

DRAFT ENVIRONMENTAL ASSESSMENT
for the Issuance of an Exempted Fishing Permit for Feasibility Testing of Using Commercial
Pollock Fishing Vessels for Acoustic Surveys within Portions of Steller Sea Lion Critical Habitat
Areas in the Aleutian Islands Subarea

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Abstract: This document is an Environmental Assessment (EA) of the potential impacts of issuing an exempted fishing permit (EFP) to allow pollock fishing vessels to conduct acoustic surveys and limited pollock harvest within selected areas of Steller sea lion critical habitat in the Aleutian Islands Subarea. The purpose of the EFP is to test the feasibility of using commercial fishing vessels for acoustic surveys for determining pollock biomass and distribution. Exemption from certain pollock fishing closure areas within Steller sea lion critical habitat in the Aleutian Islands subarea would be necessary to ensure sufficient quantities of pollock are encountered to conduct the test. The project is intended to improve the Aleutian Islands pollock stock assessment, conservation, and management. The analysis found no significant impacts on the human environment for this action.

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Executive Summary

The exempted fishing permit (EFP) would support a project to test the feasibility of using commercial fishing vessels for acoustic surveys of pollock in the Aleutian Islands. The information collected may improve the information available for stock assessments and may result in improved management of pollock harvest.

The project would be conducted in one of two areas identified in the Aleutian Islands, Kanaga Sound or Atka Island. One of the study areas would be used for conducting acoustic surveys and verification fishing of the survey data, and commercial fishing to compensate for survey expenses. The areas identified include waters within Steller sea lion critical habitat. The EFP would permit one vessel to harvest the verification and compensation fish (mostly pollock) over approximately three weeks in March. No more than 1,000 mt of groundfish may be harvested and processing is to be done at Adak, Alaska. All pollock harvested will be counted against the allocation to the Aleut Corporation for the directed pollock fishery in the Aleutian Islands. The EFP may be modified to extend the terms for an additional year in the case that the project cannot be completed in the first year.

The EFP is necessary to allow the applicant to harvest pollock in Steller sea lion protection areas that are currently closed to pollock fishing. Two alternatives were analyzed in this EA. Alternative 1 is status quo with no permit issued, and Alternative 2 would issue the permit. The environmental effects of Alternative 2 are limited to marine mammals and prohibited species components. No significant effects were identified.

Even though no significant effects under this EA were identified for Steller sea lions, adverse effects are likely and therefore an Endangered Species Act Section 7 consultation must be completed before the EFP may be issued. Socioeconomic effects primarily are potential future effects related to improved information leading to improved management of pollock harvest. No additional cumulative effects were identified.

Comparison of Alternatives and Selection of a Preferred Alternative

Alternative 2 had no significant impacts identified. Alternative 1 had no additional environmental impacts beyond those already identified in previous analyses, but Alternative 1 would not provide for improved information for pollock stock assessments and no potential improvement of pollock harvest management. Because Alternative 2 has no significant adverse impacts identified and provides for the potential to improve the use of pollock resources in the Aleutian Islands, Alternative 2 is the preferred alternative.

1.0 Introduction

1.1 Background

The U.S. Congress, in Section 803 of the Consolidated Appropriations Act of 2004 (HR 2673) (CAA), now Public Law 108-199, required that future directed fishing allowances of pollock in the Aleutian Islands be allocated to the Aleut Corporation. Only fishing vessels approved by the Aleut Corporation or its agents are allowed to harvest this allowance. To harvest the fish, the Aleut Corporation is allowed to contract only with vessels under 60 feet length overall (LOA), or vessels listed under the American Fisheries Act (AFA). The allocation was made to the Aleut Corporation for the purpose of furthering the economic development of Adak. Figure 1.1 provides a map of the Aleutian Islands. The CAA requires half of the Aleutian Islands pollock allocation to be harvested by small boats (less than 60 feet length overall (LOA)) in 2013 and beyond.

The Aleut Corporation harvested approximately 1.2 percent of their initial 2005 pollock allocation in part due to difficulty in finding pollock. The majority of pollock harvests in the Aleutian Islands subarea had historically been done in Steller sea lion critical habitat until the subarea was closed to pollock fishing in 1999 (NMFS 2004 and 64 FR 3437, January 22, 1999). The Aleutian Islands subarea was opened to pollock fishing outside of critical habitat in January 2003 with the Steller sea lion protection measures (68 FR 204, January 2, 2003).

NMFS has limited resources for pollock surveys in the Aleutian Islands subarea. Surveys have been primarily summer bottom trawl surveys conducted every 2 to 3 years. The 2005 Stock Assessment and Fishery Evaluation (SAFE) report for Aleutian Islands pollock used bottom trawl surveys and catch data to develop the stock assessment for this pollock stock. Because of the limited data available, the stock is currently managed at tier 5, as required by Fishery Management Plan (FMP) for Groundfish of the Bering Sea and Aleutian Islands management Area (BSAI).

1.2 Purpose and Need

The purpose of the environmental assessment (EA) is to predict whether the impacts to the human environment resulting from this action will be significant. If the predicted impacts from issuing the exempted fishing permit (EFP) are not significant, no further analysis is necessary to comply with the requirements of the National Environmental Policy Act.

The purpose of issuing the EFP is to test the feasibility of using commercial fishing vessels to conduct acoustic surveys for pollock in the Aleutian Islands subarea. NMFS currently does not have resources to conduct acoustic surveys of pollock in the Aleutian Islands subarea. The acoustic and biological information from the project will be used to determine; 1) if it is feasible to conduct acoustic surveys in the Aleutian Islands subarea using commercial fishing vessels, 2) if the data collected in such a manner is of sufficient quality for management purposes, and 3) if the local aggregations of pollock are stable enough during spawning season to allow for fine scale spatial and temporal management. Additionally, genetic samples will be collected during this study that will be used for stock structure analysis. Improved information may lead to improved conservation and

potentially finer spatial and temporal harvest management of the Aleutian Islands subarea pollock. Improved harvest management of the Aleutian Islands pollock stock is needed based on the high uncertainty in the stock structure and the potential effects of the fishery on Steller sea lion populations. This project is consistent with Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), national standard 1, which requires conservation and management measures achieve optimal yield from a fishery. This project also enhances implementation of national standard 2 by improving the best scientific information available to use in conserving and managing stocks.

Appendix A is the cruise plan for the project which is a detailed description of the work to be performed under the EFP. The project has three phases: (1) evaluating the commercial fishing vessel's appropriateness as an acoustic sampling platform, (2) opportunistically collecting acoustic data of pollock distribution around two sites, Kanaga Sound and Atka Island, and (3) direct acoustic and biological data sampling at one of the study sites (up to 10 one to three day trips). To verify the acoustic data and to support the study, 1000 mt of walleye pollock would be harvested within an area that includes waters within 20 nautical miles (nm) to 0 nm of Steller sea lion haulouts and rookeries. Conducting the project within Steller sea lion critical habitat is necessary because pollock aggregations must be encountered to support the work, and historical information about the occurrence of pollock indicates that pollock aggregations are likely to occur inside critical habitat. As seen in the 2005 pollock fishery, it may be difficult to conduct the project outside of critical habitat because of the difficulty in finding sufficient quantities of pollock. The EFP is needed only for the first and second phases of the project because no exemptions from fishery regulations at 50 CFR part 679 are needed for the sonar self-noise test under Phase 1 or the opportunistic acoustic survey under Phase 2. The time period of the project is March 1, 2006 through April 30, 2006, with the possibility of modifying the permit for an extension up to 12 months to complete the work.

The EFP is necessary to allow the applicant to fish for pollock in the study area, inside critical habitat which is normally closed to pollock fishing. Pollock fishing is necessary to verify acoustic sign and financially support the survey effort. Exemption from portions of the closure areas at Kanaga Sound and Atka Island are necessary to ensure the participants encounter enough pollock to test the feasibility of acoustic survey work with commercial vessels in the Aleutian Islands subarea. As further explained below in section 4.1, historical information indicates that either of these areas should provide enough pollock to allow completion of the project.

1.3 Project Area


The acoustic survey and supporting fishing will take place in one of two areas of the Aleutian Islands Subarea, Kanaga Sound or Atka Island. Fishing activities would include State waters which require permission from the ADF&G.

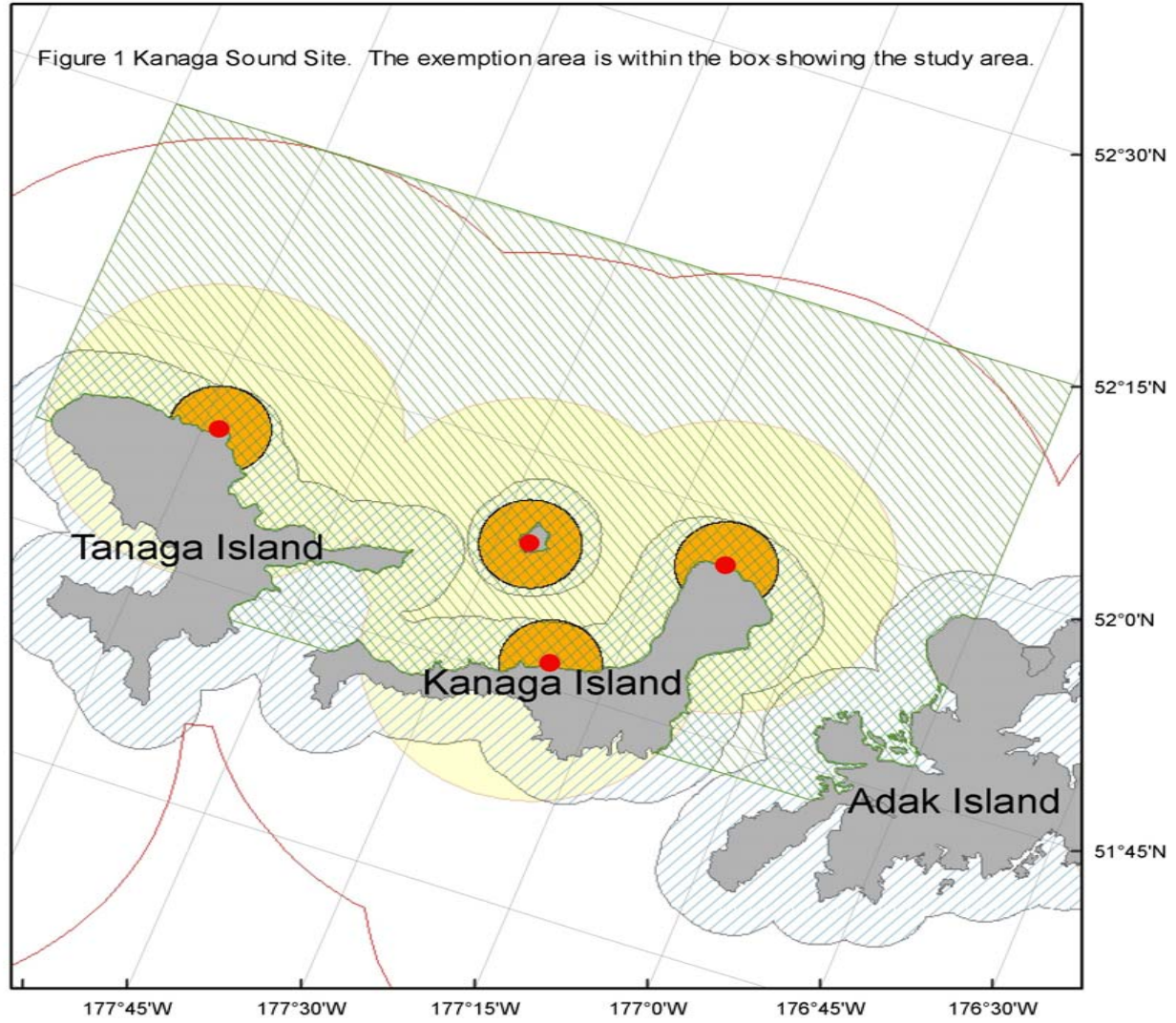
The Kanaga Sound site is waters within the study area delineated by a box with the northern boundary of 52° 15' latitude and a southern boundary of 51° 43' latitude from Adak Island to the eastern shore of Tanaga Island. The eastern boundary is 176° 45' longitude W and the western boundary is 178° 15' longitude W south to 51° 52' N latitude. The southern boundary of this portion

of the box on the west side of Tanaga Island is at $51^{\circ} 52' N$ latitude between $178^{\circ} 15'$ longitude W and $178^{\circ} 13' 22''$ longitude W (Figure 1). This area is located within statistical area 542 of the BSAI.

Figure 1 Kanaga Sound Site. The exemption area is within the box showing the study area.

Legend

-  Study Area
-  State Waters
-  Sea Lion Haulout
-  SSL 3 NMI
-  SSL 10 NMI
-  SSL 20 NMI

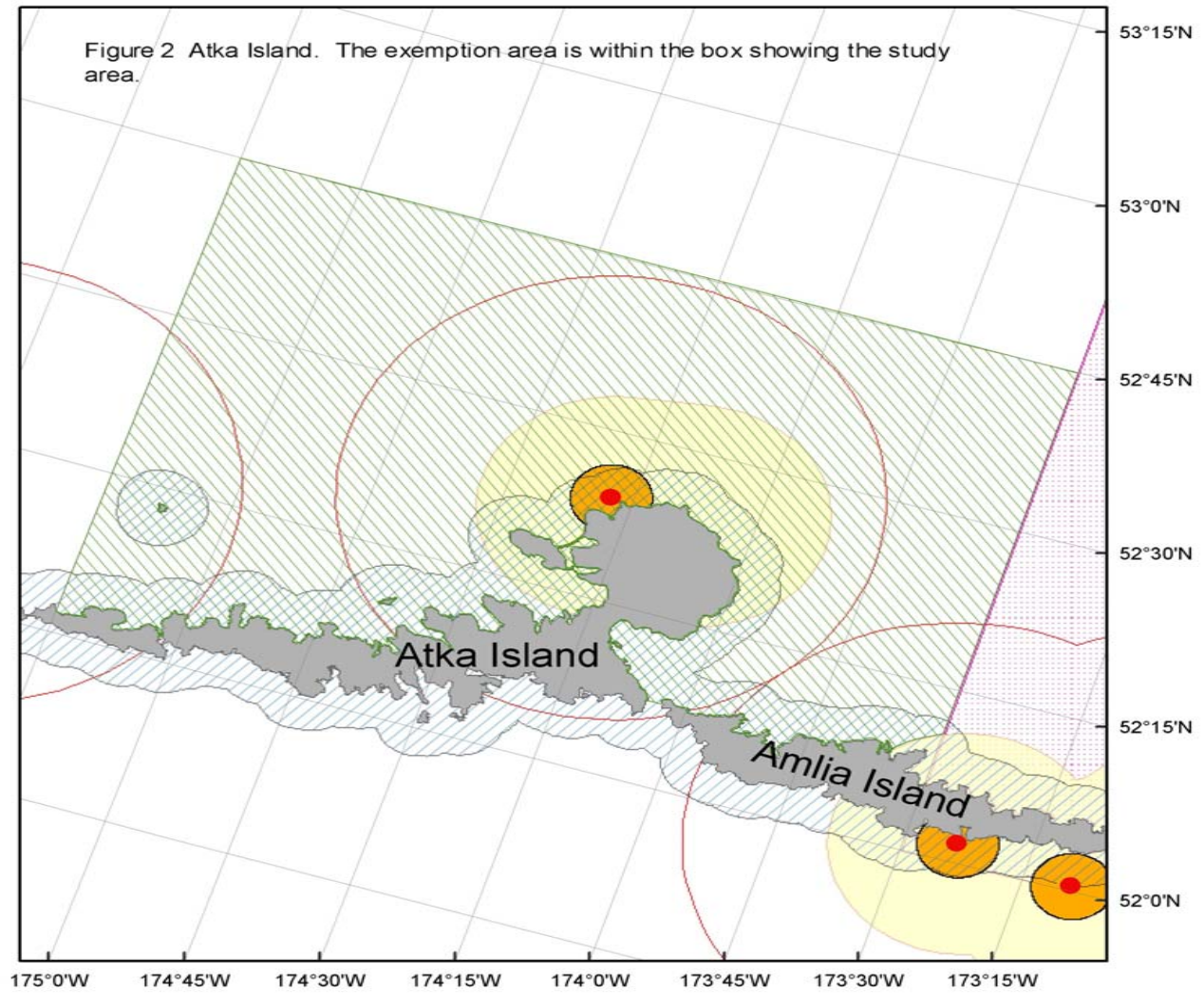


The Atka Island site is waters north of Atka and Amlia Island between 173°30' W longitude and 175°15' W longitude and south of 52°45' N latitude. At Amlia pass, the area includes waters north of a line at 52 deg. 7' 30" North latitude between 174 deg. 3' W longitude and 174deg. 5' 1" W longitude (Figure 2). This area is located in statistical area 541 of the BSAI

Figure 2 Atka Island. The exemption area is within the box showing the study area.

Legend

-  Study Area
-  State Waters
-  Sea Lion Haulout
-  SSL 3 NMI
-  SSL 10 NMI
-  SSL 20 NMI
-  Segum Closure



2.0 Descriptions of Alternatives

The applicant has worked with the Alaska Fisheries Science Center in the development of the project, and this project has been approved by the AFSC (Demaster 2006). Completion of the project would require the applicants' exemption from several regulations under 50 CFR part 679, including portions of the Steller sea lion closures as identified in Figures 1 and 2. Because meeting the purpose of this project is only possible within the context of the experimental design, the alternatives are limited to the following:

Alternative 1: No action alternative. The applicant's request for the EFP is denied.

Alternative 2: Issue the EFP including the following exemptions and conditions. The EFP would allow the applicant to use one vessel to conduct the experiment as designed in cooperation with the Alaska Fisheries Science Center (AFSC). Details of the experiment are contained in Appendix A. The exemptions only apply to Federal waters. Any fishing activities in State waters (within 3 nm) would require an Alaska Department of Fish and Game Commissioner's permit.

1. **§ 679.7(a)(2):** This regulation states that persons are prohibited from conducting any fishing contrary to notification of inseason actions, closures, or adjustments under §§ 679.20, 679.21, 679.22, and 679.25. Nearly all the groundfish harvested will be pollock, with small amounts of Pacific ocean perch also expected to be taken. A small potential exists that the pollock fishery in the Aleutian Islands subarea may be restricted due to northern, shorttraker or rougheye rockfish bycatch. As long as the bycatch of these rockfish species remain below the overfishing level, the applicant would be exempt from these potential pollock fishery closures.

2. The total amount of groundfish taken and retained during work performed under the EFP may not exceed 1000 mt. The majority of this harvest is expected to be pollock. Two areas are identified where the exemptions may apply, Atka Island or Kanaga Sound. Two areas are provided for the project in the event that no aggregations of fish can be found in one of the areas. Only one area may be used for the acoustic survey and verification fishing. No more than 1,000 mt of groundfish may be harvested from a single site in this project as described in section 1.3. If this limit is reached, fishing activities under the EFP must stop. The Regional Administrator must be notified before the limit is reached, if modification of the EFP is to be considered. Considerations may include, but are not limited to: (1) the present amount of harvest of groundfish species by the groundfish fisheries compared to the annual TACs, (2) the progress of the project to date, and (3) the potential impacts of any modification of the EFP.

Fishing may occur within 3 nm of haulouts in the study area to verify acoustic survey data. No more than 10 mt of groundfish may be harvested in a tow. The applicant must work with the NMFS scientist to ensure that the amount of groundfish harvested within 0 nm to 3 nm of a haulout is the minimum amount necessary to verify the acoustic survey data.

3. **§ 679.20(e)**: Maximum retainable amounts of incidentally taken species are specified in Table 11 for the BSAI. The applicant will be exempt from these amounts for groundfish to allow the retention of all groundfish. By retaining the incidentally caught groundfish, the applicant will be able to accurately document the species weight and composition harvested and compare this information to the acoustic data.

All retained groundfish species will be counted against the annual TAC amounts (50 CFR 679.20).

4. All prohibited species taken will be handled as required by regulation and counted against any prohibited species limits that apply to the Aleutian Islands directed pollock fishery (50 CFR 679.21). All Chinook salmon taken will count against the Chinook salmon prohibited species limit of 647 fish, as established for the Aleutian Islands directed pollock fishery (50 CFR 679.21(e)(1)(ix)).

5. **§ 679.22(a)(8)(ii)** This regulation establishes 20 nautical mile closures around Steller sea lion haulouts and rookeries in the Aleutian Islands subarea. The permit would exempt the applicant from pollock fishery closures only in the waters of the two study sites as described above in section 1.3. Fishing is limited to either Atka Island or Kanaga Sound sites.

6. The effective date of the permit would be March 1, 2006 through April 30, 2006. The permit may be modified to extend the valid dates up to 12 additional months in the case of unforeseen circumstances preventing the completion of the project within the valid dates of the permit.

7. A NMFS-certified observer must be available at the Adak plant to observe 100 percent of the shoreside deliveries of fish taken under the EFP. 50 CFR 679.50(d)(1) requires shoreside plants to have an observer present at the facility each day it receives or processes groundfish, if more than 1,000 mt of groundfish is processed in a month. Considering the fish harvested under this EFP and other potential shoreside deliveries, it is possible that more than 1,000 mt of groundfish will be delivered to the Adak plant in a month, and therefore, the daily observer coverage would apply. In addition, a NMFS scientist must be on board the vessel at all time during the project to ensure the activities are conducted as described in the project plan and to ensure that attempts are made to resolve any problems in a manner that will not invalidate the work.

3.0 Affected Environment

The NEPA documents listed below contain extensive information on the fishery management areas, marine resources, ecosystem, social and economic parameters of these fisheries and the harvest specifications. Rather than duplicate an affected environment description here, readers are referred to those documents. All of these are public documents and are readily available in printed form or over the Internet at links given in the references. Because this action is limited in area and scope, the description of the affected environment is incorporated by reference from the following

documents: The following documents are available from <http://www.fakr.noaa.gov/index/analyses/analyses.asp>.

Amendment 84a to Modify Existing Chinook and Chum Salmon Savings Areas Environmental Assessment/Regulatory Impact Review /Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) (NPFMC 2005b): The North Pacific Fishery Management Council has recommended analysis of potential changes to the management of salmon bycatch in the BSAI. Salmon is primarily taken in the pollock trawl fisheries and current management measures have not prevented the BSAI groundfish fisheries from exceeding the incidental take statement for Chinook salmon under the last biological opinion on ESA-listed Chinook salmon. Closures of the Chinook Salmon Savings Areas have been triggered by the pollock fishery exceeding the Chinook salmon limit of 29,000 fish in the Bering Sea in 2004 and 2005. These closures appear to increase rates of salmon bycatch by shifting the pollock fleet out of areas that currently have lower bycatch rates. Increased salmon bycatch outside of the closure areas may be due to shifts in salmon distribution. Section 3 contains the latest information regarding the pollock fisheries in the BSAI and salmon bycatch, including harvest and bycatch rates, locations and potential effects on salmon species by the groundfish fisheries.

Amendment 82 for the Aleutian Islands Directed Pollock Fishery EA/RIR (NMFS 2005). Amendment 82 to the BSAI groundfish FMP established the direct pollock fishery in the Aleutian Islands as required by the CAA. Section 3.0 contains a detailed description of the Aleutian Islands pollock fishery history and catch data and Steller sea lion issues including population trends and historical protection measures for the groundfish fisheries.

Harvest Specification EA. The 2006 and 2007 harvest specifications were analyzed in an EA and a FONSI determination was made prior to publication of the final harvest specification (NMFS 2006). This document contains the latest information on the status of target species (Appendix A) and contains the latest analysis of the effects on the groundfish species on all components of the human environment. Additionally, the ecosystem considerations section of the Stock Assessment and Fishery Evaluation reports is included as Appendix C to the 2006 and 2007 harvest specifications EA. The stock assessment for Aleutian Islands pollock is in Appendix C and shows that the stock is not considered overfished nor approaching an overfished condition. The SAFE report also contains summaries and references to recent studies and information applicable to understanding and interpreting the criteria used to evaluate significance of impacts that will result from alternative harvest quotas.

Alaska Groundfish Programmatic Supplemental Environmental Impact Statement (PSEIS) (NMFS 2004). A programmatic SEIS was completed August 2004. This document evaluated the fishery management policies embedded in the BSAI and GOA groundfish FMPs against policy level alternatives and the setting of TACs and ABCs at various levels. This document provides a comprehensive review of the groundfish fisheries, the affected environment and potential impacts.

Steller Sea Lion Protection Measures Supplemental EIS (NMFS 2001). This document includes the detailed description of the Steller sea lion protection measures and the biological opinion for these

measures (Appendix A). Extensive descriptions and analysis of the effects of the groundfish fisheries on Steller sea lions and other components of the human environment are provided.

4.0 Environmental and Economic Consequences

Environmental Components Potentially Affected

The issuance of the EFP is limited in scope and will not likely affect all environmental components of the BSAI. This project involves the taking of groundfish species, primarily pollock in two areas of the Aleutian Island using pelagic trawl gear. The applicant requested that the groundfish taken be counted against the TACs. In 2005, most of the Aleutian Islands pollock TAC was unharvested (about 1.2 percent of initial annual TAC harvested based on NMFS inseason data). If harvests are similar to last year, the TAC and acceptable biological catch (ABC) are not likely to be approached in 2006, even with the harvest anticipated with the project supported by the EFP. An exemption from the TAC limits is therefore not necessary to facilitate the project.

Because the amounts of groundfish taken will be applied against the TACs, the duration is for one year with the possibility of an additional year to complete the work, and the gear type and method of harvest would not change from current practices, no effects beyond those already identified are expected on the physical environment, benthic communities, non specified and forage species, target species, and seabird components of the environment (NMFS 2006). Ecosystem effects also are not expected due to the short duration of the activity, the limited amount of harvest, and the small area identified for the activity. Ecosystem effects are usually evaluated based on large scale activities (in either time, place or amount of harvest).

Table 4.0-1 shows the potentially affected environmental components. The 2005 Aleutian Islands groundfish fishery will be the baseline for purposes of this analysis. Because the location of fishing and the amount of pollock harvest would change from the 2005 fishery, three potential environmental sectors may be impacted: marine mammals, PSC, and socioeconomic. Steller sea lions in the area of the project may be impacted by fishing activities within the Steller sea lion closure areas that the applicant would receive exemptions from under the permit. Under PSC, the effects are limited to Pacific halibut and Pacific salmon, which may be taken during the project. Socioeconomic effects may occur by allowing fishing under the EFP in areas that historically have yielded pollock. More potential exists for the Aleut Enterprise Corporation to harvest an additional portion of their pollock allocation compared to pollock harvests in 2005. This additional harvest would not be available to reallocated to the Bering Sea pollock fishery.

Table 4.0-1 Resources potentially affected by EFP Alternatives

	Potentially Affected Component								
Alternatives	Physical	Benthic Comm.	Ground fish	Marine Mammals	Seabirds	Non and forage specified Species	Prohibited Species	Ecosystem	Socioeconomic

1	N	N	N	N	N	N	N	N	N
2	N	N	N	Y	N	N	Y	N	Y

N = no impact beyond status quo anticipated by the option on the component.

Y = an impact beyond status quo is possible if the option is implemented.

This section forms the scientific and analytical basis for the issue comparisons across alternatives. As a starting point, Alternative 2 is perceived as having the potential to affect one or more components of the human environment. The significance of the potential effect is determined by considering the context in which the action will occur and the intensity of the action. The context in which the action will occur includes the specific resources, ecosystem, and the human environment affected. The intensity of the action includes the type of impact (beneficial versus adverse), duration of the impact (short versus long term), magnitude of impact (minor versus major), and degree of risk (high versus low level of probability of an impact occurring). Further tests of intensity include: (1) the potential for compromising the sustainability of any target or nontarget species; (2) substantial damage to marine habitats and/or essential fish habitat; (3) impacts on public health or safety; (4) impacts on endangered or threatened species, or critical habitat of listed species; (5) cumulative adverse effects; (6) impacts on biodiversity and ecosystem function; (7) significant social or economic impacts; and (8) degree of controversy (NOAA Administrative Order 216-6, Section 6.02).

Differences between direct and indirect effects are primarily linked to the time and place of impact. Direct effects are caused by the action and occur at the same time and place. Indirect effects occur later in time and/or are further removed in distance from the direct effects (40 CFR 1508.27). For example, the direct effects of an alternative which lowers the harvest level of a target fish could include a beneficial impact to the targeted stock of fish, a neutral impact on the ecosystem, and an adverse impact on net revenues to fishermen, while the indirect effects of that same alternative could include beneficial impacts on the ability of Steller sea lions to forage for prey, neutral impacts on incidental levels of prohibited species catch, and adverse impacts in the form of economic distribution effects, for example, reducing employment and tax revenues to coastal fishing communities.

The section below contains an explanation of the significance criteria. The following ratings for significance are used: beneficial significance, adverse significance, insignificant, and unknown. Where sufficient information on direct and indirect effects is available, rating criteria are quantitative in nature. In other instances, where less information is available, the discussions and rating criteria used are qualitative in nature. In instances where criteria to determine an aspect of significance (significant adverse, insignificant, or significant beneficial) do not logically exist, no criteria are noted. These situations are termed “not applicable” in the criteria tables. An example of an instance where criteria do not logically exist, is the evaluation of the impact vector of incidental take on a declining stock of marine mammals. In that situation, an increase in take that caused a downward change in the population trajectory by greater than 10% is significant adverse. Any level below that which would have an effect on population trajectories is insignificant because the stock is continuing to decline regardless of fishery effects. There is no logical significant

beneficial alternative (a reduction in take resulting in a beneficial effect on the population trajectory). Therefore, a criterion for significant beneficial is not applicable (NMFS 2004).

The rating terminology used to determine significance is the same for each resource, species, or issue being treated, however, the basic “perspective” or “reference point” differs depending on the resource, species, or issue being treated. The reference point relates to the biological environment. For each resource or issue evaluated, specific questions were considered in the analysis. In each case, the questions are fundamentally tied to the respective reference point. The generic definitions for the assigned ratings are as follows:

- S+ Significant beneficial effect in relation to the reference point; this determination is based on interpretations of available data and the judgment of the analysts who addressed the topic.
- I Insignificant effect in relation to the reference point; this determination is based upon interpretations of data, along with the judgment of analysts, which suggests that the effects are small and within the “normal variability” surrounding the reference point. When evaluating an economic or management issue it is used when there is evidence the alternative does not positively or negatively affect the respective factor.
- S- Significant adverse effect in relation to the reference point and based on interpretations of data and the judgment of the analysts who addressed the topic.
- U Unknown effect in relation to the reference point; this determination is made in the absence of information or data suitable for interpretation with respect to the question of the impacts on the resource, species, or issue.
- NE No effect is anticipated from implementation of the action.

Prohibited Species

As defined in the BSAI groundfish Fishery Management Plan, this resource component includes,

“...those species and species groups the catch of which must be avoided while fishing for groundfish, and which must be returned to sea with a minimum of injury except when their retention is authorized by other applicable law . . .” (NPFMC, 2005, page 10).

The FMP specifically list Pacific halibut, Pacific herring, Pacific salmon, steelhead, king crab, and Tanner crab as prohibited species.

Fishermen are not permitted to retain prohibited species (unless specifically provided for in regulation). Fisheries are often subject to PSC harvest thresholds, and to restrictions on fishing activity when these thresholds are triggered. These thresholds and restrictions are provided for in the BSAI FMP in Section 3.6.2 (NPFMC 2005) and in regulations at 50 CFR 679.21.

These PSC limits and their associated measures were implemented under amendments to the groundfish FMPs and through regulatory amendments. EAs were prepared for these actions. These EAs determined that these groundfish fisheries restrictions would have insignificant impacts on the

human environment, including PSC species. These conclusions were located in the EAs and accompanying findings of no significant impact (FONSIIs).

Table 4.0-2 Criteria used to estimate the significance of impacts on incidental catch of prohibited species

	Halibut	Herring	Salmon and Steelhead	Crab
No impact	No incidental take of the prohibited species in question.			
Adverse impact	There are incidental takes of the prohibited species in question			
Beneficial impact	Natural at-sea mortality of the prohibited species in question would be reduced – perhaps by the harvest of a predator or by the harvest of a species that competes for prey.			
Significantly adverse impact	Fisheries are subject to operational constraints under PSC management measures. Groundfish fisheries without the PSC management measures would be a significantly adverse effect.			
Significantly beneficial impact	No benchmarks are available for significantly beneficial impact of the groundfish fishery on the prohibited species, and significantly beneficial impacts are not defined for these species.			
Unknown impact	Not applicable			

Marine Mammals and ESA Listed Marine Mammals

Direct and indirect interactions between marine mammals and groundfish harvest may occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey, and due to temporal and spatial overlap in marine mammal occurrence and commercial fishing activities.

Impacts of the alternative are analyzed by addressing three questions: (1) do the proposed harvest levels result in increases in direct interactions with marine mammals (incidental take and entanglement in marine debris); (2) do the proposed harvest levels remove prey species at levels or in areas that could compromise foraging success of marine mammals (harvest of prey species); (3) do the proposed harvest levels modify marine mammal behavior (disturbance)?

Significant incidental take of marine mammals is determined by predicting whether the proposed harvest levels will result in a take that exceeds the potential biological removal (PBR) The PBR is the maximum number of animals that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The PBR is used for marine mammals because it is the value determined through the marine mammal stock assessments (Angliss and Lodge 2004) to identify the level at which animals may be removed from the stocks while the stocks achieves sustainable populations. As long as take is maintained within the PBR, the take is considered not significant. Significance ratings for each question are summarized in Table 4.0-3.

Table 4.0-3 Criteria for determining significance of impacts to marine mammals.

	Incidental take and entanglement in marine debris	Harvest of prey species	Disturbance
No impact	No incidental take by fishing operations, and no	No competition for key marine mammal prey	No disturbance of mammals or their prey.

	entanglement in marine debris	species by the fishery.	
Adverse impact	Mammals are taken incidentally to fishing operations, or become entangled in marine debris	Fisheries reduce the availability of marine mammal prey.	Fishing operations disturb marine mammals or the prey of marine mammals.
Beneficial impact	There is no beneficial impact.	There are no beneficial impacts.	There is no beneficial impact.
Significantly adverse impact	Incidental take is more than PBR	Competition for key prey species likely to constrain foraging success of marine mammal species causing population decline.	Disturbance of mammal or prey field such that population is likely to decrease.
Significantly beneficial impact	Not applicable	Not applicable	Not applicable
Unknown impact	Insufficient information available on take rates	Insufficient information as to what constitutes a key area or important time of year	Insufficient information as to what constitutes disturbance.

4.1 Marine Mammals and ESA-listed Marine Mammals

Because the study will be conducted in one of two areas identified in section 1.3 of the Aleutian Islands and because of the type of gear and target fishery, the species of marine mammal that may be impacted are limited. According to the proposed List of Fisheries for 2005 (69 FR 70094, December 2, 2004), the only marine mammal species that have been killed or injured by the BSAI pollock trawl fisheries are Steller sea lions, killer whales and humpback whales. Steller sea lions and humpback whales are listed as endangered species in the study area. Pollock has been identified as a principal prey species for Steller sea lions and fishing activities will occur in Steller sea lion critical habitat.

The ESA-listed southwest Alaska distinct population segment of northern sea otters and the Gulf of Alaska stock of harbor seals also may be resident in the area where fishing under the EFP may occur (Angliss and Lodge, 2004). Disturbance is a possibility for both species but would not be likely to cause population level effects based on one vessel fishing for two weeks in a limited area. Sea otter diet primarily consists of invertebrates, and therefore, does not overlap with groundfish fisheries harvest. No record of incidental take by trawl gear of sea otters exists (NMFS, North Pacific Groundfish Observer Program, and vessel operator reports under the Marine Mammal Protection Act, December 2005 and List of Fisheries 2005). No incidental take of harbor seals in the pollock trawl fishery has been reported, based on the proposed List of Fisheries for 2005. There is some diet overlap between the pollock fishery and harbor seals (based on ADF&G wildlife notebook, <http://www.adfg.state.ak.us/pubs/notebook/marine/harseal.php>), but the removal on pollock by one vessel in one area in a two week time period is not expected to compete with harbor seals to a level that may cause a population decline. Harbor seals eat a variety of fish, and therefore, may not experience as much competition as other marine mammals that are more dependent on pollock. Based on these considerations, the potential impact of the EFP is likely to be not significant on sea otters and harbor seals. Any potential disturbance effect on sea otters is likely to be discountable, and therefore, no consultation under section 7 would be needed for this action.

Steller sea lions

Non pup Steller sea lion surveys at the proposed Kanaga Sound study area have been conducted at haulouts on Bobrof Island, Kanaga Island North Cape, and Kanaga Island Ship Rock. Surveys also have been conducted at Kanaga Island Cape Miga, a sea lion haulout. The Cape Miga site is not listed as Steller sea lion critical habitat; the other three sites are listed as critical habitat.¹ No pup counts have been made at most of these sites, although aerial survey pup counts were made at Kanaga Island Ship Rock, a haulout, in 2001 and 2002 yielding counts of 92 and 113, respectively.² Another pup count was made at that haulout on July 6, 2005 by aerial survey; the count was 221 pups.³

Most surveys have been conducted during summer months, although some winter data are available for these sites for the years 1962 and 1965 (April surveys – winter/spring) and 1993, 1998, and 1999 (March surveys). Winter counts on Bobrof Island in 1993 and 1999 were 190 and 76 non pups, respectively. At Kanaga Island North Cape winter non pup surveys were conducted in April 1962 and 1965 but no animals were seen. In March 1993, 1998, and 1999 counts at this site were 210, 0, and 118, respectively. At the Kanaga Island Ship Rock haulout, winter counts during April 1962 and 1965 were 0 and 150 non pups, respectively. At that site winter counts were made in March 1993, 1998, and 1999; the numbers of non pups counted in those surveys were 98, 0, and 196 (first count; 232 were counted at this site three days after the first count), respectively. At the Kanaga Island Cape Miga haulout 0 and 25 non pups were counted during April surveys in 1962 and 1965, respectively. No non pups were counted at this site during a March 1999 survey.

Non pup counts for these sites are provided below in Table 4.1-1.⁴

Table 4.1-1 Steller sea lion non pup counts at Kanaga Sound study area

Survey Site	Month	Day	Year	Count
Bobrof Island	6	20	1992	150
Bobrof Island	3	15	1993	190
Bobrof Island	6	15	1998	13
Bobrof Island	3	2	1999	76
Bobrof Island	6	15	2000	0

¹ ESA Section 7 Consultation Biological Opinion and Incidental Take Statement, October 2001, National Marine Fisheries Service, Alaska Region, October 19, 2001.

² Fritz, L.W. and C. Stinchcomb. Undated manuscript. Aerial, ship, and land-based surveys of Steller sea lions (*Eumetopias jubatus*) in the western stock in Alaska, June and July 2003 and 2004. National Marine Mammal Laboratory, Seattle.

³ Memorandum for the record, October 20, 2005, Lowell Fritz, Charles Stinchcomb, and Wayne Perryman, National Marine Mammal Laboratory, Seattle.

⁴ Steller sea lion pup and nonpup count data base, National Marine Mammal Laboratory, Seattle.
<http://nmml.afsc.noaa.gov/AlaskaEcosystems/sslhome/Databases/Adult%20count%20database.htm>
<http://nmml.afsc.noaa.gov/AlaskaEcosystems/sslhome/Databases/Pup%20count%20database.htm>

Bobrof Island	6	19	2002	28
Bobrof Island	6	23	2004	49
Kanaga I. No. Cape	5	25	1959	0
Kanaga I. No. Cape	4	5	1962	0
Kanaga I. No. Cape	4	5	1965	0
Kanaga I. No. Cape	6	28	1979	309
Kanaga I. No. Cape	6	13	1985	155
Kanaga I. No. Cape	5	4	1987	300
Kanaga I. No. Cape	6	20	1989	0
Kanaga I. No. Cape	6	22	1991	75
Kanaga I. No. Cape	6	20	1992	24
Kanaga I. No. Cape	3	15	1993	210
Kanaga I. No. Cape	6	29	1994	30
Kanaga I. No. Cape	6	29	1994	30
Kanaga I. No. Cape	6	22	1994	10
Kanaga I. No. Cape	6	18	1996	34
Kanaga I. No. Cape	3	4	1998	0
Kanaga I. No. Cape	3	2	1999	118
Kanaga I. No. Cape	6	15	2000	25
Kanaga I. No. Cape	6	19	2002	12
Kanaga I. No. Cape	6	15	2004	7
Kanaga I. Ship Rock	5	25	1959	0
Kanaga I. Ship Rock	4	5	1962	0
Kanaga I. Ship Rock	4	26	1965	150
Kanaga I. Ship Rock	7	99	1977	24
Kanaga I. Ship Rock	6	28	1979	168
Kanaga I. Ship Rock	6	13	1985	314
Kanaga I. Ship Rock	5	4	1987	40
Kanaga I. Ship Rock	6	20	1989	0
Kanaga I. Ship Rock	6	22	1991	92
Kanaga I. Ship Rock	6	20	1992	93
Kanaga I. Ship Rock	3	15	1993	98
Kanaga I. Ship Rock	6	20	1994	172
Kanaga I. Ship Rock	6	28	1994	177
Kanaga I. Ship Rock	6	18	1996	146
Kanaga I. Ship Rock	3	4	1998	0
Kanaga I. Ship Rock	6	15	1998	164
Kanaga I. Ship Rock	3	3	1999	196
Kanaga I. Ship Rock	3	6	1999	232
Kanaga I. Ship Rock	6	15	2000	156
Kanaga I. Ship Rock	6	19	2002	242
Kanaga I. Ship Rock	6	15	2004	229
Kanaga I. Cape Miga	4	5	1962	0
Kanaga I. Cape Miga	4	26	1965	25
Kanaga I. Cape Miga	7	99	1977	135

Kanaga I. Cape Miga	6	28	1979	14
Kanaga I. Cape Miga	6	13	1985	0
Kanaga I. Cape Miga	5	4	1987	0
Kanaga I. Cape Miga	6	20	1989	0
Kanaga I. Cape Miga	6	18	1996	34
Kanaga I. Cape Miga	3	2	1999	0
Kanaga I. Cape Miga	6	15	2000	1
Kanaga I. Cape Miga	6	15	2004	0

Non pup Steller sea lion surveys at the proposed Atka Island study area have been conducted at a haulout on Atka Island at North Cape. No pup counts have been made at this site.

As noted above for the Kanaga Sound study area, most Steller sea lion surveys have been conducted during summer months, although some winter data are available for some sites; on the Atka Island site there are winter counts for the years 1962 (winter/spring), 1993 and 1999. One survey conducted during April 1962 resulted in a count of 4,300 non pups. Surveys during March 1993 and 1999 counted 138 and 230 non pups (first count; second count four days later was 203), respectively.

Non pup counts for this site are provided below in Table 4.1-2.

Table 4.1-2 Steller sea lion non pup counts at Atka Island study area

Survey Site	Month	Day	Year	Count
Atka I. No. Cape	5	26	1959	550
Atka I. No. Cape	4	6	1962	4300
Atka I. No. Cape	6	25	1979	1192
Atka I. No. Cape	6	12	1985	653
Atka I. No. Cape	5	3	1987	855
Atka I. No. Cape	6	17	1989	333
Atka I. No. Cape	6	20	1990	153
Atka I. No. Cape	6	21	1991	180
Atka I. No. Cape	6	12	1992	80
Atka I. No. Cape	6	19	1992	156
Atka I. No. Cape	3	15	1993	148
Atka I. No. Cape	6	17	1994	68
Atka I. No. Cape	6	27	1994	38
Atka I. No. Cape	6	18	1996	59
Atka I. No. Cape	6	14	1998	156
Atka I. No. Cape	3	2	1999	230
Atka I. No. Cape	3	6	1999	203
Atka I. No. Cape	8	6	1999	60
Atka I. No. Cape	6	18	2000	76
Atka I. No. Cape	6	19	2002	224
Atka I. No. Cape	6	15	2004	383

Incidental take and entanglement: By fishing inside critical habitat, the proposed action may increase the likelihood of encountering Steller sea lions and may increase the potential for incidental take. It is assumed that the number of Steller sea lions encountered inside critical habitat will be greater than the number of animals encountered by fishing vessels outside of critical habitat. Tables 4.1-1 and 4.1-2 show that more than 100 animals may be present at three of the four haulouts in the study areas during the time of the study. The potential for encountering a sea lion is lessened by limiting the amount of fishing that may take place inside the 3 nm closure around the haulouts.

The current annual potential biological removal (PBR) for the western distinct population segment of Steller sea lions is 231 animals (Angliss and Lodge, 2004). Approximately 10 animals are taken in the entire BSAI and Gulf of Alaska fisheries each year. It is unlikely that any potential take of Steller sea lions during the study in combination with takes in the groundfish fisheries would be enough to exceed the PBR. Because the PBR is unlikely to be exceeded, the potential effects on incidental take of Steller sea lions by the EFP activities are not significant.

Harvest of Prey Species:

The Steller sea lion protection measures for pollock harvest include the overall harvest control and temporal and spatial dispersion. The harvest of pollock under the EFP will be within the TAC and therefore within the harvest control established under 50 CFR 670.20(d)(4). Temporal dispersion also will be met by applying the EFP harvest to the TAC which is temporally dispersed. Spatial dispersion of harvest may be of a concern because of the exemption to the fishing closures near the Steller sea lion haulouts in the study areas.

In both the Kanaga Sound and Atka study areas, past pollock fishing efforts have been concentrated in the 100 fathom to 500 fathom isobaths. The portion of the area harvest of pollock taken in these sites during the 1990s varied. For Kanaga Sound, the harvest of pollock in the 1990s made up at least 81 % of area 541 harvests (Table 4.1-3). Catch data include directed fishery harvest and incidental take in the Pacific cod fishery.

Table 4.1-3. Recent catch data for the Kanaga Sound area.

Year	Observed Catch (mt) *	% Pollock **	541+ 542 A-season Sub-Total				Aleutian Island Annual Catch (mt)	(541+542) A-season		Area % of AI Total	Area % of District Annual
			Catch (mt) ***	541 District Annual Catch (mt)	542 District Annual Catch (mt)	543 District Annual Catch (mt)		% of AI Total			
1993	2,493	99.49%	23,001	54,512	2,536	83	57,131	40%	4%	98%	
1995	35,935	99.58%	63,988	28,109	36,714	102	64,925	99%	55%	98%	
1996	20,884	99.52%	27,760	9,226	19,574	216	29,016	96%	72%	107%	
1997	14,868	99.58%	23,001	8,110	16,799	1,031	25,940	89%	57%	89%	
1998	3,114	99.28%	5,120	1,837	3,858	18,127	23,822	21%	13%	81%	

* This is the observed official total catch for Jan-Apr (includes bycatch).

** This is the percent Pollock in the observed species composition samples for the area.

*** This is the total catch in NMFS Areas 541 and 542 for Jan-Apr.

Source: Steve Barbeaux, NMFS, AFSC, 12/05

In the Atka Island site, the harvest of pollock in the 1990s varied from 7 % to 78% of area 541 harvests (Table 4.1-4). It appears that the majority of the Aleutian Islands pollock harvests shifted after 1995 from area 541 to area 542. Much of the harvest in this time period was part of a large 1978 year class (Steve Bareaux, personal communication. AFSC. 12/29/05). In 1998, only 1,837 mt of pollock was harvested in Area 541 with 78 percent of this harvest coming from the Atka Island area. Catch data include directed fishery harvest and incidental take in the Pacific cod fishery.

Table 4.1-4. Recent catch data for the Atka Island area.

Year	Observed Catch (mt) *	% Pollock **	541+ 542 A-season			Aleutian Island			(541+542) A-season		Area % of District Annual
			Sub-Total Catch (mt) ***	541 District Annual Catch (mt)	542 District Annual Catch (mt)	543 District Annual Catch (mt)	Annual Catch (mt)	% of AI Total	% of AI Total		
1992	6,247	98.50%	38,315	52,140	206	6	52,352	73%	12%	12%	
1993	14,011	99.29%	23,001	54,512	2,536	83	57,131	40%	25%	26%	
1994	4,219	99.64%	47,045	58,091	554	15	58,660	80%	7%	7%	
1995	16,869	98.96%	63,988	28,109	36,714	102	64,925	99%	26%	60%	
1996	1,894	99.83%	27,760	9,226	19,574	216	29,016	96%	7%	21%	
1997	3,822	98.56%	23,001	8,110	16,799	1,031	25,940	89%	15%	47%	
1998	1,428	98.76%	5,120	1,837	3,858	18,127	23,822	21%	6%	78%	

* This is the observed official total catch for Jan-Apr (includes bycatch).

** This is the percent Pollock in the observed species composition samples for the area.

*** This is the total catch in NMFS Areas 541 and 542 for Jan-Apr.

Source: Steve Barbeaux, NMFS, AFSC, 12/05

Pollock is a principal prey species for Steller sea lions in the Aleutian Islands. Between 1990 and 1998, scat sampling conducted in the winter showed that pollock was present in 63 percent of the samples from area 541 and in 2 percent of samples taken from area 542 (NMFS 2000, table 4.5a). Based on the differences in the occurrence of pollock in scat samples, pollock may be more important to Steller sea lions using the Atka Island/North Cape haulout than for animals using haulouts near Kanaga Sound.

Up to 1,000 mt of pollock could be taken from one of the two study sites under the EFP. The amount of groundfish harvest within 3 nm of a haulout will be limited to 10 mt per tow and tows limited to only as many needed to verify the acoustic data. It is very likely that the majority of the groundfish during the EFP fishing will be pollock (Steve Barbeaux, NMFS AFSC, personal communication, 12/30/05). Based on a 2002 winter pollock survey in the Umnak Island area, the amount of harvest under this EFP is expected to be less than 1 % of the biomass expected to occur in the study areas.(Nishimura, Yanagimoto and Takao, 2002). This amount of overall harvest in relation to biomass is well within the harvest control rule for pollock under the Steller sea lion protection measures (50 CFR 679.20(d)(4)).

Localized depletion of pollock may be a concern for foraging Steller sea lions. Animals using the Atka Island/North Cape haulout may be potentially impacted more based on their greater dependence on pollock as a prey species compared to animals in areas 542. Removing 1,000 mt in a two week time period from Atka Island/North Cape is similar to the overall amount of pollock harvested in 1998 when 78 percent of area 541 pollock harvest was taken from the Atka Island area. We do not know the pollock biomass in this area in 1998. It is possible that this method of harvest may result in localized depletion of pollock prey. This may be a concern for Steller sea lions using the Atka Island/North Cape haulout because scat sampling shows a large portion of the diet consists of pollock. Any impacts on prey would be limited to the animals using the haulouts in the study areas or animals foraging as they pass through the area.

From February 21 through March 1, 2002 the R/V Kaiyo Maru conducted an echo integration-trawl survey (EIT) in the Aleutian Islands area that partially covered the two proposed study sites (Appendix B). The survey estimates produced by this survey are considered conservative because the survey was limited to waters deeper than 100m, a portion of pollock biomass would be expected to be inshore of 100m at this time of year. The 2002 EIT survey estimated there to be approximately 20,000 mt in the portion of the Atka Island study area (Leg 2-2) surveyed and 18,000 mt within the portion of the Kanaga Island study area (Leg 2-4) surveyed. For the entire survey region from 170° W longitude to 178° W longitude the 2002 EIT survey estimated the pollock biomass to be 123,000 mt. Due to a higher than average 1999 year class the biomass in the Aleutian Islands in 2006 is expected to be larger than that observed in 2002 (Barbeaux et al. 2005). Given the conservative estimates provided by the 2002 EIT survey, this study would be expected to take less than 5.0 % or 5.5 % of the pollock biomass in the Atka Island or Kanaga Island study areas respectively and less than 0.8 % of the pollock biomass for the region between 170° W longitude to 178° W longitude.

Because of the following consideration:

- fishing activity is limited to only one of the areas identified for this project,
 - the area of fishing is limited,
 - each tow inside 3 nm is limited to 10 mt,
 - removals are expected to be less than 1 % of the total biomass for the area,
 - one vessel is used,
 - and the project is of a short duration,
- any impacts on prey species are not likely to cause a population level effect on Steller sea lions. This is likely true even with the possible one year extension of the EFP. The impact of the action on prey resources for Steller sea lions is therefore not significant.

Disturbance: Issuing the EFP would result in one vessel harvesting pollock inside one of the project areas for approximately three weeks in March. Fishing inside critical habitat would increase the possibility of encountering Steller sea lions during fishing operations. The potential for encounters within 3 nm of haulouts is reduced by the limitations on fishing in this area, as determined by the NMFS scientist to verify the acoustic data. Considering the size of the area of each site (Figures 1 and 2) and the relatively small number of animals likely to be using the haulouts (less than 250 animals), disturbance by the single vessel used in this project is possible

but of minor intensity and short duration. Because of the small portion of the western distinct population segment of Steller sea lion that is likely to be present in the project areas and the short duration of the project, any disturbance that may occur, is unlikely to cause population effects. Any disturbance that may occur during the project is therefore not significant.

Even though the impacts of this action are not significant for Steller sea lions, this proposed project may adversely affect some Steller sea lions by increasing the potential for incidental take, disrupting pollock aggregations or reducing available pollock for foraging Steller sea lions, and by disturbance of animals as activities occur in waters where more Steller sea lions may occur (0 nm-3 nm). Because of the potential to adversely affect Steller sea lions, Endangered Species Act Section 7 consultation should be completed before issuing the EFP. On January 17, 2006, the Assistant Regional Administrator for Sustainable Fisheries requested initiation of formal consultation from the Protected Resources Division to determine if the proposed action may result in jeopardy of extinction or adverse modification or destruction of critical habitat for Steller sea lions (Salveson 2006).

Humpback Whales and Killer Whales

The potential effects on humpback whales and killer whales are limited to incidental take and disturbance. Pollock is not likely a major prey species for either whale, and therefore, any pollock harvested during the project would have no significant impacts on prey availability.

Humpback whales that may occur in the study sites are likely from the Western North Pacific stock.(Angliss and Lodge, 2004) This stock generally migrates to Japan during the winter and spring and therefore are unlikely to be in the study area during March. Because of the migration of the humpbacks, any potential for incidental take and disturbance are minimal, and therefore no effects are likely for humpback whales. No ESA consultation will be necessary for this proposed action for humpback whales.

Killer whales from the Gulf of Alaska, Bering Sea and Aleutian Islands transient stock and from the Alaska resident stock may be present in the project areas in March. Killer whales have been incidentally taken in the pollock fisheries in the BSAI. The single vessel operating for three weeks is unlikely to cause disturbance or result in incidental take that may have a population level effect. Therefore, any effects on killer whales are likely not significant.

4.2 Effects on Prohibited Species

The only prohibited species likely to be taken during the EFP activities are Pacific halibut and Pacific salmon. Alternative 1 is the status quo and would have no additional affects on prohibited species that have not already been analyzed (NMFS 2006). Under Alternative 2, the EFP would require salmon and halibut to be treated in the same manner as Alternative 1, as required by the PSC regulations at 50 CFR 679.21. With the increased take of pollock in the Aleutian Islands under the EFP, the amounts of halibut and salmon incidental take are also be expected to increase.

Table 3.7-1 of the Amendment 82 EA shows rates of bycatch in the pollock fishery of the AI (NMFS 2005). The average annual rate for halibut bycatch in areas 541 and 542 between 1993 and 1998 was 0.0222 kg/mt. The average annual rate for Chinook salmon and other salmon in areas 541 and 542 between 1993 and 1998 was 0.019 fish per mt and 0.037 fish per mt, respectively. If the average rates of bycatch between 1993 and 1998 are experienced during the EFP activities, the harvest of 1,000 mt of pollock would result in incidental catch of approximately 22.2 kg of halibut, 19 Chinook salmon, and 37 other salmon. Out of this small number of salmon that potentially may be taken, it is highly unlikely that any of these salmon would be ESA-listed salmon stocks because those are more likely to occur in the Bering Sea and in the Gulf of Alaska based on coded-wire tag recoveries of salmon incidentally taken in the groundfish fisheries (Myers et. al 2005). Because of this relatively small amount of potential bycatch and because no exemptions will be given for the PSC measures in the regulations, the harvest under the EFP is not expected to result in significant impacts on PSC species.

4.3 Social and Economic Effects

Economic and social impacts differ in important ways from the impacts on other resource components examined in this EA. Significance findings for social and economic impacts would not affect a finding of no significant impact (FONSI); see 40 CFR 1508.14. In light of 40 CFR 1508.14, significance determinations are not made for these impacts.

Alternative 1 is the status quo and has no additional socioeconomic effects, beyond those already analyzed (NMFS 2006).

Increased Aleut Corporation pollock revenues in 2006

The Aleut Corporation's AI pollock harvest is limited to 19,000 mt by regulation. The social and economic impacts of harvests up to this level were fully analyzed in the EA/RIR/IRFA for BSAI FMP Amendment 82, which authorized the renewed AI harvest (NMFS 2005). However, Alternative 2 may increase the likelihood that an additional 1,000 mt of the Aleut Corporation's pollock allocation will be harvested by the Corporation's affiliates (within the 19,000 mt limitation) compared to harvests in 2005.

Pollock harvested under the EFP would be processed shoreside at Adak. If the 1,000 mt of pollock were not harvested under the EFP, and was not harvested in by other Aleut Corporation affiliates, it would roll over to the eastern Bering Sea pollock fishery where it would be split between catcher processors, and catcher vessels and shoreside processors (Table 3, 2006 harvest specifications 70 FR 51686, August 31, 2005).

By harvesting 1,000 mt of pollock in the Aleutian Islands, the Aleut Corporation and its affiliates would receive approximately \$849,000 in first wholesale gross revenues, based on 2004 "A" season BSAI first wholesale value per metric ton, round weight, for shoreside deliveries (\$849/metric ton). If the 1,000 mt of pollock were rolled over to the eastern Bering Sea, the participants in the Bering Sea fishery would receive approximately \$966,000 in first wholesale

gross revenues based on a weighted average of the catcher-processor and shoreside processing “A” season prices per metric ton for pollock in the “A” season BSAI fishery in 2004 (\$1,082 and \$849 per metric ton respectively).⁵ Fishing, processing, and transportation costs in the two sectors are unknown, but are believed to be higher in the relatively remote Aleutian Islands, than in the eastern Bering Sea.

New Information and improved utilization of the Aleutian Island Pollock Resource

The results of the study under the EFP may provide a better understanding of pollock aggregations, biomass, and distribution in the Aleutian Islands. The results also may provide an additional method for the AFSC to gather additional stock assessment information for Aleutian Islands pollock. Additional information about the stock may result in increased confidence in the data and the ability to manage the stock at a higher tier level than is currently used.

Under the current level of knowledge and the current fishery restrictions, the pollock resource may not be fully harvested. The lack of information regarding the stock leads to more cautious setting of harvest levels compared to those that might result with the additional information that may be collected during the EFP study. Harvesting pollock under the current Steller sea lion protection measures has been difficult, as seen in 2005 fishery in which only 1.2 % of the initial annual TAC was harvested.

If the study shows that the amount of pollock biomass in a discrete area can be predicted and a harvest amount based on this biomass can be managed, then pollock harvest, and the utilization of the AI pollock TAC, may improve in the long term, compared to current pollock harvest management. Note that improved long-term utilization of the AI pollock TAC implies a commensurate reduction in pollock harvests by the AFA fleets in the eastern Bering Sea.

Economic Development

The intent of establishing the Aleut Corporation pollock allocation was to encourage economic development in Adak. Additional revenue in 2006 should contribute to this objective. Moreover, economic development depends on the ability to harvest the pollock allocation. The results of the study may improve the ability to more fully harvest Aleutian Islands pollock, which may result in more economic activity in Adak with the processing of pollock shoreside. Even at sea processing of pollock would result in more revenues for the Aleut Corporation which can be invested in the Adak community.

5.0 Cumulative Effects

⁵ Values per metric ton round weight were based on weekly production reports and Commercial Operators Annual Reports (COAR), and provided by Terry Hiatt, National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070, on January 9, 2006. BSAI prices represent eastern Bering Sea prices. Not enough AI information is available for a specialized AI first wholesale price.

Analysis of the potential cumulative effects of a proposed action and its alternatives is a requirement of the NEPA. An environmental assessment or environmental impact statement must consider cumulative effects when determining whether an action significantly affects environmental quality. The Council on Environmental Quality (CEQ) regulations for implementing NEPA define cumulative effects as:

“the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

The cumulative effects of the current harvest specifications are discussed in detail in the Harvest Specifications EA (NMFS 2006) and are adopted here by reference. The Harvest Specifications EA is a very recent and broad examination of potential cumulative effects for fisheries throughout Alaskan waters. The findings can therefore be applied to this small portion of the Aleutian Islands pollock fishery. That EA concludes that the foreseeable future actions (ecosystem approaches to management, rationalization, traditional management tools, other government actions and private actions) will all lead to a reduction in the adverse effects of fishing on target species. One exception is the new pollock fishery in the Aleutian Islands that the State of Alaska is considering. At this time, the state managed pollock fishery is no longer a reasonably foreseeable future action based on the decision by the Board of Fisheries to wait for the formal consultation on Steller sea lions which is planned for 2006.

The Harvest Specifications EA states that continued fishing and subsistence harvest are potentially the most important sources of additional adverse impacts on marine mammals, but concludes that a number of factors will tend to reduce impacts in the future (such as a trend toward ecosystem based management and fisheries rationalization).

In summary, the conclusion of the Harvest Specifications EA is that the past, present, and reasonably foreseeable future actions do not appear to require a change in the direct-indirect significance determinations with regard to the environmental components considered in that EA, including PSC species and marine mammals which are analyzed in this EA. Based on the harvest specifications' cumulative effects analysis and on the analysis in this EA, no additional past, present or reasonably foreseeable future actions were identified. Thus, the direct, indirect and cumulative effects for the proposed action are not likely to significantly impact the human environment.

6.0 Environmental Analysis Conclusions

Alternative 1 is the status quo. No EFP would be issued, and therefore, no additional effects would occur beyond those already identified and analyzed in the 2006 and 2007 harvest specifications EA (NMFS 2006). For this reason, impact analyses in this EA were exclusively for Alternative 2. In addition to the 2006 and 2007 harvest specifications EA, the significance of

impacts of the actions analyzed in this EA were determined through consideration of the following information as required by NEPA and 40 CFR 1508.27:

Context: For the issuance of the EFP, the setting of the proposed action is the pollock fishery of the Aleutian Islands. The effects of the issuance of an EFP on society, within this area, are on individuals directly and indirectly participating in the Aleutian Island pollock fishery and on those who use the ocean resources. Because this action may allow improve the use of the Aleutian Islands directed pollock fishery allocation, this action may have regional impacts on society.

Intensity: Listings of considerations to determine intensity of the impacts are in 40 CFR 1508.28(b) and in the NOAA Administrative Order 216-6, Section 6. Each consideration is addressed below in order as it appears in the regulations.

Adverse or beneficial impact determinations for marine resources, including sustainability of target and nontarget species, damage to ocean or coastal habitat or essential fish habitat, effects on biodiversity and ecosystems, and marine mammals: No significant adverse impacts were identified for Alternative 2. No effects were expected on target or nontarget species, ocean or coastal habitat, EFH, biodiversity, the ecosystem or seabirds. Adverse effects on marine mammals were identified for Steller sea lions which requires consultation under the ESA, but these effects are not significant under this NEPA analysis. Potential effects on prohibited species were limited to Pacific halibut and salmon, and those effects were determined to be not significant.

Public health and safety will not be affected in any way not evaluated under previous actions or disproportionately. The EFP will not change fishing methods (including gear types), timing of fishing or quota assignments to gear groups, which are based on previously established seasons and allocation formulas in regulations.

Cultural resources and ecologically critical areas: This action takes place in the geographic area of the Aleutian Islands, generally from 0-20 nm offshore. The land adjacent to this area contains cultural resources and ecologically critical areas. The marine waters where the fisheries occur contain ecologically critical areas. Effects on the unique characteristics of these areas are not anticipated to occur with this action because of the small amount of fish removal by one vessel using fishing gear that is not as likely to impact ecologically critical areas.

Controversiality: This action involves the permitting of a project to improve utilization of an underutilized fishery. The Aleut Corporation, Alaska Fisheries Science Center, and the Council support this action. Fishing inside critical habitat may be controversial but the limited vessel use, timing, discrete areas and harvest amounts reduce the potential for this action being controversial. In addition, the potential for improved management of harvest inside critical habitat may outweigh concerns of potential impacts of the study.

Risks to the human environment, including social and economic effects: Risks to the human environment by the Aleutian Island pollock fishery are described in detail in the 2006 and 2007 harvest specifications EA (NMFS 2006). This action is limited in scope to a project that would last up to two years and with limited amounts of pollock harvest within selected sites of critical habitat. The effect on the human environment from this activity in critical habitat is insignificant. Socioeconomic effects are possible in the future depending on the success of the project and the development of management measures. It is not possible to predict the outcome of the project or future levels of pollock harvest in relation to the Aleutian Islands directed pollock fishery allocation. If the study results in improved utilization of pollock resources in the Aleutian Islands and for Adak, the socioeconomic impacts would likely be beneficial for those participants in the fishery and for residents in Adak.

Future actions related to this action may result in impacts. As described in Section 5.0, future actions depend on the results of the study. Pursuant to NEPA for all future action, appropriate environmental analysis documents (EA or EIS) will be prepared to inform the decision makers of potential impacts to the human environment and to implement mitigation measures to avoid significant adverse impacts. Socioeconomic impacts of improved management of pollock harvest in the Aleutian Islands would likely be beneficial.

Cumulatively significant effects, including those on target and nontarget species: Beyond the cumulative impact analysis in the 2006 and 2007 harvest specifications EA (NMFS 2006), no additional past or present cumulative impact issues have been identified that would accrue from Alternative 2. Foreseeable future impacts are likely socioeconomically beneficial for Alternative 2, as described above and in Section 5.0.

Districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places: This action will have no effect on districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places, nor cause loss or destruction of significant scientific, cultural, or historical resources. Because this action is 0 nm to 20 nm at sea, this consideration is not applicable to this action.

Impact on ESA listed species and their critical habitat: The only ESA-listed animal that may be impacted by the action is the western distinct population segment of Steller sea lions. The study would allow for limited fishing within critical habitat. The potential impacts are incidental take, competition for prey species and disturbance. Because the amount of harvest is limited and only one vessel will be used, it is not likely that these effects would cause a population level effect for Steller sea lions. Therefore, for this NEPA analysis, the impacts on Steller sea lions is likely not significant. For purposes of ESA, there may be an adverse effect on one or more Steller sea lions with requires a formal consultation under section 7 of the ESA. Formal consultation has been initiated and will be completed before issuance of the EFP.

This action poses **no known violation of Federal, State, or local laws or requirements for the protection of the environment.** Issuance of the EFP would be conducted in a manner consistent, to the maximum extent practicable, with the enforceable provisions of the Alaska

Coastal Management Program within the meaning of Section 30(c)(1) of the Coastal Zone Management Act of 1972, and its implementing regulations.

This action poses **no effect on the introduction or spread of nonindigenous species** into the Aleutian Islands beyond those previously identified because it does not change fishing, processing, or shipping practices that may lead to the introduction of nonindigenous species.

Comparison of Alternatives and Selection of a Preferred Alternative

Alternative 1 is the status quo and does not provide for the issuance of an EFP for testing the feasibility of using commercial fishing vessels for acoustic survey work for pollock in the Aleutian Islands. Alternative 2 would provide for an EFP that would allow for the potential gathering of additional information regarding pollock biomass and distribution and potential development of management measures that may improve the utilization of pollock resources in the Aleutian Islands. Alternative 2 had no significant impacts identified and potential beneficial socioeconomic effects for Adak. Alternative 1 had no additional environmental impacts beyond those already identified in previous analyses, but Alternative 1 would not provide for the improved management and utilization of pollock resources in the Aleutian Islands. Because Alternative 2 has no significant adverse impacts identified and provides for the potential for improved utilization of pollock in the Aleutian Islands, Alternative 2 is the preferred alternative.

7.0 List of Preparers and Contributors

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Aleutian Islands Management Area. August 31, 2005. North Pacific Fishery Management Council 605 W. 4th Avenue, suite 306 Anchorage, AK 99501.

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FINAL CRUISE INSTRUCTIONS

F/V Muir Milach

March 11 – April 1, 2006

Chief Scientist: Steven J. Barbeaux

1.0 FINAL CRUISE INSTRUCTIONS

1.1 Cruise Title – Aleutian Islands Pollock Acoustic Survey Feasibility Study

1.2 Cruise Dates: Dates are dependent on the Pacific cod fishery closure. Tentative dates are below

1.2.1 Departure – Depart Adak, Alaska, at 0500 on Saturday, March 11, 2005.

1.2.2 Arrival – Arrive Adak, Alaska, at 1200 on April 1, 2006.

2.0 CRUISE OVERVIEW

Cruise Objectives – The purpose of this study is to test the feasibility of using commercial fishing vessels to conduct acoustic surveys for pollock in the Aleutian Islands subarea. NMFS currently does not have resources to conduct acoustic surveys of pollock in the Aleutian Islands subarea. The acoustic and biological information from the project will be used to determine; 1) if it is feasible to conduct acoustic surveys in the Aleutian Islands subarea using commercial fishing vessels, 2) if the data collected in such a manner is of sufficient quality for management purposes, and 3) if the local aggregations of pollock are stable enough during spawning season to allow for fine scale spatial and temporal management. Additionally, genetic samples will be collected during this study that will be used for stock structure analysis.

The project has three activity phases: (1) evaluating the commercial fishing vessel's appropriateness as an acoustic sampling platform; (2) opportunistically collecting acoustic data of pollock distribution around two sites, Kanaga Sound and Atka Island and (3) direct acoustic and biological data sampling at one of the study sites (up to ten 1 to 3 day trips). To verify the acoustic data and to support the study, 1000 mt of walleye pollock would be harvested within an area that includes waters within 20 nautical miles (nm) to 0 nm of Steller sea lion haulouts and rookeries. Conducting the project within Steller sea lion critical habitat is necessary because pollock aggregations must be encountered to support the work, and historical information about the occurrence of pollock indicates that pollock aggregations are likely to occur inside critical habitat.

2.1 Applicability – These instructions present complete information for this cruise.

2.2 Operating Area – Bering Sea

2.3 Participating Organizations

NOAA – Alaska Fisheries Science Center (AFSC)
7600 Sand Point Way N.E., Seattle, Washington 98115-0070

2.4 Personnel

2.4.1 Chief Scientist

<u>Name</u>	<u>Gender</u>	<u>Affiliation</u>	<u>E-mail Address</u>
Steven J. Barbeaux (206) 526-4211	Male	AFSC	Steve.Barbeaux@noaa.gov

2.4.2 Participating Scientists

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2.5 Administrative

2.5.1 Ship Operations

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Owner F/V Muir Milach
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E-mail: dfraser@olympus.net

Dave Wilmore
Captain F/V Muir Milach
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E-mail: peanutsplace@nas.com

2.5.2 Scientific Operations

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Dr. Libby Logerwell, AFSC
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3.0 OPERATIONS

- 3.1 **Data To Be Collected** – The purpose of this study is to determine if acoustic surveys can be conducted from commercial fishing vessels using ES-60 echosounders. In the course of this study data on the reliability and stability of the echosounder will be collected as well as the specific noise characteristics of the small commercial fishing vessel. This will be done through SONAR self-noise testing and sphere calibrations. Several acoustic

surveys of pollock aggregations will be conducted that will entail the collection of both acoustic data from the ES-60 as well as biological data collected from verification trawl tows. CTD casts will be made to support both the calibration exercises and the survey effort. Commercial fishing will be conducted to support the study. Sampling of the catch will occur at sea for species composition, pollock length, weight, and age structures. In addition species composition and total delivery data will be collected at the processing plant in Adak.

- 3.2 Staging Plan** – The majority of the equipment necessary for the cruise will be loaded onto the **F/V Muir Milach** when the ship departs from Dutch Harbor Alaska, in January, 2006. The laptop computers, CTD, and personal gear of the scientists will be carried as luggage and delivered to the boat in Adak at the time of embarkation.
- 3.3 De-staging Plan** – The data, computer hardware, and personal gear will be returned with the chief scientist at the end of the study. All other gear will remain on board the ship until the ship returns to Bellingham, Washington (April 2006).
- 3.4 Cruise Plan** – The first two phases of the project will be conducted without direct scientific supervision. In January the vessel will conduct a SONAR self-noise test while steaming to fishing grounds (See Below). In February and the first part of March the vessel will opportunistically collect acoustic data over the proposed study sites in the course of traveling between port and Pacific cod fishing grounds. In the third phase, a NOAA scientist will board the vessel and depart from Adak, Alaska, at 0500 on Saturday, March 11, 2006 and will conduct an estimated 7 to 10 trips. On the first and last trip an ES-60 system calibration will be conducted (See Below). On the first, middle, and last trip replicate parallel transect acoustic surveys of between 140 and 200 nautical miles (NM) will be conducted of the study area. At least two CTD drops will be made within the study area for each acoustic survey to obtain conductivity and temperature at depth. At the direction of the NOAA scientist trawls hauls of no more than 10mt will be conducted following the acoustic surveys to verify acoustic backscatter and obtain biological samples. The validation tows will be randomly sampled for species composition, the samples will not exceed 1mt. A random subsample of 150 pollock and/or other dominant species will be measured and weighed. All measured pollock will be scanned for maturity. Otolith and fin clip samples will be collected from a subsample of the measured fish. Following the validation tows the vessel will conduct commercial trawl tows until the vessel reaches capacity (~150mt). The vessel will then return to Adak, Alaska to deliver the catch. For the remaining 4 to 7 trips, the vessel will conduct a non-parallel acoustic survey of approximately 65NM. The area of the survey will be determined by the NOAA scientist. Following the non-parallel acoustic surveys the vessel will conduct commercial tows until the vessel reaches its carrying capacity, and then will return to port for delivery. All commercial tows will be sampled for species composition. A random subsample of pollock will be measured, weighed, and scanned for maturity. Otolith samples will be collected from a subsample of the measured fish. Each trip and delivery will take an estimated 2 to 3 days, the NOAA scientist is expected to disembark by April 1, 2006.
- 3.5 Study Locations** – See Figs. 9.2.1 and 9.2.2

- **Study Operations** – The following are operations to be conducted on this cruise.

- 3.5.1 Phase 1: SONAR Self-noise testing** – A SONAR Self-noise test will be conducted in January 2006 while the vessel steams to the Pacific cod fishing grounds. For this part of the study the ES-60 echosounder will record data in “passive” mode as the vessel systematically increases speed from 0 knots to maximum in 2 knot increments every three minutes. This exercise will take no more than 45 minutes. The recorded data will then be sent to the Chief Scientist for analysis to assess signal to noise ratios and determine optimum speed for survey operations.
- 3.5.2 Phase 2: Opportunistic Acoustic Data Collection** – In February, while fishing for Pacific cod, the F/V Muir Milach will travel within the proposed survey areas going to and from the Pacific cod fishing grounds. While traveling, the vessel will opportunistically collect acoustic data. These data will be sent to the Chief Scientist prior to March 1, for qualitative assessment on relative densities of fish in the study areas. This will help determine study areas and transect layout. The captain of the F/V Muir Milach will also record weather conditions (wind speed, direction, sea state) while collecting acoustic data during the Pacific cod fishery, these data will be used to assess the quality of acoustic data under various sea conditions.
- 3.5.3 Phase 3: ES-60 System Calibration** – Two ES-60 System calibrations will be conducted, one prior to the first parallel transect acoustic survey and one following the final acoustic survey. A suitable location near the study site will be selected prior to the survey. The calibrations will be conducted by the NOAA Scientist as per protocols described in Foote et al. (1987) for sphere calibration of a scientific echosounder.
- 3.5.4 Phase 3: CTD measurement** – During each of the calibration exercise and twice during each parallel transect survey CTD casts will be made to assess speed of sound at depth. The CTD will be allowed to acclimate 1m below the surface for one minute and then lowered via the vessel winch or crane to the bottom and retrieved. CTD cast data will be downloaded to a NOAA laptop and backed up on DVD after each cast.
- 3.5.5 Phase 3: Parallel Transect Acoustic Survey** – On the first, middle, and last trip of phase three of the study, replicate parallel transect acoustic surveys of between 140 to 200 NM will be conducted of either the Atka Island or Kanaga Island study areas (See figures below). The waypoints for these surveys will be determined by the Chief Scientist by March 9, 2006 after review of the opportunistic acoustic data and in consultation with the owner and captain of the F/V Muir Milach. The survey will consist of parallel transects with between 2km to 4km spacing with a random start location for the beginning transect. Ping rate during the survey will be one ping per second and vessel speed for the survey will be determined by the Chief Scientist after analysis of the SONAR self-noise test. All acoustic data will be recorded on an external 120GB IOMEGA drive and backed-up nightly onto DVDs.

- 3.5.6 Phase 3: Non-parallel Transect Acoustic Study** – For each trip in which a parallel transect survey is not conducted a non-parallel transect acoustic survey (~65nm) will be conducted. The waypoints of these surveys will be determined after completion of the first parallel survey and will be designed to monitor changes in distribution of the largest densities of pollock in the study area. Ping rate during the survey will be one ping per second and vessel speed for the survey will be determined by the Chief Scientist after analysis of the SONAR self-noise test. All acoustic data will be recorded on an external 120GB IOMEGA drive and backed-up nightly onto DVDs.
- 3.5.7 Phase 3: Verification Trawling** – At the direction of the NOAA scientist, trawls hauls of no more than 10mt will be conducted following the acoustic surveys to verify acoustic backscatter and obtain biological samples. Although the choice of net will be up to the vessel captain, it is expected that the verification tows will be primarily conducted using a 40' mesh design trawl with a 32fm x 14fm opening. Time, date, and location of each trawl will be recorded using standard observer program trawl haul forms. All validation tows will be measured for total catch and randomly sampled for species composition, the samples will not exceed 1mt. A random subsample of 150 pollock and/or other dominant species will be measured and weighed. All measured pollock will be scanned for maturity. Otolith and fin clip samples will be collected from a subsample of the measured fish. Deck hands on the F/V Muir Milach will conduct the species composition samples and length measurements under the supervision of the NOAA scientist. Maturity scans, otoliths, and fin clips will be collected by the NOAA scientist. All data will be recorded on deck sheets and later transferred to an access database designed by the Chief Scientist. The Access database will be backed up on DVD nightly.
- 3.5.8 Phase 3: Commercial Trawling** – Following the validation tows the vessel will conduct commercial trawl tows until the vessel reaches capacity (~150mt). All commercial trawl locations must be outside of 3NM from designated Steller Sea Lion haulout sites, but otherwise will be at the discretion of the vessel captain. Time, date, and location of each trawl will be recorded using standard observer program trawl haul forms. All commercial tows will be measured for total catch and sampled for species composition. A random subsample of pollock will be measured, weighed, and scanned for maturity. Otolith samples will be collected from a subsample of the measured fish. Deck hands on the F/V Muir Milach will conduct the species composition samples and length measurements under the supervision of the NOAA scientist. Maturity scans, otoliths, and fin clips will be collected by the NOAA scientist. All data will be recorded on deck sheets and later transferred to an access database designed by the Chief Scientist. The Access database will be backed up on DVD nightly. All catch will be delivered to the Adak processing plant where it will be sorted and weighed. Data on total catch composition and weight will be reported to the NOAA scientist prior to embarkation on a following trip.
- 3.5.9 Phase 3: Opportunistic Acoustic Data Collection** – During all fishing operations, including searching for fishable aggregations of pollock, and

when traveling to and from port, the vessel will continue to collect ES-60 acoustic data. These data will be used to qualitatively assess the relative densities and assess the spatial dynamics of fish within the study areas in between acoustic surveys. In addition these data, in conjunction with catch per unit effort data from the commercial trawl hauls, will be used to assess possible impacts of fishing activities on the pollock aggregations due to the study.

3.6 Underway Operations – The following are underway operations to be conducted on this cruise.

- Opportunistic Acoustic data collection

3.7 Applicable Restrictions – Commercial trawl tows will not be conducted within 3NM of designated Sea Lion Haulout protected areas

3.8 Small Boat Operations – None

4.0 FACILITIES

4.1 Equipment and Capabilities Provided by Ship

- Wire speed indicators and readout for quarterdeck, Rowe winch,
- Stern trawl system (winches, wire, electronics, etc.)
- 38kHz SIMRAD ES-60 echosounder with GPS feed
- Sea-water hoses and nozzles to wash nets and gear ,
- Adequate deck lighting for night-time operations,
- Navigational equipment including GPS and radar,
- Ship's crane(s) used for loading and/or deploying,
- A Dantrawl "Bering Billionaire" trawl with a 50fm x 20fm opening,
- A LFS "glove" trawl with a 45fm x 18fm opening,
- A 40' mesh design trawl with a 32fm x 14fm opening.

4.2 Equipment and Capabilities Provided by Scientists

- Sea-Bird Electronics' SBE-19 SEACAT system
- AFSC Laptop with SEASOFT software for CTD data collection and processing,
- Electronic 50kg basket scale, 2kg scale for individual fish weights,
- 120GB IOMEGA External Drives, DVD read write drive, and Backup DVDs
- Miscellaneous scientific sampling and processing equipment,
- Data forms,
- Data storage Access database

5.0 DISPOSITION OF DATA AND REPORTS

5.1 The following data products will be included in the cruise data package:

- Calibration Sheets for all ship's and scientific instruments used
- CTD Cast Information
- 120GB Iomega external drive logs of ES-60 Acoustic Data

- Nightly DVD Backup logs of ES-60 Acoustic Data
- Access database log of all fishing activity
- Trawl haul information sheets, trawl haul deck forms
- All data and preliminary analyses will be submitted as an AFSC Processed report

5.2 Pre- and Post-cruise Meetings – A pre-cruise meeting will be scheduled with the chief scientist, the vessel captain (via telephone) and the vessel owner on March 5, 2006 in Seattle to determine which of the two study sites will be used. A meeting of the NOAA scientist, the vessel captain, and the vessel crew will be conducted on board the F/V Muir Milach on March 11, 2006 to discuss operations on board the vessel and assigned duties. In April 2006, a post-cruise meeting will be held in Seattle, Washington with the chief scientist, the vessel owner, and a representative from the Aleut Enterprise Corporation to discuss preliminary results of the survey.

6.0 ADDITIONAL PROJECTS

6.1 Definition – Ancillary and piggyback projects are secondary to the objectives of the cruise and should be treated as additional investigations. The difference between the two types of secondary projects is that an ancillary project does not have representation aboard and is accomplished by the ship's force.

6.2 Ancillary Projects – None

6.3 Piggyback Projects – During biological data collection fin clips will also be taken from pollock. In at least two separate hauls, fin clips will be collected from at least 50 randomly selected pollock. Length, weight, sex, and maturity of females will be recorded for each fish. Otolith samples will be collected from each fish and placed in a vial with a unique specimen number. The clips will be placed in separate micro-ampoules containing 95% alcohol and the specimen number recorded on the micro-ampoule. The data will be recorded in an Access database developed by the Chief Scientist. The fin clip samples and associated data will be provided to Dr. Mike Cannino of the AFSC for processing. Otoliths samples will be included in the total otolith samples from the study and processed by the Age and Growth Laboratory at the AFSC.

7.0 HAZARDOUS MATERIALS

7.1 Inventory

Chemical	Amount	Neutralizer	Contact
Alcohol, Reagent, 95%	2 x 1-Liter	3-M Sorbent Pads	Barbeaux

7.2 Material Safety Data Sheet (MSDS) – Submitted separately

8.0 MISCELLANEOUS

Communications – Specific information on how to contact the F/V Muir Milach

8.1 Important Telephone and Facsimile Numbers and E-mail Addresses

8.1.1 Alaska Fisheries Science Center (AFSC):

Resource Ecology and Fisheries Management (REFM):

- (206) 526-4211 (voice)
- (206) 526-4066 (fax)

E-Mail: Steve.Barbeaux@noaa.gov

8.1.2 Commercial Fishing Vessel F/V Muir Milach – Telephone and E-mail contacts

Homeport : Adak, Alaska

Satphone: 1 877 534 3583

Inmarsat C: 436754410

E-Mail: muirmilach@stratosmobile.net

Other:

Home office E-mail: crystalfisheries@hotmail.com

9.0 APPENDICES

9.1 Equipment Inventory

Equipment	Quantity	Source
Acoustic Gear		
Laptop Computer	2	Chief Scientist, FIT program
IOMEGA 120GB external drive	4	FIT Program
Calibration Downrigger	4	Chief Scientist
Tungsten-Carbide Calibration Sphere	2	Chief Scientist
Lead Cannonball	2	Chief Scientist
Spiderwire 100 lbs test	300 M	Chief Scientist
Calibration Tools and Parts	1	Chief Scientist
CTD and Cage	1	FIT Program
DVD Read/Write Drive	2	FIT Program
DVD backup discs	10	FIT Program
Biological Sampling		
Flatbed Scale 50 kg, 0.002 kg precision	2	RACE Division
Polycorder	2	RACE Division
Length-Frequency Board	2	RACE Division
Sampling Baskets	10	RACE Division
Otolith Vials	500	RACE Division
Species Id Manual	2	RACE Division
Handheld Deck Computer	2	FIT Program
Otolith Knife	2	FIT Program
Forceps	2	FIT Program
Scalpel	4	FIT Program
Scissors	2	FIT program
Various Zip-lock bags	30	FIT Program
Fin Clip micro-ampoules	100	Dr. Mike Canino
1 Liter 95% Alcohol	1	Dr. Mike Canino
Small Scale 1kg	1	FIT Program
Deck Sheets	100	Observer Program
Safety		
Immersion Suit	2	RACE Division
Life Jacket	2	RACE Division
Boots	2 pair	RACE Division
Wet Weather Gear	2 sets	RACE Division
Personal EPIRB	2	RACE Division
Hardhat	2	RACE Division
Work Gloves	6 pair	FIT Program
Other		
Digital Camera	1	FIT Program
Sleeping Bag	2	FIT Program

9.2 Figures

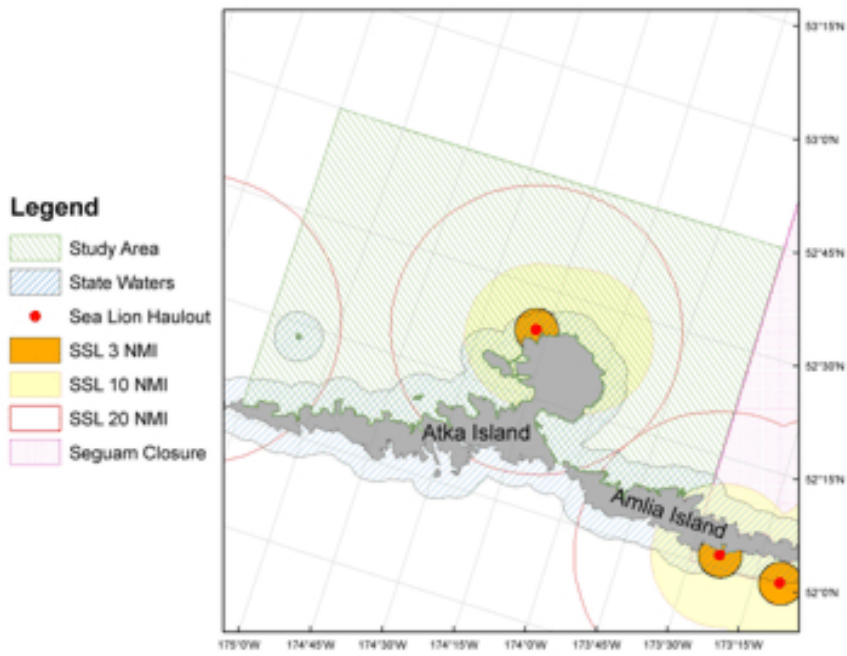


Figure 9.2.1 Atka Island Study Area

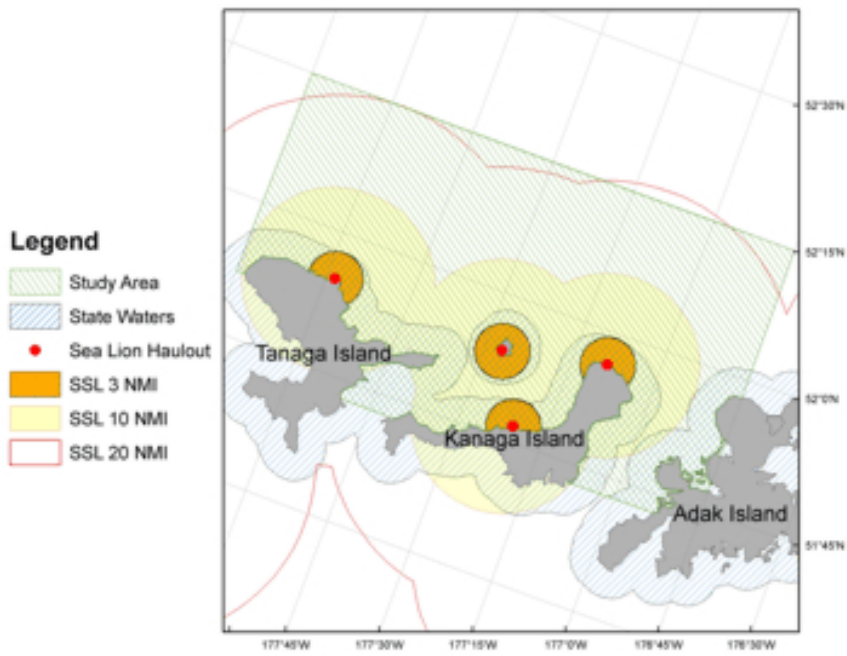


Figure 9.2.2 Kanaga Island Area Study Area

G:\FMGROUP\EFP\AEC pollock EFP\AEC pollock EA.ea.wpd
r:\region\2006\sف\jan\AEC pollock EA.ea.wpd

mnbrown: 1/5/06
bmuse: 1/12/05
sbarbeaux: 1/13/06