

HABITAT AREAS OF PARTICULAR CONCERN (HAPC) PROPOSAL

Date: January 9, 2004

Name of Proposer: NOAA Fisheries
P.O. Box 21668
Juneau, Alaska 99802

Please check applicable box (es):

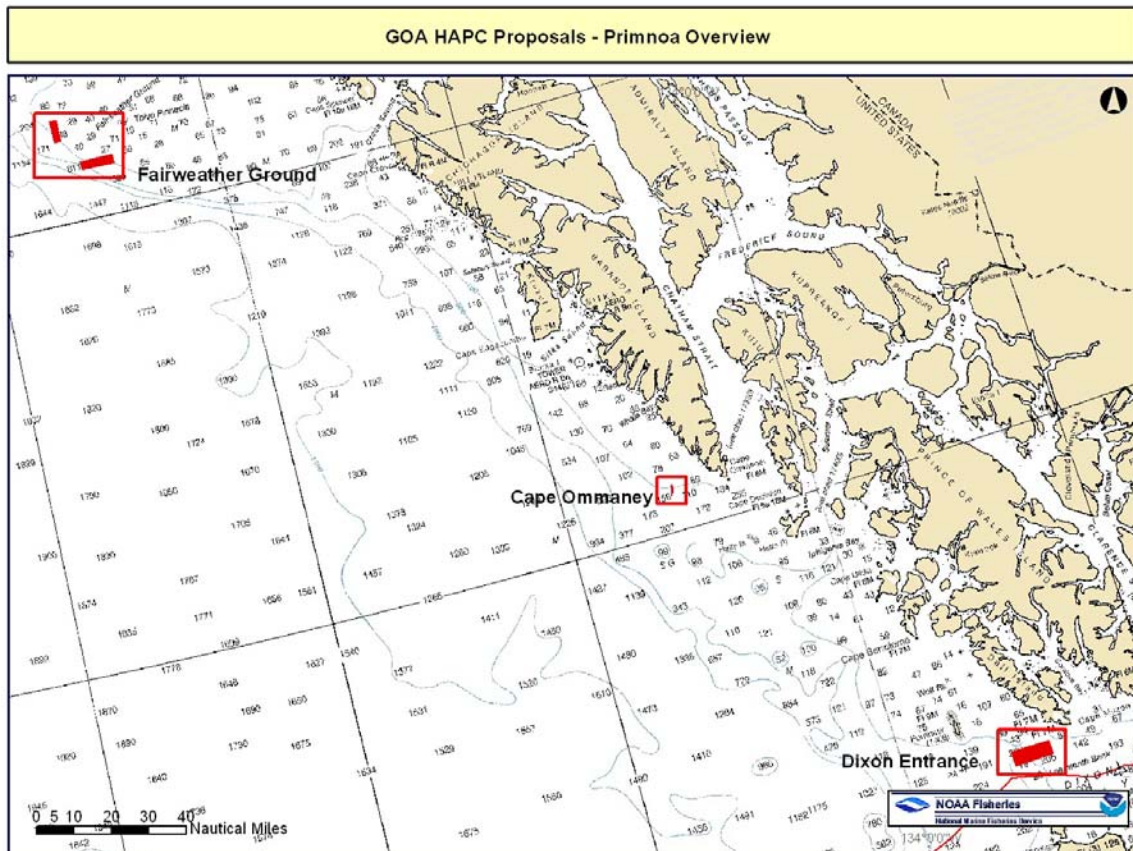
X	GOA Groundfish FMP
	BSAI Groundfish FMP
	Scallop FMP
	BSAI Crab FMP
X	Salmon FMP

Title of Proposal.
Gulf of Alaska High Relief Corals, *Primnoa* species

Summary Statement of the Proposal.
(Provide a brief paragraph concisely describing the HAPC.)

NMFS/AFSC/Auke Bay Laboratory scientists have conducted submersible dives in the Gulf of Alaska (GOA) with the DSV *Delta* in areas where concentrations of *Primnoa* have previously been documented during submersible groundfish surveys in the 1990s. During these investigations, commercial fish species have been observed in association with high relief corals. Disturbance to these fragile corals was observed *in situ*. Often this disturbance is evident, since fishing gear contacting the coral is sometimes lost, or derelict. This HAPC proposal identifies 3 discrete areas with known densities of *Primnoa* sp. Each area warrants considerations as an HAPC based on the specific characteristics of each site. The proposal suggests management measures to lessen impacts to corals within the HAPC area.

Overview of HAPC Proposal Areas in the Gulf of Alaska. (Note: Attached to the end of the proposal are individual chartlets for each of the GOA *Primnoa* sp. HAPC areas.)



HAPC Site Location.

(Specific latitude/longitude or geographic reference. Include NOAA Chart number, if known.)

HAPC Areas are within the following geographic coordinates:

HAPC Area	Latitude	Longitude	NOAA Chart Number
Cape Ommaney	56.2100N 56.1600N 56.1600N 56.2100N	135.1300W 135.1300W 135.0900W 135.0900W	17320
Dixon Entrance	54.6300N 54.5600N 54.6300N 54.5600N	133.1800W 133.1800W 132.8700W 132.8700W	17400
Fairweather Ground NW Area	58.4700N 58.3700N 58.3700N 58.4700N	139.3300W 139.3300W 139.2600W 139.2600W	16760
Fairweather Ground Southern Area	58.2600N 58.2600N 58.2200N 58.2200N	138.8600W 139.1500W 139.1500W 138.8600W	16760

Habitat Type and Species Information.

(Identify of any habitat type(s) and FMP species of the HAPC.)

Cape Ommaney Site Summary

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.

Dixon Entrance Summary

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.

Fairweather Grounds Summary

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.

All three areas contain *Primnoa* sp. colonies and associated sedentary invertebrates. High *Primnoa* sp. concentrations were also associated with small pinnacles.

The following FMP species and life stages have been observed *in situ* in association with *Primnoa* sp. (red tree) for the each proposed HAPC:

Common Name	Scientific name	Cape Ommaney	Dixon Entrance	Fairweather Grounds
Juvenile rockfish, (unidentified)	<i>Sebastes</i> sp.	✓	✓	✓
Yelloweye rockfish adults	<i>Sebastes ruberrimus</i>	✓	✓	✓
Rougeye rockfish adults	<i>Sebastes aleutianus</i>	✓	✓	✓
Dusky rockfish adults	<i>Sebastes ciliatus</i>	✓	✓	
Redbanded rockfish adults, including gravid females	<i>Sebastes babcocki</i>	✓	✓	✓
Sharpchin rockfish adults, including gravid females	<i>Sebastes zacentrus</i>	✓	✓	
Sharpchin rockfish adults	<i>Sebastes zacentrus</i>			✓
Pacific ocean perch adults	<i>Sebastes alutus</i>	✓	✓	
Rosethorn rockfish adults	<i>Sebastes helvomaculatus</i>			✓
Silvergray rockfish adults	<i>Sebastes brevispinis</i>	✓	✓	✓
Shortraker rockfish adults	<i>Sebastes borealis</i>			✓
Skate	(Unidentified)			✓
Sculpin	(Unidentified)			✓

Describe How the Proposal Addresses the each of the 4 HAPC Considerations (50CFR 600.815):

The IMPORTANCE of the ecological function provided by the habitat.

Detailed ecological studies have not been conducted yet. However, *Primnoa* colonies likely serve several important ecological functions. FMP species have been observed in these high concentration *Primnoa* areas. Colonies provide important structural habitat for many species including refuge for juvenile rockfish and golden king crab and mating golden king crab. (Golden king crab is not a GOA FMP species. These observations are the first documented observations of juvenile golden king crab aggregations and mating pairs of adult golden king crab in the GOA.) The presence of gravid females may indicate that the habitat provides important breeding or spawning habitat for at least two species of rockfish, dusky and yelloweye. Red tree coral colonies provide elevated feeding platforms for many sessile invertebrates and may provide a source of prey for some species of fish that aggregate in colonies. Also, observations noted invertebrates feeding on the *Primnoa* sp., thereby improving knowledge about the importance of this fragile habitat structure and its relationship to the ecosystem.

The extent to which the habitat is SENSITIVE to human-induced degradation.

Primnoa spp. are fragile, long-lived, and slow-growing. Damaged colonies require long periods of time to recover from disturbance. Submersible observations and fishery bycatch records indicate that *Primnoa* sp. colonies are easily damaged or detached from the seafloor if contacted by fishing gear.

Whether, and to what extent, the activity STRESSES the habitat type.

Colonies tend to be located on moderate relief bedrock and coarse talus in areas where both mobile bottom-contact fishing gear and set gear such as longlines are used. Some derelict longline gear and evidence of damage from that gear was observed from the submersible. Commercial longlining occurs in each area and *Primnoa* sp. is a common species in research long line surveys conducted in the GOA.

The RARITY of the habitat type. (Mandatory requirement).

The abundance and distribution of *Primnoa* sp. is unknown. However, FMP species have been documented in association with high relief corals. Dense concentrations of *Primnoa* sp. are uncommon and *Primnoa* sp. corals are patchy in distribution. In 2001, Auke Bay Laboratory scientists used the DSV *Delta* to verify the presence of colonies at several locations where bycatch of *Primnoa* sp. was reportedly high in research survey efforts. Remnants of colonies (i.e. skeletons) or no *Primnoa* sp. were observed at sites, indicating fishing gear has already disturbed some *Primnoa* sp. concentrations. These sites are a small subset of the total survey effort area.

Statement of Purpose and Need.

(Provide a specific purpose as why the HAPC needs to be identified.)

Red tree coral (*Primnoa* sp.) may be the most common gorgonian observed in fished areas of the eastern GOA and *Primnoa* sp. colonies are rare and an important habitat type. Submersible observations and fishery bycatch records document that *Primnoa* sp. colonies are easily damaged or dislodged from the seafloor if contacted by fishing gear. The proposed HAPC's would protect known high-density *Primnoa* sp. areas from disturbance to ensure their continued availability as refuge habitat for rockfish and other species.

Objectives of the Proposal.

(List objectives specific to the identification of the HAPC.)

The objective of this proposal is to protect the incidental mortality of *Primnoa* sp. corals from fishing gear in documented and concentrated areas in the eastern Gulf of Alaska.

Describe any Proposed Solutions to Achieve These Objectives.

(How might the problem be solved? Include concepts of methods of measuring progress towards those objectives.)

This HAPC is one of three proposals by NOAA Fisheries to protect documented concentrations of *Primnoa* sp. in the eastern Gulf of Alaska. Protection of these concentrations from disturbance by bottom contact gear will provide sanctuary for the corals, invertebrates, and FMP species that use that habitat. Archived submersible video documentation will allow scientists to monitor the establishment of new colonies and temporal changes in the abundance of FMP species.

Describe any Proposed Management Measures for the HAPC.

(Include specific objectives, if appropriate.)

All Council-managed fishing except for near-surface salmon trolling would be prohibited within the proposed HAPCs (see table below). The spatial configuration and size of the proposed buffer area at each site is based on the need to protect documented concentrations of *Primnoa* sp. from stray fishing gear. Note that *in situ* observations were not made throughout the entire proposed buffer area to confirm the presence of corals throughout the site. However, adjacent areas may likely contain some *Primnoa* sp. colonies given the contagious distribution of red tree coral and the similarity in depth strata, substrate type, and current regime in those areas.

HAPC Area	Latitude	Longitude	NOAA Chart number	Area
Cape Ommaney	56.2100N 56.1600N 56.1600N 56.2100N	135.1300W 135.1300W 135.0900W 135.0900W	17320	3.3 nm x 1.2 nm (4.0 nm ²)
Dixon Entrance	54.6300N 54.5600N 54.6300N 54.5600N	133.1800W 133.1800W 132.8700W 132.8700W	17400	10.9 nm x 4.2 nm (45.8 nm ²)
Fairweather Ground NW Area	58.4700N 58.3700N 58.3700N 58.4700N	139.3300W 139.3300W 139.2600W 139.2600W	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	16760	9.3 nm x 2.5 nm (23.3 nm ²)

The proposal identifies the HAPCs as rectangular areas to facilitate management and enforcement. Circles or other shapes are possible for the buffer areas around the identified habitat features, but the NOAA Fisheries Office of Law Enforcement recommended using rectilinear areas to facilitate enforcement. Other potential management options might include requiring VMS on all vessels, or prohibiting vessels from carrying bottom contact gear in these areas.

Identify any Expected Benefits to Habitat or FMP species.

(Include specific information regarding a species life history stage, if known.)

HAPC Area	Expected Benefit
Cape Ommaney	One of the largest and densest known <i>Primnoa</i> sp. concentrations in the eastern Gulf of Alaska would be protected from further degradation and FMP species (listed above) would benefit from the closure.
Dixon Entrance	A series of large and dense <i>Primnoa</i> sp. concentrations in central Dixon Entrance would be protected from further degradation and FMP species (listed above) would benefit from the closure.
Fairweather Ground	A series of large and dense <i>Primnoa</i> sp. concentrations along the western and southern flank of the Fairweather Ground would be protected from further degradation and FMP species (listed above) would benefit from the closure.

Identify Fishery, Stakeholders, and/or Communities, which may Benefit from the Proposed HAPC.

(Who may or may not benefit from the proposal? Include any known or indirect socioeconomic costs.)

Some long line fishing presently occurs within the boundaries of the proposed closures. These long line fishermen, mostly from SE Alaska ports, would be displaced. A regulatory impact review would need to be completed to evaluate costs and benefits. In the long term, fishers may benefit from enhanced recruitment of targeted species resulting from closure areas.

Support Data or Information Sources

(List data sources, information resource, literature, and any traditional knowledge for the proposal.)

Heifetz, J. 2002. Coral in Alaska: distribution, abundance, and species associations. *Hydrobiologia* 471: 19-27.

Witherall, D. and C. Coon. 2001. Protecting gorgonian corals from fishing impacts. Pages 117-125 In: J. H. Willison et al. (eds.) 2001. Proceedings of the First International Symposium on Deep-Sea Corals, Ecology Action Centre and Nova Scotia Museum, Halifax, Nova Scotia.

Cape Ommaney Proposal

Robert Stone, Jon Heifetz, and J. Lincoln Freese, NOAA Fisheries, Alaska Fisheries Science Center, Auke Bay Laboratory, Juneau, Alaska.

Dixon Entrance Proposal

Robert Stone and Chris Lunsford, NOAA Fisheries, Alaska Fisheries Science Center, Auke Bay Laboratory, Juneau, Alaska.

Krieger, K. J. 2001. Coral (*Primnoa*) impacted by fishing gear in the Gulf of Alaska. In Proceedings of the First International Symposium on Deep-Sea Corals. Edited by J. H. M. Willison et al. Ecology Action Centre and Nova Scotia Museum, Halifax. pp. 106-116.

Krieger, K. J. and B. L. Wing. 2002. Megafauna associations with deepwater corals (*Primnoa* spp.) in the Gulf of Alaska. *Hydrobiologia* 471: 83-90.

Fairweather Grounds Proposal

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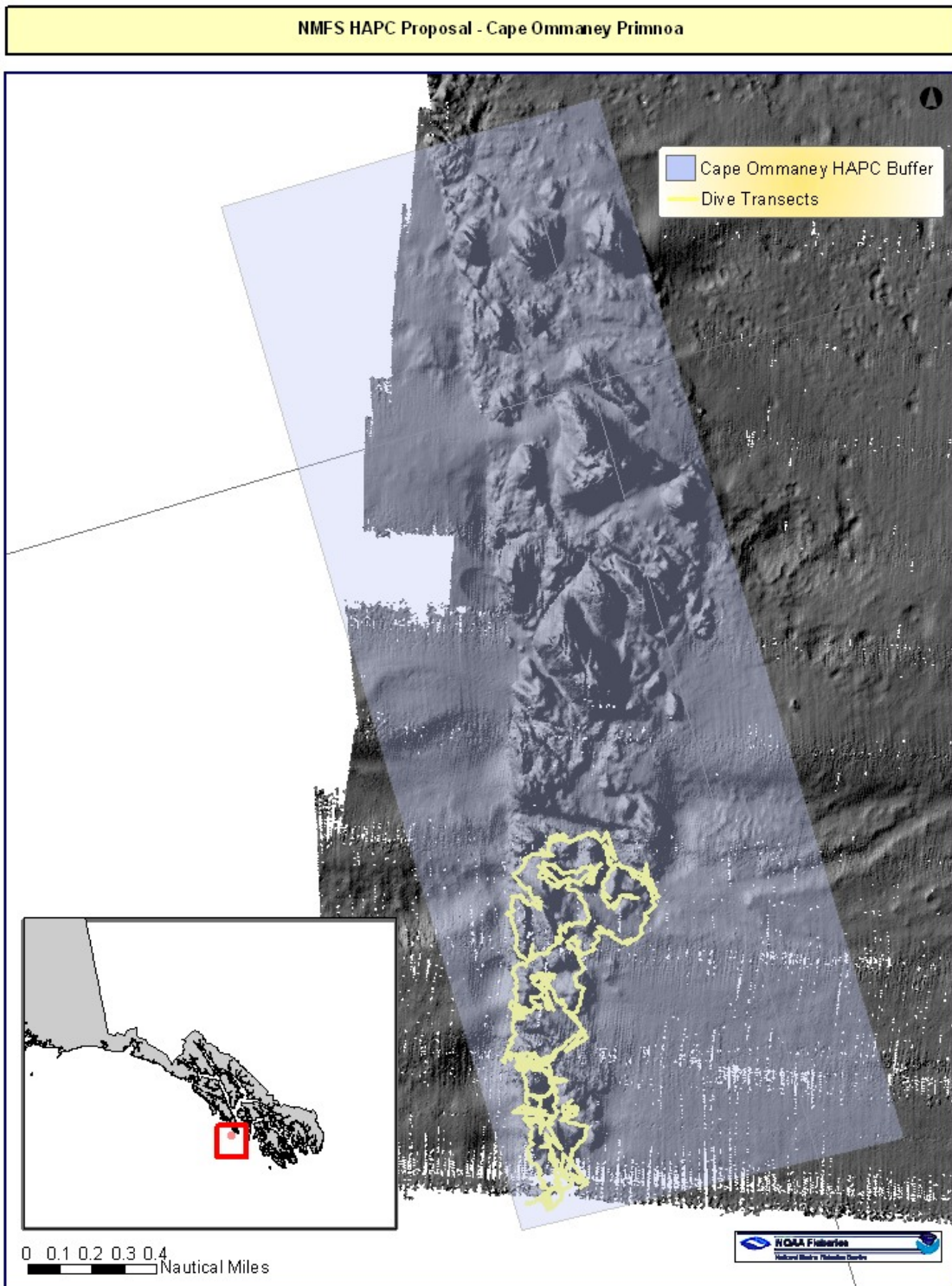
Krieger, K. J. 2001. Coral (*Primnoa*) impacted by fishing gear in the Gulf of Alaska. *In* Proceedings of the First International Symposium on Deep-Sea Corals. *Edited by* J. H. M. Willison *et al.* Ecology Action Centre and Nova Scotia Museum, Halifax. pp. 106-116.

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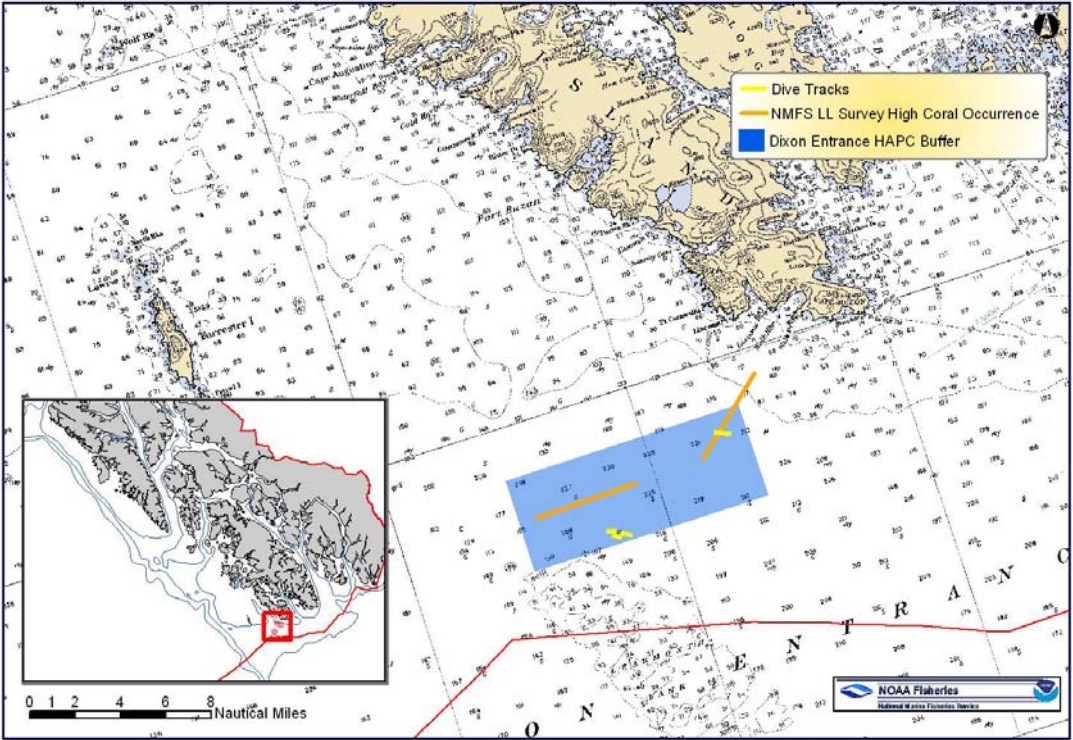
Sent Completed Proposals to or Request Further Information from:

North Pacific Fishery Management Council (<http://www.fakr.noaa.gov/npfmc/default.htm>)
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GOA Primnoa HAPC Sites



NMFS HAPC Proposal - Dixon Entrance Primnoa



NMFS HAPC Proposal - Fairweather Ground Primnoa

