

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver
Executive Director *Chris*

DATE: June 1, 2004

SUBJECT: Habitat Areas of Particular Concern (HAPC)

ESTIMATED TIME
8 HOURS

ACTION REQUIRED:

- (a) Finalize HAPC alternatives for analysis.
- (b) Review comments on EFH EIS, and take action as necessary.

BACKGROUND

HAPC Alternatives

The Council, as part of the HAPC process outlined in the draft environmental impact statement (EIS) for EFH, has selected two priorities for HAPC designation during this cycle. These HAPC's include:

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 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 during this Council meeting. In April, the Council adopted a draft purpose and needs section for the analysis, pared down the proposals to form several discrete alternatives, and directed staff to provide recommendations for 'hybrid' areas where proposals had overlapped one another (C-3(a)). To assist in the refinement of these alternatives, staff has provided a 'strawman' list of possible HAPC alternatives based on the public proposals, as well as modified hybrids for overlapping sites, sent out earlier in your Council mailing and included here as Item C-3(b). Note that the 'strawman' has not made any attempt to narrow down the areas proposed for HAPC designation. Staff has also provided a draft table of contents, draft significance criteria, and a draft RIR methodology as requested by the SSC (Item C-3(c)(i-iii)).

Essential Fish Habitat

The comment period on the Draft Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska closed on April 15, 2004. NMFS received over 33,000 written public comments. The vast majority of the comments were form letters prompted by internet solicitations from the Ocean Conservancy and Oceana. Most of the form letters included personalized messages in favor of habitat protection in addition to the prepared text opposing the Council's preliminary preferred alternative (status quo management measures). NMFS also received a number of very detailed and substantive comments from the fishing industry, the environmental community, and non-fishing industries. NMFS staff and contractors have completed a preliminary review of the comments but have not yet begun drafting responses. NMFS will present a summary of the comments, and will seek guidance from the Council on a few policy issues stemming from the public comments so that staff can begin addressing those issues.

Comments directed to the Council, relative to possible actions at this meeting, are attached under C-3 Supplemental. Included is the letter from Oceana regarding a revised EFH Alternative 5B for the Aleutian Island area.

DRAFT - Council Motion on HAPC 4/4/04

The Council adopted the following problem statement on Habitat Areas of Particular Concern (HAPC).

HAPC Problem Statement:

Habitat Areas of Particular Concern (HAPC) are site-specific areas of Essential Fish Habitat (EFH) of managed species. Identification of HAPCs provides focus for additional conservation efforts for those habitat sites that are ecologically important, sensitive to disturbance, exposed to development activities, or rare. Based on these considerations, the Council has directed that each HAPC site should meet at least two of these criteria, with one being rarity.

The Council has set the priorities of seamounts and undisturbed coral beds outside of core fishing areas important as rockfish or other species habitat as priority sites for identification as HAPC and for additional conservation measures. Seamounts may have unique ecosystems, contain endemic species, and may thus be sensitive to disturbance. Some deep-sea coral sites may provide important habitat for rockfish and other species and may be particularly sensitive to some fishing activities. The Council intends to evaluate alternatives to designate HAPC sites and take action, where practicable, to conserve these habitats from adverse effects of fishing.

The Council adopts the following draft purpose and need section for the analysis.

1.0 Purpose and Need for Action

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 they are ecologically important, stressed, susceptible to adverse effects of fishing and other human activities, and or rare. 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 any 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.

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, stress from development activities, and rarity of the habitat type. The Council required that each HAPC site should meet at least two of those considerations, with one being rarity.

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.

The Council forwards the following analytical package of proposals to be formulated into alternatives by staff such that the Council will review the framework and select final alternatives including sites and management measures, to initiate an Environmental Assessment (EA) during the June, 2004 Council meeting.

The Council directs staff prepare a preliminary analysis on the selected alternatives to be presented to the Council in June. Within this analysis the management measures originally linked to the various HAPC site based proposals will be maintained. Under staff tasking the Council also directed staff to develop within the framework of alternatives sites and management measures for each alternative as well as hybrids of those sites that had multiple proposals addressing the same area. The Council further directs staff to present a research component with any management measure.

Additionally, the Council directs staff to present information to evaluate if proposed sites are core areas for any fishery by gear type, and provide an evaluation of the intensity of usage that is used to determine "core fishing areas".

***Proposal 8 needs further industry input to aid in the site resolution. Because some stakeholders have indicated concerns on these matters the Council will form a technical sub-group meeting to resolve the site area definition issues with associated stakeholders. The work groups' results will be delivered during staff reports to the Council in June.*

Each alternative will specify the site and management for that HAPC alternative.

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)

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.

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 Adak/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)

HAPC DRAFT Alternatives:

In April the Council forwarded the package of proposals to be formulated into alternatives by staff such that the Council will review the framework and select final alternatives for analysis including sites and management measures during this Council meeting (June, 2004).

Staff prepared a preliminary analysis of the following actions to address the Council's purpose and need. Within each Action there are several alternatives based on originally submitted proposals. Management measures originally linked to the various HAPC site based proposals were maintained within these alternatives. Additionally alternatives that had several proposals identifying the same area were combined into hybrids to address the Council's purpose and need. Proposed sites were evaluated to determine if they occurred in core fishing areas and the created hybrids modified some of the boundaries that may reduce the effect on the core fished areas.

Action 1 – Seamounts

Alternative 1: No action (no seamount HAPCs).

Alternative 2: Designate 5 named seamounts in the EEZ off Alaska as HAPCs (Dickens, Giacomini, Patton, Quinn, Welker)(Table 1 bold only). Site-specific habitat and species presence/absence data is available for these 5 named seamounts. (Based on proposal 4)

Management measures: All Council-managed bottom contact fishing would be prohibited within the proposed HAPC.

Core Fishing: A preliminary analysis does not demonstrate that any core fishing under any Council managed fisheries occurring within any of the 5 named seamounts.

Alternative 3: Designate 16 named seamounts in the EEZ off Alaska as HAPCs (Table 1). Sixteen named seamounts are within 3,000m in depth, which is the deepest recorded range of FMP species (Table 1 all). 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. (Based on proposal 4).

Management measures: All Council-managed bottom contact fishing would be prohibited within the proposed HAPC.

Core Fishing: A preliminary analysis does not demonstrate any core fishing under any Council managed fisheries occurring within the total seamounts named in Table 1.

Table 1. Named Seamounts HAPC Geographic Coordinates and Area.

#	Named Seamount	Latitude	Longitude	Depth (m)	Area (nm ²)	#	Named Seamount	Latitude	Longitude	Depth (m)	Area (nm ²)
1	Bowers 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	166.6	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	2560	2248.4	12	Patton Seamount	54.7200 N	150.6000 W	168	94.3
		55.1000 N	151.0000 W	2524				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	Dall Seamount	58.3000 N	145.8000 W	2507	949.9	13	Quinn Seamount	56.4500 N	145.4000 W	658	200.9
		58.3000 N	144.9000 W					56.4500 N	145.0000 W		
		57.7500 N	145.8000 W					56.2000 N	145.4000 W		
		57.7500 N	144.9000 W					56.2000 N	145.0000 W		
6	Denson Seamount	54.2200 N	137.6000 W	927	286.7	14	Sirius Seamount	52.1000 N	161.1000 W	1929	167.0
		54.2200 N	137.1000 W					52.1000 N	160.6000 W		
		53.9500 N	137.6000 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	Dickins Seamount	54.6500 N	137.1500 W	427	147.0	16	Welker Seamount	55.2300 N	140.5500 W	618	161.5
		54.6500 N	136.8000 W					55.2300 N	140.1600 W		
		54.4500 N	137.1500 W					55.0300 N	140.5500 W		
		54.4500 N	136.8000 W					55.0300 N	140.1600 W		
9	Giacomini Seamount	56.6200 N	146.5300 W	618	163.9						
		56.6200 N	146.1200 W								
		56.4200 N	146.5300 W								
		56.4200 N	146.1200 W								

Action 2 – Gulf of Alaska (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. (Based on Proposals 5,6,7)

Management measures: These areas would be for designation only, with a recommendation for further research.

Core Fishing: HAPC designation would not restrict any of the current FMP managed fishing practices.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the GOA slope. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

Table 2. Locations of proposed HAPC designations within the central Gulf of Alaska for corals.

Proposed HAPC Designation Area	Latitude	Longitude	Management	NOAA Chart number	Area
Sanak Island	54.0000N 53.8800N 54.0800N 54.2100N	163.2500W 163.2500W 162.2000W 162.2000W	Designation	500	279 nm ²
Albatross Banks	56.2700N 56.1900N 56.1700N 56.2700N	153.3300W 153.3300W 152.6700W 152.6700W	Designation	500	122 nm ²
Middleton Island	59.2500N 59.1700N 59.1700N 58.2500N	147.0000W 147.0000W 146.5000W 146.5000W	Designation	500	85 nm ²

Alternative 3: Designate nine sites at Cape Ommaney, Dixon Entrance, Fairweather Ground Northwest, and at Fairweather Southern as HAPC, (management measures for 6 areas and designate 3 areas as HAPC (Table 3)). 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. (The management sites are modifications of Proposal 8 by the HAPC technical subgroup 5/5/04, the staff hybrid recommends these original areas)

Management measures: All Council-managed bottom contact fishing would be prohibited within 6 subareas within the 3 HAPC designated sites. Council will need to clarify if this would exclude any NMFS research with bottom contact gear (bottom trawl or longline surveys) in the future.

Core Fishing: Within the six managed HAPC sites, there would be minimal effect on the halibut, demersal rockfish, sablefish hook and line fisheries. The technical subcommittee selected these refined boundaries to reduce the impacts on core fishing areas. The 3 larger designation- only sites would not have an impact on any other Council managed fisheries.

- 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. HAPC designation would apply to the coordinates in the table above with an area of 4.0 nm². This area was identified by submersible research dives, and provided a buffer encompassing the bottom feature thought to have coral present. The managed area is a smaller component of the designation area that would prohibit bottom contact gear within the southern end of the feature while allowing historic fishing to occur within the 100 fathom contour. The subarea with management restrictions is 0.93 nm².
- 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. The area in the above table would have the management measures applied with an overall area of 45.8 nm².
- 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. The north and south sites as proposed in the table above would be designated as HAPC and include an area of , and respectively. 13.0 nm² and 23.3 nm². The committee suggested modifications to both the northern and southern boxes within the existing proposal. In the Northern site, the boundaries encompass two sections seen in side scan sonar that have rough rocky habitat, and between the two features there are sandy bottoms that have fishing effort. The committee recommended splitting the Northern site into two separate boxes to allow the halibut fisherman to fish the sandy bank, while protecting the rocky habitat that has observed coral densities. The committee additionally suggested modifying the southern Fairweather site to be separated into two areas to protect the coral features while allowing the fisheries to occur in their historic areas. The left site within the southern box would be triangular to encompass the 3 submersible dives. The right side within the southern box would be a rectangular box the submersible site.

Table 3. Locations of proposed HAPC sites within southeast Gulf of Alaska.

Proposed HAPC Area	Latitude	Longitude	Management	NOAA Chart number	Area
Cape Ommaney	56.2100N 56.1600N 56.1600N 56.2100N	135.1300W 135.1300W 135.0900W 135.0900W	Designation	17320	3.3 nm x 1.2 nm (4.0 nm ²)
Fairweather Ground NW Area	58.4700N 58.3700N 58.3700N 58.4700N	139.3300W 139.3300W 139.2600W 139.2600W	Designation	16760	6.2 nm x 2.1 nm (13.0 nm ²)
Fairweather Ground Southern Area	58.2600N 58.2600N 58.2200N 58.2200N	138.8600W 139.1500W 139.1500W 138.8600W	Designation	16760	9.3 nm x 2.5 nm (23.3 nm ²)
Dixon Entrance	54.6300N 54.5600N 54.6300N 54.5600N	133.1800W 133.1800W 132.8700W 132.8700W	Management applied	17400	10.9 nm x 4.2 nm (45.8 nm ²)
Cape Ommaney	56.1600N 56.1600N 56.1800N 56.1900N	135.1300W 135.1200W 135.1000W 135.1200W	Management applied	17320	0.93 nm ²
Fairweather Ground NW Area 1	58.4600N 58.4400N 58.4400N 58.4600N	139.3100W 139.3100W 139.3000W 139.3000W	Management applied	16760	0.44 nm ²
Fairweather Ground NW Area 2	58.4000N 58.3800N 58.3800N 58.4000N	139.3100W 139.3100W 139.2500W 139.2500W	Management applied	16760	2.51 nm ²
Fairweather Ground Southern Area 1	58.2600N 58.2200N 58.2600N	139.1500 W 138.9900 W 138.9900 W	Management applied	16760	6.52 nm ²
Fairweather Ground Southern Area 2	58.2500N 58.2300N 58.2300N 58.2500N	138.9000 W 138.9000 W 138.8800 W 138.8800 W	Management applied	16760	0.52 nm ²

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/AFSC scientists discovered unique habitat in the central Aleutian Islands consisting of high density “gardens” of corals, sponges, and other sedentary invertebrates. This habitat had not been previously documented in the North Pacific Ocean or Bering Sea and appeared to be particularly sensitive to bottom disturbance. Garden habitat was observed in situ with the DSV Delta and was found at 9 of 40 dive locations. Garden habitat was found at depths between 150-365m and can be distinguished from other coral habitat in that the seafloor is completely covered by sedentary invertebrates including hydrocorals, gorgonian and alcyonacean corals, and sponges. These gardens are similar in structural complexity to tropical coral reefs with which they share several important characteristics including a rigid framework, complex vertical relief, and high taxonomic diversity. Each coral garden area warrants consideration as a HAPC based on the specific characteristics of each site.

Core fishing was analyzed with data by target fishery from 1998-2002. These data were gridded to 10km² for an initial examination of “core fishing”. Catch was broken into low, medium, medium-high, and high categories. Core fishing was defined as those grids in the upper 50% (medium-high and high) by extrapolated catch (or legal males retained in the case of Golden king crab). Potential HAPC areas that were found to contain core fishing were then analyzed using the original point data. Hybrid HAPC areas were then developed, if necessary, to minimize overlap with core fishing areas.

Most of the Aleutian Island proposals centered on the protection of coral garden sites delineated by NMFS/AFSC scientists. The boundaries necessary to protect these areas varied between proposals from three to five miles or more. After discussion with representatives from longline and trawl fisheries, staff determined that a one-mile buffer would be sufficient to protect coral garden sites from incidental disturbance due to bottom contact fishing gear.

- 1) Adak Canyon is a 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 150-300m. (Proposals 9, 16, 19)

The Adak Canyon hybrid HAPC area would include components of the NMFS, AMCC, and MCA proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the NMFS HAPC area. In addition, a portion of the AMCC site to the west and MCA site to the east could be designated as HAPC with no management measures attached. The AMCC & MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The proposed boundaries for the managed component of the Adak Canyon HAPC hybrid could have a low effect on the sablefish/turbot longline fishery, a medium effect on golden king crab fishery, and a medium-high effect on pacific cod longline fishery in the lower portion. The hybrid area reduces the effect on core fishing from a high effect on sablefish/turbot longline fishery in AMCC proposal and avoids high effect pacific cod longline fishery from MCA proposal. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

- 2) Cape Moffett: The Cape Moffett area contains series of small coral gardens on the island arc slope between 150-250m. (Proposals 11, 16, 19)

The Cape Moffett hybrid HAPC area would include components of the MCA, NMFS, Oceana, and TOC proposals.

Management measures: The Cape Moffett hybrid HAPC area would be a one-mile box centered on coral garden sites, as well as modified MCA sites to the east and west of the coral garden sites. All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. The modified MCA sites would have no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Cape Moffett closure could have a low effect on golden king crab and pacific cod pot fisheries and a medium effect on the sablefish/turbot longline fishereis. It could have a medium-high effect on pacific cod trawl. Reducing the size of the managed area to 1 mile reduced the impact on fisheries in the area. The potential effect on the small boat fleet (<60 feet) is not known. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

- 3) Bobrof Island: The Bobrof Island area contains series of small coral gardens on the island arc slope between 150-250m. (Proposals 11, 13, 19)

The Bobrof Island hybrid HAPC area would include components of the NMFS, Oceana, and TOC proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. The larger three-mile box would have no management measures attached. This larger three-mile box, which corresponds with the NMFS & Oceana proposals, provides a focus for further research.

Core Fishing Analysis: The Bobrof Island closure could have a low effect on pacific cod pot and golden king crab fisheries and a medium effect on sablefish/turbot longline fishery. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the

Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

- 4) Semisopchnoi Island: The Semisopchnoi Island area contains a submarine volcano, Amchixtam Chaxsxii, whose summit is at ~115 m, with an overall height of 580m. 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 365m. NMFS scientists suspect the entire undersea volcano is likely covered with coral garden habitat. Large *Primnoa* spp. colonies present at 365m indicate that the submarine volcano may not have erupted within the last several hundred years. (Proposals 11, 12, 13, 18, 19)

The Semisopchnoi Island Hybrid HAPC area would include components of the MCA, NMFS, Oceana, and TOC proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. This closure would encompass the entire submarine volcano. In addition, the MCA site at Semisopchnoi (which corresponds to the ten-mile SSL closures around Petrel and Pochnoi Points) could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Semisopchnoi I. closure would have a low effect on sablefish/turbot longline and golden king crab fisheries. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

- 5) Great Sitkin: The Great Sitkin Island area contains series of small coral gardens on the island arc slope between 300-365m. (Proposals 16, 19)

The Great Sitkin hybrid HAPC area would include components of the MCA & NMFS proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. In addition, a modified MCA site around the coral garden site could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Great Sitkin closure would have a low effect on golden king crab, sablefish/turbot longline, and Atka mackerel trawl fisheries. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

- 6) Ulak Island: The Ulak Island area contains series of small coral gardens on the island arc slope between 150-250m. (Proposals 11, 13, 17, 19)

The Ulak Island hybrid HAPC area would include components of the MCA, NMFS, Oceana, & TOC proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. In addition, the MCA site at Ulak Island (which corresponds to the ten-mile SSL closure around Hasgox Point) could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Ulak Island closure could have a low effect on pacific cod longline fishery and a medium effect on sablefish/turbot longline fishery. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

Alternative 3: Designate Bowers Ridge as an HAPC. North of Petrel Bank in the Aleutian Islands, Bowers Ridge 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)

The Bowers Ridge hybrid HAPC area would include components of the AMCC and MCA proposals.

Management measures: All bottom trawling would be prohibited within the Bowers B option of the AMCC proposal. A box encompassing the MCA proposal and all waters shallower than 1,000m could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Bowers Ridge closure could have a low effect on golden king crab and sablefish/turbot longline. The designation-only sites would have no impact on Council-managed fisheries.

Recommended Research Concepts: Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied

research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence productivity of habitats.

Alternative 4: Designate 4 sites as HAPCs in the Aleutian Islands (South Adria/Atka, Kanaga Volcano, and Kanaga, and Tanaga. 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)

Management measures: These areas would be for designation only, with a recommendation for further research.

Core Fishing Analysis: With a designation only management measure there would be no effect on core fishing areas. However these sites would greatly effect the hook and line fishery overall if the management measure is added to restrict that gear type.

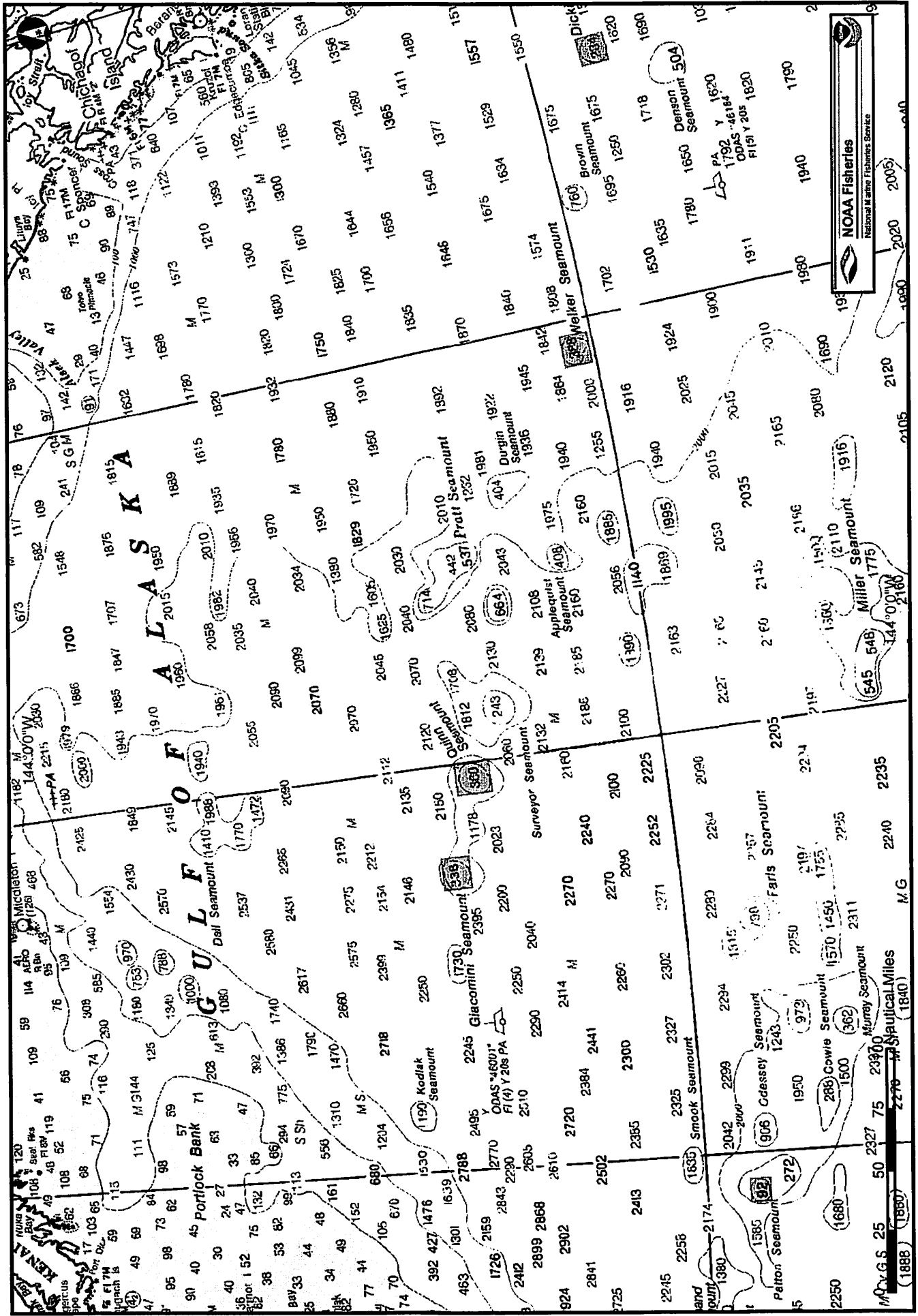
Alternative 5: Alternatives 2, 3 and 4.

Table 4. Locations of proposed HAPC sites within the Aleutian Islands.

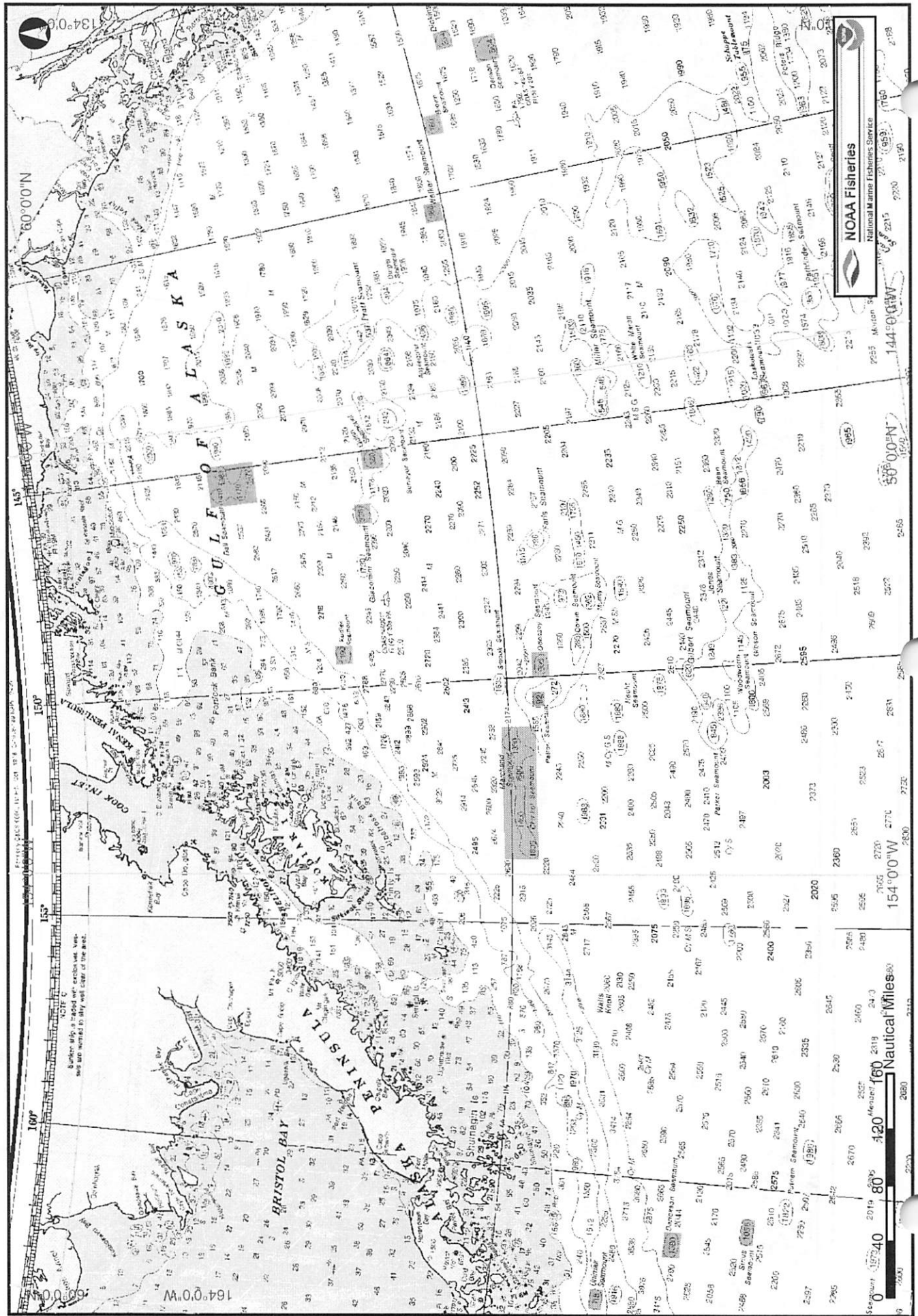
Proposed HAPC Area	Latitude	Longitude	Management	NOAA Chart number	Area
Adak Canyon	51 39 00N 51 39 00N 51 30 00N 51 30 00N	177 03 00W 177 00 00W 177 00 00W 177 03 00W	Management applied	16460	16.87 nm ²
Adak Canyon	51 39 00N 51 39 00N 51 30 00N 51 30 00N	177 08 00W 177 03 00W 177 03 00W 177 08 00W	Designation	16460	28.07 nm ²
Adak Canyon	51 34 30N 51 34 30N 51 36 30N 51 33 30N 51 30 00N 51 30 00N	177 00 00W 176 49 00W 176 40 00W 176 40 00W 176 53 30W 177 00 00W	Designation	16460	46.66 nm ²
Bobrof Island	51 55 30N 51 55 30N 51 53 30N 51 53 30N	177 26 00W 177 23 00W 177 23 00W 177 26 00W	Management applied	16460	3.74 nm ²
Bobrof Island	51 57 30N 51 57 30N 51 51 30N 51 51 30N	177 29 00W 178 20 00W 178 20 00W 177 29 00W	Designation	16460	29.89 nm ²
Cape Moffett	51 59 00N 51 59 00N 51 57 00N 51 57 00N	176 51 00W 176 48 00W 176 48 00W 176 51 00W	Management applied	16460	3.74 nm ²
Cape Moffett	51 59 00N 51 59 00N 51 56 00N 51 56 00N	176 51 00W 176 52 00W 176 51 00W 176 56 00W	Designation	16460	15.12 nm ²
Cape Moffett	51 59 00N 52 02 00N 51 57 30N 51 57 00N	176 48 00W 176 41 00W 176 41 00W 176 48 00W	Designation	16460	5.54 nm ²
Great Sitkin	52 08 30N 52 08 30N 52 06 00N 52 06 00N	176 11 30W 176 08 00W 176 08 00W 176 11 30W	Management applied	16460	5.40 nm ²
Great Sitkin	52 02 30N 52 02 30N 52 06 30N 52 10 00N 52 10 00N 52 06 00N	176 12 00W 176 16 30W 176 16 30W 176 10 00W 176 03 00W 176 03 00W	Designation	16460	37.17 nm ²
Semisopochnoi Island	51 52 00N 52 52 00N 51 50 00N 51 50 00N	179 48 30W 179 51 30W 179 51 30W 179 48 30W	Management applied	16460	3.67 nm ²
Semisopochnoi Island	52 01.40N 51 57.30N	179 36.90W 179 46.00W	Designation	16460	10-mile radius (388 nm ²)
Ulak Island	52 08 30N 52 08 30N 52 06 00N 52 06 00N	176 11 30W 176 08 00W 176 08 00W 176 11 30W	Management applied	16460	5.64 nm ²

Proposed HAPC Area	Latitude	Longitude	Management	NOAA Chart number	Area
Ulak Island	51 18.90N	178 58.90W	Designation	16460	10-mile radius (296 nm ²)
Bowers Ridge B	54 59 00 55 29 00 55 22 00 53 39 00 52 33 00	175 34 00 E 176 26 00 E 178 43 00 E 178 31 00 W 179 45 00 E	Management applied	16012	17,251 nm ²
Bowers Ridge	54 54 30N 55 10 30N 54 15 30N 52 44 30N 52 40 30N 54 06 00N	177 56 00 E 178 27 00 E 179 54 00 E 179 27 00 W 179 55 00 W 179 20 00 E	Designation	16012	3,933 nm ²
Bowers Ridge	55 04 30N 55 04 30N 54 32 30N 54 32 30N	176 00 00 E 177 14 30 E 177 14 30 E 176 00 00 E	Designation	16012	1,378 nm ²

HAPC Action 1 - Alternative 2



HAPC Action 1 - Alternative 3

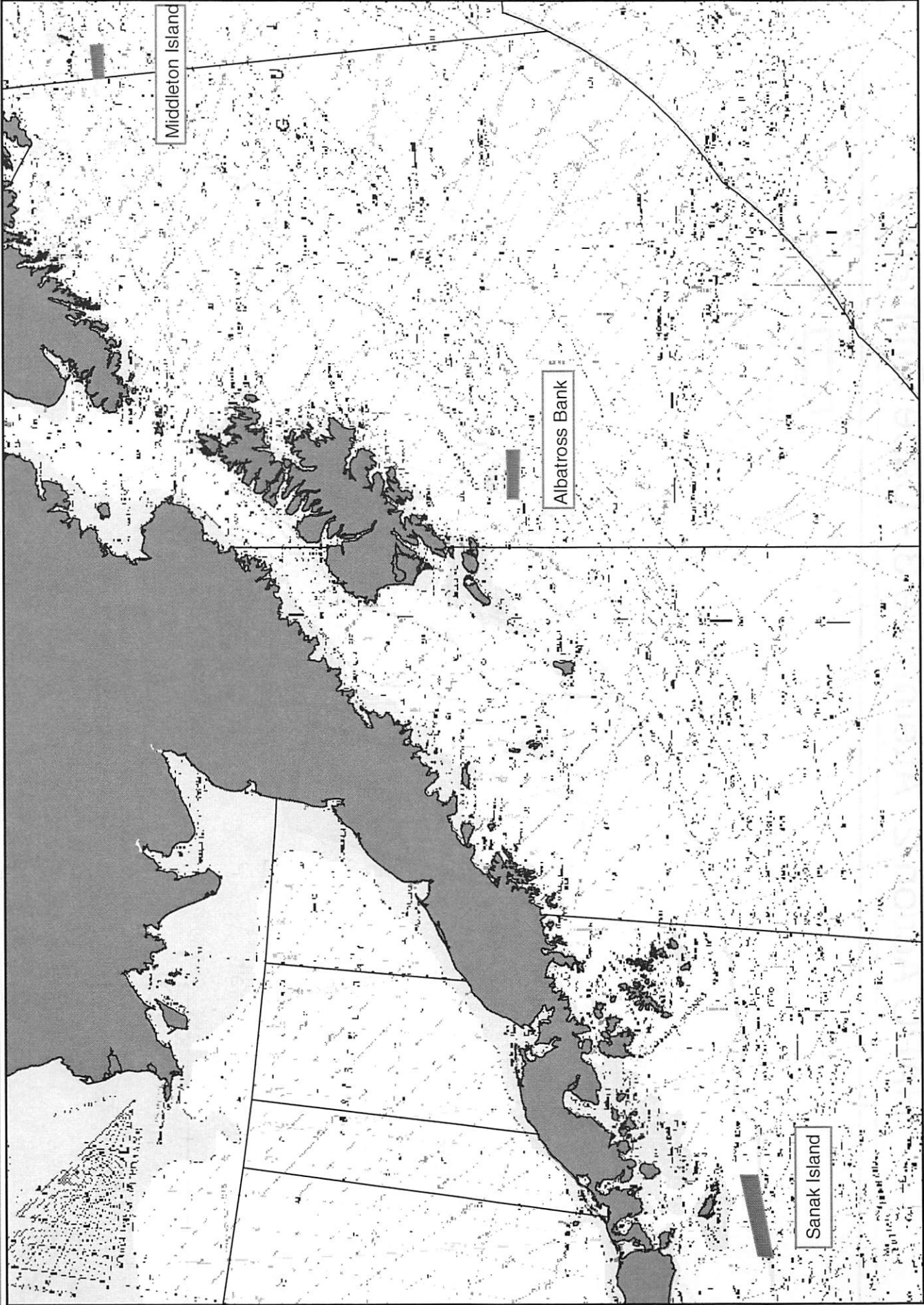


Buoy lights, if tracked and excluded, may not be shown to help with clarity of the chart.

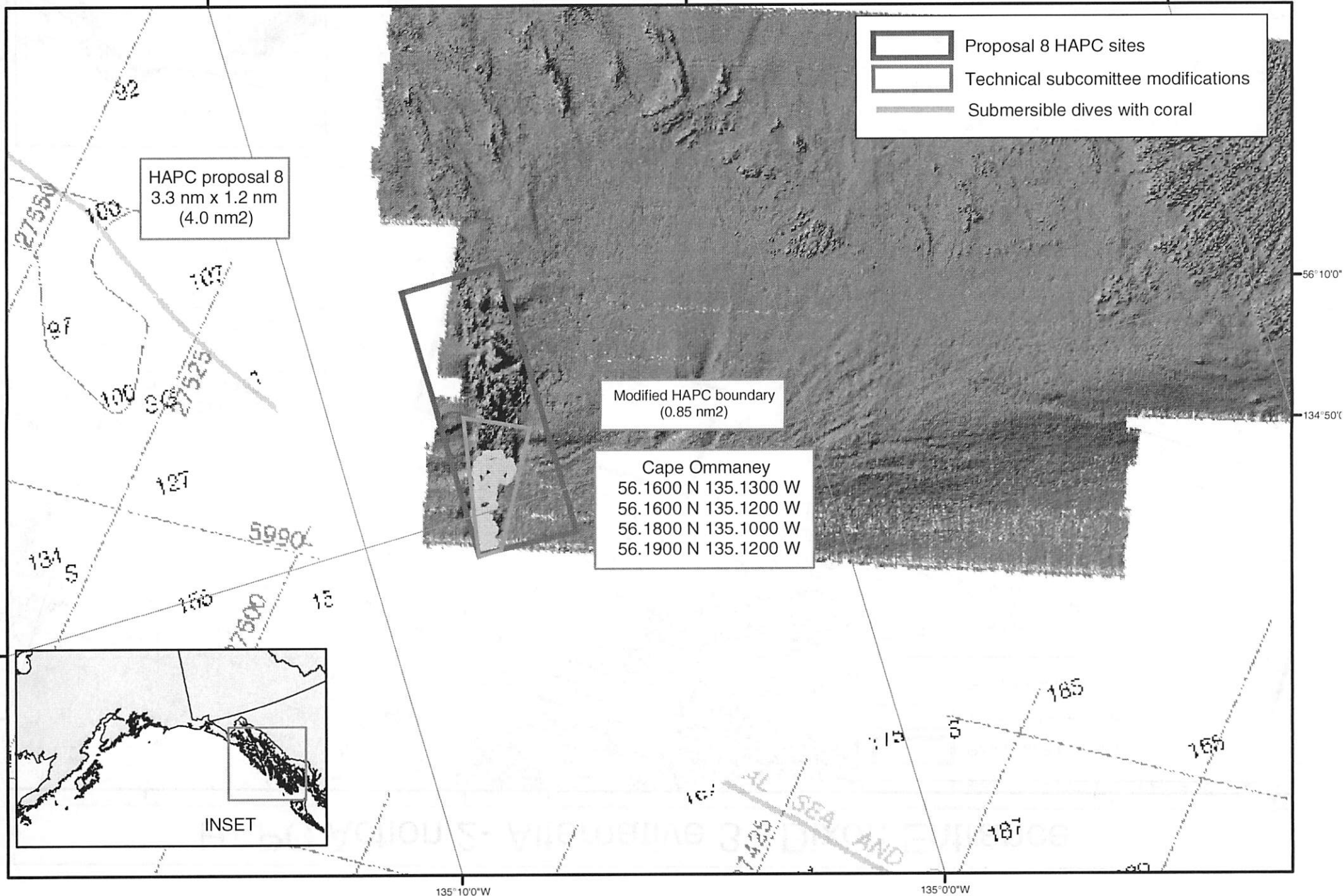
Nautical Miles
0 40 80 120 160 200 240 280



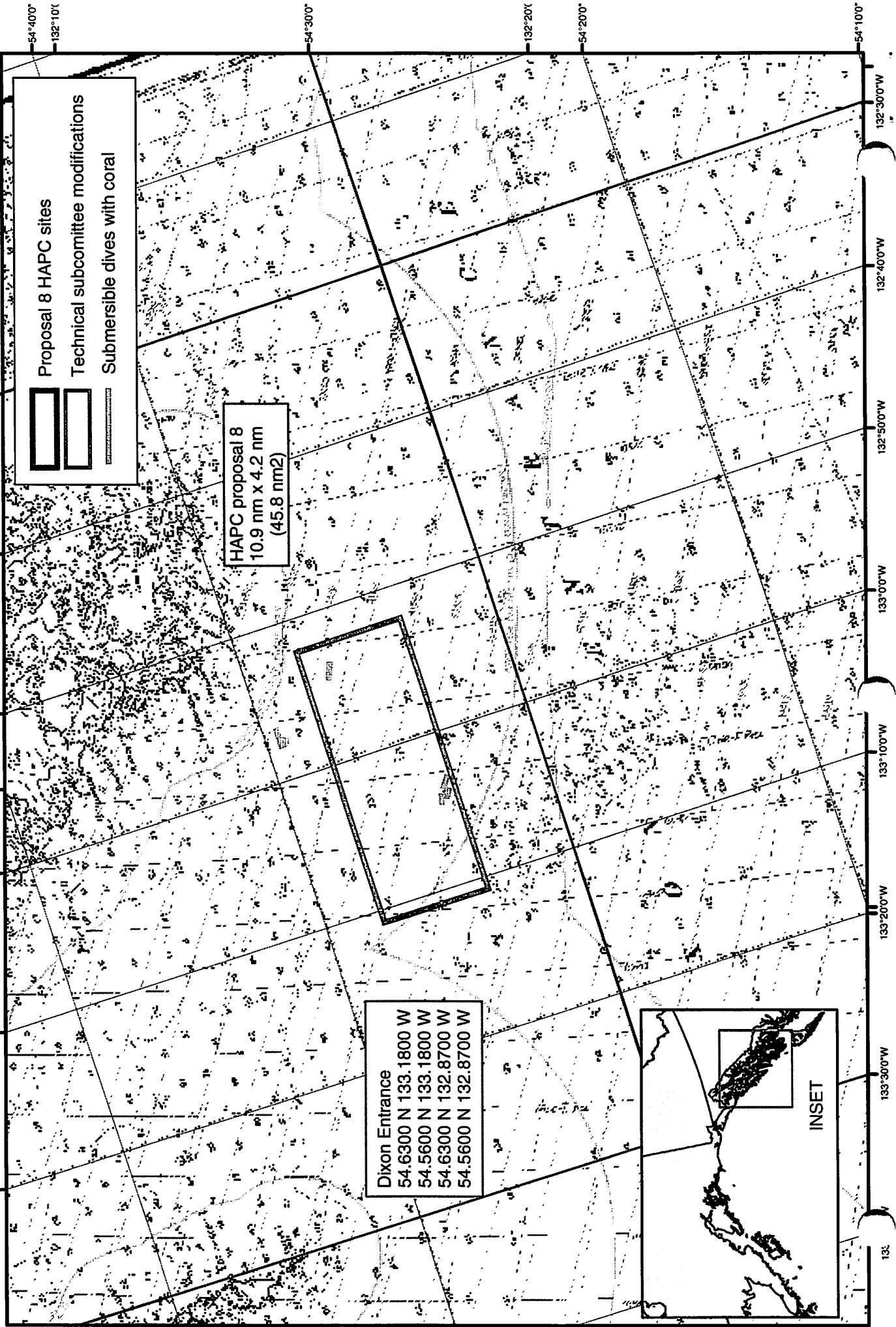
HAPC Action 2-Alternative 2



HAPC Action 2- Alternative 3 - Cape Ommaney



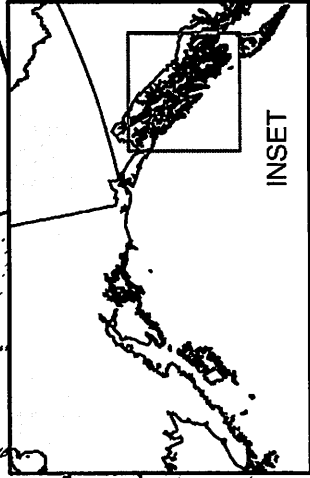
HAPC Action 2- Alternative 3 - Dixon Entrance






Proposal 8 HAPC sites
Technical subcommittee modifications
Submersible dives with coral

HAPC proposal 8
10.9 nm x 4.2 nm
(45.8 nm²)

Dixon Entrance
54.6300 N 133.1800 W
54.5600 N 133.1800 W
54.6300 N 132.8700 W
54.5600 N 132.8700 W



HAPC Action 2 - Alternative 3 - Fairweather

 Proposal 8 HAPC sites
 Technical subcommittee modifications
 Submersible dives with coral

HAPC proposal 8
6.2 nm x 2.1 nm
(13.0 nm²)

Modified FN1 HAPC
(.44 nm²)

Modified FN1 HAPC
58.4600 N 139.3100 W
58.4400 N 139.3100 W
58.4400 N 139.3000 W
58.4600 N 139.3000 W

Modified FN2 HAPC
(2.51 nm²)

Modified FN2 HAPC
58.4000 N 139.3100 W
58.3800 N 139.3100 W
58.3800 N 139.2500 W
58.4000 N 139.2500 W

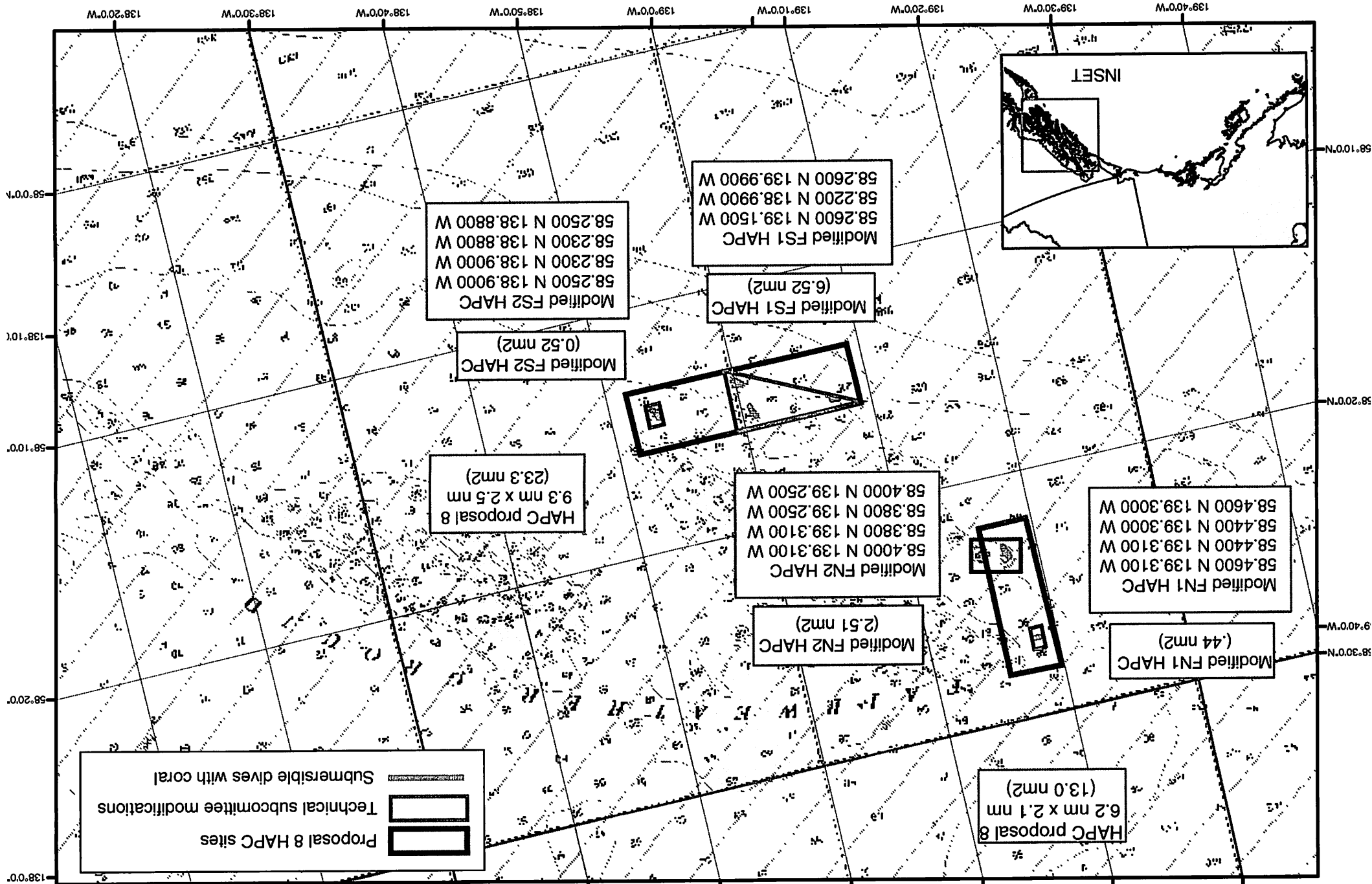
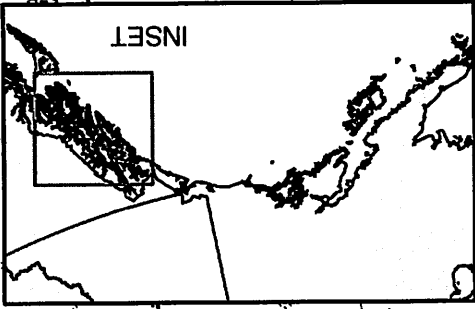
HAPC proposal 8
9.3 nm x 2.5 nm
(23.3 nm²)

Modified FS2 HAPC
(0.52 nm²)

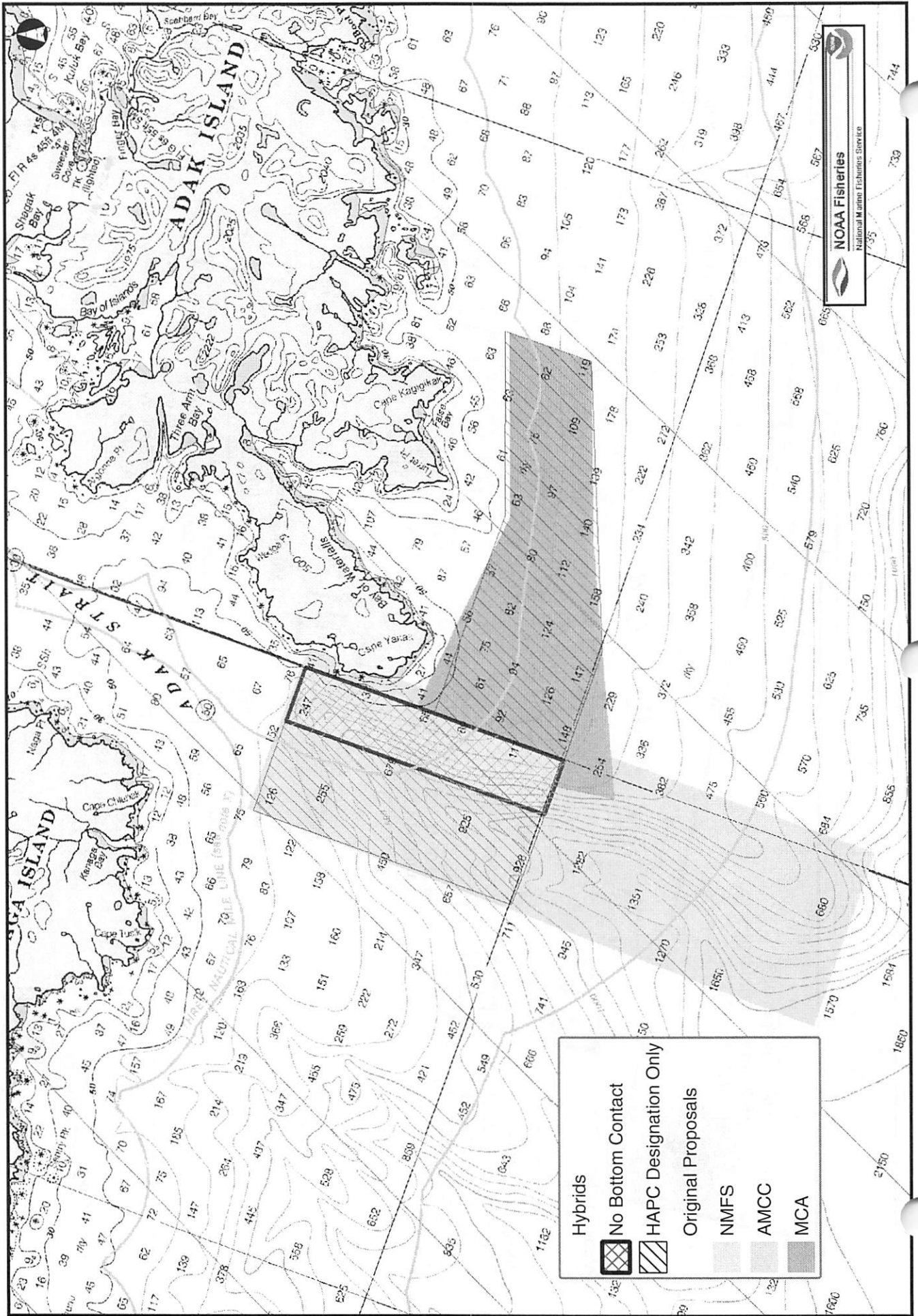
Modified FS2 HAPC
58.2500 N 138.9000 W
58.2300 N 138.9000 W
58.2300 N 138.8800 W
58.2500 N 138.8800 W

Modified FS1 HAPC
(6.52 nm²)

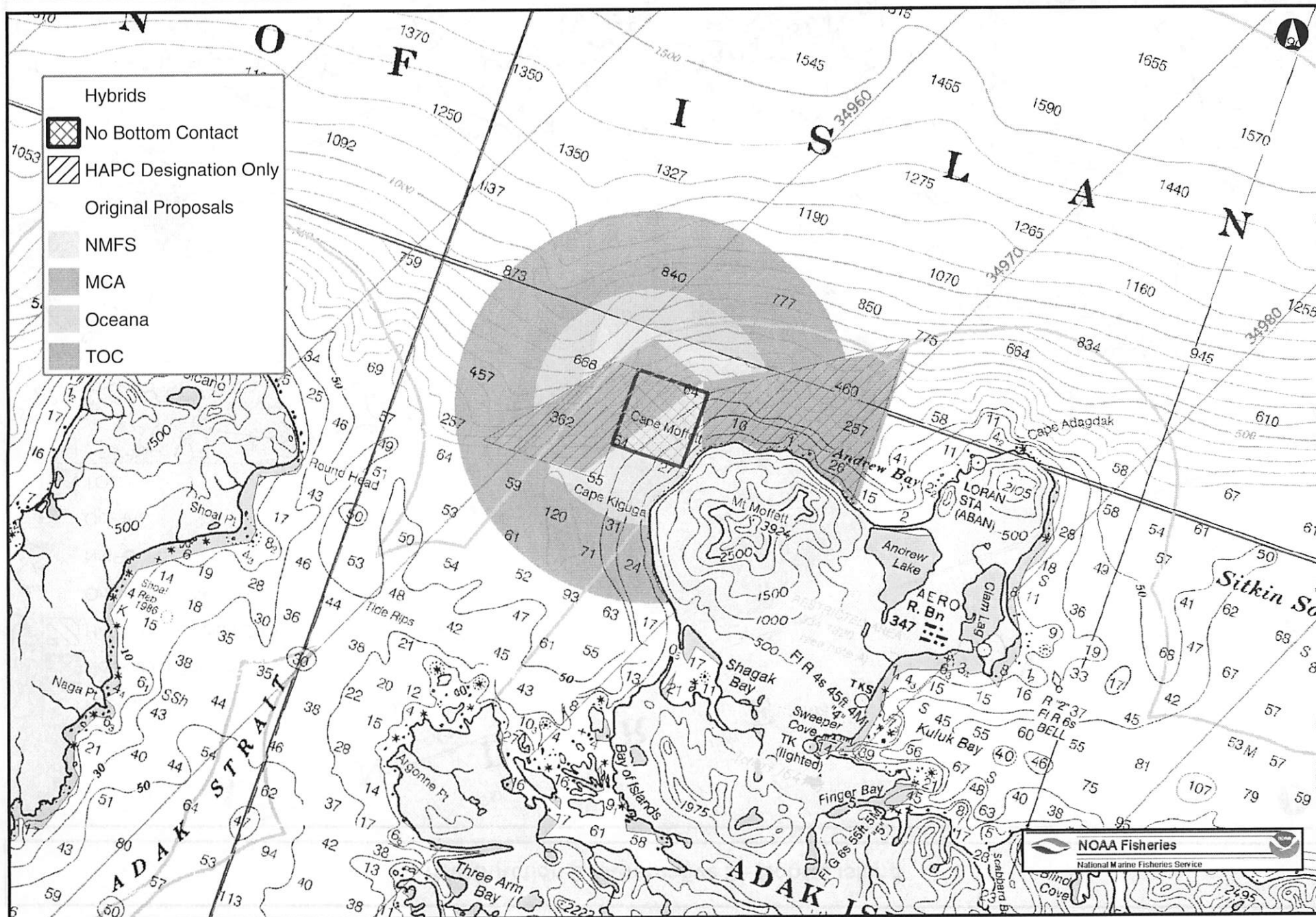
Modified FS1 HAPC
58.2600 N 139.1500 W
58.2200 N 138.9900 W
58.2600 N 139.9900 W



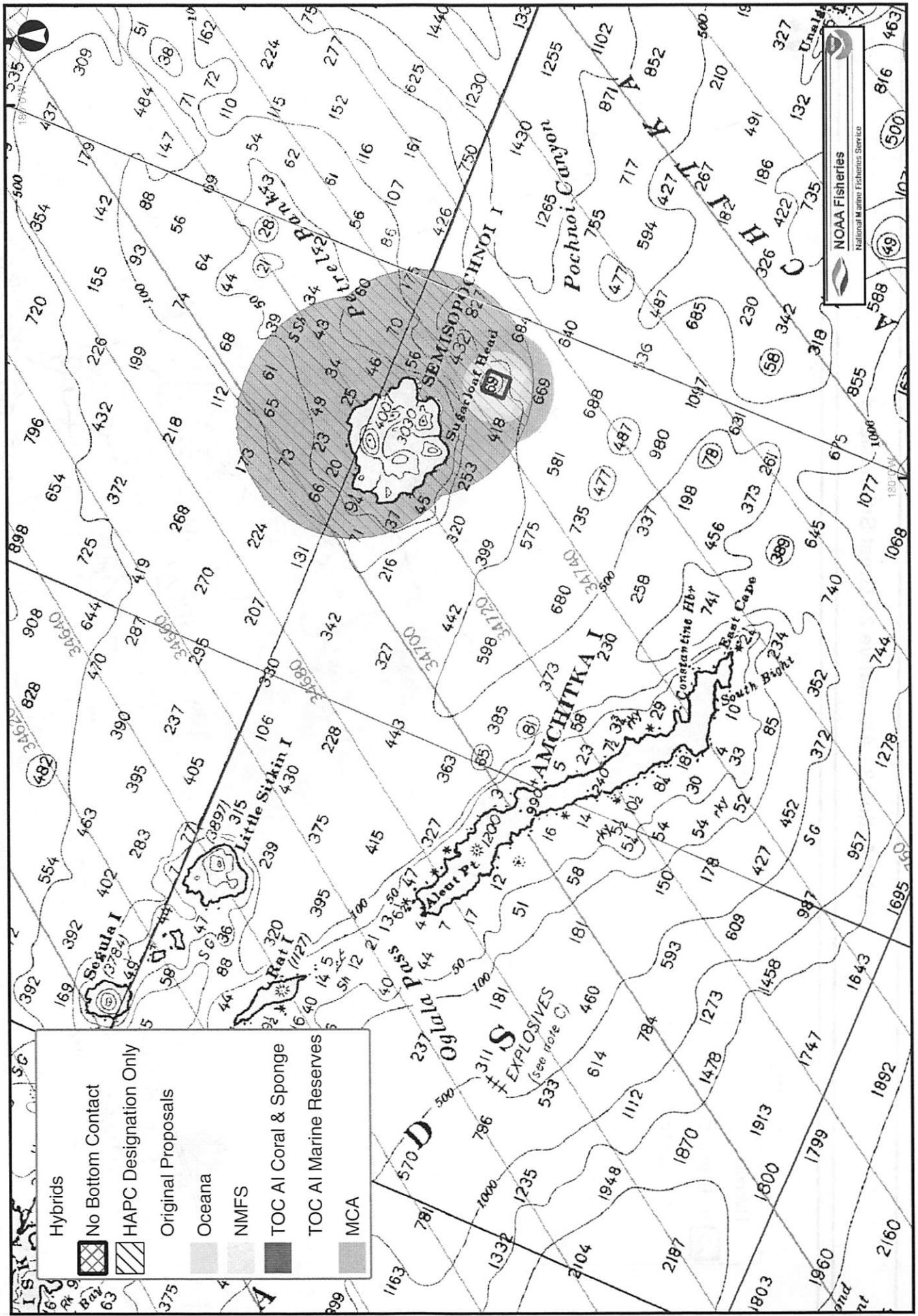
HAPC Action 3 - Alternative 2 - Adak Canyon



HAPC Action 3 - Alternative 2 - Cape Moffett



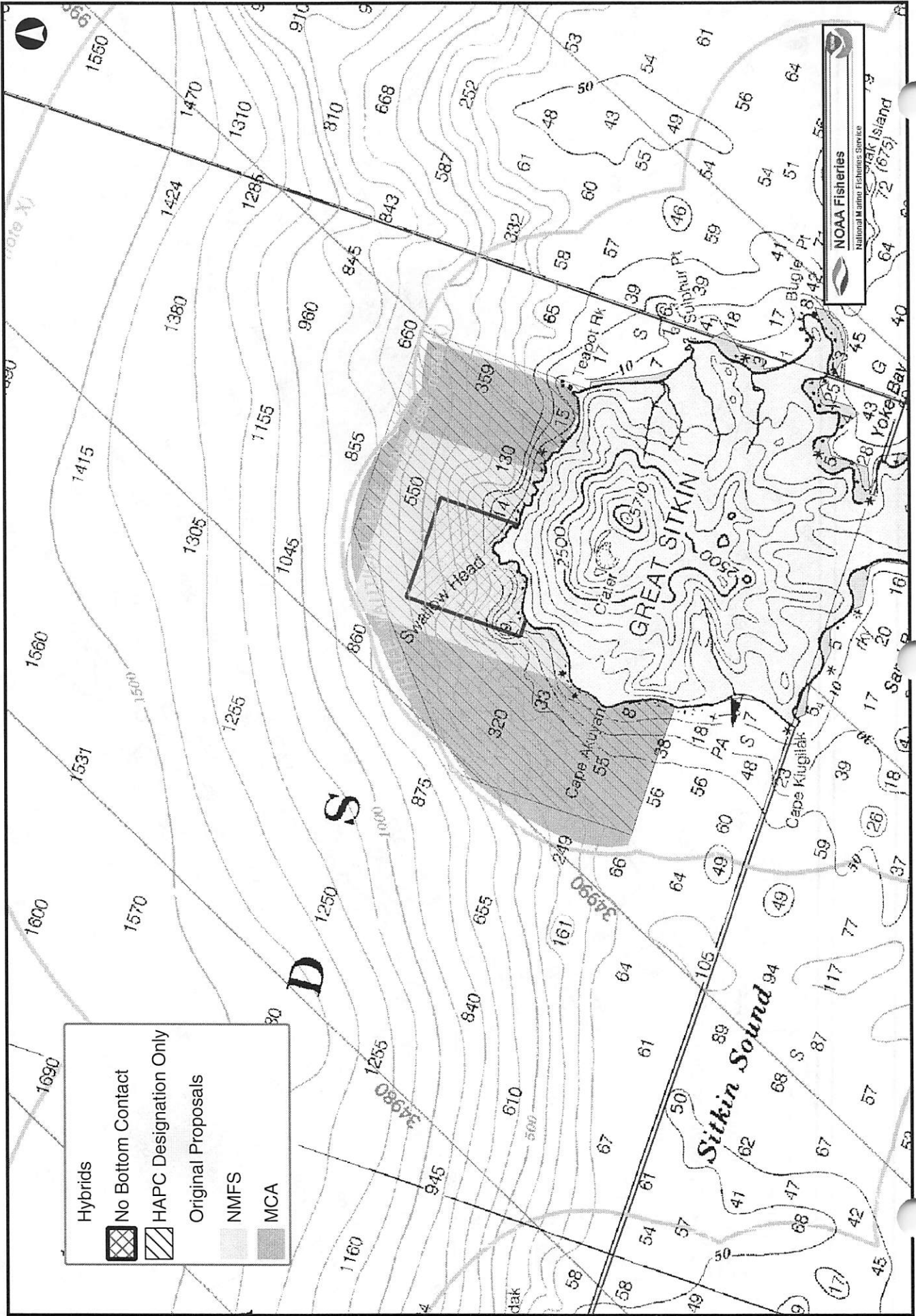
HAPC Action 3 - Alternative 2 - Semisopochnoi Island



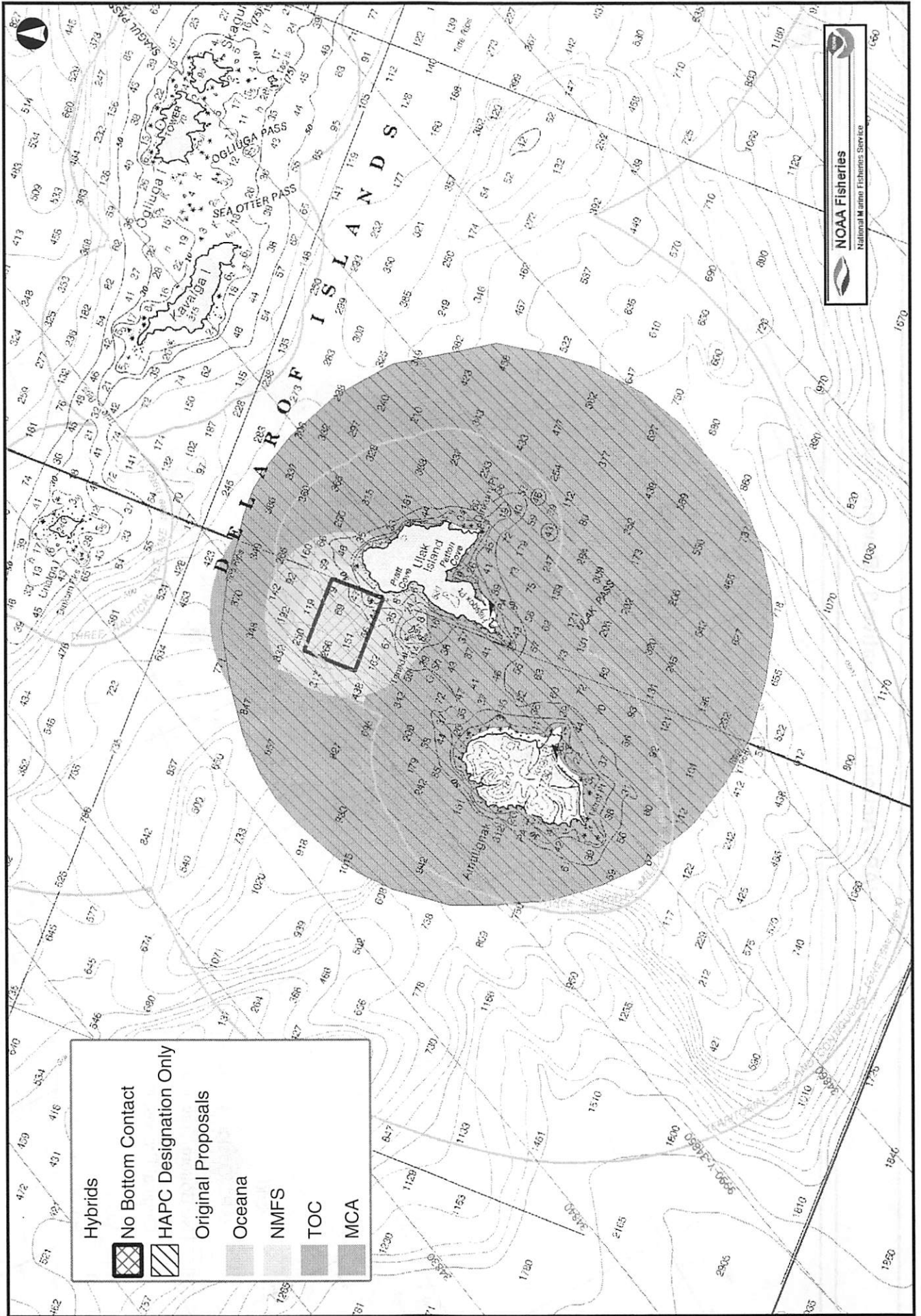
- Hybrids
- No Bottom Contact
- HAPC Designation Only
- Original Proposals
- Oceana
- NMFS
- TOC AI Coral & Sponge
- TOC AI Marine Reserves
- MCA



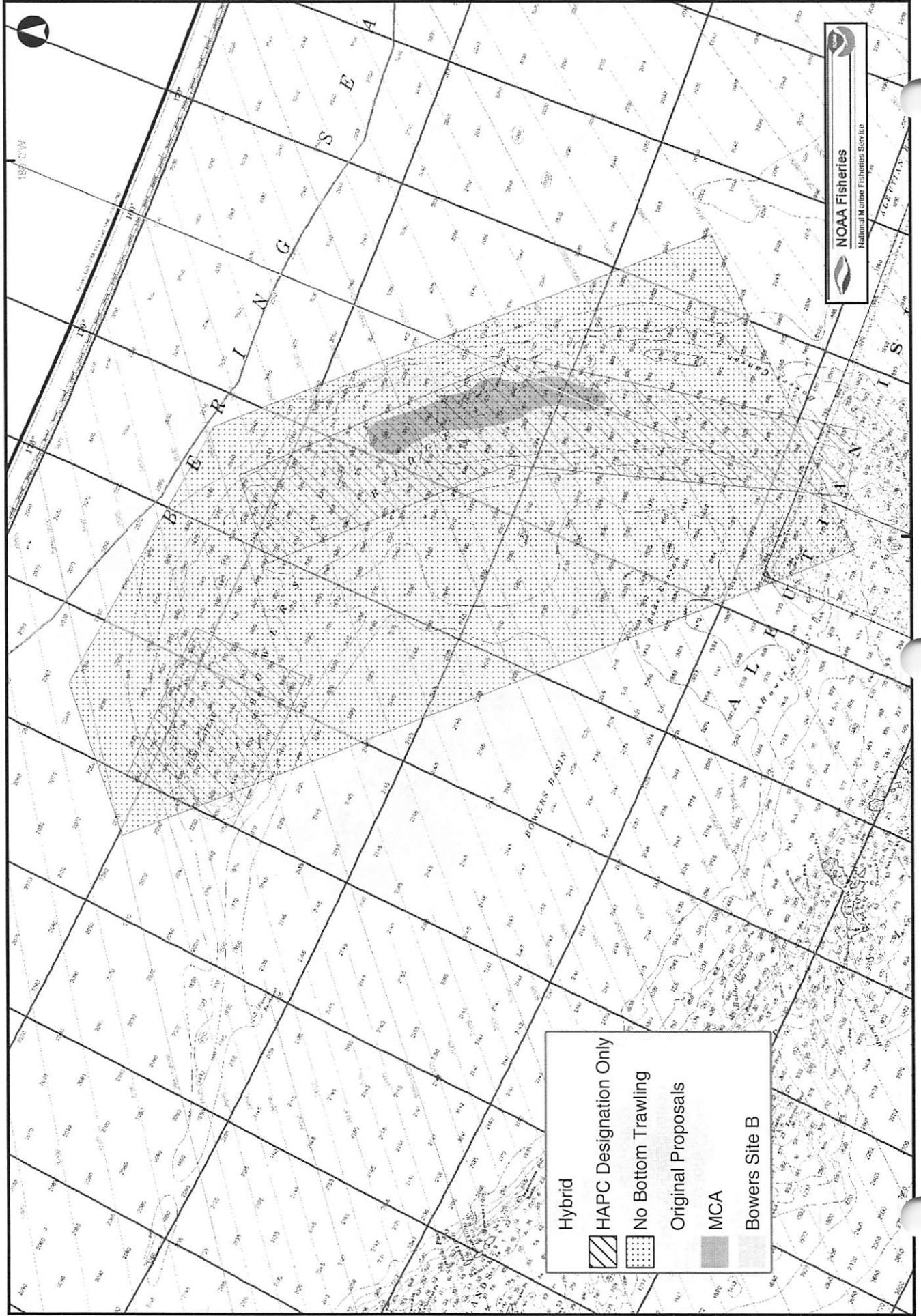
HAPC Action 3 - Alternative 2 - Great Sitkin Island



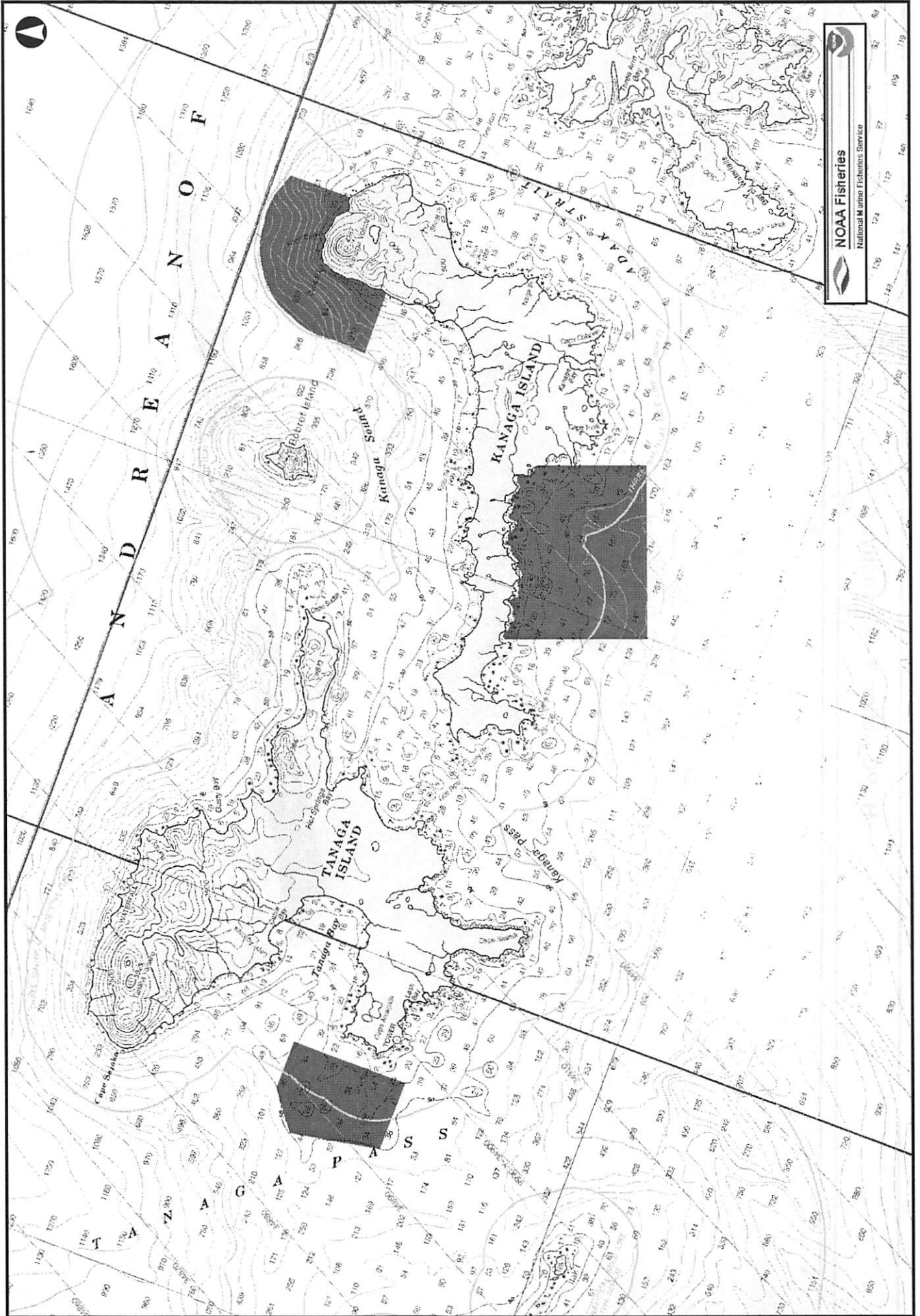
HAPC Action 3 - Alternative 2 - Ulak Island



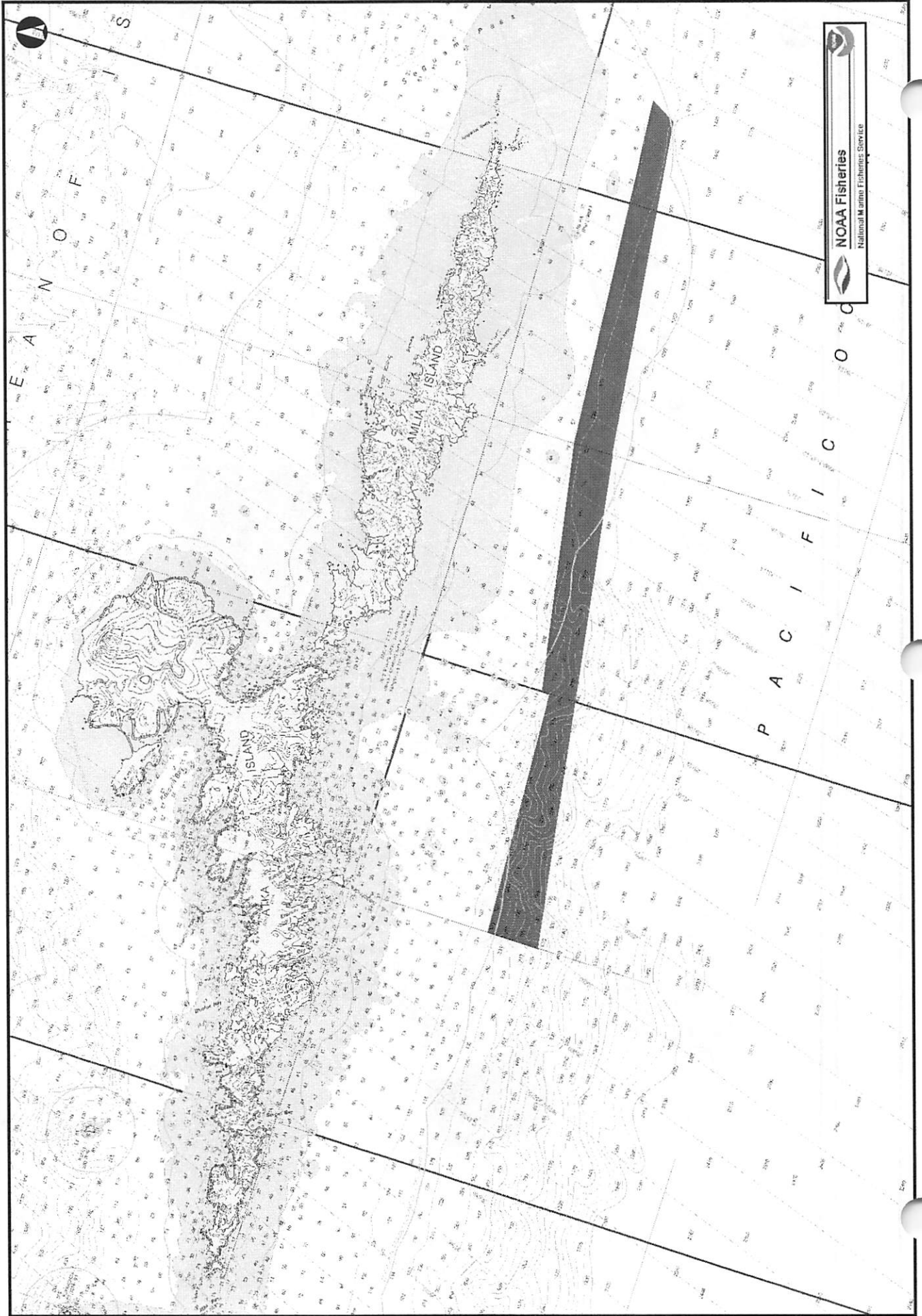
HAPC Action 3 - Alternative 3 - Bowers Ridge



HAPC Action 3 - Alternative 4



HAPC Action 3 - Alternative 4



****DRAFT 5/10/04****

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HABITAT AREAS OF PARTICULAR CONCERN (HAPCs)**

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4.0 Environmental Effects

4.1 Significance Analysis and Criteria for proposed HAPCs

An EA must consider whether an action will have a significant effect on the quality of the human environment (40 CFR 1508.27; NAO 216-6, 6.01b). Significance is determined by considering the contexts (geographic, temporal, societal) in which the action will occur, and the intensity of the effects of the action. The evaluation of intensity should include consideration of the magnitude of the impact, the degree of certainty in the evaluation, the cumulative impact when the action is related to other actions, the degree of controversy, and consistency with other laws. If an impact is not considered significant, a Finding of No Significant Impact (FONSI) is issued.

This section describes the criteria by which the impacts of the proposed action are analyzed for each of the following resource categories:

- Habitat
- Target Species
- Economic and Socioeconomic Aspects of Federally Managed Fisheries
- Other Fisheries and Fishery Resources
- Protected Species
- Ecosystem
- Non-fishing Activities

Evaluation criteria have been developed for each of these categories recently for other analyses (2004 Annual TAC Specifications EA; EFH DEIS 2004). The significance analysis used in this EA draws upon the criteria used in those recent analyses and those recent analysis. The four ratings used to assess each potential effect are:

Significantly negative (S-): Significant adverse effect in relation to the reference point. Information, data, and/or professional judgement indicate that the action will cause a significant adverse effect on the resource.

Insignificant impact (I): Insignificant effect in relation to the reference point. Information, data, or professional judgement suggests that the action will not cause a significant adverse effect on the resource.

Significantly positive (S+): Significant beneficial effect in relation to the reference point. Information, data, and/or professional judgement indicate that the action will cause a significant benefit to the resource.

Unknown (U): Unknown effect in relation to the reference point. There is an absence of information to determine a reference point for the resource, species, or issue and data is insufficient to adequately assess the effect of the action. Professional judgement is also not able to determine the effect of the action on the resource.

The reference point condition, where used, may be considered the state of the environmental component being analyzed where it is believed to be in stable condition or in a condition judged not to be threatened at the present time. For example, a reference point condition for a fish stock would be the state of that stock in a healthy condition, able to sustain itself, successfully reproducing, and not threatened with a population-level decline.

The following sub-sections describe the significance criteria used to evaluate the proposed alternatives. Significance criteria are provided for each of the resource categories listed above.

Effects on Habitat

The reference point against which the criteria are applied is the current size and quality of marine benthic habitat and other essential fish habitat. Criteria used in this EA to evaluate effects of the proposed action on habitat are provided in Table 4.1-1.

Table 4.1-1 Criteria used to determine significance of effects on habitat.

Effect	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Habitat complexity: Mortality and damage to living habitat species	Substantial increase in mortality and damage; long-term irreversible impacts to long-lived, slow growing species	Likely to not increase mortality or damage to long-lived, slow growing species	Decrease in mortality or damage to long-lived, slow growing species	Magnitude and/or direction of effects are unknown
Habitat complexity: (non-living substrates such as rock and cobble)	Increase in the rate of removal or damage of non-living substrates	Minimal likelihood in the rate or damage of non-living substrates	Decrease in the rate of removal or damage of non-living substrates	Magnitude and or direction of effects are unknown
Benthic biodiversity	Substantial decrease in community structure from baseline	Likely to not decrease community structure	Increase in community structure from baseline	Magnitude and or direction of effects are unknown
Habitat suitability	Substantial decrease in habitat suitability over time	Likely to not change habitat suitability over time	Increase in habitat suitability over time	Magnitude and or direction of effects are unknown

Proposed Methodology

Seamounts: Sixteen seamounts have been identified in the EEZ off Alaska in depths that support FMP species, but only 5 have been sampled by direct research efforts. The analysis will use the data from the seamounts that have been studied and assume that the species composition, physical features, and other environmental parameters of the remaining seamounts are comparable. The analysis will assess qualitatively the potential benefits to the habitat features that may accrue from identifying the seamounts as HAPCs and restricting fishing effort in those areas. The qualitative analysis will address potential positive and negative effects on habitat complexity, benthic biodiversity, and habitat suitability using the best professional judgment of the analysts.

High relief hard corals: The overall abundance of high relief hard coral structures in Alaska is unknown. The analysis will use the data from documented locations of high relief hard corals sites that have primarily been observed *in situ* by NMFS and ADF&G submersible research. Additional information from bycatch within the commercial fisheries as well as bycatch within NMFS research survey will be used supplementally due to its' limitations. The analysis will assess qualitatively the potential benefits to the habitat features that may accrue from identifying the coral areas as HAPCs and restricting fishing effort in those areas. The qualitative analysis will address potential positive and negative effects on habitat complexity, benthic biodiversity, and habitat suitability using the best professional judgment of the analysts.

Effects on Target Species

The reference point against which the criteria are applied is the current status of managed stocks. The significance criteria used to evaluate the impacts of the alternatives on target species are provided in Table 4.1-2.

Table 4.1-2 Criteria used to estimate the significance of effects on the FMP managed target stocks within the Aleutian Islands and Gulf of Alaska on proposed HAPC.

Intensity of the Effects				
Direct Effects	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Stock Biomass: Potential for increasing and reducing stock size	Changes in fishing mortality are expected to jeopardize the ability of the stock to sustain itself at or above its MSST	Changes in fishing mortality are expected to maintain the stock's ability to sustain itself above MSST	Changes in fishing mortality are expected to enhance the stocks ability to sustain itself at or above its MSST	Magnitude and/or direction of effects are unknown
Fishing mortality	Reasonably expected to jeopardize the capacity of the stock to yield fishable biomass on a continuing basis.	Reasonably expected to not jeopardize the capacity of the stock to yield fishable biomass on a continuing basis.	Action allows the stock to return to its unfished biomass.	Magnitude and/or direction of effects are unknown
Spatial or temporal distribution	Reasonably expected to adversely affect the distribution of harvested stocks either spatially or temporally such that it jeopardizes the ability of the stock to sustain itself.	Unlikely to adversely impact the distribution of harvested stocks either spatially or temporally such that it has no effect on the ability of the stock to sustain itself.	Reasonably expected to positively affect the harvested stocks through spatial or temporal increases in abundance such that it enhances the ability of the stock to sustain itself.	Magnitude and/or direction of effects are unknown
Change in prey availability	Evidence that the action may lead to a change prey availability such that it jeopardizes the ability of the stock to sustain itself.	Evidence that the action will not lead to a change in prey availability such that it jeopardizes the ability of the stock to sustain itself.	Evidence that the action may result in a change in prey availability such that it enhances the ability of the stock to sustain itself.	Magnitude and/or direction of effects are unknown

Proposed Methodology

The FMP describes the target fisheries as, "those species which are commercially important and for which a sufficient data base exists that allows each to be managed on its own biological merits. Catch of each species must be recorded and reported. This category includes pollock, Pacific cod, yellowfin sole, Greenland turbot, arrowtooth flounder, rock sole, "other flatfish," sablefish, Pacific ocean perch, "other rockfish," Atka mackerel, and squid." (BSAI FMP, page 286).

The analysis will utilize a qualitative assessment of the relative impact of each alternative on the mortality to fish species harvested in target fisheries or the degree to which the action might affect the spatial and temporal distribution of species harvested in target fisheries within the proposed closure area. The analysis will also employ a qualitative assessment of how the alternative may affect prey items that are important to fish harvested in target fisheries. The issue of gear conflicts or fishing grounds preemption will also be addressed in the analysis.

Economic and Socioeconomic Aspects of Federally Managed Fisheries

The reference point against which the criteria are applied is the current economic and socioeconomic conditions. Significance criteria to evaluate the impacts of the alternatives on economic and socioeconomic factors are provided in Table 4.1-3.

Proposed Methodology

The analysis will examine the significance criteria qualitatively when data is unavailable. The criteria are grouped by those relating to the potential direct effects, the potential indirect effects, and the potential for industry to mitigate direct effects. The analysis that will be conducted will be inherently limited by the availability of data, and the time and resourced made available to conduct the analysis. The presentation of findings may also be limited by Federal law and agency policy regarding confidentiality of certain data.

Table 4.1-3 Economic and socio-economic significance criteria.

Issue	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Passive Use Values	Reductions in passive use value are anticipated	No substantial changes in passive use value are anticipated	Increases in passive use value are anticipated	Magnitude and/or direction of effects are unknown
Gross Revenues	Reductions in revenue are anticipated	No substantial changes in gross revenues are anticipated	Increases in gross revenues are anticipated	Magnitude and/or direction of effects are unknown
Operating Costs	Relocation of fishing effort will be required, or catch rates will be reduced	No substantial changes in operating costs expected	Relocation of fishing effort will not be required, or catch rates will not be reduced	Magnitude and/or direction of effects are unknown
Costs to Consumers	Higher prices for consumers are expected	No substantial changes in retail prices are expected	Lower prices for consumers are expected	Magnitude and/or direction of effects are unknown
Safety	Increased risk of accidents and injuries are expected	No changes in safety are expected	Reduced risk of accidents and injuries expected	Magnitude and/or direction of effects are unknown
Effects to Fishing Communities	Reduction in community revenues and employment are anticipated	No substantial effects on communities are expected	Increase in community revenues and employment are anticipated	Magnitude and/or direction of effects are unknown
Regulatory and Enforcement Programs	Increased number and complexity of closures and quotas; additional staff and resources needed for monitoring and enforcement	No substantial changes in regulatory or enforcement requirements are expected	Reduced number and complexity of closures and quotas; fewer staff and resources needed for monitoring and enforcement	Magnitude and/or direction of effects are unknown

Effects on Other Fisheries

A. Effects on Other Target Species and Fisheries

Alternatives are evaluated with respect to three potential impacts for other directed fisheries or the species harvested in other directed fisheries. The ratings utilize a qualitative assessment of the relative impact of each alternative on the mortality to fish species harvested in non-target fisheries or the degree to which the action might affect the spatial and temporal distribution of species harvested in other directed fisheries. The ratings also employ a qualitative assessment of how the alternative may affect prey items that are important to fish harvested in other target fisheries, and how the alternative may affect the habitat used by non-target fish species. The reference point against which the criteria are applied is the current overall stock biomass. The significance criteria used to evaluate the proposed action on other directed fisheries or fish stocks are provided in Table 4.1-4.

Table 4.1-4 Criteria used to estimate the significance of effects on other directed fisheries or the fish stocks targeted in other directed groundfish fisheries.

Intensity of the Effects				
Direct Effects	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Fishing mortality	Reasonably expected to jeopardize the capacity of the stock to yield fishable biomass on a continuing basis.	Reasonably expected to not jeopardize the capacity of the stock to yield fishable biomass on a continuing basis.	Action allows the stock to return to its unfished biomass.	Magnitude and/or direction of effects are unknown
Spatial or temporal distribution	Reasonably expected to adversely affect the distribution of species harvested in other target fisheries either spatially or temporally.	Unlikely to adversely impact the distribution of species harvested in other target fisheries either spatially or temporally.	Reasonably expected to positively affect the species harvested in other target fisheries through spatial or temporal increases in abundance.	Magnitude and/or direction of effects are unknown
Change in prey availability	Evidence that the action may lead to a change prey availability such that it jeopardizes the ability of the stock to sustain itself.	Evidence that the action will not lead to a change in prey availability such that it jeopardizes the ability of the stock to sustain itself.	Evidence that the action may result in a change in prey availability such that it enhances the ability of the stock to sustain itself	Magnitude and/or direction of effects are unknown

B. Effects on Incidental Catch of Other Species and Non-specified Species

There is currently no active management and limited monitoring for the species in this category, and the retention of any non-specified species is permitted. No reporting is required for non-specified species, and there are no catch limitations or stock assessments. Most of these animals are not currently considered commercially important and are not targeted or retained in groundfish fisheries. The information available for non-specified species is much more limited than that available for target fish species. Estimates of biomass, seasonal distribution of biomass, and natural mortality are unavailable for most non-specified species. Management concerns, data limitations, research in progress, and planned research to address these concerns are discussed in Section 5.1.2.6 of the Draft PSEIS (NMFS 2003b).

Because information is limited, predictions of impacts from different levels of harvest are described qualitatively. Direct effects include the removal of other or non-specified species from the environment as incidental catch in the groundfish fisheries. The reference point against which significance criteria are applied is the current population trajectory or harvest rate of the non-specified species. The criterion for evaluating significance was whether a substantial difference in bycatch amount would occur (increase by 50% = adverse or decrease by 50% = beneficial). Indirect effects include habitat disturbance by fishing gear and disruption of food web interactions by disproportionate removal of one or more trophic levels. No attempt was made to evaluate the significance of indirect effects. See Table 4.1-5 for significance criteria for incidental catch of other or non-specified species.

Table 4.1-5 Criteria used to estimate the significance of effects on incidental catch of other species, non-specified species, forage fish, prohibited species.

Effect	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Incidental catch of other species and non-specified species	Reasonably expected to increase harvest levels by >50%	Reasonably expected to not increase or decrease harvest levels by >50%	Reasonably expected to decrease harvest levels by >50%	Magnitude and/or direction of effects are unknown.
Incidental catch of forage fish	Reasonably expected to increase harvest levels by >50%	Reasonably expected to not increase or decrease harvest levels	Reasonably expected to decrease harvest levels by >50%	Magnitude and or direction of effects are unknown.
Incidental catch of prohibited species	Reasonably expected to jeopardize the capacity of the stock to maintain benchmark population levels.	Reasonably not expected to jeopardize the capacity of the stock to maintain benchmark population levels.	Reasonably expected to increase harvest levels in directed fisheries targeting prohibited species without jeopardizing capacity of stock to maintain benchmark population levels.	Magnitude and or direction of effects are unknown.

C. Effects on Incidental Catch of Prohibited Species

Retention of prohibited species is forbidden in the BSAI and GOA groundfish fisheries. These species were typically utilized in domestic fisheries prior to the passage of the Magnuson-Stevens Act in 1976. Retention was prohibited in the foreign, joint venture, and domestic fisheries to eliminate any incentive that groundfish fishermen might otherwise have to target these species. The prohibited species include: Pacific salmon (Chinook, coho, sockeye, chum, and pink and ESA listed salmon), steelhead trout, Pacific halibut, Pacific herring, and Alaska king, Tanner, and snow crab.

This analysis focuses on the effects of the alternatives on three aspects of prohibited species management measures: 1) effects on the stocks of prohibited species; 2) effects on harvest levels in the directed fisheries for salmon, halibut, herring, and crab managed by the state; and 3) effects on recent levels of incidental catch of prohibited species in the groundfish fisheries.

The reference point used to determine the significance of effects on salmon stocks is whether the current minimum escapement needs would reasonably be expected to be met. The reference point used to determine the significance of effects on herring stocks is whether the current minimum spawning biomass threshold levels would be reasonably expected to be met. The reference point used to determine the significance of effects on the halibut stock is whether incidental catch of halibut in the groundfish fisheries would reasonably be expected to lower the total Constant Exploitation Yield (CEY) of the halibut stock below the long term estimated yield of 26,980 mt for the U.S. and Canada. The reference point used to determine the significance of effects on crab stocks is whether MSST (minimum stock size threshold) levels would reasonably be expected to be maintained. See Table 4.1-6 for significance criteria for incidental catch of prohibited species.

Table 4.1-6 Criteria used to estimate the significance of effects on harvest levels in state or internationally managed directed fisheries targeting stocks of prohibited species.

Effect	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Harvest levels in directed fisheries targeting catch of prohibited species	Substantial decrease in harvest levels in directed fisheries targeting prohibited species.	No substantial increase or decrease in harvest levels in directed fisheries targeting prohibited species.	Substantial increase in harvest levels in directed fisheries targeting prohibited species.	Magnitude and/or direction of effects are unknown
Salmon stocks	The minimum escapement needs would not be expected to be met.	The minimum escapement needs would reasonably be expected to be met.	The minimum escapement needs would be increased.	Magnitude and/or direction of effects are unknown
Herring stocks	The minimum spawning biomass threshold levels would not reasonably be expected to be met.	The minimum spawning biomass threshold levels would be reasonably expected to be met.	The minimum spawning biomass threshold levels would increase.	Magnitude and/or direction of effects are unknown
Halibut stocks	Incidental catch of halibut in the groundfish fisheries would reasonably be expected to exceed the total Constant Exploitation Yield (CEY).	Incidental catch of halibut in the groundfish fisheries would not effect the the total Constant Exploitation Yield (CEY).	Incidental catch of halibut in the groundfish fisheries would reasonably be expected to lower the total Constant Exploitation Yield (CEY).	Magnitude and/or direction of effects are unknown
Crab stocks	MSST (minimum stock size threshold) levels would not be expected to be maintained.	MSST (minimum stock size threshold) levels would reasonably be expected to be maintained.	MSST (minimum stock size threshold) levels would be expected to increase.	Magnitude and/or direction of effects are unknown

The reference point used to determine the significance of effects under each alternative is whether the recent levels of incidental catch of prohibited species in the groundfish fisheries would be maintained.

Table 4.1-7 Criteria used to estimate the significance of effects on bycatch levels of prohibited species in directed groundfish fisheries.

Effect	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Harvest levels of prohibited species in directed fisheries targeting groundfish species	Substantial increase in harvest levels of prohibited species in directed fisheries targeting groundfish species.	No substantial increase or decrease in harvest levels of prohibited species in directed fisheries targeting groundfish species	Substantial decrease in harvest levels of prohibited species in directed fisheries targeting groundfish species.	Magnitude and/or direction of effects are unknown

Effects on State of Alaska -Managed State Waters and Parallel Fisheries for Groundfish Species

The State of Alaska manages state water seasons for several species of groundfish in internal waters: sablefish in Statistical Areas 649 (Prince William Sound) and 659 (Southeast Inside District), pollock in Area 649 (Prince William Sound), and Pacific cod in Areas 610 (South Peninsula District), 620, 630 (Chignik, Kodiak, and Cook Inlet Districts), and 649 (Prince William Sound). The state also manages groundfish fisheries for which federal TACs are established within state waters. Unless otherwise specified by the state, open and closed seasons for directed fishing within state waters are concurrent with federal seasons. These fisheries have been referred to as parallel fisheries or parallel seasons in state waters. Harvests of groundfish in these fisheries accrue towards their respective federal TACs.

The significance criteria used for the analysis in this section to determine changes to harvest levels in state-managed and parallel fisheries can be reviewed in Table 4.1-8. The reference point against which the criteria are applied is whether the current harvest levels would be maintained.

Table 4.1-8 Criteria used to estimate the significance of effects on harvest levels in state managed groundfish fisheries.

Effect	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Harvest levels of groundfish in state waters seasons and parallel seasons	Substantial decrease in harvest levels.	No substantial decrease or increase in harvest levels.	Substantial increase in harvest levels.	Magnitude and/or direction of effects are unknown

Proposed Methodology:

The analysis of the impacts on target species, prohibited species, forage fish species, other species, and non-specified species was evaluated with respect to four effects: (1) fishing mortality, (2) change in biomass level, (3) spatial/temporal concentration of the catch, and (4) prey availability. The analysis of these effects will be evaluated qualitatively as to whether the impacts, within the current fishery management regime, may be reasonably expected to jeopardize the sustainability of each target species or species group based on the analysts best professional judgement.

Protected Species

A. *Effects on Marine Mammals*

Direct and indirect interactions between marine mammals and groundfish harvest activity may occur due to overlap of groundfish fishery activities and marine mammal habitat. Fishing activities may either directly take through injury, death, or disturbance marine mammal species, or indirectly affect these animals by removing prey items important for growth and nutrition or cause sufficient disturbance such that marine mammals may avoid or abandon important habitat. Fishing also may result in loss or discard of fishing nets, line, etc. that may ultimately entangle marine mammals causing injury or death.

The reference point for determining significant impact to marine mammals is predicting whether the proposed action will impact the current population trajectory of any marine mammal species. Significance criteria are provided below (Table 4.1-9).

Table 4.1-9 Criteria for determining significance of effects to marine mammals.

Effects	Significance Criteria			
	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Incidental take/entanglement in marine debris	Action may result in concentration of fishing activity that results in more take or entanglement.	Action is unlikely to result in any increase or decrease in take or entanglement.	Action may result in decreases in marine mammal take or reduced levels of entanglement.	Magnitude and/or direction of effects are unknown
Spatial/temporal concentration of fishery	Action may result in concentration of fishing activity resulting in a rate or magnitude of marine mammal prey removal that could affect nutrition, lactation, or other physiological impacts that could reduce marine mammal growth, reproduction, and population viability.	Action will not likely increase concentration of fishing activity that may result in prey removals that could compromise marine mammal growth, reproduction, and population viability.	Action may result in decreased fishing activity which in turn could reduce removals of marine mammal prey items such that their growth and reproduction is enhanced which in turn may enhance population viability.	Magnitude and/or direction of effects are unknown
Disturbance	Action may result in increased disturbance such that marine mammals may avoid or abandon habitat important to breeding, resting, lactating, pupping, foraging, or other vital activities.	Action will not likely result in disturbance to marine mammals such that they may avoid or abandon habitat important to breeding, resting, lactating, pupping, foraging, or other vital activities.	Action may result in decreased levels of disturbance to marine mammals such that access to habitats important for breeding, resting, lactating, pupping, foraging, or other vital activities is increased.	Magnitude and/or direction of effects are unknown

B. Effects on Seabirds

Given the sparse information, it is not likely that groundfish fishery effects on most individual bird species are discernable. For reasons explained in the Steller Sea Lion Protection Measures SEIS (NMFS 2001b), the following species or species groups are considered: northern fulmar, short-tailed albatross, spectacled and Steller's eiders, albatrosses and shearwaters, piscivorous seabird species, and all other seabird species not already listed. The fishery effects that may impact seabirds are direct effects of incidental take (in gear and vessel strikes), and indirect effects on prey (forage fish) abundance and availability, benthic habitat, processing waste and offal. ESA listed seabirds are under the jurisdiction of the USFWS, which has completed an FMP level (USFWS 2003a) and project level BiOp (USFWS 2003b) for the groundfish fisheries and the setting of annual harvest specifications. Both BiOps concluded that the groundfish fisheries and the annual setting of harvest specifications were unlikely to cause the jeopardy of extinction or adverse modification or destruction of critical habitat for ESA listed birds.

A description of the effects of prey abundance and availability on seabirds is in Section 3.7.1 of the Draft PSEIS (NMFS 2003b). Detailed conclusions or predictions cannot be made regarding the effects of forage fish bycatch on seabird populations or colonies. However, the present understanding is that fisheries

management measures affecting abundance and availability of forage fish or other prey species could affect seabird populations (NMFS 2003b; NMFS 2001b), although commercial fisheries do not compete directly with seabirds. There is no directed commercial fishery for those species which compose the forage fish management group and seabirds typically target juvenile stages rather than adults for those target species where there is an overlap between seabirds and commercial fisheries.

The seabird species most likely to be impacted by any indirect gear effects on the benthos would be diving sea ducks such as eiders and scoters as well as cormorants and guillemots (NMFS 2001b). Additional impacts from bottom trawling may occur if sand lance habitat is adversely impacted. This would affect a wider array of piscivorous seabirds that utilize sand lance, particularly during the breeding season, when this forage fish is also used for feeding chicks. Bottom trawl gear has the greatest potential to indirectly affect seabirds via their habitat.

Table 4.1-10 outlines the qualitative significance criteria or thresholds that are used for determining if an effect has the potential to create a significant impact on seabirds. The reference point against which the criteria are applied is whether they change from the current levels without the action.

Table 4.1-10 Criteria used to determine significance of effects on seabirds.

Effects	Rating			
	Significantly Negative (-)	Insignificant (I)	Significantly Positive (-)	Unknown (U)
Incidental take	Take number and/or rate increases substantially	Take number and/or rate is the same.	Take number and/or rate decreases substantially	Magnitude and/or direction of effects are unknown
Prey (forage fish) availability	Prey availability is substantially reduced	Prey availability is the same.	Prey availability is substantially increased	Magnitude and/or direction of effects are unknown
Benthic habitat	Impact to benthic habitat is substantially increased or decreased	Impact to benthic habitat is the same.	Impact to benthic habitat is substantially decreased	Magnitude and/or direction of effects are unknown
Processing waste and offal	Availability of processing wastes is substantially decreased	Availability of processing wastes is the same.	Availability of processing wastes is substantially increased	Magnitude and/or direction of effects are unknown

Proposed Methodology:

Direct and indirect interactions between marine mammals and groundfish harvest activity may occur due to overlap of groundfish fishery activities and marine mammal habitat. Altering fishing effort by having a closure area may affect the location of fishing activities. These displaced fishing activities may either directly take through injury, death, or disturbance marine mammal species, or indirectly affect these animals by removing prey items important for growth and nutrition or cause sufficient disturbance such that marine mammals may avoid or abandon important habitat. Fishing also may result in loss or discard of fishing nets, line, etc. that may ultimately entangle marine mammals causing injury or death.

Impacts of the proposed action will be analyzed by addressing three questions:

1. Does the proposed action result in increases in direct or indirect interactions with marine mammals that may result in incidental take or entanglement in marine debris?
2. Does the proposed action concentrate or otherwise result in fishing activity that may remove marine mammal prey items that could compromise foraging success of marine mammals and affect their nutrition?
3. Does the proposed action create sufficient disturbance to marine mammals such that they may avoid or abandon habitat important to breeding, resting, lactating, pupping, foraging, or other vital activities?

These will be done qualitatively based on the best professional judgement of the analysts.

Effects on the Ecosystem

The proposed action could affect the marine ecosystem through removals of fish biomass or alteration of the habitat. Three primary means of measurement of ecosystem change are evaluated here: predator-prey relationships, energy flow and balance, and ecosystem diversity. The reference point for predator-prey relationships against which the criteria are compared are fishery induced changes outside the natural level of abundance or variability for a prey species relative to predator demands. The reference point for energy flow and balance will be based on bottom gear effort (qualitative measure of unobserved gear mortality particularly on bottom organisms) and a quantitative assessment of trends in retained catch levels over time in the area. The reference point for ecosystem diversity will be a qualitative assessment whether removals of one or more species (target, nontarget) effects overall species or functional diversity of the area. The criteria used to evaluate the significance of the effects on the ecosystem from the proposed action are provided in Table 4.1-11.

Table 4.1-11 Significance thresholds for fishery induced effects on ecosystem attributes.

Effects	Rating			
	Significantly Negative (-)	Insignificant (I)	Significantly Positive (-)	Unknown (U)
Predator-prey relationships	A decline outside of the natural level of abundance or variability for a prey species relative to predator demands.	No observed changes outside the natural level of abundance or variability for a prey species relative to predator demands	Increases of abundance or variability for a prey species relative to predator demands	Magnitude and or direction of effects are unknown
Energy flow and balance:	Long-term changes in system biomass, respiration, production or energy cycling, due to removals.	No observed changes in system biomass, respiration, production or energy cycling, due to removals.	Increases in system biomass, respiration, production or energy cycling, due to lack of removals.	Magnitude and/or direction of effects are unknown
Ecosystem Diversity	Removals from area decreases either species diversity or the functional diversity outside the range of natural variability. Or loss in one or	No observed changes outside the natural level for species diversity, functional diversity or genetic components of	Non-removal from the area increases the species diversity or functional diversity or	Magnitude and/or direction of effects are unknown

Proposed Methodology:

Three primary means of measurement of ecosystem change are evaluated here: predator-prey relationships, energy flow and balance, and ecosystem diversity. These ecosystem-level attributes are more difficult to measure directly and the range of natural variability of those attributes is not well known. Sufficient data on population status of target or non-target species to determine whether they are above or below MSST or ESA-related thresholds may be lacking. Thus, indicators of the strength of fishing impacts on the system will also be used to evaluate the degree to which any of the alternatives may be having a significant ecosystem impact. When data is unavailable, a qualitative assessment will be used by the analysts to evaluate these measures.

Effects on Non-fishing Activities

The proposed actions could affect non-fishing activities in the vicinity of the proposed HAPCs. The criteria used to evaluate the significance of the effects on non-fishing activities of the proposed action are provided in Table 4.1-12. The reference point against which the criteria are applied is the current cost level to agencies or industries of non fishing actions due to consultations from the EFH consultations.

Table 4.1-12 Significance thresholds for effects on non-fishing activities

Effects	Significance Criteria			
	Significantly Negative (-)	Insignificant (I)	Significantly Positive (+)	Unknown (U)
Costs to federal agencies	Significant increase in the cost of authorizing, funding, or undertaking non-fishing actions	No effect on the cost of authorizing, funding, or undertaking non-fishing actions.	Significant decrease on the cost of authorizing, funding, or undertaking non-fishing actions.	Magnitude and/or direction of effects are unknown
Costs to non-fishing industries or other proponents of affected activities	Significant increase in the cost of obtaining permits or funding from federal or state agencies, and/or increase in the project costs attributable to conditions to protect habitat	No effect on the cost of obtaining permits or funding from federal or state agencies	Significant decrease in the cost of obtaining permits or funding from federal or state agencies, and/or increase in the project costs attributable to conditions to protect habitat	Magnitude and/or direction of effects are unknown

Proposed Methodology:

The analysts will utilize a qualitative assessment to determine if there will be additional costs to either federal agencies or to non fishing industries (or other proponents of affected activities).

HAPC RIR Methodology

This discussion presents an outline of the methodology that will be used to evaluate the potential effects of proposed Habitat Areas of Particular Concern (HAPC) management measures within the framework of a Regulatory Impact Review (RIR). The action(s) to be analyzed in the (RIR) will be those proposals that are put forward as alternatives by the Council in June of 2004. The alternatives are expected to include several HAPC types including seamounts, areas of coral in the Gulf of Alaska (GOA), and areas of coral in the Aleutian Islands (AI). The management measures associated with the action alternatives are expected to include designation of HAPC areas, restriction of bottom contact fishing to gear, and elimination of all commercial fishing activity.

This discussion presents a methodological outline as a series of questions to be answered in the analysis. The questions are grouped by those relating to the potential direct effects, the potential indirect effects, and the potential for industry to mitigate direct effects. Of course, the analysis that will be conducted will be inherently limited by the availability of data, and the time and resourced made available to conduct the analysis. The presentation of findings may also be limited by Federal law and agency policy regarding confidentiality of certain data.

Questions to be asked:

What are the direct economic effects of the proposed measures?

- Has fishing activity taken place in the area historically (since 1995), and recently (2003)?
- If so, which fisheries (Federal, State Parallel, and State Managed, by target) have occurred there, in which seasons has effort occurred, and how much target and incidental catch would be put "at risk" by the measure.
- Which "vessel and gear" sector(s) (small, medium, and large CVs and CP, as well as Motherships / jig, pot, hook and line, bottom trawl, pelagic trawl, troll, other) would be expected to have catch put "at risk" by the measures in each target fishery/area/season?
- How important (target/incidental catch put at risk as a percent of NMFS reporting area harvest of seasonal apportionment/TAC) is the catch potentially put "at risk" to each "vessel and gear" sector?
- What are the round weight equivalent first wholesale values of the "at risk" catch for each affected sector (i.e. "revenue at risk")?
- What are the potential effects on prohibited species catch (PSC)?

What are the potential indirect effects of the proposed measures?

- Will changes in PSC cause changes in season lengths, and thereby total catch, in affected target fisheries that tend to be constrained by PSCs.
- How will changes in incidental catch affect bycatch limits?
- Based on the direct effects analysis, which fishery dependent communities are most likely affected by the proposed measures?
- What is the magnitude of the effect on the dependent communities (e.g. summary of combined effects of the various sectors)?

- What shoreside support industries are likely to be affected and how?
- How important are the catch and revenue put “at risk” by the measures to the communities that may be affected indirectly.
- What are the potential indirect effects on other target fisheries that occur outside of the HAPC area?
- What are the potential effects to consumers from proposed measures?
- What are the potential effects on management and enforcement costs from proposed measures?
- What are the potential non-market benefits of HAPC protection of the area?

What potential exists that affected industry can redeploy effort in order to mitigate the potential direct effects of the measures?

- Have fishing areas adjacent to the areas proposed for HAPC management been historically utilized in the affected target fishery?
- If so, what is the relative importance (percent of catch inside versus outside) of the target/incidental catch put “at risk” as compared to catch in adjacent areas that are not affected by HAPC management.
- Based on the relative importance of the area proposed for HAPC management, is it reasonable to expect that industry will be able to capture catch put “at risk” by such management in adjacent open areas without incurring significant effects on operating costs and vessel safety,
- What effects on operating costs and vessel safety might be expected to occur due to redeployment of effort?
- If redeployment does not appear likely to mitigate catch put “at risk” by HAPC management, what is the overall effect on “vessel and gear” sectors.
- What effects may redeployment of effort cause in other target fisheries (Federal, State parallel, or State managed) by concentrating effort or causing gear interactions?

Data Needs

The data necessary to complete the analysis described above includes fisheries catch data from a variety of sources combined with geographical information system shapefiles of the proposed HAPC management areas. A similar analysis was conducted for the Environmental Assessment / Regulatory Impact Review for proposed Changes to Gulf of Alaska Steller Sea Lion Protection Measures, which will be reviewed by the Council in June of 2004. The data analysis methods used are detailed in Appendix four of that document and are attached here to illustrate both the data needed and the extent of the analysis that will be needed to answer the questions identified above.

Appendix 4: Methodology for Fisheries Analysis
of the
Environmental Assessment / Regulatory Impact Review
For Proposed Changes to Gulf of Alaska Steller Sea Lion Protection Measures

Database Creation

To account for all the catch that may be affected by the proposed fisheries' openings and restrictions, three databases were combined for the fishing years 2002 and 2003: the State of Alaska Fish Ticket database, Weekly Production Reports (WPR) database, and NORPAC Fisheries Observer Database. To account for all the catch and not double-count any harvest, the following rules have been applied so that the data from these three databases can be combined accurately.

1. Fishticket data for vessels less than sixty feet in length and Observer database records for vessels greater than 125 feet were added as the base values. All the catch from these vessels is thus assumed to be accounted for. However, no extrapolations were completed for observed vessels greater than 125 feet. To do this, the data in both databases were normalized to a Saturday week-ending date, targeted using the Alaska Region's targeting algorithm, and spatially resolved to a State statistical area.
2. Accounting for the total catch by vessels between 60 and 125 feet is more problematic. Such vessels are partially observed and, depending on their sector (catcher processor, mothership, or catcher vessel), may be represented in both the fishticket and Observer databases.

For catcher vessels and motherships between 60 and 125 feet where a data match could be made by vessel identification and week-ending date in both the fishticket and observer database, the Observer database records were used. When there was not a match, we assumed there to be unobserved catch, and the fishticket database records were used. For medium-sized catcher processors, observer database records were used. The combination of these fishticket and Observer records provided the base catch for medium-sized vessels. But to account for as much catch as possible, the catcher processor Observer records for these medium-sized vessels were extrapolated up to the product reported in the Weekly Production Report. This was completed by created two sets of data groupings: one for medium sized catcher processor Observer data records and one for the Weekly Production Reports. The grouping included the quarter, processor identification, region, and course-level species groupings. Ratios between these two sets of value groupings were created and then applied back as a multiplier to the observer data. Most records could be matched; unmatched records were extrapolated using an average ratio for the sector (medium sized CPs), region, and species group.

The combined catch of the fishticket and Observer database is called the Catch-In-Areas (CIA) database. This CIA was completed for 2002 and 2003. A similar combined database product called the Catch-By-Vessel (CBV) database was created by Sustainable Fisheries for the years 1995 to 2001. The CBV database was appended to the CIA database.

Finding the Net Effect of the Openings and Restrictions

The purpose of this fisheries analysis was to model restricting or opening the fisheries' historical catch by ADF&G groundfish statistical area (proportionally), gear type, target species (dominant species by haul target), and week-ending date (WED). Assigning an economic value to the net associated catch was the final step.

Two sets of geographical information systems (GIS) shapefile were created: the first set included the current Steller sea lion management protection measures; the second set included the proposed measures, which are the subject of the EA/RIR, as outlined in the North Pacific Fishery Management Council's alternatives.

Each set of shapefiles included ADF&G groundfish statistical areas, gear, target, and WED. Both sets of measures (current and proposed) were analyzed for the proportion of the ADF&G groundfish statistical area affected by the closure, the gear type in question, the target species being restricted or unrestricted, and WED. The next step was to create a criteria\proportions table. When all four sets of the criteria matched (statistical area, gear, target, WED), that record was selected and a GIS function called *pArea.Area* was used to create the proportion of the amount of the statistical area affected.

A custom function was used to apply this criteria\proportions table to the CIA database. The results include the total catch affected (target and incidental) by each of the current closures and the proposed closures. To model the actual effect of the alternatives, the current extent of each closure was subtracted from the proposed extent, assigning a net effect of the closure. The round-weight values for Pacific cod and Walleye pollock from the 2003 Economic SAFE were multiplied by the net effect to provide an economic assessment of the sector specific gross revenue impacts of the proposed action.

Tables were created from these databases that included the quantity and value of the catch broken down by vessel size class, processing sector designation (shoreside, mothership, or catcher processor), harvests code (for determining when the vessel was operating in the Federal, State or parallel fishery), and vessel identification. The data were organized by year and season and the unique vessel count was calculated in the State, State parallel and Federal fisheries. Vessel counts were then reviewed and the data that were presented for the Federal and State parallel fisheries was restricted as necessary, pursuant to NOAA Administrative Order 216-100, in order to protect the confidentiality of individual operators.



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April 29, 2004

Chris Oliver
North Pacific Fishery Management Council
6056 W 4th Ave., Ste 306
Anchorage, AK 99501

RECEIVED
MAY - 3 2004

N.P.F.M.C.

Dear Mr. Oliver:

We are writing to ask for your review and consideration of the revised Aleutians Alternative 5b. The national and regional groundswell of awareness and concern about deep sea corals and sponges and their importance to healthy ocean ecosystems is evidenced by the overwhelming volume of public comments (more than 33,000) that recently flooded the Juneau National Marine Fisheries Services office on the Draft Essential Fish Habitat Environmental Impact Statement. Additionally, more than sixty marine scientists from around the country signed a letter (enclosed) to emphasize the importance of immediately protecting deep sea corals and sponges from destruction by bottom trawling.

Over the past two years, Oceana developed Alternative 5b as a practicable management approach that can maintain vibrant fisheries while protecting essential fish habitat. In the time since we developed the original Alternative 5b, we have acquired and analyzed more data and further consulted with fishermen, scientists, local communities, and critics to refine the proposal. Attached please find the detailed Revised Alternative 5b for the Aleutians. This alternative gives the Council family the opportunity to adopt a management alternative that meets the interests of all involved.

Revised Alternative 5b applies a core area approach that allows continued bottom trawling in the core fishing areas throughout the Aleutians based on historic success of Catch Per Unit Effort, while also protecting coral and other important benthic habitat. This approach can be implemented and managed with little or no impact to fishing and total allowable catch.

With more than 450 species of fish, more than two dozen marine mammal species, and millions of seabirds from all seven continents, the Aleutian Islands ecosystem is truly a special place on the planet, deserving of special protections. I think we could agree it would be insufficient for us to limit protection to the few recently discovered coral gardens when a more comprehensive practicable approach is possible. We urge you to have Revised Alternative 5b analyzed to replace original Alternative 5b as a mitigation alternative and ultimately adopt it as the preferred alternative.

Revised Alternative 5b accomplishes needed protections for the habitat of the Aleutians while respecting and maintaining the importance of fishing to the economy and culture of the area. It



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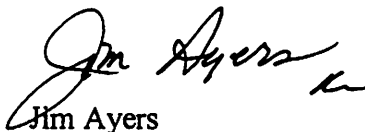
CHLORINE BLEACH FREE

Mr. Chris Oliver
April 29, 2004
Page 2

is the only alternative that is developed and modified to recognize and accommodate the wide range of stakeholders. We urge the Council to adopt this practicable, balanced management approach.

If you have questions, comments, or concerns about our proposals, please do not hesitate to call me. We look forward to continuing our discussion of Essential Fish Habitat with you during the Council meeting in Portland in early June.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Ayers", with a stylized flourish at the end.

Jim Ayers
Pacific Region Director
Oceana

Enclosures



OCEANA

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April 15, 2004

Dr. James Balsiger, Administrator
Alaska Region
National Marine Fisheries Service
709 West Ninth Street
Juneau, AK 99802-1668

RECEIVED
MAY - 3 2004

N.P.F.M.C.

Dear Dr. Balsiger:

We urge the National Marine Fisheries Service (Fisheries Service) to adopt and implement Revised Alternative 5b for the Aleutian Islands, as detailed in this letter, as the preferred alternative in the Final Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska.¹

Since the original development of Alternative 5b, we have gathered and analyzed more data on fishing effort, NOAA trawl survey data, NOAA submersible dives, observer bycatch data, and local knowledge to refine this management approach. By adopting the Revised Alternative 5b for the Aleutians, the Fisheries Service and North Pacific Fishery Management Council (Council) are able to maintain vibrant fisheries and provide important practicable mitigation measures for protecting essential fish habitat.

The Revised Alternative 5b is substantially similar to the version submitted in 2002 with a few minor changes. First, the Revised Alternative 5b includes coral gardens described since 2002 along with specific management measures to protect those gardens. Second, we modified the boundaries of several open and closed bottom trawling areas based on our additional analyses. Third, a proportional Total Allowable Catch (TAC) reduction for Pacific cod may not be necessary with the adoption and implementation of Revised Alternative 5b. All other provisions proposed in the original Alternative 5b remain intact in the Revised Alternative 5b.

The Aleutian Islands

The Aleutian Islands ecosystem is one of the most vibrant, dynamic, productive and rare ocean environments in the world. In the Aleutians Islands, there are over 450 species of fish, more than 50 species of seabirds that migrate from all seven continents around the world, 25 species of marine mammals, and countless marine species--some yet to be described by science. This rich and unique marine ecosystem is an international treasure. It is a rare and wondrous place on the

¹ The Draft EFH EIS considers three suites of alternatives. This letter focuses on the alternatives to minimize the adverse effects of fishing. With regard to the alternatives to describe and identify EFH, we take no position. With regard to the alternatives to adopt an approach for identifying HAPCs, we request consideration of an alternative that permits identification of HAPCs by both type and site, and that builds on existing HAPC designations.



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Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

planet deserving of special management including special protections. The Aleutian Islands marine ecosystem is key to the ecosystems of the North Pacific and is integral to the way of life of the local peoples. It is also an important part of the economic engine that drives the Alaskan fisheries that provide more than half of the nation's catch. However, indiscriminate destructive bottom trawling in delicate living seafloor habitat like corals, sponges, and other living substrates is irreversibly marring this unique environment and threatens the long-term ecological sustainability of this American resource.

The Aleutian Islands marine ecosystem requires adaptive management measures tailored to the area's unique benthic habitat. The Fisheries Service does not sufficiently regulate bottom trawling. The Aleutian Islands seafloor is characterized by hard benthic substrate with long-lived epibenthic organisms (EFH DEIS, p. 3-5). According to the National Academy of Sciences (2002) this habitat type is the most susceptible to disturbance from bottom trawling. Yet, the Fisheries Service has to date recommended status quo for bottom trawling management in the Aleutians.

The Aleutian Islands marine ecosystem is rich with complex benthic habitat and gorgonian corals. NOAA fisheries trawl surveys have documented 2,437 instances of corals in the Aleutian Islands during groundfish surveys from 1975 to 2002 (RACEBASE trawl survey data, Alaska Fishery Science Center, NOAA). The waters off Alaska may have the greatest diversity and abundance of cold-water corals left on earth (Stone, 2003). Alaska could harbor over 100 species of cold-water corals (Bruce Wing, Auke Bay Lab, personal communication) and dedicated sampling missions invariably discover new species. Recently, a new genus of octocorals, *Alaskagorgia aleutiana* (Sanchez and Cairns, 2004) and a new genus of black corals were described that may be endemic to the Aleutian Islands.

Benthic sessile epifauna like deep water corals increase habitat complexity and biodiversity. Deep water corals and sponges, if allowed to grow without trawling disturbance, provide high quality fish habitat. Rockfish and Atka mackerel are associated with gorgonian corals, hydrocorals and cup corals (Heifetz, 2002). Corals provide essential habitat for a variety of marine species including several species of rockfish, king crab, Atka mackerel, shrimp, Pacific cod, walleye pollock, Greenland turbot, greenlings, and other flatfish (Krieger and Wing, 2002). Juvenile and adult *Sebastes sp.* were often found in association with *Primnoa spp.* during underwater video surveys of rockfish habitat in southeast Alaska (Bizzarro, 2002). Furthermore, corals may be important for growth to maturity for demersal slope rockfish (EFH EIS); and Else et al. (2002) found a significant correlation between abundances of shortspine thornyhead (*Sebastolobus alascanus*) and sponges in the Gulf of Alaska. Finally, Stone (preliminary data, 2004) found an 87% rate of association between adult Alaskan Fishery Management Plan species and biogenic habitat, and a 100% association rate for juvenile rockfish and biogenic habitat in the Aleutian Islands.

Adverse Effects of Fishing in the Aleutian Islands

Bottom trawling alters the physical structure of the seafloor, reduces habitat complexity, and changes the composition of benthic communities (Thrush et al., 1998, see also Attachment 2 of Oceana, The Ocean Conservancy et al. joint comments). Bottom trawling removes epifauna, thereby reducing habitat complexity and species diversity of the benthic community (Collie et

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

al., 2000). Gravel pavement substrate disturbed by bottom trawling on Georges Bank had significantly less emergent epifauna, shrimp, polychaetes, brittlestars, and small fish than undisturbed sites (Collie et al., 2000). Scavenging organisms tended to dominate communities in areas of high dredging disturbance while long-lived organisms and fragile taxa disappeared (Collie et al., 1997). In the Aleutian Islands, 8% of the gorgonian corals and 25% of the hydrocorals observed from a submersible appeared damaged (Stone, in prep).

When bottom trawling occurs in coral habitat, up to 30% of coral colonies can be removed by a single pass of a trawl, and of those that remained, up to 90% can be damaged (Krieger, 2001). The corals at the same research site had not recovered seven years later (Krieger, 2001). In Seguam Pass in the Aleutian Islands, gorgonian corals were a major component of the bycatch in the Atka mackerel fishery twenty years ago, but steadily declined until the fishery was closed in 1993 (NMFS, 2001). This clearly indicates that after years of bottom fishing, there are significantly fewer of these habitat-forming species left. Video observation of some areas in Seguam Pass shows completely destroyed coral habitats with only fragments of coral skeletons and rubble on the bottom (Zenger, 1999). From 1990 to 2002, U.S. federal fishery observers reported over 1,500 metric tons of coral and sponge bycatch from the Aleutian Islands, of which approximately 90% was caused by bottom trawling (NMFS 2002).

Removal of epifaunal organisms like corals may lead to the degradation of the habitat such that it is no longer suitable for associated fish species (Auster et al., 1996). Destruction of bryozoan growths by trawling in Tasman Bay, New Zealand resulted in a marked reduction in numbers of associated juvenile fish (Turner et al., 1999). Predation rate on juvenile Atlantic cod (*Gadus morhua*) increases with decreasing habitat complexity (Walters and Juanes, 1993). Case studies in New Zealand and Australia suggest that loss of habitat structure through removal of large epibenthic organisms by fishing has negative effects on associated fish species (Turner et al., 1999).

The National Academy of Sciences (2002) details the adverse impacts of bottom trawling on corals, sponges, and other living seafloor animals. The Academy recommends fishing effort reduction, gear modifications, and area closures to mitigate the adverse impacts of bottom trawling on seafloor habitats.

Revised Alternative 5b – Aleutian Islands Special Management Area

The unique, rare, productive, and biodiverse Aleutian Island marine ecosystem deserves protection as a Special Management Area. This management approach has been adopted for consideration by the Council in the Preferred Alternative of Alaska Groundfish Fisheries Draft Programmatic Supplemental Environmental Impact Statement (DPSEIS 2003). Further, the DPSEIS recognizes the adverse impacts of bottom trawling on sensitive habitat.

Revised Alternative 5b both maintains vibrant fisheries and protects essential fish habitat. Management measures and detailed descriptions of protections that differ from the original Alternative 5b are described in the following sections.

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

Management Measures

The unique, rare, biodiverse, and productive Aleutian Island marine ecosystem warrants graduated protection depending on the habitat threatened. Revised Alternative 5b has three levels of protection. The first level of protection mitigates most of the adverse effects of fishing by prohibiting all commercial fishing gear that contacts the bottom. Since the development of original Alternative 5b two years ago, the Fisheries Service has identified six specific areas as "coral gardens" as described below. Revised Alternative 5b holds level one protection for these six coral gardens. This management measure would have a negligible economic impact on Aleutian Island fisheries. Additionally, this level of protection should extend to other coral gardens when they are discovered and described.

The second level of protection prohibits bottom trawling. Fishing with other gear types is allowed. While this level does not completely mitigate the effects of fishing on seafloor habitat, it does reduce the amount of damage by the most harmful gear type. All areas outside the designated open bottom trawl areas are closed to bottom trawling. As in the original Alternative 5b, these areas extend to the boundaries of the Exclusive Economic Zone, and are not opened to bottom trawling unless and until research and benthic mapping show that bottom trawling can occur in these areas without damaging sensitive living substrate on the seafloor.

The third level of protection is responsible management and monitoring of all open areas. This would include such measures as required vessel monitoring systems (VMS) on all bottom trawling vessels. (This may require federal assistance for smaller vessels.) Some VMS provisions are already in place and could be better utilized. Vessels which participate in bottom trawl fisheries for Atka mackerel and Pacific cod in the Aleutians are outfitted with VMS as required under existing regulations. However, vessels which target rockfish are not required to have VMS; yet the bottom trawl rockfish fishery is prosecuted by the same vessels that fish Atka mackerel. It would be a simple matter to require those vessels to activate their VMS when targeting rockfish.

In Revised Alternative 5b, fishing by bottom trawling and all other gear types is allowed in the designated open bottom trawl areas. The total area open to bottom trawling includes strategic areas encompassing more than 23,000 km² throughout the Aleutian Islands that have provided vibrant fisheries over the last fifteen years.

Proposed designation of open areas does not supercede existing management measures in state or federal waters. Proposed closed areas would complement Steller sea lion closures, the Adak Vessel Length and Gear Restriction Zones, and other management measures.

As determined by the Fisheries Service, the original Alternative 5b is the most practicable alternative and received the highest rating by the reviewers. The Revised Alternative 5b provides further opportunities for maintaining vibrant fisheries and economic success while protecting essential fish habitat.

Geographic Extent

Revised Alternative 5b, the Aleutian Islands Special Management Area, encompasses management areas 541, 542 and 543. Please see attached maps for details (Figures 1-7).

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

Coral gardens

Structurally complex and dense aggregations of coral and sponge discovered and identified since 2002 are included in the Aleutian Islands Special Management Area. NOAA fisheries scientists have estimated the geographic boundaries of several coral garden sites since the open/closed bottom trawl areas of original Alternative 5b were considered. The coral garden boundaries are primarily based on sightings along submersible dive transects with consideration of bathymetric characteristics, desired enforcement borders along lines of latitude/longitude, and buffers to prevent contact from stray fishing gear over the area (Stone, personal communication).

Revised Alternative 5b reflects research and discoveries since its development and includes six coral garden sites. No commercial bottom contact is permitted in the coral gardens. Examples of fishing gear that contact the bottom are bottom trawls, non-pelagic trawls fished on the bottom, longlines, dredges, and pots. The coral garden sites are located off Semisopochnoi Island (Amixta chiixsi), Bobrof Island, Cape Moffet, Great Sitkin Island, Ulak Island, and Adak Canyon. In original Alternative 5b, the Cape Moffet coral garden site is within an open bottom trawling area. In Revised Alternative 5b, an area of 41 km² is closed to all bottom contact by commercial fishing gear to protect the Cape Moffet coral garden. The inclusion of all the coral gardens sites in Revised Alternative 5b increases the area of no-bottom contact zones by 285 km². The economic impacts of closing these sites are likely minimal based on NMFS' own analysis (Scott Miller, Fishery Economist, Draft Initial Socioeconomic Effects Assessment of HAPC Proposals, March, 2004).

The protection of the six coral gardens is the primary change to Revised Alternative 5b. Other minor changes to fishing areas are described below.

Modified Bottom Trawl Areas

Analysis of spatial patterns in fishing effort and depth contours along with consultation with fishermen and local residents provide the basis for the changes to the original Alternative 5b proposal. When the open areas of original Alternative 5b were constructed, attempts to make areas linear sometimes resulted in areas of sensitive and/or unfished habitat that warranted protection being left open. In addition, fishermen indicate that some fishing areas utilized by vessels without fishery observers are not included in the open areas in original Alternative 5b. The boundaries of areas were changed with the intent to further minimize economic impact while maintaining protection for sensitive habitat. The Fisheries Service's work on the analysis of original Alternative 5b allows a straightforward and expedient analysis of Revised Alternative 5b.

When analyzing and implementing Revised Alternative 5b, the Fisheries Service should work closely with local communities to ensure minimal/no impacts on subsistence and other community uses. This should include Fisheries Service work with local communities to identify Essential Fish Habitat and determine additional nearshore bottom trawl closures.

In Revised Alternative 5b, the following eight areas differ from original Alternative 5b due to more data analysis and input from fishermen and local residents.

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

◆ Buldir Island (Figure 3)

In original Alternative 5b, the open area around Buldir Island is an odd shape due to an area of high coral bycatch that is closed east of the island. According to observer data, fishing effort is concentrated in the southern portion of the designated open area in original Alternative 5b. Fisheries Service trawl surveys in the northern portion of the designated open area in original Alternative 5b document the presence of the corals including *Stylaster sp.*, *Fanellia compressa*, *Paragorgia arborea*, *Calcigorgia spiculifera*, *Callogorgia sp.*, and *Plumerella*. Due to presence of this essential fish habitat, Steller sea lion closures, and further analysis of productivity, in Revised Alternative 5b, the open area around Buldir Island is decreased by 500 km². This revised open area includes only the southern portion of the designated open area in original Alternative 5b, in a continuous rectangle that also opens 40 km² of a previously closed area to provide for further bottom trawling opportunities in this productive area. The Revised Alternative 5b open area around Buldir Island will be easier to enforce, and provides optimal fishing opportunity while protecting essential fish habitat.

◆ Murray Canyon (Figure 3)

Murray Canyon is a deep, submerged canyon North of Kiska Island. Due to low fishing effort, Steller sea lion closures, and the high probability of living benthic habitat, the open area around Murray Canyon is reduced by 187 km² in Revised Alternative 5b.

◆ South Amchitka (Figure 4)

In original Alternative 5b, open areas around South Amchitka include nearshore habitat from Clam Point to East Cape and a portion of the Steller sea lion closure. Fisheries Service trawl surveys document the presence of corals, including *Thourella sp.*, *Fanellia compressa*, *Primnoa willeyi*, unidentified *Scleratinians*, *Callogorgia sp.*, and *Paragorgia arborea*, in this area. In Revised Alternative 5b, 190 km² south of Amchitka is closed to bottom trawling to protect this complex nearshore habitat. With very little observed fishing effort in this area, this closure will protect sensitive benthic habitat with minimal to no economic impact on bottom trawl fisheries.

◆ Petrel Bank (Figure 5)

In original Alternative 5b, the open area around Petrel Bank does not include an area with high fishing effort on the southern Bank. The original Alternative 5b Petrel Bank open area also encompasses an area of high coral bycatch and low fishing effort to the east. In Revised Alternative 5b, the open area around Petrel Bank is redrawn to include the southern high fishing effort and exclude the eastern coral bycatch.

◆ Gusty Bay (Figure 6)

The area west the Bobrof Island coral garden is designated a closed area in original Alternative 5b. However, trawl skippers indicate that the state waters near Gusty Bay are productive fishing grounds for vessels under 60 feet. Consequently, in Revised Alternative 5b, an area of 118 km² is open in state waters from 177.55° West to 177.90° to ensure opportunity for these small boats. As corals and sponges or other living benthic habitat is determined to be present, the Fisheries Service should make appropriate management adjustments.

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

- ◆ **Kanaga Island (Figure 6)**

Trawl skippers familiar with the Kanaga Island area indicate that the area is avoided due to rough bottom and corals. Fisheries Service trawl surveys document the presence of corals including *Primnoa sp.*, *Paragorgia arborea*, *Thouarella*, *Fanellia fraseri*, and *Stylaster sp.* Due to this low fishing effort and high presence of living benthic habitat, in Revised Alternative 5b, an area of less than 475 km² is closed to bottom trawling in the Kanaga Island area.
- ◆ **Adak South (Figure 7)**

In original Alternative 5b, an area south of Adak was identified as an open bottom trawling area. However, trawl skippers indicate that this area contains complex, untrawlable substrate; and there are no observed catches from 1990-2002. This area of 450 km² is closed in Revised Alternative 5b. The Fisheries Service is urged to work with the community of Adak to determine appropriate fishing opportunities for locally owned and operated vessels under 60 feet in length.
- ◆ **Atka Pass (Figure 7)**

Fisheries Service trawl surveys in the region of Atka Pass have document the presence of corals including *Thouarella sp.*, *Alcyonacea*, and *Plumarella sp.* In addition, analysis of observer data indicates very little bottom trawl activity. Given this low fishing effort and high presence of corals, an area of less than 700 km² from Kasatochi Island through Atka Pass is closed in Revised Alternative 5b. Closure in this area results in protection of living benthic habitat with little economic impact to fishermen.

TAC Reductions

The National Academy of Sciences (2002), National Research Council states "Effort reduction is the cornerstone of managing the effects of fishing, including, but not limited to, the effects on habitat." When original Alternative 5b was developed two years ago, TAC reductions were proposed relative to the percentage of the catch caught in the proposed closed areas.

The proposed TAC reductions in original Alternative 5b were applied to the Atka mackerel, rockfish, and Pacific cod trawl fleet in the Aleutian Islands. Due to area-wide Bering Sea/Aleutian Islands TAC specifications for Pacific cod, when assessing the original Alternative 5B, the Fisheries Service inappropriately calculated area-wide, rather than Aleutian Islands-specific economic impacts to the Pacific cod trawl fleet. The result is an inappropriate calculation in the original Alternative 5b of economic impact to the Bering Sea trawl cod fishery to account for habitat protection in the Aleutian Islands

This Pacific cod TAC issue could be resolved. Oceana requested that the Fisheries Service split the Pacific cod TAC into two separate allocations (Bering Sea and Aleutian Islands, July 10, 2003) to make TAC reductions in the Aleutian Islands a feasible alternative. NOAA Fisheries responded on September 5, 2003 that there was not "sufficient justification" to change the management of Pacific cod from a single stock.

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

The Fisheries Service refuses to split the Bering Sea/Aleutian Islands fisheries for Pacific cod at this time, and Revised Alternative 5b does not include a Pacific cod TAC reduction. TAC reductions for Atka mackerel and rockfish remain in Revised Alternative 5b.

Conclusion

As a steward for public resources, the Fisheries Service has an obligation to conserve, protect, and manage living marine resources responsibly. In the Sustainable Fisheries Act of 1996, Congress amended the federal statute governing fishing in the waters off of America's coasts by adding conservation provisions. The Magnuson Stevens Act requires that the Fisheries Service describe and identify Essential Fish Habitat, and minimize the adverse effects of fishing on that habitat to the extent practicable. It was the Fisheries Service's non-compliance with the law that resulted in a court order to conduct the EFH EIS process now in progress. In particular, the Court noted, "There is no substantive discussion of how fishing practices and gear may damage corals, disrupt fish habitat, and destroy benthic life that helps support healthy fish populations." (District Court Order at 41)

The Fisheries Service acknowledges the importance of living benthic substrates. In a letter to Oceana in September 2002, Dr. William Hogarth of NMFS wrote, "Corals, sponges, and other living substrata in waters off Alaska are classified by NOAA Fisheries as Habitat Areas of Particular Concern deserving of special protection because of their importance as habitat and their vulnerability to human impacts." Additionally, a variety of scientific papers, including those published by Fisheries Service scientists, describe the importance of corals, sponges, and other living substrates to both commercial and noncommercial fish species and marine life. Further, over the past several years, the body of science concerning both the importance of intact marine habitat and the effects of fishing gear on habitat has grown substantially.

The National Academy of Sciences (2002) clearly identifies the adverse impacts of bottom trawling on corals, sponges, and other living seafloor animals. The Academy recommends fishing effort reduction, gear modifications, and area closures to mitigate the adverse impacts of bottom trawling on seafloor habitats.

Despite the Fisheries Service recognition of the importance of corals, sponges, and other living substrates as Essential Fish Habitat, and the clear threat of bottom trawling to this sensitive long-lived habitat, the Fisheries Service still has not adopted or implemented any measures for mitigation to stop this destruction.

The Fisheries Service and the North Pacific Fishery Management Council must keep in mind that bottom trawling is a privilege granted by the American people through the Secretary of Commerce and the Council. It is not the right of a few to wreak destruction for economic gain.

We are concerned that the EFH EIS process was not sufficiently solicitous of the views of the public, particularly the views of those who live in small coastal communities throughout Alaska. As such, the agency has not satisfied its NEPA obligations. We urge the agency and Council to work with local communities to further identify location and distribution of Essential Fish Habitat and take responsible action to limit the adverse impacts of nearshore bottom trawl

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

activity that threatens the viability of Essential Fish Habitat as well as community subsistence and way of life.

The Fisheries Service and the North Pacific Fishery Management Council urged Oceana privately and criticized us publicly to move away from litigation and become more involved in the EFH EIS process by helping develop viable and practicable alternatives. We did so in good faith.

Oceana, over the past two years, has developed a viable and practicable management alternative for the Aleutians by working with the Fisheries Service, the North Pacific Fishery Management Council, fishermen, scientists, local residents, and critics. Revised Alternative 5b recognizes both the importance of corals, sponges, and other living seafloor animals as essential fish habitat, and the importance of maintaining healthy vibrant fisheries in the Aleutians. We request the agency and Council adopt Revised Alternative 5b as the preferred alternative in the Final EIS.

Sincerely,



Jim Ayers
Oceana, Pacific Regional Director

cc: North Pacific Fishery Management Council Chair Stephanie Madsen and Council Members

Attachments

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

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Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

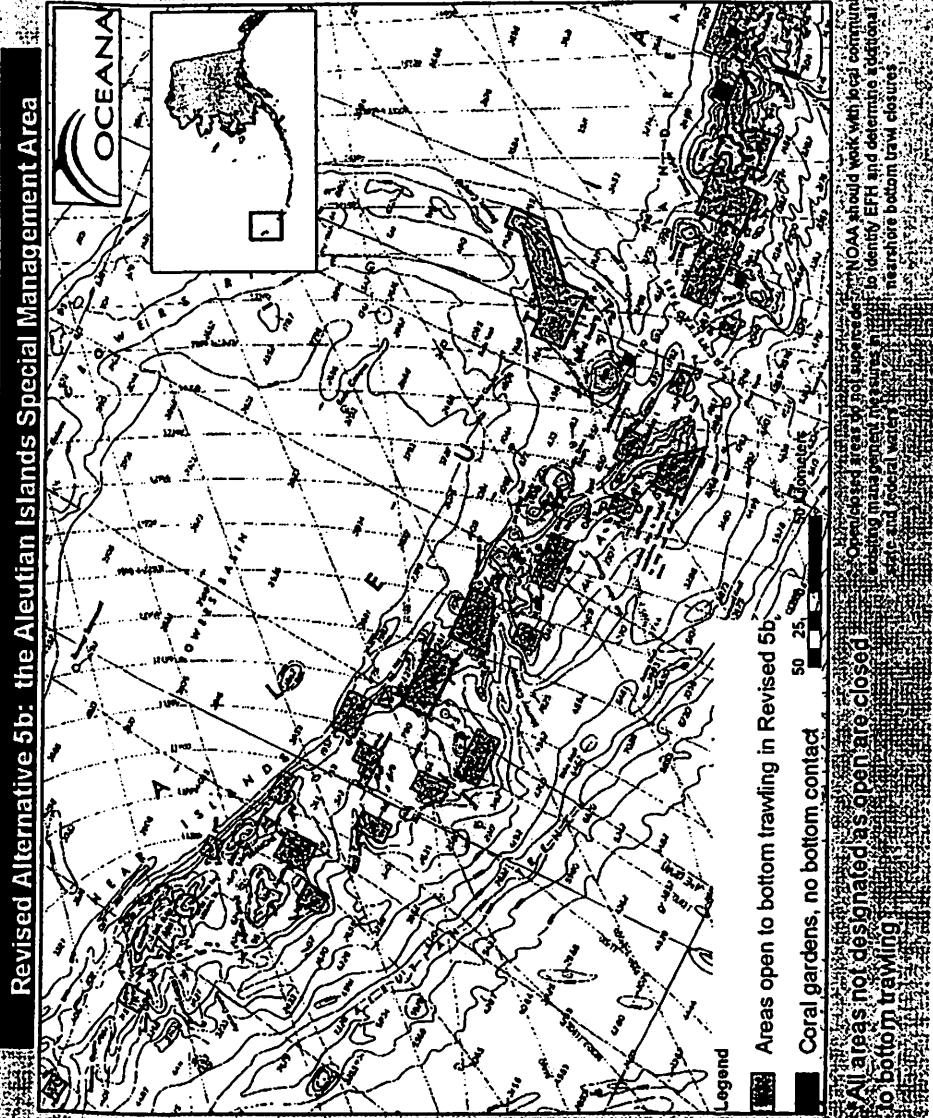


Figure 1: Revised Alternative 5b, the Aleutian Islands Special Management Area. West portion, Stalemate bank to Amchitka Pass.

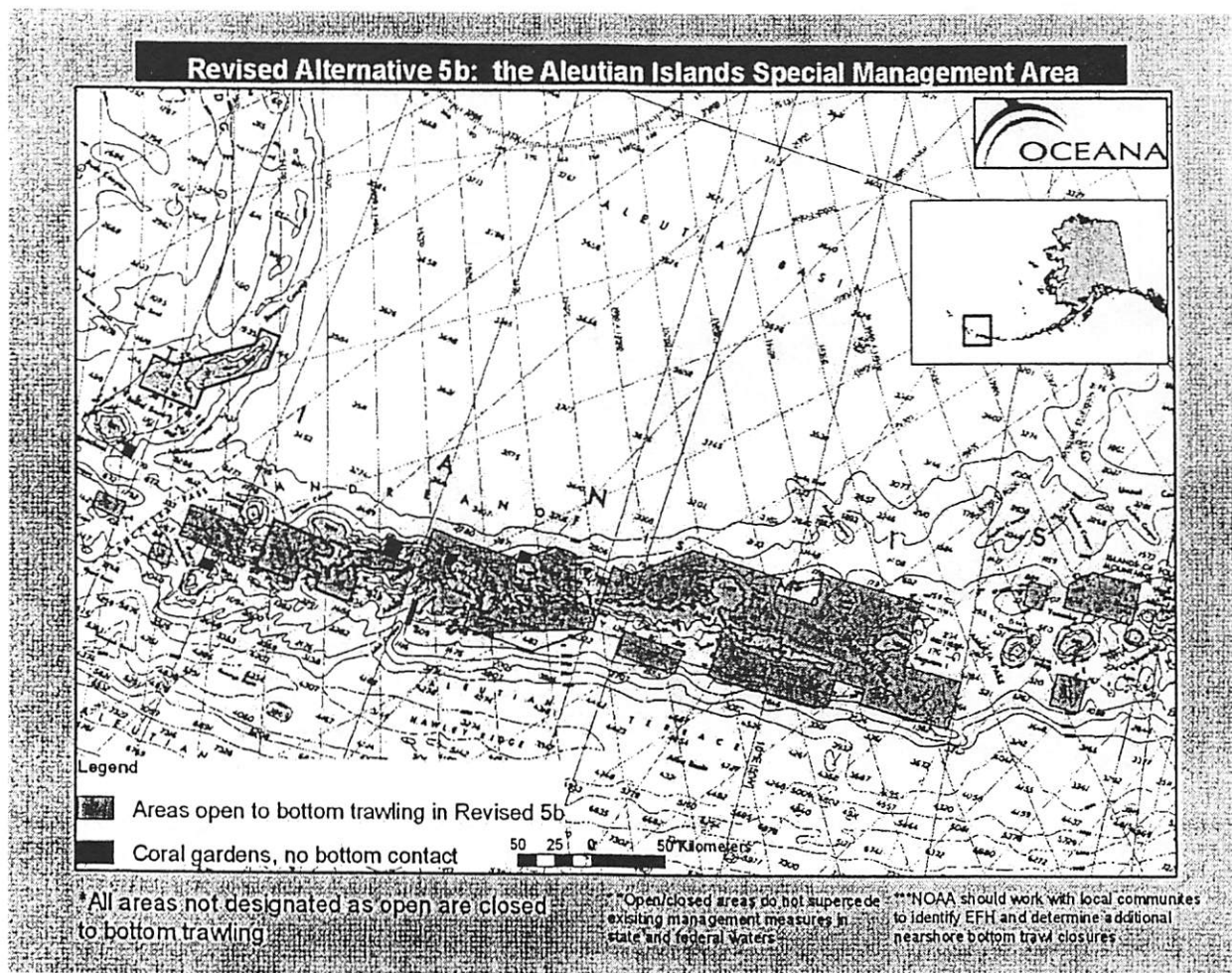


Figure 2: Revised Alternative 5b, the Aleutian Islands Special Management Area. East portion, Amchitka Pass to Amukta Island.

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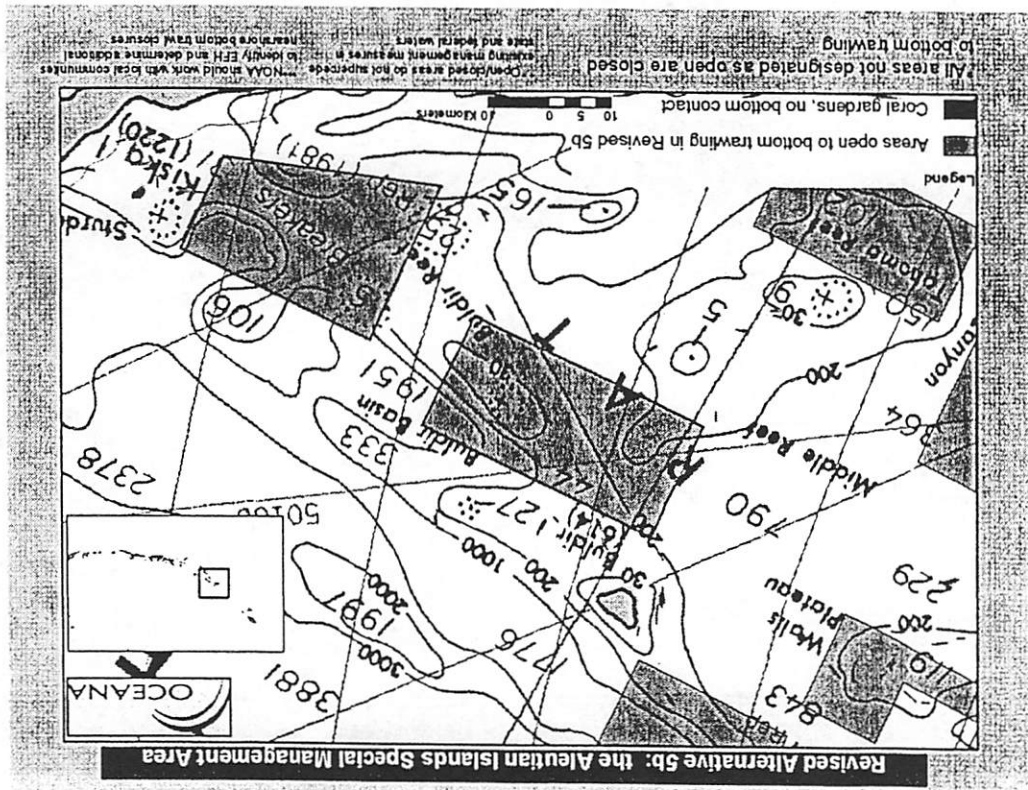
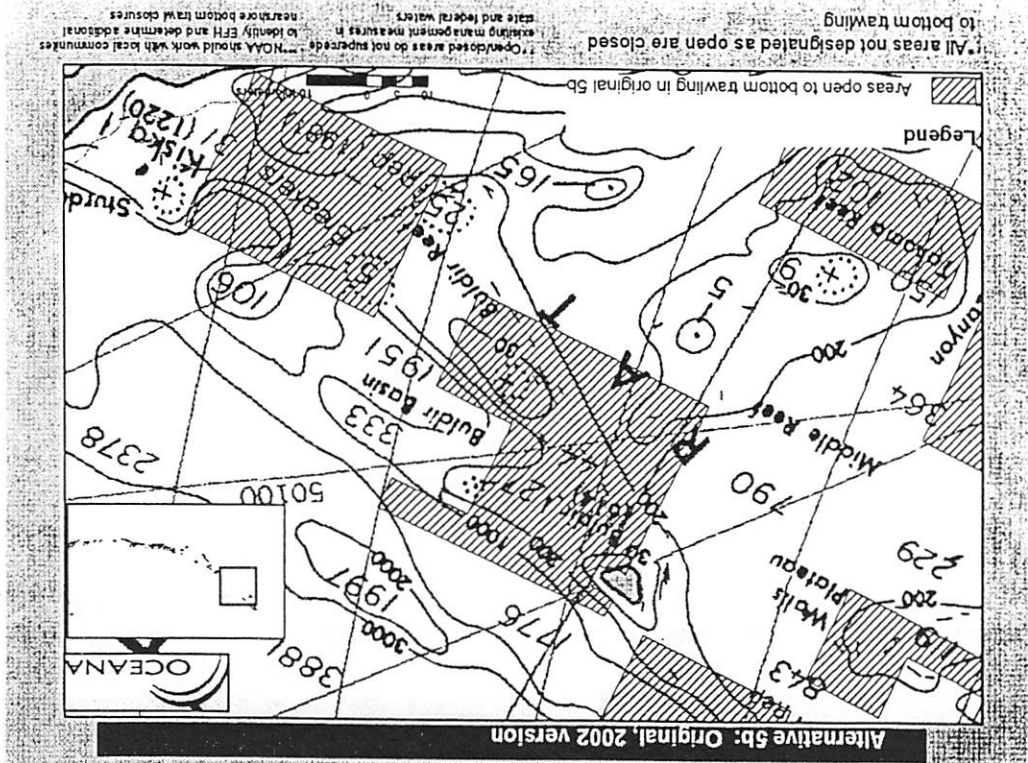


Figure 3: Comparison of Revised 5b and Original 5b areas of Buldir Island and Murray Canyon. The open bottom trawl area around Buldir Island is reduced (above) to include concentrated fishing effort in the southern portion and exclude areas of documented corals and low fishing effort in the northern portion. The open bottom trawl area near Murray canyon was reduced (above) to exclude unfinished area.



All areas not designated as open are closed
 Existing management measures in state and federal waters
 NOAA should work with local communities to identify EFH and determine additional nearshore bottom trawl closures

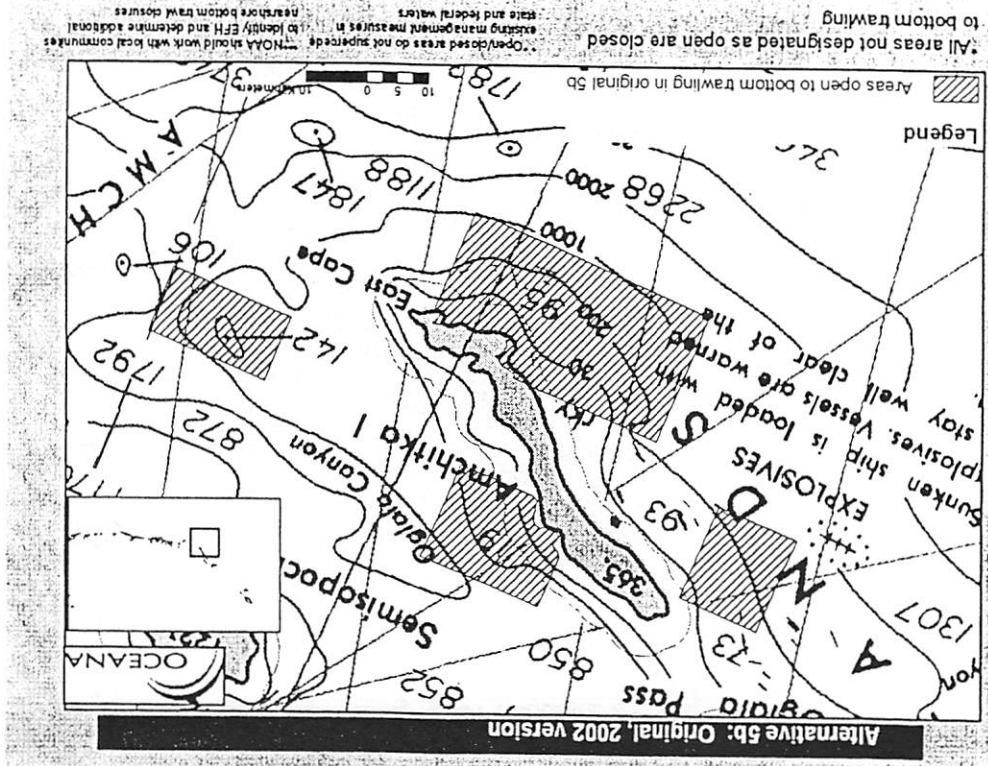
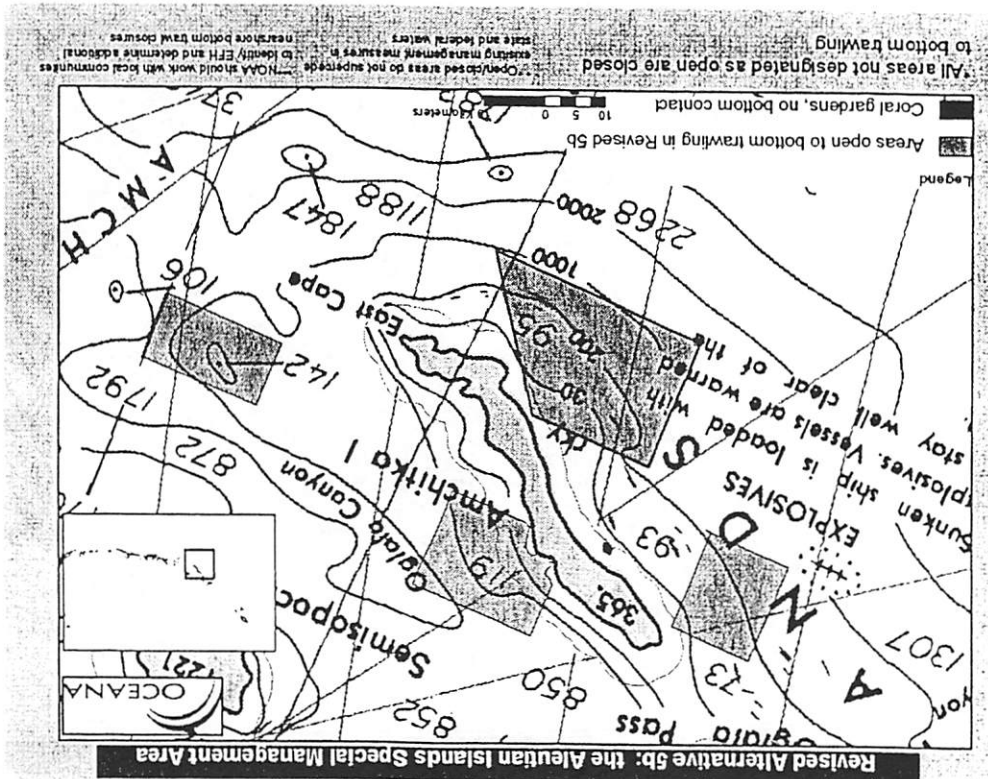


Figure 4: Comparison of Revised 5b and Original 5b area of Amchitka Island. The open bottom trawl area south of Amchitka is reduced in revised 5b (above) due to little observed fishing effort and the documented presence of corals.



Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

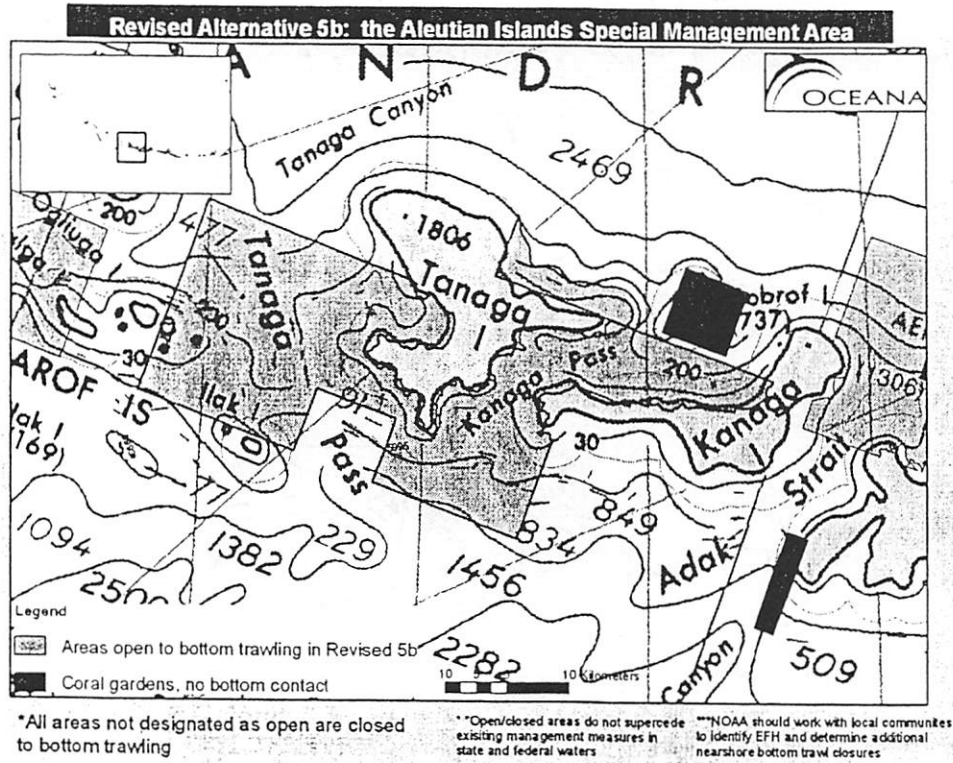
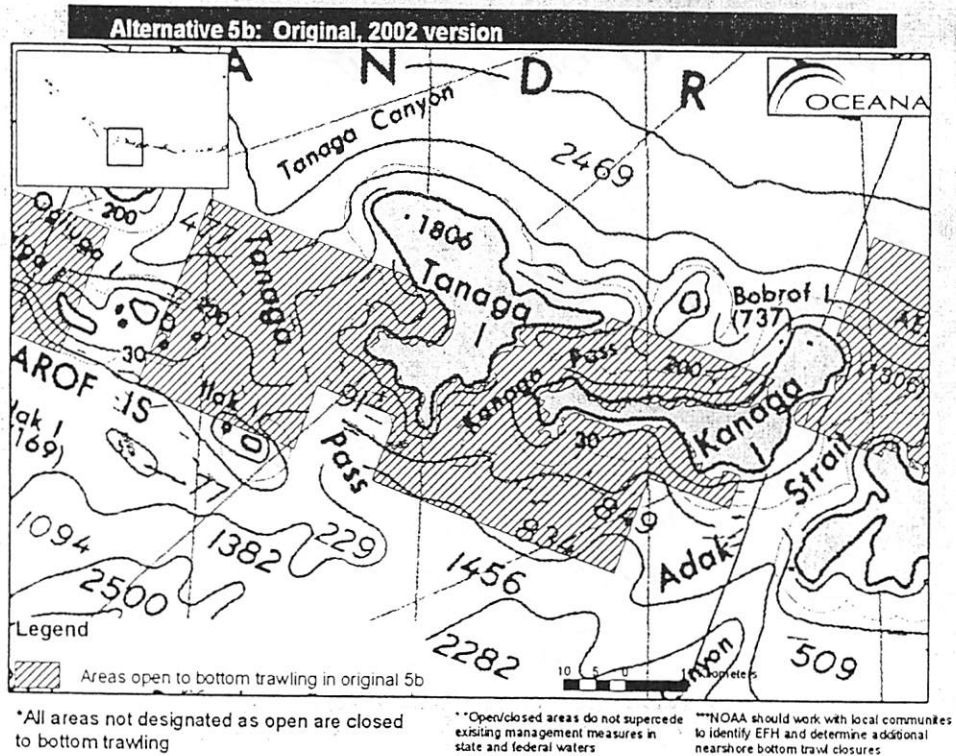


Figure 6: Comparison of Revised 5b and Original 5b area of Tanaga/ Kanaga Island. Gusty Bay, on the northeast side of Tanaga, was closed in Original 5b (below) and was indicated to be an important fishing area for small vessels. The revised open bottom trawl area (above) includes Gusty Bay. An area south of Kanaga (above) is designated as closed due to rough bottom and low fishing effort. Coral gardens around Bobrof Island and Adak canyon (above) are protected from all commercial bottom contact in Revised 5b.



Aleutian Islands Special Management Area-Revised EFH EIS Alternative 5b

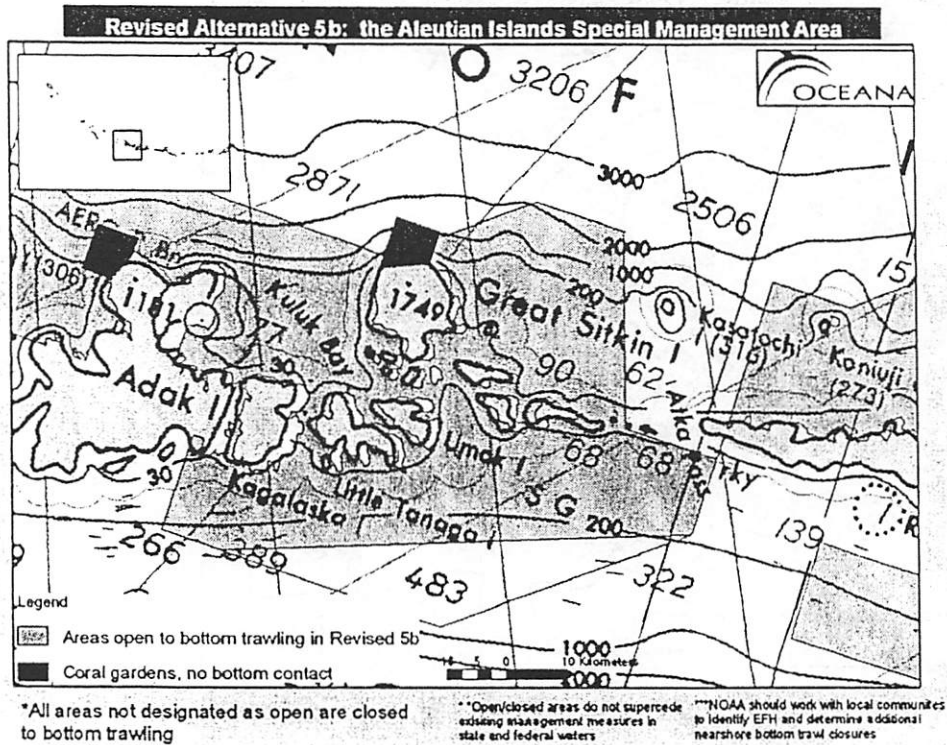
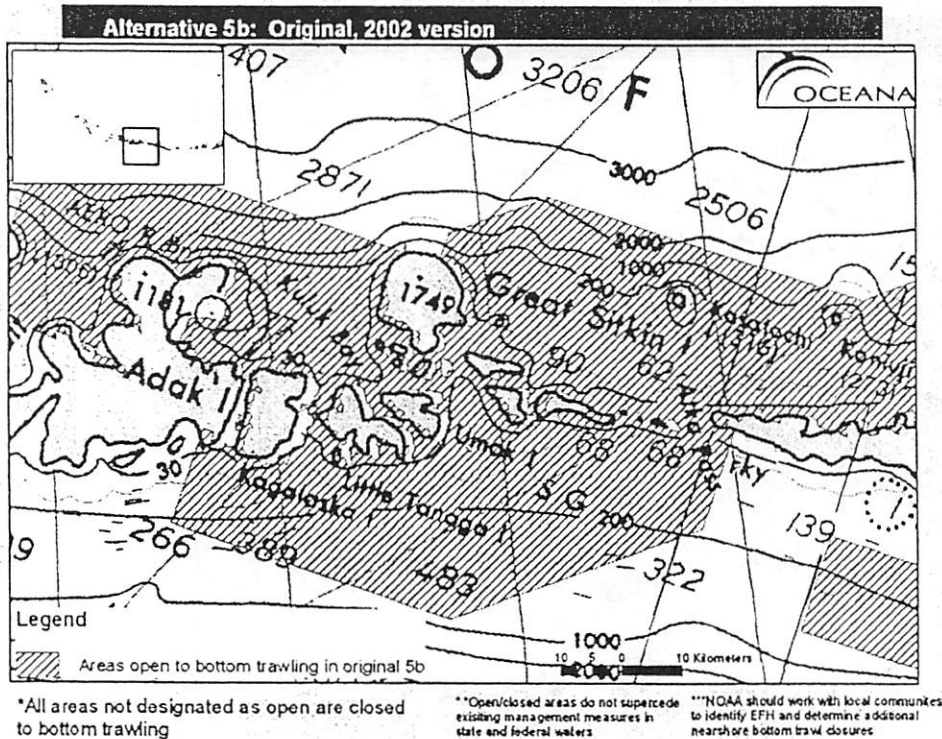


Figure 7: Comparison of Revised 5b and Original 5b area of Adak and Atka Pass. A portion of Atka Pass (above) and an area southeast of Adak (above) are closed to bottom trawling in revised 5b due to low trawl activity and documented presence of corals. Coral gardens off Cape Moffet and Great Sitkin (above) are protected from all commercial bottom contact in Revised 5b.



April 15, 2004

Dr. James Balsiger, Administrator
Alaska Region
National Marine Fisheries Service
709 West Ninth Street
Juneau, AK 99802-1668

Ms. Stephanie Madsen, Chair
North Pacific Fishery Management Council
222 Seward Street, Suite 200
Juneau, AK 99801

Dear Dr. Balsiger and Ms. Madsen:

Corals, sponges, and other living seafloor communities are important to the health of our oceans. The current Essential Fish Habitat Environmental Impact Statement process for the North Pacific provides the opportunity for the National Marine Fisheries Service (NMFS) and the North Pacific Fishery Management Council (NPFMC) to conserve corals, sponges, and other living seafloor communities that provide habitat for fishes from destructive fishing practices. We, the undersigned marine scientists and marine conservation biologists are concerned by the actions and rationale of the NMFS and NPFMC that fail to protect deep sea corals and sponges in North Pacific waters.

Presence of living benthic structure increases habitat complexity and sustains patterns of biodiversity in our ocean ecosystems. Cold water corals are among the most vulnerable and oldest seafloor habitats in Alaska. Many marine species, including commercially important species, utilize the vertical and three-dimensional structure provided by corals and sponges. Widely distributed in the Aleutians, Bering Sea, and Gulf of Alaska, these long-lived animals can protect fishes from strong currents and predators, as well as serve as nurseries for juveniles, and focal sites for feeding and reproduction.

Gorgonian corals, such as the red tree coral *Primnoa* spp. and the bubblegum coral *Paragorgia arborea*, are one of the most prominent groups of corals in Alaska. Both grow slowly, but can reach large sizes (3 m tall) and great ages (200+ years) if left undisturbed. Rockfish, Atka mackerel, walleye pollock, Pacific cod, sablefish, flatfish, crabs, and other economically important species in the North Pacific are found around red tree coral in the Gulf of Alaska (Krieger and Wing 2002). Among fish caught around corals during trawl surveys from 1975-1998, rockfish and Atka mackerel were most commonly caught around gorgonian, cup, and hydro- corals (Heifetz 2000). Eighty three percent of the rockfish observed during one study were associated with red tree coral (Krieger and Wing 2002). The removal or damage of red tree corals in Alaskan waters could have long term effects on associated faunal communities (Krieger and Wing 2002).

Video observation indicates that some managed fish species in the Aleutian Islands are highly associated with corals, sponges and other structure-forming invertebrates. One hundred percent of juvenile rockfish and eighty seven percent of all managed species counted in video from dives around the Aleutian Islands in 2002 were found within or very near these organisms (Stone, unpublished data). In recognition of their ecological importance and vulnerability to the adverse effects of fishing, coral, sponges, and other structure-forming seafloor communities have been identified as habitat areas of particular concern in Alaskan waters (Amendment 55/55/8/5/5 to the Fishery Management Plans for

April 15, 2004
Dr. Balsiger and Ms. Madsen
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BSAI Groundfish, GOA Groundfish, BSAI Crab, Alaska Scallop, and Salmon in the EEZ, pg 362-364, Jan.1999).

Bottom trawling destroys far more ocean habitat than any other fishing practice on the West Coast. The NMFS estimates about one million pounds of corals and sponges were removed from the seafloor of the Aleutian Islands and the Bering Sea annually between 1997 and 1999 by commercial fishing – over 90% by bottom trawlers (NMFS 2003). The impacts of this kind of destruction are neither minimal nor temporary. Both hard corals and soft corals can be extremely slow growing and sensitive to disturbance (eg Krieger 2001, Witherell and Coon 2000). For some species, it could take hundreds of years, if ever, for these animals to recover from the destruction of bottom trawling (eg Witherell and Coon 2000, Risk *et al.* 1998, Andrews *et al.* 2002). Vase sponges, morel sponges, and seaweeds in deep, cold water habitats such as those in the Gulf of Alaska are also very vulnerable and slow to recover from bottom trawling (Freese *et al.* 1999, Freese 2001).

As documented in the National Academy of Sciences, National Research Council report of 2002, "Effects of Trawling & Dredging on Seafloor Habitat," bottom trawling reduces the complexity and biological diversity of seafloor habitats. The Academy recommends closures, gear modifications, and fishing effort reductions to mitigate the detrimental impacts of bottom trawling. Further, in February 2004, more than 1,100 of the world's foremost biologists signed a consensus statement calling for governments and the United Nations to protect imperiled deep sea coral and sponge ecosystems.

Currently in the North Pacific, NMFS is using the argument that bottom trawling in Alaska has no more than a "minimal" impact on habitat. The agency is using the rationale that in order to be more than minimal, habitat degradation must be so severe as to cause commercial fish stocks to collapse below sustainable levels. NMFS is measuring habitat effects by gauging the stock status of commercial fish, an inappropriate proxy as fisheries scientists cannot separate the effects of overfishing from those of habitat destruction on the status of fish populations. Rather, the effects on habitat should be directly measured, using observation and experiment.

NOAA scientists have said that the deep-sea corals in the Aleutians in particular are likely unparalleled in the world and that they have observed areas of damaged corals and associated organisms. Further, NMFS' own analysis shows that habitat-structuring organisms like corals, sponges, bryozoans, tunicates, crinoids, and anemones will be reduced 70-90% in thousands of square kilometers of habitat if current fishing practices continue. These losses are not inconsequential. Ecosystems are naturally resilient, but only to a point. Waiting to cross that threshold is dangerous. If the resiliency of a system is exceeded, the change can be irrevocable.

The time is now to protect Alaska's corals. We strongly urge the Council and NMFS to protect sensitive benthic habitat from destructive fishing practices.

Sincerely,

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Ms. Stephanie Madsen, Chairwoman
North Pacific Fishery Management Council
605 W. 4th Ave., #306
Anchorage, AK 99501-2252

Dear Chairwoman Madsen:

The following are the public comments of the Fishing Vessel Owners' Association regarding the NPFMC's various proposed actions for Habitat of Particular Concern (HAPC). The FVOA represents 95 longline vessels, which fish in Council waters from S.E. Alaska to waters in the Bering Sea and the Aleutians. The primary species targeted by our members include Pacific Halibut, Sablefish and Pacific Cod.

Before we comment on each option of the various proposed HAPC, we have several observations and concerns, which we would like to express. The science of measurements for designating an area as a HAPC is currently lacking. The conjecture of importance of individual areas has not been linked to any known scientific process to demonstrate that assumed importance. There simply is no quantifying scientific linkage in order to assess any of the alternatives. The Plan Team and SSC were unable to do it in the initial review process. The general public and industry have no known measurements of science in order to analyze the potential negative impacts due to commercial fishing on any of the proposed HAPC spots relative to assertions of particular concern.

The Council's HAPC Problem Statement seems unfocused. It states, as presented in the Newsletter:

HAPC Problem Statement:

Habitat Areas of Particular Concern (HAPC are site-specific areas

of Essential Fish Habitat (EFH) of managed species. Identification of HAPCs provides focus for additional conservation efforts for those habitat sites that are ecologically important, sensitive to disturbance exposed to development activities, or rare. Based on these considerations, the Council has directed that each HAPC site should meet at least two of these criteria, with one being rarity.

If what the Council is attempting to protect is a hypothetical linkage between fishing gear, coral and individual cohort, strength of particular rock fish species and/or fishing gear, coral and the forage species of particular rock fish species, then the problem statement needs further development. To further focus on the solution to the Council's problem statement, the Council needs to recognize the different impacts of the many forms of fishing gear. It is unclear that this is being done.

The Council's focus on coral as a type of habitat that may have significant ecological impact relative to rock fish may be overstated. Coral may play only a minor importance while the protection of "bolder fields" from "rockhopper gear" (trawls with large foot ropes) seem to be having the greatest positive impact on the rebuilding of rockfish resources on the lower Pacific coast. All overfished rockfish stocks are showing increased biomass levels with the limitation on the footrope size in the Pacific Council EEZ areas.

The following are our comments relative to the proposed Council actions currently under analysis.

Action 1. The economic impact or vessel usage of the seamount areas designated as HAPC in alternative 2,(a subset of NMFS Proposal 4) and alternative 3 (previously proposal 4, NMFS seamounts) are very minor for our members. Of the proposed sites, the Patton and Unimak Seamounts have had some longline activity. The Association members could support adoption of either alternative at this time. The majority of the seamounts proposed are far deeper than our members are currently fishing while success in catching fish on a few seamounts has been inconsistent.

Action 2. GOA Corals

Alternative 2 designates three sites along the continental slope at Sanak Island, Albatross and Middleton Islands as various forms of HAPC under study with potential trawl restrictions in the future.

Sanak Island (AGDB proposal 5)

Council document C-2 supplemental from the March meeting prepared by Scott Miller, states the following regarding this option.

“However, the management measures associated with this proposal call for prioritization for submersible mapping and rockfish abundance evaluation and eventual development of restriction 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.”

Based on these comments, the Association would endorse the area being designated as proposed. However, since the area was originally suggested based on the area not being commonly trawled, it is questionable how much will be learned from the effects of trawl gear in this area.

It was reported in document C-2 Supplemental - March, that only 2.79% of the sablefish fishing is conducted in this proposed HAPC. Our members, who reviewed this area, believe that the Sanak HAPC has a much greater percentage of sablefish IFQs harvested than the 2.79% indicated in the supplemental report. The report says 271.75 square miles of HAPC would be designated at 500 fathoms or less, which is prime sablefish habitat for the longline fleet.

Albatross (AGDB proposal 6)

The analysis states relative to this option from document C-2 supplemental - March:

"..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."

The Association, based on the above, could support the proposed action. However, in that this area was recommended based on limited trawl activity, there is a question of how much information will be generated on trawl impacts to this HAPC. This area, according to the March C-2 supplement, has 71 percent of its area in depths of prime longline sablefish activity. This area is a very important area for the IFQ sablefish fleet.

Middleton (AGDB proposal 7)

The March C-2 supplement makes identical comments relative to the proposed management actions in the Middleton HAPC, as stated with the Sanak and Albatross HAPC proposals. The Association would endorse the proposed area based on the above management actions. However, the area, like the Sanak and Albatross, does not have much trawl activity and hence, little would be learned from trawl activity in this area.

The Middleton area would have over 80% of the HAPC in depths associated

with important sablefish IFQ activity, according to the March C-2 supplement.

Action 2 - GOA Corals - Alternative 3

The Association has members that fish in and around the proposed four sites at Cape Ommaney, Dixon Entrance, and Fairweather grounds (two sites). It is our understanding that other longline organizations will be presenting comments to the Council's proposed actions and we would defer to the organizations from S.E. Alaska on these four sites.

Action 3 - Aleutian Island Corals

Alternative 2: Designates six coral garden sites within the Aleutians as HAPCs. (NMFS previous option, Proposal 19, MCA Adak & Kanaga Proposal #16, AMCC Adak Canyon, Proposal 9).

The members' preferred proposal to work from is the NMFS proposal 19 and their six sites. The MCA Adak and Kanaga proposal is commented on in Alternative 3.

As a general comment about hook and line fishing in the Aleutians, even though some fishermen have had good success fishing on the south side of the Aleutians, generally speaking the tides prevent a lot of hook-and-line fishing activity on the south side of the Aleutians. Therefore, the fishable northern areas of the Aleutians become very important for being able to harvest the set quotas for both halibut and sablefish. The loss of many small areas can be collectively critical to the longline fleet, particularly if the areas are on the north side of the Aleutians.

(1) Adak Canyon (from Proposal 19 NMFS)

This proposed area is situated in an area that has significant tides and longline activity by our fleet has been minimal. The northern portion of this site is currently within a sea lion rookery and unfished. This site would not have a significant effect on the halibut and sablefish IFQ operations in the Aleutians. Our members could support this area as a HAPC.

The AMCC proposal for Adak Canyon is very close in geography to that proposed by the NMFS. Our comments above relative to fishing activity

would be the same for this proposal.

(2) Cape Moffet and (5) Great Sitkin (from Proposal 19 NMFS)

These two areas lie to the north of the Aleutians where tides allow for hook and line gear to be deployed. Our members that fish the Aleutians, fish for halibut in the area off the Great Sitkin HAPC and for sablefish in the proposed site at Cape Moffett. We would like to continue to have access to those two spots. According to IPHC statistics, log book information, verifies halibut fishing in the Cape Moffet area and Great Sitkin. We propose that the Council consider allowing fixed gear operations to continue in these two sites and use the other 4 sites as control sites in order to evaluate the impact of longline gear on the coral and the general habitat off Cape Moffet and Great Sitkin. We would reiterate that generally speaking due to currents, the south side of the Aleutians are significantly protected from hook and line gear. The north side of the Aleutians is therefore very important to any hook and line operation for harvesting quotas.

(3) Bobrof Island (from Proposal 19 NMFS)

We propose that this area be redesigned as follows. The northern boundary be moved to the northern tip of Bobrof Island at 51.93 N. latitude.

We propose the following coordinates for the proposed Bobrof HAPC for Council considerations.

Latitude	Longitude
51.9300 N	177.4900 W
51.9300 N	177.3300 W
51.8600 N	177.3300 W
51.8600 N	177.4900 W

This proposed change would set the northern boundary of the HAPC at the northern tip of Bobrof Island. This will allow some sablefish grounds to be freed up to the north side of the island. The majority of the fishable sablefish grounds, due to tides, are on the north side of the Aleutians for longline gear and this suggested change preserves some area that is used by the IFQ sablefish fleet both pot and longline. The members would

support this modified NMFS HAPC (see chart).

(3) Semisopochnoi Island (from proposal 19 NMFS)

This area has had some halibut activity, however, the tides in this area tend to make it a difficult area to fish with hook and line gear. This area, if it were designated as a HAPC, would have little effect on hook and line operations in the Aleutians for those targeting halibut or sablefish. The members would support this HAPC.

(6) Ulak Island (from proposal 19 NMFS).

The south side of this island is important for hook-and-line fishing for halibut. The area proposed by the NMFS would not have a major impact on either the sablefish or halibut IFQ fishing operations. The members would support this HAPC.

Alternative 3 - Designate Bowers Ridge as an HAPC (Proposal 10B)

The members of the Association support a modification of proposal 10 taken from AMCC, their options 10-13 B for Bowers Ridge. The area proposed is a large area and is probably more logically discussed as an area of Essential Fish Habitat (EFH) rather than a HAPC. From a hook-and-line perspective, we would recommend working from the Bower Bank "B" proposal and altering the westward coordinates to the following (see chart):

175.500	54.9800
176.4600	55.4900
177.3300	55.7500
178.7500	53.2500
179.7400	52.5700

We could additionally support the area to the west of the above coordinates, extending westward to the western boundary of the original proposal "B", and limiting trawl gear, in this area, to trawls with a foot rope no greater than 8" in diameter (taken from Pacific Council) .

Alternative 4. Designate nine (9) sites in the Aleutians (original proposals 15, 16, 17)

According to the Council's explanation of the option, these sites were sited by trawl skippers because the areas were untrawlable and may be areas of high relief hard coral and may be good rock fishing habitat. This may all be accurate. However, the sites selected for consideration are significantly areas where sablefish, halibut and brown crab operations take place. Of the nine sites proposed in this alternative, six are somewhat duplicative of the options in Alternative (2). The Association members do not support the larger sites proposed as HAPCs in Alternative 4. The following is a brief discussion of the different areas.

South Amlia/Atka - This area is a important sablefish and brown crab area.

Kanaga Volcano - There is some halibut but due to the steep terrain to the immediate north side of this site, this is an important sablefish area.

Cape Moffet (2 areas) - The terrain in this proposed HAPC is similar to Kanaga Volcano site and makes it an important sablefish area. The areas on the North side of the Aleutians are very important for hook and line gear as the south side has much stronger tides, which precludes hook and line fishing operations. We have supported an amended HAPC in the Cape Moffet area under Alternative (2).

Great Sitkin - We have supported an alternate HAPC in this area under Alternative (2). This area lies on the north side of the Aleutians and the drop off is somewhat less making it an important halibut habitat.

Adak South - We have supported the Adak Canyon proposal in Alternative (2). This proposed area has some halibut fishing and potentially important sablefish due to the depth of the proposed site.

Tanaga - This area is a halibut area for the IFQ fleet.

Kanaga Is. - this area is important to halibut fishing and due to the size and depth important for sablefish operations.

Amatignak/Ulak Islands - The south side of these islands is important to the halibut IFQ fleet. We are currently supporting the Ulak site in Alternative (2). This site is simply too large.

This alternative suggests looking at the nine proposed sites in a study

fashion without management restrictions or placing management restrictions on trawl efforts only. At this time, until the smaller sites in Alternative (2) can be studied and fishing effects quantified, the Association members support the modifications and options we supported in Alternative (2).

The Halibut Commission's analysis of harvest in the nine (9) areas should be interpreted as follows. In order to have the halibut in the Aleutians harvested, there are many small sites that are fished, each by a small frequency of numbers of vessels. This is because, unlike the central Gulf of Alaska, the sites in the Aleutians play out quickly and it takes a year for them to fill back in with migrating fish. Hence, when you look at these sites, the IPHC catch information shows basically one or two IFQ fishing efforts in each area. The nine (9) sites proposed in this alternative could collectively represent 15 to 20 percent of the IFQ and CDQ quotas in this Aleutian area.

The following is a summary of the members' recommendations on the various Action items for HAPC.

Action 1 - Seamount Area: FVOA can support Alternative 2 or 3.

Action 2 - GOA Corals (Sanak, Albatross and Middleton): FVOA can support as recommended for analysis at the March Council meeting.

Action 2 - Alternative 3 sites (4) in S.E. Alaska: FVOA defers comments to the S.E. Alaska fishermen's groups.

Action 3 - Alternative 2: FVOA can support the HAPCs as proposed at Adak Canyon, Semisopchnoi, and Ulak Island from proposal 19 by NMFS. FVOA supports the Bobrof Island site (proposed by NMFS) with modification of the northern boundary. Cape Moffet and Great Sitkin - We request that fixed gear be allowed to fish in these two sites using the other 4 sites as controls to any potential fixed-gear impact in the Cape Moffet and Great Sitkin HAPC areas.

Action 3 - Alternative 3 - Bower Ridge: FVOA recommends a geographical modification of the Bower "B" option from AMCC proposal 10 with an area that allows trawls with a foot rope no greater than 8".

Alternative 4 - FVOA recommends delaying consideration of this alternative until further studies are done on the sites recommended in Action 3, Alternative 2.

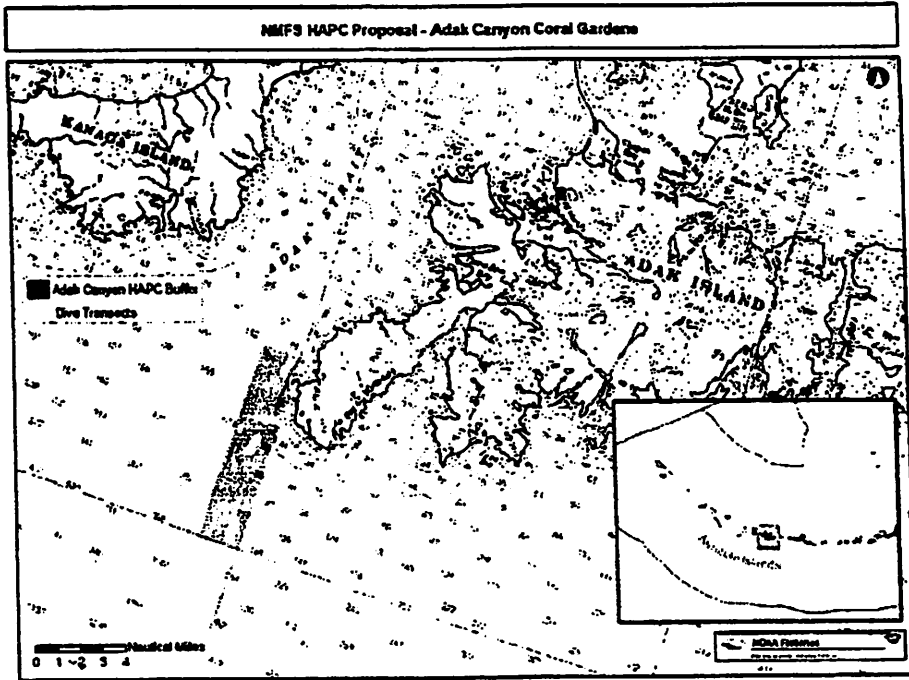
Sincerely,

A handwritten signature in black ink, appearing to read "Robert D. Alverson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

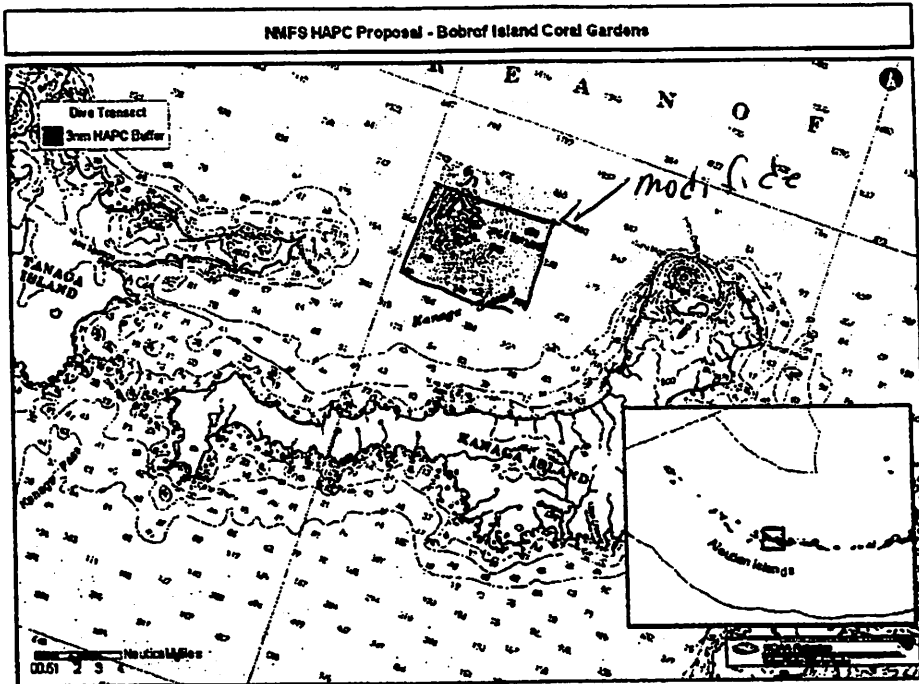
Robert D. Alverson
Manager

RDA:cb

AI Coral Garden HAPC Sites



rocks
over top
pass
West side
important



BC

ALASKA LONGLINE FISHERMEN'S ASSOCIATION
403 Lincoln Street, Ste. 237 Sitka, AK 99835

May 18 2004

North Pacific Fishery Management Council
3605 West 4th Avenue, Ste. 306
Anchorage AK 99510

RECEIVED
MAY 24 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 brief comments on the HAPC portion of Agenda item C-3.

ALFA continues to be concerned by the Council's decision to proceed with HAPC designations on the Fairweather Grounds, off Cape Ommaney, and off Dixon Entrance. All three areas fall within core halibut grounds, and some within core rockfish longline grounds. Given the Council's announced intent to designate HAPC in healthy coral/sponge habitat ~~outside core fishing grounds, these three Southeast areas should be~~ dropped from further consideration.

If the Council decides to continue with the designation of these areas despite the apparent contradiction, ALFA urges the Council to designate the areas as HAPC for research purposes only. ~~The corals in these areas were deemed to be healthy and intact despite the~~ century of longline activity known to have occurred in these areas. In other words, the Council has no data indicating that longlines pose a threat to these areas, only circumstantial evidence indicating that they do not.

In closing, ALFA believes the location of the nominated Southeast sites within core fishing areas disqualifies them from further consideration at this time. If the Council remains determined to designate HAPC in Southeast, then these three areas should be designated as research areas only, and used to verify that longlines do not pose a threat to coral/sponge habitat.

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-3 HAPC**

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	NAME (PLEASE PRINT)	AFFILIATION
1 ✓	Dave Fraser	Alutian Cod Fisheries Marketing Assoc.
2 ✓	JOHN GALVIN	GROUNDWATER FORUM
3 ✓	Ben Enticknap	Alaska Marine Conservation Council
4 ✓	Whit Sheard	The Ocean Conservancy
5 ✓	GLORY MERRITT ✓	Prowler Fisheries
6 ✓	Heather McLarty	CBSTA
7 ✓	Jim Ayers	Oceana
8 ✓	Michelle Ridgway	Oceanus Alaska
9 ✓	Donna Parker	HSCC
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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.

DRAFT

North Pacific Fishery Management Council
HAPC Technical Sub group Report
Federal Building Room 445
Juneau, AK 10am-3pm
May 5, 2004

Committee members: Stephanie Madsen NFPMC chair (facilitator), Cora Crome, Petersburg Vessel Owners Association (PVOA); Steve Fish, Sitka fisherman; Richie Davis (Seafood Producers Coop); Matt Eagleton, NMFS.

Agency: Cathy Coon, NPFMC; Phil Rigby & Bob Stone, NMFS ABL; Jon Kurland, NMFS-HCD; John Lepore, NOAA GC; Jeff Passer, NMFS enforcement

Public present: Cara Rodgveller, Oceana; Michelle Ridgway, Oceanus; Brent Fenty The Ocean Conservancy (TOC); Lisa Butner North Pacific Longline Association (NPLA).

Goal/Purpose of meeting:

A technical subgroup met to provide refinements to the boundaries of HAPC proposal #8, which was submitted to the Council by NMFS. The proposal suggested four separate sites within southeast Alaska to protect high-density areas of high relief Primnoa (red tree corals). Public testimony during the April 2004 Council meeting suggested that the boundaries of these four sites occur within core fishing areas for the halibut long line and the under 60' fleet targeting sablefish and demersal rockfish fisheries whose data was not represented in the staff's initial economic evaluation.

Presentation of existing proposal:

NMFS staff provided an overview of the proposal (Matt Eagleton and Bob Stone). Included in the presentation were video clips from submersible dives within these four sites. Although there were numerous submersible dives in the entire Gulf of Alaska, these four sites were selected based on their unique characteristics and high densities of Primnoa. Much of the research that has identified these locations has been in conjunction with other projects, so there has been little directed research to document the Gulf-wide distribution or abundance of Primnoa habitat.

- Dixon Entrance site was based on several research sources. NMFS longline sablefish assessment survey had two sets within this site, as well as a 1992 study by Ken Krieger in the submersible. The original bounds were set to cover the bathymetric feature where the coral was observed and thought to occur.
- Cape Ommaney site was originally observed to have coral in late 1980's by a NMFS assessment on Pacific Ocean Perch (POP). NMFS ABL revisited the area in 2000 to document corals with the Delta submersible. The multibeam image occurred after the submersible work but overlays nicely on the lower end of the spit.
- Fairweather Grounds- the two sites within this area were chosen from combination NMFS and ADF&G submersible dives with high amounts of coral.

Preliminary analysis summary of affected fisheries:

Council staff provided an overview of the affected fisheries from the HAPC sites. There are currently no crab or scallop fisheries affected in these sites. The sablefish hook and line fishery would suffer a reduction of .27% based on a five year historic catch in the four HAPC sites based on the entire sablefish catch in NMFS report area 640. This does not account for the unobserved portion of the 30% covered sector (vessels 60-125' in

length). The demersal rockfish fishery (DSR) in southeast occurs within some of these sites, however according to ADF&G it is minimal. The northern Fairweather box there were 10 rockfish sets between 1998-2002, in the lower Fairweather box there were 14 sets made. No sets were made for the DSR rockfish fishery in either the Dixon Entrance or Cape Ommaney Area. The halibut fleet would be affected the greatest, up to 33 vessels have used these 4 sites in aggregate, and the IPHC logbooks entail approximately 200,000lbs in a 5year period. There additionally may be some sablefish hook and line vessels under 60' fishing in these areas, however that data was not readily available for this portion of the analysis.

Public Comment:

Comments were accepted during two components of the meeting. Brent (TOC), wanted to know if we had addressed the appropriate size for benefits for these MPA's in addition to the size to allow current fishing practices to occur.

Work session on developing recommendations on redefining boundaries:

- Dixon Entrance: The technical subgroup agreed that the current bounds of this site were acceptable. The area within the site does not fall within core fishing areas. Additionally the site covers the features adequately. The team noted that this area might have experienced some disturbance from a couple of NMFS longline and trawl surveys.
- Cape Ommaney: Steve Fish proposed a site that would reduce the current HAPC site to only enclose the known Primnoa locations based on the submersible tracts. The group overall looked at the multibeam image of the spit where this coral habitat occurred. Cora Crome indicated that the fleet regularly utilized the 100 fathom contour line within the northern portion of the site, and it would be better to expand the northern edge to go up to that contour line. Steve Fish discussed the merits of enclosing the flanks of the spit as a modified HAPC site to allow fishers to continue to fish up to the edge of the spit but not over the feature with observed coral. There was discussion on how much of a buffer was needed for gear movement, and the committee decided that fishing along the edge of the spit was acceptable because the gear does not move that much if set properly.
- Fairweather grounds: The committee suggested modifications to both the northern and southern boxes within the existing proposal. In the Northern site, the boundaries encompass two sections seen in side scan sonar that have rough rocky habitat, and between the two features there are sandy bottoms that have fishing effort. The committee recommended splitting the Northern site into two separate boxes to allow the halibut fisherman to fish the sandy bank, while protecting the rocky habitat that has observed coral densities. The committee additionally suggested modifying the southern Fairweather site to be separated into two areas to protect the coral features while allowing the fisheries to occur in their historic areas. The left site within the southern box would be triangular to encompass the 3 submersible dives. The right side within the southern box would be a rectangular box the submersible site.

Wrap Up/Closing Remarks:

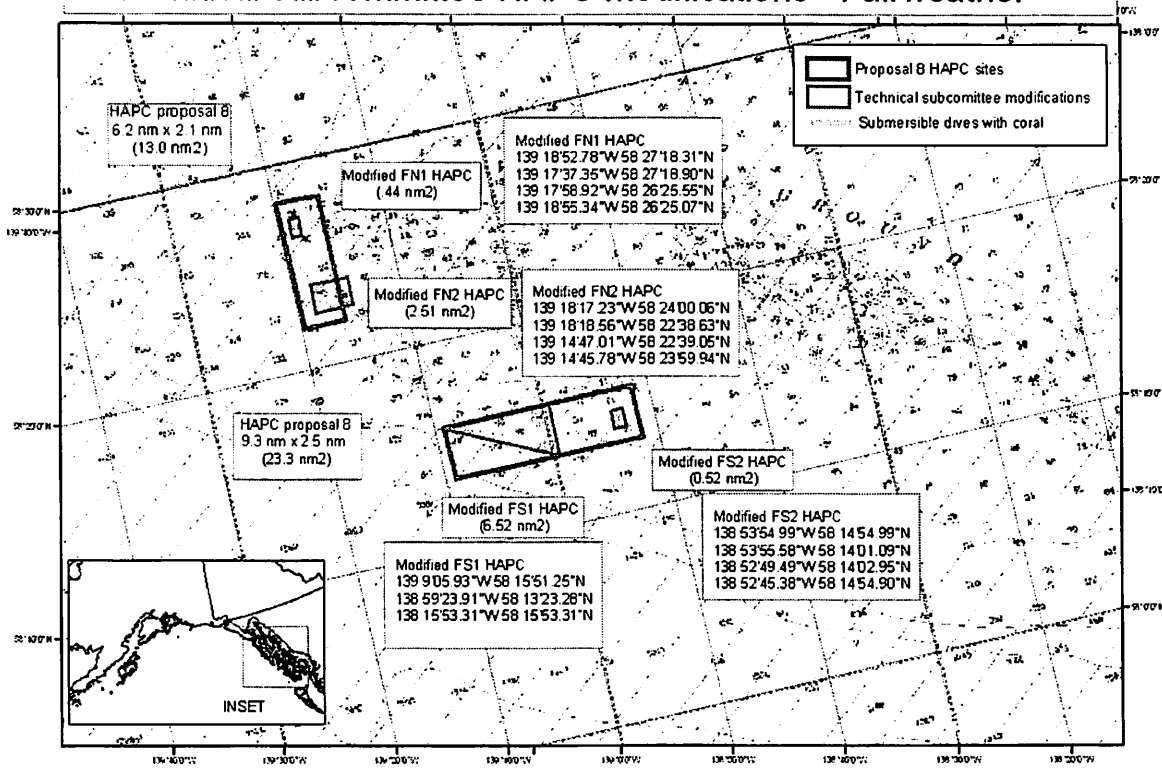
The committee concurred with the modifications of the proposed HAPC site boundaries as a reasonable compromise that would protect observed high density coral areas while allowing fishing to continue in historic fishing areas.

The committee requested clarification if the NMFS surveys with bottom contact gear would be precluded from the identified areas, if management measures require no bottom contact gear. Additionally, the committee asked Council staff to clarify whether the halibut and state demersal shelf rockfish fishery would be excluded from the proposed HAPCs.

Ms. Madsen thanked the participants of the committee for coming well prepared and ready to work. Staff during the June Council meeting will report the findings of the workgroup.

Meeting adjourned at 3pm.

Technical subcommittee HAPC modifications - Fairweather



Summary of Review of HAPC Proposals for Enforceability Concerns

Enforcement Element	Proposal number (per Plan Team review document)											
	1	2	3	4	5	6	7	8	9	10	11	12
Non pelagic trawl gear allowed	N	N	N	N	N	N	N	N	N	N	N	N
Pelagic trawl gear allowed	N	?	?	N	?	?	?	N	N	?	N	N
Other bottom contact gear allowed	N	?	?	N	?	?	?	N	Y	?	N	N
Management area boundaries defined by geographic coordinates	Y	N	N	Y	N	N	N	Y	Y	Y	Y	?
Management areas of minimum size for effective enforcement	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Management area boundaries "enforceable"	Y	Y	Y	Y	?	?	?	Y	Y	Y	Y	?
Management area(s) contain state waters	Y	Y	Y	N	N	N	N	N	Y	N	Y	Y


Enforcement Element	Proposal number (per Plan Team review document)										
	13	14	15	16	17	18	19	20	21	22	23
Non pelagic trawl gear allowed	N	N	N	?	N	N	N	N	?	?	N
Pelagic trawl gear allowed	N	?	?	?	?	?	N	N	?	?	N
Other bottom contact gear allowed	N	?	?	?	?	?	N	N	?	?	N
Management area boundaries defined by geographic coordinates	Y	N	N	N	N	N	Y	Y	Y	N	Y
Management areas of minimum size for effective enforcement	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Management area boundaries "enforceable"	Y	Y	?	?	?	?	Y	Y	?	?	Y
Management area(s) contain state waters	Y	Y	N	Y	Y	Y	Y	N	N	N	N

HAPC C-3

The Council, as part of the HAPC process outlined in the DEIS for EFH, has selected two priorities for HAPC designation during this cycle.

1. Seamounts in the EEZ, named on NOAA charts, that provide important habitat for managed species. (Alternatives follow as Action 1)
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. (Alternatives follow as Actions 2 & 3)

The joint stipulation requires final regulations implementing HAPC designations, if any, and associated management measures be promulgated no later than August, 2006. To meet this deadline the Council needs to select final HAPC alternatives during this Council meeting.




HAPC C-3

Council Priorities:

The Coral areas were selected 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.

Seamounts were selected because they may serve as unique ecosystems. Some FMP species on seamounts may be endemic 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.

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.




HAPC Draft Alternative Analysis C-3

In April adopted a purpose and need section for the analysis, and pared down the initial HAPC proposals, post Plan Team Review to form discrete alternatives (see item C-3 (a)).

Additionally the Council directed staff to provide recommendations for 'hybrid areas' where proposals had overlapped one another. Staff has provided a list of possible HAPC alternatives based on the public proposals, as well as modified hybrids for overlapping sites (see item C-3(b)).

**** Note that the list of alternatives has not made any attempt to narrow down the areas proposed for HAPC designation under each alternative. The Council can choose any combination of alternatives under each action item, and identify designation and management boundaries for analysis.**




HAPC Alternatives Action 1 Seamounts

Seamounts :
A seamount is a feature that rises more 1,000 meters above the surrounding seafloor and is of limited extent across the summit

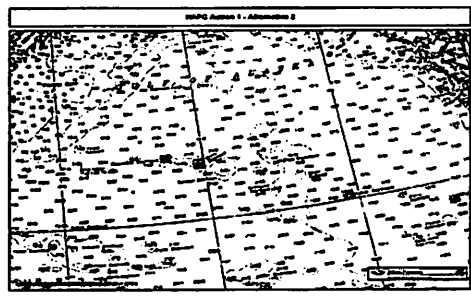

- Alternative 1: No Action
- Alternative 2: Designate 5 seamounts as HAPCs. (no bottom contact) (Dickens, Geacomini, Patton, Quinn, Welker).
 - Site-specific habitat and species presence/absence data is available for these 5 named seamounts. (subset of Proposal 4)
- Alternative 3: Designate 16 seamounts as HAPCs (no bottom contact) Sixteen named seamount summits are less than 3,000m in depth, the deepest recorded range of FMP species (sablefish, deep sea sole). (based on Proposal 4)

Core Fishing: A preliminary analysis does not demonstrate any core fishing under any Council managed fisheries occurring within the total seamounts named in (Table 1).



HAPC Draft Alternatives – Action 1 Seamounts

Alternative 2: Designate 5 seamounts as HAPCs. (no bottom contact gear)





#4 NMFS Proposals - Seamounts

Species Associations of 5 Named Seamounts:

FMP Species		FMP Species	
Sablefish within existing core fishing and larger areas	<i>Sebastes maliger</i>	Starbuck multi-belted	<i>Sebastes kamoharui</i>
Deep sea sole	<i>Sebastes maliger</i>	Apertus multi-belted	<i>Sebastes maliger</i>
Shallow multi-belted	<i>Sebastes maliger</i>	Golden long snout	<i>Lepidion lewisii</i>
Fish within multi-belted	<i>Sebastes maliger</i>	Small red long snout	<i>Lepidion lewisii</i>
Chinook within multi-belted	<i>Sebastes maliger</i>	Overcast leather snout	<i>Chirocentrus</i>
Longspine shortfin multi-belted	<i>Sebastes maliger</i>	Spout	<i>Chirocentrus</i>
Shallow longfin multi-belted	<i>Sebastes maliger</i>	Sandpiper	Crab
Shallow multi-belted	<i>Sebastes maliger</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.

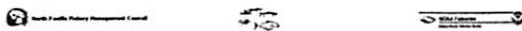


HAPC Draft Alternatives – GOA corals (Action 2)

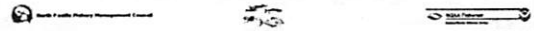
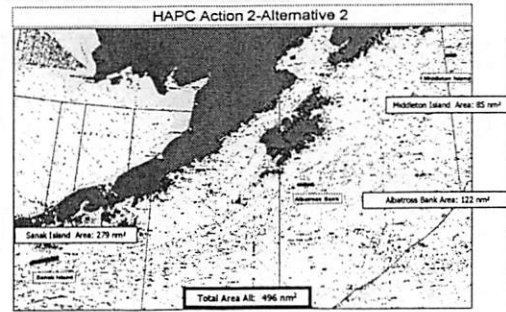
Alternative 3: Consider nine sites at Cape Ommaney, Dixon Entrance, Fairweather Ground (NW Area), and Fairweather Ground (Southern Area) as HAPCs, (management measures could apply for 6 sites and designation for 3 sites as HAPC)

- Sites are in areas where concentrations of *Primnoa* were documented using a manned submersible conducting groundfish stock assessment surveys and research on 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.
- (based on proposal 8 & HAPC technical subcommittee)

Alternative 4: Alternative 2 plus Alternative 3.



HAPC Draft Alternatives – GOA Corals (Action 2)

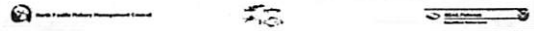
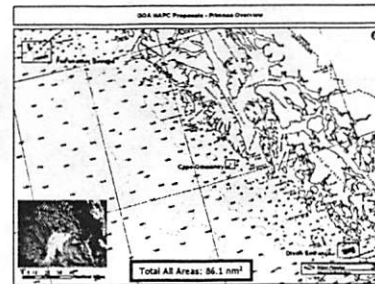


#5, 6, & 7 AGDB HAPC Proposals summary

- 3 Areas are offered by fishers possessing a wealth of experience and knowledge of the GOA and target rockfish species/habitats. Propose similar objectives and measures:
- # 5 Sanak Island, # 6 Abatross Bank, # 7 Middleton Island
 - 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;
 - In the future could develop restrictions on bottom trawling while preserving fishing opportunities;
 - Design and conduct applied research to understand rockfish habitat and how fishing effects productivity.

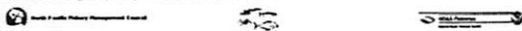


#8 NMFS GOA Hard Coral Areas – Overall



#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, 4 sites with management of no bottom contact gear:
 - Dixon Entrance
 - Cape Ommaney
 - Fairweather Grounds
- Public testimony during the April Council suggested that the boundaries of these four sites occur within core fishing areas for the halibut longline fishery and the under 60 vessels targeting sablefish and demersal rockfish fisheries. The Council appointed a technical sub group to provide refinements to the boundaries in the 4 GOA sites.

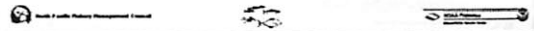


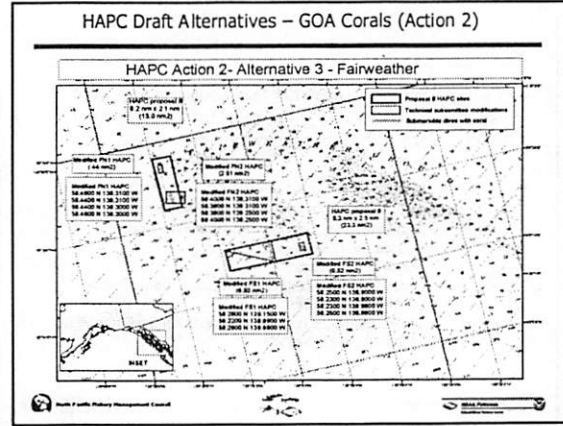
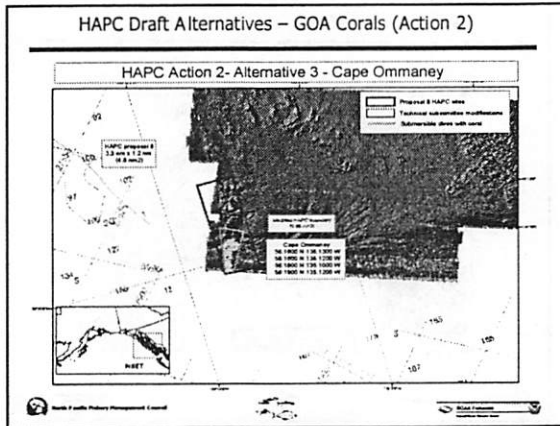
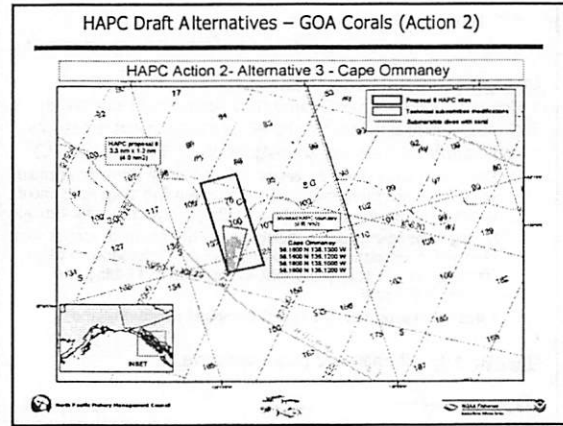
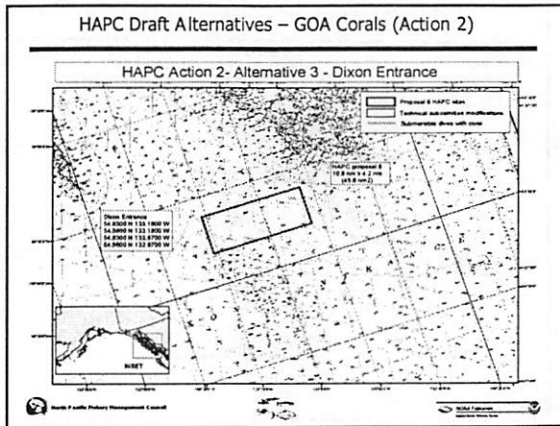
HAPC Draft Alternatives – GOA Corals (Action 2)

Report in C-3 supplemental

The technical subcommittee to the Council met on May 5 to discuss refinements to the boundaries of proposal #8. These are presented as an additional alternative for which the Council could select from.

The committee concurred with the modifications (see maps) of the proposed HAPC site boundaries as a reasonable compromise that would protect observed high density coral areas while allowing fishing to continue in historic fishing area.





HAPC Draft Alternatives – GOA Corals Alternative 3 Summary (Action 2)

- Consider four sites (in NMFS proposal 8) with no bottom contact fishing
- or
- Consider nine sites at Cape Ommaney, Dixon Entrance, Fairweather Ground Northwest, and at Fairweather Southern as HAPC, (management measures for 6 areas and designate 3 areas as HAPC (Table 3)).

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. The management sites are modifications of Proposal 8 by the HAPC technical subgroup 5/5/04.

Council would need to clarify if there is a no bottom contact gear closure whether NMFS research surveys conducted with bottom contact gear would be allowed AND whether halibut or state demersal shelf rockfish fisheries would be excluded from these areas.

HAPC draft Alternative

Proposed HAPC Area	Latitude	Longitude	Management	NOAA Chart number	Area
Cape Ommaney	54 17100N	135 13000W	Designation	17320	3.3 nm x 1.2 nm (4.0 nm ²)
	54 16400N	135 13600W			
	54 17100N	135 08000W			
Fairweather Ground NW Area	54 4700N	139 2300W	Designation	16760	6.2 nm x 2.1 nm (13.0 nm ²)
	54 3740N	139 2340W			
	54 3740N	139 2000W			
Fairweather Ground Southern Area	54 2600N	138 8000W	Designation	16760	9.3 nm x 2.5 nm (23.3 nm ²)
	54 2600N	139 1800W			
	54 2200N	138 8000W			
Dixon Entrance	54 4200N	131 1800W	Management applied	17400	10.9 nm x 4.2 nm (45.8 nm ²)
	54 3800N	131 1800W			
	54 4200N	132 0700W			
Cape Ommaney	54 1800N	136 1200W	Management applied	17320	0.93 nm ²
	54 1800N	135 1200W			
	54 1400N	135 1200W			
Fairweather Ground NW Area 1	54 4600N	139 2100W	Management applied	16760	0.44 nm ²
	54 4400N	139 3100W			
	54 4000N	139 3000W			
Fairweather Ground NW Area 2	54 4000N	139 3100W	Management applied	16760	2.51 nm ²
	54 3800N	139 2100W			
	54 3800N	139 2000W			
Fairweather Ground Southern Area 1	54 2500N	138 9000W	Management applied	16760	6.52 nm ²
	54 2200N	138 9000W			
	54 2000N	138 8000W			
Fairweather Ground Southern Area 2	54 2900N	138 9000W	Management applied	16760	0.52 nm ²
	54 2300N	138 8000W			
	54 1700N	138 8000W			

HAPC Draft Alternatives Action 3

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

Alternative 2: Designate six coral garden sites within the Aleutian Islands as HAPCs.

- Adak Canyon (based on proposals 9,16,19, Hybrid)
- Cape Moffett (based on proposals 11,16,19, Hybrid)
- Bobrof Island (based on proposals 11,13,19, Hybrid)
- Semlsopchnoi Island (based on proposals 11,12,13,18,19, Hybrid)
- Great Sitkin (based on proposals 16,19, Hybrid)
- Ulak Island (based on proposals 11, 13,17,19, Hybrid)

Alternative 3: Designate Bowers Ridge as an HAPC.

- AMCC Proposal 10 (No Bottom Trawling)
- • MCA Proposal 18 (Designation only)
- • Hybrid 1 (Designation only)
- Hybrid 2 (No Bottom Contact)

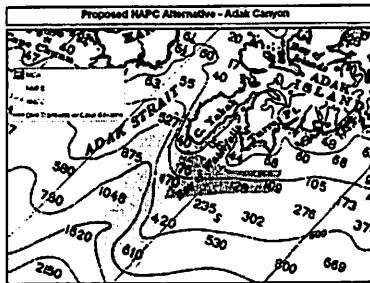
HAPC Draft Alternatives – Aleutian Corals (Action 3)

Alternative 4: Designate 4 sites at South Amli/Atka, Kanaga Volcano, Kanaga & Tanaga Islands.

Alternative 5: Alternative 2 + Alternative 3 + Alternative 4.

HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Council forwarded 3 proposals around Adak Canyon



#9 AMCC Adak Canyon

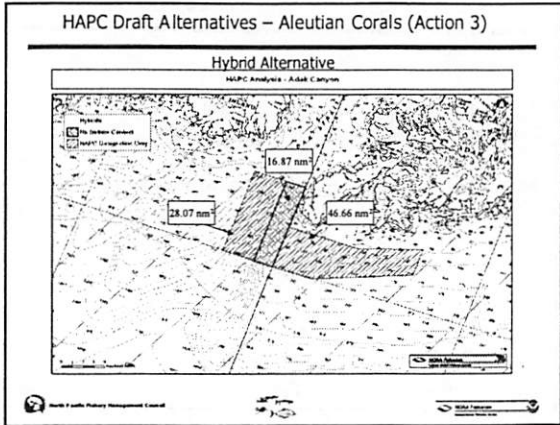
- Lasting protection and conservation of long-lived rockfish and corals within Adak Canyon.
- Relatively undisturbed
- Allows current level of commercial harvest by longline & pot gear, with cooperative research effects.
- Identify areas with habitat mapping, submersible, and ROV.
- Bottom trawling would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

#16 MCA Proposals

- Area is 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.

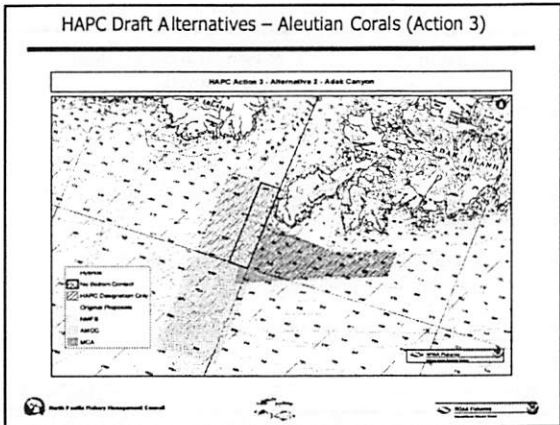
#19 NMFS AI Coral Garden Proposal Summary

- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- 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.



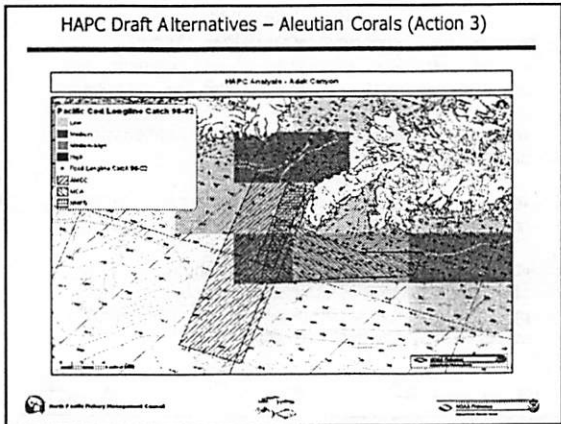
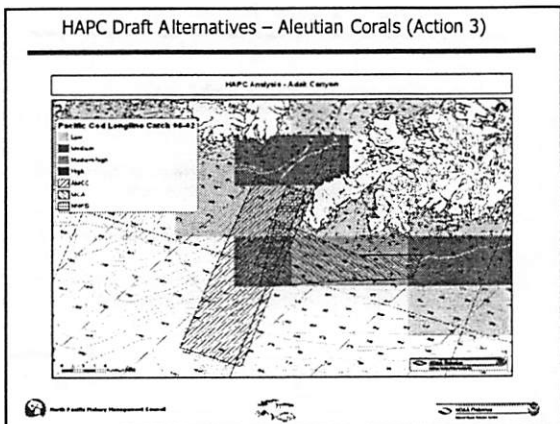
Hybrid Alternative Adak Canyon

- The Adak Canyon hybrid HAPC area would include components of the NMFS, AMCC, and MCA proposals.
- Management measures: All Council-managed bottom contact fishing would be prohibited within the NMFS HAPC area. In addition, a portion of the AMCC site to the west and MCA site to the east could be designated as HAPC with no management measures attached. The AMCC & MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.



Hybrid Alternative Adak Canyon

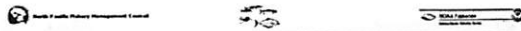
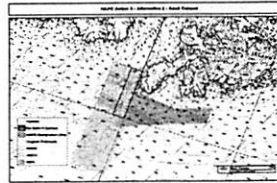
- Core Fishing Analysis:** The proposed boundaries for the managed component of the Adak Canyon HAPC hybrid could have a low effect on the sablefish/turbot longline, a medium effect on golden king crab, and a medium-high effect on pacific cod longline in the lower portion. The hybrid area reduces the effect on core fishing from a high effect on sablefish/turbot longline in AMCC proposal and avoids high effect pacific cod longline from MCA proposal. The designation-only sites would have no impact on Council-managed fisheries.
- Recommended Research Concepts:** Prioritize submersible mapping efforts to identify whether high-relief hard coral stands exist within these sites. Evaluate the benthic features in this section of the Aleutian Islands. Support ongoing research for rockfish abundance. Design and conduct applied research to increase our understanding of how rockfish use habitat and how fishing affects the productivity of that habitat. Support continued research on how fishing affects use and productivity, and how different levels of fishing intensity and gear effects influence of habitats.



HAPC Draft Alternative 2 – Aleutian Corals (Action 3)

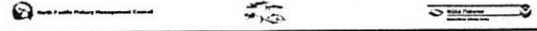
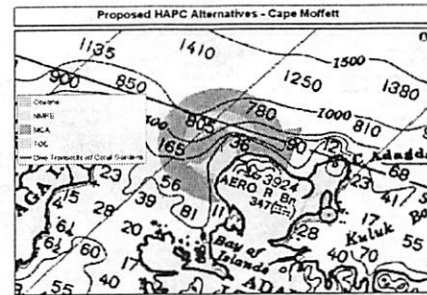
Alternative 2: Designate six coral garden sites as HAPCs.

- a. Adak Canyon
- AMCC Proposal 9 (No Bottom Trawling, Cooperative Research Longline/Pot)
 - MCA Proposal 16 (Designation only)
 - NMFS Proposal 19 (No Bottom Contact)
 - Hybrid (No Bottom Contact + Designation only)



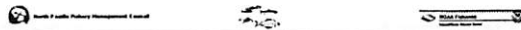
HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Council forwarded 4 proposals around Cape Moffett



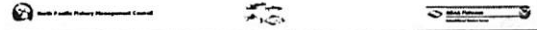
#11 TOC AI Hard Corals Summary

- 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 = $\pi \cdot r^2$; $\sim 79 \text{ nm}^2$ 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

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



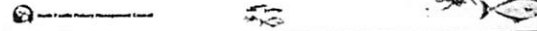
#16 MCA Proposals

- Area is 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.



#19 NMFS AI Coral Garden Proposal Summary

- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- 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.



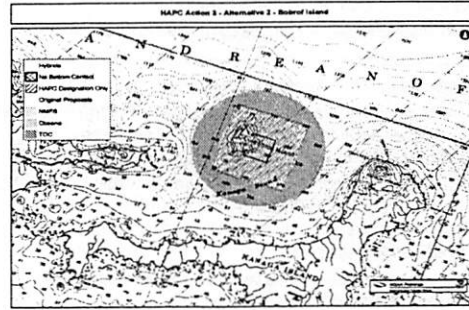
#19 NMFS AI Coral Garden Proposal Summary

- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- 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.



HAPC Draft Alternatives – Aleutian Corals (Action 3)

Hybrid



HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Bobrof Island hybrid HAPC area would include components of the NMFS, Oceana, and TOC proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. The larger three-mile box would have no management measures attached. This larger three-mile box, which corresponds with the NMFS & Oceana proposals, provides a focus for further research.

Core Fishing Analysis: The Bobrof Island closure could have a low effect on pacific cod pot and golden king crab fisheries and a medium effect on sablefish/turbot longline fishery. The designation-only sites would have no impact on Council-managed fisheries.

HAPC Draft Alternatives – Aleutian Corals (Action 3)

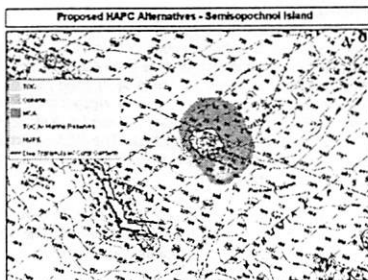
Alternative 2: Designate six coral garden sites as HAPCs.

- c. Bobrof Island
 - TOC Proposal 11 (No-take Marine Reserve)
 - Oceana Proposal 13 (No Bottom Contact)
 - NMFS Proposal 19 (No Bottom Contact)
 - Hybrid (No Bottom Contact + Designation only)



HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Council forwarded 5 proposals around Semisopochnoi Island



#11 TOC AI Hard Corals Summary

- 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 = $\pi \cdot r^2$; $\sim 79 \text{ km}^2$ 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;

#12 TOC Semisopchnoi Proposal Summary

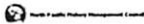
Proposals focused on AI hard corals

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

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

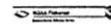
Objectives and management measures:

- 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.



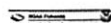
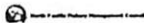
#13 OCEANA AI Hard Corals Summary

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



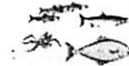
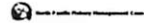
#18 MCA Semisopchnoi Proposal Summary

- Areas are offered by fishers possessing a wealth of experience and knowledge of the AI and target rockfish species/habitats.
 - 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.

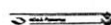
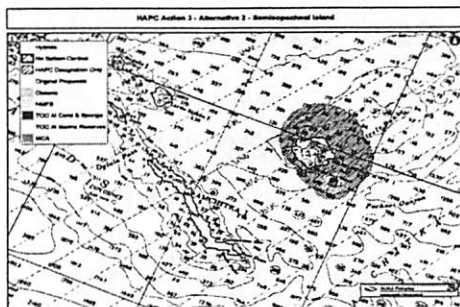


#19 NMFS AI Coral Garden Proposal Summary

- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- 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.



HAPC Draft Alternatives – Aleutian Corals (Action 3)

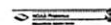


HAPC Draft Alternatives – Aleutian Corals (Action 3)

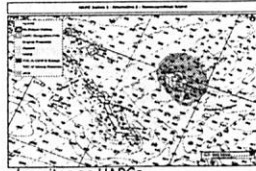
The Semisopchnoi Island Hybrid HAPC area would include components of the MCA, NMFS, Oceana, and TOC proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. This closure would encompass the entire submarine volcano. In addition, the MCA site at Semisopchnoi (which corresponds to the ten-mile SSL closures around Petrel and Pochnoi Points) could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Semisopchnoi I. closure would have a low effect on sablefish/turbot longline and golden king crab fisheries. The designation-only sites would have no impact on Council-managed fisheries.

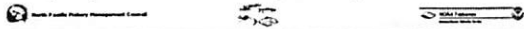


HAPC Draft Alternatives – Aleutian Corals (Action 3)



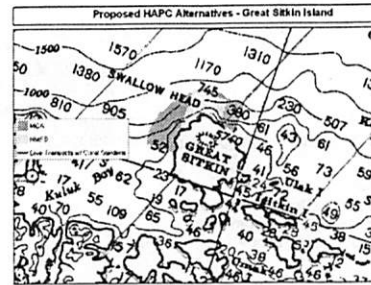
Alternative 2: Designate six coral garden sites as HAPCs.

- d. Semisopchnoi Island
- TOC Proposal 11 (No-take Marine Reserve)
- TOC Proposal 12 (No-take Marine Reserve)
- Oceana Proposal 13 (No Bottom Contact)
- MCA Proposal 18 (Designation only)
- NMFS Proposal 19 (No Bottom Contact)
- Hybrid (No Bottom Contact + Designation only)



HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Council forwarded 2 proposals around Great Sitkin Island



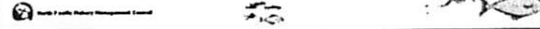
#16 MCA Proposals

- Areas is 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.

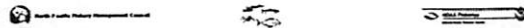
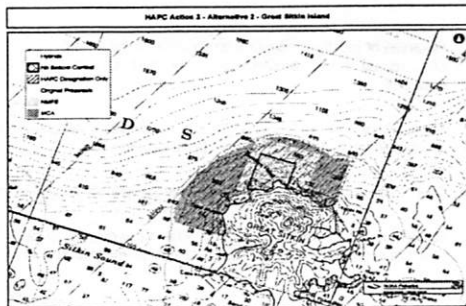


#19 NMFS AI Coral Garden Proposal Summary

- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- 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.



HAPC Draft Alternatives – Aleutian Corals (Action 3)

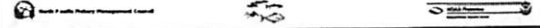


HAPC Draft Alternatives – Aleutian Corals (Action 3)

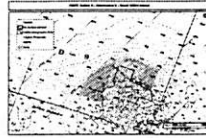
The Great Sitkin hybrid HAPC area would include components of the MCA & NMFS proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. In addition, a modified MCA site around the coral garden site could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Great Sitkin closure would have a low effect on golden king crab, sablefish/turbot longline, and Atka mackerel trawl fisheries. The designation-only sites would have no impact on Council-managed fisheries.

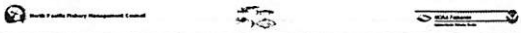


HAPC Draft Alternatives – Aleutian Corals (Action 3)



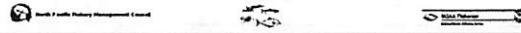
Alternative 2: Designate six coral garden sites as HAPCs.

- e. Great Sitkin
 - MCA Proposal 16 (Designation only)
 - NMFS Proposal 19 (No Bottom Contact)
 - Hybrid (No Bottom Contact + Designation only)



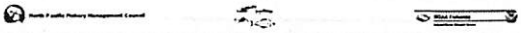
HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Council forwarded 4 proposals around Ulak Island



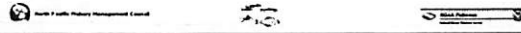
#11 TOC AI Hard Corals Summary

- 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 = $\pi \cdot r^2$; $\sim 79 \text{ nm}^2$ 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;



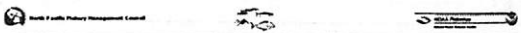
#13 OCEANA AI Hard Corals Summary

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



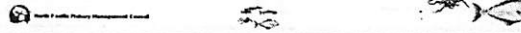
#17 MCA Proposals

- Area is 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.

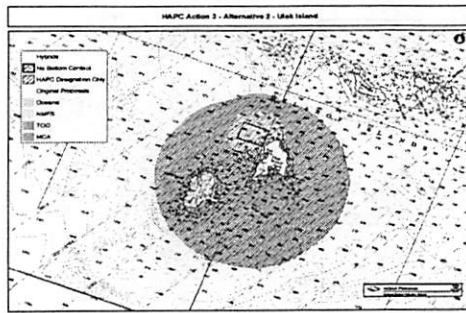


#19 NMFS AI Coral Garden Proposal Summary

- Six areas of mostly continuous coral garden habitat with documented rockfish presence were identified out of the 40 dive locations.
- 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.



HAPC Draft Alternatives – Aleutian Corals (Action 3)



South Pacific Fishery Management Council

HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Ulak Island hybrid HAPC area would include components of the MCA, NMFS, Oceana, & TOC proposals.

Management measures: All Council-managed bottom contact fishing would be prohibited within the 1-mile box to provide protection for coral garden sites. In addition, the MCA site at Ulak Island (which corresponds to the ten-mile SSL closure around Hasegox Point) could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

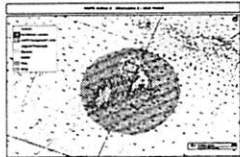
Core Fishing Analysis: The Ulak Island closure could have a low effect on pacific cod longline fishery and a medium effect on sablefish/turbot longline fishery. The designation-only sites would have no impact on Council-managed fisheries.

South Pacific Fishery Management Council

HAPC Draft Alternatives – Aleutian Corals (Action 3)

Alternative 2: Designate six coral garden sites as HAPCs.

- f. Ulak Island
 - TOC Proposal 11 (No-take Marine Reserve)
 - Oceana Proposal 13 (No Bottom Contact)
 - MCA Proposal 17 (Designation only)
 - NMFS Proposal 19 (No Bottom Contact)
 - Hybrid (No Bottom Contact + Designation only)



South Pacific Fishery Management Council

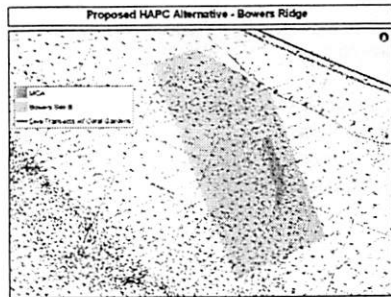
HAPC Draft Alternatives – Aleutian Corals (Action 3)

- Alternative 3: Designate Bowers Ridge as HAPC
 - AMCC Proposal 10 (No Bottom Trawling)
 - MCA Proposal 18 (Designation only)
 - Hybrid 1 (Designation only)
 - Hybrid 2 (No Bottom Contact)

South Pacific Fishery Management Council

HAPC Draft Alternatives – Aleutian Corals (Action 3)

The Council forwarded 2 proposals around Bowers Ridge



South Pacific Fishery Management Council




#10 AMCC Bowers Ridge Summary

- 2 options for Bowers Ridge HAPC: Site B selected to match lat/longs for regulator ease
- 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.

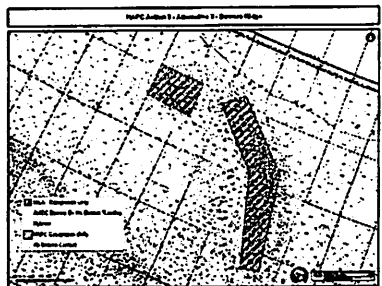



South Pacific Fishery Management Council

#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
 - Semisopochnoi 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 Semisopochnoi Island is within Steller sea lion critical habitat for the nearby major rookery.

HAPC Draft Alternatives – Aleutian Corals (Action 3)



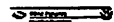





HAPC Draft Alternatives – Aleutian Corals (Action 3)

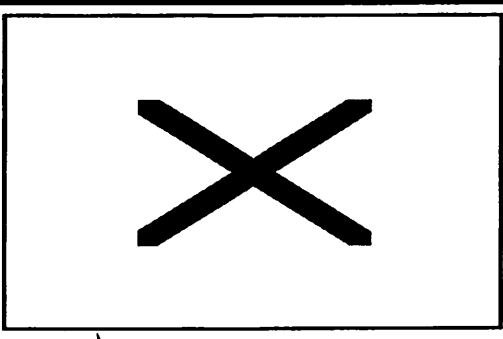


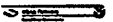
The Bowers Ridge hybrid HAPC area would include components of the AMCC and MCA proposals.

Management measures: All bottom trawling would be prohibited within the Bowers B option of the AMCC proposal. A box encompassing the MCA proposal and all waters shallower than 1,000m could be designated as HAPC with no management measures attached. The MCA proposal provided anecdotal information regarding the presence of coral habitat and provides a focus for further research.

Core Fishing Analysis: The Bowers Ridge closure could have a low effect on golden king crab and sablefish/turbot longline. The designation-only sites would have no impact on Council-managed fisheries.




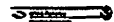
HAPC Draft Alternatives – Aleutian Corals (Action 3)

HAPC Draft Alternatives – Aleutian Corals (Action 3)

Alternative 3: Designate Bowers Ridge as HAPC




- AMCC Proposal 10 (No Bottom Trawling)
- MCA Proposal 18 (Designation only)
- Hybrid 1 (Designation only)
- Hybrid 2 (No Bottom Contact)

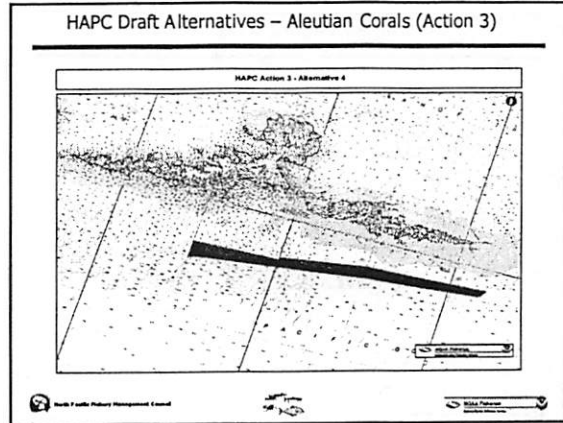
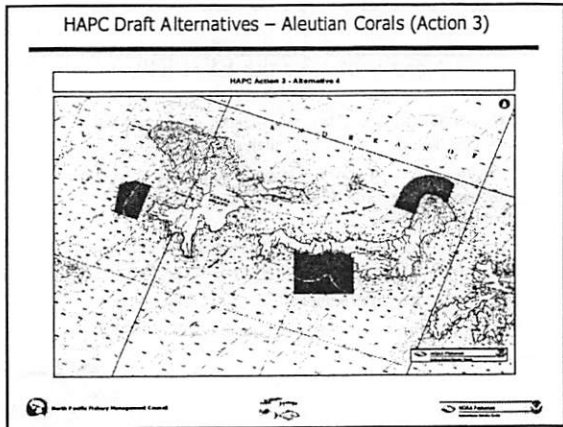





HAPC Draft Alternatives – Aleutian Corals (Action 3)

Aleutian Islands Hybrids – Alternative 4 Designation only- no management attached

- South Amila/Atka Island
- Kanaga Volcano
- Kanaga Island
- Tanaga Island

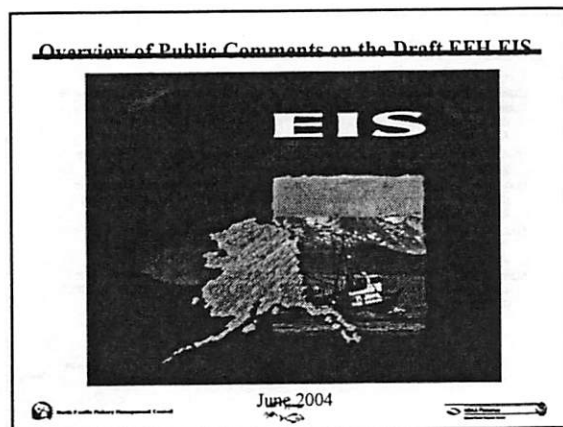






- #15, 16, 17 MCA Proposals
- Areas are offered by skippers possessing experience and knowledge of the AI and target rockfish species/ habitats
 - Prioritize submersible mapping of areas and benthic habitats;
 - Develop appropriate restriction to protect high relief hard corals and juvenile rockfish 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.

HAPC C-3


Additionally, staff has provided a draft table of contents, draft significance criteria, and a draft RIR methodology (*see item C-3 (c) (i-iii)*).



- Today's Report on the EFH EIS
- Very generalized overview of the DEIS comments – not a complete analysis
 - Summary of the next steps staff are planning to take as they begin to develop responses and revise the EIS based on public comments
 - A focus on big picture issues where Council guidance would assist staff

Staff's Next Steps on the EPH EIS

- Await the results of the CIE review before revising Appendix B or developing responses to comments on that analysis.
- Revise other sections of the EIS and appendices in response to public comments, using the analysts' best judgment (with management oversight) as to how to respond.
 - EPH descriptions (add seamounts)
 - Socioeconomic analysis (refine based on comments)
 - Evaluation of the effects of non-fishing activities (refine based on comments)
 - Other sections as warranted
- Develop written responses to comments for Council review.



Issues Needing Council Guidance

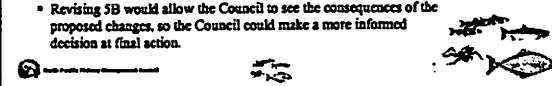
Should staff modify Alternative 5B to incorporate several suggestions from Oceana?

Oceana requested a number of specific changes to the Aleutian Islands portion of Alternative 5B:

- Prohibit bottom contact fishing in the six coral garden sites
- Modify eight specific open areas (making some larger and some smaller based on Oceana's discussions with fishermen)
- Eliminate the proposed TAC reduction for Pacific cod (but retain it for Atka mackerel and rockfish)

Considerations

- Many commenters supported 5B.
- Some commenters said to make no more changes to the alternatives.
- Revising 5B would allow the Council to see the consequences of the proposed changes, so the Council could make a more informed decision at final action.



Issues Needing Council Guidance


Should staff modify the alternatives for adopting an approach to identify HAPCs, and include an option that would retain the existing broad HAPCs based on general types of habitat wherever they may be found (e.g., all living substrates in deep water), in addition to allowing the Council to identify site-specific HAPCs?

The Alaska Marine Conservation Council and Environmental Protection Agency both suggested this modification.

The current alternatives include retaining the existing HAPCs, or switching to a site based approach, but not both.


Considerations

- Most commenters supported the site based approach to HAPCs.
- Some commenters supported the type/site based approach.
- The existing HAPCs based on habitat types are so broad and general that they are not particularly useful for management purposes.




Issues Needing Council Guidance

Reminder: Additional issues may warrant guidance from the Council once staff complete the analysis of public comments.




End



Alternatives for Describing and Identifying EPH

- Alternative 1: No EPH Description
- Alternative 2: Status Quo EPH Descriptions
- Alternative 3: Revised General Distribution
- Alternative 4: Presumed Known Concentration
- Alternative 5: Ecoregion Strategy
- Alternative 6: EEZ Only



Handout 6/12 130p
Dave Fraser
C-3 Pub. Test.
(Hapc?)

Comments relative to Alternative 5B

The basic concept of Alt. 5B for the Aleutian Islands is to allow trawlers to continue to fish where they have been fishing, but not to allow them to move into new areas.

After 20 years that we and other US trawlers have been bottom trawling in the Aleutians, the pioneering days are over. We have identified the productive grounds that are trawlable and have been able to harvest the full TAC quotas fishing where we have fished.

At the same time, it needs to be noted that the trawl fleet has given up vast amounts of the area we have traditionally fished in the Aleutians because of the sea lion mitigation measures. It also needs to be recognized that although fishing locations in the Aleutian Islands are far more consistent from year to year relative to the Bering Sea or GOA, fish still move around from year to year and season to season based on a variety of environmental factors, so the application of the "5B principle" to the Aleutian Islands requires looking at a broad suite of years to establish the "traditional fishing areas".

The three portions of Alternative 5B to which I object are some 'bells and whistles' that Oceana has hung on to the general principle.

- The 1st objectionable 'add-on' is that the quota should be reduced proportionate to the amount closed area.
- The second aspect of the Oceana proposal is that there should be caps on the amount of sponge and coral taken within the open areas based on the average of past take of sponge and coral, and that attainment of the caps would close the fishery down.
- The third aspect that is troubling is that Oceana's version of the 5B "open area" did not reflect all the fishing grounds that trawlers currently use or have used in the recent past. This problem of the initial reduction in fishing grounds is compounded by the sea lion regulations that have reduced our fishing areas such that any loss of any of the area we currently fish is unacceptable.

Recommendation 1:

The components of Alternative 5B for the Aleutian Islands should be specifically identified as independent elements by management area. The Council should have the latitude to adopt 5B for the Aleutians and reject it for the Bering Sea and Gulf of Alaska. This probably means the explicit identification of a separate Aleutian Islands core fishing area alternative in the EIS.

Rationale:

The core of Alt. 5B may be appropriate as a management measure in the Aleutian Islands because of its unique bathymetry, the nature of the bottom trawl fisheries that occur there, and the aggregating behaviours of the species that are the primary bottom trawl targets (Atka mackerel, rockfish, and P. cod). The approach makes no sense when exported to

the Bering Sea or GOA which have very different topography, a wider variety of target species, and where aggregations of fish are determined more by water temperature and less by the topography.

Recommendation 2:

The components of Alternative 5B should be specifically identified as independent elements within the Aleutian Island management area, particularly with regard to the following four elements:

- A - Open and Closed areas based on past fishing effort
- B - TAC reductions
- C - PSC caps for coral and sponge
- D - Additional closed areas within the preliminary "open area" based on past "bycatch hotspots".

Rationale:

A - The core concept in 5B is that fishing should be confined to the set of all the previously trawled area and un-trawled areas should remain un-impacted by bottom trawls. This should be a stand alone decision point.

B - TAC reductions are inconsistent with the idea that unfished areas are being protected to retain the contribution of their productivity to the overall harvestable surplus and that fish do move between the open and closed areas. This concept is often advanced by advocates of marine reserves to ensure fishers that there will be net gains as a result of creating no-fishing areas.

C - Under Alt. 5B the vast majority of the AI management area (including of the 'fishable' area as defined in the DEIS) is closed to bottom trawling, providing a high degree of protection for coral and sponge habitat. The 'open' areas are being left 'open' in part based on the idea that whatever effect has already occurred which is unlikely to be reversible although the open areas remain productive from the perspective of populations of managed species.

The proposed bycatch caps are based on extrapolated observer data involving sampling for a relatively rare occurrence during a period years when precise estimation of absolute bycatch amounts was not a high priority of the observer program. The extrapolation of past observer data may result in un-realistic caps, especially when combined with a different level of prioritization of coral and sponge bycatch monitoring in the future.

The average annual bycatch of bryozoans and corals, combined, for all Aleutian Islands bottom trawl fisheries was 19.4 metric tons. This was caught while harvesting an average of 61,200 metric tons of fish per year (a bycatch rate of 0.03%).

The average annual bycatch of sponges for all Aleutian Islands bottom trawl fisheries was 85.3 metric tons (a bycatch rate of 0.14%).

Additionally, extrapolation of bycatch amounts from basket sampling is bound to result in wide variances in the estimates of bycatch which could close a fishery even though there was no significant difference from the historic average. The cost of caps will exceed the benefits.

This element is a redundant protection for coral and sponge that has the potential to result in large costs to the fleet if closures are triggered, with very minimal gain to the habitat.

D – Additional closure areas within the fished/open area share the problem of being identified based on historic observer data involving extrapolation from basket samples when precise estimation of bycatch amounts of coral, bryzoans and sponge was not a priority of the observer program.

To the extent that small ‘hot spots’ may exist within the fished areas, at this time there is no evidence that these areas represent a large or important portion of the overall abundance of coral and sponge habitat. If later on we discover that a subset of our open area does represent an important portion of the overall amount of coral garden habitat, these hotspots could be candidates for HAPC consideration for focused research and mapping to investigate whether there are high concentrations of coral and to map out appropriate closure areas if needed.

Recommendation 3:

The analysis identifying the fished/open areas needs to be enhanced.

In an iterative process, the 5B open area boundaries should be improved by using all available observer data through 2003, VMS data, and logbook information provide by fishers. In particular, the 5B shape needs to be overlaid on 1:300,000 scale navigational charts and made easily available to stakeholders.

Based on enhanced analysis and information provided by fishers with experience in the Aleutians, the Council should have flexibility in redrawing the AI 5B shape at the time of final action, to include updated information on areas in which there has been trawl effort to optimize the open and closed area boundaries.

Rationale:

Identification of the fished/open areas is necessarily an iterative process.

The fished/open area was identified using observer data. However, in the cod fishery in particular, there have been a substantial number of <60’ unobserved vessels fishing state waters, as well as a number of <125’ vessels with 30% coverage. The fishing patterns of these fleets may differ significantly from the 100% covered CP trawl fleet. Only by offering these stakeholders an opportunity to evaluate the 5B lines on an appropriately scaled navigational chart, will they be able to determine the impact on their fishing areas.

It is also unclear whether all observer data was used when the initial 10K blocks were developed or whether substantial amounts of catch were filtered out based on the number of participants in a cell in a given time period.

The 5B open area shape as shown in fig. 2-50 is geo-reference to latitude and longitude. This was a good 1st cut attempt to identify the fished area, based on an attempt to capture the areas that observer data showed as fished using a 10K grid that was not aligned to lat/lon. The difficulty of moving from a square 10k grid to lat/lon is that the two approaches do not blend neatly, and subjective decisions must be made about where to truncate portions of blocks. i believe this has resulted in the loss of some significant fishing areas, as well as the inclusion of some areas that are not fished. An iterative approach to defining the open and closed areas could optimize the 5B boundaries.

When i overlayed the VMS data for the 2003 cod fishery for the FV Muir Milach and Tracy Anne on the 5B shape to examine whether we had trawled outside the proposed 'open' area, i found that there were 5 distinct areas where we fished P. cod that were not included in the 5B open area.

These were around 1) the south side of Adak to the west of Kagalaska Strait, 2) south Amlia Isand to the west of Amlia Pass, 3) north of Tanaga Island off Gusty Bay, 4) on Petrel bank just south of the 5B open area east/west line, and 5) east of Kiska around Little Sitkin, Segula and Rat Islands. The 5B shape left out fished ground in each of those areas.

It is likely that rockfish and Atka mackerel fishers would discover similar issues with the precise delineation of open areas based on overlaying their VMS data on the appropriately scaled charts.

Thanks

dave fraser

Agenda Item C-6 IRIU TAC Split Discussion Paper

The IRIU Discussion paper provided by staff captures the problem of the interaction between Amendment 80 and future sub-divisions of TAC and the reason this issue needs to be carried forward within the context of Amendment 80 for a variety of species.

However, the problem related to cod is more immediate. The SSC stated in December: **The SSC believes that the ABC should be split among BS and AI areas, but we are not in a position to address the concerns expressed by the authors. Therefore, for the 2005 specification process, the SSC requests the authors to evaluate the methods used to split the ABC and their potential management implications, so that specific recommendations can be made to the Council on this issue in the future.**

As the discussion paper notes, the default option is Option 2, which will be highly disruptive of the current effort patterns. The SSC has given us time to "get our act together." A TAC split can be done in the 'spec' process, but changing the default option for allocation requires a regulatory amendment.

The following table was constructed from the data in the discussion paper to illustrate the degree of relocation of effort by sector that would be required under option 2 which is the default.

Sector	BSAI 2004 TAC	Option 2 -- The Default		2002 AI Harvest
		Annual AI TAC If Split	A Season Limit If Split	
trawl cv	46,844	6,722	4,705	15,393
trawl cp	46,844	6,722	3,361	12,529
jig	3,987	572	343	0
h&l cp	81,330	11,671	7,003	2759
pot cv	15,249	2,188	1,313	0
pot cp	3,355	481	289	6
h&l cv	305	44	26	106
<60 fixed gear	1,423	204	123	-
Non CDQ total	199,337	28,605	17,163	30,793

Option 3 is a stop gap measure which would limit total catch in the AI based on the recommendations of the Plan Team and SSC relative to ABC without sub-allocating the sectors beyond the current BSAI wide accounting of sector splits.

The Council should initiate a regulatory amendment that would address this issue as requested by the AP. This needs to be done for cod independent of Amendment 80, but the issue is broader and needs to be integrated into Amendment 80.

Thanks,
 dave fraser

Comments relative to Alternative 5B

The basic concept of Alt. 5B for the Aleutian Islands is to allow trawlers to continue to fish where they have been fishing, but not to allow them to move into new areas.

After 20 years that we and other US trawlers have been bottom trawling in the Aleutians, the pioneering days are over. We have identified the productive grounds that are trawlable and have been able to harvest the full TAC quotas fishing where we have fished.

At the same time, it needs to be noted that the trawl fleet has given up vast amounts of the area we have traditionally fished in the Aleutians because of the sea lion mitigation measures. It also needs to be recognized that although fishing locations in the Aleutian Islands are far more consistent from year to year relative to the Bering Sea or GOA, fish still move around from year to year and season to season based on a variety of environmental factors, so the application of the "5B principle" to the Aleutian Islands requires looking at a broad suite of years to establish the "traditional fishing areas".

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Additionally, extrapolation of bycatch amounts from basket sampling is bound to result in wide variances in the estimates of bycatch which could close a fishery even though there was no significant difference from the historic average. The cost of caps will exceed the benefits.

This element is a redundant protection for coral and sponge that has the potential to result in large costs to the fleet if closures are triggered, with very minimal gain to the habitat.

D – Additional closure areas within the fished/open area share the problem of being identified based on historic observer data involving extrapolation from basket samples when precise estimation of bycatch amounts of coral, bryzoans and sponge was not a priority of the observer program.

To the extent that small ‘hot spots’ may exist within the fished areas, at this time there is no evidence that these areas represent a large or important portion of the overall abundance of coral and sponge habitat. If later on we discover that a subset of our open area does represent an important portion of the overall amount of coral garden habitat, these hotspots could be candidates for HAPC consideration for focused research and mapping to investigate whether there are high concentrations of coral and to map out appropriate closure areas if needed.

Recommendation 3:

The analysis identifying the fished/open areas needs to be enhanced.

In an iterative process, the 5B open area boundaries should be improved by using all available observer data through 2003, VMS data, and logbook information provide by fishers. In particular, the 5B shape needs to be overlaid on 1:300,000 scale navigational charts and made easily available to stakeholders.

Based on enhanced analysis and information provided by fishers with experience in the Aleutians, the Council should have flexibility in redrawing the AI 5B shape at the time of final action, to include updated information on areas in which there has been trawl effort to optimize the open and closed area boundaries.

Rationale:

Identification of the fished/open areas is necessarily an iterative process.

The fished/open area was identified using observer data. However, in the cod fishery in particular, there have been a substantial number of <60’ unobserved vessels fishing state waters, as well as a number of <125’ vessels with 30% coverage. The fishing patterns of these fleets may differ significantly from the 100% covered CP trawl fleet. Only by offering these stakeholders an opportunity to evaluate the 5B lines on an appropriately scaled navigational chart, will they be able to determine the impact on their fishing areas.

It is also unclear whether all observer data was used when the initial 10K blocks were developed or whether substantial amounts of catch were filtered out based on the number of participants in a cell in a given time period.

The 5B open area shape as shown in fig. 2-50 is geo-reference to latitude and longitude. This was a good 1st cut attempt to identify the fished area, based on an attempt to capture the areas that observer data showed as fished using a 10K grid that was not aligned to lat/lon. The difficulty of moving from a square 10k grid to lat/lon is that the two approaches do not blend neatly, and subjective decisions must be made about where to truncate portions of blocks. i believe this has resulted in the loss of some significant fishing areas, as well as the inclusion of some areas that are not fished. An iterative approach to defining the open and closed areas could optimize the 5B boundaries.

When i overlayed the VMS data for the 2003 cod fishery for the FV Muir Milach and Tracy Anne on the 5B shape to examine whether we had trawled outside the proposed 'open' area, i found that there were 5 distinct areas where we fished P. cod that were not included in the 5B open area.

These were around 1) the south side of Adak to the west of Kagalaska Strait, 2) south Amlia Isand to the west of Amlia Pass, 3) north of Tanaga Island off Gusty Bay, 4) on Petrel bank just south of the 5B open area east/west line, and 5) east of Kiska around Little Sitkin, Segula and Rat Islands. The 5B shape left out fished ground in each of those areas.

It is likely that rockfish and Atka mackerel fishers would discover similar issues with the precise delineation of open areas based on overlaying their VMS data on the appropriately scaled charts.

Thanks

dave fraser