



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

FEB 27 1998

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act, an environmental review has been performed on the following action.

TITLE: Environmental Assessment of a Final Rule to Implement Requirements for Seabird Bycatch Avoidance Devices in the Hook-and-Line Pacific Halibut Fishery off Alaska

LOCATION: Exclusive Economic Zone of the Bering Sea and Aleutian Islands and the Gulf of Alaska and all U.S. waters off the State of Alaska

SUMMARY: The final rule requires operators of hook-and-line vessels fishing for Pacific halibut in the Bering Sea and Aleutian Islands management area and the Gulf of Alaska to conduct fishing operations in a specified manner and to employ specified bird avoidance techniques to reduce seabird bycatch and incidental seabird mortality. The action is necessary to mitigate hook-and-line fishery interactions with the short-tailed albatross, an endangered species protected under the Endangered Species Act, and other species.

RESPONSIBLE OFFICIAL: Steven Pennoyer
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The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. A copy of the finding of no significant impact, including the environmental assessment, is enclosed for your information. Also, please send one copy of your comments to me in Room 5805, PSP. U.S. Department of Commerce, Washington, D.C. 20230.

Sincerely,

Susan Fruchter

Susan Fruchter
Acting NEPA Coordinator

Enclosure



ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/
FINAL REGULATORY FLEXIBILITY ANALYSIS

FOR A REGULATORY AMENDMENT TO REDUCE
THE INCIDENTAL SEABIRD MORTALITY
IN THE PACIFIC HALIBUT FISHERY
IN U.S. CONVENTION WATERS OFF ALASKA

AND A REGULATORY EXEMPTION
FOR SMALL VESSELS
IN THE PACIFIC HALIBUT FISHERY
IN U.S. CONVENTION WATERS OFF ALASKA
AND THE GROUND FISH HOOK-AND-LINE FISHERIES OFF ALASKA

Prepared by

National Marine Fisheries Service
Alaska Regional Office

January 26, 1998

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Executive Summary

In early November 1996, several industry groups representing hook-and-line vessels in the Gulf of Alaska (GOA) and the Bering Sea/Aleutian Islands (BSAI) petitioned the North Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) to impose regulatory measures intended to reduce the incidental mortality of seabirds in their fisheries. This action was motivated by recent takes (two in 1995 and one in 1996) of the short-tailed albatross (*Diomedea albatrus*), a listed species under the Endangered Species Act (ESA). Pursuant to the ESA, the short-tailed albatross is afforded certain protections that are outlined in the section 7 consultation with the U.S. Fish & Wildlife Service (USFWS) regarding the GOA and BSAI groundfish fisheries.

Millions of birds, representing over 80 species, occur over waters off Alaska. The presence of "free" food in the form of offal and bait attract many birds to fishing operations. In the process of feeding, birds sometimes come into contact with fishing gear and are accidentally killed. For example, most birds taken during hook-and-line operations are attracted to the baited hooks when the gear is being set. These birds become hooked at the surface, and are then dragged underwater where they drown. The probability of a bird being caught is a function of many interrelated factors including: Type of fishing operation and gear used; length of time fishing gear is at or near the surface of the water; behavior of the bird (feeding and foraging techniques); water and weather conditions (e.g., sea state); size of the bird; availability of food (including bait and offal); and physical condition of the bird (molt, migration, health). Almost any species which occurs in these waters is susceptible to interactions with fishing gear, although a few species are especially vulnerable.

Effective mitigation measures would reduce the incidental mortality of seabirds during longline fishing by minimizing the seabirds' attraction to fishing vessels and by preventing the seabirds from attempting to seize baited hooks, particularly during the period when the lines are set. At its December 1996 meeting, the Council voted unanimously to recommend that all hook-and-line vessels fishing for groundfish in the GOA and BSAI must use certain seabird bycatch avoidance measures intended to reduce the incidental mortality of the short-tailed albatross and other seabird species. Furthermore, the Council intended that these or similar measures would be implemented in the Pacific halibut fishery in U.S. Convention waters off Alaska. A proposed rule that would implement seabird avoidance measures in the Alaskan groundfish hook-and-line fisheries was published in the Federal Register on March 5, 1997 (62 FR 10016) and public comments accepted through March 20, 1997. Final regulations were published April 29, 1997 (62 FR 23176). At its annual meeting in January 1997, the IPHC reviewed and concurred with the development of seabird avoidance measures for the Pacific halibut fishery in U.S. Convention waters off Alaska. At its April 1997 meeting, the Council took initial action and recommended releasing this Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) for public review. At its June 1997 meeting, the Council recommended expanding the groundfish seabird avoidance measures to the Pacific halibut fishery in U.S. Convention waters off Alaska, with specified regulatory exemptions for vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and in the GOA and BSAI groundfish hook-and-line fisheries.

This EA/RIR/Final Regulatory Flexibility Analysis (FRFA) addresses regulatory measures intended to reduce seabird bycatch and incidental mortality in the Pacific halibut hook-and-line fisheries in U.S. Convention waters off Alaska. Given the degree of overlap between vessels that participate in both the IFQ halibut fishery and groundfish fisheries, this EA/RIR/FRFA does not analyze alternatives other than those already analyzed for the groundfish fisheries (NMFS, 1997). The alternatives and options

are as follows:

Alternative 1: Status quo, no action. Any gear modifications, seabird avoidance devices, or changes in fishing methods intended to reduce the incidental mortality of seabirds would continue to be voluntary.

Alternative 2: Gear modifications, seabird avoidance devices, or changes in fishing methods designed to reduce the incidental mortality of seabirds would be required in regulation. The measures would apply to vessels fishing for Pacific halibut with hook-and-line gear in U.S. Convention waters off Alaska.

1. All applicable hook-and-line fishing operations would be conducted in the following manner:
 - a. Use hooks that when baited, sink as soon as they are put in the water. This could be accomplished by any means, including the use of weighted groundlines and/or thawed bait.
 - b. If offal is discharged while gear is being set or hauled, offal discharge must occur in a manner that distracts seabirds from baited hooks, to the extent practicable. The discharge site on board a vessel must either be aft of the hauling station or on the opposite side of the vessel from the hauling station.
 - c. Make every reasonable effort to ensure that birds brought aboard alive are released alive and that wherever possible, hooks are removed without jeopardizing the life of the bird.
2. All applicable hook-and-line fishing operations would be required to employ one or more of the following seabird avoidance measures:
 - a. Set gear between hours of nautical twilight (as specified in regulation) using only the minimum vessel's lights necessary for safety;
 - b. Tow a streamer line or lines during deployment of gear to prevent birds from taking hooks;
 - c. Tow a buoy, board, stick or other device during deployment of gear at a distance appropriate to prevent birds from taking hooks. Multiple devices may be employed; or
 - d. Deploy hooks underwater through a lining tube at a depth sufficient to prevent birds from settling on hooks during deployment of gear.

The required measures to reduce the incidental mortality of seabirds would not be applicable to vessels using hook-and-line gear on:

Option 1: vessels less than 26 ft (7.9 m) length overall (LOA) in the Pacific halibut fishery.

Option 2: vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and the GOA and BSAI groundfish fisheries. Rulemaking to allow for a small vessel exemption in the groundfish fisheries would be initiated separately.

Option 3: No exemption for small vessels.

Option 4: Vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and the GOA and BSAI groundfish fisheries would be exempt from required measures 2a through 2d above but not from measures 1a through 1c. (Preferred)

USFWS concluded an informal consultation with NMFS on January 12, 1998, and concurred with NMFS's assessment that the proposed regulatory measures to reduce seabird mortality in the Pacific halibut fishery and the regulatory exemption for vessels less than 26 ft (7.9 m) LOA using hook-and-line gear in the groundfish fisheries in the BSAI or GOA or in the Pacific halibut fishery are not likely to adversely affect the short-tailed albatross.

NMFS is awaiting the conclusion of an earlier consultation on the Pacific halibut fishery itself and anticipates that USFWS will issue a Biological Opinion that establishes an incidental take limit for short-tailed albatrosses in the Pacific halibut fishery, prior to the effective date of the required seabird avoidance measures.

The measures required of all applicable vessels under number 1 of Alternative 2 would be expected to be of minimal or no cost. Procedural or operational changes may be required in fishing operations.

In 1996, 2124 vessels landed halibut from U.S. Convention waters off Alaska. Under Alternative 2, the economic impact on small entities would depend upon the option exercised (small vessel exemption) and the particular measures chosen. A vessel operator would have a choice of several measures. Smaller vessels (< 100 ft (30.5 m)) may find the cost of a lining tube to be prohibitive (approximately \$35,000 per vessel). Vessels \geq 60 ft (18.3 m) numbered 189. The other seabird bycatch avoidance devices (bird streamer lines, buoys) ranged from \$50-\$250 per vessel. In 1996, 328 vessels less than 26 ft (7.9 m) LOA made halibut and sablefish landings in the IFQ fisheries (15 percent of total number of IFQ vessels making 1996 landings) and 47 vessels were issued Federal fisheries permits for the BSAI and GOA groundfish fisheries (2.5 percent of 1996 Federal fisheries permittees).

1.0 INTRODUCTION

The Northern Pacific Halibut Act of 1982 (NPHA), P.L. 97-176, 16 U.S.C. 773c(e) authorizes the regional fishery management councils having authority for the geographic area concerned to develop regulations governing the Pacific halibut catch in U.S. waters which are in addition to but not in conflict with regulations of the International Pacific Halibut Commission (IPHC).

The groundfish fisheries in the Exclusive Economic Zone (EEZ) (3 to 200 miles offshore) off Alaska are managed under the Fishery Management Plan for Groundfish of the Gulf of Alaska and the Fishery Management Plan for the Groundfish Fisheries of the Bering Sea and Aleutian Islands Area. Both fishery management plans (FMPs) were prepared by the North Pacific Fishery Management Council (Council) under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The Gulf of Alaska (GOA) FMP was approved by the Secretary of Commerce (Secretary) and become effective in 1978 and the Bering Sea and Aleutian Islands Area (BSAI) FMP become effective in 1982.

Actions taken to amend FMPs or implement other regulations governing the groundfish fisheries must meet the requirements of Federal laws and regulations. In addition to the Magnuson-Stevens Act, the most important of these are the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), Executive Order (E.O.) 12866, and the Regulatory Flexibility Act (RFA). Actions taken to implement regulations governing the halibut fishery must meet the requirements of the NPHA, NEPA, ESA, MMPA, E.O. 12866, and RFA.

NEPA, E.O. 12866, and the RFA require a description of the purpose and need for the proposed action as well as a description of alternative actions which may address the problem. This information is included in Section 1 of this document. Section 2 contains information on the biological and environmental impacts of the alternatives as required by NEPA. Effects on endangered species and marine mammals are also addressed in this section. Section 3 contains a Regulatory Impact Review (RIR) which addresses the requirements of both E.O. 12866 and the RFA that economic impacts of the alternatives be considered. Section 4 contains the Initial Regulatory Flexibility Analysis (IRFA) required by the RFA which specifically addresses the impacts of the proposed action on small businesses.

This EA/RIR/FRFA addresses regulatory measures intended to reduce seabird bycatch and incidental mortality in the Pacific halibut hook-and-line fisheries in U.S. Convention waters off Alaska. Given the extent of overlap between vessels that participate in both the IFQ halibut fishery and groundfish fisheries, this EA/RIR/FRFA does not analyze alternatives other than those already analyzed for the groundfish fisheries (NMFS, 1997).

1.1 Purpose of and Need for the Action

Recent takes of the endangered short-tailed albatross (*Diomedea albatrus*) (two in 1995 and one in 1996) in hook-and-line groundfish fisheries in the BSAI and the GOA highlight a seabird bycatch problem. At its December 1996 meeting, the Council voted unanimously to recommend that all hook-and-line vessels fishing for groundfish in the GOA and BSAI must use certain seabird bycatch avoidance measures intended to reduce the incidental mortality of the short-tailed albatross and other seabird species. Furthermore, the Council intended that these or similar measures would be implemented in the Pacific halibut fishery in U.S. Convention waters off Alaska. Addressing a

potential seabird bycatch problem in the Pacific halibut fishery is warranted given the similarities between the Pacific halibut fishery and the hook-and-line groundfish fisheries. A short-tailed albatross was taken in the GOA halibut fishery in October, 1987. At its annual meeting in January 1997, the IPHC reviewed and concurred with the development of seabird avoidance measures for the Pacific halibut fishery in U.S. Convention waters off Alaska.

A proposed rule that would implement seabird avoidance measures in the Alaska groundfish hook-and-line fisheries was published in the Federal Register on March 5, 1997 (62 FR 10016) and public comments accepted through March 20, 1997. Final regulations were published April 29, 1997 (62 FR 23176). At its April 1997 meeting, the Council took initial action and recommended releasing the EA/RIR/IRFA for public review. At its June 1997 meeting, the Council adopted measures to expand the seabird avoidance measures in the Alaska groundfish hook-and-line fisheries to the Pacific halibut fishery in U.S. Convention waters off Alaska, with specified regulatory exemptions for vessels less than 26 ft (7.9 m) length overall (LOA) in the Pacific halibut fishery and in the GOA and BSAI groundfish hook-and-line fisheries.

The EA/RIR/IRFA prepared for the final rule that would require seabird avoidance measures in the groundfish hook-and-line fisheries off Alaska provides background information on the seabird bycatch issue, the purpose and need for the action, and the development of regulations intended to reduce seabird bycatch and incidental mortality in the groundfish hook-and-line fisheries (NMFS, 1997).

1.2 Alternatives Considered

NMFS issued final regulations for seabird avoidance measures in the GOA and BSAI groundfish hook-and-line fisheries on April 29, 1997 (62 FR 23176). These measures are modeled, in part, after NMFS' regulations implementing conservation measures adopted by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) (61 FR 8483, March 5, 1996) to reduce the incidental mortality of seabirds in the longline fisheries in Antarctic waters. Nonetheless, differences exist between the sub-Antarctic longline fisheries governed under the CCAMLR regulations and the Alaskan groundfish hook-and-line fisheries. These differences include: (1) Target species, (2) gear and gear deployment, (3) vessel size and vessel configuration, (4) weather and sea conditions, and (5) prevalent seabird species. Current information suggests that seabird avoidance techniques appropriate for one fishery may not be appropriate for another. Management agencies must assess the needs in a particular fishery and employ measures that are practicable for that fishery. For a detailed discussion of why regulations identical to those in CCAMLR fisheries were not implemented in the Alaska groundfish fisheries, see the Response to Comments' section in the preamble of the final rule (62 FR 23176). For these same reasons, and given the degree of overlap between vessels that participate in both the IFQ halibut fishery and groundfish fisheries, this EA/RIR/IRFA does not analyze alternatives other than those already analyzed for the groundfish fisheries (NMFS, 1997). These alternatives are described below.

- 1.2.1 Alternative 1: Status quo, no action. Any gear modifications, seabird avoidance devices, or changes in fishing methods intended to reduce the incidental mortality of seabirds would continue to be voluntary.
- 1.2.2 Alternative 2: Gear modifications, seabird avoidance devices, or changes in fishing methods designed to reduce the incidental mortality of seabirds would be required in regulation. The measures would apply to vessels fishing for Pacific halibut with

hook-and-line gear in U.S. Convention waters off Alaska.

1. All applicable hook-and-line fishing operations would be conducted in the following manner:
 - a. Use hooks that when baited, sink as soon as they are put in the water. This could be accomplished by any means, including the use of weighted groundlines and/or thawed bait.
 - b. If offal is discharged while gear is being set or hauled, offal discharge must occur in a manner that distracts seabirds from baited hooks, to the extent practicable. The discharge site on board a vessel must either be aft of the hauling station or on the opposite side of the vessel from the hauling station.
 - c. Make every reasonable effort to ensure that birds brought on board alive are released alive and that wherever possible, hooks are removed without jeopardizing the life of the bird.
2. All applicable hook-and-line fishing operations would be required to employ one or more of the following seabird avoidance measures:
 - a. Set gear between hours of nautical twilight (as specified in regulation) using only the minimum vessel's lights necessary for safety;
 - b. Tow a streamer line or lines during deployment of gear to prevent birds from taking hooks;
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Option 4: Vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and the GOA and BSAI groundfish fisheries would be exempt from required measures 2a through 2d above but not from measures 1a through 1c. (Preferred)

The offal discharge requirement under Alternative 2 (1b) would be clarified from the final rule published April 29, 1997 (62 FR 23176) to indicate the initial intent that if offal is discharged during the setting or hauling of gear, it must be done in a manner that distracts seabirds, to the extent practicable. Public comment received after the final rule was published indicated that the regulation could be perceived to indicate that offal discharge must occur during the setting or hauling of gear. This was not NMFS' intent in the final rule and requires clarification.

1.3 Background

The EA/RIR/FRFA prepared for the final rule that would require seabird avoidance measures in the groundfish hook-and-line fisheries off Alaska provides background information on the seabird bycatch issue, the purpose and need for the action, and the development of regulations intended to reduce seabird bycatch and incidental mortality in the groundfish hook-and-line fisheries (NMFS, 1997). Approximately 27 percent of halibut vessels also landed sablefish, a groundfish species (Table 2). NMFS IFQ halibut data does not track participation in other groundfish fisheries. Given the extent of overlap between vessels that participate in both the IFQ halibut fishery and groundfish fisheries, this EA/RIR/FRFA does not analyze alternatives other than those already analyzed for the groundfish fisheries (NMFS, 1997).

1.3.1 Description and History of the Halibut Fishery

See IPHC reports for a description and history of the halibut fishery (IPHC 1995, 1997).

In 1996, the total commercial halibut catch was approximately 47 million pounds (Table 1). At its 1997 annual meeting, the IPHC established a commercial catch limit of 66 million pounds. Approximately 2100 vessels landed halibut in 1996 (Table 2).

Under Alternative 2, Option 2, vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and the GOA and BSAI groundfish fisheries would be exempt from requirements for seabird avoidance measures. In the 1996 halibut fishery, 328 vessels were less than 26 ft (7.9 m) LOA (Table 2). This represents 15 percent of the total number of vessels. In 1996, only 47 vessels were less than 26 ft (7.9 m) LOA in the groundfish fisheries off Alaska, representing 2.5 percent of 1996 Federal fisheries permittees (Table 3). Under the preferred alternative (Alternative 2, Option 4) vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and the GOA and BSAI groundfish fisheries would be exempt from measures 2a through 2d. The nature of the gear used by vessels less than 26 ft (7.9 m) LOA and the area fished by these small vessels is such that seabird avoidance measures 1a through 1c appear to be adequate at reducing any seabird bycatch that may be encountered.

1.3.2 Description of the Gear

Halibut gear may vary from gear used for groundfish. Traditionally, a unit of gear, or "skate" consists of groundline, gangions, and hooks. The number of skates deployed in a string varies from 4 to 12, most commonly 6 (total of 1800 ft). Short branch lines (gangions) 4 to 5 ft long are attached to the groundline and a hook (usually circle-shaped) is attached to the end of the gangion. The number of skates per string depends on factors such as the size of the fishing area and the likelihood of snagging on the bottom. Each end of the string is attached to an anchor and buoy line and marked at the surface for detection when gear is retrieved. Most of the fishing is conducted at depths of 100 to 600 m. The skates with baited hooks are set over a chute at the stern of the vessel. Average soak time is

12 hours per skate, but can vary according to fishing area, time of year, and bait used. Baits used in the halibut fishery are either fresh or frozen and historically have included herring, squid, salmon, or groundfish species caught incidentally.

Snap-on gear is used commonly on small vessels. It differs from traditional gear in that the gangions are attached to the groundline with metal snaps rather than being tied on. When snap-on gear is set, the hooks are baited and the gangions are attached to the groundline as it unwinds from the drum. Hook intervals can be changed with each set. When the gear is retrieved, the hooks are unsnapped and stored (IPHC, 1987).

To compare with groundfish gear, hook-and-line vessels targeting Pacific cod set groundlines of varying length to a maximum of approximately 12 miles, in water 25-100 fathoms deep. Typically two lines are set and hauled in a day. The vessel travels at a speed of about five knots during a two-hour set. The haul process takes approximately 16 to 18 hours and begins immediately after the gear is set. Radar-reflecting buoys are connected to both ends of the groundline. Twelve-inch gangions with hooks are attached to the groundline at 3-foot intervals. An approximate 12-mile set would contain approximately 18,000 hooks. Most of the longline vessels in the BSAI targeting Pacific cod are freezer/longliners, many of which use autobaiting systems (pers. comm., North Pacific Longline Association).

Hook-and-line vessels targeting sablefish or Greenland turbot set gear in deeper water on the continental slope. The gear is rigged much the same as in the Pacific cod fishery, though the lengths of the groundlines are often shorter and may vary with the size of the vessel. Many smaller vessels participate in both the BSAI and GOA fisheries, and fewer are equipped with autobaiting machines.

1.3.3 Seabird Bycatch

The EA/RIR/FRFA prepared for the final rule that would require seabird avoidance measures in the groundfish hook-and-line fisheries off Alaska provides background information on the seabird bycatch issue, the purpose and need for the action, and the development of regulations intended to reduce seabird bycatch and incidental mortality in the groundfish hook-and-line fisheries (NMFS, 1997).

The magnitude of the seabird bycatch problem in the North Pacific groundfish fisheries is ascertained in part by data collected by observers. The magnitude of seabird bycatch in the Pacific halibut fishery off Alaska has not been addressed at this time. Although vessel operators are not required to have observer coverage for the harvest of halibut, approximately 9 percent of the vessels are ≥ 60 ft LOA and also harvest sablefish, thus triggering groundfish observer coverage requirements. Seabird bycatch data would be collected on these vessels. Seabird bycatch also could be monitored using logbooks or some other required reporting mechanism. Seabird bycatch in the halibut fishery may be similar to that in the groundfish fisheries given the gear and fishery similarities. A key difference between the halibut and groundfish fisheries is the greater number of small vessels in the halibut fleet. Vessel size as a factor in seabird bycatch is discussed in sections 2.3.2 and 2.3.3.

2.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. If the action is determined not to be significant based on an analysis of relevant

considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared for major Federal actions significantly affecting the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives, and a list of document preparers. The purpose and alternatives were discussed in Sections 1.1 and 1.2, and the list of preparers is in Section 8. This section contains the discussion of the environmental impacts of the alternatives including effects on threatened and endangered species and marine mammals.

2.1 Environmental Impacts of the Alternatives

The environmental impacts generally associated with fishery management actions are effects resulting from (1) harvest of fish stocks which may result in changes in food availability to predators and scavengers, changes in the population structure of target fish stocks, and changes in the marine ecosystem community structure; (2) changes in the physical and biological structure of the marine environment as a result of fishing practices (e.g., effects of gear use and fish processing discards); and (3) entanglement/entrapment of non-target organisms in active or inactive fishing gear.

An initial analysis of the effects of the IFQ management system for the halibut fisheries off Alaska on the biological environment and associated effects on marine mammals, seabirds, and other threatened or endangered species was done in the environmental impact statement for the action (NMFS, 1991).

2.2 Effects on Endangered or Threatened Species

Endangered and threatened species under the ESA that may be present in the U.S. Convention waters off Alaska include:

Endangered

Steller sea lion (western population)	<i>Eumetopias jubatus</i>
Northern right whale	<i>Balaena glacialis</i>
Sei whale	<i>Balaenoptera borealis</i>
Blue whale	<i>Balaenoptera musculus</i>
Fin whale	<i>Balaenoptera physalus</i>
Humpback whale	<i>Megaptera novaeangliae</i>
Sperm whale	<i>Physeter macrocephalus</i>
Snake River sockeye salmon	<i>Oncorhynchus nerka</i>
Short-tailed albatross	<i>Diomedea albatrus</i>

Threatened

Steller sea lion (eastern population)	<i>Eumetopias jubatus</i>
Snake R. spring and summer chinook salmon	<i>Oncorhynchus tshawytscha</i>

Snake R. fall chinook salmon *Oncorhynchus tshawytscha*
Spectacled eider *Somateria fischeri*

2.2.1 Endangered or Threatened Seabirds

Listed or candidate species of seabirds include the endangered short-tailed albatross (*Diomedea albatrus*). The world breeding population of the short-tailed albatross was estimated to be 400 birds in 1988, and has now increased to over 700 (Richardson, 1994). As the population increases, the potential for interactions with commercial fisheries increases. However, the short-tailed albatross population is steadily increasing due to its protection on the breeding grounds (two islands in Japan and a recent report on Midway Island). Currently no evidence exists as to whether or not the halibut fishery is impeding their recovery.

Past observations indicate that as with other albatrosses, older short-tailed albatrosses are present in Alaska primarily during the summer and fall months along the shelf break from the Alaska Peninsula to the GOA, although 1- and 2-year old juveniles may be present at other times of the year. Consequently, these albatrosses generally would be exposed to fishery interactions most often during the summer and fall.

Albatrosses are surface feeders that take principally small fish (e.g., larval and juvenile walleye pollock and sablefish), squid, and zooplankton, much of which is presumed to be of little commercial interest. The importance of commercial fish species in the diet of the short-tailed albatross and the effects of the commercial fishery on this species are not well known, but direct competition for food supplies is probably not a substantial problem for this species.

Formal ESA section 7 consultation was concluded on the effects of the groundfish fisheries on the short-tailed albatross and other species listed under the ESA under the jurisdiction of the USFWS on July 3, 1989. That consultation concluded that BSAI and GOA groundfish fisheries would adversely affect the short-tailed albatross and would result in the incidental take of up to two birds per year, but would not jeopardize the continued existence of that species. The short-tailed albatross could be affected by: (1) Direct injury or mortality from fishing equipment, (2) entanglement or ingestion of plastics and other debris disposed overboard from fishery vessels; (3) injury resulting from contact with petroleum products spilled or leaked from vessels, and (4) competition for food resources. USFWS issued an amendment to the 1989 Biological Opinion on February 19, 1997. The Biological Opinion was amended as follows: (1) Hereafter, the scope of section 7 consultations would be limited to the hook-and-line groundfish fisheries which are likely to adversely affect short-tailed albatrosses, and (2) the incidental take was revised to four short-tailed albatrosses during the two-year period of 1997 and 1998.

USFWS concluded an informal consultation with NMFS on January 12, 1998, and concurred with NMFS's assessment that the proposed regulatory measures to reduce seabird mortality in the Pacific halibut fishery and the regulatory exemption for vessels less than 26 ft (7.9 m) LOA using hook-and-line gear in the groundfish fisheries in the BSAI or GOA or in the Pacific halibut fishery are not likely to adversely affect the short-tailed albatross.

NMFS is awaiting the conclusion of an earlier consultation on the Pacific halibut fishery itself and anticipates that USFWS will issue a Biological Opinion that establishes an incidental take limit for short-tailed albatrosses in the Pacific halibut fishery, prior to the effective date of the required seabird

avoidance measures.

Five short-tailed albatross takes have been reported in the Alaskan hook-and-line fisheries from 1983 through 1996. These occurred in the months of July, August, September, and October (2). Short-tailed albatross sightings in the BSAI and/or GOA have occurred in all months from April through November (Sherburne, 1993).

The first reported take of a short-tailed albatross in the Alaskan groundfish fisheries was in July 1983, north of St. Matthew Island. The bird was found dead in a fish net. A second take occurred in October 1987, and was caught by a vessel fishing for halibut in the GOA.

A juvenile short-tailed albatross was taken in the western GOA IFQ sablefish hook-and-line fishery south of the Krenitzin Islands on August 28, 1995. The captain of the vessel reported that hundreds of albatrosses were caught and drowned on sets of squid-baited hooks (the others were Laysan and black-footed albatrosses). A NMFS-certified observer reported that longlines may have been inadequately weighted to assure rapid descent of baited hooks (A. Grossman, NMFS-PRMD, memo dated September 14, 1995).

A take of a short-tailed albatross in the IFQ sablefish fishery occurred on October 8, 1995, in the Bering Sea; NMFS was notified of the bird death on November 14 at the closure of the IFQ longline fishery. By the time USFWS confirmed the bird's identification, the groundfish TACs were reached and NMFS had closed the fisheries. The reason for the second taking was also attributed to insufficient weighting of the longlines (A. Grossman, NMFS-PRMD, memo dated February 13, 1996).

The fifth short-tailed albatross was taken September 27, 1996, in the BSAI. The 5-year old adult bird was taken in a hook-and-line fishery.

All five albatrosses had been banded on their Japanese breeding grounds and their bands were recovered, allowing scientists to verify identification and age.

Beginning in 1994, NMFS informed participants in the commercial fisheries of the need and possible methods for avoiding entanglement of short-tailed albatross in fishing gear as well as requested reports on sightings and encouraged compliance with MARPOL (news releases, 1 in 1994, 2 in 1995, 4 in 1996, and 2 in 1997). A direct mailing to 1,740 hook-and-line fishermen in the GOA and the BSAI occurred in December 1996, and a mailing to 10,000 IFQ permit holders occurred in February 1997. An informational brochure was distributed to all IFQ permit holders and to hook-and-line groundfish fishery participants in March and April 1997. This distribution is being accomplished as a cooperative effort with the industry and the Council. NMFS assisted the North Pacific Longline Association in the distribution of the booklet, "Longline Fishing Dollars and Sense: Catching Fish, Not Birds, Using Bottom Set or Mid Water Set Longlines" by Nigel Brothers to approximately 3000 hook-and-line fishermen in the Alaska groundfish and halibut fisheries in August 1997.

The bycatch of albatrosses by the North Pacific fishing fleet could impact the population of this species. NMFS, USFWS, and the US Geological Survey, Biological Resources Division are cooperating to obtain accurate information on the mortality of seabirds related to trawl, longline, and pot vessels fishing groundfish in the GOA and BSAI. USFWS, in cooperation with NMFS, is developing a population model for the short-tailed albatross which will determine the level of mortality that the species can sustain without affecting its recovery.

Alternative 2 is expected to minimize fishery interactions between the short-tailed albatross and other seabird species and the halibut fishery and is expected to mitigate the fisheries' effects on endangered or threatened species or their critical habitats.

2.2.2 Endangered or Threatened Marine Mammals

Under section 118 of the MMPA, commercial fisheries must be classified in one of three categories based on the frequency of incidental mortality and serious injury of marine mammals. The Pacific halibut fishery in U.S. Convention waters off Alaska is classified as a Category III fishery—a remote likelihood of or no known incidental mortality or serious injury of marine mammals. Participants in Category III fisheries that meet prescribed criteria under section 101(a)(5)(E)(i), are not subject to penalties under the MMPA, so long as they report all incidental mortalities and injuries of marine mammals in accordance with section 118 of the MMPA.

NMFS has determined that for the humpback whale and the Steller sea lion, the mortality and serious injury incidental to commercial fishing operations will have a negligible impact (60 FR 45399; August 31, 1995). A "negligible impact" is defined as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

The impact of BSAI and GOA groundfish fisheries on Steller sea lions was addressed in a formal consultation on January 26, 1996. The Biological Opinions issued for these consultations concluded that the FMPs, groundfish fisheries, and TAC levels were not likely to jeopardize the continued existence and recovery of the Steller sea lion populations. Given the gear and fishery similarities between the Pacific halibut fishery and the BSAI and GOA groundfish fisheries, NMFS believes that this proposed action is not likely to adversely affect any endangered or threatened marine mammals or their critical habitat. NMFS initiated a consultation under section 7 of the ESA on the potential effects this proposed action may have on endangered or threatened marine mammals or their critical habitat. NMFS has concluded that this action is not likely to adversely affect those threatened and endangered species under its jurisdiction. Neither will the action result in adverse modification of designated critical habitats of those species.

2.3 Impacts on Seabirds not Listed under the ESA

Over 80 species of seabirds occur over waters off Alaska and could potentially be impacted by interactions with the halibut fisheries. See the EA/RIR/FRFA prepared for the final rule that would require seabird avoidance measures in the groundfish hook-and-line fisheries off Alaska for a detailed discussion (NMFS, 1997).

2.3.1 Seabird Bycatch in the Alaskan Fisheries

The NMFS Observer Program has documented bycatch of seabird species in the GOA and BSAI groundfish fisheries since 1989. In 1995, the seabird bycatch in observed samples from hook-and-line vessels in the GOA and BSAI was 351 and 4,417 birds, respectively (NMFS, 1997), and far exceeded the seabird bycatch found in other gear types. Until statistically valid extrapolation procedures can be developed by NMFS, extrapolating from the known seabird takes in observer samples to the total fleet catch is inappropriate at this time. It will be important to take time and area fishing effort, seabird

take reports from outside the observer sample, and seabird distribution into consideration.

Preliminary estimates of the incidental mortality of seabirds in Alaska groundfish fisheries between 1989 and 1993 indicates that about 85 percent of the total average seabird mortality in all groundfish fisheries during this time occurred in the BSAI (Wohl et al., 1995). These preliminary data may be an overestimate due to several factors in the BSAI: increased groundfish harvest, higher populations or concentrations of seabirds, and higher levels of observer coverage may have reflected a greater percentage of seabird mortality in the BSAI.

The magnitude of the seabird bycatch problem in the North Pacific groundfish fisheries is ascertained in part by data collected by observers. The magnitude of seabird bycatch in the Pacific halibut fishery off Alaska has not been addressed at this time. Although vessel operators are not required to have observer coverage for the harvest of halibut, approximately 9 percent of the vessels are ≥ 60 ft LOA and also harvest sablefish (Table 2), thus triggering groundfish observer coverage requirements. Seabird bycatch data would be collected on these vessels. Seabird bycatch also could be monitored using logbooks or some other required reporting mechanism. Seabird bycatch in the halibut fishery may be similar to that in the groundfish fisheries given gear and fishery similarities. A key difference between the halibut and groundfish fisheries is the greater number of small vessels in the halibut fleet. Whether vessel size is a factor in seabird bycatch, is not certain.

2.3.2 Seabird Bycatch as it Relates to Vessel Size

At its December 1996 meeting, the Council discussed briefly the possibility that small vessels in the halibut fishery be exempt from requirements for seabird avoidance measures (Alternative 2, option 1). Given the Council's recommendation at its June meeting for a small vessel exemption, NMFS is not aware of any justification to not extend the exemption to small vessels in the groundfish fisheries (Alternative 2, option 4). The best scientific information that is available on this subject indicates that variations between vessels in the numbers of observed seabird catches appeared to be related, at least in part, to the extent to which birds accumulate around vessels. This, in turn, is a function of the length of time that offal is discarded. Smaller vessels are not as attractive to scavenging seabirds as are larger vessels, which provide a continuous supply of food (Barnes et al., 1997). Smaller vessels fishing off the southwest cape in South Africa do not accumulate large numbers of scavenging birds, because hauling and setting periods are much shorter and erratic and the offal is only available to birds for short periods and in small quantities (Christian Boix, personal communication).

Observer seabird data collected in Australian and New Zealand longline fisheries has been analyzed for potential factors that may mitigate seabird bycatch (Duckworth, 1995; Klaer, 1995). Some of the factors considered were: area, presence and quality of streamer line, phase of the moon for night sets, time of day of gear deployment, time taken for gear deployment, bait condition, use of bait thrower, wind strength, atmospheric pressure, and percent cloud cover.

Public testimony at the June 1997 Council meeting supported a small vessel regulatory exemption under the preferred alternative (Alternative 2, Option 4). Representatives of vessel fishing associations testified that fishing practices of vessels less than 26 ft (7.9 m) LOA did not warrant the more extensive measures that are required under the current groundfish regulations. Small vessel fishing practices typically include: (1) use of baited hooks that sink as soon as they enter the water, (2) use of anchored groundlines, (3) snap-on gear which acts as a weight to the groundline, (4) slow gear deployment speeds which acts to sink the gear immediately, (5) very minimal freeboard at stern of

small vessels, 5) minimal and sporadic offal discharge relative to larger vessels, thus less of an attractant to seabirds, and 6) fishing in nearshore areas where the likelihood of encountering the short-tailed albatross and other pelagic seabirds is minimal. Small vessels using snap-on gear are less likely to have a seabird bycatch problem because of the weight of the snaps and the slow speed in which gear is deployed, both factors that contribute to the baited hooks sinking immediately upon gear deployment. Using snap-on gear requires the gangions to be attached manually to the groundline as it is being deployed, therefore the vessel must deploy gear at slower speeds than when using conventional gear. The vessel length criteria of 26 ft (7.9 m) LOA was chosen because vessels of this size represent the typical skiff fleet. In 1996, 2124 vessels made landings in the halibut and sablefish fisheries of which 328 were less than 26 ft (7.9 m) LOA (15 percent of total number of vessels making halibut and sablefish landings). In 1996, 1847 vessels were issued Federal fisheries permits for the BSAI and GOA groundfish fisheries of which 47 were less than 26 ft (7.9 m) LOA (2.5 percent of 1996 Federal fisheries permittees) (Tables 2 and 3).

2.3.3 Monitoring Seabird Bycatch in the Halibut Fishery

The magnitude of the seabird bycatch problem in the North Pacific groundfish fisheries is ascertained in part by data collected by observers (NMFS, 1997). The magnitude of seabird bycatch in the Pacific halibut fishery off Alaska has not been addressed at this time. Although vessel operators are not required to have observer coverage for the harvest of halibut, approximately 9 percent of the vessels are \geq 60 ft LOA and also harvest sablefish (Table 2), thus triggering groundfish observer coverage requirements. Seabird bycatch data would be collected on these vessels. Seabird bycatch also could be monitored using logbooks or some other required reporting mechanism.

2.4 Impacts on Marine Mammals

Marine mammals not listed under the ESA that may be present in U.S. Convention waters off Alaska include cetaceans, [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon spp.*)] as well as pinnipeds [northern fur seals (*Callorhinus ursinus*), and Pacific harbor seals (*Phoca vitulina*)] and the sea otter (*Enhydra lutris*).

None of the alternatives are expected to have a significant effect on marine mammals.

2.5 Coastal Zone Management Act

Implementation of any of the alternatives would be conducted in a manner consistent, to the maximum extent practicable, with 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.

2.6 Conclusions or Finding of No Significant Impact

None of the alternatives are likely to significantly impact the quality of the human environment, and the preparation of an environmental impact statement for the proposed action is not required by Section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

David Evans 2/20/98
Date

3.0 REGULATORY IMPACT REVIEW: ECONOMIC AND SOCIOECONOMIC IMPACTS OF THE ALTERNATIVES

This section provides information about the economic and socioeconomic impacts of the alternatives including identification of the individuals or groups that may be affected by the action, the nature of these impacts, quantification of the economic impacts if possible, and discussion of the trade offs between qualitative and quantitative benefits and costs.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

This section also addresses the requirements of both E.O. 12866 and the RFA to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" impacts on small entities under the RFA.

E. O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

- (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

- (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

A regulatory program is "economically significant" if it is likely to result in the effects described above. The RIR is designed to provide information to determine whether the proposed regulation is likely to be "economically significant."

3.1 Identification of the Individuals or Groups that may be Affected by the Proposed Action

A recent description of the halibut fishery is contained in the report "Changes under Alaska's Halibut IFQ Program, 1995" (CFEC Report by Muse et.al., 1996). In 1996, 2124 vessels landed halibut from U.S. Convention waters off Alaska. Under Alternative 2, the number of small entities affected would depend upon the option exercised (small vessel exemption). Under Option 1 of Alternative 2, 15 percent of the 2124 vessels (328 < 26 ft (7.9 m)) would be exempt from seabird avoidance measures. Under Option 2 of Alternative 2, small vessels in both the halibut fishery and the GOA and BSAI hook-and-line fisheries would be exempt (2.5 percent, or 47 groundfish vessels < 26 ft (7.9 m)). No vessels would be exempt under Option 3 of Alternative 2. Under Option 4 of Alternative 2, halibut vessels and groundfish vessels less than 26 ft (7.9 m) LOA would be required to employ seabird avoidance measures under number 1 but would be exempt from measures required under number 2.

3.2 Economic and Social Impacts of the Alternatives

3.2.1 Impacts of Alternative 1 - Status Quo

The status quo alternative would not require any gear modifications, seabird avoidance devices, or changes in fishing methods intended to reduce the incidental mortality of seabirds. Such measures would continue to be voluntary.

3.2.2 Impacts of Alternative 2 - Require Seabird Bycatch Avoidances Measures in the Halibut Fishery

The measures required of all applicable vessels under number 1 of Alternative 2 (see below) would be expected to be of minimal or no cost. Procedural or operational changes may be required in fishing operations.

- Use hooks that when baited, sink as soon as they are put in the water. This could be accomplished by any means, including the use of weighted groundlines or thawed bait.
- If offal is discharged while gear is being set or hauled, offal discharge must occur in a manner that distracts seabirds from baited hooks, to the extent practicable. The discharge site on board a vessel must either be aft of the hauling station or on the opposite side of the vessel from the hauling station.
- Every reasonable effort shall be made to ensure that birds brought on board alive are released alive and that wherever possible, hooks are removed without jeopardizing the life of the bird.

Under number 2, the costs would depend on which and how many of the measures were used.

2. One or more of the following measures would be employed at all times when hooks are being

set:

- Gear must be set only during hours specified (between the times of nautical twilight), using only the minimum vessel's lights necessary for safety;
- Tow a streamer line or lines during deployment of gear to prevent birds from taking hooks;
- Tow a buoy, board, stick, broom, or other like device during deployment of gear, at a distance appropriate to prevent birds from taking hooks. Multiple devices may be employed; or
- Deploy hooks underwater through a lining tube at a depth sufficient to prevent birds from settling on hooks during deployment of gear.

Per vessel costs associated with number 2 measures:

Buoy or bag of buoys	\$50-\$100
Streamer line	\$200-\$250
Lining tube for underwater deployment	\$35,000

The lining tube might be an appropriate choice of bycatch avoidance devices by only the larger vessels (≥ 100 ft (30.5 m)). Smaller vessels may find the cost of a customized lining tube to be prohibitive. Smaller vessels (< 100 ft (30.5 m)) may find the cost of a lining tube to be prohibitive (approximately \$35,000 per vessel). Vessels ≥ 60 ft (18.3 m) numbered 189. The other seabird bycatch avoidance devices (bird streamer lines, buoys) ranged from \$50-\$250 per vessel. The impacts of Alternative 2 would depend on the option chosen. Options 1,2, and 4 propose some sort of regulatory exemption for small vessels. Option 4 would relieve a restriction on vessel less than 26 ft (7.9 m) LOA in the BSAI and GOA groundfish fisheries. These vessels are currently required to comply with all the seabird avoidance measures set forth at 50 CFR Part 679.24(e).

3.3 Administrative, Enforcement and Information Costs

No significant costs for administration, enforcement, or information requirements are expected under any of the alternatives.

4.0 FINAL REGULATORY FLEXIBILITY ANALYSIS

The objective of the Regulatory Flexibility Act is to require consideration of the capacity of those affected by regulations to bear the direct and indirect costs of regulation. If an action will have a significant impact on a substantial number of small entities an Final Regulatory Flexibility Analysis (FRFA) must be prepared to identify the need for the action, alternatives, potential costs and benefits of the action, the distribution of these impacts, and a determination of net benefits.

The Small Business Administration has defined all fish-harvesting or hatchery businesses that are independently owned and operated, not dominant in their field of operation, with annual receipts not in excess of \$3,000,000 as small businesses. In addition, seafood processors with 500 employees or fewer, wholesale industry members with 100 employees or fewer, not-for-profit enterprises, and government jurisdictions with a population of 50,000 or less are considered small entities. NMFS has determined that a "substantial number" of small entities would generally be 20 percent of the total universe of small entities affected by the regulation. A regulation would have a "significant impact"

on these small entities if it changed annual gross revenues by more than 5 percent, total costs of production by more than 5 percent, or compliance costs for small entities by at least 10 percent compared with compliance costs as a percent of sales for large entities.

If an action is determined to affect a substantial number of small entities, the analysis must include:

- (1) a description and estimate of the number of small entities and total number of entities in a particular affected sector, and total number of small entities affected; and
- (2) analysis of economic impact on small entities, including direct and indirect compliance costs, burden of completing paperwork or recordkeeping requirements, effect on the competitive position of small entities, effect on the small entity's cashflow and liquidity, and ability of small entities to remain in the market.

Under Section 604(a) of the RFA, each FRFA must contain a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

4.1 Economic Impact on Small Entities

Most catcher vessels harvesting halibut in U.S. Convention waters off Alaska meet the definition of a small entity under the RFA. In 1996, 2124 vessels landed halibut from U.S. Convention waters off Alaska. No regulatory measures are called for under Alternative 1, therefore, small entities would not be economically impacted as a result of regulatory action.

Under Alternative 2, the economic impact on small entities would depend upon the option exercised (small vessel exemption) and the particular measures chosen. A vessel operator would have a choice of several measures. NMFS anticipates that the smaller vessels (< 60 ft (18.3 m)) would not require the use of a lining tube (approximately \$35,000 per vessel). Vessels \geq 60 ft (18.3 m) numbered 189. The other seabird bycatch avoidance devices (bird streamer lines, buoys) ranged from \$50-\$250 per vessel.

USFWS concluded an informal consultation with NMFS on January 12, 1998, and concurred with NMFS's assessment that the proposed regulatory measures to reduce seabird mortality in the Pacific halibut fishery and the regulatory exemption for vessels less than 26 ft (7.9 m) LOA using hook-and-line gear in the groundfish fisheries in the BSAI or GOA or in the Pacific halibut fishery are not likely to adversely affect the short-tailed albatross.

NMFS is awaiting the conclusion of an earlier consultation on the Pacific halibut fishery itself and anticipates that USFWS will issue a Biological Opinion that establishes an incidental take limit for short-tailed albatrosses in the Pacific halibut fishery, prior to the effective date of the required seabird avoidance measures.

If the anticipated take of short-tailed albatross were exceeded under either alternative, the actual economic impacts resulting from a modification of the reasonable and prudent measures established to minimize take of the short-tailed albatross would depend upon the revised measures, which could

range from measures proposed under Alternative 2 to closures. The economic impact of closures would depend upon the length of the closures. Such economic impacts on small entities could result in a reduction in annual gross revenues by more than 5 percent and could, therefore, potentially have a significant economic impact on a substantial number of small entities.

The economic impacts on small entities could be minimized under Alternative 1 in that no regulatory measures would be required. Several measures available under Alternative 2 would also minimize the economic impacts on small entities. Very significant impacts on small entities could occur if closures were imposed due to the incidental take limit being exceeded. The likelihood of this happening is greater under Alternative 1.

The no action alternative would not require seabird avoidance measures in the Pacific halibut fishery, including small entities, which would not accomplish the Council's objective of limiting bycatch. Alternatives that addressed modifying reporting requirements for small entities were not considered by the Council or in this analysis. Such alternatives are not relevant to this action and would not mitigate the impacts on small entities. The proposed seabird avoidance measures are based on performance standards rather than design standards, therefore alleviating a potential economic burden to small entities. The exemption for vessels less than 26 ft (7.9 m) LOA (all small entities) proposed in the preferred alternative option would also alleviate a potential economic burden to small entities.

The proposed rule to implement required seabird avoidance measures in the Pacific halibut fishery was published in the Federal Register on December 15, 1997 (62 FR 65635) and comments were invited on the IRFA. No comments were received on the IRFA.

5.0 SUMMARY AND CONCLUSIONS

In early November 1996, several industry groups representing hook-and-line vessels in the GOA and the BSAI petitioned the Council and NMFS to impose regulatory measures that are intended to reduce the incidental mortality of seabirds in their fisheries. This action was motivated by recent takes (two in 1995 and one in 1996) of the short-tailed albatross (*Diomedea albatrus*), a listed species under the ESA. Pursuant to the ESA, the short-tailed albatross is afforded certain protections that are outlined in the section 7 consultation with the USFWS regarding the GOA and BSAI groundfish fisheries.

Millions of birds, representing over 80 species, occur over waters off Alaska. The presence of "free" food in the form of offal and bait attract many birds to fishing operations. In the process of feeding, birds sometimes come into contact with fishing gear and are accidentally killed. For example, most birds taken during hook-and-line operations are attracted to the baited hooks when the gear is being set. These birds become hooked at the surface, and are then dragged underwater where they drown. The probability of a bird being caught is a function of many interrelated factors including: Type of fishing operation and gear used; length of time fishing gear is at or near the surface of the water; behavior of the bird (feeding and foraging techniques); water and weather conditions (e.g., sea state); size of the bird; availability of food (including bait and offal); and physical condition of the bird (molt, migration, health). Almost any species which occurs in these waters is susceptible to interactions with fishing gear, although a few species are especially vulnerable.

Effective mitigation measures would reduce the incidental mortality of seabirds during longline fishing by minimizing the seabirds' attraction to fishing vessels and by preventing the seabirds from attempting to seize baited hooks, particularly during the period when the lines are set. At its

December 1996 meeting, the Council voted unanimously to recommend that all hook-and-line vessels fishing for groundfish in the GOA and BSAI must use certain seabird bycatch avoidance measures intended to reduce the incidental mortality of the short-tailed albatross and other seabird species. Furthermore, the Council intended that these or similar measures would be implemented in the Pacific halibut fishery in U.S. Convention waters off Alaska. A proposed rule that would implement seabird avoidance measures in the Alaskan groundfish hook-and-line fisheries was published in the Federal Register on March 5, 1997 (62 FR 10016) and public comments accepted through March 20, 1997. Final regulations will be effective by early 1997. At its annual meeting in January 1997, the IPHC reviewed and concurred with the development of seabird avoidance measures for the Pacific halibut fishery in U.S. Convention waters off Alaska. At its April 1997 meeting, the Council took initial action and recommended releasing this Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) for public review. At its June 1997 meeting, the Council recommended expanding the groundfish seabird avoidance measures to the Pacific halibut fishery in U.S. Convention waters off Alaska, with specified regulatory exemptions for vessels less than 26 ft (7.9 m) LOA in the Pacific halibut fishery and in the GOA and BSAI groundfish hook-and-line fisheries.

The alternatives for seabird bycatch avoidance measures are described in Sections 1 and 2 of this document.

USFWS concluded an informal consultation with NMFS on January 12, 1998, and concurred with NMFS's assessment that the proposed regulatory measures to reduce seabird mortality in the Pacific halibut fishery and the regulatory exemption for vessels less than 26 ft (7.9 m) LOA using hook-and-line gear in the groundfish fisheries in the BSAI or GOA or in the Pacific halibut fishery are not likely to adversely affect the short-tailed albatross.

NMFS is awaiting the conclusion of an earlier consultation on the Pacific halibut fishery itself and anticipates that USFWS will issue a Biological Opinion that establishes an incidental take limit for short-tailed albatrosses in the Pacific halibut fishery, prior to the effective date of the required seabird avoidance measures.

Given the gear and fishery similarities between the Pacific halibut fishery and the BSAI and GOA groundfish fisheries, NMFS believes that this proposed action is not likely to adversely affect any endangered or threatened marine mammals or their critical habitat. NMFS has initiated a consultation under section 7 of the ESA on the potential effects this proposed action may have endangered or threatened marine mammals or their critical habitat.

The measures required of all applicable vessels under number 1 of Alternative 2 would be expected to be of minimal or no cost. Procedural or operational changes may be required in fishing operations.

In 1996, 2124 vessels landed halibut from U.S. Convention waters off Alaska. Under Alternative 2, the economic impact on small entities would depend upon the option exercised (small vessel exemption) and the particular measures chosen. A vessel operator would have a choice of several measures. Smaller vessels (< 100 ft (30.5 m)) may find the cost of a lining tube to be prohibitive (approximately \$35,000 per vessel). Vessels \geq 60 ft (18.3 m) numbered 189. The other seabird bycatch avoidance devices (bird streamer lines, buoys) ranged from \$50-\$250 per vessel. In 1996, 328 vessels less than 26 ft (7.9 m) LOA made halibut landings. 47 vessels less than 26 ft (7.9 m) LOA were issued 1996 Federal fisheries permits.

None of the alternatives is expected to result in a "significant regulatory action" as defined in E.O. 12866.

None of the alternatives are likely to significantly affect the quality of the human environment, and the preparation of an environmental impact statement for the proposed action is not required by Section 102(2)(C) of NEPA or its implementing regulations.

6.0 REFERENCES

- Barnes, K.N., P.G. Ryan, and C. Boix-Hinzen. 1997. The impact of the Hake *Merluccius spp.* longline fishery off South Africa on Procellariiform seabirds. *Biological Conservation* 82:227-234.
- Duckworth, Kim. 1995. Analysis of factors which influence seabird bycatch in the Japanese southern bluefin tuna longline fishery in New Zealand waters, 1989-93. New Zealand Fisheries Assessment Research Document 95/26, Ministry of Fisheries, Wellington, 60 pp.
- Hill, P.S., D.P. DeMaster, and R.J. Small. 1996. Draft Alaska Marine Mammal Stock Assessments 1996. National Marine Mammal Laboratory, Alaska Fisheries Science Center, October 11.
- International Pacific Halibut Commission. 1987. The Pacific halibut: biology, fishery, and management. IPHC Technical Report 22.
- International Pacific Halibut Commission. 1995. Annual Report, Seattle.
- International Pacific Halibut Commission. 1997. IPHC 73rd Annual Meeting Handout, Victoria, British Columbia, Canada, January.
- Klaer, N. and T. Polacheck. 1995. Japanese longline seabird bycatch in the Australian Fishing Zone, April 1991- March 1994. Catch and catch rates by area and season and an evaluation of the effectiveness of mitigation measures. Division of Fisheries, CSIRO, October, Australia, 95 pp.
- Muse, Ben, K. Schelle, E. Dinneford, K. Iverson. 1996. Changes under Alaska's halibut IFQ program, 1995. CFEC Report #96-R10N, September.
- NMFS, 1997. Draft Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendment to Reduce the Incidental Seabird Mortality In Groundfish Hook-And-Line Fisheries off Alaska. March 28, 1997.
- Richardson, S. 1994. Status of the short-tailed albatross on Midway Atoll. *Elepaio* 54:35-37.
- Sherburne, J. 1993. Status Report on the Short-tailed Albatross, *Diomedea albatrus*. Alaska Natural Heritage Program, Environment and Natural Resources Institute, University of Alaska Anchorage. Anchorage. 58 pp.

Wohl, K.D., P.J. Gould, and S.M. Fitzgerald. 1995. Incidental mortality of seabirds in selected commercial fisheries in Alaska. Paper submitted to the Circumpolar Seabird Working Group, Ottawa, Canada, March, 50 pp.

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Table 1. The 1996 removals of Pacific halibut by regulatory area in net weight (thousands of pounds). From 1997 IPHC Annual Meeting Handout.

Table 2. Number of vessels making Pacific halibut landings in 1996.

Table 3. Number of vessels issued 1996 Federal fisheries permits in BSAI and GOA groundfish fisheries, preliminary data. Data from Fisheries Management Division, NMFS, Alaska Region.

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Figure 1. IPHC regulatory areas for the 1996 commercial halibut fishery. From 1997 IPHC Annual Meeting Handout.

Table 1. The 1996 removals of Pacific halibut by regulatory area in net weight (thousands of pounds).

Area	2A	2B	2C	3A	3B	All of 4	Total
Commercial	287	9,529	8,797	19,693	3,807	5,311	47,424
Sport	229	657	1,911	4,871	18	45	7,731
Bycatch Mortality ¹	433	307	342	2,421	1,748	8,111	13,362
Personal Use	14 ²	300	0	97	37	94	542
Wastage ¹	4	242	185	627	110	138	1,306
Total	967	11,035	11,235	27,709	5,720	13,699	70,365

¹ Bycatch mortality and wastage is for all size categories of halibut.

² Treaty Indian ceremonial fish authorized in the Catch Sharing Plan.

Table 2. Number of vessels making Pacific halibut landings in 1996. Data from Restricted Access Management Division, NMFS, Alaska Region.

VESSEL SIZE RANGE (in ft length overall, LOA)	NUMBER OF VESSELS	FISHERY
< 26'	328	Halibut & Sablefish
0 to 35'	798	"
36 to 60'	1,141	"
< 60'	1,935	"
60 to 124'	181	"
> 124'	8	"
> 60'	185	"
TOTAL	2,124	"
<hr/>		
Total	1,558	Halibut Landings Only

Table 3. Number of vessels issued 1996 Federal fisheries permits in BSAI and GOA groundfish fisheries. Preliminary data from Fisheries Management Division, NMFS, Alaska Region.

VESSEL SIZE RANGE (in ft length overall, LOA)	NUMBER OF VESSELS
< 26'	47
< 60'	1490
≥ 60'	357
TOTAL	1847

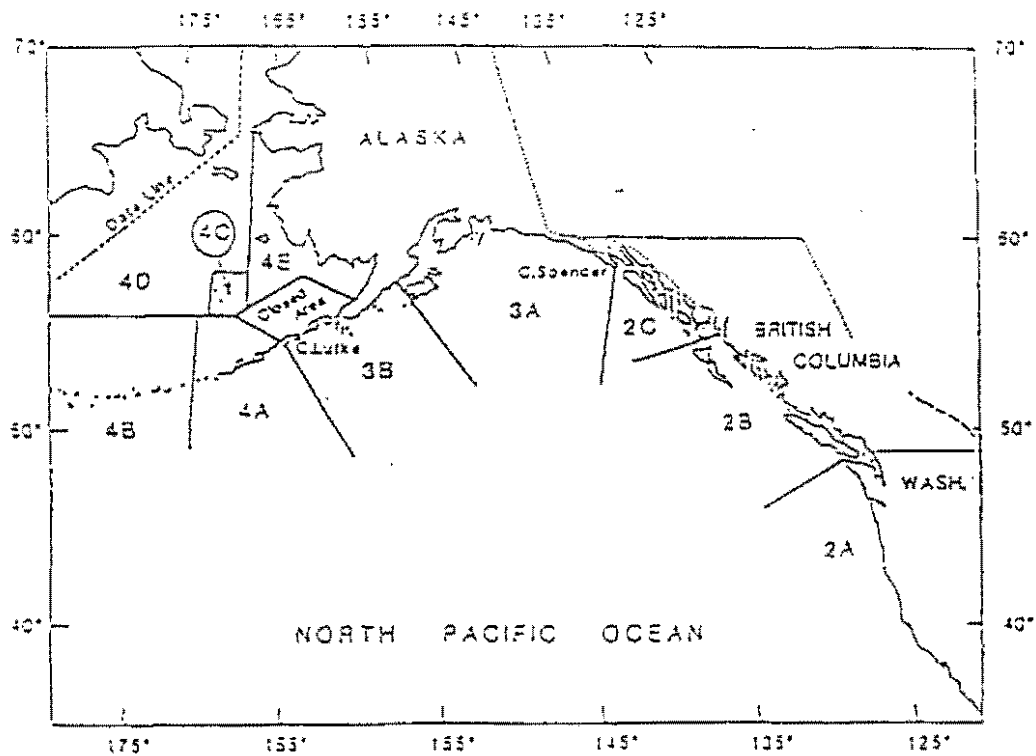


Figure 1. IPHC regulatory areas for the 1996 commercial fishery.