

**Draft for Initial Review**

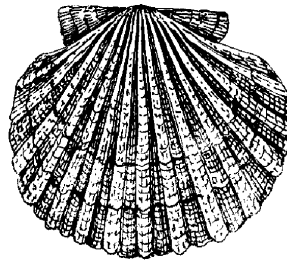
ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW  
INITIAL REGULATORY FLEXIBILITY ANALYSIS

for

**Amendment 10**

TO THE FISHERY MANAGEMENT PLAN FOR THE SCALLOP FISHERY OFF ALASKA

to modify the Licence Limitation Program



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May 2004



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## Executive Summary

Beginning in 2001, a Federal Scallop License Limitation Program (LLP) license is required on board any vessel deployed in scallop fisheries in Federal waters off Alaska. Under the LLP, 7 vessel owners are licensed to fish statewide (outside Cook Inlet Registration Area) utilizing two 15 foot dredges, and two vessels owners are licensed to fish statewide with a single 6-foot dredge. All 9 licenses permit vessel owners to fish inside Cook Inlet with a single 6-foot dredge.

Since the federal LLP was implemented, it has come to the attention of the Council that given observer requirements and their associated costs, this gear restriction may create a disproportionate economic hardship when fishing outside of state waters. In February 2004, the Council developed a problem statement and alternatives for analysis of modifying or eliminating the gear restriction on 2 of the 9 LLP licenses. Additionally the Council noted in its' problem statement that the current Scallop FMP does not reflect current management and biology and needs to be updated in this regard.

Three alternatives are considered in this analysis.

Alternative 1: Status Quo. Maintain the current 6 ft dredge restriction endorsement.

Alternative 1, status quo, represents the current LLP as approved by NMFS. There are currently 9 LLP licenses, of which seven have no gear restriction while 2 have a gear restriction endorsement which limits them to the use of a single 6 ft dredge.

Alternative 2: Modify the current 6 ft dredge restriction to allow vessels with the current endorsement to fish in statewide waters outside of Cook Inlet with a maximum of two ten-foot dredges (or two dredges with a combined width of no more than 20 feet).

This alternative would allow the two restricted permits to use longer dredges.

Alternative 3: Eliminate the current 6 ft dredge restriction such that there are no gear restrictions on any Scallop LLP for fishing in statewide waters outside of Cook Inlet.

Alternative 3 would allow all 9 LLP holders to utilize the full complement of gear, two 15 ft dredges, in statewide waters outside of Cook Inlet. This alternative is consistent with the State of Alaska revised regulations which limit scallop vessels to a maximum of 2- 15 ft dredges.

Analysis indicates that alternatives to the status quo may impact other fishery participants and particularly the voluntary cooperative structure under which the fishery is currently prosecuted. The relative economic impacts on the other participants in the fishery would be two-fold in the decrease in relative harvest percentage (that which is currently unavailable to the gear restricted permit holders) as well as a presumed decrease in the value of the LLP licenses currently held given their limited number. For alternatives 2 and 3, the gear restrictions would be modified (alternative 2) or eliminated (alternative 3). Expansion of statewide operations of the two license holders subject to a relaxation of the gear limitation is not known, but if expansion occurs, it is most likely to occur in Area D (PWS) and Area K (Kodiak) given the smaller size of these vessels. As these areas are currently fully utilized, any expansion of harvests by the two vessels would be at the expense of the other license holders in the fishery. Additionally the value of the two licenses subject to less stringent gear restrictions would increase as those licenses would be usable for substantially larger operations. The relative value of the remaining 7 licenses under the federal LLP are likely to decline with the increase in the number of non-gear restricted licenses. The impacts on the LLP license holders that are in the voluntary cooperative depend upon the operations and harvests of others in the fishery as the cooperative does not receive an exclusive allocation in the fishery. If the other participants increase harvests, the cooperative may need to respond by either reducing its own harvests or expanding the cooperative to

include these other participants. In either case, the return to cooperative members could be expected to decline as a portion of the fishery currently harvested by the cooperative would be harvested by or allocated to these other LLP holders.

None of the alternatives are expected to have a significant impact on endangered, threatened, or candidate species and none of the alternatives would affect takes of marine mammals. An action to modify the gear restriction on two LLP licenses would not alter the harvest of scallops or otherwise impact scallop stocks.

## **1.0 Purpose and Need**

### **1.1 Introduction**

The scallop fishery in the Exclusive Economic Zone (EEZ) (3 to 200 miles offshore) off Alaska is jointly managed by NMFS and the Alaska Department of Fish and Game (ADF&G) under the Fishery Management Plan for the Scallop Fishery off Alaska (FMP). The FMP was developed by the North Pacific Fishery Management Council (Council) under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and approved by NMFS on July 26, 1995.

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).

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) addresses Amendment 10 to the FMP. 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 Chapter 2 of this document. Chapter 3 contains information on the affected environment, Chapter 4 discusses the biological and environmental impacts of the alternatives as required by NEPA. Impacts on endangered species and marine mammals are also addressed in this section. Chapter 5 contains a Regulatory Impact Review (RIR) which addresses the economic impacts of the alternatives and Chapter 6 discusses the IRFA as required under the RFA. The proposed action would modify the existing license limitation program (LLP) for the Alaska scallop fishery.

Beginning in 2001, a Federal Scallop License Limitation Program (LLP) license is required on board any vessel deployed in scallop fisheries in Federal waters off Alaska. Under the LLP, 7 vessel owners are licensed to fish statewide (outside Cook Inlet Registration Area) utilizing two 15 foot dredges, and two vessels owners are licensed to fish statewide with a single 6-foot dredge. All 9 licenses permit vessel owners to fish inside Cook Inlet with a single 6-foot dredge.

### **1.2 Background on the Scallop LLP**

The perceived need to limit access to the fishery was the primary motivation for the Council to begin its consideration of Federal management of the scallop fishery in 1992. Following a specific incident of unregulated fishing activity in Prince William Sound resulting in the State's GHL being exceeded by more than 100 percent, the Council requested that NMFS implement an emergency rule to close Federal waters to fishing for scallops to prevent overfishing of the scallop stocks. NMFS approved the Council's request and closed Federal waters off Alaska to fishing for scallops by emergency rule on February 23, 1995 (60 FR 11054, March 1, 1995).

To respond to the need for Federal management of the scallop fishery once the emergency rule expired, the Council prepared and adopted an FMP which was approved by NMFS on July 26, 1995. The only management measure authorized and implemented under the FMP was an interim 1 year closure of Federal waters off Alaska to fishing for scallops (60 FR 42070, August 15, 1995). The interim closure prevented uncontrolled fishing for scallops in Federal waters while the Council developed a Federal scallop management program.

## Summary of FMP amendments leading to the LLP (amendment 4)

### *Amendment 1: State-Federal Management Regime*

Amendment 1 was approved by NMFS on July 10, 1996 (61 FR 38099). Amendment 1 established a joint State- Federal management regime under which NMFS implemented Federal scallop regulations that duplicated most State scallop regulations, including definitions of scallop registration areas and districts, scallop fishing seasons, closed waters, gear restrictions, efficiency limits, crab bycatch limits, scallop catch limits, in-season adjustments, and observer coverage requirements. This joint State-Federal management regime was designed as a temporary measure to prevent unregulated fishing in Federal waters until changes in the Magnuson-Stevens Act would enable the Council to delegate management of the fishery to the State. Federal waters were re-opened to fishing for scallops on August 1, 1996.

### *Amendment 2: Vessel Moratorium*

Amendment 2 to the FMP, establishing a temporary moratorium on the entry of new vessels into the scallop fishery in Federal waters off Alaska was approved on April 11, 1997 (62 FR 17749). To qualify its owner for a moratorium permit, a vessel must have made a legal landing of scallops during 1991, 1992, or 1993, or during at least 4 separate years from 1980 through 1990. The moratorium was intended to remain in effect through June 30, 2000, or until replaced by a permanent limited access system. Eighteen vessel owners qualified for moratorium permits under the Federal vessel moratorium.

### *Amendment 3: Delegate Management Authority to the State*

Amendment 3 delegated to the State the authority to manage all aspects of the scallop fishery in Federal waters, except limited access, including the authority to regulate vessels not registered under the laws of the State. The final rule implementing Amendment 3 was published on July 17, 1998 (63 FR 38501). Amendment 3 simplified scallop management in the Federal waters off Alaska by eliminating the unnecessary duplication of regulations at the State and Federal levels.

### *Amendment 4: License Limitation Program*

In December 1996, the Council initiated analysis of a license limitation program for the scallop fishery. Section 303(b)(6) of the Magnuson-Stevens Act provides authority to limit access to a fishery "...to achieve optimum yield if, in developing such a system, the Council and Secretary take into account:

- A. present participation in the fishery
- B. historical fishing practices in, and dependence on, the fishery,
- C. the economics of the fishery,
- D. the capability of fishing vessels used in the fishery to engage in other fisheries,
- E. the cultural and social framework relevant to the fishery, and,
- F. any other relevant considerations."

A LLP was proposed to limit access to the fishery, because re-entry of latent capacity would adversely affect the economic viability of the current participants in the fishery.



The EA for Amendment 4 to the Scallop LLP considered a range of 6 alternatives and two options for analysis. The preferred alternative was the following and including two additional options for area endorsements and vessel reconstruction and replacement:

Holders of either Federal or State moratorium permits that used their moratorium permits to make legal landings of scallops in two of the three years (1996, 1997, 1998 through 10/9) would receive a license. The federal or state moratorium qualification period would serve as the historic qualifying period and the years 1996, 1997 and 1998 would serve as the recent qualifying period. Under this alternative, a total of 9 licenses would be issued; one for each vessel.

Option 1: Area Endorsements

No area endorsements. All licenses are statewide, but Cook Inlet vessels would be restricted to a single 6 ft dredge in all areas based on recent activity.

Option 2: Vessel Reconstruction and Replacement

No increases in vessel length allowed. Maximum vessel length will be restricted to 100% of the LOA of the qualifying vessel on February 8 1999, unless the moratorium permit was used on a longer vessel in the recent qualifying period in which case the license will be limited to 100% of the LOA of the longest vessel used in the recent qualifying period.

Area endorsements were considered to address concerns about having separate scallop fleets inside and outside of Cook Inlet. Originally, the designation of separate licenses was intended to protect the Homer small boat fleet from competition by larger outside vessels. Three factors were cited in public testimony from February 1998 indicating that this protection was no longer necessary. First, the season opening dates for Yakutat and PWS had been changed from January to July 1, providing for additional fishing opportunities for larger vessels in the summer months. The second reason is that Cook Inlet requires the use of a single 6 foot dredge, which would not be economical to fish with a larger vessel and an 11 person crew. The third reason cited is that the Cook Inlet (Kamishak) quota had remained very small relative to outside areas, ranging from 20,000 to 28,000 pounds during that time period. Since 1997, the GHR ceiling for the Cook Inlet Registration area has been limited to 20,000 pounds.

The area endorsement that was originally adopted allowed the Cook Inlet qualified vessels to fish in other areas but limited these vessels to fishing only one 6-foot dredge. Testimony at the February 1998 meeting indicated that this could be a non- economically viable option if the restricted vessels were required to carry an observer in the statewide areas. In the EA for Amendment 4 it was acknowledged that: *“Option 1C (the option chosen) would allow vessels to fish in the outside waters with a gear restriction, but the observer costs would be prohibitive, and none of the Cook Inlet vessels would be expected to participate in areas outside Cook Inlet. The difference between Option 1C(1) and Option 1C(2) is one vessel, the F/V Wayward Wind, that fished outside Cook Inlet during the historic qualifying period, but not in the recent qualifying period. Option 1C(1) would limit this vessel to fishing one 6-foot dredge outside of Cook Inlet.”* (NPFMC, 1999).

The Council adopted an LLP, which limited the fishery to a total of 9 licenses. Only one license was issued for each qualifying vessel. Only those holders of moratorium permits who made legal landings of scallops from a vessel in two of the three years 1996, 1997, or 1998 received a license. The Council further adopted several options from the analysis, including area endorsements and restrictions and limits on vessel replacement size.

In deciding upon the area endorsement, the Council debated the need to limit capacity in the fishery based upon historical precedent and the vulnerability of the resource. The Council chose to adopt the more restrictive licence limitation option available to them, given the concerns regarding the overcapacity of the fleet and the potential to overfish the scallop resource at that time.

The net result was that all licenses are statewide, but license holders who never made a legal landing of scallops from outside Cook Inlet during the qualifying period were restricted to a single 6 ft dredge in all areas. Federal regulations under 50 CFR 679.4(g)(3) state that “A scallop license authorizes the license holder to catch and retain scallops only if the vessel length and gear used do not exceed the vessel length and gear endorsements specified on the licence...”. This is the specific restriction that has been brought to the attention of the Council. Testimony received by Max and Scott Hulse indicates that they are economically disadvantaged as the only scallop fishery participants in the statewide fishery that are restricted to the use of a single 6 ft dredge. Apparently, the other 6 ft dredge endorsed licence, for Thomas Hogan, is only being used to fish within Cook Inlet. All of the other seven licence holders are able to use the full complement of two 15 ft dredges in the statewide fishery.

### 1.3 Problem statement adopted by the Council

The Council adopted the following problem statement at its’ February 2004 meeting in addressing the need for action on modifying the LLP gear restriction:

The current federal LLP limits two license holders to fish with a single 6 ft dredge in federal waters while 7 license holders are allowed to use the full complement of gear (two 15 ft dredges). The Council approved this LLP under amendment 4 to the federal scallop FMP, as a means to address excess capacity in the scallop fishery. Since the federal LLP was implemented in 2001, it has come to the attention of the Council that given observer requirements and their associated costs, this gear restriction may create a disproportionate economic hardship when fishing outside of state waters. The Council is considering modifying or eliminating this gear restriction on those federal LLP licences. Additionally, the current scallop FMP does not reflect current management and biology and needs to be updated in this regard.

## 2.0 Description of the Alternatives

Three alternatives are considered in this analysis.

### 2.1 Alternative 1: Status Quo. Maintain the current 6 ft dredge restriction endorsement.

Alternative 1, status quo, represents the current LLP as approved by NMFS. There are currently 9 LLP licenses, of which seven have no gear restriction while 2 have a gear restriction endorsement which limits them to the use of a single 6 ft dredge. These two vessels fished only in Cook Inlet during the qualifying period as stated in the EA for Amendment 4 to the Scallop FMP.

### 2.2 Alternative 2: Modify the current 6 ft dredge restriction to allow vessels with the current endorsement to fish in statewide waters outside of Cook Inlet with a maximum of two ten-foot dredges (or two dredges with a combined width of no more than 20 feet).

This alternative would allow the two restricted permits to use longer dredges.

### 2.3 Alternative 3: Eliminate the current 6 ft dredge restriction such that there are no gear restrictions on any Scallop LLP for fishing in statewide waters outside of Cook Inlet.

Alternative 3 would allow all 9 LLP holders to utilize the full complement of gear, two 15 ft dredges, in statewide waters outside of Cook Inlet. This alternative is consistent with the State of Alaska revised regulations which limit scallop vessels to a maximum of 2- 15 ft dredges.

## 2.4 Alternatives considered but not carried forward for analysis

Since the appeal to change the existing LLP was brought forward in public testimony at the February 2004 Council meeting, consideration was given toward reexamining the alternatives from the previous analysis for amendment 4. These alternatives, and specifically the gear size restriction, were described in section 1.1 of this document. In 2000 when the Council was making its decision to limit the fishery according to its preferred alternative and options, the Council was responding to the vulnerability of the scallop resource at that time and the imminent need to limit capacity in the fishery. Since that time, the capacity in the fishery has been reduced by the voluntary cooperative structure. Given the changing nature of both the fishery as well as the current status of the statewide scallop stocks, a reconsideration of previously examined qualifying criteria for the LLP did not seem to suitably address the current status of the fishery and fishery participants.

Testimony to the Council at the February 2004 meeting suggested that the cost of carrying an observer in statewide waters is a limiting factor when fishing with only a 6ft dredge. Consideration was given for an alternative under the LLP which allows for a waiver of statewide observer requirements for vessels utilizing a 6ft dredge in statewide waters. However, observer coverage is a Category 1 measure under the FMP and delegated to the State of Alaska for management. Thus, any waiver of observer requirements would be evaluated by the Board of Fisheries. Waivers for observer coverage have been brought forward to the Board of Fisheries in the past, but these waivers have not been approved by the BOF given concerns regarding the limited available information on the status of statewide scallop stocks and the emphasis placed upon the information provided by the Scallop Observer Program. Scallop proposals are considered by the BOF on a three-year cycle under "Miscellaneous Shellfish" issues. The next opportunity to address regulation changes for the scallop fishery will be in March 2006.

## 3.0 Affected Environment

### 3.1 Physical Environment

The management areas covered under the Scallop FMP includes all Federal waters of the Gulf of Alaska (GOA) and the Bering Sea/Aleutian Islands area (BSAI). The GOA is defined as the U.S. exclusive economic zone (EEZ) of the North Pacific Ocean, exclusive of the Bering Sea, between the eastern Aleutian Islands at 170°W longitude and Dixon Entrance at 132°40'W longitude. The BSAI is defined as the U.S. EEZ south of the Bering Strait to the Alaska Peninsula and Aleutian Islands and extending south of the Aleutian Islands west of 170° W longitude.

All commercial fisheries for Alaskan scallops take place in relatively shallow waters (< 200 m) of the continental shelf. Coastal waters overlying the continental shelf are subject to considerable seasonal influences. Winter cooling accompanied by turbulence and mixing due to major storms results in a uniform cold temperature in the upper 100 m. Seasonal changes in temperature and salinity diminish with increasing depth and distance from shore.

Along the outer shelf and upper slope, bottom water temperatures of 4 to 5° C persist year-round throughout the periphery of the GOA. With further increase in depth, water temperature shows no significant seasonal change but gradually decreases with depth, reaching 2° C or less at greater depths. The water circulation pattern in both the eastern Bering Sea and Gulf of Alaska is a counterclockwise gyre (Sharma 1979). Inshore current flow patterns are affected by weather, tides, and topography.

The continental shelf parallels the southeastern Alaska coast and extends around the GOA. Total area of continental shelf in the GOA is about 160,000 square km, which is less than 25 percent of the eastern Bering Sea Shelf. Although its width is less than 10 miles at some points, it is generally 30 to 60 miles wide. As it curves westerly from Cape Spencer towards Kodiak Island it extends some 50 miles seaward, making it the most extensive shelf area south of the Bering Sea. West of Kodiak Island and proceeding along the Alaska

Peninsula toward the Aleutian Islands, the shelf gradually becomes narrow and rough again. The broadening and narrowing of the continental shelf from east to west plays an important role in the circulation of waters through the GOA, which is dominated by the Alaska Coastal Current (ACC).

The most prominent and unique feature of the Bering Sea is the extensive continental shelf in the eastern and northern portion of the sea. It constitutes approximately 80% of the total shelf area in the Bering Sea (Hood and Kelly 1974) and is one of the world's largest. For the Bering Sea as a whole, 44% of its 2.3 million km<sup>2</sup> area is continental shelf, 13% continental slope, and 43% deepwater basin.

The broad eastern Bering Sea shelf is extremely smooth and has a gentle uniform gradient resulting from sediment deposits (Sharma 1974). The sediments, originating along the coast and transported offshore in graded suspension by storm waves, are predominantly sands over the inner shelf and silt and clay sediments on the outer shelf and slope.

Forming a partial barrier to the exchange of Bering Sea and Pacific Ocean water is the Aleutian-Commander Islands arc. This chain is made up of more than 150 islands and has a total length of approximately 2260 km (Gershanovich 1963). Shelf areas throughout most of the Aleutians portion of the chain are narrow (and frequently discontinuous between islands) ranging in width on the north and south sides of the island from about 4 km or less to 42-46 km. The shelf broadens in the eastern Aleutians.

Exchange of water between the Bering Sea and the Pacific Ocean occurs through the various Aleutian Island passes with an estimated 14% of the Pacific water remaining in the Bering Sea (Sharma 1974).

## 3.2 Biological Environment

### 3.2.1 Biology, Abundance, and Distribution of Weathervane scallops

Weathervane scallops (*Patinoplectin caurinus*), are distributed from Point Reyes, California, to the Pribilof Islands, Alaska. The highest known densities in Alaska have been found to occur in the Bering Sea, off Kodiak Island, and along the eastern gulf coast from Cape Spencer to Cape St. Elias. Weathervane scallops are found from intertidal waters to depths of 300 m, but abundance tends to be greatest between depths of 40-130 m on beds of mud, clay, sand, and gravel.

Scallops are typically found in elongated beds oriented along the coast in the same direction as prevailing currents. A combination of large-scale (overall spawning population size and oceanographic conditions) and small-scale (site suitability for settlement) processes influence recruitment of scallops to these beds. Spawning occurs annually between May and early July. Spermatozoa and eggs are released directly into the water where fertilization occurs. Fertilized eggs settle to the bottom where they hatch into larvae within several days then rise in the water column. Larvae drift with prevailing currents in the upper water column for about a month while undergoing metamorphosis. They then settle to the bottom as juveniles and may attach to the substrate with byssal threads.

Weathervane scallops begin to mature by age 3 at about 7.6 cm (3 inches) in shell height, and virtually all scallops are mature by age 4. Growth, maximum size, and size at maturity vary significantly within and between beds and geographic areas. Weathervane scallops are long-lived; individuals may live 28 years old or more. Scallops are likely prey to various fish and invertebrates during the early part of their life cycle. Flounders are known to prey on juvenile weathervane scallops, and sea stars may also be important predators.

The overall magnitude of the weathervane scallop resource off Alaska is thought to be very limited based on survey and fishery information. Weathervane scallops are found in patchy distributions along the continental shelf from Southeast Alaska to the Bering Sea and Aleutian Islands at depths of 40-250 m. Commercial

fishing effort is concentrated in 75-120 m depths. Approximately 128 square nautical miles were dredged during the 2001/02 season (Barnhart and Rosenkranz 2003).

Fisheries occur in discrete areas of concentration (beds), as shown in Figure 1. These same beds have been exploited since the beginnings of the fishery over thirty years ago. No other concentrations have been found in the Gulf of Alaska despite extensive prospecting. However, some fishermen have testified that they believe other beds may exist in state waters closed to scallop dredging. Survey data confirms that although weathervanes are distributed all along the coast, commercial quantities are found only in the areas currently exploited. In areas where scallop surveys have been conducted (Cook Inlet and Prince William Sound), scallops were very concentrated in these beds, and nearly absent in adjacent areas. Although the bed of scallops in the Bering Sea was known about many years ago, the fishery only began to target on this concentration in the 1990s. No other concentrations of weathervane scallops are known to exist off Alaska, despite many years of bottom trawl surveys and prospecting by scallop fishermen.

### 3.2.2 Habitat

Major scallop fishing locations in Alaska coastal waters are shown in Figure 1. Many areas of Alaska's coast are closed to scallop dredging to protect habitats important to other species. Bottom substrate types inhabited by weathervane scallops are variable throughout the state and include mud, clay, silt, sand, and pebble.

Amendment 5 to the Scallop FMP described Essential Fish Habitat (EFH) for all scallop stocks under the Fishery Management Unit (FMU) of the Scallop FMP. The following is the description of EFH for weathervane scallops.

#### EFH definition for Alaskan weathervane scallops

##### **Eggs (several days) - Level 0<sub>a</sub>**

Demersal waters of the inner and middle continental shelf of the Gulf of Alaska and to a lesser extent in the Bering Sea and Aleutian Islands. Eggs are released in the late spring and early summer.

##### **Larvae (2-3 weeks) - Level 0<sub>a</sub>**

Pelagic waters along the inner, middle, and outer continental shelf of the Gulf of Alaska west of Dixon entrance, extending into the Bering Sea and Aleutian Islands.

##### **Juveniles (to 3 years of age) - Level 1**

Areas of clay, mud, sand, and gravel along the mid-continental shelf of the BSAI and GOA.

##### **Adults (3+ years of age) - Level 2**

Areas of clay, mud, sand, and gravel along the mid continental shelf of the GOA and BSAI. Areas of concentration are those between the depths of 40-130 m. Scallop beds are generally elongated in the direction of current flow.

EFH descriptions and identification are currently under the process of revision by NMFS and the Council. A copy of the draft EFH EIS analysis is available on the NMFS Alaska Region website at <http://www.fakr.noaa.gov/habitat/seis/efheis.htm>.

### 3.2.3 Crab and groundfish stocks in region

In both the Bering Sea and Gulf of Alaska, scallops are only a part of a diverse benthic community. Weathervane scallops are associated with other benthic species such as king and Tanner crabs and flatfishes. Commercially important crab species include red king crab (*Paralithodes camtschatica*), blue king crab (*P. platypus*), brown or golden king crab (*Lithodes aequispina*), dungeness crab (*Cancer magister*), and two

species of Tanner crab (*Chionoectes bairdi*, and *C. opilio*). Red king crabs are distributed from Southeast Alaska to Kodiak Island and northward into Norton Sound, with highest densities at depths of 40-100 meters. Blue king crabs also occur at those depths, but are distributed primarily around the Pribilof, St. Matthew, and St. Lawrence Islands. Tanner crabs occur at those depths, and deeper to 700 meters. *C. opilio* are distributed throughout the Bering Sea. *C. bairdi*, on the other hand, are distributed through the Gulf of Alaska and Aleutian Islands to the Bering Sea, with highest concentrations in the Bering Sea from the Alaska Peninsula to the Pribilof Islands. More information on the distribution and harvest of crabs in the BSAI can be found in the annual Stock Assessment and Fishery Evaluation report (NPFMC 2003a). The SAFE report is available through the Council office.

Flatfish in the BSAI and GOA include yellowfin sole (*Limanda aspera*); Alaska Plaice (*Pleuronectes quadrituberculatus*) and rock sole (*Lepidopsetta* spp.) which dominate the flounder community in the BSAI, and arrowtooth flounder, (*Atheresthes stomias*), which comprises the largest part of the exploitable biomass of flounders in the Gulf of Alaska. Other abundant flounders in the Gulf include Pacific halibut (*Hippoglossus stenolepis*); rock sole (*Lepidopsetta bilineata*); starry flounder (*Platichthys stellatus*); flathead sole (*Hippoglossoides elassodon*); rex sole (*Glyptocephalus zachirus*); and, in deep water, Dover sole (*Microstomus pacificus*). A more complete description of commercial groundfish, other finfish, and shellfish stocks can be found in the Council's annual Stock Assessment and Fishery Evaluation report for the groundfish stocks (NPFMC 2003b) and in the draft Programmatic Supplemental Environmental Impact Statement for the Alaska Groundfish Fisheries (NMFS, 2003).

Bycatch in the scallop fishery includes prohibited species, other commercially important species of fish and invertebrates, miscellaneous non-commercial species, and natural and man-made debris. Prohibited species include king crab (*Paralithodes camtschaticus*), Tanner crab (*Chionoectes bairdi*), snow crab (*C. opilio*), Dungeness crab (*Cancer magister*), and Pacific Halibut (*Hippoglossus stenolepis*). Although a variety of marine vertebrates, invertebrates, and debris are caught incidentally in the scallop dredges, weathervane scallops predominate catches. Since 1996, the five most frequently caught species or items, by percent weight, from haul composition sampling are weathervane scallops 77%, numerous species of starfish 5%, natural debris (kelp, wood, etc.) 5%, empty bivalve shells 4%, and several species of skates 2%. Gorgonian (hard) corals are infrequently encountered during observer sampling of scallop dredges. Since 1996, corals have been observed in only 11 of the 15,836 tows sampled for catch composition and bycatch. Detailed catch composition data from observer sampling are available in annual reports produced by ADF&G (e.g., Barnhart and Rosenkranz 2003).

### 3.3 Human Environment

#### 3.3.1 Management of the Fishery

Under the Federal FMP initiated in 1995, all management measures, except limited access, are delegated to the State of Alaska. The FMP must also conform with all applicable federal laws including NEPA, Magnuson Stevens Act, EO 12866. ADF&G management of the weathervane scallop fishery covers both state and federal waters off Alaska.

##### 3.3.1.1 Fishing seasons and observer requirements

The regulatory fishing season for weathervane scallops in Alaska is July 1 through February 15 except in the Cook Inlet Registration Area. In the Kamishak District of Cook Inlet, the season is August 15 through October 31, and in all other districts of Cook Inlet, the season is from January 1 through December 31 under conditions of an exploratory permit. Scallop fishing in any registration area in the state may be closed by emergency order prior to the end of the regulatory season. Scallop guideline harvest ranges (GHRs) and crab bycatch limits (CBLs) are typically announced by ADF&G approximately one month prior to the season opening date.

The State of Alaska requires 100% onboard observer coverage. The primary purposes of the onboard observer program are to collect biological and fishery-based data, monitor bycatch, and provide for regulatory enforcement. Data are collected on crab and halibut bycatch, discarded scallop catch, retained scallop catch, catch composition, scallop meat weight recovery, location, area, and depth fished, and catch per unit effort (CPUE). Observers report scallop harvest, number of tows, area fished, and crab bycatch to ADF&G tri-weekly during the season. Data are used to manage the fishery inseason and to set GHRs for the following season.

The weathervane scallop fishery is prosecuted with standard New Bedford style scallop dredges. On average, a 15-foot dredge weighs approximately 2,600 pounds and a 6-foot dredge weighs about 900 pounds. The frame design provides a rigid, fixed dredge opening. Attached to and directly behind the frame is a steel ring bag consisting of 4-inch (inside diameter) rings connected with steel links. A sweep chain footrope is attached to the bottom of the mesh bag. The top of the bag consists of 6-inch stretched mesh polypropylene netting which helps hold the bag open while the dredge is towed along the ocean floor. A club stick attached to the end of the bag helps maintain the shape of the bag and provides for an attachment point to dump the dredge contents on deck. Steel dredge shoes that are welded onto the lower corners of the frame bear most of the dredge's weight and act as runners, permitting the dredge to move easily along the substrate. Each dredge is attached to the boat by a single steel wire cable operated from a deck winch.

All vessels fishing inside the Cook Inlet Registration Area are limited to a single dredge not more than 6 feet in width. Unless otherwise restricted by the LLP, vessels fishing in the remainder of the state may simultaneously operate a maximum of 2 dredges that are 15 feet or less in width. Vessels used in the weathervane scallop fishery range in size from 58 feet to 124 feet length overall with a maximum of 1,200 horsepower.

### 3.3.1.2 Summary of recent landings

There are 9 scallop registration areas managed by the state under the FMP for vessels commercially fishing for scallops. These include the Southeastern Alaska Registration Area (Area A); Yakutat Registration Area (Area D and District 16); Prince William Sound Registration Area (Area E); Cook Inlet Registration Area (Area H); Kodiak Registration Area (Area K), which is subdivided into the Northeast, Shelikof and Semidi Districts; Alaska Peninsula Registration Area (Area M); Dutch Harbor Registration Area (Area O); Bering Sea Registration Area (Area Q); and Adak Registration Area (Area R) (Figure 1). ADF&G establishes GHRs and manages the fishery by registration areas within regions.

Vessel participation and total catch by registration area and year are shown in Tables 1-10. With the exception of Kodiak, Prince William Sound and Cook Inlet (except recent years), catches have been well below state GHRs for each area. Additional years and other information on harvest rates and recruitment are available in the annual SAFE reports. The Alaska Department of Fish and Game has confidential release forms signed from vessels in order to display specific catch information. Whenever possible, unless otherwise indicated as "confidential", catch records have been made available for publication by the State.

Table 1. Yakutat Area D scallop fishery summary statistics. (Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	8	250,000	241,102	58
1999/00	3	250,000	249,681	65
2000/01	3	250,000	195,699	46
2001/02	2	200,000	103,800	43
2002/03	2	200,000	122,718	50

Table 2. Yakutat District 16 scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	6	35,000	34,090	49
1999/00	2	35,000	34,624	51
2000/01	3	35,000	30,904	65
2001/02	2	35,000	20,398	49
2002/03	2	35,000	3,685	37

Table 3. Prince William Sound Area E scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	2	20,000	19,650	110
1999/00	2	20,000	20,410	137
2000/01	3	30,000	30,266	137
2001/02	1	30,000	30,090	114
2002/03	2	20,000	14,762	121

Table 4. Cook Inlet, Kamishak District scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	1	20,000	conf	
1999/00	3	20,000	20,083	61
2000/01	3	20,000	20,516	74
2001/02	2	20,000	conf	conf
2002/03	3	20,000	8,591	28



Table 5. Kodiak Northeast District scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	4	NA	120,010	44
1999/00	3	75,000	77,119	56
2000/01	4	80,000	79,965	73
2001/02	3	80,000	80,470	70
2002/03	2	80,000	79,987	59

Table 6. Kodiak Shelikof District scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	8	NA	179,870	44
1999/00	6	180,000	187,963	44
2000/01	5	180,000	180,087	62
2001/02	4	180,000	179,198	53
2002/03	3	180,000	179,957	47

Table 7. Kodiak Semidi District scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	2	NA	1,720	16
1999/00	1	NA	930	21
2000/01		NA		
2001/02		NA		
2002/03		NA		

Table 8. Alaska Peninsula Area scallop fishery summary statistics. (Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	4	200,000	63,290	39
1999/00	5	200,000	75,535	37
2000/01	3	33,000	7,660	24
2001/02		closed		
2002/03		closed		

Table 9. Bering Sea Area scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	4	400,000	96,795	42
1999/00	2	400,000	164,481	50
2000/01	3	200,000	205,520	61
2001/02	3	200,000	140,365	46
2002/03	2	105,000	90,562	44

Table 10. Dutch Harbor Area scallop fishery summary statistics.(Confidential catch information was made available voluntarily by the Scallop fleet unless otherwise noted)

Season	Number vessels	GHR ceiling (lbs meat)	Catch (lbs meat)	CPUE (lbs meat per dredge hr)
1998/99	4	110,000	46,432	45
1999/00	1	110,000	6,465	24
2000/01		closed		
2001/02		closed		
2002/03	1	10,000	6,120	33

Table 11 shows the percent of scallop harvest caught in state versus federal waters from 1998/99 through the 2003/04 regulatory season. Examination of the percent harvest in state versus federal waters indicates which regions may have fully or under utilized harvest in either state or federal waters. The areas of interest are Areas D, E and K which are the areas that either have had historical harvest by the smaller vessels or which testimony has indicated that future fishing efforts in the federal fishery would be concentrated in these areas. Area E (Prince William Sound) is currently fully harvested in the federal fishery. Area D is more evenly split between state and federal in the 2003/04 season, though previous years have shown a much higher percentage of the harvest from federal waters. Area K, specifically the Shelikof region (KSH) has a range of 35-52% of the harvest coming from federal waters since 1998/99 while state water percentages have ranged from 18-34% over the same time period.

### 3.3.2 Description of Fishery participants

Commercial weathervane scallop fishing in federal waters is limited by the federal license limitation plan (LLP), while participation in state waters (0-3 nautical miles) is limited by an Alaska legislative moratorium. Nine permits are issued to fish statewide under the Federal LLP (Attachment 1). The state vessel moratorium limits participation in state waters to nine vessels. Except for 3 vessels, these are different vessels than originally qualified for federal LLP licenses.

Federal LLP permits have been voluntarily consolidated by the fleet through an industry cooperative (see section 3.3.3). Three larger vessels with LLP permits, including one limited by American Fisheries Act (AFA) sideboards, participate in the federal water portion of the fishery and harvest the majority of the scallop quota in the federal (statewide) fishery outside of Cook Inlet. Three smaller vessels with LLP permits participate primarily in the Cook Inlet fishery. Occasionally, one of the smaller vessels participates in the scallop fishery

outside of Cook Inlet. Of all scallop vessels currently active in Alaska, only two are permitted to fish in state waters, and one is a small vessel that typically fishes in Cook Inlet.

### 3.3.3 Description of the voluntary cooperative

In May 2000, six of the nine LLP owners formed the North Pacific Scallop Cooperative under authority of the Fishermen's Cooperative Marketing Act, 48 Stat. 1213 (1934), 15 U.S.C. Sec. 521. Cooperative operations are transparent to the managers of the fishery. The cooperative regulates individual vessel allocations within the GHR and caps under the terms of their cooperative contract. The purpose of the cooperative was to slow the race for fish enabling participants to develop better techniques for bycatch avoidance as well as to improve efficiency in targeting scallops.

The cooperative members negotiate allocations of scallops and crab bycatch among members annually and enforce those allocations through provisions in the cooperative contract. Participants must stop fishing once they have reached either their scallop allowance or crab caps. The cooperative contract gives coop members the authority to seek injunctive relief if a member fails to cease fishing once their allocation is met.

Additional provisions in the cooperative contract include: requirement to report data inseason to a third party contractor; prohibition on fishing in the Cook Inlet Management Area; installation and use of vessel monitoring systems to track fishing locations; reserve of scallop and crab allocations for possible use by non coop members; severe financial penalties for overages of scallops or crabs; a rolling 5 year contract length and others.

Non cooperative vessels are not bound by any contract provisions and so may fish in any area statewide. Historic effort by non coop vessels may not be pre-empted by coop vessels (required by the Fishermen's Cooperative Market Act) so the coop annually reserves the historic maximum catch of the non cooperative vessels to ensure that their ability to operate at that level is not preempted. This historic reserve is estimated by the cooperative at approximately 17,000 pounds given that the official numbers are confidential. This reserve is set aside in the area most likely to be utilized by non cooperative member vessels. This area can vary from year to year depending upon the region where effort by non cooperative vessels is concentrated. If the reserve is not utilized that amount is redistributed to coop members. If they wish, non cooperative members can join the cooperative at any time under the same terms and conditions as the existing members.

Some owners opted to remove their boats from the fishery due to decreased profitability in the scallop fishery in recent years. The catch history associated with those permits is then fished by the remaining vessels in the cooperative. Since formation of the cooperative, harvest rates have slowed and fishing effort occurs over a longer time period each season.

## 4.0 Environmental Impacts

The environmental impacts generally associated with fishery management actions are effects resulting from (1) harvest of fish and invertebrate stocks which may result in changes in food availability to predators and scavengers, changes in the population structure of target fish and invertebrate 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.

The effects of scallop fishing on the biological environment and associated impacts on marine mammals, seabirds, and other threatened or endangered species are analyzed in the final EA/RIR/FRFA for Amendments 1 and 2 to the FMP (NMFS 1997a). The alternatives to the status quo are not expected to allow substantial damage to the ocean and coastal habitats, or to jeopardize the long-term productive capability of crab, herring, or groundfish stocks in any manner not previously analyzed in the EA for Amendment 1. Scallop dredges may have potential, in some situations, to affect other organisms comprising benthic communities. These effects are not likely to be substantial, however, because the scallop fisheries in Alaska are small in area relative to the total benthic ecosystem, compressed in time, and contribute insignificantly to the total bycatch of crabs off Alaska. In addition, the alternatives under consideration are not expected to change the manner in which the scallop fishery currently is conducted in the Federal waters off Alaska because the proposed LLP changes do not affect the amount of scallops harvested, which is controlled by an overall catch limit or the timing of the harvest or location of the harvests.

#### 4.1 Potential impacts on Scallop Stocks

There are no expected impacts upon the statewide scallop stocks. Scallop stocks are conservatively managed by ADF&G using established GHRs by registration area. The only change anticipated by adoption of either alternative 2 or 3 would be an increase in the allowable dredge size by two vessels. The ring sizes on both 6ft and 15 ft dredges remain the same, and there are no changes proposed to state GHRs. Analysis done for Sea Scallop regulation changes in New England indicated that if the total amount of area-swept by the trawls remains the same, than the impacts on scallop mortality and the environment would be equivalent regardless of a change in trawl width (NEFMC, 2003). This assumes, of course, that the trawls are catching the same size selection of scallops. For the weathervane scallop fishery in Alaska the ring sizes are fixed at 4 inches regardless of trawl width.

#### 4.2 Potential impacts on bycatch of non-target species

As detailed in section 3.2.3, the scallop fishery has 100% observer coverage, thus data on the bycatch of non-target species in the fishery is well known. This includes prohibited species (such as crab and halibut), other commercially important species of fish and invertebrates, miscellaneous non-commercial species, and natural and man-made debris. Annual reports produced by ADF&G give detailed catch composition data from observer sampling.

Bycatch of crabs in the scallop fishery is controlled through the use of Crab Bycatch Limits (CBLs) based on individual crab stock abundance. Annual CBLs are established by ADF&G prior to the scallop season, and bycatch is monitored during the season through tri-weekly observer reports delivered by radio or email. Bycatch caps are expressed in numbers of crabs and include all sizes of crabs caught in the scallop fishery (Barnhart 2003). Additional information on individual CBLs by region and species can be found in the 2003 Scallop SAFE Report (NPFMC 2003c).

Closures based on the fleet reaching crab bycatch limits have decreased over the years since inception of CBLs in 1993 (Barnhart and Rosenkranz 2003). During the 1993/94 season four statewide areas were closed due to crab bycatch. Since the 2000/01 season no area has closed due to crab bycatch.

The voluntary cooperative in the scallop fleet formed in May 2000 prior to the start of the harvest season (section 3.3.3). This cooperative includes 6 of the 9 LLP holders and fishes exclusively in the statewide fishery. Vessel owners within the cooperative have taken an active role in reducing crab bycatch. Vessel

operators provide confidential inseason fishing information to an independent consulting company contracted by the cooperative. This firm reviews crab bycatch data, fishing locations, and scallop harvest, which allows for real time identification of high crab bycatch areas. When these areas are identified, the fleet is provided with the information and directed to avoid the area.

Since the formation of the cooperative, the incidental catch rate has dropped by 39%, or 126 MT of incidental catch per 1,000 tons of retained scallops (Northern Economics, 2003). In a comparison of pre and post-coop incidental catch rates by species, Brittle Stars and Sea Baskets declined by 51%, prohibited species by 1%, other commercial species by 12%, kelps and rocks by 56% and miscellaneous starfish species declined by 52% (Northern Economics, 2003). The decline in the bycatch of kelp and rocks is noteworthy in that these make up important habitat components of the ecosystem thus this decline may indicate a lesser stress upon the habitat as a result of fishing practices following the formation of the cooperative.

None of the alternatives are expected to jeopardize the long-term productive capability of crab or groundfish stocks. Modifications to the scallop LLP will not change the State of Alaska's existing bycatch control measures that limit the amount of bycatch in the scallop fishery nor will the proposed changes to the LLP affect the existing scallop observer program which monitors the amount of bycatch of non-target species in the scallop fishery.

#### 4.3 Potential impacts on Habitat

This section contains analyses of potential fishing gear impacts on benthic substrate attributable to the scallop fishery. The habitat impacts of the scallop fishery will not change due to this proposed action because the proposed action does not increase the amount of scallops harvested or change the location or timing of the fishery.

Dredging for scallops may affect habitat by causing unobserved mortality to scallops and other marine life, mortality of discards, and modification of the benthic community and sediments. Similar to trawling, dredging places fine sediments into suspension, bury gravel below the surface and overturn large rocks that are embedded in the substrate (NEFMC 1982, Caddy 1973). Dredging can also result in dislodgement of buried shell material, burying of gravel under resuspended sand, and overturning of larger rocks with an appreciable roughening of the sediment surface (Caddy 1968). A study of scallop dredging in Scotland showed that dredging caused significant physical disturbance to the sediments, as indicated by furrows and dislodgement of shell fragments and small stones (Eleftheriou and Robertson 1992). The authors note, however, that these changes in bottom topography did not change sediment disposition, sediment size, organic carbon content, or chlorophyll content. Observations of the Icelandic scallop fishery off Norway indicated that dredging changed the bottom substrate from shell-sand to clay with large stones within a 3-year period (Aschan 1991). For some scallop species, it has been demonstrated that dredges may adversely affect substrate required for settlement of young to the bottom (Fonseca et al. 1984; Orensanz 1986). Mayer et al. (1991), investigating the effects of a New Bedford scallop dredge on sedimentology at a site in coastal Maine, found that vertical redistribution of bottom sediments had greater implications than the horizontal translocation associated with scraping and plowing the bottom. The scallop dredge tended to bury surficial metabolizable organic matter below the surface, causing a shift in sediment metabolism away from aerobic respiration that occurred at the sediment-water interface and instead toward subsurface anaerobic respiration by bacteria (Mayer et al. 1991). Dredge marks on the sea floor tend to be short-lived in areas of strong bottom currents, but may persist in low energy environments (Messieh et al. 1991).

Two studies have indicated that intensive scallop dredging may have some direct effects on the benthic community. Eleftheriou and Robertson (1992), conducted an experimental scallop dredging in a small sandy bay in Scotland to assess the effects of scallop dredging on the benthic fauna. They concluded that while dredging on sandy bottom has a limited effect on the physical environment and the smaller infauna, large numbers of the larger infauna (mollusks) and some epifaunal organisms (echinoderms and crustaceans) were killed or damaged after only a few hauls of the dredge. Long-term and cumulative effects were not examined, however. Achan (1991) examined the effects of dredging for islandic scallops on macrobenthos off Norway. Achan found that the faunal biomass declined over a four-year period of heavy dredging. Several species, including urchins, shrimp, seastars, and polychaetes showed an increase in abundance over the time period. In summary, scallop gear like other gear used to harvest living aquatic resources, may effect the benthic community and physical environment relative to the intensity of the fishery.

Several studies have addressed mortality of scallops not captured by dredges. In Australia, this type of fishing gear typically harvests only 5-35% of the scallops in their path, depending on dredge design, target species, bottom type, and other factors (McLoughlin et al. 1991). Of those that come in contact with the dredge but are not captured, some elude the passing dredge and recover completely from the gear interaction. Some injuries may occur during on board handling of undersized scallops that are returned to the sea or during gear interactions on the sea floor (Caddy 1968; Naidu 1988; Caddy 1989), and delayed mortality can result from siltation of body cavities (Naidu 1988) or an increased vulnerability to disease (McLoughlin et al. 1991) and predation (Elner and Jamieson 1979). Caddy (1973) estimated incidental dredge mortality to be 13 to 17%, based on observations of broken and mutilated shells of Atlantic sea scallops. However, a submersible study of sea scallops from the mid-Atlantic indicated that scallop dredges capture with high efficiency those scallops which are within the path of the scallop dredge and cause very low mortality among those scallops that are not captured (NEFMC 1988). Murawski and Serchuk (1989) made submersible observations of dredge tracks and found a much lower mortality rate (<5%) for Atlantic sea scallops. The difference in mortality between these two studies can be attributed to the substrate on which the experiments were conducted. Caddy's work was done in a sandy/gravelly area and Murawski and Serchuk worked on a smooth sand bottom. Shepard and Auster (1991) investigated the effect of different substrate types on dredge induced damage to scallops and found a significantly higher incidental damage on rock than sand, 25.5% versus 7.7%. For weathervane scallops, mortality is likely to be lower as this species prefers smoother bottom substrates consisting of mud, clay, sand, or gravel (Hennick 1970, 1973).

Atlantic sea scallop beds and the benthic community associated with scallop fishing grounds in the Bay of Fundy were assessed in 1969 (Caddy 1976). During the intervening years, the area has seen great changes in fishing pressure with recent effort amounting to more than 90 vessels of over 25 GRT continuously fishing the grounds with Digby drags for days at a time (Kenchington and Lundy 1991). Since 1969, there have also been dramatic fluctuations in scallop abundance, including both record highs and lows for this century. In particular, scallop abundance rose to over 1000 times "normal" levels with the recruitment of two strong year-classes in 1985 and 1986. This information indicates that extensive dredging does not affect the recruitment of scallops to a productive ground.

Observations from scallop fisheries across the state suggest that mortality of crab bycatch may be lower on average than those taken in trawl fisheries, perhaps due to shorter tow times, shorter exposure times, and lower catch weight and volume. For crab taken as bycatch in the Gulf of Alaska weathervane scallop fishery, Hennick (1973) estimated that about 30% of Tanner crabs and 42% of the red king crabs bycaught in scallop dredges were killed or injured. Hammerstrom and Merrit (1985) estimated mortality of Tanner crab at 8% in Cook Inlet. Kaiser (1986) estimated mortality rates of 19% for Tanner crab and 48% for red king crab

bycaught off Kodiak Island. Urban et al. (1994) recorded that in 1992, 13-35% of the Tanner crab bycaught were dead or moribund before being discarded with the highest mortality rate occurring on small (<40 mm carapace width, CW) and large (>120 mm CW) crabs. Delayed mortality of Tanner crab resulting from injury or stress has not estimated. Mortality in the Bering Sea appears to be lower than in the Gulf of Alaska, in part due to different sizes of crab taken. Observations from the 1993 Bering Sea scallop fishery indicated lower bycatch mortality of red king crab (10%), Tanner crab (11%) and snow crab (19%) (Barnhart et al. 1996). As with observations from the Gulf of Alaska, mortality appeared to be related to size, with larger and smaller crabs having higher mortality rates on average than mid-sized crabs (Barnhart et al. 1996). Delayed mortality was not estimated. In one groundfish plan amendment analysis, all sources of crab mortality were examined; in this analysis a 40% discard mortality rate for all crab species was assumed for scallop fisheries (NPFMC 1993).

Adverse effects of scallop dredges on benthic communities in Alaska may be lower in intensity than trawl gear. Studies on effects of trawl and dredge gear have revealed that, in general, the heavier the gear in contact with the seabed, the greater the damage (Jones 1992). Scallop dredges generally weigh less than most trawl doors, and the relative width they occupy is significantly smaller. A 15' wide New Bedford style scallop dredge weighs about 1,900 lbs (Kodiak Fish Co. data). Because scallop vessels generally fish two dredges, the total weight of the gear is 3,800 lbs. Trawl gear can be significantly heavier. An 850 HP vessel pulling a trawl with a 150' sweep may require a pair of doors that weigh about 4,500 pounds. Total weight of all trawl gear, including net, footrope, and mud gear would weigh even more (pers. communication, Teresa Kandianis, Kodiak Fish Co.). Hence, based on weight of gear alone, scallop fishing may have less effect than bottom trawling, however its effects may be more concentrated.

As indicated in section 4.2, bycatch data from the Scallop Observer Program has shown that habitat forming organisms (e.g. Gorgonian hard corals) are infrequently observed in sampling of scallop catch. Since 1996, corals have only been encountered in 11 of the 15,836 tows sampled for catch composition and bycatch (Barnhart and Rosenkranz 2003). Natural debris, kelp wood etc made up approximately 5% of the total percent weight sampled for the same time period. As previously expressed, a study by Northern Economics found that the bycatch of kelp and rocks has declined 56% since formation of the coop in 2000 (Northern Economics, 2003). This may indicate a lesser stress upon the habitat due to the change in fishing practices following the formation of the cooperative.

#### 4.4 Potential impacts on EFH

Section 303(a)(7) of the Magnuson-Stevens Act requires all FMPs to describe and identify EFH, which it defines as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” In addition, FMPs must minimize effects on EFH caused by fishing and identify other actions to conserve and enhance EFH. These EFH requirements are detailed in Amendment 5 to the FMP for the Scallop Fishery off Alaska and the accompanying Environmental Assessment (available from NMFS).

The scallop fishery occurs from the Bering Sea to Yakutat in the Gulf of Alaska, concentrating in the regions around Kodiak and Yakutat. All managed species and their identified EFH under each of the Council’s five FMPs are located within the area affected by this action. No evidence suggests that the scallop fishery impacts the EFH of salmon. The scallop fishery does not occur on any areas designated as Habitat Areas of Particular Concern (HAPC).

This proposed action will not change the location of the scallop fishery or increase the amount of scallops harvested. The location of the fishery is determined by the location of the scallop resource which is not randomly distributed. The State of Alaska determines the guideline harvest level (GHL), which is the amount of scallops harvested, by scallop abundance estimates. The State apportions the GHL by scallop management area. Modifying the gear restriction under the LLP will not change the GHL setting process or how it is apportioned by area. Nor will modifying the LLP gear restriction change the existing scallop management areas or the location of the scallop beds.

The action proposed by this regulatory amendment will not increase the amount of harvest, the intensity of harvest, or the location of harvest, therefore, this action is presumed not to increase the impacts of the fishery to EFH. Based on the above, this action, in the context of the fishery as a whole, will not adversely affect EFH for species managed under the five North Pacific FMPs. As a result of this determination, an EFH consultation is not required.

#### 4.5 Endangered Species Act

The Endangered Species Act of 1973 as amended [16 U.S.C. 1531 *et seq*; ESA], provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by the NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species and by the USFWS for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA listed species is based on the biological health of that species. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)]. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and anadromous fish species. The Secretary of the Interior, acting through the USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to listing species under the ESA, the critical habitat of a newly listed species must be designated concurrent with its listing to the "maximum extent prudent and determinable" [16 U.S.C. § 1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.



#### 4.6 Impacts on Endangered, Threatened or Candidate Species

Species listed as endangered and threatened under the ESA that may be present in the Federal waters off Alaska include:

Common Name	Scientific Name	ESA Status
Northern Right Whale	<i>Balaena glacialis</i>	Endangered
Bowhead Whale <sup>1</sup>	<i>Balaena mysticetus</i>	Endangered
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Snake River Sockeye Salmon	<i>Onchorynchus nerka</i>	Endangered
Short-tailed Albatross	<i>Phoebaotria albatrus</i>	Endangered
Steller Sea Lion	<i>Eumetopias jubatus</i>	Endangered and Threatened <sup>2</sup>
Snake River Fall Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Snake River Spring/Summer Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Puget Sound Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Lower Columbia River Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Upper Willamette River Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Upper Columbia River Spring Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Endangered
Upper Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Endangered
Snake River Basin Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Lower Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Upper Willamette River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Middle Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Spectacled Eider	<i>Somateria fishcheri</i>	Threatened
Steller Eider	<i>Polysticta stelleri</i>	Threatened

<sup>1</sup> The bowhead whale is present in the Bering Sea area only.

<sup>2</sup> Steller sea lion are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.

The scallop fishery off Alaska (which consists of a small fleet of vessels, and uses gear less likely to generate bycatch of finfish, seabirds or marine mammals) is not expected to affect ESA-listed species, seabirds or marine mammals in any manner or extent not already addressed under previous consultations for the groundfish fisheries. There has never been an assumption that there is an effect, therefore, there has never been a consultation for the FMP for the Scallop Fishery off Alaska. The impact of the groundfish fisheries off Alaska on endangered and threatened species has been addressed extensively in a series of formal and informal consultations.

Section 7 consultations with respect to actions of the federal groundfish fisheries have been done for all the species listed in above, either individually or in groups. See section 3.8 of the SEIS (NMFS 1998), for summaries of section 7 consultations done prior to December 1998. Consultations completed since publication of the SEIS are summarized in the EA for the interim and final groundfish harvest specifications for 2000. Also each species has been considered for re-initiated consultation with respect to the year 2000 specifications and reinitiated consultations are underway for Steller sea lion and the 12 evolutionarily significant units of Pacific salmon and steelhead .

#### 4.7 Potential Impacts on ESA-listed Pacific Salmon

Capture of salmon by the scallop dredges is reported to be extremely rare (Hennick 1973), as scallop dredges are small in size, and remain within one meter of the ocean bottom. Bycatch of all fish species by scallop dredges is composed primarily of flounders and skates (Kruse et al. 1993; Urban et al. 1994). No salmon bycatch was reported by ADF&G observers deployed on vessels during the 1999-2002 fishing seasons, with over 1680 days of fishing observed (Barhart and Rosenkranz, 2003), and there have been no other reports of salmon bycatch in the scallop fishery off Alaska. None of the alternatives likely will affect the continued existence of listed species of Pacific salmon, or result in disturbance or adverse modification of critical salmon habitat.

#### 4.8 Potential Impacts on Seabirds

Many seabirds occur in Alaskan waters indicating a potential for interaction with scallop fisheries. The most numerous seabirds in Alaska are northern fulmars, storm petrels, kittiwakes, murre, auklets, and puffins. These groups, and others, represent 38 species of seabirds that breed in Alaska. Eight species of Alaska seabirds breed only in Alaska and in Siberia. Populations of five other species are concentrated in Alaska but range throughout the North Pacific region. Marine waters off Alaska provide critical feeding grounds for these species as well as others that do not breed in Alaska but migrate to Alaska during summer, and for other species that breed in Canada or Eurasia and overwinter in Alaska. Additional discussion about seabird life history, predator-prey relationships, and interactions with commercial fisheries can be found in the 1998 FSEIS for the Groundfish Total Allowable Catch Specifications and Prohibited Species Catch Limits Under the Authority of the Fishery of the Bering Sea and Aleutian Islands Area and Groundfish of the Gulf of Alaska (NMFS 1998).

Since scallop dredges are small in size, and remain within one meter of the ocean bottom, interactions with seabirds are much less likely in the scallop fishery than in the groundfish fishery, which consists of a much larger fleet of vessels using large nets or baited hooks or pots. In addition, there are no reported takes of seabirds by the scallop fishery off Alaska. Therefore, none of the alternatives likely will affect endangered or threatened seabirds or their critical habitat.

#### 4.9 Potential Impacts on Marine Mammals

The scallop fishery in the EEZ of Alaska is classified as Category III fishery under the Marine Mammal Protection Act. A fishery that interacts only with non-strategic stocks and whose level of take has insignificant impact on the stocks is placed in Category III. An observer program is in place for the scallop fisheries. No takes of marine mammals by the scallop fishery off Alaska have been reported.

#### 4.10 Potential impacts on the human environment

There are 9 federal LLP licence holders. None of the alternatives will alter the number of licence holders, however two of the alternatives will alter the current gear restriction on two of the 9 licences. Under alternatives 2 and 3, the two gear restricted licences will be altered to include either 2- 10ft dredges or 2- 15ft dredges, respectively.

Analysis indicates that alternatives to the status quo may impact other fishery participants and particularly the voluntary cooperative structure under which the fishery is currently prosecuted. For alternatives 2 and 3, the gear restrictions would be modified (alternative 2) or eliminated (alternative 3). The relative economic impacts on the other participants in the fishery would be two-fold in the decrease in relative harvest percentage (that which is currently unavailable to the gear restricted permit holders) as well as a presumed decrease in the value of the LLP licenses currently held given their limited number. Expansion of statewide operations of the two license holders subject to a relaxation of the gear limitation is not known, but if expansion occurs, it is most likely to occur in Area D and Area K given the smaller size of these vessels. As these areas are currently fully utilized, any expansion of harvests by the two vessels would be at the expense of the other license holders in the fishery. Additionally the value of the two licenses subject to less stringent gear restrictions would increase as those licenses would be usable for substantially larger operations. The relative value of the remaining 7 licenses under the federal LLP are likely to decline with the increase in the number of non-gear restricted licenses. The impacts on the LLP license holders that are in the voluntary cooperative depend upon the operations and harvests of others in the fishery as the cooperative does not receive an exclusive allocation in the fishery. If the other participants increase harvests, the cooperative may need to respond by either reducing its own harvests or expanding the cooperative to include these other participants. In either case, the return to cooperative members could be expected to decline as a portion of the fishery currently harvested by the cooperative would be harvested by or allocated to these other LLP holders.

A more detailed discussion of the economic impacts of the alternatives can be found in section 5.4 of this document.

#### 4.11 Cumulative Effects

This section describes those past, present or reasonably foreseeable impacts which may occur as a result of the proposed action and have not yet been discussed in the previous environmental consequences section. As previously discussed there is no expected impact of the alternatives on scallop stocks, EFH, bycatch of other species in the scallop fishery, prohibited or ESA-listed species or marine mammals. Potential economic impacts are described in the Regulatory Impact Review (RIR), section 5.0 of this document. There are no past, present or reasonably foreseeable impacts which would occur as a result of this action which have not been addressed in either the environmental consequences section of this document or the RIR portion of the document.

## 5.0 Regulatory Impact Review

### 5.1 Introduction

This RIR is required under Presidential Executive Order (E.O.) 12866 (58 *FR* 51735; October 4, 1993). 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 nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 further 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:

- 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, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this Executive Order.

### 5.2 Purpose and Need

As explained in section 2.2, the problem statement adopted by the Council is as follows:

The current federal LLP limits two license holders to fish with a single 6 ft dredge in federal waters while 7 license holders are allowed to use the full complement of gear (two 15 ft dredges). The Council approved this LLP under amendment 4 to the federal scallop FMP, as a means to address excess capacity in the scallop fishery. Since the federal LLP was implemented in 2001, it has come to the attention of the Council that given observer requirements and their associated costs, this gear restriction may create a disproportionate economic hardship when fishing outside of state waters. The Council is considering modifying or eliminating this gear restriction on those federal LLP licences. Additionally, the current scallop FMP does not reflect current management and biology and needs to be updated in this regard.

### 5.3 Alternatives considered

Three alternatives are considered in this analysis.

#### 5.3.1 Alternative 1: Status Quo. Maintain the current 6 ft dredge restriction endorsement.

Alternative 1, status quo, represents the current LLP as approved by NMFS. There are currently 9 LLP licenses, of which seven have no gear restriction while 2 have a gear restriction endorsement which limits them to the use of a single 6 ft dredge. These two vessels fished only in Cook Inlet during the qualifying period as stated in the EA for Amendment 4 to the Scallop FMP.

5.3.2 Alternative 2: Modify the current 6 ft dredge restriction to allow vessels with the current endorsement to fish in statewide waters outside of Cook Inlet with a maximum of two ten-foot dredges (or two dredges with a combined width of no more than 20 feet).

This alternative would allow the two restricted permits to use longer dredges.

5.3.3 Alternative 3: Eliminate the current 6 ft dredge restriction such that there are no gear restrictions on any Scallop LLP for fishing in statewide waters outside of Cook Inlet.

Alternative 3 would allow all 9 LLP holders to utilize the full complement of gear, two 15 ft dredges, in statewide waters outside of Cook Inlet. This alternative is consistent with the State of Alaska revised regulations which limit scallop vessels to a maximum of 2- 15 ft dredges.

#### 5.4 Economic Impacts of the Alternatives

The economic analysis is limited by confidentiality of data (which arises because of the few participants in the scallop fishery), the availability of reliable cost data, and the lack of thoroughly tested quantitative models. As a result, the analysis of economic impacts of the alternatives is largely qualitative.

The analysis focuses on three groups of affected participants: the two LLP license holders currently limited to a single 6 foot dredge (who would be directly affected by the proposed regulatory change), the six LLP license holders that are subject to less restrictive gear limits (up to two 15 foot dredges) and participate in the cooperative, and the one LLP license holder that is subject to the less restrictive gear limitation (up to two 15 foot dredges) that does not participate in the cooperative.

##### 5.4.1 Potential impacts on fishery participants

Adoption of **alternative 1** would indicate no change to the current LLP as implemented in 2001. Under this alternative, the two license holders with the 6 ft dredge gear restriction would retain their gear restriction and would only be able to fish in statewide waters using a single 6ft dredge. Other license holders would continue to be permitted to use two dredges of up to 15 feet each. Maintaining the status quo management is likely to leave fishing practices and economic impacts unchanged from current conditions. In the current fisheries, the holders of the two licenses that are subject to more restrictive gear limitations limit their participation in the statewide fisheries to Cook Inlet, although one vessel has attempted some limited harvest in statewide waters. Whether these two participants continue to limit their participation in statewide waters under status quo management cannot be determined with certainty. One of the license holders, however, asserts that he is economically unable to fish in the statewide fishery while subject to the 6 foot dredge limit because he is unable to realize high enough ex vessel revenues to cover the costs of observers.<sup>1</sup> In the event that either or

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<sup>1</sup> Estimated observer costs per day are \$350 (Jeff Barnhart, ADF&G, pers. comm.). Ex-vessel price per pound in 2003 for most regions was approximately \$5.50 (Jeff Barnhart, ADF&G, pers. comm).

both of the holders of the licenses subject to more restrictive gear limitations were to expand operations in statewide waters, the impact of that participation on other license holders would be limited by the ability of those holders to harvest using one 6 foot dredge. Although an expansion of operations in statewide waters is possible, the operations of the cooperative are unlikely to be disrupted substantially by expansion of operations of by the two gear limited vessels (or those participants likely would have expanded their operations already).

Under this alternative there would be no change to the LLP program or to any of the licenses, therefore there would be no change in the relative value of LLP licenses in the fishery and no change in the economic impact on the other participants in the fishery.

Under **alternatives 2 and 3**, the gear restrictions would be modified, which would allow both license holders the ability to catch a greater percentage of the harvest if the license is fished, and also increase the value of permit regardless if the license is fished. The relative economic impacts on the other participants in the fishery would also be two-fold in the decrease in relative harvest percentage (that which is currently unavailable to the gear restricted permit holders) as well as a presumed decrease in the value of the LLP licenses currently held given their limited number. Discussion of the relative impacts under both alternatives is necessarily hypothetical in nature, however a qualitative discussion is provided of potential scenarios under each alternative and the presumed economic impact on the other participants in the fishery as a result of that scenario. Following this section an additional discussion of the potential impact upon the cooperative in general is provided.

Under **alternative 2**, a maximum of two 10 ft dredges (or two dredges with a maximum combined width of 20 ft) would be authorized for the two licenses current limited to a single 6 foot dredge. One of the two current license holders has stated that two ten foot dredges is the maximum gear that could be used on the vessel currently using that license. The expansion of statewide operations of the two license holders subject to this relaxation of the gear limitations is not known. The current holder of one license asserts that expansion of operations in statewide waters is likely to be limited.<sup>2</sup> Near term expansion of operations is most likely to occur in the areas near Cook Inlet, where the two license holders currently fish (i.e., Areas E and K). Since 1999, harvests in the Shelikof region have reached or exceeded the established GHR ceiling of 180,000 lbs (Table 6). Vessel participation for this region over the same time period has ranged from 3 to 6 vessels. In the Prince William Sound region (Area E) harvests since 1999 have reached or exceeded the established GHR of 30,000 lbs with the exception of the 2002/2003 season (Table 3). Vessel participation in this region has ranged from 1 to 3 vessels. Since these areas are fully utilized, any expansion of harvests by the two vessels that would be subject to the regulation change would be at the expense of the other license holders in the fishery (cooperative members and the non-cooperative member currently subject to the less restrictive gear limitations). In the long term, expansion of harvests by two licenses subject to the gear limitation change

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<sup>2</sup> The owner of this vessel, Max Hulse, has stated that the traditional fishing grounds for this vessel have been recently restricted to Cook Inlet due to aforementioned concerns regarding observer costs in statewide waters. However some additional landings were made in areas of Kodiak (Shelikof) and Prince William Sound (Kayak Island) where weather is generally better for smaller vessels and scallop size tends to be larger. If the vessel, as was indicated, fished in these traditional grounds, additional fishing opportunities would be provided by the use of the larger dredge in the month of July and early September in the area of Shelikof. The owner has suggested that the vessel would continue to fish Cook Inlet during the month of August. Smaller vessels have a more limited ability to fish in statewide waters due to their inability to withstand the inclement weather conditions. The owner estimated that the vessel would be weathered out of fishing for scallops in the statewide waters of Shelikof Strait approximately 50 percent of the time. However, the ability to move and out of state waters utilizing the same dredge gear would allow for increased harvests in the time periods that the smaller boats were able to fish. Provisions for the state waters scallop fishery will allow all vessels to fish with 2-15 foot dredges in all state waters outside of Cook Inlet.

could be broader, particularly if either of the current license holders transfer their licenses to more powerful vessels. Shucking rates and crew size may also play a role in the ability for these smaller boats to fully utilize the increase harvest ability afforded by the increased dredge size.

The value of the licenses subject to the less stringent gear restrictions would increase as those licenses will be usable for substantially larger operations. The relaxed gear limitations could make the licenses attractive to a new market of buyers that have more powerful vessels that are able to realize greater returns from the license than would have been possible under the single six foot dredge limitation. Both licenses in question are restricted to MLOA of less than 75 feet. Information from the New England Sea Scallop fishery on vessels utilizing New Bedford style trawls suggests that vessels of at least 60 feet, with at least 500 BHP, and 50 GRT are capable of pulling two 15ft dredges. (A. Applegate, NEFMC pers. comm.). So, although the vessels on which the licenses are currently used may not be able to fully use gear to the licenses limit, the license could be transferred to a different vessel for the full complement of gear.

The impacts on the LLP license holders that are in the cooperative depend largely on changes of the operations and harvests of others in the fishery, because the cooperative does not receive an exclusive allocation in the fishery. So, if other participants increase harvests, the cooperative may need to respond, either by reducing its own harvests or expanding the cooperative to include these other participants as members with some likely concession to these new members.<sup>34</sup> In either of these cases, the return to cooperative members could be expected to decline as a portion of the fishery currently harvested by the cooperative would be harvested by or allocated to these other LLP holders. In these two instances, the returns to the non-member of the cooperative that is not currently subject to the restrictive gear limits is likely to remain unchanged. This LLP license holder currently harvests a portion of the GHR in a few areas and is likely to continue to operate in those areas independent of the cooperative. In Cook Inlet, the non-member of the cooperative could see an increase in its harvests, if one or both of the gear restricted LLP holders decreases effort in Cook Inlet to participate in other areas outside of Cook Inlet.

Alternatively, an increase in harvests by the non-members of the cooperative could result in disbanding of the cooperative and a return to the race for fish. The implications of a return to a race for fish would be a loss of efficiency, as each LLP license holder that wishes to realize any return from the fishery would be required to enter a vessel in the fishery. Currently only two to three vessels harvest the cooperative's catch. Efficiency would also be lost as each vessel races for a portion of the total catch, with greater attention to increasing catch and less attention to reducing harvest costs. The distribution of activity in the different areas in a race for fish cannot be fully predicted, but it could generally be expected that the areas with the highest CPUEs and GHRs would draw the most effort early in the season. After the closure of these areas, vessels would move on to other areas that have lower CPUEs and GHRs. In areas receiving higher effort, grounds preemption could result with redistribution of effort in response. If a race for fish does ensue as a result of the change in management, the returns to cooperative participants could decline substantially. In the long run,

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<sup>3</sup> The three licenses holders that are not cooperative members were offered membership at the outset, but chose not to join. Given that they were unwilling to join at the outset under the cooperative's current allocation rules, it is unlikely they would accept membership under less restrictive gear regulations subject to those same terms. So, if these license holders are to be drawn into the cooperative, the current members would likely need to make some concession to gain these new members.

<sup>4</sup> The cooperative currently sets aside the amount traditionally harvested by non-members and only harvests this amount after weather has precluded these other smaller vessels from participation. If non-members do not exceed the set aside, the presumed impact is negligible in theory. In practice, however, non-members have never taken the full set aside, instead leaving the at least a portion of the set aside for cooperative harvest at the end of the season. So, cooperative harvests might be reduced, even if the non-members only harvest the cooperative's set aside.

however, the race for fish is unlikely to persist. Given that the cooperative structure already developed, the addition of one or two new members could be achieved more easily. The benefits of fishing in a cooperative, over fishing in a competitive, derby fishery are likely to be substantial enough that participants will decide to fish in a larger cooperative rather than race for fish.

In any case in which the cooperatives harvests are affected by the changes in participation of LLP holders that managed under a relaxed gear restriction, the value of the cooperative member's licenses are likely to decline. This decline is commensurate with the decline in the expected long run return from the license or the cooperative share of the license holder.

Under **alternative 3**, the gear restriction on both licenses would be eliminated, thus both licenses would allow for use of the full complement of gear, two 15 foot dredges. This would mean consistent gear limitations on all of the 9 federal LLP licenses. As under alternative 2, whether the two licenses directly affected by the regulatory change would change operations cannot be predicted.<sup>5</sup> The ability of analysts to differentiate impacts of alternatives 2 and 3 are limited. The additional gear that would be permitted under alternative 3 would create an opportunity for a large share of the harvest to be taken by the two vessels that are subject to the relaxation of gear limitations. Whether and when the larger dredges would be used is not known.

#### 5.4.2 Impact on the management of the fishery

Relative impacts of the alternatives on the management of the fishery would be negligible. Under alternatives 2 and 3 there would presumably be increased harvest by vessels in the statewide fishery, requiring additional observer coverage which is paid for by the vessels. Since these areas are already fished by other vessels the only change would be in the number of boats on which observers are deployed; the GHRs would not change and presumably harvest rates would be the same. The state already manages conservatively for GHRs thus inseason management would remain the same. If the vessels joined the cooperative, then any increased management responsibility would be assumed within the cooperative management and not by the State.

## 6.0 Initial Regulatory Flexibility Analysis

The Regulatory Flexibility Act (RFA), first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities. When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis (FRFA). Analysis requirements for the IRFA are described below in more detail. In the case of the issues and alternatives considered in this analysis (Scallop Amendment 10), the Council will make

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<sup>5</sup> The holder of one of the two affected LLP licenses asserts that his vessel could not operate with two 15 foot dredges.



recommendations for the preferred alternative, and, if approved by the Secretary, NMFS will develop proposed regulatory amendments to implement the Council's preferred alternative.

The preceding analysis addresses the issues required under the RFA. Most, if not all, of the affected entities would be considered small entities under the RFA (Section 601(3)). To ensure a broad consideration of impacts and alternatives, an IRFA has been prepared pursuant to 5 USC 603, without first making the threshold determination of whether or not this proposed action would have a significant economic impact on small entities. A definitive assessment of the impacts on small entities, however, is dependent on the specific alternative and options selected by the Council and thus cannot be conducted until after final action.

The IRFA must contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
  1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
  2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
  3. The use of performance rather than design standards;
  4. An exemption from coverage of the rule, or any part thereof, for such small entities.

In determining the scope, or 'universe', of the entities to be considered in an IRFA, staff generally includes only those entities, both large and small, that are directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis. Staff interprets the intent of the RFA to address negative economic impacts, not beneficial impacts, and thus such a focus exists in analyses that are designed to address RFA compliance.

## 6.1 Definition of a small entity

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a ‘small business’ as having the same meaning as ‘small business concern’ which is defined under Section 3 of the Small Business Act (SBA). ‘Small business’ or ‘small business concern’ includes any firm that is independently owned and operated and not dominant in its field of operation. The SBA has further defined a “small business concern” as one “organized for profit, with a place of business located in the U.S., and which operates primarily within the U.S. or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor... A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture.”

The SBA has established size criteria for all major industry sectors in the U.S. including fish harvesting and fish processing businesses. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of \$3.5 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$3.5 million criterion for fish harvesting operations. Finally, a wholesale business servicing the fishing industry is a small businesses if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

Small organizations. The RFA defines “small organizations” as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions. The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000.

## 6.2 Reason for considering the proposed action

Public testimony to the Council at its February 2004 meeting indicated that a participant in the scallop fishery was experiencing disproportionate economic impacts as a result of the gear restriction endorsement on his license under the current LLP.

## 6.3 Objectives of, and legal basis for, the proposed action

The Scallop fishery is jointly managed by the NMFS and the Alaska Department of Fish and Game under a federal Scallop FMP. Issues dealing with licence limitation are designated in the federal FMP as under federal jurisdiction.

#### 6.4 Number and description of affected small entities

For purposes of the IRFA, all 9 license holders under the federal LLP can be considered small entities, with annual receipts of less than 3.5 million.

#### 6.5 Recordkeeping and reporting requirements

Implementation of the proposed amendment would not change the overall reporting structure and recordkeeping requirements of the vessels in the scallop fishery.

#### 6.6 Relevant Federal rules that may duplicate, overlap, or conflict with proposed action

This analysis did not uncover any existing Federal rules that duplicate, overlap, or conflict with any of the actions proposed in the Alternatives.

#### 6.7 Description of significant alternatives

The range of alternatives has been discussed in sections 2.0 and 5.0 of this document.

#### 6.8 Measures taken to reduce impacts on small entities

This action is currently under initial review by the Council. When the Council takes final action on these alternatives it will consider the impacts on small entities.

### **7.0 Summary and Conclusions**

Beginning in 2001, a Federal Scallop License Limitation Program (LLP) license is required on board any vessel deployed in scallop fisheries in Federal waters off Alaska. Under the LLP, 7 vessel owners are licensed to fish statewide (outside Cook Inlet Registration Area) utilizing two 15 foot dredges, and two vessels owners are licensed to fish statewide with a single 6-foot dredge. All 9 licenses permit vessel owners to fish inside Cook Inlet with a single 6-foot dredge.

Since the federal LLP was implemented, it has come to the attention of the Council that given observer requirements and their associated costs, this gear restriction may create a disproportionate economic hardship when fishing outside of state waters. In February 2004, the Council developed a problem statement and alternatives for analysis of modifying or eliminating the gear restriction on 2 of the 9 LLP licenses. The alternatives analyzed in this document range from elimination of the gear restriction on both licenses (Alternative 3) to retaining the gear restriction (Alternative 1, Status Quo). Additionally the Council noted in its' problem statement that the current Scallop FMP does not reflect current management and biology and needs to be updated in this regard.

Analysis indicates that alternatives to the status quo may impact other fishery participants and particularly the voluntary cooperative structure under which the fishery is currently prosecuted. For alternatives 2 and 3, the gear restrictions would be modified (alternative 2) or eliminated (alternative 3). The relative economic impacts on the other participants in the fishery would be two-fold in the decrease in relative harvest percentage (that which is currently unavailable to the gear restricted permit holders) as well as a presumed decrease in the value of the LLP licenses currently held given their limited number. Expansion of statewide

operations of the two license holders subject to a relaxation of the gear limitation is not known, but if expansion occurs, it is most likely to occur in Area D and Area K given the smaller size of these vessels. As these areas are currently fully utilized, any expansion of harvests by the two vessels would be at the expense of the other license holders in the fishery. Additionally the value of the two licenses subject to less stringent gear restrictions would increase as those licenses would be usable for substantially larger operations. The relative value of the remaining 7 licenses under the federal LLP are likely to decline with the increase in the number of non-gear restricted licenses. The impacts on the LLP license holders that are in the voluntary cooperative depend upon the operations and harvests of others in the fishery as the cooperative does not receive an exclusive allocation in the fishery. If the other participants increase harvests, the cooperative may need to respond by either reducing its own harvests or expanding the cooperative to include these other participants. In either case, the return to cooperative members could be expected to decline as a portion of the fishery currently harvested by the cooperative would be harvested by or allocated to these other LLP holders.

None of the alternatives are expected to have a significant impact on endangered, threatened, or candidate species and none of the alternatives would affect takes of marine mammals. An action to modify the gear restriction on two LLP licences would no alter the harvest of scallops or impact scallop stocks.

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## **9.0 List of Preparers and Agencies and individuals consulted**

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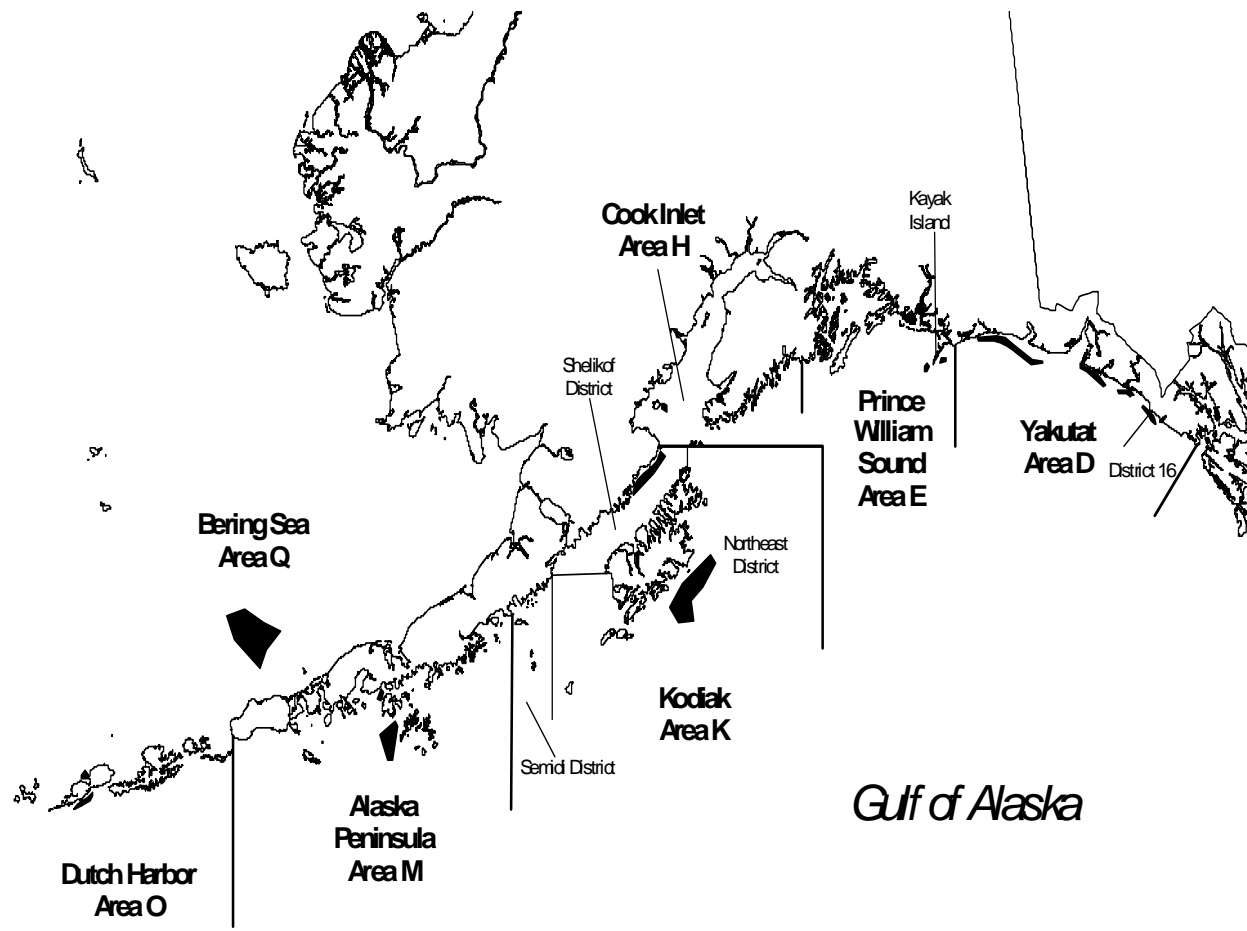


Figure 1: Map showing registration areas and general fishing locations (dark polygons) for weathervane scallops off Alaska.

**Attachment 1: Scallop License Limitation Permits  
 Issued by National Marine Fisheries Service - Restricted Access Management**

National Marine Fisheries Service  
 PO Box 21668  
 Restricted Access Management  
 Juneau, Alaska 99802-1668  
 800-304-4846

Prepared: January 9, 2003

<u>License</u>	<u>License Holder</u>	<u>MLOA</u>	<u>Transferable?</u>	<u>Gear Restrictions</u>
009	Carolina Boy, Inc.	95'	Yes	None
010	Alaska Scallop, LLC	96'	Yes	None
002	Forum Star, Inc.	97'	Yes	None
003	Hogan, Thomas C.	75'	Yes	Single 6' (1.8m) scallop dredge
004	Hulse, Max et al.	79'	Yes	Single 6' (1.8m) scallop dredge
005	Ocean Fisheries LLC	100'	Yes	None
006	Thomas Gilmartin	70'	Yes	None
008	Provider, Inc.	124'	Yes	None
007	Pursuit, Inc.	101'	Yes	None

Note: these licenses do not have expiration dates. Interim licenses remain valid until Final Agency Action is taken on claims.