups of Plan Team members that were able to attend the meeting—these groups were assigned to focus on a subset of the proposals. This report is therefore organized into the presentations made by the Plan Team groups. The list of groups and assigned proposals were as follows (participating group members are presented in the Appendix).

Plan Team Group	Proposal Area	Proposer	Proposal Number
A	North Pacific seamounts	TOC	1
A	GOA pinnacles	Oceana	2
A	AI pinnacles	Oceana	3
A	Named seamounts	NMFS	4
C	GOA Sanak Island	AAG	5
C	GOA Albatross Rockfish	AAG	6
C	GOA Middleton Island	AAG	7
C	GOA Primnoa Forrest	NMFS	8
D	AI Adak Canyon	AMCC	9
E	AI Bowers Ridge	AMCC	10
G	AI Coral and Sponge	TOC	11
F	AI Marine Reserve	TOC	12
G	AI coral gardens	Oceana	13
F	AI core bottom trawl area	Oceana	14
D	AI South Amlia Atka	MCA	15
D	AI Adak and Kanaga	MCA	16
D	AI Amatignak/Alak	MCA	17
E	AI Semisopchnoi	MCA	18
E	AI coral gardens	NMFS	19
B	BS Zemchug and Pribilof canyons	TOC	20
B	GOA Prince William Sound deep water canyon	TOC	21
H	BS- Soft coral	Oceana	22
A	Kodiak 8 fathom pinnacle	NMFS	23

The Plan Teams discussed a number of issues that required clarification. The classification of “hard corals” appears to be insufficient, as were other terms such as “deep-water coral” or “cold-water coral.” The Teams interpreted hard corals to include hydrocorals and gorgonian corals (such as red-tree corals). These two types of coral provide vertical structure and are long-lived and sensitive to disturbance. Excluded from this group are soft corals, e.g., *Gersemia* spp. such as sea raspberries. The Teams noted that for the purpose of discussion (and this report) the term “proposal” refers to a document (such as one of the 23 proposals reviewed). This distinction was made to avoid confusion with HAPC sites proposed within a document (many documents proposed multiple sites). The Teams also struggled with comparing proposals that declared (often multiple) small areas and habitat types with those that claimed the same (or



similar) habitat types but over large areas that covered a wide diversity of habitats (not just those listed as being of particular concern).

It was noted that seamounts are typically outside of EFH designation and therefore are inappropriate for HAPC declaration. The EFH definitions are under revision and are likely to include seamounts in the near future. Hence, considering them at this time was considered proactive. By way of background, it was clarified that HAPC designations are discretionary, not mandatory.

The Plan Teams' reviews of the HAPC proposals were to include additional support from experts on enforcement and economic issues. Due to the limited time available to review these proposals, comments on these aspects were not specifically addressed during the meeting and are not represented in this report. It was the Plan Teams' understanding that separate reports from agency personnel regarding these aspects were being prepared for Council review.

## Plan Team concerns

Council staff provided the Plan Teams with tables for their review (see Appendix) based upon Council direction for facilitating the relative scoring of proposals. While the Plan Teams attempted to follow Council direction in reviewing proposals per these instructions, the Plan Teams have several concerns regarding Tables 1 and 2:

- 1) The rating criteria were evidently not established until after the proposals had been submitted, meaning that proposers had no way of knowing the full range of information that would be required to rate their respective proposals.
- 2) The proposals deal with habitat *areas*, but the tables deal only with habitat *types*. This tends to generate a mismatch between the data provided in the proposal and the data required for completion of the tables. For example, a proposal might provide data showing that a given habitat *area* is "stressed" without mentioning whether the habitat *type* in general is similarly stressed. A related problem has to do with homogeneity of habitat type within a proposed area. If a proposed area encompasses more than one habitat type, the ratings in the tables become difficult to interpret. A more precise description defining the meaning of habitat area and habitat type for the purpose of this analysis is needed.
- 3) The ratings in the tables may imply a greater degree of precision than is warranted by the available data. For example, a rating of 3 under one category should not necessarily be interpreted as carrying the same weight as a rating of 3 under another category. Similarly, a rating of 3 should not necessarily be interpreted as carrying three times the weight as a rating of 1, even under the same category.
- 4) The rating criteria sometimes conflict with standard usage of terms. For example, according to the rating criteria, a habitat type can be classified as "locally rare" only if the habitat type is "common" in the respective management area (the Plan Teams dealt with this problem by assuming that "common" meant "occurs to some extent"). Another example is the rating criteria for "stressed," where a *higher* level of fishing pressure implies a *lower* "stressed" rating.
- 5) In several instances, the rating criteria are ambiguous. First, under "local rarity," the criteria for ratings of 2 and 3 are logically equivalent. Second, under "ecological importance," multiple criteria are presented for each rating, making it difficult to assign a rating if some criteria are met while others are not. Third, under "stressed," the criteria for ratings of 2 and 3 are expressed in different dimensions (i.e., the criterion for a rating of 2 is expressed in terms of *frequency* of fishing whereas the criterion for a rating of 3 is expressed in terms of *regularity* of fishing).

Some additional concerns were also noted with respect to Table 3 summarizing the proposals according to Council priorities. Specifically, the Plan Teams were unable to adequately address what they interpreted Council direction to be on “relative disturbance”. While the interpretation of this was believed to be the relative disturbance of the habitat, the Plan Teams did not feel that adequate clarification was made nor sufficient information provided to evaluate this. Instead the Plan Teams chose to mimic the ratings used in this category as for the “stress” category in the Tables 1 and 2. The Plan Teams also noted that evaluating to what degree proposals met Council priorities was more befitting a staff or agency decision than an evaluation by the Plan Teams. The Teams noted that deciding upon the degree to which a proposal was responsive to the request for proposals would have been more beneficial earlier in the process.

## **Plan Team comments and suggestions on the current HAPC process**

The Teams generally expressed appreciation to be included in the process of establishing useful HAPC designations. This issue is important and can have far-reaching consequences for developing innovative management strategies. The Council requested comments from the Teams about the effectiveness of this style of review process.

The Teams’ felt that more input on writing the “directions for reviewers” and on criteria might have helped alleviate some ambiguity.

The Teams’ discussed the pros and cons of establishing a smaller subset of plan team members assigned specifically to a HAPC review workgroup (along with a number of experts). Many plan team members felt that could be more efficient than requesting that all members of all Plan Teams participate in the full review process. Such a workgroup could then report back to the full Plan Team their findings similar to other working groups (e.g., “Other species” working group, Crab overfishing working group). However, other plan team members discussed that the inclusion of all Team members brought together diverse experiences and expertise and provided for a more comprehensive review. This was felt to be constructive initially and served to raise the level of general understanding about habitat issues to those involved in FMP implementations (where these types of concerns have not traditionally played a large role). The Teams’ acknowledged that time and opportunity to involve additional expertise from outside of the plan teams would have been beneficial in the process.

An evaluation of the level of data utilized in the proposal as well as the level of scientific uncertainty inherent in that data would be useful in this review.

Citations should be submitted in full for these proposals such that reviewers could pursue these citations if necessary to evaluate their relevance. Grey literature should be accessible and would assist reviewers.

A general habitat inventory should be made available. If this is unavailable, it should be a priority for agency work. This would serve a number of purposes, one of which would be to provide a uniform basis for evaluating HAPC sites.

As noted above under “Plan Team concerns,” it was difficult to evaluate proposals in a consistent manner according to established criteria. Also, there was a lack of time available to debate and discuss a number of critical concepts and measures.

The Teams struggled with the notion in many proposals that HAPC sites that lack information should be designated HAPC *first*, and then evaluated for refinements and further research to determine if the designation was appropriate. Since HAPC are discretionary tools for Council use, a HAPC designation should be based on information that is currently available rather than on speculation. That said, perhaps HAPC proposals that fit this description should fall into a separate research priority category. This would

provide the Council with a subset of sites that may not fit the HAPC criteria, but may reflect a higher priority research area.

Several sites proposed were areas already closed to trawling, hence the question of how to treat the Council's priority on "stress" was raised. Since Council guidance did not specify the type of fishing activity, the Teams interpreted any fishing activity (e.g., fixed gear such as longline and pots) in considering the degree of stress.

Additional data concerns centered on the determination of extent of relative fishing pressure by proposal area. This was notably difficult for reviewers to assess given only the information provided in the proposal though it was noted that some additional information was provided by staff. While it was noted that confidentiality issues may be problematic, it was suggested that in the future catch data be provided in some aggregated form such as within statistical areas.

The number of proposals and limited time to review them did not leave sufficient time to discuss important concepts like the size of buffers around areas, maintaining habitat types as well as connected groups of habitat types, and the overall management objectives for HAPCs.

The Teams noted that the same sites were identified in a number of proposals, but varying levels of scientific information were utilized for each site. There should be consistent availability of data for proposed sites such that it would then raise the levels of information available for use by all proposers and therefore increase the quality and consistency of all proposals. Mixing of sites within proposals made them difficult to evaluate (i.e. pinnacles and seamounts). Proposers could likely have done a much better job in their respective proposals had they been advised to separate out these conflicting and sometimes confusing mixtures of areas and habitat types.

Finally evaluating individual HAPC sites (regardless of who proposed them) rather than evaluating duplicative sites by individual proposal would have been more beneficial and increased the utility of proposal review. The Plan Teams understand that during this review this was not necessarily feasible under the time constraints and thus the Teams evaluated each proposal individually. However it is the Teams understanding that it is the individual sites and relative merits thereof that will eventually be evaluated in any forthcoming analysis.

## **Review of individual proposals**

### **Group A: Proposals 1, 2, 3, 4, and 23**

#### ***General comments***

The ability to discuss ecological importance and sensitivity (from the perspective of the Council's priorities) depends on coral and sponge abundance on the seamounts. In general, the proposals assume that all of the seamounts and pinnacles proposed as protected areas include significant quantities of coral and sponge. However, there is no specific information provided to substantiate this claim. The exception is the 8 fathom pinnacle proposal (#23), which specifically describes the habitat and why that habitat type is susceptible to fishing effects.

The remaining proposals describe the harmful effects of fishing on such biota, but the story isn't complete without specific information on the amount of coral and sponge habitat at each of the seamounts and pinnacles. One piece of evidence implies that seamount habitat is heterogeneous, rather than homogeneous as implied by the proposals. Coral is commonly caught during longline surveys of Dickins but not other sampled seamounts (N. Maloney, Auke Bay Lab). The most specific descriptions were provided in the NOAA Fisheries proposal for named seamounts, which described general habitat features and fish species in the "Habitat Type and Species Information" section, but the proposal could be

improved by providing more information on susceptible species (corals and sponges) present in the proposed HAPC.

Deep water crab species were noted by reviewers to probably occur within the appropriate depth ranges on all seamounts as well as continental shelf and slope areas within their range.

## **Proposal 1, The Ocean Conservancy, North Pacific Seamounts Marine Reserve Network**

### *Ecological importance*

The proposal documents that seamounts exhibit some structure and that fish are present. At least one seamount contains several crab species (Patton, DSV Alvin survey). Several surveyed seamounts demonstrate wide species diversity (Hughes 1981). However, vulnerable life stages or habitat associations not documented. The information linking lingcod spawning to seamounts is incorrect.

### *Sensitivity*

Some corals are present and are sensitive, but coral abundance is apparently unknown, so habitat sensitivity is unknown overall. Reference to Gubbay seems irrelevant. We also don't see the relevance of the repeated paragraph on sablefish being vulnerable to overfishing, since they are well-managed by NMFS - perhaps the author is implying that seamounts will act as a buffer against declines?

### *Stress*

No documentation provided for how much fishing occurs on North Pacific seamounts. The stress section simply repeats the sensitivity section.

### *Scientific/Technical merit*

We found this proposal difficult to evaluate scientifically. The author frequently uses documentation that has not been peer reviewed to substantiate important points. The points may be correct, but they are difficult to objectively evaluate when no substantial proof is offered. The 15 nautical mile radius (chosen to cover the base of the largest seamount) seems arbitrary. Why apply this to all seamounts, including the smallest seamount?

The aggregation of individual seamounts into larger marine protected areas isn't adequately justified. For example, including large tracts of the abyssal plain seems to contradict the reasons for protecting the seamounts.

### *Ecological merit*

Seamounts are rare features based on their area size. Seamounts are unique because they are relatively shallow areas in an otherwise deepwater, oceanic area, and they can concentrate plankton in an otherwise low productivity area.

### *Other comments*

Objective 1 seems reasonable. However, objectives 2 and 3 have problems. Objective 2 seems inappropriate because it preserves atypical parts of the distribution (i.e., the stated "unique" habitat) and thus inappropriate to preserve as sanctuaries. Objective 3 seems impractical. Research at these isolated, deep seamounts would be costly and also may be inappropriate to study fishing effects in atypical ("unique") habitats. Six of the mentioned seamounts are not included in the depth range of the FMP species.

The choice of 15 nautical mile radius and the value of larger MPAs encompassing several seamounts might be worth considering.

## **Proposal 2, Oceana, Gulf of Alaska Pinnacles and Seamounts**

Seamount habitat is rare (based on habitat size) but can be found in other Alaska regions. Pinnacles are common in the Gulf of Alaska and Aleutians and less frequent in the Bering Sea.

### *Ecological importance*

The roles of corals and sponges as important habitat are documented, but their abundance on the seamounts is unknown, therefore the overall effect on the seamounts is unknown. Vertical structure has been documented. The listed pinnacles are very diverse and the general documentation provided is insufficient to determine if all pinnacles have the same ecological importance. Furthermore, the listed pinnacles are found in several depths and distances from shore which presumably increases the diversity.

### *Sensitivity*

The effects of fishing for the seafloor and associated biota are documented for some ecosystems. There are a large number of pinnacles listed and they are diverse. The documentation provided is insufficient to determine if all pinnacles have the same ecological importance. Furthermore, the listed pinnacles are found in several depths and distances from shore which presumably increases the diversity.

### *Stress*

No documentation was provided to determine how much fishing occurs on North Pacific seamounts. No documentation was provided to determine how much fishing occurs on North Pacific pinnacles (except for effects of one tow).

### *Scientific/Technical merit*

One citation (Bradshaw et al.) is inappropriate, referring to completely different habitat (25-m deep, mixed mud bottom) than seamount habitat proposed to protect. The sensitivity section made extensive use of peer-reviewed literature. However, there is little specific information cited that pertains to the proposed protected areas. Citations on deepwater corals often are inappropriate given the diversity of listed pinnacles.

### *Ecological merit*

Seamounts are rare features based on their area size. Seamounts are unique because they are shallow areas in an otherwise deepwater, oceanic area and they concentrate plankton in an otherwise low productivity area.

### *Other comments*

Table 2 lists 21 seamounts, whereas the text cites 19 seamounts (p. 4), so we're not sure which 19 seamounts are proposed for protection. Three of the 21 seamounts in Table 2 are greater than 3000 m, which is below the NMFS definition of EFH.

The shotgun approach of listing all of the pinnacles likely masks the importance of some of the pinnacles. The pinnacles likely are diverse habitats, are found in the photic zone, and likely harbor diverse species. The proposal would be greatly improved by separating the seamounts from the pinnacles and describing specific pinnacles, which likely are better known because they're closer to the surface and nearer to shore.

Many of the listed pinnacles are close to the 3-mile State waters limit. A two mile radius protected area likely would infringe upon State waters.

The proposal is vague as to what gears besides bottom trawl would be limited and therefore it is difficult to evaluate the effects of this proposal.

### **Proposal 3, Oceana, Aleutian Islands Pinnacles and Seamounts**

Seamount habitat is rare (based on habitat size) in all 3 Alaska regions. Pinnacles are common in the Gulf of Alaska and Aleutians and less frequent in the Bering Sea.

#### *Ecological importance*

The roles of corals and sponges as important habitat are documented, but not their abundance on the seamounts, so the overall effect on the seamounts is unknown. Vertical structure is documented. The listed pinnacles are very diverse (Table 1). The general documentation provided is insufficient to be true for all of the listed pinnacles because of their diversity (e.g. listed pinnacles are found in several depths and distances from shore).

#### *Sensitivity*

The effects of fishing for the seafloor and associated biota are documented for some ecosystems. The listed pinnacles are very diverse (Table 1). The general documentation provided is insufficient to be true for all of the listed pinnacles because of their diversity.

#### *Stress*

No documentation provided for how much fishing occurs on North Pacific seamounts. Analysis methods were presented on p. 9-10, but no conclusion was made about how much fishing occurs. No documentation provided for how much fishing occurs on North Pacific pinnacles (except for effects of one tow). The listed pinnacles are very diverse (Table 1). The general documentation provided is insufficient to be true for all of the listed pinnacles because of their diversity.

An analysis on p. 9-10 described how 3 pinnacles were excluded from protection because the analysis showed they were located within the core trawling area.

#### *Ecological merit*

One citation (Bradshaw et al.) is inappropriate, referring to completely different habitat (25-m deep, mixed mud bottom) than seamount habitat proposed to protect. The sensitivity section made extensive use of peer-reviewed literature. However, there is little specific information cited that pertains to the proposed protected areas. Citations on deepwater corals often are inappropriate given the diversity of listed pinnacles.

Seamounts are rare features based on their area size. Seamounts are unique because they are shallow areas in an otherwise deepwater, oceanic area and they concentrate plankton in an otherwise low productivity area.

#### *Other comments*

The proposal did not specifically consider golden king crab fishing and hook-and-line fishing.

The remaining additional commentary for proposal 3 is identical as that for the previous proposal (#2). The shotgun approach of listing all of the pinnacles likely masks the importance of some of the pinnacles. The pinnacles likely are diverse habitats, are found in the photic zone, and likely harbor diverse species. The proposal would be greatly improved by separating the seamounts from the pinnacles and describing specific pinnacles, which likely are better known because they're closer to the surface and nearer to shore.

Many of the listed pinnacles are close to the 3-mile State waters limit. A two mile radius protected area likely would infringe upon State waters.

The proposal is vague as to what gears besides bottom trawl would be limited and therefore it is difficult to evaluate the effects of this proposal.

## **Proposal 4, NOAA Fisheries, Named seamounts on NOAA charts**

### *Scientific/Technical merit*

No vulnerable life history stages of fish or habitat reproductive associations are definitively documented in this proposal. However, the reviewers note that local populations of some species (e.g. scarlet king crab, golden king crab) could be reproductively isolated but this is difficult to determine without specific genetic data.

### *Ecological merit*

High species diversity because seamount flanks span great depth range. Role of seamounts for fish and plankton (concentrating effect) are documented. Seamounts are rare features based on their area size. Seamounts are unique because they are shallow areas in an otherwise deepwater, oceanic area and they concentrate plankton in an otherwise low productivity area.

### *Sensitivity*

Sensitivity of habitat to fishing is not documented sufficiently to scientifically evaluate this aspect of the proposal.

### *Stress*

The proposal authors state that little fishing occurs; however, they should specifically document this statement.

### *Concepts for further evaluation*

The method of choosing the boundaries of the protected areas is unclear. For example, Marchand area covers depths to 1805 fm whereas the Patton area covers depths only to about 92 fm (proposal p. 9).

## **Proposal 23, NOAA Fisheries, Eight Fathom Pinnacle in the Gulf of Alaska**

This pinnacle is rare and unique as a shallow water, kelp forested, offshore pinnacle.

### *Ecological importance*

Role of this shallow water, offshore pinnacle is documented. Habitat diverse and vertical structure, substrate is notable, but no vulnerable life history stages or habitat reproductive associations noted.

### *Sensitivity*

Habitat or structure is somewhat sensitive to fishing because kelp forest is adapted to regeneration after winter storms in contrast to slow-growing corals.

### *Stress*

The proposed protected area is within existing fishing areas and subject to perturbation from storms (wave action).

### *Scientific/Technical merit*

The Teams felt that the level of information provided was good and allowed an objective evaluation of the proposed protected area.

### *Concepts for further evaluation*

Are any FMP species present? Is the presence of FMP species relevant for the rating of the proposal?

*Ecological merit*

The rarity mostly is due to the presence of a kelp forest a long distance from shore that is different from the adjacent habitat and the presence of black rockfish typically associated with near shore, shallow habitat.

**Group B Deep Water Canyons, proposals 20, 21**

The areas defined in these proposals were introduced as being similar in some respects to seamounts (albeit inverted).

**Proposal 20, BS Zemchug and Pribilof Canyons**

Zemchug canyon appears to have higher biodiversity than Pribilof but both are considered to be in the "green belt." There were concerns about the proposal's description on the location of Pribilof canyon. Ecological importance was well described and ecological function is clearly high.

*Sensitivity*

The sensitivity of habitat to human-induced degradation was poorly documented. Some statements regarding sensitivity are not well supported in the text of the proposal. The "Mushroom area" experiences fishing pressure and therefore falls well within core fishing areas. The Zemchug canyon may be less susceptible to disturbance than the Pribilof canyon. It was noted that there is limited data on coral bycatch in this region.

*Ecological merit*

Golden king crab and other crab species occur in both canyons. The importance of these areas on these species' life histories is unknown. The authors provide a good argument for why that area is important but the Teams noted that these are not presently on the list of the Council's priorities.

The Teams discussed how canyons qualify as being "rare." For the Eastern Bering Sea, there are only two and it was noted that worldwide, canyons such as these are relatively uncommon. The degree to which these canyons are unique was argued without firm resolution.

*Stress*

These areas are routinely fished. Longline fisheries routinely operate in Zemchug canyon as do snow crab fisheries (fish down to 150 fathoms).

*Other comments*

Discussion of rating the ecological importance centered on the highly diverse vertical structure and prey base. The proposed management measures (e.g., 15 mile radius no-take zone) were considered important to provide protection of the midwater zone. It was noted that there are difficulties using this for ranking since vulnerable life history stages and/or reproductive associations were not established. It was noted that although these do not necessarily meet Council priorities but these may be important to other priorities and meet EFH final rule.

**Proposal 21, GOA Prince William Sound Deep Water Canyon**

This proposal fails to address Council priorities.

The Teams felt this proposal was low in terms of merit and recommended dropping it from further consideration. Among the problems were that the HAPC fell within internal waters (not federal).



Fishing in this area includes a limited pollock trawling (less than 1 week per year), shrimp fishing, and small-boat (<60ft) sablefish fishery. Based on this, the Teams considered this area to be routinely fished.

## **Group C GOA Hard corals, proposals 5,6,7,8**

### *Comments*

Proposals 5,6, and 7 are similar in content and scope. However, given that much of the information on coral and habitat use by rockfish was anecdotal, it was difficult for some reviewers to provide accurate scores within the framework of the provided matrix.

## **Proposals 5, 6, & 7 GOA sites (Sanak Island, Albatross Rockfish, Middleton)**

### ***General comments***

The Teams note that these proposals fail to meet the Council's priorities since HAPC sites are neither seamounts nor in Aleutian Islands area and only loosely establish an association between rockfish and habitat.

The lack of definitive information on the existence of coral within the proposed areas limited the ability to review these proposals. Reviewers found merit in the general concept of rockfish abundance evaluation and submersible mapping. However, there was a lack of information in the proposal as to what a HAPC designation would accomplish. The Teams acknowledged that impacts to the fishing fleets would be minor with the adoption of these areas as HAPC. There was a general lack of habitat use and coral abundance information within these proposals; this lack of data hampers the Teams' ability to recommend these proposals be considered further by the Council. The NMFS trawl survey data may help determine if corals are indeed present within the proposed areas and might be the worth further evaluation.

The Teams felt that the proposals deserve merit based on the experimental design approach to learn more about how rockfish utilize habitat. These proposals fail to demonstrate that there are any corals in this area. The proposals documented the presence of rockfish but no coral association.

There was a lengthy discussion on how these sites should be classified for rarity. One viewpoint is that the area is generally untrawlable and relatively common, particularly in the GOA. Another view was that the untrawlable area in the GOA slope area is unique and rare. The Teams concluded that more clarification and guidance would be required to adequately specify the level of rarity for this type of habitat.

### *Ecological merit*

This assessment was difficult given available information presented in the proposal.

### *Sensitivity*

Sensitivity was also difficult to evaluate from available information presented in these proposals. If corals were actually documented, then the sites listed in these proposals would be sensitive.

### *Stressed*

These sites are considered to be occasionally fished (though the degree to which longline vessels fish these areas was poorly documented).

## **Proposal 8, GOA Primnoa Forrest**

There was some discussion that the proposal fails to meet the Council priorities. However, the Teams felt that it should be highlighted since rockfish are apparently abundant. Also, the sites are relatively undisturbed and occur outside core fishing areas.

### *Scientific/Technical merit*

The Teams found this proposal to have a high degree of scientific and technical merit. Direct observations of corals and rockfish have occurred from submersibles and the proposed HAPC sites seemed appropriate.

### *Ecological merit*

The Teams found this proposal to have a high level of ecological merit since the presence of corals and rockfish was documented. Rarity of Primnoa habitat was discussed at length. This work was based on a sub-set of work and characterizing it as the most important area may be premature. It was pointed out that high densities of Primnoa (as described for this proposal) might be rare elsewhere (while the organism itself may not be).

### *Stress*

These areas are already closed to trawling, hence the question of whether it automatically gets a lower rating was raised. Since Council guidance did not specify the type of fishing activity, the Teams interpreted any fishing activity (e.g., fixed gear such as longline and pots) in considering the degree of stress.

## **Group D AI Hard Corals, proposals 9,15,16,17**

### **Proposal 9 Adak Canyon**

For this proposal, the Teams felt that the HAPC covered a broad area that included regions that likely have limited ecological importance and sensitivity (e.g., the very deep-water portion).

### *Ecological Importance*

The region covered in this proposal has a high degree of ecological importance both for juvenile SR/RE and for golden king crab, important FMP species. It was noted by a reviewer that golden king crab species are found normally at depths coincident with high profile corals and both golden king crab populations and fishing for golden king crab occurs to some degree in all of the proposed areas in the AI.

### *Sensitivity*

Since hard, cold-water coral are easily damaged and apparently have long recovery periods, the sensitivity of the area covered in this proposal is considered high.

### *Stressed*

Using the Council's priority for this aspect, the proposal demonstrates that the habitat (at a significant but unknown fraction of the region) is moderate and exposed to occasional fishing.

### *Scientific/Technical merits*

This proposal is technically quite good and the management measures seem proactive and appropriate. Estimates on the percentage of current "critical areas" would have allowed better rationale to judge the scale of the proposed management area.

### *Ecological merit*

The Teams felt that the ecological merit was high due to coral and rockfish found in this area. The question of biological diversity rather than ecological function was discussed (this site would likely fit in the former). This region is ecologically important for rockfish and golden king crab.

### *Other comments*

The management objectives outlined in this proposal focus on research and relatively limited restrictions on fishing. The Teams supported the concept of cooperative research that will lead to better information on the role of habitat and stock productivity.

## **Proposal 15 South Amlia/Atka**

This proposal refers to a number of technical aspects of a draft EFH EIS that was unfamiliar with the majority of the Plan Team members. This added to the difficulty in assessing whether the proposal warranted further consideration.

### *Ecological Importance*

The region covered in this proposal was considered *likely* to have a high degree of ecological importance. However, the authors did a poor job of providing the background information required to satisfy this criterion (note that they do not check the box for ecological importance, hence this is not necessarily a shortcoming of the proposal).

### *Sensitivity*

Since hard, cold-water coral are easily damaged and apparently have long recovery periods, the sensitivity of the area covered in this proposal is considered high. However, the supporting evidence is weak and limits the degree to which these HAPC can be judged.

### *Stressed*

Using the Council's priority for this aspect, the proposal demonstrates that the habitat (for a significant but unknown fraction of the region) is fished rarely to moderately. For this reason, the Teams had difficulty assigning a single value to this

### *Scientific/Technical merits*

This proposal is technically deficient. The authors rely on anecdotal knowledge of unnamed fisherman. While this may be appropriate, links to better establish credibility are needed. Listing the fishermen's names would help to allow follow up the information.

### *Ecological merit*

The Teams felt that the ecological merit was high due to the *likely* presence of coral and rockfish found in this area. The extent of these species presence was not well documented.

### *Other comments*

The Teams felt that the management measures were noteworthy and appeal to the need for more research. However, they questioned the appropriateness of claiming an area as HAPC solely for the purpose of determining if the area should be declared HAPC.

## **Proposal 16 Adak and Kanaga**

This proposal refers to a number of technical aspects of a draft EFH EIS that was unfamiliar with the majority of the Plan Team members. This added to the difficulty in assessing whether the proposal warranted further consideration.

### *Ecological Importance*

The region covered in this proposal was considered *likely* to have a high degree of ecological importance. However, the authors did a poor job of providing the background information required to satisfy this criterion (note that they do not check the box for ecological importance, hence this is not necessarily a shortcoming of the proposal).

### *Sensitivity*

Since hard, cold-water coral are easily damaged and apparently have long recovery periods, the sensitivity of the area covered in this proposal is considered high. However, the supporting evidence is weak and limits the degree to which these HAPC can be judged.

### *Stressed*

Using the Council's priority for this aspect, the proposal demonstrates that the habitat (for a significant but unknown fraction of the region) is fishing is rare to moderate. For this reason, the Teams had difficulty assigning a single value to this

### *Scientific/Technical merits*

This proposal is technically deficient. The authors rely on anecdotal knowledge of unnamed fisherman. While this may be appropriate, links to better establish credibility are needed. Listing the fishermen's names would help to allow follow up the information.

### *Ecological merit*

The Teams felt that the ecological merit was high due to the *likely* presence of coral and rockfish found in this area. The extent of these species presence was not well documented.

### *Other comments*

The Teams felt that the management measures were noteworthy and appeal to the need for more research. However, they questioned the appropriateness of claiming an area as HAPC solely for the purpose of determining if the area should be declared HAPC.

## **Proposal 17 Amatignak/Alak**

This proposal refers to a number of technical aspects of a draft EFH EIS that was unfamiliar with the majority of the Plan Team members. This added to the difficulty in assessing whether the proposal warranted further consideration.

### *Ecological Importance*

The region covered in this proposal was considered *likely* to have a high degree of ecological importance. However, the authors did a poor job of providing the background information required to satisfy this criterion (note that they do not check the box for ecological importance, hence this is not necessarily a shortcoming of the proposal).

### *Sensitivity*

Since hard, cold-water coral are easily damaged and apparently have long recovery periods, the sensitivity of the area covered in this proposal is considered high. However, the supporting evidence is weak and limits the degree to which these HAPC can be judged.

### *Stressed*

Using the Council's priority for this aspect, the proposal demonstrates that the habitat (for a significant but unknown fraction of the region) is fishing is rare to moderate. For this reason, the Teams had difficulty assigning a single value for this criterion.

### *Scientific/Technical merit*

This proposal is technically deficient. The authors rely on anecdotal knowledge of unnamed fisherman. While this may be appropriate, links to better establish credibility are needed.

### *Ecological merit*

The Teams felt that the ecological merit was high due to the *likely* presence of coral and rockfish found in this area. The extent of these species presence was not well documented.

### *Other comments*

The Teams felt that the management measures were noteworthy and appeal to the need for more research. However, they questioned the appropriateness of claiming an area as HAPC solely for the purpose of determining if the area should be declared HAPC.

## **Group E     AI Hard Corals**

### ***General comments***

These three proposals are diverse in terms of scale and data sources, and usefully illustrate some of the problems we had as a team in evaluating the proposals and attempting to fit them within the criteria for review. First, it was difficult in general to evaluate proposals for certain information (e.g., global rarity) when the proposers had not been specifically told to provide it. Second, the different scale of areas outlined in the proposals combined with a general lack of information about benthic habitats in Alaska and with a lack of clarity in objectives for establishing HAPC areas made the process generally difficult, and maintaining consistency in evaluating proposals nearly impossible.

There are some general concepts that warrant further discussion which may not be captured in the following description of our assignment of ratings. The first is of scale. If we are concerned with a particular habitat area (or type within a particular area) then it seems as though a small and specific area should be outlined using best available information (this appears to be the approach of proposal 19). However, if we are concerned that there are lots of habitat types within a general area that we suspect meet the criteria outlined by the council but we have little specific information, and we want to further protect unknown but perhaps important habitat connectivity, or a suite of habitats that together are more important than the isolated pieces themselves to the ecosystem, then we should outline large areas (the approach of proposal 10). Proposal 18 takes a middle ground approach which protects narrower areas than the large block in proposal 10 but with much less specific information than that used in proposal 19. This approach, of protecting moderately large areas outlined by the combined experience of fishermen who arguably have the most direct experience with these habitats of anyone involved in the process, should be considered despite the "anecdotal" nature of the information provided in the proposal which some reviewers found far less credible than survey information.

## **Proposal 10, AI Bowers Ridge**

Habitat in this big an area is likely to be highly varied in type and therefore likely found commonly in Alaska regions with high bathymetric variability; the AI and the GOA.

### *Scientific/Technical merit*

The Teams felt that the technical merit for this proposal was high. However, given the diversity of habitat and size of the proposed HAPC, it was difficult to provide unambiguous conclusions. No information on fish abundance or coral abundance was provided. The proposal fails to provide any analysis or evaluation or methods for monitoring. The implication that the whole area of Bowers Ridge is coral habitat seems unlikely.

### *Ecological merit*

We decided that this was not possible to evaluate over an area this large in a comparable way that we evaluated the other proposals. (The same logic was used in ranking the ecological importance for GOA pinnacles in proposal 2 and the AI HAPC that resulted from closing all but core trawling areas to trawling in proposal 22.) While it is nearly assured that some portions of the area outlines would rate 3 for ecological importance, it is equally likely that other areas would not. Since our instructions were to apply ratings to habitat types, we felt our only options were to attempt to average ratings based on the areal coverage of different habitat types with different importance or to say that ecological importance was not possible to evaluate. Given that there was not information on areal coverage of habitat types in this area, we chose the latter option.

We noted that this method of rating leaves aside an important discussion on the importance of protecting not just habitat types, but also connected mosaics of habitat types of differing ecological importance and sensitivity. There is certainly merit in the approach of protecting large areas containing multiple habitat types, even if it is uncertain exactly what they are, especially if they are relatively undisturbed. However, it was the general feeling of the reviewers (and the Plan Team) that the HAPC designation was designed to be applied to discrete areas of known and relatively homogenous habitat characteristics. The approach of protecting large heterogeneous areas containing many habitat types might be more appropriately applied as a general Marine Protected Area or other management measure than a HAPC.

None of this means that Bowers Ridge is not an ecologically important area, we certainly do not mean to imply that. It simply means that the information we had for it as presented within the framework of the HAPC process made us unable to evaluate it.

### *Sensitivity*

See above discussion. In short, this large area likely contains such a range of habitat types with variable sensitivity that we were unable to assign a rating.

### *Stressed*

This region is thought to have a low level of fishing effort. However, given the large area, there could be differential fishing pressure on some portions.

### *Other comments*

We found this proposal difficult to evaluate scientifically. No information on habitat types on Bowers Ridge is presented, primarily because little exists. The logic is that places in the Aleutian Islands with similar bathymetric features contain some coral and rockfish habitat identified in the Council priorities, so Bowers Ridge probably does too. While this may be true, it does not seem in keeping with the type of information required for HAPC designation as we understand it.

The management measures were not well defined and the rationale behind the shapes proposed was not explained. Presumably these alternative area definitions were done to be responsive to perceived monitoring and enforcement needs.

The two options for different boundaries are not discussed. They should be if we are to evaluate them.

One concept for further evaluation would be to evaluate the merit of protecting large relatively undisturbed areas containing multiple unknown habitat types (but perhaps not as HAPC?).

### **Proposal 18, AI Semisopochnoi**

Coral with associated rockfish are found in the GOA as well as in the AI.

#### *Scientific/Technical merit*

This proposal had similar issues due to the reliance on fishermen's information. They propose that submersible mapping be done later to delineate areas to close. Also, they propose that experiments be done in the Bowers ridge area, both in fishing and no fishing areas to understand effects. Don't we already know the effects? This just sounds like want to keep open as much area as possible in contrast to #10 which suggests closing the whole area, without really any information on where the unique areas are. Information utilized in the proposal was fishermen's knowledge of where coral areas are in contrast to proposal #19 which utilized only information from submersible dives.

#### *Ecological merit*

We assumed that dense stands of corals exist in the areas identified by the fishermen surveyed as they report; therefore, these areas would have the highly diverse vertical structure and likely associations with vulnerable life history stages of FMP rockfish warranting a rating of 3. We note, however, that the proposers did not even attempt to attest to the ecological importance of these areas to rockfish in their proposal; they simply identified areas of dense coral stands.

#### *Sensitivity*

We assume that the dense stands of high relief coral reported to be in these areas would be quite sensitive to the effects of fishing, but this rating is based on weak evidence.

#### *Stressed*

We separated our rating into one for the Semisopochnoi area and one for the Bowers Ridge area identified in the proposal, because we felt they had different fishing histories and warranted a different rating.

Occasionally to routinely fished (Semisopochnoi). The Semisopochnoi area is currently part of a closure for Stellar Sea lions and so has limited fishing for atka mackerel, cod, and Pollock. However, other fishing is allowed there and the area is an important region for the golden king crab fishery.

The Bowers ridge area has no fishing restrictions, however it has had historically limited fishing. There is some rockfish catch in the region however this was considered to be of limited importance. There is also intermittent fishing for golden king crab in this area.

The areas are identified by fishermen, so at least the adjacent areas are routinely fished. However, assigning this rating is difficult for the coral stands themselves. We heard public comment during the meeting that most of the fishermen choose not to fish in these areas because of the density of coral (although perhaps more to conserve fishing gear than habitat), so the areas might be relatively undisturbed relative to the heavily fished non coral habitats immediately adjacent.

While some reviewers criticized the data quality used in this proposal because it is "anecdotal;" many reviewers felt that information based on fishermen's collective experience is extremely useful, especially when complemented with other information sources. What this information may lack in specificity compared with a trawl survey or sub survey, it more than makes up in sample size and spatial coverage. The lack of specificity of the information was recognized by the proposers, who recommended additional sub survey work in these areas to quantitatively describe the sites and evaluate whether a final HAPC designation should be made based on this supplemental information.

*Ecological merit:*

At least one reviewer questioned the motivation for including areas already in a Steller sea lion closure as being more motivated by economic and managerial considerations rather than ecological considerations. It was also commented both by some reviewers and during the Plan Team meeting that the proposers "are proposing HAPCs and then proposing research to determine if they should be HAPCs," which reflected on the lack of specific information that the proposers themselves admit.

*Other comments:*

Combination of this approach with approaches for defining HAPC based on alternative data sources may ultimately prove most efficient than attempting to use any one source. Incorporating information from those who spend the most time in the system in a more quantitative way is certainly valuable.

**Proposal 19, AI coral gardens**

The coral gardens are a subset of coral habitat found commonly within the Aleutians; this was reflected in the proposal. Jon Heifetz stated in the meeting that all of the dive sites were selected based on the likelihood of finding corals, so the fact that "coral gardens" habitat was found in a small subset within this already selective sample of habitats attests to the local rarity of the habitat type. It was apparently not observed in any other FMP areas, where there is admittedly more limited sampling with sub surveys.

*Scientific/Technical merit*

This proposal received a high technical/scientific merit rating because of the established link to scientific dive sites supplemented with fishery information.

*Ecological merit*

The proposal documents many FMP species and several life history stages of those species in association with the coral gardens, as well as gravid females of at least one species. The areas are also suggested to be aggregation areas for fishes and high relief feeding areas for invertebrates, and perhaps important sites of nutrient cycling due to the presence of high densities of filter feeding invertebrates such as sponges. These are direct visual observations of the areas and are therefore considered strong evidence.

There was some question on how much coral coverage should be considered for ecological sensitivity. The authors used all available dive sites and picked the "best of the best" for consideration. They note that dive site selection was pre-specified to be in areas with rich features (i.e., the dive sites were not randomly selected within the Aleutian Islands). Brown crab and other fisheries operate in these areas (in particular, the Semisopchnoi site). The Teams concluded that all the areas of this proposal are routinely fished.

Direct observation of the habitat types is the strongest evidence that can be presented to argue for the special nature of these habitat areas. The fact that this habitat type was not found on all sub dives designed to find general coral habitat attests to their rarity.



### *Sensitivity*

The species observed in these areas are known to be long lived and slow growing, and also fragile in the case of high relief coral. They are therefore expected to be highly sensitive to fishing from a population standpoint (slow recovery time) as well as from physical damage.

### *Stressed*

Regularly fished. While the relatively high relief locations of the coral gardens appear undisturbed by trawl fishing activities, the proposal states that some groundfish and king crab fishing occurs regularly in the vicinity of the identified areas, and that derelict longline gear was observed in the areas.

### *Overall ecological merit:*

The proposal makes a convincing case that the areas observed are special, even within the already coral-rich Aleutian Islands area.

### *Other comments:*

Combining submarine research with information presented in other proposals might represent the strongest overall approach for outlining HAPC. The review team wondered why draw the line at 100% coverage of benthic invertebrates—could habitats with lower coverage be similarly important? This is an open question. During the Plan Team meeting it was commented that protecting these discrete areas may not represent much of an advantage to larger stocks of fish; this approach was called a “piecemeal” approach in contrast to an approach covering larger areas. The council should decide which approach is more appropriate to the HAPC process, as it was unclear to the Plan Team which would be more useful without clearer management objectives.

Additionally, the proposal would be improved by providing a map showing where all dives were conducted to evaluate the coverage of the area. It was difficult to determine how good the sampling was - are there more sites that have not been explored? How were these sites selected to be observed? How much of the coral habitat is this protecting? What is the optimum size for the closed areas? How do we know that these areas cover the extent of the coral habitat in that location if only one dive occurred in the area?

## **Group F**

### **Proposal 12, AI Marine Reserve**

There was a discussion amongst the Plan Teams of the degree of rarity of this habitat type in the Aleutian Islands. Following debate the specific corals in the regions were determined to be locally rare due to the diversity of corals in the region and particularly the rare species being identified from this region. It was discussed that the evolutionary origin of cold water corals for the entire world is in the Aleutian Island region. Concern was expressed however regarding the size of the HAPC proposed in this area as it covers a large area of habitat and thus could encompass areas where these corals are not found which influences the degree of local rarity

### *Scientific and technical merit*

The proposal is weak in scientific and technical justifications for designating the proposed areas as marine reserves. Neither the number nor the boundaries of proposed closed areas are justified in the proposal. The areas chosen for marine reserves are according to Alternative 6 of the EFH EIS. Thus, this proposal merely supports an Alternative of the EFH EIS that suggests that marine reserves should be designed around areas with identified presence of habitat such as high relief coral, sponges, and sea onions, with emphasis on areas with notable benthic structure and/or high concentrations of benthic invertebrates.

Many strong statements are made without supporting documentation. For example, the rarity of the habitat is asserted but not proven. The discussion of rarity is really about biodiversity. As another example, the proposal refers to the affected ecosystems both as pristine and as deeply impacted by previous fishing. In the event that this proposal is carried forward, all concepts within the proposal should be evaluated further.

*Ecological merit of this proposal:*

Although it is intuitively acceptable that protection is good against human activities that physically wrecks benthic resources of corals, sponges, sea onions, etc., any ecological harm of such destruction has not been proven. Nonetheless, the proposal has reasonable overall ecological logic as marine reserves can be an important component of conservation. The size of marine reserves is an important consideration. It is not known what size of marine reserve would be necessary to provide for fish stock protection. Therefore implementation of marine reserves needs to have valid assumptions concerning the area utilized by species of interest to ensure that they will be protected.

*Stressed*

The habitat type was determined to fall under the routinely fished category. However the relative scale of the HAPC area calls into question the ability to determine a single category of stress for the entire area as some regions within this may be routinely fished while others may less so.

*Other comments*

There is a tendency to want special protections to what are intuitively sensitive biological areas; but there should be facts and science to support why designation of marine reserves is the best solution for conservation. Beyond that, there is also need to scientifically define the geographical extent of these reserves.

**Proposal 14, AI Core bottom trawl area**

This proposal represented a unique approach to HAPC design. While the Plan Teams appreciate the innovative concept, it was inherently difficult to evaluate this type of proposal within the context of the others. Nevertheless the Plan Teams discussed the scientific and technical merits of this approach and this proposal.

*Scientific and technical merits*

The limited amount of knowledge that exists on the abundance and distribution of Alaskan corals, sponges and other living substrates, and their role as habitat for other species, are the major weaknesses of this proposal. The abundance or rarity of the habitat is relatively unknown, and the ecological relationships that probably exist between the corals, sponges (and other living substrates) and different life history stages of commercially harvested fish and crabs, remain almost entirely unsubstantiated.

The authors of the proposal have conducted considerable analysis of spatial trawling effort and harvest values by area; but based on selected narrower scope of the data. The proposal utilizes the NMFS-Observer data from the recent 12-year period (since 1990) to show where fishing has taken place in the Aleutians. Out of 27,600 km<sup>2</sup> where fishing had taken place since 1990, the proposal suggests that the core fishing areas should only be 5,500 km<sup>2</sup> as these areas accounted for 82% of the catches and 75% of the observed hauls. The area is only 20% of the entire areas fished from 1990. In the Aleutian region, fishing since 1990 has actually been significantly lower than the periods prior to 1990; particularly when foreign fisheries were active in the Aleutians. Thus the percentage of the core fishing area would be substantially lower than 20% of all fishable grounds in the Aleutians

The Aleutian Islands region is composed of island features of high-relief, complex vertical structures and complex benthic communities (like deep sea and cold water coral gardens) and other biological organisms. Little is scientifically known of the benthic habitat and the area has not been comprehensively mapped. This proposal uses a very limited data source to draw a conclusion to close off a massive area that is more than 80% of recent areas fished.

#### *Overall ecological merit*

One reviewer says that "Although I am chagrined by the use of superlatives and unsubstantiated claims of ecological values of certain substrates and its rarity, the basis of the proposal is sound and it merits additional evaluation." The logic of this proposal needs probing analyses: rather than defining closed areas, this proposal defined some core fishing areas and closed off the rest of the Aleutian area. As such, the entire Aleutian region will be closed to fishing unless the areas are mapped and scientifically proven that fishing will not harm the habitat. This will demand an unrealistically large burden of proof to have future fishing areas opened up.

#### *Stress:*

The entire Aleutian Islands area has been routinely fished.

#### *Other comments:*

The Teams had trouble evaluating this proposal given its' peculiar nature. The Teams decided to treat this proposal similar to how other very large area proposals were evaluated (e.g., Adak and Pinnacles) leading to an inability to adequately establish numbers for these categories. The Teams discussed the philosophical difference in this proposal, and the nature of reversing the burden of proof in order to reopen areas, and questioned the appropriateness of this proposal in the current process. The Teams understand that the Council has a wide latitude for describing HAPCs and that if a proposal has technical merit the Council is not limited from pursuing it. However, given the difficulty inherent in evaluating a proposal of this nature, the Teams felt that this proposal was currently out of order with respect to the other HAPC proposals under review.

## **Group G**

#### ***General comments***

The two proposals focus on the same areas (5) in the Aleutian Islands that have had NMFS research and documented coral gardens. Some of the overall comments of the reviewers apply to both proposals. NMFS proposal #19 also addresses the same areas.

#### *Scientific /Technical Merit:*

The overall scientific merit is limited to observational data from the NOAA submersible research. There is no direct link with FMP species however golden king crab fishing, as noted in previous proposals, occurs to some degree in all AI areas proposed. Corals are also known to be long lived and sensitive to fishing impacts. The proposals directly addresses one of the Council's identified priorities of largely undisturbed, high relief, long lived hard coral beds in the AI. However some of the documentation in both proposals is lacking. NMFS #19 is similar to these two proposals and should these be carried forward that would be evaluated together.

#### *Stress:*

Two of the sites are relatively unfished, however, the two eastern most (Bobrof and Adak Is) areas located where some commercial fishing occurs, and thus are relatively disturbed.

The information within the proposal to determine if it is largely undisturbed and occur outside core fishing areas has not been adequately provided. Only groundfish observer data was shown which may bias the review.

*EFH Considerations:*

Rarity of corals or coral garden areas within the Aleutian Islands has not been documented. Most reviewers indicated that cold water corals were rare on a global scale however one reviewer indicated that they are found throughout the world (not rare)

Corals themselves are vulnerable and sensitive, but the link to the ecological role these corals play in the life history of FMP managed species is not documented. Anecdotal data does suggest it may have some ecological merit to protect nursery area to FMP species and permanent habitat (vertical structure) to other species.

It was difficult to do some of the overall rankings since three of the sites are relatively undisturbed and two are relatively disturbed.

*Other comments*

Need to coordinate with the state to see if the management for these areas would fall within their realm since some of them are within the 3 mile to land.

It is not documented in how large a closure would need to be around a coral bed to afford it adequate protection.

**Proposal 11, AI coral and sponge**

*Scientific and technical merit*

The proposal lacks merit from a scientific and technical perspective. There is little research that substantiates a proposal of this type. The proposal suggests that the closed areas could be used as control areas in a study. No study design or areas where experimental treatments will be applied is proposed. The proposal states that the areas suggested for closure are pristine and that fishing gear contacting the bottom damages these habitats. Perhaps little bottom contact fishing has occurred in the proposed areas possibly negating the justification for a closure. An alternative approach would be to close areas that have impacted more heavily by bottom contact gear. No justification is made for the size of the closed areas. Commercial fishery landings data from the 2001, 2002 and 2003 seasons indicate that at least 2-4% of the state waters sablefish harvest and 4-9% of the Aleutian Islands golden king crab harvest has come from the areas proposed for closure. The closures could displace vessels and contribute to increased gear conflicts and habitat damage in other areas. Rarity is not addressed under the rarity section, but discusses biodiversity. There is no justification of the boundary of the closure size.

*Ecological merits*

The goal of protecting largely undisturbed concentrations of rare or uncommon corals and bryozoans in the Aleutian Islands has some ecological merit. Because of the small size of the proposed closed areas, and the migratory patterns of fish and larval drift these areas seem to be of limited value as essential fish habitat. The proposed areas may contain unique and important populations of corals, sponges and other sessile marine invertebrates, but they are not unique habitat for commercially important fish and shellfish in the Aleutian Islands. We find important habitat throughout the Aleutian Islands. Much of this habitat is currently in a de facto marine reserve because of depth and bottom topography that renders the areas unfishable.

### *Other comments*

There may be some merit in protecting concentrations of corals and sponges for their own intrinsic value, but the small areas suggested by this proposal are likely to provide little benefit in terms of protecting essential fish habitat. HAPCs and marine reserves should be addressed in terms of ecosystem management rather than this piecemeal approach. Unfortunately, the general lack of data on coral and sponge populations in the Aleutian Islands makes it difficult to evaluate proposals of this type

## **Proposal 13, AI coral gardens**

### *Scientific and technical merit*

The scope of this proposal is broad and lacks important specific details. From a scientific and technical perspective the proposal lacks justification. The boundaries of proposed closed areas are not justified in the proposal. The proposal suggests that the entire Aleutian Islands should be designated as a Special Management Area (SMA), but does not define the term nor what management steps would be taken in developing the SMA.

### *Ecological merits*

The goal of protecting largely undisturbed concentrations of rare or uncommon corals and bryozoans in the Aleutian Islands has some ecological merit. The proposed areas may contain unique and important populations of corals, sponges and other sessile marine invertebrates, but they are not unique habitat for commercially important fish and shellfish in the Aleutian Islands. We find important habitat throughout the Aleutian Islands. Much of this habitat is currently in a de facto marine reserve because of depth and bottom topography that renders the areas unfishable.

### *Other comments*

There may be some merit in protecting coral gardens for their own intrinsic value, but the small areas suggested by this proposal are likely to provide little benefit in terms of protecting essential fish habitat. HAPCs and marine reserves should be addressed in terms of ecosystem management rather than this piecemeal approach. Unfortunately, the general lack of data on coral and sponge populations in the Aleutian Islands makes it difficult to evaluate proposals of this type.

## **Group H    BS Soft Corals**

### **Proposal 22, BS Soft coral**

The Teams found that this proposal use poorly supported arguments for declaring a HAPC and failed to meet Council priorities. However, they used valid qualitative reasoning to consider this type of habitat.

This proposal submitted by Oceana proposes to create HAPC's at two areas in the Bering Sea to protect soft corals (*Gersemia* sp.). One area encompasses 8,800 km<sup>2</sup> east of the Pribilof Islands and the second area encompasses 2,000 km<sup>2</sup> northwest of Unimak. The areas would be used for studies to evaluate the effects of fishing gear on the soft coral habitat and ecology. This proposal also creates one HAPC area to protect the Mednyy Seamount. The review group sees two components in this proposal that perhaps should have been treated in separate proposals. As such we have chosen to review them separately.

The Mednyy Seamount is not located within the US EEZ. Coordinates for the seamount location confused the longitude putting the seamount in the Bering Sea instead of in Russian waters. As such, the likelihood of these seamounts providing habitat for important species is not known. Also, rationale for the area of closure was not given. Too little is known about the seamount and no rationale was stated for the closure;

therefore the proposal had very little scientific merit. Thus, the Plan Teams had no further discussion on Mednyy seamount.

With respect to the Bering Sea soft corals *Gersemia* sp., this proposal does not meet Council priorities because it addresses soft corals instead of hard corals. These sites have a small amount of rockfish catch suggesting that they meet the Council priorities of limited fishing disturbance and positive association with managed rockfish. The site nearest the Pribilofs appears to have large amounts of coral/bryozoa catch according to NMFS observer data although it is not known if this is large relative to what may be available. The soft corals provide low relief structure which *may* promote ecological diversity. However, little information or supporting data is presented to establish the benefit of these soft coral beds to fish communities (esp. rockfish). The justifications given for creating these HAPC's were based on general literature without focus on the *Gersemia* sp. in particular. Furthermore, relative importance of this habitat is difficult to ascertain due to a lack of data outside the proposed regions. The discussion of costs due to this closure action does not exist in the proposal except to say it will be "minimal".

Plan Team members noted many inconsistencies in the bycatch data provided for Box 2 of the proposal. These inconsistencies were also reiterated by members of the public present.

Overall the scientific merit of this proposal is weak due to limited data and no evidence to support the arguments made.

#### *Ecological Merits:*

The reviewers agree that data is too limited to properly evaluate the ecological importance of *Gersemia* sp. If in fact this is a unique habitat to Alaska, it would be important to sustain its ecological function. At this point, however, there has been no demonstrated association of commercial species with this soft coral habitat. The proposed HAPC areas may help preserve the biodiversity in the Bering Sea but at substantial cost to industry. One reviewer suggested that the closure area be reduced to areas open, closed and monitored to study the impact of bottom trawling.

#### *Additional comments:*

The proposal contained a number of citation errors and the mis-location of the Mednyy seamount suggests that the proposers did not have a clear idea of what they were proposing. The Teams also expressed concerns as noted above with respect to the bycatch data provided and implications thereof for box 2 of the proposal. Given these concerns, if this proposal were to be forwarded on for analysis, it is suggested that the area delimited by box 2 be excluded from the HAPC proposal.

## Tables

Table 1. Summary of Plan Teams' classification for seamounts. NOTE: see Plan Teams' concerns in introduction for a discussion on problems with interpreting this table.

Plan Team Groups	Proposal Area	Proposer	Proposal Number	Number of Named Seamounts	Council priority (named, EEZ)	Rarity Global (Y/N)	Rarity Local	Ecological Importance	Sensitivity	Stressed	Total
A	Alaska	TOC	1	23	Y	Y	3	2	2	2	NA
A	Gulf of Alaska	Oceana	2	21	Y	Y	3	2	2	2	NA
A	Aleutian Islands	Oceana	3	3	Y	Y	3	2	2	2	NA
A	Alaska	NMFS	4	16	Y	Y	3	2	NA	2	NA

Table 2. Summary of Plan Teams' classification by group. NOTE: see Plan Teams' concerns in introduction for a discussion on problems with interpreting this table.

Plan Team Group	Proposal Area	Name of Proposer	Proposal Number	Rarity Global (Y/N)	Rarity Local	Ecological Importance	Sensitivity	Stressed	Total
A	AI Pinnacles	Oceana	3	N	2	NA	NA	NA	NA
A	GOA Pinnacles	Oceana	2	N	2	NA	NA	NA	NA
A	Kodiak 8 fathom pinnacle	NMFS	23	Y	3	2	2	R	NA
B	BS Zemchug and Pribilof Canyons	TOC	20	N	3	2	2	R	NA
B	GOA Prince William Sound Deep Water Canyon	TOC	21	N	2	2	2	R	NA
C	GOA Albatross Rockfish	AAG	6	CY	2	2	2	O	NA
C	GOA Middleton Island	AAG	7	CY	2	2	2	O	NA
C	GOA Sanak Island	AAG	5	CY	2	2	2	O	NA
C	GOA Primnoa Forrest	NMFS	8	Y	2	3	3	O	NA
D	AI Adak Canyon	AMCC	9	Y	2	3	3	O	NA
D	AI South Amalie Atka	MCA	15	Y	2	3	3	R	NA
D	AI Adak and Kanaga	MCA	16	Y	2	3	3	R	NA
D	AI Amatignak/Alak	MCA	17	Y	2	3	3	R	NA
E	AI Bowers Ridge	AMCC	10	Y	2	NA	NA	L	NA
E	AI Semisopochnoi	MCA	18	Y	2	3	3	R/O	NA
E	AI Coral Gardens	NMFS	19	Y	3	3	3	R	NA
F	AI Marine Reserve	TOC	12	Y	3	3	3	R	NA
F	AI Core bottom trawl area	Oceana	14	Y	3	NA	NA	R	NA
G	AI Coral and Sponge	TOC	11	Y	3	3	3	R	NA
G	AI corals gardens	Oceana	13	Y	3	3	3	R	NA
H	BS- Soft coral	Oceana	22	Y	2	2	3	R	NA

Legend:

- L = Low level of fishing
- O = Occasionally fished
- R = Routinely fished
- CY = Conditionally yes
- Y = Yes
- W = Weak information
- NA = Not available, see qualitative comments



Table 3. Plan Teams' summary for Council priorities.

Proposal Number	Proposal Name	Proposer	Sites Proposed	Council Priorities				
				Named Seamount	Aleutian Islands	Rockfish	Relative Disturbance	High Relief Coral
1	North Pacific Seamounts	TOC	23	Y	Y			
2	GOA Pinnacles & Seamounts		73					
	GOA Seamounts	Oceana		Y	N			
	GOA Pinnacles	Oceana		Y	N	Y	R	CY
3	AI Pinnacles & Seamounts		85					
	AI Seamounts	Oceana		Y	Y			
	AI Pinnacles	Oceana		Y	Y	Y	R	CY
4	Named Seamounts	NMFS	16	Y	Y			
5	Sanak Island rockfish	AAGF	1	N	N	Y	O	UNK
6	Albatross Bank	AAGF	1	N	N	Y	O	UNK
7	Middleton Island	AAGF	1	N	N	Y	O	UNK
8	GOA Primnoa	NMFS	4	N	N	Y	O	Y
9	Adak Canyon	AMCC	1	N	Y	Y	O	Y
10	Bowers Ridge	AMCC	2	N	Y	Y	L	Y
11	AI Coral & Sponges	TOC	5	N	Y	Y	R	Y
12	AI Marine Reserve Network	TOC	4	N	Y	Y	R	Y
13	AI Coral Gardens	Oceana	5	N	Y	Y	R	Y
14	AI Core Bottom Trawling Open Permit Area	Oceana	55	N	Y	Y	R	Y
15	South Amliia/Atka	MCA	1	N	Y	Y	R	Y
16	Adak & Kanaga	MCA	5	N	Y	Y	R	Y
17	Amatignak/Ulak & Tanaga	MCA	2	N	Y	Y	R	Y
18	Semisopchnoi & Bowers	MCA	2	N	Y	Y	R/O	Y
19	AI Coral Gardens	NMFS	6	N	Y	Y	R	Y
20	Zemchug & Pribilof Canyon	TOC	2	N	N	Y	R	Y
21	PWS Deepwater Canyon	TOC	1	N	N	Y	R	UNK
22	Bering Sea Soft Corals and Seamount	Oceana	3	N	N	N	R	N
23	8-fathom Pinnacle	NMFS	1	N	N	Y	R	N

## Group Members

Group leaders are presented in bold.

### Group A      Seamounts

*Proposals: 1,2,3,4,23*

Tory O'Connell (GOA PT)  
**Mike Sigler (BSAI PT)**  
Doug Pengilly (CPT)  
Gregg Rosenkrantz (SPT)  
Beth Sinclair (GOA PT)

### Group E      AI Hard Corals

*Proposals: 10, 18, 19*

Lowell Fritz (BSAI PT)  
**Sarah Gaichas (GOA PT)**  
Jack Turnock (CPT)  
David Carlile (BSAI PT)  
Herman Savikko (CPT/SP T)

### Group B      Deep Water Canyons

*Proposals: 20,21*

Kathy Kuletz (BSAI PT/GOA PT)  
Bill Bechtol (GOA PT)  
Beth Sinclair (GOA PT)  
**Tom Pearson (GOA PT)**  
Lou Rugolo (CPT)

### Group F      AI Hard Corals

*Proposals: 12, 14*

Grant Thompson (BSAI PT)  
**Loh-Lee Low (BSAI PT)**  
Tom Shirley (CPT)  
Wayne Donaldson (CPT)  
Gregg Rosenkrantz (SPT)

### Group C      GOA Hard Corals

*Proposals: 5,6,7,8*

Jeff Fujioka (GOA PT)  
**Mike Ruccio (GOA PT)**  
Diana Stram (GOA PT/CPT/SPT)  
Ivan Vining (BSAI PT)  
Bill Clark (BSAI PT/GOA PT)

### Group G      AI Hard Corals

*Proposals: 11,13*

Bob Foy (GOA PT)  
**Grant Thompson (BSAI PT)**  
Forrest Bowers (CPT)  
Gretchen Harrington (CPT/SPT)  
Jeff Barnhart (SPT)  
Tom Pearson (GOA PT)

### Group D      AI Hard Corals

*Proposals: 9,15,16,17*

Kerim Aydin (BSAI PT)  
Sandra Lowe (GOA PT)  
**Jim Ianelli (GOA PT)**  
Jon Heifetz (GOA PT)  
Bob Otto (CPT)  
Jeff Barnhart (SPT)

### Group H      Miscellaneous (BS soft corals)

Proposal: 22

Tom Pearson (GOA PT)  
Bill Clark (BSAI PT/GOA PT)  
**Bob Foy (GOA PT)**  
Shareef Siddeek (CPT)  
Bill Bechtol (GOA PT)

## Appendix

February 20, 2004

Dear Plan Team member,

As a member of one of the North Pacific Fishery Management Council's Plan Teams you have been requested to participate in a review of Habitat Areas of Particular Concern (HAPC) proposals. A meeting of all the Plan Teams to review these proposals will be held March 8-9<sup>th</sup>. This meeting will be held simultaneously in Seattle, Juneau, and Kodiak.

HAPC is a provision under the current Essential Fish Habitat measures that consider adverse effects from fishing on FMP species and habitat. HAPCs provide a mechanism to acknowledge areas within EFH where additional information is available regarding regional ecological functions and /or vulnerability.

An initial call for HAPC proposals in 2004 focussed on the following Council identified priorities:

1. Seamounts in the Exclusive Economic Zone (EEZ), named on NOAA charts, that provide important habitat for managed species.
2. Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species. Nominations shall be based upon best available scientific information, and include the following features:
  - a) Sites must have likely or documented presence of FMP rockfish species.
  - b) Sites must be largely undisturbed and occur outside core fishing areas.

Additionally, the Council priorities specified that HAPC proposals would be required to meet rarity and one of the other of the HAPC considerations established in the EFH Final Rule: importance of ecological function, sensitivity, and vulnerability.

The Council received 23 proposals overall. The Plan Teams will evaluate these proposals for overall ecological merit, scientific and technical composition and acknowledge the degree to which the proposal addresses the Council's identified priorities. The proposals are included on a CD in this packet, as well as directions and materials for the review, and additional background materials as listed below. For each assigned proposal, you will need to submit completed tables and comments prior to the meeting in March as per the attached directions. During the March Plan Team meeting there will be a review and discussion of each proposal. Following the meeting, staff will provide a summary of Plan Team feedback on these proposals for the Council.

Thank you for your time,

Cathy Coon  
NPFMC

## DIRECTIONS FOR REVIEWERS

1. Check your group assignment (you may be assigned to multiple groups).
2. Review assigned proposals. Please discuss with your group or other colleagues as appropriate.
  - a. Fill out proposal lines in Table 1 or 2 as appropriate (additional directions below).
  - b. For each proposal reviewed, fill out a Proposal Merit form.
3. Submit review to group leader prior to the meeting. If you are the group leader, collect and summarize your group's proposal reviews, and be prepared to lead off the discussion at the meeting.
4. Read and/or review other proposals if possible.
5. Attend and participate in meeting.

## HOW TO FILL OUT THE TABLES

Tables 1 and 2

Evaluate proposal areas for rarity, ecological importance, sensitivity, and stress. Rarity is divided into global and local rarity. For global rarity, please note yes or no if the feature is considered globally rare. Use the scoring system listed below for the other indicators.

<b>Score</b>	<b>Local Rarity</b>	<b>Ecological Importance</b>	<b>Sensitivity</b>	<b>Stressed</b>
<b><i>EFH Final Rule:</i></b>	<i>The rarity of the habitat type.</i>	<i>The importance of the ecological function provided by the habitat.</i>	<i>The extent to which the habitat is sensitive to human induced environmental degradation.</i>	<i>Whether and to what extent development activities are or will be stressing the habitat type.</i>
<b>1</b>	Habitat common throughout the Alaska region: Bering Sea, Gulf of Alaska, and Aleutian Islands	Habitat is featureless or unknown; fish are present; reproductive associations with the habitat do not exist	Habitat or structure less sensitive	Habitat is exposed to routine fishing disturbance or natural perturbation
<b>2</b>	Habitat common in one of the Alaska regions, and occurs with less frequency in one or both of the others	Habitat exhibits some structure; fish are present within known substrates; habitat or reproductive associations may exist	Habitat or structure somewhat sensitive	Habitat is exposed to occasional fishing disturbance or natural perturbation
<b>3</b>	Habitat is common in only one of the Alaska regions	Habitat consists of highly diverse or vertical structure; substrate is notable; vulnerable life history stages of fish or habitat reproductive associations exist	Habitat or structure highly sensitive	Habitat is exposed to little or no fishing disturbance or natural perturbation

For Table 1 there are two parts. The first row (in bold box) is mandatory, and rates the overall proposal for all included seamounts. Additionally, if you are able to evaluate the proposed seamounts on an individual basis, then provide specific rankings in the appropriate row.

### Table 3

The remaining columns under Council priorities will be filled out at the meeting. When reviewing the proposals, please keep in mind the degree to which the proposal meets the Council priorities of high relief coral areas, areas with rockfish present, and largely undisturbed areas.

**Plan Team members, state and agency staff and public in attendance by location and teleconference**

BSAI = BSAI groundfish Plan Team      GOA = GOA groundfish Plan Team  
 CPT = BSAI Crab Plan Team              SPT = Scallop Plan Team

<b>Seattle (Main meeting)</b>	<b>Juneau</b>	<b>Kodiak</b>
<p><b>Chair: Jim Ianelli (GOA co-chair)</b>  <i>Plan Team members:</i>                      Loh-lee Low (BSAI chair)                      Lowell Fritz (BSAI)                      Grant Thompson (BSAI)                      Bill Clark (BSAI/GOA)                      Kerim Aydin (BSAI)                      Jack Turnock (CPT)                      Diana Stram (GOA co-chair/CPT/SPT)                      Sandra Lowe (GOA)                      Sarah Gaichas (GOA)</p> <p><i>State and Agency Staff:</i>                      Earl Krygier                      Cathy Coon                      John Olson                      Matt Eagleton                      Kristin Mabry                      Mark Zimmerman                      Farron Wallace</p> <p><i>Additional Attendees:</i>                      Paul McGregor                      Donna Parker                      Ed Richardson                      John Gauvin                      Jan Jacobs                      Michelle Ridgeway                      Arni Thompson                      Thorn Smith                      Lisa Butzner                      Whit Sheard                      Ed Richardson                      Glenn Reed                      Karl Halfinger                      Bill Henkel                      Terry Leitzell                      Heather Ludmann                      Dave Wood                      Dave Benson                      Brent Payne                      Dave Fraser                      Katie Chamberlin</p> <p><i>Teleconference attendance:</i>                      Kathy Kuletz (BSAI/GOA)                      Tory O'Connell (GOA)                      David Witherell</p>	<p><b>Chair: Mike Sigler (BSAI)</b>  <i>Plan Team members:</i>                      David Carlile (BSAI)                      Gretchen Harrington(CPT/SPT)                      Tom Shirley (CPT)                      Shareef Siddeek (CPT)                      Herman Savikko (CPT/SPT)                      Doug Woodby (SPT)                      Jeff Fujioka (GOA)                      Jon Heifetz (GOA)                      Tory O'Connell (GOA)                      Tom Pearson (GOA)</p> <p><i>State and Agency Staff:</i>                      Jon Kurland</p> <p><i>Additional Attendees:</i>                      Jon Warrenchuk</p> <p>Plan Team members absent                      (for all locations):</p> <p>Beth Sinclair (GOA)                      Brenda Norcross (BSAI)                      Andy Smoker (BSAI)                      Ivan Vining (BSAI)                      Jane DiCosimo (BSAI)                      Joshua Greenberg (CPT)                      Lou Rugolo (CPT)                      Gregg Rosenkrantz (SPT)</p> <p>Total of 28 PT members in                      attendance, 8 absent, 31                      additional participants by state                      and agency staff and members                      of the public</p>	<p><b>Chair: Doug Pengilly (CPT chair)</b>  <i>Plan Team members:</i>                      Bob Otto (CPT)                      Wayne Donaldson (CPT)                      Forrest Bowers (CPT)                      Jeff Barnhart (SPT chair)                      Mike Ruccio (GOA)                      Bob Foy (GOA)</p> <p><i>State and Agency Staff</i></p> <p><i>Additional Attendees:</i>                      Linda Kozak</p>

DRAFT 3/22/04

## 1.0 Purpose and Need for Action

The following description of the purpose and need for action also serves as the Council's problem statement for considering Habitat Areas of Particular Concern (HAPCs).

The Council recognizes that Essential Fish Habitat (EFH) designations are necessarily broad in scope because of the limited available scientific information about the habitat requirements of managed species. The Council further recognizes that specific habitat areas within EFH may warrant additional management because of the following: The importance of the ecological function provided by the habitat; whether, and to what extent the development activities are, or will be, stressing the habitat type; and the rarity of the habitat (50 CFR 600.815(a)(8)). HAPC identification provides a way to call extra attention to such habitats and to focus conservation and enhancement priorities within EFH.

### 1.1 Need for Action

In section 2 of the Magnuson-Stevens Fishery Conservation and Management Act, Congress recognized that one of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. Congress adopted specific requirements for fishery management plans (FMPs) to identify EFH and minimize to the extent practicable the adverse effects of fishing on EFH. In the regulations implementing the EFH provisions of the Magnuson-Stevens Act, NMFS encourages Councils to identify types or areas of habitat within EFH as HAPCs (50 CFR 600.815(a)(8)). HAPCs provide a mechanism to acknowledge areas where more is known about the ecological function and/or vulnerability of EFH, and to highlight priority areas within EFH for conservation and management.

Concurrent with the evaluation of potential HAPCs, NMFS and the Council are developing an Environmental Impact Statement (EIS) for the EFH components of the Council's FMPs. The EIS considers three actions: (1) Describe and identify EFH; (2) Adopt an approach to identify HAPCs; and (3) Minimize to the extent practicable the adverse effects of fishing on EFH. The Council determined that it would be most effective to adopt an overall approach for considering HAPCs first (via the EIS), and then to consider specific proposed HAPCs and any associated management measures (via this Environmental Assessment). The Council's preliminary preferred alternative approach for HAPCs is to identify specific HAPC sites, rather than HAPCs based on broad types of habitat.

The draft EIS acknowledges that there are long-term effects of fishing on benthic habitat features off Alaska, and that considerable scientific uncertainty remains regarding the consequences of such habitat changes for managed species. Nevertheless, the analysis concludes that the effects on EFH are minimal because there is no indication that continued fishing at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The EIS therefore 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 effects under the Magnuson-Stevens Act. However, the EIS notes that a variety of practicable management actions could be taken to provide additional habitat protection.

HAPCs and associated management measures considered by the Council would provide additional habitat protection and further minimize potential adverse effects of fishing on EFH. Such actions are consistent with the EFH EIS because they address potential impacts that are discussed in the EIS, even though the EIS

indicates new management measures may not be required under the Magnuson-Stevens Act to reduce those impacts. In effect, through its evaluation of HAPCs, the Council is considering new measures that would be precautionary.

The need for this action also stems from a May 2003 joint stipulation and order approved by the U.S. District Court for the District of Columbia. That agreement reflected the Council's commitment to consider new HAPCs as part of the response to the *AOC v. Daley* litigation that challenged whether Council FMPs minimize to the extent practicable the adverse effects of fishing on EFH. Under the agreement, final regulations implementing any new HAPC designations and any associated management measures must be promulgated no later than August 13, 2006.

## **1.2 Purpose of Action**

The purpose of this action is to determine whether and how to amend the Council's FMPs to identify and manage site-specific HAPCs. HAPCs identified as a result of this EA would provide additional habitat protection and further minimize potential adverse effects of fishing on EFH. The HAPCs would be subsets of EFH that are particularly important to the long-term productivity of one or more managed species, or that are particularly vulnerable to degradation. The Council may identify HAPCs based on one or more of four considerations listed in the EFH regulations: ecological importance, sensitivity to human-induced degradation, stress from development activities, and rarity of the habitat type.

The Council established a process for considering potential new HAPCs, which is documented in Appendix J of the draft EFH EIS. While many types of habitat may be worth considering as HAPCs, the Council determined that concrete and realistic priorities should be set to move forward expeditiously with the designation and possible protection of HAPCs. The Council decided that the initial HAPC proposal cycle should focus on two priorities:

1. Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species
2. Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species that include the following features:
  - a) sites must have likely or documented presence of FMP rockfish species
  - b) sites must be largely undisturbed and occur outside core fishing areas

Coral areas were selected as a Council HAPC priority because they may be linked with rockfish and other FMP species. Additionally, areas of high density "gardens" of corals, sponges, and other sedentary invertebrates were recently documented for the first time in the North Pacific Ocean and appear to be particularly sensitive to bottom disturbance. Some deep sea corals are fragile, long-lived, and slow growing organisms that provide habitat for fish and may be susceptible to human induced degradation or stress.

Seamounts were selected as a Council HAPC priority because they may serve as unique ecosystems. Some FMP species on seamounts may be endemic (exclusive to a particular place) and vulnerable to stress caused by human induced activities. The purpose of this priority is to protect seamounts from potential disturbance from fishing activities, and therefore to ensure the continued productivity of these habitats for managed species.

If the Council identifies HAPCs that include state waters, the Council will relay its concerns to the Alaska Board of Fisheries to suggest appropriate protection of HAPCs under state jurisdiction.

**DRAFT 3/22/04**  
**Conceptual Approaches for HAPC Alternatives**

Staff developed the following conceptual approaches for HAPC alternatives for the upcoming NEPA analysis (EA), based on the Council's priorities. Twenty-three proposals were received for HAPC candidate sites with a range of management suggestions. The Council will need to select final HAPC alternatives no later than the June 2004 Council meeting.

The Council will need to choose management measures for analysis for each alternative. Several options are possible for HAPC management measures, including the following:

- HAPC designation only, no new management measures
- No bottom trawling within the HAPC
- No bottom contact gear within the HAPC
- No fishing within the HAPC

The Council will need to decide at this meeting the methodology to finalize the alternatives (HAPC areas as well as management measures) between now and June. All proposals were incorporated into the conceptual approach below (referred to numerically and bolded).

**Action 1 – Seamounts**

Alternative 1: No action (no seamount HAPCs).

Alternative 2: Designate 5 named seamounts in the EEZ off Alaska as HAPCs (Dickens, Geacomini, Patton, Quinn, Welker). Site-specific habitat and species presence/absence data is available for these 5 named seamounts.

Alternative 3: Designate 16 named seamounts in the EEZ off Alaska as HAPCs. Sixteen named seamounts are within less than 3,000m in depth, which is the deepest recorded range of FMP species. Although site-specific habitat and species presence/absence data is available for only 5 of these sites, species composition can be inferred for the 11 unexplored seamounts. **(Proposal 4)**

Alternative 4: Designate 23 named seamounts in the EEZ off Alaska as HAPCs. Twenty-three seamounts within EEZ waters of the Alaska region are named on NOAA charts. Seven of these seamounts are extremely deep and FMP species are not likely present. **(Proposal 1)**

**Action 2 – GOA Corals**

Alternative 1: No action (no GOA coral HAPCs).

Alternative 2: Designate three sites along the continental slope at Sanak Island, Albatross, and Middleton Island as HAPCs. These sites are identical to proposed closure areas that were delineated in Alternative 5a for the EFH EIS. These areas were proposed based on anecdotal information from trawl captains that the area is likely rockfish habitat and relatively unfished. The presence of high relief corals is unknown in two of the sites, however Sanak Island has had some observed coral/bryozoan bycatch. **(Proposals 5, 6, 7)**



Alternative 3: Designate four sites at Cape Ommaney, Dixon Entrance, Fairweather Ground (NW Area), and Fairweather Ground (Southern Area) as HAPCs. Site-specific habitat and species presence/absence data is available for these areas. These sites are in areas where concentrations of *Primnoa* were documented using a manned submersible conducting groundfish stock assessments and researching the effects of fishing gear on benthic habitats. During these investigations, rockfish and other managed species were observed in association with high relief corals. Disturbance to these fragile corals was observed *in situ*, including derelict fishing gear contacting the coral. **(Proposal 8)**

- 1) Cape Ommaney Site. *Primnoa* sp. (red tree coral) colonies are concentrated on a series of small pinnacles about 28 km west of Cape Ommaney, Baranof Island, Alaska. Red tree coral (*Primnoa* sp.) is located on bedrock and large boulders at depths between 201 and 256 m. Several hundred colonies were observed at this site and many were greater than 1 m in height. Several sections of derelict longline gear were observed at the study site and damage to several colonies was evident. The majority of colonies were attached to the seafloor and undamaged, however.
- 2) Dixon Entrance Site. In 1997, NMFS/AFSC/Auke Bay Laboratory scientists conducted submersible dives with the DSV *Delta* in two areas of Dixon Entrance where large catches of *Primnoa* sp. coral were collected as bycatch during triennial groundfish surveys. Submersible observations confirmed the presence of a series of dense *Primnoa* sp. concentrations. Additionally, two sites in this area sampled as part of the Auke Bay Laboratory's sablefish stock assessment program have consistently produced the highest incidental long line catches of *Primnoa* sp. coral in the Gulf of Alaska since 1989. Red tree coral is located on scattered large boulders at depths between 150 and 380 m. Several hundred colonies were observed at the submersible sites and 163 colonies have been collected as bycatch at the two survey sites since 1989. Many colonies were greater than 1 m in height. The majority of colonies at the submersible site were attached to the seafloor and undamaged.
- 3) Fairweather Ground Sites. In 2001, NMFS/AFSC/Auke Bay Laboratory scientists conducted submersible dives with the DSV *Delta* in areas of the Fairweather Grounds where large catches of *Primnoa* sp. coral were collected as bycatch during triennial groundfish surveys. Submersible observations confirmed the presence of a series of dense *Primnoa* sp. concentrations. Red tree coral is located on scattered large boulders at depths between 150 and 200 m. Colonies were observed at the submersible sites and distributed throughout the dive transects. Many colonies were greater than 1 m in height. The majority of colonies at the submersible site were attached to the seafloor and undamaged.

Alternative 4: Alternative 2 plus Alternative 3.

### **Action 3 – Aleutian Island Corals**

Alternative 1: No action (no Aleutian Islands coral HAPCs).

Alternative 2: Designate six coral garden sites within the Aleutian Islands as HAPCs. In 2002 NMFS submersible dives found high density 'gardens' of corals, sponges and other sedentary invertebrates in the central AI.

- 1) Adak Canyon: Large, geologically active submarine canyon on the south end of Adak Strait. Eastern flank of the canyon is rich in corals and other sedentary invertebrates. The area

contains a series of small coral gardens on the island arc slope between the 150 m and 300 m contour bathymetry lines. (Proposals 9, 16, 19)

- 2) Cape Moffett, the Northern portion off Adak Canyon: Area contains series of small coral gardens on the island arc slope between 150-250 m. (Proposals 11, 16, 19)
- 3) Bobrof Island: Area contains series of small coral gardens on the island arc slope between 150-250m. (Proposals 11, 13, 19)
- 4) Semisopchnoi Island: Submarine volcano, Amchixtam Chaxsxii, whose summit is at ~115 m, with an overall height of 580 m. Lava flows extend 14 km downslope to the southeast of the volcano. Strong currents were observed. Coral garden habitat exists on the west side of volcano from the summit to a depth of 365 m. NMFS scientists suspect the entire undersea volcano is likely covered with coral garden habitat. Large *Primnoa* spp. colonies present at 365 m indicate that the submarine volcano may not have erupted within the last several hundred years. (Proposals 11, 12, 13, 18, 19)
- 5) Great Sitkin: Area contains series of small coral gardens on the island arc slope between 300-365 m. (Proposals 16, 19)
- 6) Ulak Island: Area contains series of small coral gardens on the island arc slope between 150-250 m. (Proposals 11, 13, 17, 19)

Alternative 3: Designate Bowers Ridge as an HAPC. North of Petrel Bank in the Aleutian Islands is a unique submerged ridgeline that spans depths from 11m to greater than 3,700 m. This area is designated EFH for several rockfish species. The complex bathymetric features of the ridge provide a physically complex habitat that *likely* supports undisturbed coral gardens. (Proposals 10, 18)

Alternative 4: Designate 9 sites as HAPCs in the Aleutian Islands (South Amliia/Atka, Cape Moffett, Great Sitkin, Adak South, Kanaga Volcano, and Kanaga, Tanaga and Amatignak/Ulak Islands. Trawl skippers with experience and knowledge of the Aleutian Islands selected these sites because they meet the NPFMC priority for high relief hard coral stands likely to be good rockfish habitat. These areas are mostly considered untrawlable grounds with very rocky substrates, numerous snags, and strong tide changes. (Proposals 15, 16, 17)

Alternative 5: Designate the Aleutian Islands Reporting Areas 541-543 as a Special Management Unit. All areas would be closed to bottom trawling except core open area.. (Proposal 14)

#### Action 4 – Other HAPCs

Alternative 1: No action (no other HAPCs).

Alternative 2: Designate two sites in the Bering Sea as HAPCs to protect dense aggregations of soft corals, *Germsemia* spp. (Proposal 22)

Alternative 3: Designate 3 deep water canyons as HAPCs (two in the Bering Sea and one in Prince William Sound). (Proposals 20, 21)

Alternative 4: Designate 54 pinnacles in the Gulf of Alaska as HAPCs. (Proposal 2)

Alternative 5: Designate 82 pinnacles in the Aleutian Islands as HAPCs. **(Proposal 3)**

Alternative 6: Designate the Eight Fathom Pinnacle in the Gulf of Alaska as an HAPC. The site is a near surface pinnacle located 30 miles offshore on Albatross Bank and within 5 miles of the continental slope. The pinnacle rises to 15 m (8 fathoms) from surrounding areas of 46 m (25 fathoms). The pinnacle area has been investigated with a manned submersible. The pinnacle is forested with kelp that provides cover and refugia for large schools of rockfish. No high-relief hard corals were observed. The pinnacle is within current fishing areas. **(Proposal 23)**

**DRAFT**  
**Initial Socioeconomic Effects Assessment of HAPC Proposals**

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## **Executive Summary**

This initial assessment evaluates the potential for each Habitat Area of Particular Concern (HAPC) proposal to create socioeconomic benefits and whether each proposal is likely to have no effect, negligible effect, minimal effect or significant effect on harvest of federally managed species, Aleutian Islands brown and red king crab, scallops, and halibut. This assessment is intended to provide information that will assist the North Pacific Fisheries Management Council (Council) in evaluating HAPC proposals. It is expected that HAPC proposals that are shown, in this initial assessment, to have significant impacts on harvest will receive considerable additional analytical attention once data can be made available. Further, it is expected that HAPC proposals that are included, as alternatives for further consideration, will receive additional analytical treatment in the Regulatory Impact Review/Initial Regulatory Flexibility Analysis (RIR/IRFA) and Environmental Assessment prepared to support the HAPC process.

Given the limitations on quantitatively assessing the socioeconomic benefits associated with HAPC proposals, this evaluation reviewed proposals to identify their potential to create socio-economic benefits such as use, passive use, non-use, and existence value. The term “potential benefits” is used here to reflect the fact that, while benefits may be created by proposed management measures, it is impossible to quantify benefits with currently available information.

Management measures associated with proposed HAPCs are generally intended to provide ecosystem protection from fishing activities and/or promote a greater knowledge of the resources contained within the proposed HAPC. Proposals that define protection measures that would result in closure of areas to fishing offer direct ecosystem protection. In contrast, proposals that define priorities for research, mapping, zoning, or other forms of improved scientific knowledge offer a plan that may result in future ecosystem protections without actually invoking immediate protection. As such, this assessment has evaluated proposed management measures based on whether they provide “binding” measures that provide direct ecosystem protection or “non-binding” measures that do not provide direct ecosystem protection. Proposals that have “binding” measures have the potential to create benefits associated with ecosystem protection as well as effects on fishery harvest. Those that are composed of “non-binding” measures do not have the potential to create benefits associated with ecosystem protection or effects on fishery harvest.

As shown in Figure ES 1, nine of the twenty-three HAPC proposals do not have binding management measures. Thus, these proposals do not have the potential to create socioeconomic benefits nor do they directly affect fishery harvest. Some of these proposals offer the potential for improved scientific knowledge through research, mapping, and zoning and could eventually result in binding management measures. However, for the purposes of this assessment, these proposals do not have the potential to create socioeconomic benefits or costs and their effects are indeterminate.

**Figure ES 1: Proposals with Non-Binding Management Measures**

<b>Proposal</b>
5 ADA/AGDB Sanak Island
6 ADA/AGDB Albatross Rockfish
7 ADA/AGDB Middleton Island
9 AMCC Adak Canyon
15 MCA South Amlia/Atka
16 MCA Adak & Kanaga
17 MCA Tanaga & Amatignak/Ulak
18 MCA Semisopchnoi & Bowers Ridge
21 TOC PWS Deepwater Canyon

In order to provide some information on the level of potential benefits associated with each proposal, this assessment provides information on the extent of the area proposed for protection including surface area (at sea level) as well as a breakdown of that area by bathymetric ranges. Unfortunately, it is not possible with currently available information to evaluate the potential benefits any further. Figure ES 2 provides a breakdown by bathymetric range of the area of protection each proposal offers and identifies the type of protection provided for by the management measures of each proposal.

This initial effects assessment has evaluated each HAPC proposal to determine whether groundfish fisheries, the Aleutian Islands red and brown king crab fisheries, the scallop fishery, or the halibut fishery occur within the proposal area. The assessment has also determined which fisheries, if any, are affected by binding constraints on harvests as a result of management measures associated with each proposal. When binding effects on harvests are proposed, the effect on the target fishery have been evaluated using criteria described below Figure ES 3.

As shown in Figure ES 3, proposals 2, 3, 12, 14, 20, and 21 all have the potential to create “significant” effects on harvest in at least one of the five fisheries. It is important to note that, for the groundfish fisheries, these findings are limited to the observed federal groundfish fisheries. Thus, small catcher vessels are not fully represented in this assessment and additional effects on catcher vessels may be possible.



**Figure ES 2: Bathymetric Comparison of Proposals with Binding Management Measures**

Proposal	Fishing Effect	Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
		0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
1 TOC North Pacific Seamounts	no fishing	4.75 0%	110.48 1%	326.09 3%	382.69 3%	11135.27 87%	821.72 6%	12781.00
2 Oceana GOA Pinnacles & Seamounts	no-fishing/limit bottom trawl	648.84 16%	92.83 2%	23.64 1%	144.79 4%	2718.37 67%	417.73 10%	4046.21
3 Oceana AI Pinnacles & Seamounts	no-fishing/limit bottom trawl	602.30 35%	258.70 15%	106.87 6%	27.23 2%	372.85 22%	342.30 20%	1710.25
4 NMFS Seamounts	no fishing	2.14 0%	67.90 2%	62.79 2%	51.75 1%	3965.81 96%	0.23	4150.62
8 NMFS GOA Primnoa Forest	no fishing	84.64 99%	0.64 1%	0.19 0%				85.47
10 AMCC Bowers Ridge	no bottom trawl	1336.75 3%	5124.83 13%	4605.85 12%	3817.88 10%	24805.70 62%		39691.01
11 TOC AI Coral & Sponge	no fishing	98.20 49%	61.93 31%	21.43 11%	12.93 6%	7.05 3%		201.54
12 TOC AI Marine Reserves	no fishing	3462.90 49%	2289.00 32%	1048.18 15%	250.45 4%	57.73 1%		7108.26
13 Oceana AI Coral Gardens	no bottom contact	88.97 45%	78.24 40%	26.85 14%		2.63 1%		196.69
14 Oceana AI Core Bottom Trawl Area	restrict bottom trawl	1058.34 66%	367.43 23%	162.13 10%	19.39 1%	0.14 0%		1607.42
19 NMFS AI Coral Gardens	no fishing	72.45 55%	41.80 32%	10.24 8%	7.36 6%			131.85
20 TOC Zhemchug & Pribilof Canyons	no fishing	299.04 21%	408.46 29%	305.44 22%	199.54 14%	202.02 14%		1414.49
22 Oceana BS Soft Corals	no-fishing/limit bottom trawl	10486.29 100%						10486.29
23 NMFS 8-fathom Pinnacle	no fishing	16.11 100%						16.11

**Figure ES 3: Summary of Potential Fishery Harvest Effects**

Proposal	Groundfish	Red King Crab	Golden King Crab	Scallops	Halibut
1 TOC North Pacific Seamounts	negligible	none	none	none	negligible
2 Oceana GOA Pinnacles & Seamounts	minimal	none	none	<b>significant*</b>	negligible
3 Oceana AI Pinnacles & Seamounts	<b>significant</b>	minimal	<b>significant</b>	<b>negligible*</b>	negligible
4 NMFS Seamounts	negligible	none	none	none	negligible
5 AAG Sanak Island	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
6 AAG Albatross Rockfish	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
7 AAG Middleton Island	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
8 NMFS GOA Primnoa Forest	negligible	none	none	none	NA
9 AMCC Adak Canyon	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
10 AMCC Bowers Ridge	negligible	NA	NA	none	NA
11 TOC AI Coral & Sponge	minimal	none	negligible	none	negligible
12 TOC AI Marine Reserves	<b>significant</b>	<b>significant</b>	<b>significant</b>	<b>negligible*</b>	negligible
13 Oceana AI Coral Gardens	negligible	none	negligible	none	negligible
14 Oceana AI Core Bottom Trawl Area	<b>significant</b>	NA	NA	<b>confidential</b>	NA
15 MCA South Amlia/Atka	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
16 MCA Adak & Kanaga	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
17 MCA Tanaga & Amatignak/Ulak	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
18 MCA Semisopochnoi & Bowers Ridge	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
19 NMFS AI Coral Gardens	minimal	none	negligible	none	NA
20 TOC Zhemchug & Pribilof Canyons	<b>significant</b>	none	none	none	negligible
21 TOC PWS Deepwater Canyon	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
22 Oceana BS Soft Corals	<b>significant</b>	none	none	<b>significant*</b>	negligible
23 NMFS 8-fathom Pinnacle	negligible	none	none	none	NA

Criteria	
none	no harvest occurring in proposal area
negligible	not more than 1% harvest in HAPC & affected by management measures
minimal	greater than 1% but less than 5% of harvest in HAPC & affected by management measures
Significant	greater than 5% of harvest in HAPC & affected by management measures
NB-IND	Non-binding management, eventual effects are indeterminate.
Scallop *	additional confidential harvest data within the proposal area is not included.

## **Introduction**

This initial assessment will identify the potential for each Habitat Area of Particular Concern proposal to create socioeconomic benefits and whether each proposal is likely to have no effect, negligible effect, minimal effect or significant effect on harvest of federally managed species, Aleutian Islands brown and red king crab, scallops, and halibut. This assessment is intended to provide information that will assist the North Pacific Fisheries Management Council (Council) in evaluating HAPC proposals. It is expected that HAPC proposals that are shown, in this initial assessment, to have significant impacts on harvest will receive considerable additional analytical attention once data can be made available. Further, it is expected that HAPC proposals that are included as alternatives for further consideration will receive additional analytical treatment in the Regulatory Impact Review/Initial Regulatory Flexibility Analysis (RIR/IRFA) and Environmental Assessment prepared to support the HAPC process.

### **Potential Benefits**

Attempts to minimize the adverse effects of fishing on HAPCs is predicated on the idea that such minimization provides ecosystem protection that translates into benefits to society (as a whole) and potentially to the fishing fleets. This assessment will consider the potential for HAPC proposals to create three types of benefits: passive use benefits, use benefits, and productivity benefits.

The term "passive use value" implies that those who hold such values have no expectation of directly "using" this asset, in the normal sense of that term. However, whether referred to as passive-use, non-use, or existence value, the underlying premise is that individuals derive real benefit from the knowledge that relatively unique natural assets remain in a comparatively undisturbed state.

The findings reported in the EFH EIS analysis (See EFH EIS section 4.3.1.3.) indicate that two associated classes of market/consumptive-use values may be identified in connection with measures to minimize the adverse effects of fishing on EFH off Alaska, including "opportunity reservation value" (future consumptive-use value) and "production and yield of FMP and other species" (consumptive-use value).

Opportunity reservation value is a societal value distinct from traditional option value, the latter being an individually held form of future use value. In this instance, the value being defined may be regarded as a collective hedge against irreversible loss of some highly valuable good or service that has not yet been recognized. For example, HAPC protection may preserve a species of plant or animal or an ecological process that, in the future, may prove to have irreplaceable, tangible value to the world's population.

In this assessment, consumptive use value, or "production and yield value" is the economic benefit associated with the potential for improved ecosystem function with regard to the production, and thereby, the commercial fishing yields of FMP species.

This can come about through protection of a wide range of habitat that improves ecosystem processes related to reproduction and/or growth to maturity of FMP species.

### **Benefits Evaluation Methodology**

It is generally accepted that the types of benefits described above do have the potential to be realized through habitat protection. The difficulty is that, while a wide range of habitat is important for reproduction and growth to maturity of FMP species, the actual linkage between habitat protection and production and yield improvement is extremely complex and not presently defined in a quantitative way. Thus, it is not possible to quantitatively measure productivity and yield benefits that may occur if a certain amount (area) and type of habitat is protected from fishing impacts. Similarly, there is no available measure for passive use value or opportunity reservation value that may be directly applied to evaluate such benefits of proposed HAPCs. Simply put, these benefits exist but are impossible to quantify with currently available information.

Given the limitations on quantitatively assessing the socioeconomic benefits associated with HAPC proposals, this evaluation will review proposals to identify their potential to create the types of socio-economic benefits described above. The term “potential benefits” is used here to reflect the fact that, while benefits may be created by proposed management measures, it is impossible to quantify benefits with currently available information. Thus, what is being evaluated is the potential for the proposed HAPC and associated management measures to create socioeconomic benefits.

Management measures associated with proposed HAPCs are generally intended to provide ecosystem protection from fishing activities and/or promote a greater knowledge of the resources contained within the proposed HAPC. Proposals that define protection measures that would result in closure of areas to fishing offer direct ecosystem protection. In contrast, proposals that define priorities for research, mapping, zoning, or other forms of improved scientific knowledge offer a plan that may result in future ecosystem protections without actually invoking immediate protection. As such, this assessment will evaluate proposed management measures based on whether they provide “binding” measures that provide direct ecosystem protection or “non-binding” measures that do not provide direct ecosystem protection.

Proposals that have “binding” measures have the potential to create benefits associated with ecosystem protection and those composed of “non-binding” measures do not have the potential to create benefits associated with ecosystem protection. In order to provide some information on the level of potential benefits associated with each proposal, this assessment will provide information on the extent of the area proposed for protection including surface area (at sea level) as well as a breakdown of that area by bathymetric ranges.

## **Potential Harvest Impacts**

The following effects assessment will identify whether a proposed HAPC area has the potential to have effects on the groundfish fisheries or on Aleutian Islands red and brown king crab fisheries, the scallop fishery, or the halibut fishery. This will be done by determining whether these fisheries occur within the area identified in the proposal and then by determining whether the proposed management measures will have binding or non-binding effects on harvests within these target fisheries. When binding effects on harvests are proposed, the effect on the target fishery will be evaluated using the following range of effects:

**None:** No harvest has been observed or reported in the HAPC area.

**Negligible:** Harvest has occurred in the proposed HAPC area, however, no affected target fishery has been observed or reported to have had harvests within the HAPC area of more than 1% of the total harvest for that target fishery.

**Minimal:** Harvest has occurred in the proposed HAPC area, however, no affected target fishery has been observed or reported to have had harvest within the HAPC areas of more than 5% of the total harvest occurring within the target fishery.

**Significant:** Harvest has occurred in the proposed HAPC area, and at least one target fishery has been observed or reported to have had harvest within the HAPC area of more than 5% of the total harvest occurring within the HAPC area. Significance, as used here, implies the need for further analysis of the impacts of harvest on specific vessel and gear classes.

## **Data Used in this Assessment**

### *Groundfish*

Groundfish Observer data was gathered for the years 1998 through 2002 from the North Pacific groundfish observer program database (NORPAC). Each haul or set for those years was assigned a target fishery, similar to the algorithm used by NMFS Alaska Region. Each haul, or set, included an overall observed catch recorded in metric tons, a latitude and longitude of gear retrieval, year, duration, and a calculation of effort. The observed catch was extrapolated to overall catch based on a methodology that Craig Rose used in the analysis for the EFH EIS, which accounts for target sectors observed coverage.

The observer data was brought into a GIS environment using ArcGIS 8.3. Additional polygon coverage representing HAPC proposal areas were added in the GIS project. Each target fishery that intersected the HAPC proposals was summarized for catch inside and

outside of each HAPC proposals. The result is a five-year total of all observed harvest, retained and discarded, inclusive of the target species and all incidentally caught species summarized by target fishery. The total observed harvest for the target fishery is then compared to the amount of total observed harvest caught within the HAPC proposal area by calculating the percentage of total observed harvest that occurred within the HAPC proposal area during those five years. The percentage within the HAPC area will be used here to assess the potential impact on harvest.

### *King Crab*

Point data (legal males retained) was obtained from ADFG for Petrel Bank red king crab (RKC) for 2002 and for the Aleutian Island gold king crab (GKC) for 1998-2002. Data was only available for a single year in the Petrel Bank fishery because that fishery began in 2002. The point data was queried to select points that intersected HAPC proposal sites. Those selected points were joined with HAPC areas and the sum of legal males retained per HAPC area was calculated. A table was then created to provide the total of legal males retained in the fishery, the sum of legal males retained within each site and the percentage of total harvest each HAPC site represented. The percentage within the HAPC area will be used here to assess the potential impact on harvest.

### *Scallops*

Scallop data for all state statistical areas (SSAs) that overlap HAPC proposal sites were obtained from ADFG for 1998-2002. The data is only provided as pounds of shucked meats retained within the entire SSA. Since harvest point data is not available, it is not possible to calculate the exact amount of scallop harvest that occurred within each proposed HAPC. As a proxy, the entire scallop harvest within the SSA overlapping each HAPC proposal is used to identify the potential for impacts to scallop harvest. The percentage of total harvest within SSAs overlapping HAPC areas was calculated from overall statewide harvest numbers obtained from ADFG web page and these percentages will be used to assess the potential impact of each HAPC proposal on scallop harvest.

### *Halibut*

Halibut catch data was obtained from the International Pacific Halibut Commission (IPHC) for the 1998-2001 seasons. The data was queried to extract landings records occurring in State of Alaska statistical areas in which HAPC proposals define areas for management measures (closures etc.). The percentage of each state statistical area (SSA) contained within the HAPC proposal area was calculated for each SSA in each proposal. These percentages were then multiplied by the landed pounds occurring in the SSA over the period 1998-2001 to calculate a proportional landed pounds within the HAPC proposal area intersection with the SSA. Proportional landed pounds were then summed for the HAPC proposal, as were total landed pounds for the entire SSA. The ratio of the two represents the harvest that occurred within proposed closure areas as a percent of the total harvest that occurred in the SSAs and will be used to determine whether HAPC proposals are likely to have significant effects on halibut harvest.

## **Limitations Of This Assessment**

This assessment represents an initial review of HAPC proposals. Due to the large number of proposals, the breadth of geographic coverage of the proposals, and the complexity of evaluative data, this assessment has sought to determine whether proposals have the potential to create benefits and/or effects on harvest in Federally managed fisheries. This assessment has not determined actual effects nor has it determined which sectors of the fishing industry may be affected by HAPC proposal management measures. This limitation is primary due to limited availability of data and due to the need to break the data down to the individual sector level.

## Proposal Evaluations

### PROPOSAL 1: TOC North Pacific Seamounts Marine Reserves

As shown in Figure 1, this proposal provides a total of 12,781 square nautical miles of protected area. The Ocean Conservancy proposes that the 23 named seamounts within the Exclusive Economic Zone be designated and managed as no-take marine reserves. In addition to the designation of individual seamounts as no-take marine reserves, five larger marine protected areas (MPAs) are proposed. Within the MPA boundaries but outside of the proposed marine reserves, future fishing would be allowed with experimental fishing permits and a minimum of 100 percent observer coverage. Thus, management measures associated with this proposal are binding closures, and this proposal does have the potential to create socioeconomic benefits as well as impacts on harvests.

**Figure 1: Proposal 1: TOC North Pacific Seamounts Marine Reserves Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	>5001-8000	
Adams Seamount					254.50	456.08	710.58
Atka Seamount					39.40	256.16	295.57
Bowers Seamount				4.69	701.75		706.44
Brown Seamount					289.34		289.34
Chirikof Seamount					522.99		522.99
Denson Seamount		4.69	89.75	61.16	751.23		906.84
Derickson Seamount					139.44	58.82	198.26
Dickins Seamount		4.58	41.49	82.17	688.99		817.23
Giacomini_Quinn Seamnt		35.61	51.24	55.76	1456.69		1599.30
Hecht Seamount					54.06		54.06
Kodiak Seamount					784.93	50.66	835.59
Marchand Seamount				1.28	709.43		710.71
Patton_Odessey Seamnt	4.75	53.27	67.86	66.57	1191.76		1384.21
Putnam Seamount					668.13		668.13
Sirius Seamount					833.68		833.68
Smook Seamount					707.59		707.59
Unimak Seamount			16.00	48.42	687.20	0.00	751.62
Welker Seamount		12.33	59.76	62.64	654.14		788.86
<b>Total</b>	<b>4.75</b>	<b>110.48</b>	<b>326.09</b>	<b>382.69</b>	<b>11135.27</b>	<b>821.72</b>	<b>12781.00</b>
<b>Percent of total</b>	<b>0%</b>	<b>1%</b>	<b>3%</b>	<b>3%</b>	<b>87%</b>	<b>6%</b>	<b>100%</b>

A review of groundfish data, as shown in Figure 2, found that only 0.01% of the harvest in the Gulf of Alaska Rockfish Pelagic Trawl fishery occurred within the proposed closure area. In addition, effects on halibut harvest are likely negligible. No other observed fisheries were found to have harvest within the proposed closure area. Thus, this proposal would likely have negligible effect on groundfish and halibut harvests and no effect on other fisheries.



**Figure 2: Fisheries Occurring In The Area of Proposal 1.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Rockfish Pelagic Trawl	0.01%
Crab	None
Scallops	None
Halibut	0.03%

**PROPOSAL 2: Oceana GOA Pinnacles and Seamounts**

As shown in Figure 3, this proposal would affect just over 4,046 square nautical miles of ocean area with management measures for pinnacles of no bottom trawling and limitation of other commercial bottom contact. The proposed management measure for seamounts is a moratorium on commercial fishing. Thus, this proposal has binding management measures and the potential to create socioeconomic benefits as well as impacts on harvests.

**Figure 3: Proposal 2: Oceana GOA Pinnacles & Seamounts Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Adams Seamount					2.74		2.74
Atka Seamount						417.73	417.73
Chirikof Seamount					187.72		187.72
Dall Seamount					970.42		970.42
Denson Seamount				34.69	51.89		86.58
Derickson Seamount					730.21		730.21
Dickins Seamount		31.09	9.38				40.47
Ely Seamount					3.14		3.14
Giacomini Seamount		1.32	4.45	0.00			5.78
GOA Pinnacles	648.84	18.88					667.73
Hecht Seamount					611.16		611.16
Kodiak Seamount					32.76		32.76
Odessey Seamount					44.96		44.96
Patton Seamount				15.88			15.88
Putnam Seamount					40.68		40.68
Quinn Seamount			9.81	6.72			16.53
Sirius Seamount					42.69		42.69
Unimak Seamount				87.51			87.51
Welker Seamount		41.53					41.53
<b>Total</b>	<b>648.84</b>	<b>92.83</b>	<b>23.64</b>	<b>144.79</b>	<b>2718.37</b>	<b>417.73</b>	<b>4046.21</b>
<b>Percent of Total</b>	<b>16%</b>	<b>2%</b>	<b>1%</b>	<b>4%</b>	<b>67%</b>	<b>10%</b>	<b>100%</b>

A review of groundfish data, as shown in Figure 4, found that harvest from several groundfish target fisheries occurs within the proposed closure area. However, none had more than minimal harvest within the affected area. Similarly, the effect of this proposal on halibut harvest in these areas is likely negligible. In contrast, the scallop fishery had significant harvest (over 23%) within the affected area. No other observed fisheries were

found to have harvest within the proposed closure area. Thus, this proposal would likely have negligible effect on groundfish and halibut harvests, significant effects on scallop harvests, and no effect on other fisheries.

**Figure 4: Fisheries Occurring In The Area of Proposal 2.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Deepwater Flatfish Trawl	0.16%
Gulf of Alaska Pacific Cod H&L	1.82%
Gulf of Alaska Pacific Cod Pot	0.05%
Gulf of Alaska Pacific Cod Trawl	0.09%
Gulf of Alaska Pollock Pelagic Trawl	0.37%
Gulf of Alaska Pollock Trawl	0.34%
Gulf of Alaska Rockfish Pelagic Trawl	0.02%
Gulf of Alaska Rockfish Trawl	1.09%
Gulf of Alaska Shallow water Flatfish Trawl	0.03%
Gulf of Alaska Sablefish Greenland Turbot H&L	0.38%
Crab	none
Scallops	23.08 %
	0.44%
Halibut	

### PROPSOAL 3: Oceana AI Pinnacles and Seamounts

As shown in Figure 5, this proposal would affect approximately 1,710 square nautical miles of ocean area with management measures for pinnacles of no bottom trawling and limitation of other commercial bottom contact. The proposed management measure for seamounts is a moratorium on commercial fishing. Thus, this proposal has binding management measures and the potential to create socioeconomic benefits and impacts on harvests.

**Figure 5: Proposal 3: Oceana AI Pinnacles & Seamounts Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
AI Pinnacles	602.30	258.70	106.87	27.23	7.66		1002.76
Thurmond Knoll					365.19	342.30	707.49
<b>Total</b>	<b>602.30</b>	<b>258.70</b>	<b>106.87</b>	<b>27.23</b>	<b>372.85</b>	<b>342.30</b>	<b>1710.25</b>
<b>Percent of Total</b>	<b>35%</b>	<b>15%</b>	<b>6%</b>	<b>2%</b>	<b>22%</b>	<b>20%</b>	<b>100%</b>

A review of fisheries data, as shown in

Figure 6, found that harvest from several groundfish target fisheries, as well as crab, scallops, and halibut occurs within the proposed closure area. Of these, effect on harvest of groundfish and brown king crab appear significant, red king crab harvests appear to be minimally affected, and halibut and scallops are negligibly affected by this proposal. However, some scallop harvest data from within the proposal area is confidential.

**Figure 6: Fisheries Occurring In The Area of Proposal 3.**

Target Fishery	% of fishery in area
Aleutian Islands + areas 518-519 Pacific Cod H&L	4.39%
Aleutian Islands + areas 518-519 Pacific Cod Pot	1.84%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.62%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	2.46%
Aleutian Islands + areas 518-519 Pollock Trawl	3.46%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	2.15%
Aleutian Islands + areas 518-519 Rockfish Trawl	16.93%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot POT	3.40%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot Trawl	5.63%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	2.91%
Gulf of Alaska Pacific Cod H&L	0.20%
Gulf of Alaska Pacific Cod Pot	0.06%
Gulf of Alaska Sablefish Greenland Turbot H&L	0.00%
Red King Crab	2.30%
Brown King Crab	6.88%
Scallops	0.14%
Halibut	0.26%

**PROPOSAL 4: NMFS Seamounts**

As shown in Figure 7, this proposal would affect approximately 4,150 square nautical miles of ocean area. Management Measures would prohibit all Council-managed fishing within the proposed HAPC's. Other potential management options might include requiring VMS on all vessels, or prohibiting vessels from carrying bottom contact gear in these areas. Thus, this proposal has binding management measures and has the potential to create socioeconomic benefits as well as impacts on harvests.

**Figure 7: Proposal 4: NMFS Seamounts Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Brown Seamount					587.92		587.92
Dall Seamount					688.00		688.00
Giacomini Seamount		22.24	13.78	19.70	105.48		161.20
Marchand_Chirikof Seamnt				2.26	2245.28	0.23	2247.77
NMFS Bowers Seamount					28.86		28.86
Odessey Seamount				4.70	163.20		167.90
Patton Seamount	2.14	34.50	26.62	2.89	15.38		81.54
Quinn Seamount		11.16	22.38	22.20	131.69		187.43
<b>Total</b>	<b>2.14</b>	<b>67.90</b>	<b>62.79</b>	<b>51.75</b>	<b>3965.81</b>	<b>0.23</b>	<b>4150.62</b>
<b>Percent of Total</b>	<b>0%</b>	<b>2%</b>	<b>2%</b>	<b>1%</b>	<b>96%</b>	<b>0%</b>	<b>100%</b>

A review of fisheries data, as shown in Figure 16, found that negligible harvest in two groundfish target fisheries, and the halibut fishery occurs within the proposed closure area. No other fisheries appear to occur within the proposal area.

**Figure 8: Fisheries Occurring In The Area of Proposal 4.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Pacific Cod Pot	0.00%
Gulf of Alaska Rockfish Pelagic Trawl	0.01%
Crab	None
Scallops	None
Halibut	0.01%

### PROPOSAL 5: ADA/AGDB Sanak Island

As shown in Figure 9, this proposal would affect approximately 278 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures are presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

Figure 9: Proposal 5: ADA/ADGB Sanak Island Bathymetry

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Sanak Island	193.89	77.86	6.71			278.46
Percent of Total	70%	28%	2%			100%

A review of fisheries data, as shown in Figure 10, found that harvest from several groundfish target fisheries, as well as, scallops, and halibut occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may have on harvests is indeterminate.

Figure 10: Fisheries Occurring In The Area of Proposal 5.

Target Fishery	% Of Fishery In Area
Gulf of Alaska Deepwater Flatfish Trawl	0.22%
Gulf of Alaska Pacific Cod H&L	2.15%
Gulf of Alaska Pacific Cod Pot	0.05%
Gulf of Alaska Pacific Cod Trawl	0.01%
Gulf of Alaska Pollock Pelagic Trawl	0.04%
Gulf of Alaska Rockfish Trawl	0.52%
Gulf of Alaska Sablefish Greenland Turbot H&L	2.79%
Scallops	Confidential
Crab	None
Halibut	0.31%

### PROPOSAL 6: ADA/AGDB Albatross Rockfish

As shown in Figure 11 below, this proposal would affect approximately 122 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures are presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

**Figure 11: Proposal 6: ADA/AGDB Albatross Rockfish Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total	
	5001-8000	2001-5000	1501-2000	1001-1500	501-1000		0-500
Albatross Bank		7.12	28.61	32.61	44.49	9.60	122.43
Percent of Total		6%	23%	27%	36%	8%	100%

A review of fisheries data, as shown in Figure 12, found that harvest from several groundfish target fisheries, and from the halibut fishery occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may have on harvests is indeterminate.

**Figure 12: Fisheries Occurring In The Area of Proposal 6.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Deepwater Flatfish Trawl	0.05%
Gulf of Alaska Pacific Cod Trawl	0.01%
Gulf of Alaska Rockfish Trawl	0.01%
Gulf of Alaska Sablefish Greenland Turbot H&L	1.35%
Crab	None
Scallops	None
	0.26%
Halibut	

**PROPOSAL 7: ADA/AGDB Middleton Island**

As shown in Figure 13, this proposal affects approximately 85 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and

use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures are presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

**Figure 13: Proposal 7: ADA/AGDB Middleton Island Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Middleton Island	28.00	43.20	4.16	5.16	4.19		84.71
<b>Percent of Total</b>	<b>33%</b>	<b>51%</b>	<b>5%</b>	<b>6%</b>	<b>5%</b>		<b>100%</b>

A review of fisheries data, as shown in Figure 14, found that harvest from several groundfish target fisheries, and from the halibut fishery occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may have on harvests is indeterminate.

**Figure 14: Fisheries Occurring In The Area of Proposal 7.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Deepwater Flatfish Trawl	0.25%
Gulf of Alaska Pollock Pelagic Trawl	0.17%
Gulf of Alaska Sablefish Greenland Turbot H&L	1.49%
Crab	None
Scallops	None
Halibut	0.12%

### **PROPOSAL 8: NMFS GOA Primnoa forest**

As shown in Figure 15, this proposal would affect approximately 85 square nautical miles of ocean area. Management Measures would prohibit all Council-managed fishing, except for near-surface salmon trolling, within the proposed HAPC's. Other potential management options might include requiring VMS on all vessels, or prohibiting vessels from carrying bottom contact gear in these areas. Thus, this proposal has binding management measures and has the potential to create socioeconomic benefits as well as impacts on harvests.

**Figure 15: Proposal 8: NMFS GOA Primnoa Forest Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Cape Ommaney	4.07						4.07
Dixon Entrance	45.51						45.51
Fairweather Ground	35.05	0.64	0.19				35.88
<b>Total</b>	<b>84.64</b>	<b>0.64</b>	<b>0.19</b>				<b>85.47</b>
<b>Percent of Total</b>	<b>99%</b>	<b>1%</b>	<b>0%</b>				<b>100%</b>

A review of fisheries data, as shown in Figure 16, found that negligible harvest in two groundfish target fisheries, and the halibut fishery occurs within the proposed closure

area. Note that halibut is not Council managed. No other fisheries appear to occur within the proposal area.

**Figure 16: Fisheries Occurring In The Area of Proposal 8.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Sablefish Greenland Turbot H&L	0.04%
Crab	None
Scallops	None
Halibut	0.04%

**PROPOSAL 9: AMCC Adak Canyon**

As shown in Figure 17, this proposal affects approximately 132 square nautical miles of ocean area. This proposal calls for cooperative research that would allow baseline levels of commercial harvest while increasing biologic, physical, and fishery data. Based on the results of cooperative research efforts, adaptive management measures could be applied to ensure that the objectives of the proposed HAPC are met while allowing for some levels of commercial harvest in the area. Thus, the proposal does not impose binding closures on current fishing effort. Harvests would presumably be unchanged by these actions; however, additional harvest may be precluded. These measures do not change the existing level of ecosystem benefits associated with the area as the focus of these management measures is research not habitat protection. Thus, this proposal has non-binding management measures that do not create the potential for increased socioeconomic benefits and would not have direct effects on harvest at present.

**Figure 17 Proposal 9: AMCC Adak Canyon Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Adak Canyon	32.92	15.68	30.09	24.17	29.50		132.36
<b>Percent of Total</b>	<b>25%</b>	<b>12%</b>	<b>23%</b>	<b>18%</b>	<b>22%</b>		<b>100%</b>

A review of fisheries data, as shown in Figure 18, found that harvest from two groundfish target fisheries, the crab fisheries, and the halibut fishery occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may eventually have on harvests is indeterminate.

**Figure 18: Fisheries Occurring In The Area of Proposal 9.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.19%
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot H&L	1.23%
Crab	0.05%
Scallops	None
Halibut	0.02%



## PROPOSAL 10: AMCC Bowers Ridge

As shown in Figure 19, this proposal would affect approximately 39,691 square nautical miles of ocean area. The proposed management measure is no bottom trawling in order to provide for the lasting conservation of undisturbed cold-water corals and rockfish habitat located in the bowers ridge area. This management measure is binding on harvests in target fisheries that utilize bottom trawl gear. Thus, this proposal has the potential to create socioeconomic benefits as well as impacts on harvests in bottom trawl fisheries in the proposal area.

**Figure 19: Proposal 10: AMCC Bowers Ridge Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Bowers Site A	668.37	2561.83	2249.46	1921.46	14908.78		22309.91
Bowers Site B	668.37	2563.00	2356.39	1896.42	9896.92		17381.09
<b>Total</b>	<b>1336.75</b>	<b>5124.83</b>	<b>4605.85</b>	<b>3817.88</b>	<b>24805.70</b>		<b>39691.01</b>
<b>Percent of Total</b>	<b>3%</b>	<b>13%</b>	<b>12%</b>	<b>10%</b>	<b>62%</b>		<b>100%</b>

A review of fisheries data, as shown in Figure 20, found that harvest from several groundfish target fisheries, of crab, and of halibut occurs within the proposed closure area. The proposed management measures are limited to no bottom trawling. Thus, the groundfish harvest effects of this proposal appear to be negligible and no effects on harvest in other fisheries appear likely.

**Figure 20: Fisheries Occurring In The Area of Proposal 10.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.01%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.00%
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot H&L	4.61%
Aleutian Islands + areas 518-519 Rockfish Trawl	0.14%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	0.03%
Brown King Crab	0.19%
Scallops	None
Halibut	0.07%

## PROPOSAL 11: TOC AI Coral and Sponge

As shown in Figure 21, this proposal would affect over 201 square nautical miles of ocean area. The Ocean Conservancy proposes that these areas be designated as marine reserves, and that all extractive activities be banned. Exceptions for research and traditional subsistence activities are applicable. Thus, this proposal has binding management measures that create the potential for increased socioeconomic benefits as well as impacts on harvests.

**Figure 21: Proposal 11: TOC AI Coral & Sponge Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Bobrof Is.	47.75	13.51	2.34	7.54	0.87	72.02
Cape Moffett	19.37	16.22		1.98	6.18	43.75
Semisopochnoi Is.	7.84	27.03	16.56			51.43
Ulak Is.	23.25	5.16	2.52	3.41		34.35
<b>Total</b>	<b>98.20</b>	<b>61.93</b>	<b>21.43</b>	<b>12.93</b>	<b>7.05</b>	<b>201.54</b>
<b>Percent of total</b>	<b>49%</b>	<b>31%</b>	<b>11%</b>	<b>6%</b>	<b>3%</b>	<b>100%</b>

A review of fisheries data, as shown in Figure 22, found that harvest from several groundfish target fisheries, as well as the crab and halibut fisheries occurs within the proposed closure area. Of these, groundfish harvest effects appear minimal, while crab and halibut effects appear to be negligible.

**Figure 22: Fisheries Occurring In The Area of Proposal 11.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.07%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.21%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	2.40%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.55%
Aleutian Islands + areas 518-519 Sablefish & Grnld Turbot H&L	2.28%
Brown King Crab	0.16%
Scallops	None
Halibut	0.11%

**PROPOSAL 12: TOC AI Marine Reserve**

As shown in Figure 23, this proposal would affect approximately 7,108 square nautical miles of ocean area. The Ocean Conservancy proposes that these areas be designated as marine reserves, and that all extractive activities be banned. Exceptions for research and traditional subsistence activities are applicable. Thus, this proposal has binding management measures that create the potential for increased socioeconomic benefits as well as impacts on harvests.

**Figure 23: Proposal 12: TOC AI Marine Reserves Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Attu Is.	646.12	540.00	386.03	201.66	56.24	1830.05
Seguam Pass	1030.26	686.16	228.84	2.84		1948.10
Semisopochnoi Island	1399.06	726.44	324.02	39.41	1.49	2490.43
Umnak Island	387.45	336.40	109.29	6.55		839.69
<b>Total</b>	<b>3462.90</b>	<b>2289.00</b>	<b>1048.18</b>	<b>250.45</b>	<b>57.73</b>	<b>7108.26</b>
<b>Percent of total</b>	<b>49%</b>	<b>32%</b>	<b>15%</b>	<b>4%</b>	<b>1%</b>	<b>100%</b>

A review of fisheries data, as shown in Figure 24, found that harvest from several groundfish target fisheries, as well as harvest of crab, scallops, and halibut occurs within

the proposed closure area. Of these, groundfish and crab harvest effects appear to be significant. Scallop harvest effects appear to be negligible, however, some scallop harvest data within the proposal area is confidential. In addition, halibut harvest effects appear to be minimal.

**Figure 24: Fisheries Occurring In The Area of Proposal 12.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	15.53%
Aleutian Islands + areas 518-519 Pacific Cod Pot	8.09%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	6.92%
Aleutian Islands + areas 518-519 Pollock Trawl	0.04%
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot H&L	15.28%
Aleutian Islands + areas 518-519 Rockfish Trawl	15.07%
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot POT	42.72%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	10.36%
Red King Crab	80.46%
Brown King Crab	16.06%
Scallops	0.55%
Halibut	1.16%

**PROPOSAL 13: Oceana AI corals/gardens**

As shown in Figure 25, this proposal would affect approximately 197 square nautical miles of ocean area. Oceana proposes that the entire Aleutian Islands region be designated as a Special Management Area with categories of HAPC and respective management approaches. Management measures for coral gardens should prohibit all commercial bottom contact. This protection should also be applied to any coral garden discovered in the future. Thus, this proposal has binding management measures that create the potential for increased socioeconomic benefits as well as impacts on harvests.

**Figure 25: Proposal 13: Oceana AI Coral Gardens Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Bobrof Is.	16.66	13.79	4.41			34.86
Cape Moffett	17.81	8.65			2.63	29.08
Semisopochnoi Is.	40.58	19.65				60.22
Ulak Is.	13.93	36.15	22.44			72.52
<b>Total</b>	<b>88.97</b>	<b>78.24</b>	<b>26.85</b>		<b>2.63</b>	<b>196.69</b>
<b>Percent of total</b>	<b>45%</b>	<b>40%</b>	<b>14%</b>		<b>1%</b>	<b>100%</b>

A review of fisheries data, as shown in

Figure 26, found that harvest from several groundfish target fisheries, as well as harvest of crab and halibut occurs within the proposed closure area. However, none of these effects appear to be more than negligible.

**Figure 26: Fisheries Occurring In The Area of Proposal 13.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.00
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.01
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.00
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot H&L	0.01
Brown King Crab	0.02%
Scallops	None
Halibut	0.03%

**PROPOSAL 14: Oceana AI Core bottom trawl area**

As shown in Figure 27, this proposal would affect approximately 1,607 square nautical miles of ocean area. Management measures would permit bottom trawling in the Core Bottom Trawling Open Permit Area unless data and other information indicate HAPC destruction, and would be prohibited outside of core area. This proposal would place a binding constraint on bottom trawl fishing effort to a core area that does not encompass the entire area historically fished. Thus, this proposal has the potential to create impacts on harvests. Similarly, this proposal would constrain bottom trawl fishing effort thereby creating the potential to increase socioeconomic benefits through the potential for habitat preservation.

**Figure 27: Proposal 14: Oceana AI Core Bottom Trawl Area Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Open Trawl	1058.34	367.43	162.13	19.39	0.14		1607.42
Percent of total	66%	23%	10%	1%	0%		100%

A review of fisheries data, as shown in

Figure 28, found that harvest from several groundfish target fisheries, as well as harvest of crab, scallops, and halibut occurs within the proposed closure area. For this proposal, a significant effect would be expected if any bottom trawl fishery did not have over 95% of total harvest within the proposal area. As is apparent in

Figure 28, several bottom trawl fisheries occur within the area but do not come close to having 95% of overall harvest within the core area. Thus, this proposal appears to have significant harvest effects on groundfish. Scallop harvest would also be affected. However, scallop data in this area is confidential. Since this proposal is restricted to bottom trawl activities, crab and halibut would not be affected.

**Figure 28: Fisheries Occurring In The Area of Proposal 14.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	10.68%
Aleutian Islands + areas 518-519 Pacific Cod Pot	1.50%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	48.91%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	4.95%
Aleutian Islands + areas 518-519 Pollock Trawl	20.71%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	6.53%
Aleutian Islands + areas 518-519 Rockfish Trawl	33.18%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot POT	5.94%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot Trawl	10.26%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	80.73%
Red King Crab	3.38%
Brown King Crab	6.42%
Scallops	Confidential
Halibut	0.31%

**PROPOSAL 15: MCA South Amlia/Atka**

As shown in Figure 29, this proposal would affect approximately 177 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures are presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

**Figure 29: Proposal 15: MCA South Amlia/Atka Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
South Amlia/Atka	41.04	103.08	30.92	2.06		177.09
Percent of total	23%	58%	17%	1%		100%

A review of fisheries data, as shown in

Figure 30, found that harvest from several groundfish target fisheries, as well as harvest of crab and halibut occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may eventually have on harvests is indeterminate.

**Figure 30: Fisheries Occurring In The Area of Proposal 15.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.06%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.01%
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot H&L	1.75%
Aleutian Islands + areas 518-519 Rockfish Trawl	0.03%
Aleutian Islands + areas 518-519 Sablefish & GrnInd Turbot POT	0.58%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	0.01%
Brown king Crab	0.01%
Scallops	None
Halibut	0.05%

**PROPOSAL 16: MCA Adak and Kanaga**

As shown in, this proposal would affect approximately 207 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures are presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

**Figure 31: Proposal 16: MCA Adak & Kanaga Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Adak South	45.26	6.06	5.54	0.60	0.11	57.57
Cape Moffett			33.47			33.47
Great Sitkin Is.	10.40	4.54	14.32	5.69	0.16	35.11
Kanaga Is.	52.15	0.01				52.16
Kanaga Volcano	7.96	7.91	4.93	7.66	0.03	28.49
<b>Total</b>	<b>115.77</b>	<b>18.52</b>	<b>58.26</b>	<b>13.95</b>	<b>0.30</b>	<b>206.80</b>
<b>Percent of total</b>	<b>56%</b>	<b>9%</b>	<b>28%</b>	<b>7%</b>	<b>0%</b>	<b>100%</b>

A review of fisheries data, as shown in

Figure 32, found that harvest from several groundfish target fisheries, a well as harvest of crab and halibut occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may eventually have on harvests is indeterminate.



**Figure 32: Fisheries Occurring In The Area of Proposal 16.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	2.11%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.64%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.37%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.02%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	1.24%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	0.00%
Brown King Crab	0.97%
Scallops	None
Halibut	0.08%

**PROPOSAL 17: MCA Amatignak/Alak**

As shown in Figure 33, this proposal would affect approximately 324 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures are presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

**Figure 33: Proposal 17: MCA Tanaga & Amatignak/Ulak Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-8000	
Amatignak/Ulak Islands	147.76	96.33	42.34	16.02		302.45
Tanaga Island	21.24					21.24
<b>Total</b>	<b>169.00</b>	<b>96.33</b>	<b>42.34</b>	<b>16.02</b>		<b>323.69</b>
<b>Percent of total</b>	<b>52%</b>	<b>30%</b>	<b>13%</b>	<b>5%</b>		<b>100%</b>

A review of fisheries data, as shown in

Figure 34, found that harvest from several groundfish target fisheries, as well as harvest of crab and halibut occurs within the proposed closure area. However, the proposed

management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may eventually have on harvests is indeterminate.

**Figure 34: Fisheries Occurring In The Area of Proposal 17.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.09%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.07%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.03%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	1.10%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	0.39%
Brown King Crab	1.43%
Scallops	None
Halibut	0.04%

**PROPOSAL 18: MCA Semisopchnoi**

As shown in Figure 35, this proposal would affect approximately 978 square nautical miles of ocean area. However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restrictions on bottom trawling to protect high-relief hard coral and rockfish areas within these proposed sites while preserving fishing opportunities to the extent practical. In addition, the proposal calls for development of controlled research to learn more about how rockfish and other managed demersal species associate with and use habitat, how fishing affects that use and productivity, how different levels of fishing intensity and gear effects influence productivity of habitats. Thus, the proposed management measures presently undefined, and are non-binding. Therefore, this proposal does not have the potential to create socioeconomic benefits or direct impacts on harvests.

**Figure 35: Proposal 18: MCA Semisopchnoi & Bowers Ridge Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Bowers Ridge	339.24	190.41	46.79			576.44
Semisopchnoi Is.	326.74	53.00	13.94	7.86		401.54
<b>Total</b>	<b>665.98</b>	<b>243.41</b>	<b>60.73</b>	<b>7.86</b>		<b>977.98</b>
<b>Percent of total</b>	<b>68%</b>	<b>25%</b>	<b>6%</b>	<b>1%</b>		<b>100%</b>

A review of fisheries data, as shown in

Figure 36, found that harvest from several groundfish target fisheries, of crab, and of halibut occurs within the proposed closure area. However, the proposed management measures are presently non-binding and eventual measures are undefined. Thus, the effect this proposal may eventually have on harvests is indeterminate.

**Figure 36: Fisheries Occurring In The Area of Proposal 18.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.03%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.00%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.01%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	0.63%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	0.03%
Red King Crab	13.30%
Brown King Crab	1.70%
Scallops	None
Halibut	0.06%

**PROPOSAL 19: NMFS AI Coral gardens**

As shown in Figure 37, this proposal would affect approximately 132 square nautical miles of ocean area. All Council-managed fishing would be prohibited within the proposed HAPCs. Thus, this proposal may create potential benefits as well as potential impacts on harvests.

**Figure 37: Proposal 19: NMFS AI Coral Gardens Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
Bobrof Island	22.33	8.89	1.07				32.28
Cape Moffett	17.23	9.57		3.93			30.73
Great Sitkin Island	2.80	2.06	4.73	3.43			13.02
Semisopochnoi Island	27.95	12.50					40.45
Ulak Island	2.14	8.78	4.45				15.37
<b>Total</b>	<b>72.45</b>	<b>41.80</b>	<b>10.24</b>	<b>7.36</b>			<b>131.85</b>
<b>Percent of total</b>	<b>55%</b>	<b>32%</b>	<b>8%</b>	<b>6%</b>			<b>100%</b>

A review of fisheries data, as shown in Figure 38, found that groundfish, crab, and halibut harvests occurred within the proposal area. Of these fisheries, effects on groundfish harvests are likely minimal and halibut are not council managed. No other fisheries appear to occur within the proposal area.

**Figure 38: Fisheries Occurring In The Area of Proposal 19.**

Target Fishery	% Of Fishery In Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.13%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.05%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	1.44%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.03%
Aleutian Islands + areas 518-519 Sablefish & Grnlnd Turbot H&L	0.68%
Brown King Crab	0.22%
Scallops	None
Halibut	0.04%

**PROPOSAL 20: TOC Zemchug and Pribilof Canyons**

As shown in Figure 39, this proposal would affect approximately 1,414 square nautical miles of ocean area. The Ocean Conservancy proposes that Zhemchug and Pribilof Canyon be designated and managed as no-take marine reserves. The suggested management boundary for each of the canyons is a 15 nautical mile radius from the coordinates listed under the “HAPC site location” section. The reserves would be closed to all forms of fishing and oil and gas development in order to avoid disturbance of the areas but would remain open to scientific research and native subsistence activities. Thus, the binding nature of the management measures in this proposal creates the potential for increased socioeconomic benefits as well as impacts to harvests.

**Figure 39: Proposal 20: TOC Zhemchug & Pribilof Canyons Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters					Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	
Pribilof Canyon	205.87	245.07	134.48	92.84	28.98	707.24
Zhemchug Canyon	93.16	163.39	170.96	106.70	173.04	707.25
<b>Total</b>	<b>299.04</b>	<b>408.46</b>	<b>305.44</b>	<b>199.54</b>	<b>202.02</b>	<b>1414.49</b>
<b>Percent of total</b>	<b>21%</b>	<b>29%</b>	<b>22%</b>	<b>14%</b>	<b>14%</b>	<b>100%</b>

A review of fisheries data, as shown in Figure 40, found that significant harvest occurs in several groundfish target fisheries, and negligible harvest occurs in the halibut fishery within the proposed closure area. No other fisheries appear to occur within the proposal area.

**Figure 40: Fisheries Occurring In The Area of Proposal 20.**

Target Fishery	% Of Fishery In Area
Bering Sea Flathead Sole, Other Flatfish Trawl	0.19%
Bering Sea P. Cod H&L	2.59%
Bering Sea P. Cod Trawl	0.01%
Bering Sea Pollock Pelagic Trawl	1.23%
Bering Sea Pollock Trawl	0.02%
Bering Sea Rock Sole Trawl	0.02%
Bering Sea Rockfish Trawl	13.65%
Bering Sea Sablefish & Greenland Turbot Pot	7.67%
Bering Sea Sablefish & Greenland Turbot H&L	5.51%
Bering Sea Sablefish & Greenland Turbot Trawl	1.09%
Bering Sea Yellowfin Sole Trawl	0.01%
Crab	None
Scallops	None
Halibut	0.10%

### **PROPOSAL 21: TOC PWS Deepwater Canyon**

As shown in Figure 41, this proposal would affect approximately 69 square nautical miles of ocean area. The proposed management measures include; Designate the proposed area as a HAPC; Require adequate EFH consultation from oil and cruise ship industries to

ensure protection of the deepwater basin ecosystem; Create an inventory of the physical environments and biological communities that inhabit the PWS deepwater canyon; Improve our knowledge of the structure, function, and variability of the PWS deepwater canyon ecosystem; Further our understanding of the relationships and population dynamics between commercial and non-commercial species which inhabit the PWS deepwater canyon; Further our knowledge of the local effects of pollutants resulting from cruise ship and oil shipping industries; AND Further our knowledge of the value of HAPCs as a conservation and fisheries management tool. However, none of these measures would create binding constraints on fishing activities. Thus, this proposal does not have the potential to create socioeconomic benefits or impacts on harvests.

**Figure 41: Proposal 21: TOC PWS Deepwater Canyon Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
PWS Deepwater Canyon	69.42						69.42
<b>Percent of total</b>	<b>100%</b>						<b>100%</b>

A review of fisheries data, as shown in Figure 42, found that negligible harvest occurred in the halibut fishery within the proposed closure area. No other federal fisheries appear to occur within the proposal area. Note, however, that the proposed management measures are non-binding. Thus, this proposal has indeterminate effects on harvest.

**Figure 42: Fisheries Occurring In The Area of Proposal 21.**

Target Fishery	% Of Fishery In Area
Groundfish	None
Crab	None
Scallops	None
Halibut	0.03%

**PROPOSAL 22: Oceana soft corals and seamounts (BS Raspberry area)**

As shown in Figure 43, this proposal would affect approximately 10,486 square nautical miles of ocean area. The proposed management measures are no commercial fishing on seamounts and mitigation measures and restrictions on bottom trawling possible in other areas. Thus, this proposal may create potential benefits as well as have impacts on harvests.

**Figure 43: Proposal 22: Oceana BS Soft Corals Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
BS Soft Corals	10486.29						10486.29
<b>Percent of total</b>	<b>100%</b>						<b>100%</b>

A review of fisheries data, as shown in Figure 44, found that significant harvest occurs in several groundfish target fisheries, the scallop fishery, and the halibut fishery within the proposed closure area.

**Figure 44: Fisheries Occurring In The Area of Proposal 22.**

Target Fishery	% Of Fishery In Area
Bering Sea Flathead Sole, Other Flatfish Trawl	15.90%
Bering Sea P. Cod H&L	18.16%
Bering Sea P. Cod Pot	1.09%
Bering Sea P. Cod Trawl	0.43%
Bering Sea Pollock Pelagic Trawl	3.22%
Bering Sea Pollock Trawl	6.77%
Bering Sea Rock Sole Trawl	18.77%
Bering Sea Sablefish & Greenland Turbot Pot	0.01%
Bering Sea Sablefish & Greenland Turbot Trawl	1.25%
Bering Sea Yellowfin Sole Trawl	26.09%
Scallops	17.79%
Crab	None
Halibut	

**PROPSOAL 23: NMFS Eight-Fathom Pinnacle**

As shown in Figure 45, this proposal would affect approximately 16 square nautical miles of ocean area. The proposed management measures are that all Council-managed fishing would be prohibited within the boundary of the HAPC buffer area. Thus, this proposal may create potential benefits as well as have impacts on harvests.

**Figure 45: Proposal 23: NMFS 8-fathom Pinnacle Bathymetry**

Name	Square Nautical Miles by Depth Range in Meters						Total
	0-500	500-8000	2001-5000	1501-2000	1001-1500	501-1000	
8-fathom Pinnacle	16.11						16.11
Percent of total	100%						100%

A review of fisheries data, as shown in Figure 46, found that negligible groundfish and halibut harvests occurred within the proposal area. Thus, effects of this proposal on groundfish harvests are likely negligible and halibut are not council managed. No other fisheries appear to occur within the proposal area.

**Figure 46: Fisheries Occurring In The Area of Proposal 23.**

Target Fishery	% Of Fishery In Area
Gulf of Alaska Sablefish Greenland Turbot H&L	0.07%
Crab	None
Scallops	None
Halibut	0.01%

**ALASKA LONGLINE FISHERMEN'S ASSOCIATION**

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SITKA, AK 99835

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Anchorage AK 99510

**RECEIVED**

MAR 22 2004

**N.P.F.M.C.**

Dear Members of the Council,

On behalf of the Alaska Longline Fishermen's Association (ALFA), I would like to submit the following testimony on agenda item C-2:Habitat Areas of Particular Concern.

ALFA has participated in the EFH/HAPC process for many years. We share the Council's commitment to protecting habitat, especially sensitive benthic areas. Nevertheless, we have some concerns relative to the ongoing HAPC process in general and the HAPC areas proposed by the National Marine Fisheries Service (NMFS) in particular. Because our members fish primarily and in some cases exclusively in the Eastern Gulf, I will focus our comments on the HAPC proposed for this area.

In developing a HAPC process, the Council specified that HAPC should be designated to address an identified problem or meet a specific management objective. Management measures, where appropriate, should be designed to meet that objective with minimal possible disruption to the fishing fleet. ALFA members continue to support this approach and hope the Council will as well. In our estimation, the NMFS proposals do not follow these guidelines:

NMFS has proposed that three areas in Southeast be designated as HAPC and be closed to all bottom tending gear. As rationale for designating the areas as HAPC, the Agency states that submersible dives documented "dense... concentrations" of healthy, intact hard corals. The term "dense. . . concentrations" is described but never defined. Corals are found along the shelf/slope break throughout the North Pacific in varying densities. What density is necessary in order to qualify for a HAPC designation? And what degree of impact qualifies for protection? What is the Agency and the Council's policy relative to corals? Is the Agency promoting marine reserves or following the Council's HAPC guidelines?

Additionally, the three HAPC areas NMFS has proposed for the Eastern Gulf all fall within traditional longline grounds; the Ommaney site and the Fairweather site fall within core halibut grounds that have been extensively fished for over 100 years. Given that the corals were judged to be healthy and relatively undisturbed, and given that the areas is already closed to trawling (the only gear type that poses a documented threat to corals), the need for a fishing closure is hard to justify. If the corals are relatively undisturbed in an area that has be fished for over a century by fixed gear, then why should fixed gear be



prohibited from that area? What is the problem the management measures are attempting to address?

In sum, the NMFS HAPC proposals for the Eastern Gulf fail to meet the Council's HAPC guidelines on all accounts: there is no clear objective, certainly no identified problem, and yet the proposed management measures would significantly disrupt the fishing fleet.

In closing, I would like to remind the Council that ALFA helped develop the pinnacle closure off Sitka that is often hailed as Alaska's first HAPC. ALFA members supported this closure because the objective was clear and the management measures were designed to address an identified problem: to protect nest guarding ling cod and their nesting habitat in a high use area where ling cod stocks were recognized as depleted. ALFA members will continue to support habitat closures that have a specific, rationale objective or address an identified problem. We can not, at this time support the closures proposed for the Eastern Gulf or for any other areas where the objective is vague and the problem unidentified.

Thank you for the opportunity to comment.

Sincerely,



Linda Behnken  
(Director, ALFA)

**Public Testimony Sign-Up Sheet  
and  
Other Handouts Received**

**PUBLIC TESTIMONY SIGN-UP SHEET FOR  
AGENDA ITEM C-2 HAPC**

	NAME (PLEASE PRINT)	AFFILIATION
1X	Bob Ahrens	FUUA - Seattle
<del>2</del>	Heather McCarty	MCA
<del>3</del>	John Galvin	GROUNDFISH FORUM
<del>4</del>	Ben Enticknap	Alaska Marine Conservation Council
<del>5</del>	Jon Warrandyk	Oceanq
<del>6</del>	GERRY MERRIGAN	PROWLON FISHERIES 3
<del>7</del>	Alexi Thompson	ACC 6
<del>8</del>	Lance Lischer	Muri M. Lischer
<del>9</del>	CORA CROME	PVOA
10	EDRILHARDSON	POLLOCK COOPERATION COOPERATIVE VE
<del>11</del>	Donna Pytker	High Seas Catcher Vessel Coop
<del>12</del>	<del>Edwin Smith</del>	<del>MPLA</del> <del>withdrawn</del>
<del>13</del>	Julie Bonney	AGDD
<del>14</del>	Paul MacGranger	At-Sea Processors
15	<del> </del>	
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NOTE to persons providing oral or written testimony to the Council: Section 307(1)(I) of the Magnuson-Stevens Fishery Conservation and Management Act prohibits any person "to knowingly and willfully submit to a Council, the Secretary, or the Governor of a State false information (including, but not limited to, false information regarding the capacity and extent to which a United State fish processor, on an annual basis, will process a portion of the optimum yield of a fishery that will be harvested by fishing vessels of the United States) regarding any matter that the Council, Secretary, or Governor is considering in the course of carrying out this Act.

100-100000

John - [unclear]

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**Errata to C2 Supplemental  
Draft Initial Socioeconomic Effects Assessment of HAPC Proposals**

The text of the document and tables has been edited to replace the usage of the word “significant” with “potential.” This was done to eliminate any confusion with the usage of the term “significant” in NEPA analysis. The summary table in Figure ES-3 has been edited similarly and has been amended with a re-calculation of the potential for harvest effects in the halibut fishery (see below) along with identifying that effects in the halibut are preliminary and must be verified with additional data. Figure ES-3 below should be inserted into the executive summary.

**Figure ES 3: Summary of Potential Fishery Harvest Effects**

Proposal	Groundfish	Red King Crab	Golden King Crab	Scallops	Halibut**
1 TOC North Pacific Seamounts	negligible	none	none	none	potential**
2 Oceana GOA Pinnacles & Seamounts	minimal	none	none	potential *	minimal**
3 Oceana AI Pinnacles & Seamounts	potential	minimal	potential	negligible*	minimal**
4 NMFS Seamounts	negligible	none	none	none	potential**
5 AAG Sanak Island	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
6 AAG Albatross Rockfish	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
7 AAG Middleton Island	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
8 NMFS GOA Primnoa Forest	negligible	none	none	none	minimal**
9 AMCC Adak Canyon	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
10 AMCC Bowers Ridge	negligible	NA	NA	none	NA
11 TOC AI Coral & Sponge	minimal	none	negligible	none	potential**
12 TOC AI Marine Reserves	potential	potential	potential	negligible*	potential**
13 Oceana AI Coral Gardens	negligible	none	negligible	none	potential**
14 Oceana AI Core Bottom Trawl Area	potential	NA	NA	confidential	NA
15 MCA South Amlia/Atka	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
16 MCA Adak & Kanaga	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
17 MCA Tanaga & Amatignak/Ulak	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
18 MCA Semisopochnoi & Bowers Ridge	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
19 NMFS AI Coral Gardens	minimal	none	negligible	none	potential**
20 TOC Zhemchug & Pribilof Canyons	potential	none	none	none	potential**
21 TOC PWS Deepwater Canyon	NB-IND.	NB-IND.	NB-IND.	NB-IND.	NB-IND.
22 Oceana BS Soft Corals	potential	none	none	potential *	none
23 NMFS 8-fathom Pinnacle	negligible	none	none	none	minimal**

Criteria	
none	no harvest occurring in proposal area
negligible	not more than 1% harvest in HAPC & affected by management measures
minimal	greater than 1% but less than 5% of harvest in HAPC & affected by management measures
potential	greater than 5% of harvest in HAPC & affected by management measures
NB-IND	Non-binding management, eventual effects are indeterminate.
Scallop *	additional confidential harvest data within the proposal area is not included.
Halibut **	Preliminary, must be verified with additional data
NA	Not applicable due to management measures

## Potential for Effects on the Halibut Fishery

Halibut fishery harvest affected by HAPC proposals was originally reported as affected harvest as a percent of total harvest in the Alaska halibut fishery. This representation understates the potential for effects in this fishery due to the large area and harvest amount in the overall fishery as compared to the relatively small areas that might be closed. To better represent the need to consider effects on the halibut fishery the affected harvest (based on a proportional calculation) has been recalculated as a percent of the total harvest within the Alaska state statistical area that the HAPC proposal affects. However, available data has not allowed a comparison of the proportional amount of harvest within proposed HAPC closure areas, in affected state statistical areas, with the total halibut harvest within IPHC areas. Thus, it is not possible, at this stage of the analysis, to show anything other than the overall percentage of harvest that may be affected within affected state statistical areas and this does not provide a clear picture of potential effects. Thus, findings for the halibut fishery are preliminary and subject to verification when additional data can be made available by the IPHC.

The following table provides the revised calculations and indicates into which figure they are to be inserted. The text has also been amended to consider these findings and Figure ES-3 (above) summarizes those changes.

Figure	% of halibut fishery in Area	Figure	% of halibut fishery in Area
2	20.13%	26	11.24%
4	1.42%	28	**
6	1.74%	30	4.31%
8	20.54%	32	7.73%
10	20.25%	34	4.99%
12	6.02%	36	14.23%
14	8.86%	38	6.66%
16	1.28%	40	12.61%
18	8.82%	42	20.03%
20	20.34%	44	None
22	13.77%	46	1.61%
24	39.64%		

\*\* open areas proposal not consistent with calculation method and management measure only applies to bottom trawl.

### PROPOSAL 14: Oceana AI Core bottom trawl area

Figure 28, representing fishing effects for this proposal has been recalculated to show the percentage of the affected fisheries that occur outside of the core bottom trawl area. This makes the presentation consistent with those of other proposals that show percentages of harvest occurring in closed areas. It is important to note that only bottom trawl fisheries would be restricted to the "core open area." Thus, although many fisheries

occur in the area that would be closed only the groundfish bottom trawl fisheries appear to have potential effects.

**Figure 28: Fisheries Occurring In The Area of Proposal 14.**

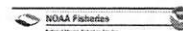
<b>Target Fishery</b>	<b>% Of Fishery In Closed Area</b>
Aleutian Islands + areas 518-519 Pacific Cod H&L	89.32%
Aleutian Islands + areas 518-519 Pacific Cod Pot	98.50%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	51.09%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	95.05%
Aleutian Islands + areas 518-519 Pollock Trawl	79.29%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	93.47%
Aleutian Islands + areas 518-519 Rockfish Trawl	66.82%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot POT	94.06%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot Trawl	89.74%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	19.27%
Red King Crab	96.62%
Brown King Crab	93.68
Scallops	Confidential
Halibut	NA

## Habitat Areas of Particular Concern (HAPC) C-2

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### Presentation for Council April 2004

- ✓ Overview and Background
- ✓ Receive Reports on HAPC proposal evaluations
- ✓ Draft problem statement, purpose and need, and alternatives for analysis
- ✓ Seeking comments on forwarding proposals into an analysis



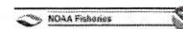
## Receive Reports on HAPC proposals and evaluations

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In October, the Council issued a call for HAPC proposals, using the process outlined in the draft environmental impact statement (EIS) for EFH. The Council's initial HAPC proposal cycle focused on two priorities:

1. Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species.
2. Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species that include the following features: (a) sites must have likely or documented presence of FMP rockfish species; and (b) sites must be largely undisturbed and occur outside core fishing areas.

The request for proposals yielded 23 separate proposals. In February, the Council forwarded all of these proposals to the plan teams for review, as well as a socioeconomic and enforcement evaluation.





## Receive Reports on HAPC proposals and evaluations

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Plan Teams met March 8-9th to review the scientific and technical merit of each proposal, and evaluated how each proposal meets the Council's priorities and the HAPC considerations in the EFH Final Rule.

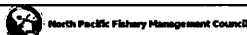
To facilitate the Plan Team review, the 23 proposals were broken into subsets of the proposals, the presentation will give a brief description of the proposals followed by the plan teams evaluation of them.



## HAPC Criteria

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The plan teams were requested to rank the proposals based on the following criteria issued in the EFH Final Rule : The importance of the ecological function provided by the habitat; whether, and to what extent the development activities are, or will be, stressing the habitat type; and the rarity of the habitat (50 CFR 600.815(a)(8)). Additionally rarity was broken into a global and local category.



## HAPC Criteria

Score	Local Rarity	Ecological Importance	Sensitivity	Stressed
<b>EFH Final Rule:</b>	The rarity of the habitat type.	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.
<b>1</b>	Habitat common throughout the Alaska region: Bering Sea, Gulf of Alaska, and Aleutian Islands	Habitat is featureless or unknown; fish are present; reproductive associations with the habitat do not exist	Habitat or structure less sensitive	Habitat is exposed to little or no fishing disturbance or natural perturbation
<b>2</b>	Habitat common in one of the Alaska regions, and occurs with less frequency in one or both of the others	Habitat exhibits some structure; fish are present within known substrates; habitat or reproductive associations may exist	Habitat or structure somewhat sensitive	Habitat is exposed to occasional fishing disturbance or natural perturbation
<b>3</b>	Habitat is common in only one of the Alaska regions	Habitat consists of highly diverse or vertical structure; substrate is notable; vulnerable life history stages of fish or habitat reproductive associations exist	Habitat or structure highly sensitive	Habitat is exposed to routine fishing disturbance or natural perturbation



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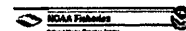
## HAPC Criteria

	Local Rarity	Ecological Importance	Sensitivity	Stressed
<b>EFH Final Rule:</b>	The rarity of the habitat type.	The importance of the ecological function provided by the habitat.	The extent to which the habitat is sensitive to human induced	Whether and to what extent development activities are or will be stressing the
				Habitat is exposed to

For global rarity, please note yes or no if the feature is considered globally rare.



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## Joint Plan Teams' review of HAPC proposals

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**March 8-9th, 2004**

**Seattle, Juneau, Kodiak**

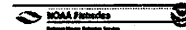
**Plan Teams for the North Pacific Fishery  
Management Council:**

**BSAI Groundfish Plan Team**

**GOA Groundfish Plan Team**

**BSAI Crab Plan Team**

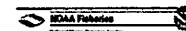
**Scallop Plan Team**



## Plan Team Members participating in the review

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- **BSAI**
  - Loh-lee Low (chair)
  - Mike Sigler
  - Lowell Fritz
  - Grant Thompson
  - Bill Clark
  - Kerim Aydin
  - David Carlile
  - Kathy Kuletz
  - Ivan Vining\*
- **Crab**
  - Doug Pengilly (chair)
  - Bob Otto
  - Wayne Donaldson
  - Forrest Bowers
  - Gretchen Harrington
  - Herman Savikko
  - Jack Turnock
  - Diana Stram
- **GOA**
  - Jim Ianelli (co-chair)
  - Diana Stram (co-chair)
  - Sandra Lowe
  - Sarah Gaichas
  - Bill Clark
  - Jeff Fujitoka
  - Jon Heifitz
  - Tory O'Connell
  - Tom Pearson
  - Mike Ruccio
  - Bob Foy
  - Kathy Kuletz
  - Bill Bechtol\*
- **Scallop**
  - Jeff Barnhart (chair)
  - Gretchen Harrington
  - Herman Savikko
  - Diana Stram
  - Gregg Rosenkranz\*



## Organization of Proposal Review

- Proposals grouped according to similar areas. Discussion of proposals was by first by summary of the overall group then secondarily by individual proposal.

Plan Team Group	Proposal Area	Proposer	Proposal Number
A	North Pacific seamounts	TOC	1
A	GOA pinnacles	Oceana	2
A	AI pinnacles	Oceana	3
A	Named seamounts	NMFS	4
C	GOA Sanak Island	AAG	5
C	GOA Albatross Rockfish	AAG	6
C	GOA Middleton Island	AAG	7
C	GOA Primnoa Forrest	NMFS	8
D	AI Adak Canyon	AMCC	9
E	AI Bowers Ridge	AMCC	10
G	AI Coral and Sponge	TOC	11
F	AI Marine Reserve	TOC	12
G	AI coral gardens	Oceana	13
F	AI core bottom trawl area	Oceana	14
D	AI South Amila Atka	MCA	15
D	AI Adak and Kanaga	MCA	16
D	AI Amatignak/Alak	MCA	17
E	AI Semisopchnoi	MCA	18
E	AI coral gardens	NMFS	19
B	BS Zemchuq and Pribilof canyons	TOC	20
B	GOA Prince William Sound deep water canyon	TOC	21
H	BS- Soft coral	Oceana	22
A	Kodiak 8 fathom pinnacle	NMFS	23



North Pacific Fishery Management Council



NOAA Fisheries  
Bonneville Basin, Alaska

## General Issues for clarification

- Classification of "hard corals", "deep-water coral", "cold-water coral" insufficient
  - Teams interpreted to include hydrocorals and gorgonian corals (e.g., red-tree corals)
  - these corals provide vertical structure and are long-lived and sensitive to disturbance
  - excludes soft corals, e.g., *Gersemia* spp.
- Proposal refers to the actual document (23 received) and not to individual proposed sites.
  - Many proposals included multiple sites thus distinction was made at the proposal level
- Problems with the size of areas covering a range of often diverse habitat types



North Pacific Fishery Management Council

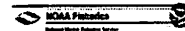


NOAA Fisheries  
Bonneville Basin, Alaska

## General Issues for clarification

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- General confusion regarding the specificity of Council priorities (particularly emphasis on AI)
- Seamounts were noted to be outside of current EFH designation but definitions are expected to be revised to include seamounts therefore proposals with seamounts were examined for HAPCs
- Enforcement and economic issues were neither evaluated nor discussed in detail at the Plan Team level. Separate reports on these issues were being prepared for Council review and the Plan Teams did not have either adequate expertise or available information to review the proposals on those issues.

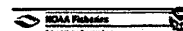


## Plan Team Concerns with the Tables and Rating Criteria

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### Tables 1 & 2:

- The rating criteria were not established prior to proposal submission
  - proposers had no way of knowing the range of information that would be required to rate their proposals
- Proposals deal with habitat areas while tables deal with habitat types
  - mismatch between data in proposal and data required for the table
  - problems with homogeneity and heterogeneity of habitat types within a proposed area
  - more precise definition of habitat area and habitat type in needed



## Plan Team Concerns with the Tables and Rating Criteria

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- Ratings in the tables may imply a greater degree of precision than is warranted by the available data
- Rating criteria sometimes conflict with standard usage of terms
  - e.g., habitat type can only be “locally rare” if it is “common” in the management area
  - higher fishing pressure  $\propto$  lower “stressed” rating
- Rating criteria are often ambiguous
  - “local rarity”-->ratings of 2 and 3 are logically equivalent
  - “ecological importance”--> multiple criteria are presented for each rating therefore it is difficult to assign a rating when some criteria are met and not others
  - “stressed”-->ratings of 2 and 3 are expressed in different dimensions
  - numerical implications of ratings misleading



North Pacific Fishery Management Council



NOAA Fisheries  
National Oceanic and Atmospheric Administration

## Plan Team Concerns with the Tables and Rating Criteria

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- Table 3:
  - Plan Teams unable to address interpretation of “relative disturbance”
    - in absence of adequate clarification of the meaning of this and adequate information provided to evaluate, the Plan Teams did not evaluate this particular Council Priority for Table 3
  - Evaluation of how well proposals meet Council Priorities is more of an agency or staff decision than a Plan Team specific evaluation
    - degree to which each proposal is responsive to an RFP would have been more beneficial to the Plan Teams’ review earlier in the review process



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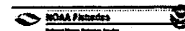


NOAA Fisheries  
National Oceanic and Atmospheric Administration

## Plan Teams' Comments and Suggestions on the Current HAPC Process

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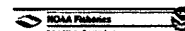
- Teams appreciated inclusion in the process and would like to work to make the next phase of the review process more effective by providing constructive commentary on improvements to the process
- Input prior to the review on the criteria utilized may have helped alleviate some ambiguity
- Pros and Cons of establishing a smaller subset of Plan Team members to review HAPC proposals
  - workgroup vs. whole PT membership
  - opportunity to involve additional expertise outside of Plan Team membership would have been beneficial



## Plan Teams' Comments and Suggestions on the Current HAPC Process

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- Include an evaluation of the level of data utilized in the proposals as well as the scientific uncertainty inherent in that data
- Citations should be submitted in full in order to reviewers to better evaluate their relevance
  - grey literature should be accessible to reviewers
- Habitat Inventory:
  - this should be a priority for agency work
  - would provide a uniform basis for evaluating HAPC sites



## Plan Teams' Comments and Suggestions on the Current HAPC Process

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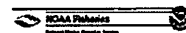
- Difficult to evaluate proposals in a consistent manner according to established criteria
- Number of proposals and limited review time did not allow for sufficient time to debate and discuss many critical concepts and measures
  - e.g. size of buffers around areas, habitat types, overall management objectives of HAPCs
- Difficulty in assessing to what degree proposals meet HAPC criteria with limited information
  - subset of proposals could fit into a research priority category in order to evaluate whether meets HAPC criteria (rather than designate first and then determine if designation was appropriate afterwards)



## Plan Teams' Comments and Suggestions on the Current HAPC Process

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- Difficult in assessing proposed areas for "stress" given that some areas are already closed to trawling
  - Teams interpreted any fishing activity (incl. longline and pot gear) in considering relative degree of stress
- Difficult to determine extent of relative fishing pressure by proposal area
  - reviewers had difficulty assessing using the information provided in proposals, though some additional information was provided by staff
  - for future reviews catch data should be provided in some aggregated form such as within statistical areas (understanding the limits of confidentiality issues)

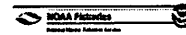




## Plan Teams' Comments and Suggestions on the Current HAPC Process

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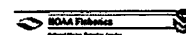
- Need for consistency in availability of data for proposals
  - same sites in many proposals but varying levels of scientific information utilized by proposals and site
  - consistency in data availability would increase the quality and consistency of proposals
    - solicited info from public then subjected to rigorous scientific review process on scientific merit alone
  - mixing of sites within proposals made them difficult to evaluate (e.g., mixing pinnacles and seamounts)
    - better advice in advance to proposers re: separation of mixed areas and habitat types would have been advisable
- Evaluation of individual HAPC sites for relative merit (regardless of who proposed them) rather than duplicative sites by proposal would have increased the utility of proposal review



## Plan Team Review

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- Review was based on evaluation of:
  - Scientific and technical merit
  - Ecological merit
  - categories of:
    - sensitivity
    - stress
    - ecological importance
    - rarity
  - Discussion of management measures within review process



## HAPC Proposals Group A

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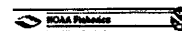
- #1 TOC North Pacific Seamounts Marine Reserves
- #2 Oceana GOA Pinnacles and Seamounts
- #3 OCEANA AI Pinnacles and Seamounts
- #4 NMFS Named Seamounts
- #23 NMFS Eight Fathom Pinnacle



## Seamounts Summary

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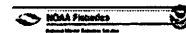
- 27 Individual Named Seamounts were proposed by 3 proposers: NMFS, OCEANA, and TOC.
- Of the 27:
  - Several Named Seamounts are located outside the EEZ;
  - 1 seamount in Russian waters (incorrect position);
  - 24 seamounts are Named (Council Priority) and within the EEZ (Council Priority);
  - 16 seamounts are Named, within EEZ, and are within known depth range or habitat of FMP species (Council Priority; "*important to FMP species*").



## Seamount Definition

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- NMFS analysis of Named Seamounts used definition from the National Imagery and Mapping Agency Secretary, US BGN Advisory Committee on Undersea Features (ACUF) as:
  - A seamount is a feature that rises more 1,000 meters above the surrounding seafloor and is of limited extent across the summit.

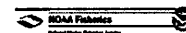


## Pinnacle Definition

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For pinnacles, criteria are different.

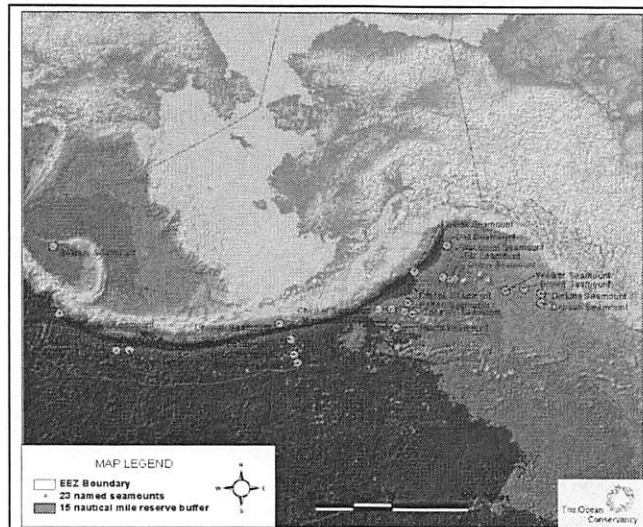
- The pinnacle proposers used a file from NMFS/HCD/Eagleton & Boland investigations on pinnacles in federal offshore waters (>3nm).
- Pinnacles met the following criteria:
  - feature rises sharply to 1/2 to 1/3 shallower than surrounding depths (noticeable vertical rise, shallow peak);
  - least depth of 2 fm MLLW (not to uncover at lowest of tides);
  - similar shape/size/feature of the more-known Sitka Pinnacles;
  - 3 nm from shore (in federal waters);
  - within fishable depths (<1,000m).



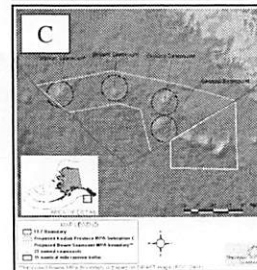
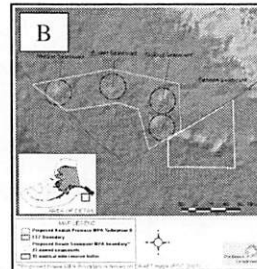
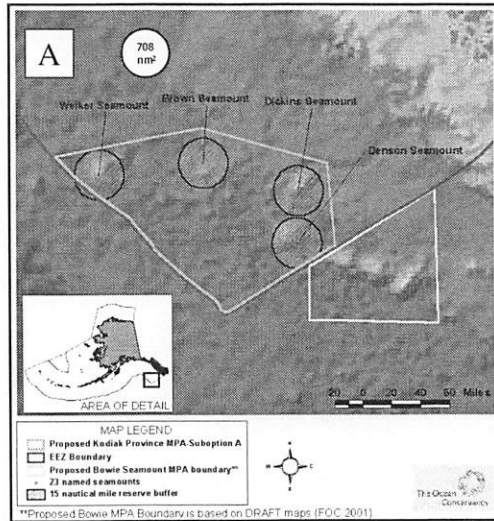
## TOC Proposed Management Measures

- Seamounts
  - Identified 23 Seamount No-take Reserves with 15 nm protection radius;
- AND
  - Establish 5 larger marine protected areas as seamount reserves;
- Pinnacles
  - 2 nm conservation radius;
  - Restriction on bottom trawling;
  - Other commercial bottom contact gear limitations (not specified).

## #1 TOC North Pacific Seamounts & 15nm Buffer Zones



## #1 TOC Kodiak Seamounts Reserve Options A,B,&C



North Pacific Fishery Management Council



NOAA Fisheries  
National Marine Fisheries Service

## OCEANA Proposed Management Measures

- Seamounts
  - Moratorium on all commercial fishing activities on seamount.
- Pinnacles
  - 2 nm conservation radius;
  - Restriction on bottom trawling;
  - Other commercial bottom contact gear limitations (not specified).

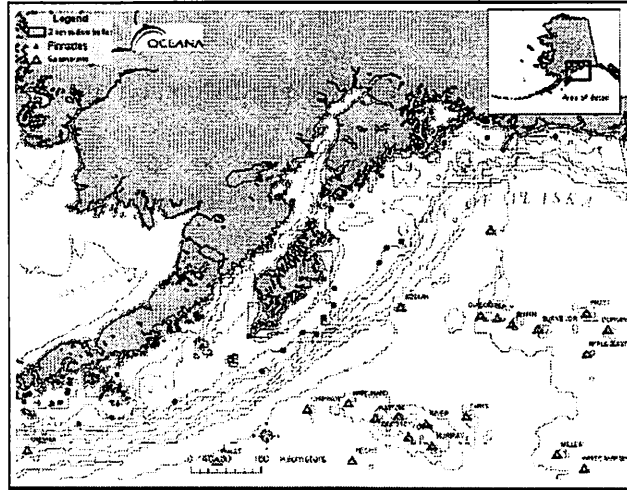
North Pacific Fishery Management Council



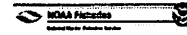
NOAA Fisheries  
National Marine Fisheries Service

## #2 Oceana GOA Pinnacles and Seamounts

Overview of Oceana Gulf of Alaska HAPC Proposal

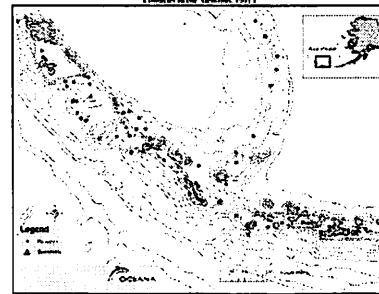


Map 1 - Gulf of Alaska pinnacles and seamounts



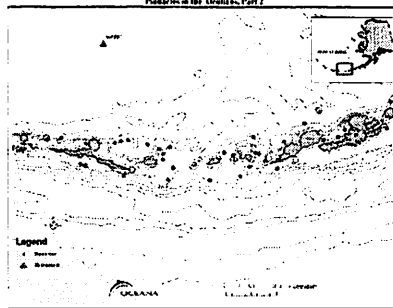
## #3 OCEANA AI Pinnacles and Seamounts

Pinnacles in the Aleutians, Part 1



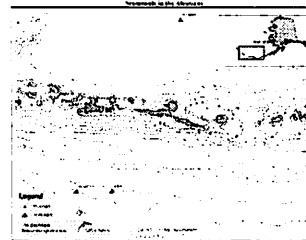
Map 1 - Central Aleutian Pinnacles and Seamounts

Pinnacles in the Aleutians, Part 2

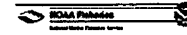


Map 2 - Aleutian Pinnacles and Seamounts

Pinnacles in the Aleutians

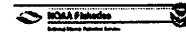


Map 3 - Aleutian Pinnacles and Seamounts



## #4 NMFS Proposed Management Measures

- **Seamounts**
  - Conservation measures offer a restriction on bottom contact fishing activities;
  - Based on some site specific habitat and species information;
  - Areas offer protection of seamount top and flanks;
  - Areas are squared to suggest easier enforceability.

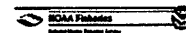


## #4 NMFS Proposals - Seamounts

### Species Associations of 5 Named Seamounts:

FMP Species		FMP Species	
Sablefish adults, including gravid females and larger males	<i>Anaplopoma fimbria</i>	Shortraker rockfish adults	<i>Sebastes borealis</i>
Deep sea sole	<i>Embassichthys bathybius</i>	Aurora rockfish adults	<i>Sebastes aurora</i>
Sockeye salmon adults	<i>Oncorhynchus nerka</i>	Golden king crab	<i>Lithodes aequispina</i>
Pink salmon adults	<i>Oncorhynchus gorbuscha</i>	Scarlet red king crab	<i>Lithodes couesi</i>
Chum salmon adults	<i>Oncorhynchus keta</i>	Green tanner crab	<i>Chionoecetes tanneri</i>
Longspine thornyhead rockfish, adults	<i>Sebastolobus aliveti</i>	Squid	(Unidentified)
Shortspine thornyhead rockfish, adults	<i>Sebastolobus alascanus</i>	Sculpins	<i>Cottidae</i>
Rougheye rockfish adults	<i>Sebastes aleutianus</i>		

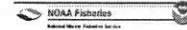
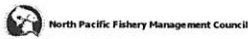
Note: Species associations are inferred for the other seamounts and are representative, should future research identify habitats similar to those already known. For example, a seamount consisting of rough features, vertical relief, and harder substrates will likely support rockfish, sablefish and some crab species, while a more featureless seamount consisting of softer substrates will likely support deep sea sole and other crab species.



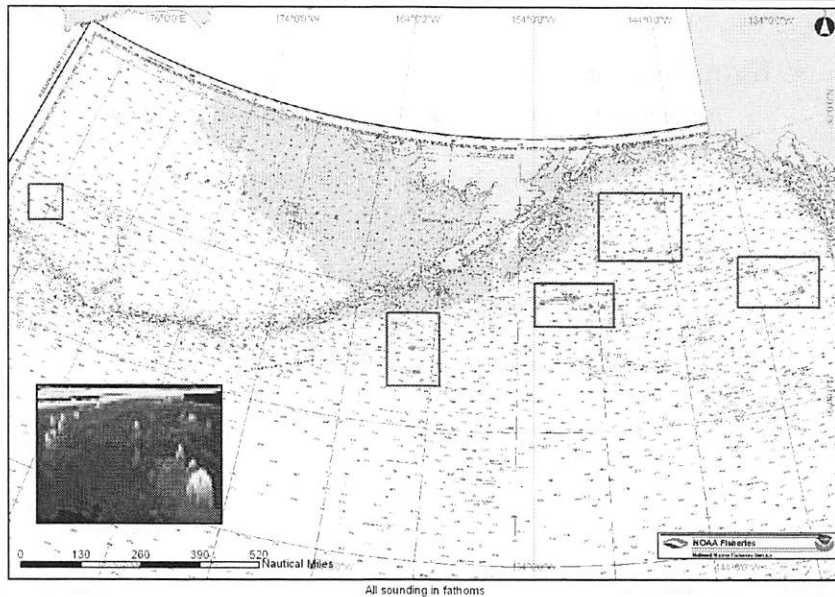
## #4 NMFS Proposals - Seamounts

Site specific habitat features of 5 Named Seamounts:

Named Seamount	General Features
Dickins	Area consists of soft and hard substrates, which are distributed patchily across the feature. The seamount is scattered with rock pinnacles.
Giacomini	Area is relatively flat and consists of soft substrates with few scattered, less prominent rock pinnacles.
Patton	Area is rough in feature. Harder substrates of rock create a series of pinnacles across the summit.
Quinn	Area consists of soft substrates with a notable absence of pinnacles. The flanks are shallow sloped.
Welker	Area consists of hard and soft substrates, with softer substrates between numerous, scattered rock pinnacles.



NMFS HAPC Proposal - Named Seamounts on NOAA Charts within EEZ



All sounding in fathoms



## #4 NMFS Seamount Area Table

#	Named Seamount	Latitude	Longitude	Depth (m)	Area (nm <sup>2</sup> )	#	Named Seamount	Latitude	Longitude	Depth (m)	Area (nm <sup>2</sup> )
1	Dowers Seamount	54 1500 N	174 7000 E	2268	28.9	10	Kodiak Seamount	57 0000 N	149 5000 W	2176	158.3
		54 0700 N	174 7000 E					57 0000 N	149 1000 W		
		54 0700 N	174 8700 E					56 8000 N	149 5000 W		
		54 1500 N	174 8700 E					56 8000 N	149 1000 W		
2	Brown Seamount	55 0000 N	138 8000 W	1390	106.6	11	Odyssey Seamount	54 7000 N	150 0000 W	1657	209.8
		55 0000 N	138 4000 W					54 7000 N	149 5000 W		
		54 8000 N	138 8000 W					54 5000 N	150 0000 W		
		54 8000 N	138 4000 W					54 5000 N	149 5000 W		
3 4	Chirikof & Marchand Seamounts	55 1000 N	153 7000 W	2500	2248.4	12	Patton Seamount	54 7200 N	150 6000 W	168	94.3
		55 1000 N	151 0000 W					54 7200 N	150 3000 W		
		54 7000 N	153 7000 W					54 5700 N	150 6000 W		
		54 7000 N	151 0000 W					54 5700 N	150 3000 W		
5	Oak Seamount	58 3000 N	145 8000 W	2507	949.9	13	Ouirn Seamount	58 4500 N	145 4000 W	658	200.9
		58 3000 N	144 9000 W					58 4500 N	145 0000 W		
		57 7500 N	145 8000 W					58 2000 N	145 4000 W		
		57 7500 N	144 9000 W					58 2000 N	145 0000 W		
6	Denson Seamount	54 2200 N	137 8000 W	927	286.7	14	Sirius Seamount	52 1000 N	161 1000 W	1929	187.0
		54 2200 N	137 1000 W					52 1000 N	160 6000 W		
		53 9500 N	137 8000 W					51 9500 N	161 1000 W		
		53 9500 N	137 1000 W					51 9500 N	160 6000 W		
7	Derickson Seamount	53 0000 N	161 5000 W	2890	218.4	15	Unimak Seamount	53 8000 N	162 7000 W	1308	128.5
		53 0000 N	161 0000 W					53 8000 N	162 3000 W		
		52 8000 N	161 5000 W					53 6500 N	162 7000 W		
		52 8000 N	161 0000 W					53 6500 N	162 3000 W		
8	Dickiza Seamount	54 5500 N	137 1500 W	427	147.0	16	Walker Seamount	55 2300 N	140 5500 W	618	181.5
		54 6500 N	136 8000 W					55 2300 N	140 1800 W		
		54 4500 N	137 1600 W					55 0300 N	140 5500 W		
		54 4500 N	136 8000 W					55 0300 N	140 1800 W		
9	Giacomini Seamount	58 6200 N	146 5300 W	618	163.9	Total Area : 5,330 nm <sup>2</sup>					
		58 6200 N	146 1200 W								
		58 4200 N	146 5300 W								
		58 4200 N	146 1200 W								



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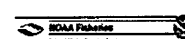
## #23 NMFS Eight Fathom Pinnacle

### • 8 fm Pinnacle

- The pinnacle rises to a depth of 15 m (8 fathoms) and surrounding areas are considerably deeper.
- The pinnacle has been observed *in situ* with the DSV *Delta* submersible.
- The summit of the pinnacle is within the euphotic zone and covered with blade kelps, *Laminaria* sp. and *Agarum* sp. Dense concentrations of the anemone, *Metridium farcimen*, are common throughout the area.
- Black rockfish and unidentified juvenile rockfish have been observed in association with the area.
- Based on site specific habitat and species information;
- 4 nm x 4 nm conservation areas;
- Within current fishing areas.

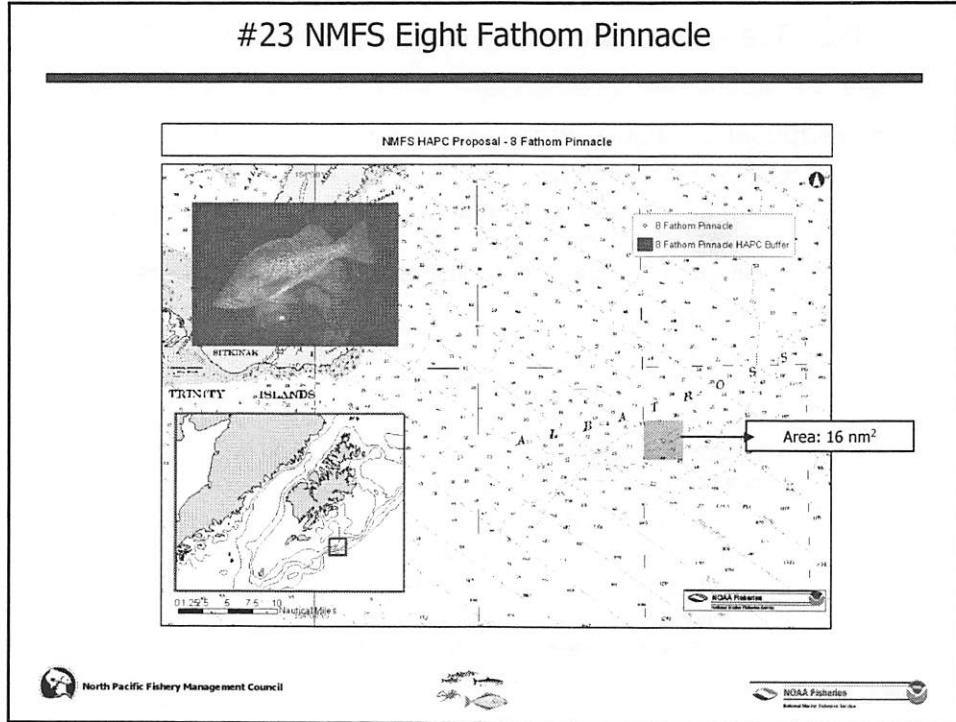


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## #23 NMFS Eight Fathom Pinnacle



## Plan Team Review of individual proposals (Group A)

- Group A: general comments
  - assumption that all proposed seamounts and pinnacles include significant amounts of coral and sponge but no information provided to substantiate this
    - exception = 8 fathom pinnacle (proposal 23)
    - specific information on the amount of coral and sponge habitat at these seamounts and pinnacles would have been useful
  - conflicting evidence regarding whether seamount habitat is heterogenous vs. homogenous
  - deep-water crab species noted to probably occur within the appropriate depth ranges on all seamounts as well as shelf and slope areas within their range

## Plan Team Review of individual proposals (Group A)

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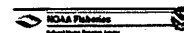
- **Proposal 1: TOC N. Pacific Seamounts Marine Reserves**
  - *Ecological Importance*
    - seamounts exhibit some structure, fish are present, some have wide species diversity
    - vulnerable life stages or habitat association not documented
  - *Sensitivity*
    - unknown
      - corals present but abundance is unknown
  - *Stress*
    - no documentation provided on fishing effort on N. Pacific seamounts
  - *Scientific/Technical Merit*
    - difficult to evaluate scientifically
      - documentation referenced not peer reviewed
      - points possible valid but difficult to substantiate
      - 15 nautical mile radius seems arbitrary



## Plan Team Review of individual proposals (Group A)

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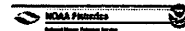
- **Proposal 1(cont)**
  - *Ecological Merit*
    - rare features based on area size
    - unique due to providing relatively shallow areas in otherwise deepwater area
      - concentrate plankton in otherwise low productivity area
  - *Other comments*
    - problems with objectives 2 and 3
      - 2 seems inappropriate
      - 3 seems impractical
        - » research = costly
    - 6 of seamounts not included within the depth range of the FMP species



## Plan Team Review of individual proposals (Group A)

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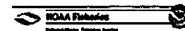
- Proposal 2: Oceana GOA Pinnacles and Seamounts
  - *Ecological importance:*
    - abundance of coral and sponge unknown
    - vertical structure documented
    - listed pinnacles diverse
      - difficult to determine if all have equal ecological importance
  - *Sensitivity*
    - effects of fishing are documented for some ecosystems
  - *Stress*
    - no documentation provided to determine how much fishing occurs on N. Pacific seamounts or pinnacles
      - one tow only provided for pinnacles
  - *Scientific/Technical merit*
    - little specific information cited for proposed protected areas



## Plan Team Review of individual proposals (Group A)

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- Proposal 2 (cont)
  - *Ecological merit*
    - seamounts are rare and unique (same as #1)
  - *other comments*
    - questions regarding text citation of 19 seamounts whereas table cites 21
      - 3 of 21 listed below 3000m(NMFS definition of EFH)
    - listing all pinnacles masks importance of some specific pinnacles
      - mixing seamounts with pinnacles also masks importance of some specific pinnacles
    - vague reference to which gears would be limited (in addition to bottom trawl)



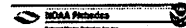
## Plan Team Review of individual proposals (Group A)

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- **Proposal 3: Oceana AI Pinnacles and Seamounts**
  - *Ecological importance*
    - general documentation provided insufficient to be true for all listed pinnacles due to diversity (range of depths and distance from shore)
    - otherwise similar comments as per previous proposals
  - *Sensitivity*
    - general documentation provided insufficient to be true for all listed pinnacles due to diversity
  - *Stress*
    - no documentation or conclusions on amount of fishing
  - *Ecological merit*
    - little specific information cited for proposed protected areas
  - *other comments*
    - did not consider GKC fishing and hook and line gear
    - similar comments as for proposal 2 (same proposer)



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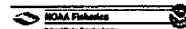
## Plan Team Review of individual proposals (Group A)

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- **Proposal 4: NMFS Named Seamounts**
  - *Sensitivity*
    - not documented well enough to evaluate
  - *Stress*
    - undocumented statements regarding no fishing in this area
  - *Scientific/Technical merit*
    - no vulnerable life stages or reproductive associations documented.
      - Reviewers note that local populations of some species (e.g., SKC, GKC) could be reproductively isolated
  - *Ecological merit*
    - high species diversity due to depth range spanned by seamounts
    - seamounts rare and unique (same as per other proposals in group A)
  - *other comments*
    - methodology for boundaries of protected areas unclear



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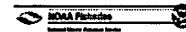


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## Plan Team Review of individual proposals (Group A)

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- **Proposal 23: NMFS 8 Fathom Pinnacle**
  - *Ecological importance*
    - role of shallow water, kelp forested, offshore pinnacle well documented
      - diverse habitat and vertical structure
      - no documented vulnerable life history stages or reproductive associations noted
  - *Sensitivity*
    - somewhat sensitive but better adapted to regeneration (than corals)
  - *Stress*
    - within existing fishing areas
    - subject to storm perturbation



## Plan Team Review of individual proposals (Group A)

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- **Proposal 23 (cont)**
  - *Scientific/Technical merit*
    - good information provided
  - *Ecological merit*
    - rare offshore kelp forest
    - presence of black rockfish
  - *other comments*
    - unclear regarding presence of FMP species nor whether or to what extent this is necessary for evaluation



## HAPC Proposals Group B

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- #20 TOC Zemchug and Pribilof Canyons
- #21 TOC PWS Deepwater Canyon



## HAPC Proposals Group B Summary

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Two proposals focused on 3 Deepwater Canyon areas

Two within the Bering Sea (#20):

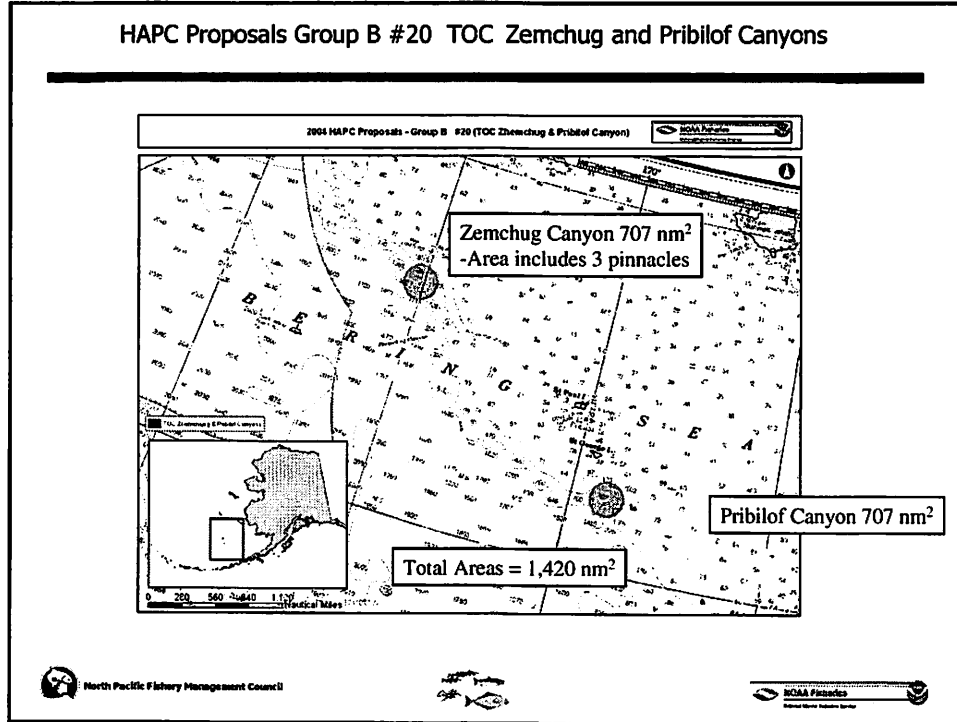
1. Zemchug Canyon and Pinnacles ( 2,730 m deep, 60 miles wide )
2. Pribilof Canyon (1,800m deep, 30 miles wide)

Objectives and management measures:

- to protect high biodiversity and aid in sustaining high primary and secondary productivity associated these canyons
- Annual 2<sup>o</sup> production 60% higher in BS canyons than adjacent outershell domain and 260% greater than the deep ocean (Springer et al., 1996). Greatest amount of zooplankton in BS (Loughlin et al, 1999)
- Zemchug Pinnacles has documented high presence of corals in 2002 EBS survey.
- suggested management is no take marine reserves (15nm<sup>2</sup> radius), while allowing research and native subsistence activities.



## HAPC Proposals Group B #20 TOC Zemchug and Pribilof Canyons



## HAPC Proposals Group B Summary

### One within the Gulf of Alaska (#21):

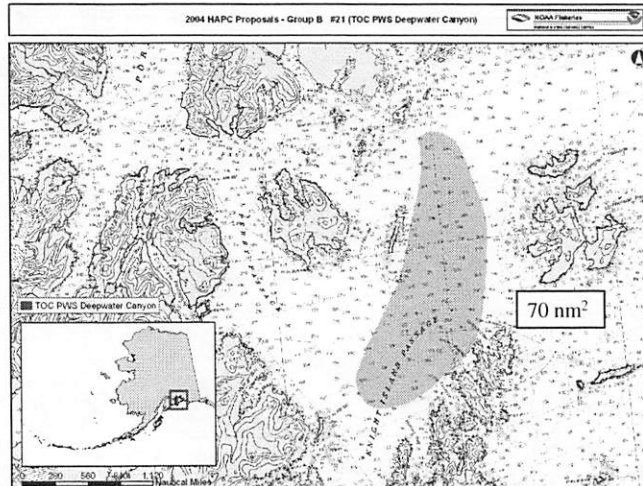
#### 3. Prince William Sound Deep Water Canyon

##### Objectives and management measures: Designation

- to protect high biodiversity and aid in sustaining high primary and secondary productivity associated these canyons
- provides habitat for *Neocalanus* copepods (Kline 1999) a food source critical to juvenile salmon (Cooney 1993)
- allows for adequate EFH consultation in order to protect area from the potential activities such as oil barging and cruise ship pollutant discharge
- encourages future research to broaden knowledge of deep water canyon habitat and associated species



## HAPC Proposals Group B #21 TOC PWS Deepwater Canyon



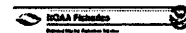
## Plan Team Review of individual proposals (Group B)

- Proposal 20: Zemchug and Pribilof Canyon
  - *Sensitivity*
    - sensitivity to human induced degradation poorly documented
    - limited data on coral bycatch in this region
  - *Stress*
    - areas are routinely fished
  - *Ecological merit*
    - GKC and other crab species occur in both canyons
      - importance in life history unknown
    - differing opinions amongst team members as to degree to which canyons are unique features worldwide but acknowledged as rare in the EBS and relatively uncommon elsewhere

## Plan Team Review of individual proposals (Group B)

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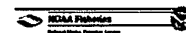
- Proposal 20 (cont)
  - *other comments*
    - diverse vertical structure and prey base
    - proposed management measures would provide protection to the midwater zone
      - difficult rank given the established criteria as no vulnerable life history stages and/or reproductive associations established
    - may not meet Council priorities but important to other HAPC priorities and meet EFH final rule



## Plan Team Review of individual proposals (Group B)

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- Proposal 21: PWS Deep Water Canyon
  - Fails to address Council priorities
  - Complicated by HAPC falling in internal (not federal) waters
  - routinely fished area (contrary to proposal statements)
    - limited pollock trawling
    - shrimp fishing
    - small boat (<60 ft) sablefish fishery
  - teams also note that fishing is not only human induced stress in this area
    - ships (transportation and oil) exert additional pressure on area
  - questionable overall merit



## Group C HAPC Proposals – GOA Hard Corals

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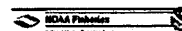
- #5 AGDB Sanak Island
- #6 AGDB Albatross Bank
- #7 AGDB Middleton Island
- #8 NMFS GOA Primnoa Forest (Hard Corals)



## Group C - GOA Hard Corals Summary

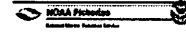
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- 7 Areas in the GOA were proposed by 2 proposers: AGDB and NMFS.
- Of the 7:
  - 3 Areas are offered by fishers possessing a wealth of experience and knowledge of the GOA and target rockfish species/habitats.
  - 4 areas are offered using scientific information using direct physical observation (*in situ*; DSV Delta), survey data, and expertise/knowledge.

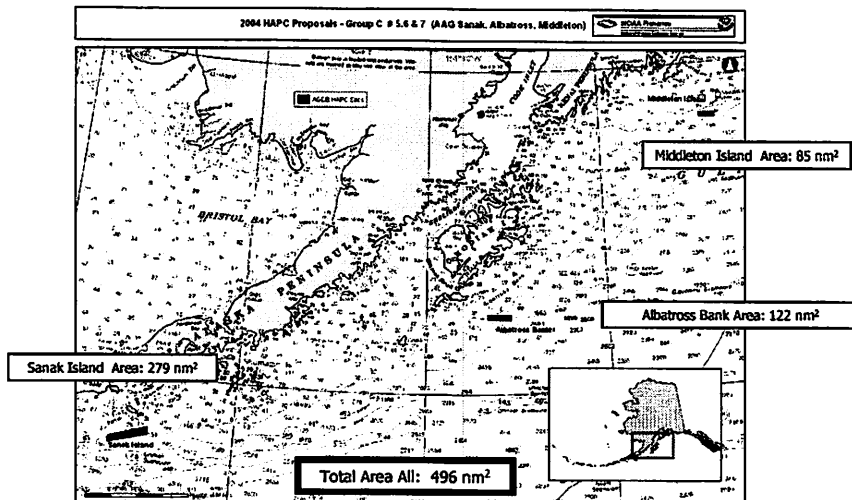


## #5, 6, & 7 AGDB HAPC Proposals

- Three AGDB Areas:
  - # 5 Sanak Island
  - # 6 Albatross Bank
  - # 7 Middleton Island
- Propose similar objectives and measures:
  - Likely within rockfish habitat and relatively unfished;
  - Prioritize submersible mapping of areas and benthic habitats;
  - Locate and identify high-relief coral habitats ;
  - Evaluate rockfish abundance;
  - Develop restrictions on bottom trawling while preserving fishing opportunities;
  - Design and conduct applied research to understand rockfish habitat and how fishing effects productivity.

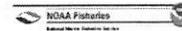


## #5, 6, & 7 AGDB Proposal Areas

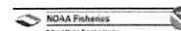
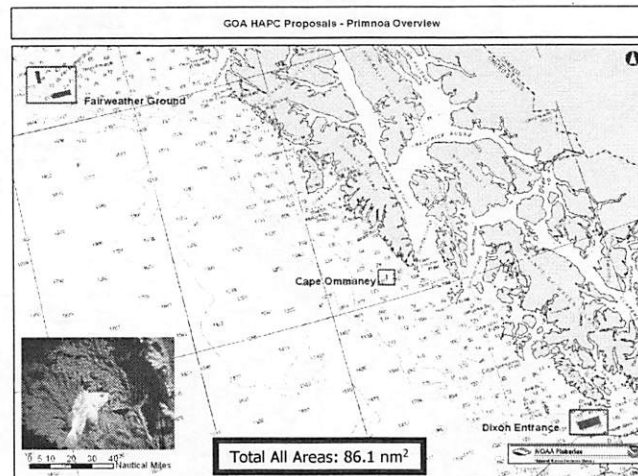


## #8 NMFS GOA Hard Corals

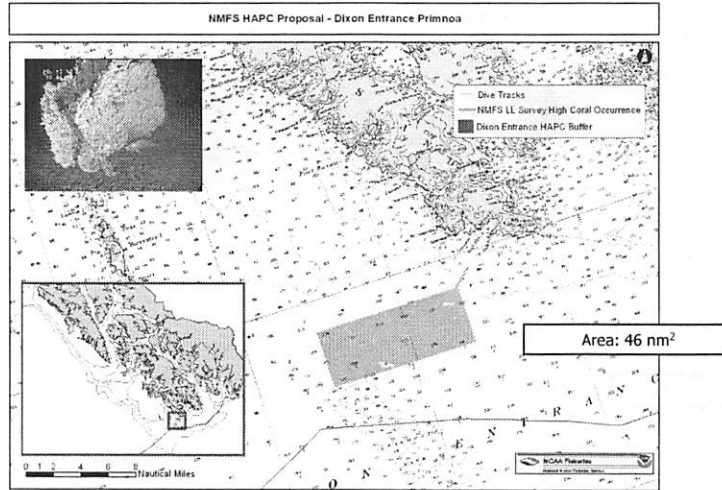
- NMFS submitted one HAPC proposal for 3 areas consisting of:
  - largely undisturbed, high relief, long lived hard coral beds which provide habitat for life stages of rockfish, or other important managed species, without particular emphasis on the Aleutian Islands.
- Three Areas:
  - Dixon Entrance
  - Cape Ommaney
  - Fairweather Grounds



## #8 NMFS GOA Hard Coral Areas – Overall



## #8 NMFS GOA Hard Coral – Dixon Entrance

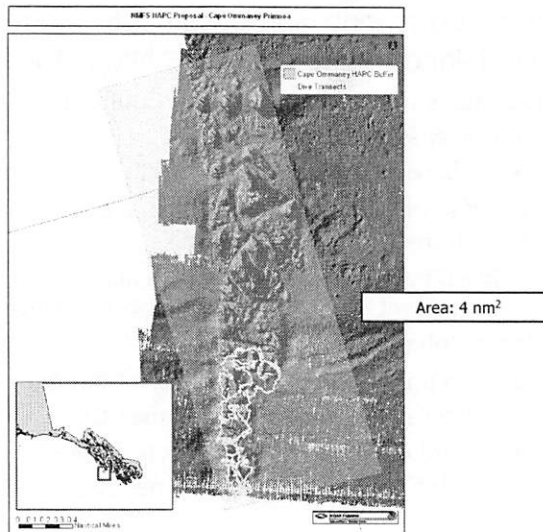


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## #8 NMFS GOA Hard Corals – Cape Ommaney

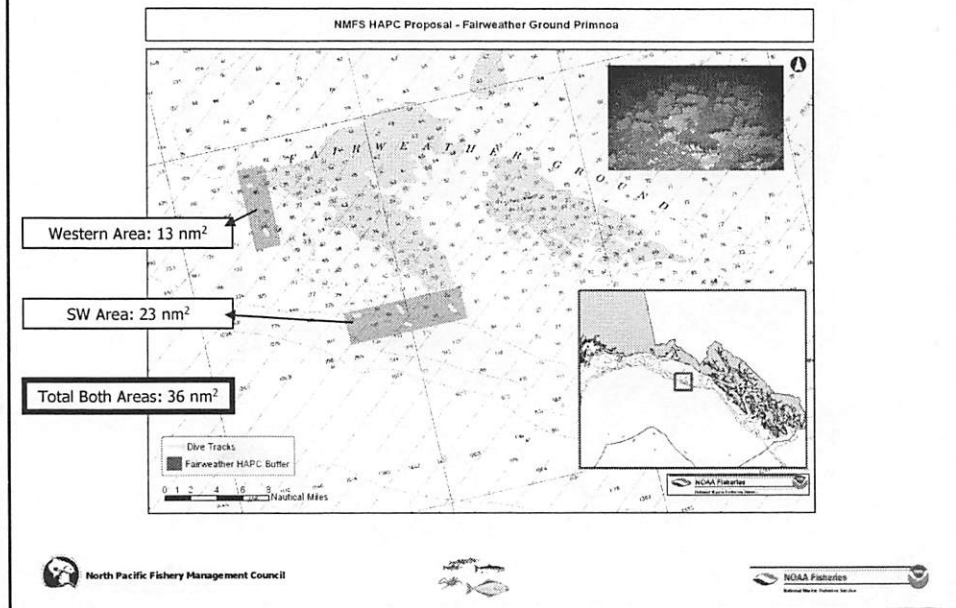


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## #8 NMFS GOA Hard Corals – Fairweather Grounds



## Plan Team Review of individual proposals (Group C)

- General Comments (proposals 5,6,7 together):  
Sanak Island, Albatross Bank, Middleton Island
  - Questions regarding addressing Council priorities
    - neither seamounts nor in the AI
    - loosely established association with rockfish and habitat
  - lack of information on the existence of coral limited the ability to review these proposals
    - NMFS trawl survey data might be utilized to determine if coral are present and areas worth further evaluation
  - documented rockfish but no coral
  - differing opinions regarding rarity of habitat area
    - untrawlable area is common in the GOA
    - untrawlable area on the GOA slope is rare
  - more clarification and guidance necessary to specify rarity of this habitat

## Plan Team Review of individual proposals (Group C)

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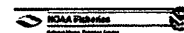
- Proposals 5,6,7 (cont)
  - *Sensitivity*
    - difficult to evaluate from information presented
      - if corals demonstrated here then sites listed would be sensitive
  - *Stress*
    - occasionally fished areas
      - degree of longline fishing poorly documented
  - *Ecological merit*
    - difficult to assess given the information presented



## Plan Team Review of individual proposals (Group C)

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- Proposal 8: NMFS GOA *Primnoa* Forest
  - Questions on meeting Council priorities however highlighted by Teams given:
    - abundance of rockfish
    - relatively undisturbed sites
    - outside core fishing areas\*\*
  - *Stress*
    - areas already closed to trawling
  - *Scientific/Technical merit*
    - high degree of scientific and technical merit
    - direct observations of corals and rockfish from submersibles
    - proposed sites seem appropriate for HAPCs
  - *Ecological merit*
    - high degree of ecological merit given documented corals and rockfish
    - rarity of *Primnoa* debated





## HAPC Proposals Group D – AI Hard Corals

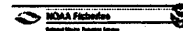
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#9 AMCC Adak Canyon

#15 MCA South Amlia Atka

#16 MCA Adak and Kanaga

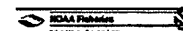
#17 MCA Amatignak/ Ulak & Tanaga



## Group D – AI Hard Corals Summary

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- 8 different areas were proposed by 2 proposers:
  - AMCC
  - MCA
- These 8 areas are based on:
  - local knowledge/experience & fishery data
  - scientific information using direct physical observation ( *in situ*; *DSV Delta*), survey data, and expertise and knowledge.

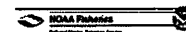
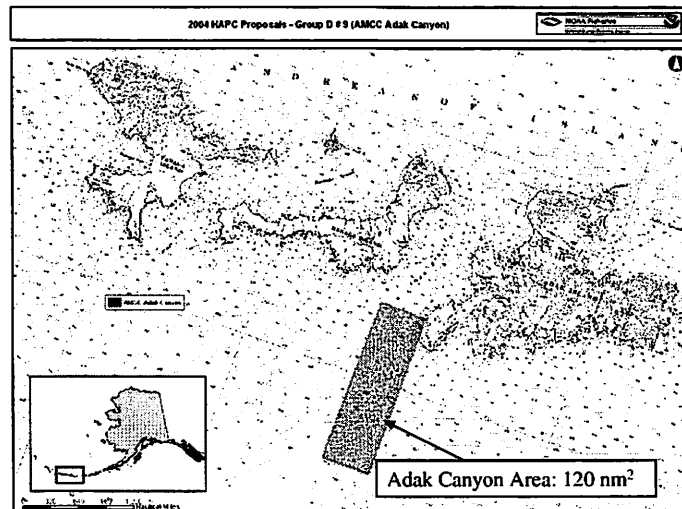


## #9 AMCC Adak Canyon

- Lasting protection and conservation of long-lived rockfish and corals within Adak Canyon.
- Relatively undisturbed
- Allows current level of commercial harvest by longline & pot gear, with cooperative research effects.
- Identify areas with habitat mapping, submersible, and ROV.
- Bottom trawling would be prohibited.



## #9 AMCC Adak Canyon

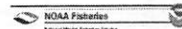


## #15, 16, 17 MCA Proposals

- Areas are offered by skippers possessing experience and knowledge of the AI and target rockfish species/ habitats
- Prioritize submersible mapping of areas and benthic habitats;
- Develop appropriate restriction to protect high relief hard corals and juvenile rockfish based on habitat mapping;
- Develop research strategy to understand rockfish and other demersal species use habitat, how fishing effects productivity, and how different levels of fishing intensity influence productivity of hard coral habitats.

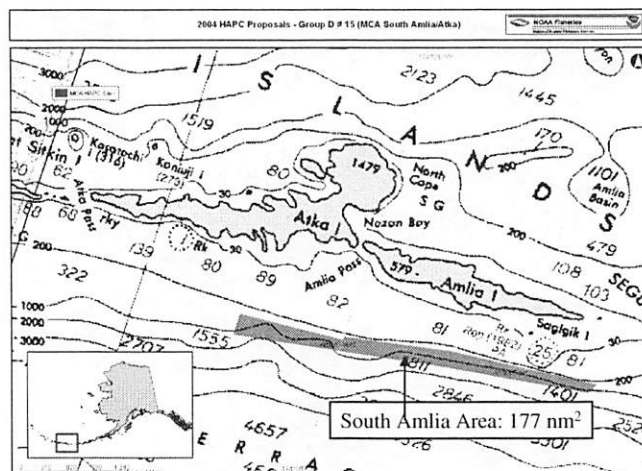


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## #15 MCA South Amlia/Atka

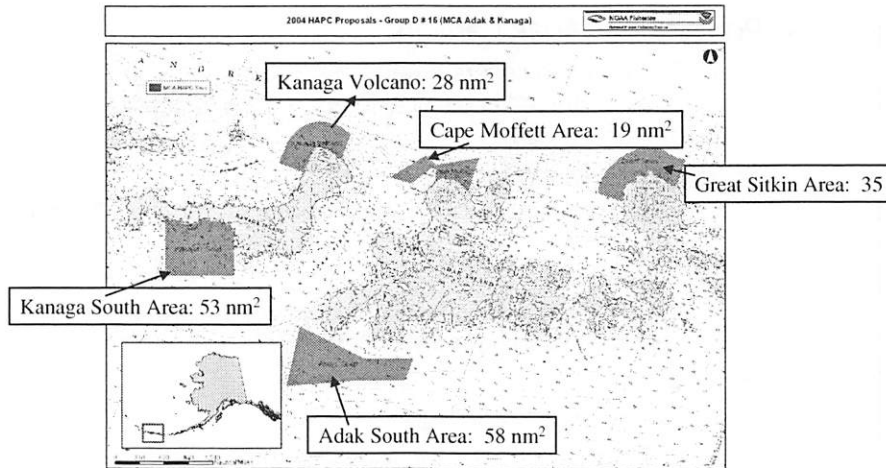


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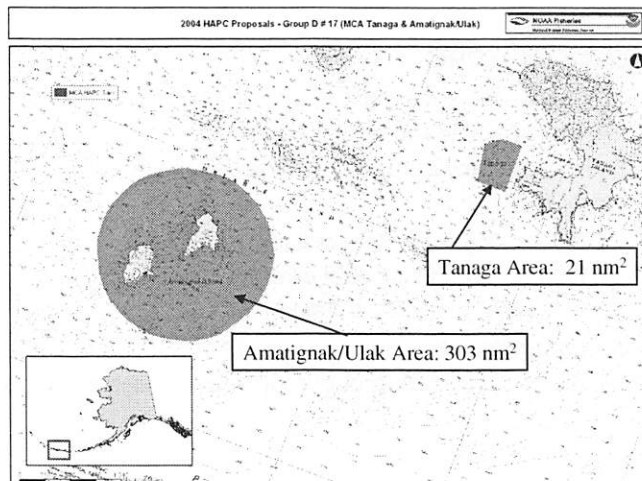


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## #16 MCA Adak & Kanaga



## #17 MCA Amatignak/Ulak & Tanaga



## Plan Team Review of individual proposals (Group D)

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- **Proposal 9: Adak Canyon**
  - HAPC proposed covers broad area including regions that likely have limited ecological importance and sensitivity (e.g., deep-water areas)
  - *Ecological importance*
    - region has high ecological importance for juvenile SR/RE and GKC species
  - *Sensitivity*
    - high sensitivity given propensity for hard corals to be easily damaged and long-recovery periods
  - *Stress*
    - occasional fishing in region



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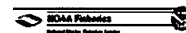
## Plan Team Review of individual proposals (Group D)

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- **Proposal 9 (cont)**
  - *Scientific/Technical merit*
    - high scientific and technical merit
    - proposed measures proactive and appropriate
  - *Ecological merit*
    - high ecological merit (coral and rockfish)
    - high degree of biological diversity in region
    - ecologically important region for GKC
  - *other comments*
    - teams support concept of cooperative research in proposal



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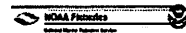
## Plan Team Review of individual proposals (Group D)

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- General comments: 15,16,17: S. Amlia/Atka/ Adak and Kanaga/ Amatignak, Ulak and Tanaga
  - Difficulty in assessing given that proposals refers to technical aspects of draft EFH EIS that was unfamiliar to team members
- Proposals 15,16,17 (similar comments for all three)
  - *Ecological importance*
    - likely high ecological importance
      - insufficient background information provided
  - *Sensitivity*
    - high sensitivity given easily damaged corals and long-recovery periods
      - however supporting evidence in proposal weak
  - *Stress*
    - rare to moderate fishing activity



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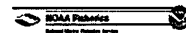
## Plan Team Review of individual proposals (Group D)

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- Proposal 15,16,17 (cont)
  - *Scientific/Technical merit*
    - technically deficient
    - anecdotal information from unknown fishermen \*\*
  - *Ecological merit*
    - high merit due to likely coral and rockfish presence
      - extent of presence not well documented
  - *other comments*
    - management measures and research needs appropriate
    - appropriateness of designating as HAPC to determine is appropriate as HAPC questionable concept



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## HAPC Proposals Group E – AI Hard Corals

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#10 AMCC Bowers Ridge

#18 MCA Semisopchnoi

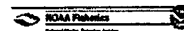
#19 NMFS AI Corals Gardens



## Group E AI Hard Corals Summary

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- 9 different areas were proposed by 3 proposers:
  - AMCC;
  - MCA; and
  - NMFS
- Of these 9 areas:
  - Three proposal options exist for the Bowers Ridge area.
  - 2 Areas are offered by fishers possessing a wealth of experience and local knowledge of habitats.
  - Group E includes 6 AI Coral Garden & Rockfish areas proposed by NMFS using scientific information using direct physical observation (*in situ*; DSV Delta), survey data, and expertise/knowledge.

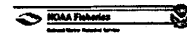
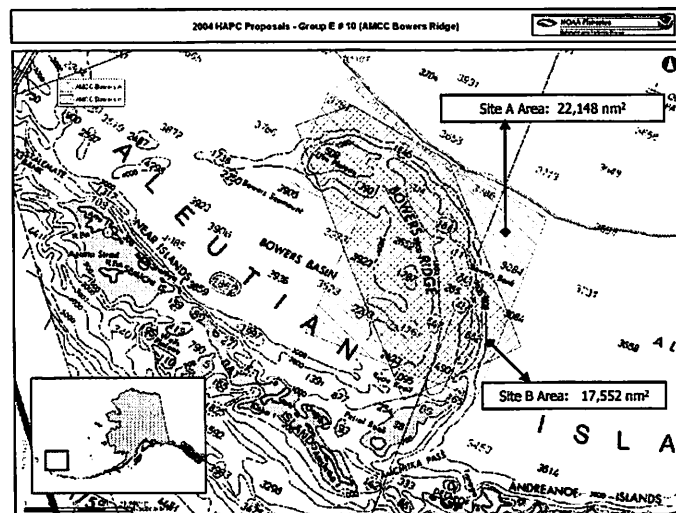


## #10 AMCC Bowers Ridge Summary

- 2 options for Bowers Ridge HAPC: Site A & B
  - Two areas offered to allow a difference in evaluation.
- Complex, diverse coral and rockfish habitat area consisting of numerous pinnacles and submarine canyons;
- Provide for the lasting conservation of undisturbed cold-water corals;
- Area has limited habitat research information;
- Management measure is no bottom trawling.



## #10 AMCC Bowers Ridge Proposal Areas



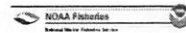


## #18 MCA Bowers Ridge Proposal Summary

- Areas are offered by fishers possessing a wealth of experience and knowledge of the AI and target rockfish species/habitats.
  - Bowers Ridge area
  - Semisopchnoi Island area
- Prioritize submersible mapping of areas and benthic habitats;
- Once areas are mapped, delineate areas where high relief habitats exist and eventually develop appropriate restrictions on fishing activities to protect high-relief hard coral and juvenile rockfish areas. while preserving the other areas for certain fishing activities;
- Develop a controlled research strategy to understand rockfish and other demersal species use habitat, how fishing effects that use and productivity, and how different levels of fishing intensity influence productivity of hard coral habitats.
- HAPC area near Semisopchnoi Island is within Steller sea lion critical habitat for the nearby major rookery.

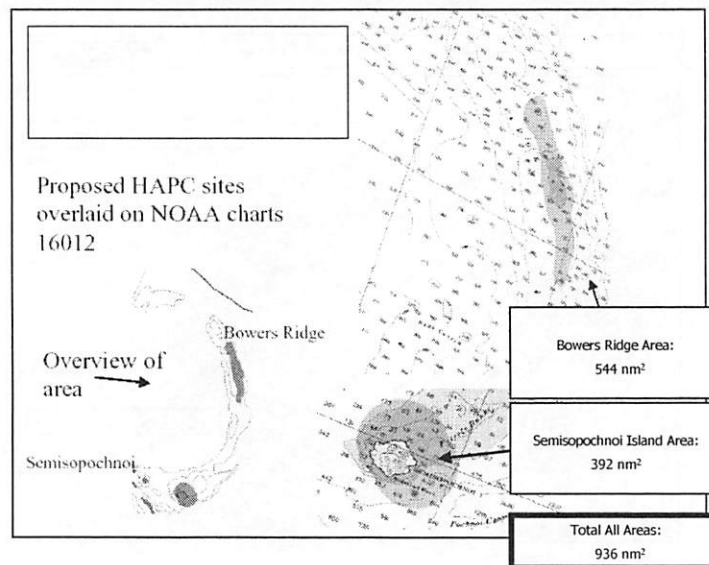


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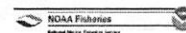


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## #18 MCA Bowers Ridge Proposal Area



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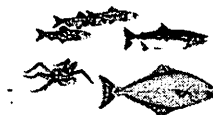


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National Marine Fisheries Service

## #19 NMFS AI Coral Garden Proposal Summary

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- Areas where coral and rockfish have been physically documented; *in situ* observations using the DSV Delta submersible.
- Over 40 dive locations in the AI have been physically investigated.
- Importantly, a NMFS HAPC proposal area is not every area of direct observation, but only those that appear more unique or rare.



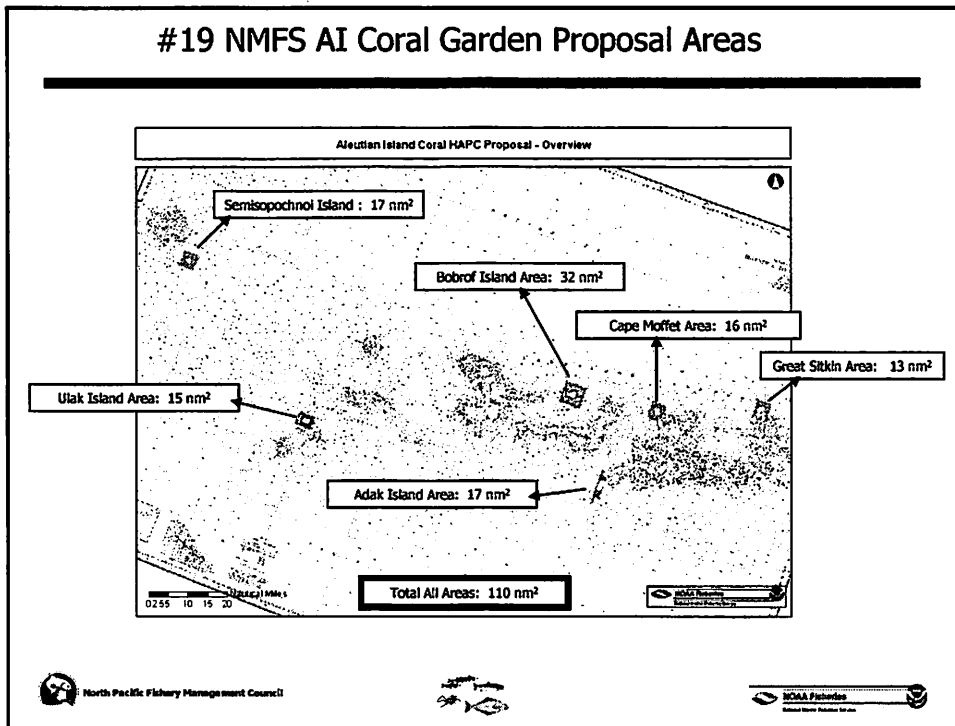
## #19 NMFS AI Coral Garden Proposal Summary

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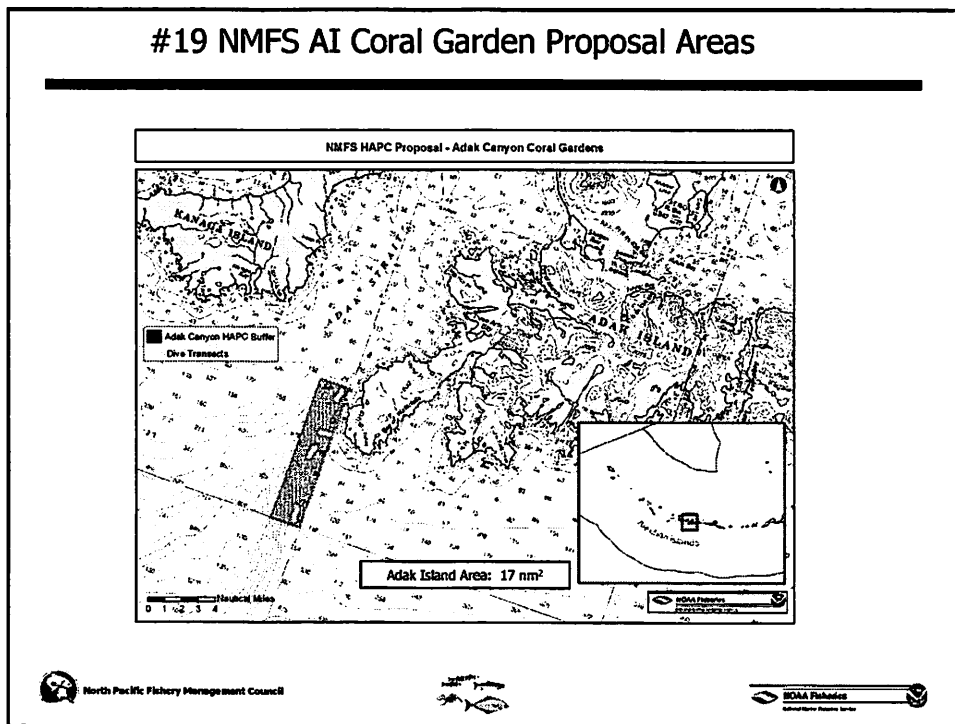
- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- These areas of coral habitat are near or within:
  - Adak Canyon
  - Bobrof Island
  - Cape Moffet
  - Great Sitkin
  - Semisopchnoi Island
  - Ulak Island



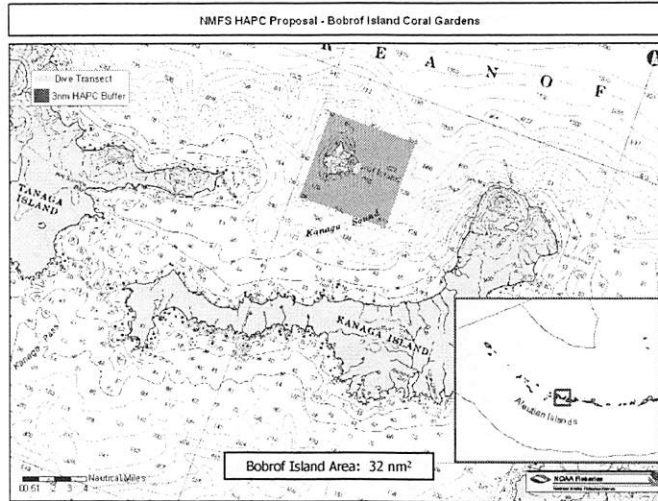
## #19 NMFS AI Coral Garden Proposal Areas



## #19 NMFS AI Coral Garden Proposal Areas



## #19 NMFS AI Coral Garden Proposal Areas

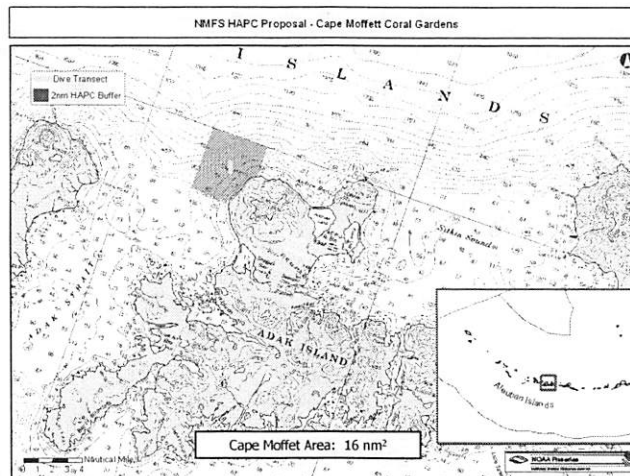


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## #19 NMFS AI Coral Garden Proposal Areas

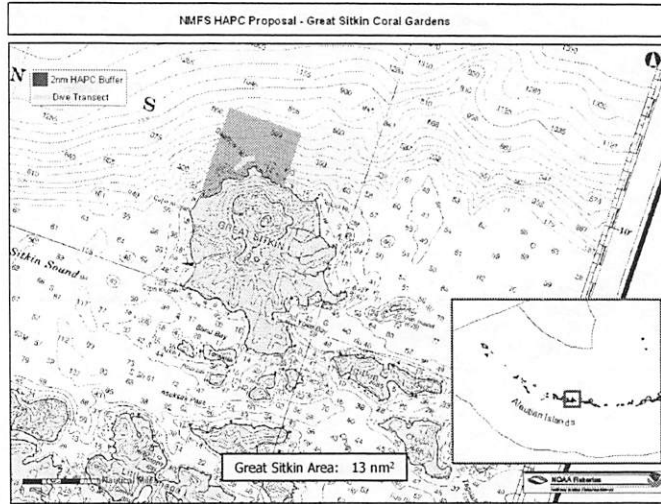


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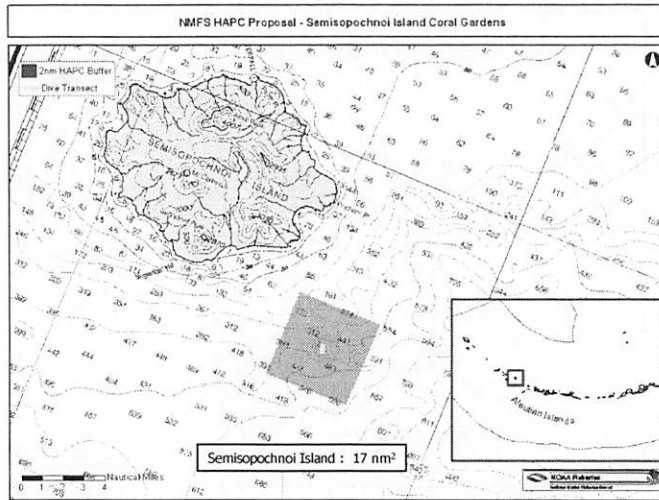


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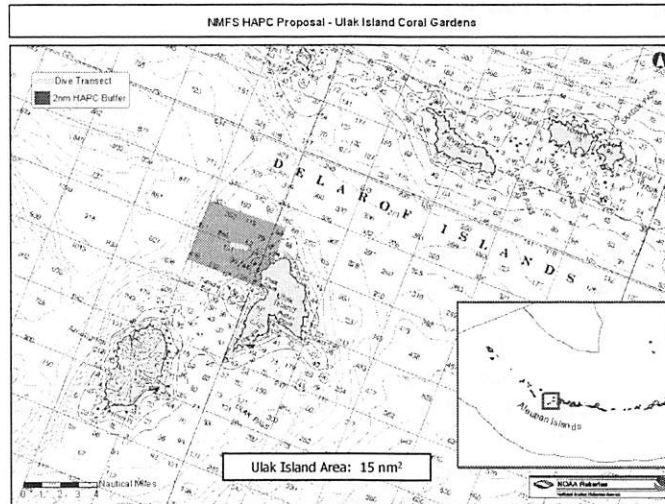
# #19 NMFS AI Coral Garden Proposal Areas



# #19 NMFS AI Coral Garden Proposal Areas



## #19 NMFS AI Coral Garden Proposal Areas



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## Plan Team Review of individual proposals (Group E)

- General comments:
  - question of scale in evaluating proposals
    - ranged from small scale specific area (proposal 19) to broad areas with a suite of habitat areas (proposal 10)\*\*
    - which is more important?
  - Utility of “anecdotal” information by fishermen
    - question of credibility of information scientifically vs. utility from extensive experience
- Proposal 10: Bowers Ridge
  - *Sensitivity*
    - unable to assign a rating (see ecological merit discussion)
  - *Stress*
    - low level of fishing effort
      - large area therefore possibly differential fishing pressure on some regions

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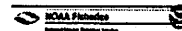
## Plan Team Review of individual proposals (Group E)

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- Proposal 10 (cont)
  - *Scientific/Technical merit*
    - high technical merit
    - difficult to assess given diversity of habitats and size of area
    - no information on fish or coral abundance provided
    - unlikely that all of Bowers Ridge is coral habitat
  - *Ecological merit*
    - impossible to evaluate in comparable way to other proposals given large area proposed
      - obviously ecologically important area however difficult to evaluate within the framework of the HAPC process
    - raises important discussion points regarding protection of specific habitat types or connected mosaics a range of differing habitat types
    - large area protection possibly better suited to a marine reserve and discrete areas to HAPCs



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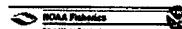
## Plan Team Review of individual proposals (Group E)

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- Proposal 10 (cont)
  - *Other comments*
    - difficult to evaluate scientifically
    - little available information on habitat types on Bowers Ridge (little in existence)
    - rationale behind proposed shapes not well explained
      - 2 options proposed for boundaries but not explained



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## Plan Team Review of individual proposals (Group E)

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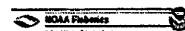
- Proposal 18: Semisopchnoi and Bowers Ridge
  - *Ecological importance*
    - assume from proposers that dense coral stands exist therefore vertical structure and likely association with rockfish
      - however nothing in the proposal that identified the tie to rockfish
  - *Sensitivity*
    - assumed sensitive based on coral
      - rating based on weak evidence
  - *Stress*
    - Semisopchnoi:
      - occasionally to routinely fished (SSL closure but limited atka mackerel, cod, pollock fishing, important area for GKC fishery)
    - Bowers Ridge:
      - limited historic fishing (some limited rockfish catch, intermittent GKC fishing)



## Plan Team Review of individual proposals (Group E)

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- Proposal 18 (cont)
  - *Scientific/Technical merit*
    - questions regarding reliance on fishermen's data
    - need more information on where unique areas are (poses questions re: philosophy of closing large or discrete areas without specific information on location of unique regions)
  - *Ecological merit*
    - concern that motivation for measures designed by economic and managerial concerns rather than ecological
    - lack of information to specify HAPCs





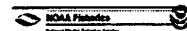
## Plan Team Review of individual proposals (Group E)

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- **Proposal 19: NMFS AI Coral Garden**
  - Coral gardens are subset of coral habitat found commonly in the AI
  - *Ecological importance*
    - documented FMP species and life history stages in association with the coral gardens
    - aggregation areas for fish
    - high relief feeding areas for invertebrates
    - important sites for nutrient cycling-->high densities of filter feeding invertebrates (sponges)
    - strong evidence due to visual observations
  - *Sensitivity*
    - highly sensitive
      - long-lived, slow growing, fragile, slow recovery time(from physical damage)



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## Plan Team Review of individual proposals (Group E)

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- **Proposal 19 (cont)**
  - *Stress*
    - regularly fished
      - relatively high relief locations appear undisturbed by trawl fishing
      - however, groundfish and king crab fishing in areas, derelict longline gear observed
  - *Scientific/Technical merit*
    - high scientific and technical merit
      - established link to scientific dive sites supplemented with fishery information
  - *Ecological merit*
    - high ecological merit, proposal demonstrates unique nature of areas proposed (even within AI coral-rich areas)
  - *other comments*
    - questions regarding the overall coverage of area by dive sites
      - how were individual sites selected? How much habitat would be protected? Optimal size for closed areas?



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## HAPC Proposals Group F

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#12 TOC AI Marine Reserve

#14 Oceana AI Core bottom trawl area



## HAPC Proposals Group F Summary #12

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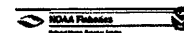
Two proposals focused on AI hard corals

1. AI Marine Reserve composed of 4 sites (#12)

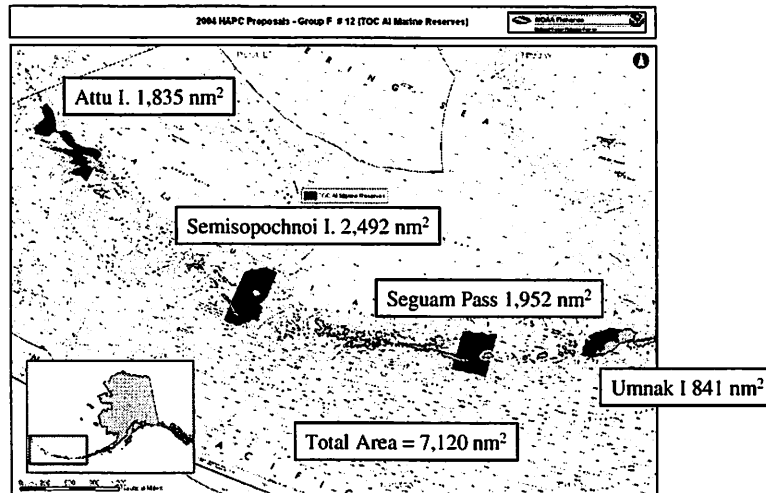
{Attu I., Semisopochnoi I., Seguam Pass, Umnak I} Individually and Combined

### Objectives and management measures:

- These areas had an identified presence of high relief coral and other notable benthic structure. The areas were identified in the PDEIS for EFH alt 6, designed by NMFS.
- Designed to protect the sensitive habitat within the Aleutians Islands from fishing impacts, the need for control areas for adaptive management, and the need for refugia for long lived rockfish species.
- suggested management is no take marine reserves while allowing research and native subsistence activities.



## HAPC Proposals Group F #12 TOC AI Marine Reserve



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## HAPC Proposals Group F Summary #14

### 2. AI Core bottom trawl open permit area (#14)

#### Objectives and management measures:

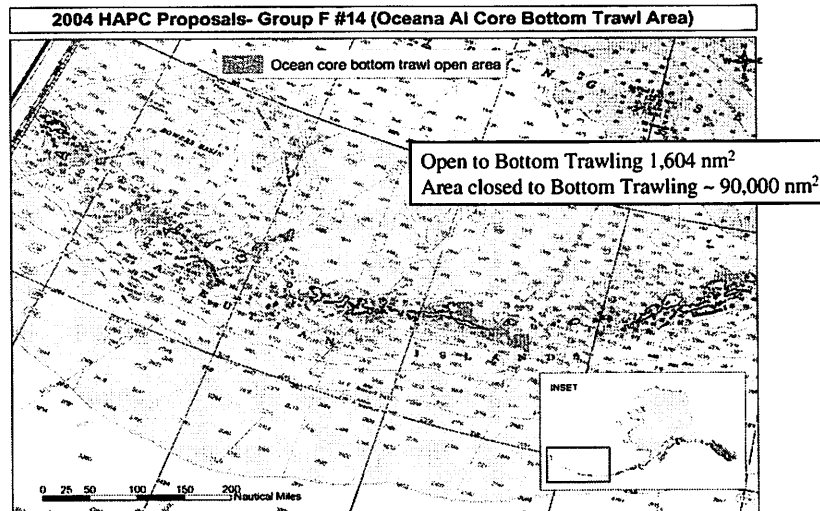
- Designate the Aleutian Islands and a special management unit to protect corals, sponges, other living substrates, pinnacles, and seamounts in the region.
- Management suggested: allow bottom trawl gear with a permit to occur in 55 10x10 km blocks that historically provided high levels of harvest with bottom trawl gear.
- All other areas would be closed to bottom trawling until NMFS conducts research and mapping to determine that bottom trawling would not negatively impact these HAPCs.

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## HAPC Proposals Group F #14 Oceana AI Core bottom trawl area



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## Plan Team Review of individual proposals (Group F)

### • Proposal 12: AI Marine Reserve

#### – *Ecological importance*

- Overall discussion of local rarity of AI corals (diversity of corals and rare species in area)

#### – *Stress*

- routinely fished
  - relative (large) scale proposed makes determination difficult (potential for differential fishing pressure)

#### – *Scientific/Technical merit*

- weak in scientific/technical merit for designing areas as marine reserves
- number and boundaries of closed areas not well justified
- conflicting statements of pristine ecosystems and deeply impacted by fishing
- if carried forward concepts in proposal require further evaluation before proceeding

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## Plan Team Review of individual proposals (Group F)

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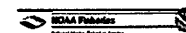
- Proposal 12 (cont)
  - *Ecological merit*
    - marine reserve concept acknowledged for ecological merit in a general sense
  - *other comments*
    - remaining questions regarding scientific justification for the geographic extent of the proposed reserves



## Plan Team Review of individual proposals (Group F)

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- Proposal 14: AI Core Bottom Trawl Area (reverse)
  - Unique approach to HAPC design but inherently difficult to evaluate within context of other proposals
  - *Stress*
    - routinely fished (entire AI area)
  - *Scientific/Technical merit*
    - weak in scientific and technical merit due to lack of available knowledge on corals, role in habitat for species (to justify proposed measures/large scale closures)
    - uses limited scientific data to justify proposed closure of massive area of AI
  - *other comments*
    - philosophical difference in proposal re: reversing the burden of proof to reopen areas
    - Teams appreciate innovative nature of proposal but felt that is currently out of order with respect to the other proposals



## HAPC Proposals Group G – AI Hard Corals

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#11 TOC Coral and Sponge

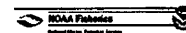
#13 OCEANA AI Corals Gardens



## AI Hard Corals Summary

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- Both proposals suggest the same 5 areas in the AI proposed to protect coral gardens.
- Areas overlap between proposals based on NMFS research.
- These areas of coral habitat are near or within:
  - Bobrof Island
  - Cape Moffet
  - Great Sitkin
  - Semisopchnoi Island
  - Ulak Island



## #11 TOC AI Hard Corals Summary

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- Propose individual marine reserves centered around known concentrations of coral and sponge biodiversity that provide shelter for manage species.
- 5 nm radius centered on coral area (Area =  $\pi*r^2$ ;  $\sim 79 \text{ nm}^2$  each)
- All extractive activities be banned; exceptions for research and traditional subsistence activities.
- Create and inventory of AI seafloor habitats and communities.
- Further develop knowledge and understanding of:
  - Sponge and coral structures, function, and variability;
  - Correlation between coral habitats and nearshore habitats;
  - Potential for human-induced threats on corals and sponges;



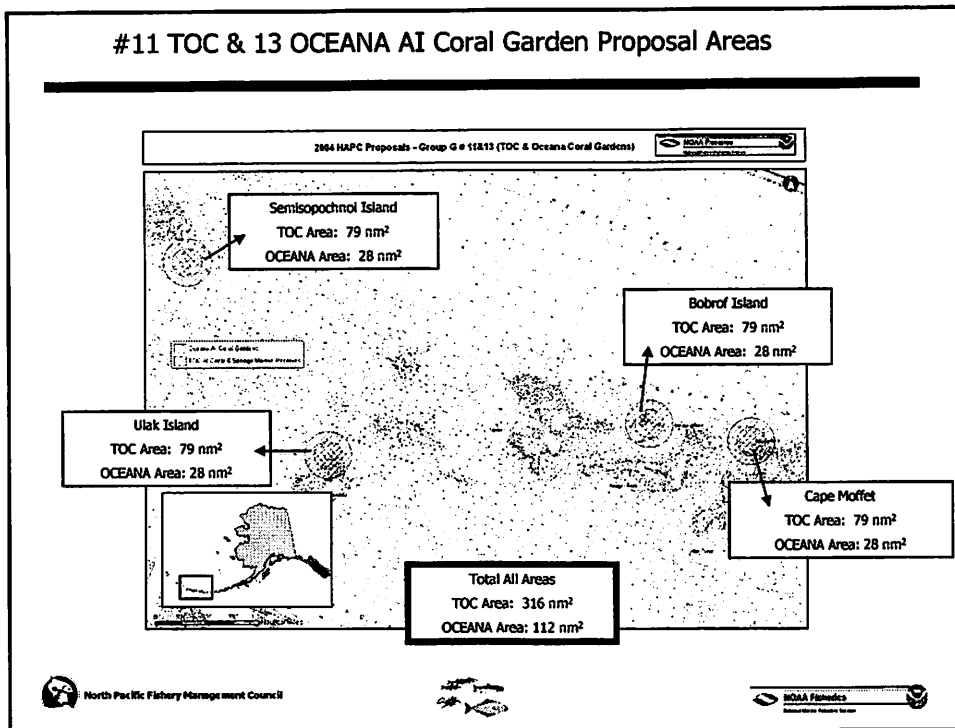
## #13 OCEANA AI Hard Corals Summary

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- Propose individual marine reserves centered around known concentrations of coral and sponge areas.
- 3 nm radius centered on area (Area =  $\pi*r^2$ ;  $\sim 28 \text{ nm}^2$  each)
- Protect these areas from any commercial fishing gear that advertently or inadvertently contacts the bottom.



## #11 TOC & 13 OCEANA AI Coral Garden Proposal Areas



## Plan Team Review of individual proposals (Group G)

- General comments (11 and 13)

- *Stress*

- two sites relatively unfished, two (Bobrof and Adak Is.) locations within commercial fishing activities and relatively disturbed

- *Scientific/Technical merit*

- merit limited to observational data from NOAA submersible research
    - no direct link provided to FMP spp, however GKC fishing in area
    - documentation in both proposals lacking
    - Proposal 19 is similar to 11 and 13 and should all be evaluated together

- *other comments*

- state management concerns would need to be addressed
    - no documentation on size of closure necessary to afford adequate protection to coral beds



## Plan Team Review of individual proposals (Group G)

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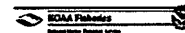
- **Proposal 11: TOC Coral and Sponge**
  - *Scientific/Technical merit*
    - lack scientific and technical merit
    - little research to justify concepts in proposal
    - no justification for size of closed areas
  - *Ecological merit*
    - general concept of protection of corals and bryozoans has ecological merit
    - small size of closed areas leads to questions regarding their specific ecological merit (unique corals but unique habitat for fish and shellfish in AI?)
  - *other comments*
    - proposal seems to protect corals for own intrinsic value but not as unique and important EFH and HAPC
    - general lack of data on AI coral and sponge makes evaluation difficult



## Plan Team Review of individual proposals (Group G)

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- **Proposal 13: Oceana AI Coral Gardens**
  - *Scientific/Technical merit*
    - lacks scientific and technical merit
      - broad scope and lacks important specific details to justify closed areas (based on proposal)
      - understanding linkage of sites to proposal 19
    - designation of SMA undefined in terms of management steps and justification
  - *Ecological merit*
    - same as previous (justification for corals overall but not specific habitat for fish and shellfish)



## HAPC Proposals Group H#22 Oceana Soft corals

One proposal focused on Soft Corals in the Bering Sea Region with two sites. - seamount outside of EEZ

### Objectives and management measures:

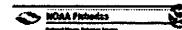
Two sites within the Bering Sea that have documented presence of *Gersemia sp.* would be designated HAPC and recommend as a priority that NOAA fisheries should undertake research to determine the extent to which bottom trawling damages these invertebrates.

Area designated to enhance productivity of FMP species such as: P.Cod, yellowfinsole, flathead sole, rex sole, arrowtooth flounder, and walleye pollock.

Management measures would be determined based on research.

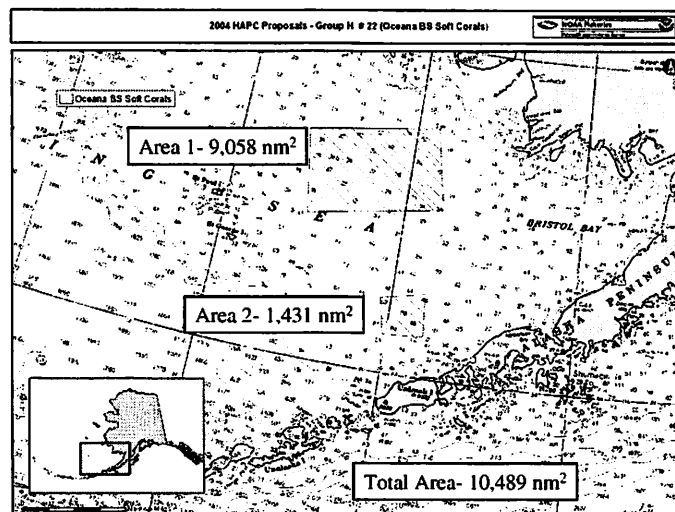


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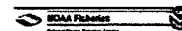


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## HAPC Proposals Group H #22 Oceana BS Soft corals



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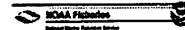


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## Plan Team Review of individual proposals (Group H)

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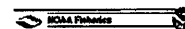
- Proposal 22: BS Soft Corals
  - Poorly supported arguments for declaring HAPC
  - Failed to meet Council priorities
  - Mednyy seamount mislocated therefore disregarded
  
  - *Scientific/Technical merit*
    - weak scientific merit due to limited data and limited evidence to support arguments within proposal
    - justifications based on general literature, no focus on *Gersemia* spp.
    - inconsistencies in bycatch data provided for Area 2 (scallop bycatch data inconsistent with proposal)



## Plan Team Review of individual proposals (Group H)

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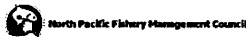
- Proposal 22 (cont)
  - *Ecological merit*
    - limited available data to evaluate importance of *Gersemia* spp.
      - If demonstrated importance it would be important to sustain ecological function
      - current association of commercial species with soft coral lacking
  - *other comments*
    - limited disturbance and relation to rockfish possible (e.g. Council priorities)



## Plan Team Comments on Tables for Council

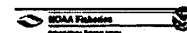
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- Tables 1 and 2
  - prefer not to utilize due to previous concerns with criteria and ranking
  - if utilized should be as qualitative assessment only and not additive across rows to sum for “score”
- Table 3
  - qualified previously re: “relative disturbance”
  - left for staff to fill out as appropriate
    - PTs filled out coral section as best evidence would indicate at this time (therefore CY for “conditional yes”)



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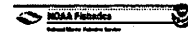
## Assessment of the Potential for Socioeconomic Effects of HAPC Proposals



## Potential Effects Considered

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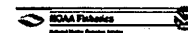
- Potential Benefits
  - Passive Use Value (Passive use, non-use, existence):
    - the underlying premise is that individuals derive real benefit from the knowledge that relatively unique natural assets remain in a comparatively undisturbed state
  - Use Value:
    - “opportunity reservation value (future consumptive-use value):” a collective hedge against irreversible loss of some highly valuable good or service that has not yet been recognized.
    - “production and yield of FMP and other species” (consumptive-use value): the economic benefit associated with the potential for improved ecosystem function with regard to the production, and thereby, the commercial fishing yields of FMP species.



## Potential for Effects on Harvest

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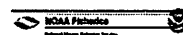
- Potential to reduce harvest by closing areas where harvest has historically occurred
- Potential to restrict a gear type from operating in areas where harvest has historically occurred
- Does not consider whether effort redeployment would mitigate effects.



## Potential for Benefits Effects Methodology

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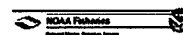
- Measuring Potential Benefits
  - there is no available measure for passive use value or opportunity reservation value that may be directly applied to evaluate such benefits of proposed HAPCs.
  - the actual linkage between habitat protection and productivity and yield improvement is extremely complex and not presently defined in a quantitative way.
  - **Simply put, these benefits exist but are impossible to quantify with currently available information.**
  - In order to provide some information on the level of potential benefits associated with each proposal, this assessment provides information on the extent of the area proposed for protection including surface area (at sea level) as well as a breakdown of that area by bathymetric ranges.



## Potential for Harvest Effects Methodology

---

- Criteria
  - **None:** No harvest has been observed or reported in the HAPC area.
  - **Negligible:** Harvest has occurred in the proposed HAPC area, however, no affected target fishery has been observed or reported to have had harvests within the HAPC area of more than 1% of the total harvest for that target fishery.
  - **Minimal:** Harvest has occurred in the proposed HAPC area, however, no affected target fishery has been observed or reported to have had harvest within the HAPC areas of more than 5% of the total harvest occurring within the target fishery.
  - **Potential:** Harvest has occurred in the proposed HAPC area, and at least one target fishery has been observed or reported to have had harvest within the HAPC area of more than 5% of the total harvest occurring within the HAPC area. **Potential, as used here, implies the need for further analysis of the impacts of harvest on specific vessel and gear classes.**



## Harvest Effects Data

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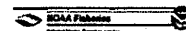
- Groundfish Observer data, 1998 through 2002, organized by target fishery and intersected with HAPC proposal areas to calculate a five-year total percent of harvest within the HAPC area.
- ADF&G king crab Observer data, 1998-2002 for AI brown and red king crab (2002 only) intersected with HAPC proposal areas to calculate a five-year total percent of harvest within the HAPC area.
- ADF&G scallop data by state statistical area, 1998-2002. As a proxy, the percentage of total harvest within SSAs overlapping HAPC areas is used to identify the potential for impacts.
- Halibut catch data was obtained from the International Pacific Halibut Commission (IPHC) for the 1998-2001 seasons. The proportional of harvest in each state statistical area (SSA) contained within the HAPC proposal area was calculated for each SSA in each proposal and then summed and divided by total harvest for the SSAs to obtain percent of harvest affected.



## Binding vs. Non-binding Management Measures

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- **Binding measures = "present" potential for benefits and effects on harvest**
  - Closures to fishing
  - Gear Restrictions (e.g Bottom Trawl or Bottom Contact)
- **Non-binding measures = no "present" potential for benefits, harvest effects potential is indeterminate**
  - Designation of HAPC
  - Prioritization for mapping/zoning
  - Research
  - Eventual restrictions



## HAPC Proposals with Non-Binding Management Measures

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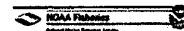
Proposal	
5	ADA/AGDB Sanak Island
6	ADA/AGDB Albatross Rockfish
7	ADA/AGDB Middleton Island
9	AMCC Adak Canyon
15	MCA South Amlia/Atka
16	MCA Adak & Kanaga
17	MCA Tanaga & Amatignak/Ulak
18	MCA Semisopchnoi & Bowers Ridge
21	TOC PWS Deepwater Canyon



## Effects Summary Tables

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- **Table ES-2: Bathymetric Comparison**
  - Compares square nautical miles of ocean area by depth range
  - Provides percentage breakdown by range
  - Proxy of the Potential for Socioeconomic Benefits
- **Table ES-3: Potential Harvest Effects**
  - Potential, minimal, negligible, none, or indeterminate effects by proposal
  - Groundfish, king crab, scallops, halibut





## Harvest Effects Summary

Proposal	Groundfish	Red King Crab	Golden King Crab	Scallops	Halibut**
1 TOC North Pacific Seamounts	negligible	none	none	none	potential**
2 Oeana GOA Pinnacles & Seamounts	minimal	none	none	potential *	minimal**
3 Oeana AI Pinnacles & Seamounts	potential	minimal	potential	negligible*	minimal**
4 NMFS Seamounts	negligible	none	none	none	potential**
8 NMFS GOA Primnoa Forest	negligible	none	none	none	minimal**
10 AMCC Bowers Ridge	negligible	NA	NA	none	NA
11 TOC AI Coral & Sponge	minimal	none	negligible	none	potential**
12 TOC AI Marine Reserves	potential	potential	potential	negligible*	potential**
13 Oeana AI Coral Gardens	negligible	none	negligible	none	potential**
14 Oeana AI Core Bottom Trawl Area	potential	NA	NA	confidential	NA
19 NMFS AI Coral Gardens	minimal	none	negligible	none	potential**
20 TOC Zhemchug & Pribilof Canyons	potential	none	none	none	potential**
22 Oeana BS Soft Corals	potential	none	none	potential *	none
23 NMFS 8-fathom Pinnacle	negligible	none	none	none	minimal**

Criteria	
none	no harvest occurring in proposal area
negligible	not more than 1% harvest in HAPC & affected by management measures
minimal	greater than 1% but less than 5% of harvest in HAPC & affected by management measures
potential	greater than 5% of harvest in HAPC & affected by management measures
NB-IND	Non-binding management, eventual effects are indeterminate.
Scallop *	additional confidential harvest data within the proposal area is not included.
Halibut **	Preliminary, must be verified with additional data
NA	Not applicable due to management measures



## Harvest Effects: Proposal 1 – TOC North Pacific Seamounts Marine Reserves (no fishing)

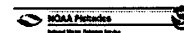
Target Fishery	% Of Fishery In Closed Area
Gulf of Alaska Rockfish Pelagic Trawl	0.01%
Crab	None
Scallops	None
Halibut	20.13%



**Harvest Effects: Proposal 2 – Oceana GOA Pinnacles & Seamounts  
(no fishing/limit bottom trawl)**

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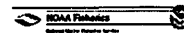
<b>Target Fishery</b>	<b>% of Fishery in Closed Area</b>
Gulf of Alaska Deepwater Flatfish Trawl	0.16%
Gulf of Alaska Pacific Cod H&L	1.82%
Gulf of Alaska Pacific Cod Pot	0.05%
Gulf of Alaska Pacific Cod Trawl	0.09%
Gulf of Alaska Pollock Pelagic Trawl	0.37%
Gulf of Alaska Pollock Trawl	0.34%
Gulf of Alaska Rockfish Pelagic Trawl	0.02%
Gulf of Alaska Rockfish Trawl	1.09%
Gulf of Alaska Shallow water Flatfish Trawl	0.03%
Gulf of Alaska Sablefish Greenland Turbot H&L	0.38%
<b>Crab</b>	<b>none</b>
<b>Scallops</b>	<b>23.08 %</b>
<b>Halibut</b>	<b>1.42%</b>



**Harvest Effects: Proposal 3 - Oceana AI Pinnacles and Seamounts  
(no fishing/limit bottom trawl)**

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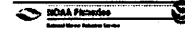
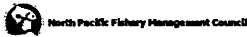
<b>Target Fishery</b>	<b>% of Fishery in Closed Area</b>
Aleutian Islands + areas 518-519 Pacific Cod H&L	4.39%
Aleutian Islands + areas 518-519 Pacific Cod Pot	1.84%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.62%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	2.46%
Aleutian Islands + areas 518-519 Pollock Trawl	3.46%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	2.15%
<b>Aleutian Islands + areas 518-519 Rockfish Trawl</b>	<b>16.93%</b>
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot POT	3.40%
<b>Aleutian Islands + areas 518-519 Sablefish &amp; Greenland Turbot Trawl</b>	<b>5.63%</b>
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	2.91%
Gulf of Alaska Pacific Cod H&L	0.20%
Gulf of Alaska Pacific Cod Pot	0.06%
Gulf of Alaska Sablefish Greenland Turbot H&L	0.00%
<b>Red King Crab</b>	<b>2.30%</b>
<b>Brown King Crab</b>	<b>6.88%</b>
<b>Scallops</b>	<b>0.14%</b>
<b>Halibut</b>	<b>1.74%</b>



## Harvest Effects: Proposal 4 - NMFS Seamounts (no fishing)

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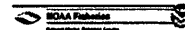
Target Fishery	% Of Fishery in Closed Area
Gulf of Alaska Pacific Cod Pot	0.00%
Gulf of Alaska Rockfish Pelagic Trawl	0.01%
Crab	None
Scallops	None
Halibut	20.56%



## Harvest Effects: Proposal 8 - NMFS GOA Primnoa forest (no fishing)

---

Target Fishery	% Of Fishery in Closed Area
Gulf of Alaska Sablefish Greenland Turbot H&L	0.04%
Crab	None
Scallops	None
Halibut	1.28%



## Harvest Effects: Proposal 11 - TOC AI Coral & Sponge (no fishing)

---

Target Fishery	% Of Fishery In Closed Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.07%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.21%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	2.40%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.55%
Aleutian Islands + areas 518-519 Sablefish & Grmnd Turbot H&L	2.28%
Brown King Crab	0.16%
Scallops	None
Halibut	13.77%



## Harvest Effects: Proposal 12 – TOC AI Marine Reserves (no fishing)

---

Target Fishery	% Of Fishery In Closed Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	15.53%
Aleutian Islands + areas 518-519 Pacific Cod Pot	8.09%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	6.92%
Aleutian Islands + areas 518-519 Pollock Trawl	0.04%
Aleutian Islands + areas 518-519 Sablefish & Grmnd Turbot H&L	15.28%
Aleutian Islands + areas 518-519 Rockfish Trawl	15.07%
Aleutian Islands + areas 518-519 Sablefish & Grmnd Turbot POT	42.72%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	10.36%
Red King Crab	80.46%
Brown King Crab	16.06%
Scallops	0.55%
Halibut	39.64%



**Harvest Effects: Proposal 13 – Oceana AI Coral Gardens (no bottom contact)**

---

<b>Target Fishery</b>	<b>% Of Fishery In Closed Area</b>
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.00
Aleutian Islands + areas 518-519 Pacific Cod Trawl	0.01
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.00
Aleutian Islands + areas 518-519 Sablefish & Gmnd Turbot H&L	0.01
Brown King Crab	0.02%
Scallops	None
Halibut	11.24%



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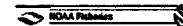
**Harvest Effects: Proposal 14 – Oceana AI Core Bottom Trawl Area (restrict bottom trawl)**

---

<b>Target Fishery</b>	<b>% Of Fishery In Closed Area</b>
Aleutian Islands + areas 518-519 Pacific Cod H&L	89.32%
Aleutian Islands + areas 518-519 Pacific Cod Pot	98.50%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	51.09%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	95.05%
Aleutian Islands + areas 518-519 Pollock Trawl	79.29%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot H&L	93.47%
Aleutian Islands + areas 518-519 Rockfish Trawl	66.82%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot POT	94.06%
Aleutian Islands + areas 518-519 Sablefish & Greenland Turbot Trawl	89.74%
Aleutian Islands + areas 518-519 Atka Mackerel Trawl	19.27%
Red King Crab	96.62%
Brown King Crab	93.68
Scallops	Confidential
Halibut	NA



North Pacific Fishery Management Council



## Proposal 19 - NMFS AI Coral Gardens Bathymetry (no fishing)

---

Target Fishery	% Of Fishery In Closed Area
Aleutian Islands + areas 518-519 Pacific Cod H&L	0.13%
Aleutian Islands + areas 518-519 Pacific Cod Pot	0.05%
Aleutian Islands + areas 518-519 Pacific Cod Trawl	1.44%
Aleutian Islands + areas 518-519 Pollock Pelagic Trawl	0.03%
Aleutian Islands + areas 518-519 Sablefish & Gm/nd Turbot H&L	0.68%
Brown King Crab	0.22%
Scallops	None
Halibut	6.66%



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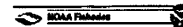
## Harvest Effects: Proposal 20 – TOC Zemchug & Pribilof Canyons (no fishing)

---

Target Fishery	% Of Fishery In Closed Area
Bering Sea Flathead Sole, Other Flatfish Trawl	0.19%
Bering Sea P. Cod H&L	2.59%
Bering Sea P. Cod Trawl	0.01%
Bering Sea Pollock Pelagic Trawl	1.23%
Bering Sea Pollock Trawl	0.02%
Bering Sea Rock Sole Trawl	0.02%
Bering Sea Rockfish Trawl	13.65%
Bering Sea Sablefish & Greenland Turbot Pot	7.67%
Bering Sea Sablefish & Greenland Turbot H&L	5.51%
Bering Sea Sablefish & Greenland Turbot Trawl	1.09%
Bering Sea Yellowfin Sole Trawl	0.01%
Crab	None
Scallops	None
Halibut	12.61%



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NOAA Fisheries  
Bonneville Basin Office

**Harvest Effects: Proposal 22 – Oceana BS Soft Corals  
(no fishing/limit bottom trawl)**

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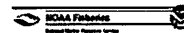
<b>Target Fishery</b>	<b>% Of Fishery In Closed Area</b>
Bering Sea Flathead Sole, Other Flatfish Trawl	15.80%
Bering Sea P. Cod H&L	18.16%
Bering Sea P. Cod Pot	1.09%
Bering Sea P. Cod Trawl	0.43%
Bering Sea Pollock Pelagic Trawl	3.22%
Bering Sea Pollock Trawl	6.77%
Bering Sea Rock Sole Trawl	18.77%
Bering Sea Sablefish & Greenland Turbot Pot	0.01%
Bering Sea Sablefish & Greenland Turbot Trawl	1.25%
Bering Sea Yellowfin Sole Trawl	26.09%
Scallops	17.79%
Crab	None
Halibut	None



**Proposal 23: NMFS Eight-Fathom Pinnacle ( no fishing)**

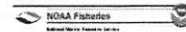
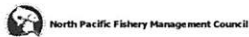
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<b>Target Fishery</b>	<b>% Of Fishery In Closed Area</b>
Gulf of Alaska Sablefish Greenland Turbot H&L	0.07%
Crab	None
Scallops	None
Halibut	1.61%



## Conclusion

- This assessment represents an initial review of HAPC proposals.
- This assessment has sought to determine whether proposals have the potential to create benefits and/or effects on harvest in Federally managed fisheries.
- This assessment has not determined actual effects nor has it determined which sectors of the fishing industry may be affected by HAPC proposal management measures.
  
- **It is expected that HAPC proposals that are included, as alternatives for further consideration, will receive additional analytical treatment in the Regulatory Impact Review/Initial Regulatory Flexibility Analysis (RIR/IRFA) and Environmental Assessment prepared to support the HAPC process.**



#	Proposal Name	Proposer	Sites Proposed	Council Priorities	
				No. 1	No. 2
				Named Seamounts	High-Relief Corals
1	North Pacific Seamounts	TOC	23	Y	
2	GOA Pinnacles & Seamounts	Oceana	73 (total)	(see below)	(see below)
	GOA Seamounts		19	Y	
	GOA Pinnacles		54	N	CY
3	AI Pinnacles & Seamounts	Oceana	85 (total)	(see below)	(see below)
	AI Seamounts		3	Y	
	AI Pinnacles		82	N	CY
4	Named Seamounts	NMFS	16	Y	
5	Sanak Island	AAGF	1	N	UNK
6	Albatross Bank	AAGF	1	N	UNK
7	Middleton Island	AAGF	1	N	UNK
8	GOA Primnoa	NMFS	4	N	Y
9	Adak Canyon	AMCC	1	N	Y
10	Bowers Ridge	AMCC	2	N	Y
11	AI Coral & Sponges	TOC	5	N	Y
12	AI Marine Reserve Network	TOC	4	N	Y
13	AI Coral Gardens	Oceana	5	N	Y
14	AI Core Bottom Trawling Open Permit Area	Oceana	55	N	Y
15	South Amia/Atka	MCA	1	N	Y
16	Adak & Kanaga	MCA	5	N	Y
17	Amatignak/Ulak & Tanaga	MCA	2	N	Y
18	Semisopchnoi & Bowers	MCA	2	N	Y
19	AI Coral Gardens	NMFS	6	N	Y
20	Zemchug & Pribilof Canyon	TOC	2	N	Y
21	PWS Deepwater Canyon	TOC	1	N	UNK
22	Bering Sea Soft Corals and Seamount	Oceana	3	N	N
23	8-fathom Pinnacle	NMFS	1	N	N
<b>Council Priority for 2004 HAPC Process</b>					
No. 1	Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species.				
No. 2	Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species that include the following features: a) sites must have likely or documented presence of FMP rockfish species; b) sites must be largely undisturbed and occur outside core fishing areas.				



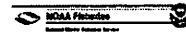
## Habitat Areas of Particular Concern Purpose & Need

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The Council needs to consider adopting a problem statement and purpose and need for the upcoming NEPA analysis on HAPC. Staff has provided a draft under your notebooks under C-2 (b)

The Council recognizes that Essential Fish Habitat (EFH) designations are necessarily broad in scope because of the limited available scientific information about the habitat requirements of managed species. The Council further recognizes that specific habitat areas within EFH may warrant additional management because of the following: The importance of the ecological function provided by the habitat; whether, and to what extent the development activities are, or will be, stressing the habitat type; and the rarity of the habitat (50 CFR 600.815(a)(8)).

**HAPC identification provides a way to call extra attention to such habitats and to focus conservation and enhancement priorities within EFH.**

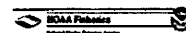


## Habitat Areas of Particular Concern Need

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In section 2 of the Magnuson-Stevens Fishery Conservation and Management Act, Congress recognized that one of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. Congress adopted specific requirements for fishery management plans (FMPs) to identify EFH and minimize to the extent practicable the adverse effects of fishing on EFH. In the regulations implementing the EFH provisions of the Magnuson-Stevens Act, NMFS encourages Councils to identify types or areas of habitat within EFH as HAPCs (50 CFR 600.815(a)(8)).

**HAPCs provide a mechanism to acknowledge areas where more is known about the ecological function and/or vulnerability of EFH, and to highlight priority areas within EFH for conservation and management.**



## Habitat Areas of Particular Concern Purpose

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- The purpose of this action is to determine whether and how to amend the Council's FMP's to identify and manage site-specific HAPCs. HAPCs identified as a result of an environmental assessment may provide additional habitat protection and further minimize potential adverse effects of fishing on EFH.
- The Council may identify HAPCs based on one or more of four considerations listed in the EFH regulations: ecological importance, sensitivity to human-induced degradation, stress from development activities, and rarity of the habitat type.

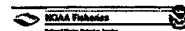


## Habitat Areas of Particular Concern Council Priorities

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The Council decided that the initial HAPC proposal cycle should focus on two priorities:

- 1) Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species.
- 2) Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species that include the following features:
  - sites must have likely or documented presence of FMP rockfish species; and
  - sites must be largely undisturbed and occur outside core fishing areas.



## Habitat Areas of Particular Concern Council Priorities (continued)

### Seamounts

- Seamounts were selected as a Council HAPC priority because they may serve as unique ecosystems. Some FMP species on seamounts may be endemic (exclusive to a particular place) and vulnerable to stress caused by human induced activities. **The purpose of this priority is to protect seamounts from potential disturbance from fishing activities, and therefore to ensure the continued productivity of these habitats for managed species.**

### Corals

- Coral areas were selected as a Council HAPC priority because they may be linked with rockfish and other FMP species. Additionally, areas of high density "gardens" of corals, sponges, and other sedentary invertebrates were recently documented for the first time in the North Pacific Ocean and appear to be particularly sensitive to bottom disturbance. Some deep sea corals are fragile, long-lived, and slow growing organisms that provide habitat for fish and may be susceptible to human induced degradation or stress. **The purpose of this priority is to protect sensitive high-relief coral and rockfish areas from potential disturbance from fishing activities, and therefore to ensure the continued productivity of these habitats for managed species.**



North Pacific Fishery Management Council



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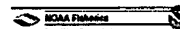
## Habitat Areas of Particular Concern EA Alternatives Development

- Proposals have been developed into a series of actions to identify a possible structure for the NEPA analysis. The EA could analyze potential HAPCs both within and outside of the 2004 Council HAPC priorities. Examples of alternatives are given under each of four actions. Guidance is needed on the set of actions, and the alternatives within them to forward for further development before June.
- Several management options could be analyzed (note that proposals were developed with specific recommendations regarding management, and the sponsors might not support other management options for a given area):
  - HAPC designation only, no new management measures;
  - No bottom trawling within the HAPC;
  - No bottom contact gear within the HAPC;
  - No fishing within the HAPC.

The Council needs to provide guidance at this meeting so staff can refine the alternatives further, enabling the Council to finalize the alternatives at the June meeting.



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## HAPC Conceptual Alternative Development Named Seamounts

**Alternative 1:** No action (no seamount HAPCs).

**Alternative 2:** Designate 5 named seamounts in the EEZ off Alaska as HAPCs (Dickens, Geacomini, Patton, Quinn, Welker).

- Site-specific habitat and species presence/absence data is available for these 5 named seamounts.

**Alternative 3:** Designate 16 named seamounts in the EEZ off Alaska as HAPCs.

- Sixteen named seamount summits are less than 3,000m in depth, the deepest recorded range of FMP species (sablefish, deep sea sole). **(Proposal 4)**

**Alternative 4:** Designate 23 named seamounts in the EEZ off Alaska as HAPCs.

- Twenty-three seamounts within EEZ waters of the Alaska region. Seven of these seamounts are extremely deep and FMP species are not likely present.

**(Proposal 1)**



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## HAPC Conceptual Alternative Development GOA Corals

**Alternative 1:** No action (no GOA coral HAPCs).

**Alternative 2:** Designate three sites along the continental slope at Sanak Island, Albatross, and Middleton Island as HAPCs.

- These sites are identical to proposed closure areas that were delineated in Alternative 5a for the EFH EIS.
- These areas were proposed based on anecdotal information from trawl captains that the area is likely rockfish habitat and relatively unfished. The presence of high relief corals is thought to be within the sites. Sanak Island area has had some observed coral/bryozoan bycatch. **(Proposals 5,6,7)**

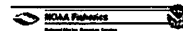
**Alternative 3:** Designate four sites at Cape Ommaney, Dixon Entrance, Fairweather Ground (NW Area), and Fairweather Ground (Southern Area) as HAPCs.

- Sites are in areas where concentrations of Primnoa were documented using a manned submersible conducting groundfish stock assessments and researching the effects of fishing gear on benthic habitats.
- During these investigations, rockfish and other managed species were observed in association with high relief corals. Disturbance to these fragile corals was observed *in situ*, including derelict fishing gear contacting the coral. **(Proposal 8)**

**Alternative 4:** Alternative 2 plus Alternative 3.



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HAPC Conceptual Alternative Development  
Aleutian Island Corals

**Alternative 1:** No action (no Aleutian Islands coral HAPCs).

**Alternative 2:** Designate six coral garden sites within the Aleutian Islands as HAPCs. Overlap exists for the following sites:

Adak Canyon	<b>(Proposals 9,16,19)</b>
Cape Moffett	<b>(Proposals 11,16,19)</b>
Bobrof Island	<b>(Proposals 11,13,19)</b>
Semisopchnoi Island	<b>(Proposals 11,13,18,19)</b>
Great Sitkin	<b>(Proposals 16,19)</b>
Ulak Island	<b>(Proposals 11, 13,17,19)</b>

**Alternative 3:** Designate Bowers Ridge as an HAPC. **(Proposals 10, 18)**



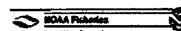
HAPC Conceptual Alternative Development  
Aleutian Island Corals

**Alternative 4:** Designate **10 sites** as HAPCs in the Aleutian Islands (South Amliia/Atka, Cape Moffett, Great Sitkin, Adak South, Kanaga Volcano, Kanaga Island, Semisopchnoi Island, Tanaga, and Amatignak/Ulak Islands. Alternative 4 is basically Alternative 2 plus 4 additional sites. **(Proposals 15,16,17,19) \*\*\***

**Alternative 5:** Designate the Aleutian Islands Reporting Areas 541-543 as a Special Management Unit. All areas would be closed to bottom trawling except core open area. **(Proposal 14)**

**Alternative 6:** Designate the 4 Aleutian Islands sites within each AI report area that have high abundances of corals and sponges ( Identified in EFH DEIS as Alt 6) **(Proposal 12)\*\*\***

**\*\*\*Note discrepancy on handout: 10 sites and Alternative 6 added**



## HAPC Conceptual Alternative Development Other HAPC\* Areas

**Alternative 1:** No action (no other HAPCs).

**Alternative 2:** Designate two sites in the Bering Sea as HAPCs to protect dense aggregations of soft corals, *Germsemia spp.*. (**Proposal 22**)

**Alternative 3:** Designate 3 deep water canyons as HAPCs (two in the Bering Sea and one in Prince William Sound). (**Proposals 20,21**)

**Alternative 4:** Designate 54 pinnacles in the Gulf of Alaska as HAPCs. (**Proposal 2**)

**Alternative 5:** Designate 82 pinnacles in the Aleutian Islands as HAPCs. (**Proposal 3**)  
(Alternative may exist to combine Alt 4 & 5; Designate 136 pinnacles in Alaska as HAPCs.)

**Alternative 6:** Designate the Eight Fathom Pinnacle in the Gulf of Alaska as an HAPC. (**Proposal 23**)

\* Other HAPC areas are those sites/areas that do not specifically address Council Priorities as Named Seamounts and Hard Coral & Rockfish Areas.



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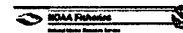


## Group A Bathymetry

Proposal	Fishing Effect	Source Habitat (Miles by Depth Range in Meters and Percent of Total below)						Total (Miles)
		0-500	501-1000	1001-1500	1501-2000	2001-3000	3001-6000	
1 TOC North Pacific Seamounts	no fishing	4.75 0%	110.48 1%	328.09 3%	382.69 3%	11135.27 87%	821.72 6%	12781.00
2 Oceana GOA Pinnacles & Seamounts	no-fishing/limit bottom trawl	648.84 18%	82.83 2%	23.84 1%	144.79 4%	2718.37 87%	417.73 10%	4068.21
3 Oceana AI Pinnacles & Seamounts	no-fishing/limit bottom trawl	602.30 35%	258.70 15%	106.87 6%	27.23 2%	373.85 22%	342.30 20%	1710.25
4 NMFS Seamounts	no fishing	2.14 0%	67.80 2%	62.79 2%	51.75 1%	3965.81 95%	0.23 0%	4150.82
23 NMFS 8-fathom Pinnacle	no fishing	18.11 100%						18.11



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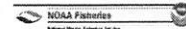


## Group B and C Bathymetry

Group B: Canyons		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
20	TOC Zhemchug & Pribilof Canyons	no fishing	299.04	408.46	305.44	199.54	202.02	1414.49
			21%	29%	22%	14%	14%	
<i>21 is non-binding</i>								
Group C: GOA Hard Corals		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
8	NMFS GOA Primrose Forest	no fishing	84.64	0.64	0.19			85.47
			99%	1%	0%			
<i>5,6 and 7 are non-binding</i>								



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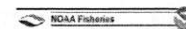
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## Group D, E, F H, and H Bathymetry

Group D: AI Hard Corals		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
<i>9, 15, 16, and 17 are non-binding</i>								
Group E: AI Hard Corals		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
10	AMCC Bowers Ridge	no bottom trawl	1336.75	5124.83	4605.85	3817.88	24805.70	39691.01
			3%	13%	12%	10%	62%	
19	NMFS AI Coral Gardens	no fishing	72.45	41.80	10.24	7.36		131.85
			55%	32%	8%	6%		
<i>18 is non-binding</i>								
Group F: AI Hard Coral Focused		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
12	TOC AI Marine Reserves	no fishing	3462.90	2289.00	1048.18	250.45	57.73	7108.26
			49%	32%	15%	4%	1%	
14	Oceana AI Core Bottom Trawl Area**	restrict bottom trawl	1058.34	367.43	162.13	19.39	0.14	1607.42
			66%	23%	10%	1%	0%	
Group G: AI Hard Corals		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
11	TOC AI Coral & Sponge	no fishing	98.20	61.93	21.43	12.93	7.05	201.54
			49%	31%	11%	6%	3%	
13	Oceana AI Coral Gardens	no bottom contact	88.97	78.24	26.85		2.63	196.69
			45%	40%	14%		1%	
Group H: BS Soft Corals		Square Nautical Miles by Depth Range in Meters and Percent of Total (below)						Total
Proposal	Fishing Effect	0-500	501-1000	1001-1500	1501-2000	2001-5000	5001-8000	
22	Oceana BS Soft Corals	no fishing/limit bottom trawl	10486.29					10486.29
			100%					



North Pacific Fishery Management Council



NOAA Fisheries  
National Marine Fisheries Service

TO: North Pacific Fishery Management Council  
FR: Ben Enticknap, Alaska Marine Conservation Council  
DT: April 2, 2004  
RE: **Agenda C-2(b) Habitat Areas of Particular Concern  
Purpose and Need for Action**

*"The SSC notes that it may not be possible to motivate the protection of rare and fragile habitats (e.g. habitats found on seamounts and coral gardens) solely on the basis of their linkage to the productivity of managed species." SSC Draft minutes March 29-31, 2004.*

The Alaska Marine Conservation Council offers the following changes to the Purpose and Need statement proposed by NPFMC staff. These changes are responsive to the SSC comments on the present inability of science to show a "scientifically credible understanding between these habitats and fish productivity" and the inconsistency of using such a high standard of evidence with the Council's precautionary approach. Furthermore, the following changes reflect concerns that it is inappropriate to tier the HAPC analysis to the preliminary conclusions of draft EFH EIS.

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**1.0 Purpose and Need for Action**

The following descriptions of the purpose and need for action also serves as the Council's problem statement for considering Habitat Areas of Particular Concern (HAPCs).

The Council recognizes that Essential Fish Habitat (EFH) designations are necessarily broad in scope because of the limited available scientific information about the habitat requirements of managed species. Within EFH, there are habitat areas of particular concern (HAPC) that may be especially vulnerable to fishing activities and may warrant additional management on one or more of the following considerations: The importance of the ecological function provided by that habitat; sensitivity to human induced environmental degradation; whether and to what extent the development activities are, or will be, stressing the habitat type; and the rarity of the habitat type (50 CFR 600.815(a)(8)). HAPC identification provides a way to call extra attention to such habitats and to focus conservation and enhancement measures within EFH.

**1.1. Need for Action**

In Section 2 of the Magnuson-Stevens Fishery Conservation and Management Act, Congress recognized that one of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. Congress adopted specific requirements for fishery management plans (FMPs) to identify EFH and minimize to the extent practicable the adverse effects of fishing on EFH. In the regulations implementing the EFH provisions of the Magnuson-Stevens Act, NMFS encourages the Councils to identify types of areas of habitat within EFH as HAPCs (50 CFR 600.815(a)(8)). HAPCs provide a mechanism to acknowledge areas where more is known about the ecological function and /or vulnerability of EFH, and to highlight priority areas with EFH for conservation and management.



Concurrent with the evaluation of potential HAPCs, NMFS and the Council are developing an Environmental Impact Statement (EIS) for the EFH components of the Council's FMPs. The EIS considers three actions: (1) Describe and identify EFH; (2) Adopt an approach to identify HAPCs; and (3) Minimize to the extent practicable the adverse effects of fishing on EFH. The Council determined that it would be most effective to adopt an overall approach for considering HAPCs first (via the EIS), and then to consider specific proposed HAPCs and any associated management measures (via this Environmental Assessment). The Council's preliminary preferred alternative approach for HAPCs is to identify specific HAPC sites, rather than HAPCs based on broad types of habitat.

~~The draft EIS acknowledges there are long-term effects of fishing on benthic habitat features off Alaska, and that considerable scientific uncertainty remains regarding the consequences of such habitat changes for managed species. Nevertheless, the analysis concludes that the effects on EFH are minimal because there is no indication that continued fishing at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. The EIS therefore 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 effects under the Magnuson-Stevens Act. However, the EIS notes that a variety of practicable management actions could be taken to provide additional habitat protection.~~

~~HAPCs and associated management measures considered by the Council would provide additional habitat protection and further minimize potential adverse effects of fishing on EFH. Such actions are consistent with the EFH EIS because they address potential impacts that are discussed in the EIS, even though the EIS indicates new management measures may not be required under the Magnuson-Stevens Act to reduce those impacts. In effect, through its evaluation of HAPCs, the Council is considering new measures that would be precautionary.~~

The need for this action also stems from a May 2003 joint stipulation and order approved by the U.S. District Court for the District of Columbia. That agreement reflected the Council's commitment to consider new HAPCs as part of the response to the *AOC v. Daley* litigation that challenged whether Council FMPs minimize to the extent practicable the adverse effect of fishing on EFH. Under the agreement, final regulations implementing any new HAPC designations and any associated management measures must be promulgated no later than August 13, 2006.

## 1.2 Purpose of Action

The purpose of this action is to determine whether and how to amend the Council's FMPs to identify and manage site-specific HAPCs. HAPCs identified as a result of the EA would provide additional habitat protection and further minimize potential adverse effects of fishing on EFH. The HAPCs would be subsets of EFH that are particularly important to the long-term productivity of one or more managed species, or that are particularly vulnerable to degradation. The Council may identify HAPCs based on one of more of four considerations listed in the EFH Final Rule: ecological importance, sensitivity to human-induced degradation, stress from development activities, and rarity of the habitat type.

The Council established a process for considering potential new HAPCs, which is documented in Appendix J of the draft EFH EIS. While many types of habitat may be worth considering as HAPCs, the Council determined that concrete and realistic priorities should be set to move forward expeditiously with the designation and possible protection of HAPCs. The Council decided that the initial HAPC proposal cycle should focus on two priorities:

1. Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species

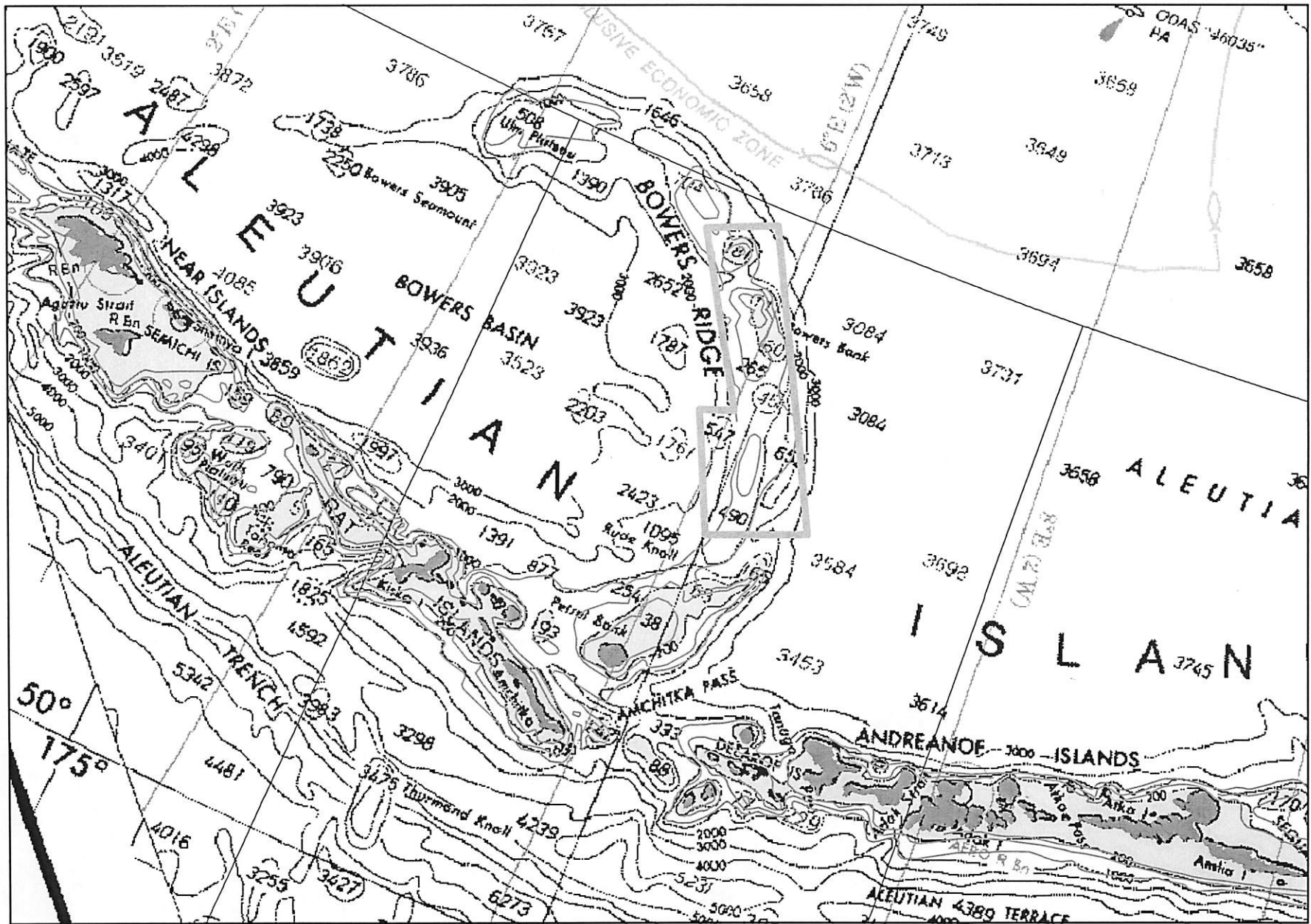
2. Largely undisturbed, high relief, long lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish, or other important managed species that include the following features:
  - a) sites must have likely or documented presence of FMP rockfish species
  - b) sites must be largely undisturbed and occur outside core fishing areas

Coral areas were selected as a Council HAPC priority because they may be linked with rockfish and other FMP species. Additionally, areas of high density “gardens” of corals, sponges, and other sedentary invertebrates were recently documented for the first time in the North Pacific Ocean and appear to be particularly sensitive to bottom disturbance. Some deep sea corals are fragile, long-lived, and slow growing organisms that provide habitat for fish and may susceptible to human induced degradation or stress.

Seamounts were selected as a Council HAPC priority because they may serve as unique ecosystems. Some FMP species on seamounts may be endemic (exclusive to a particular place) and vulnerable to stress caused by human induced activities. The purpose of this priority is to protect seamounts from potential disturbance from fishing activities, and therefore to ensure the continued productivity of these habitats for managed species.

If the Council identifies HAPCs that include state waters, the Council will relay its concerns to the Alaska Board of Fisheries to suggest appropriate protection of HAPCs under state jurisdiction.

# Bowers Ridge Alternate HAPC concept



Dave Fraser C-2  
handout 4/4/04

### April 4<sup>th</sup> notes on C-2 HAPC from dave fraser

In addition to the HAPC proposals included in the AP motion, i believe the Council should include the following additional proposals for analysis:

- 1- The Aleutian Island "Category 2" sites recommended by MCA as outlined in John Gauvin's presentation (from proposals #15, 16, 17, & 18).
- 2- The three WGOA/CGOA/WYAK "Category 2" sites recommended by GF, AGDB, & ADA (in proposals # 5, 6, & 7).
- 3- The EGOA "Primnoa forest" sites proposed by NMFS (in proposal # 8) should also be considered from a "Category 2" perspective.

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With regard to Oceana's proposal #14, it is not appropriate for inclusion as a HAPC. While the central concept behind the BHI Alternative 5B for the Aleutian Islands has merit in the context of the EFH analysis, proposal #14 strays beyond the bounds of 5B.

Information found in table ES-9 and chapter 4.3.7 of the EFH analysis indicates that:

- The AI management area is about 290,000 square miles, or roughly 1,000,000 square kilometers in size.
- The "fishable" area is about 105,000 km<sup>2</sup> - or about 10% of the overall AI area.
- The "fished" area is about 27,000 km<sup>2</sup> - or about 2.7% of the overall AI area.
- The core open area in 5B leaves open about 23,000 km<sup>2</sup> - about 2.3% of the AI area.
- The new Ocean proposal #14 leaves open only 5,500 km<sup>2</sup> - roughly 0.5% of the AI area.

The BHI analysis further indicates the "cost" of 5B would be:

- 12% of the trawl rockfish
- 10% of the trawl cod
- 6% of the Atka mackerel

By contrast, staff analysis of the new Oceana proposal #14 suggests that the proposed closed area accounts for the following percentages of the historic catch:

- 66% of the trawl rockfish
- 51% of the trawl cod
- 19% of the trawl Atka mackerel

The basic 5B approach deserves continued consideration by the Council in the BHI analysis. However, the Council should be considering a sub-option that would allow the trawl fishery access to the full 27,000 km<sup>2</sup>, given that it only represents 2.7% of the full AI area or about 25% of the "fishable" area.

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Oceana's pinnacle proposal lacks merit, and utilizes a vague and poorly applied criteria for defining pinnacles. This proposal is like throwing mud at the wall to see what sticks. For example what appears as 3 "pinnacles" on a 1:1,126,321 scale chart, look entirely different on a 1:300,000 scale chart. The 3 "pinnacles" are the high points of a 15 mile long ridge that is over a mile in width. If one plotted a 120 fathom contour around these features, they would look much more like 3 gentle hills on Vashon Island in Puget Sound.