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

DEC 11 1997

To All Interested Government Agencies and Public Groups:

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

TITLE: Environmental Assessment of Amendment 34 to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area

LOCATION: Exclusive Economic Zone of the Bering Sea and Aleutian Islands Area off Alaska

SUMMARY: Amendment 34 would authorize the allocation of up to two percent of the annual specification of total allowable catch of Atka mackerel in the Eastern Aleutian Islands District/Bering Sea subarea to vessels using jig gear. The purpose of the amendment is to provide an opportunity for a local small-vessel jig gear fleet to fish for Atka mackerel to supply a bait fishery and a fresh fish market for this species without direct competition from the trawl fleet.

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

Sincerely,

Acting NEPA Coordinator

Enclosure

POOR ORIGINAL

FINAL ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/ FINAL REGULATORY FLEXIBILITY ANALYSIS

FOR AMENDMENT 34 TO THE FISHERY MANAGEMENT PLAN FOR THE GROUNDFISH FISHERY OF THE BERING SEA AND ALEUTIAN ISLANDS AREA THAT AUTHORIZES AN ALLOCATION OF ATKA MACKEREL TO VESSELS USING JIG GEAR

Prepared by

National Marine Fisheries Service
Alaska Regional Office

November 1997

Table of Contents

Executive Summary i

1.0 INTRODUCTION 1
1.1 Purpose of and Need for the Action 1
1.2 Alternatives Considered 2
1.2.1 Alternative 1: 2
1.2.2 Alternative 2 (Preferred): 2
1.2.3 Alternative 3: 2
1.3 Background 2
1.3.1 Distribution of the BSAI Atka mackerel resource 2
1.3.2 History and current fleet profile of the Atka mackerel fishery 3

2.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES 6
2.1 Environmental Impacts of the Alternatives 6
2.1.1 Steller sea lion concerns 8
2.1.2 Impact on Atka mackerel spawning aggregations 9
2.1.3 Impacts on prohibited species 9
2.2 Coastal Zone Management Act 9
2.3 Conclusions or Finding of No Significant Impact 10

3.0 REGULATORY IMPACT REVIEW: ECONOMIC AND SOCIOECONOMIC IMPACTS OF THE ALTERNATIVES 11
3.1 Identification of the Individuals or Groups that may be Affected by the Proposed Action 12
3.2 Economic and Social Impacts of the Alternatives 12
3.2.1 Impacts of Alternative 1 - Status Quo 12
3.2.2 Impacts of Alternative 2 (Preferred) -Allocate a portion of the Atka mackerel TAC to vessels using jig gear. 13
3.2.3 Impacts of Alternative 3 - Establish separate Atka mackerel TACs for the Eastern Aleutian Islands District and the Bering Sea and authorize directed fishing for Atka mackerel in the Bering Sea only by vessels using jig gear 14
3.3 Administrative, Enforcement and Information Costs 14

4.0 FINAL REGULATORY FLEXIBILITY ANALYSIS 15
4.1 Economic Impact on Small Entities 15

5.0 REFERENCES 16

6.0 AGENCIES AND INDIVIDUALS CONSULTED 17

7.0 LIST OF PREPARERS 17

8.0 LIST OF TABLES 17

9.0 LIST OF FIGURES 18

Executive Summary

At its December 1996 meeting, the Council reviewed proposals received from management agencies, the fishing industry, conservation groups, and other interested members of the public for changes to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands (FMP) or regulations implementing the FMP. One proposal received from the Unalaska Native Fishermen's Association requested that 2 percent of the TAC annually specified for Bering Sea Atka mackerel be allocated to vessels using jig gear. The purpose of this proposal would be to provide more opportunity to a local small-vessel jig gear fleet to fish for Atka mackerel and supply a bait fishery and a small, but allegedly growing fresh fish market for this species, without direct competition from the large trawl fleet that harvests Atka mackerel.

Under the existing FMP, a closure to directed fishing for Atka mackerel applies to all vessels. Thus vessels using jig gear are prevented from directed fishing for Atka mackerel once these directed fishing closures are effective, although bycatch amounts of Atka mackerel may be retained during a fishing trip equal to 20 percent of the retained amount of other species open to directed fishing. Atka mackerel may not be retained on board a vessel once Atka mackerel becomes a prohibited species upon the attainment of TAC or because of overfishing concerns for other species taken as bycatch in the Atka mackerel fishery.

Vessels using trawl gear harvest over 99 percent of the available Atka mackerel. In 1994 and 1995, 15 and 19 vessels using jig gear harvested 36 and 13 metric tons (mt) of Atka mackerel, respectively, in the combined Eastern Aleutian Islands District/ Bering Sea management area. All of this harvest occurred in the southern Bering Sea (reporting areas 519 and 518). These amounts equate to 0.22 percent and 0. 09 percent of the harvest in the Eastern AI/Bering Sea during these 2 years. Vessels using jig gear have not fished in the Central or Western AI districts, which is not surprising considering that most vessels (71 percent) permitted to use this gear type are less than 60 ft LOA.

Alternatives Considered

Alternative 1: Status quo, no action. The jig gear fleet would continue to compete with trawl gear operations for access to the Atka mackerel fishery.

Alternative 2 (Preferred): Allocate a portion of the annual Atka mackerel TAC specified for one or more of the Aleutian Island (AI) districts to vessels using jig gear. Under any of the allocation options listed below, a step-up provision may be adopted that would allow a gradual increase of the jig gear allocation during the annual groundfish specifications process based on the determination that the previous year's allocation had been reached and the anticipated harvest of Atka mackerel by the jig gear fleet during the upcoming year.

Option 1: (Preferred) Allocate 2 percent of the Atka mackerel TAC specified for the Eastern AI/ Bering Sea subarea to vessels using jig gear.

Option 2: Allocate 1 percent of the Atka mackerel TAC specified for the Eastern AI/ Bering Sea subarea to vessels using jig gear.

Option 3: Allocate 2 percent of the Atka mackerel TAC specified for each BSAI subarea or district.

Option 4: Allocate 1 percent of the Atka mackerel TAC specified for each BSAI subarea or district.

Alternative 3: Establish separate Atka mackerel TACs for the Eastern Aleutian Islands District and the Bering Sea and authorize directed fishing for Atka mackerel in the Bering Sea only by vessels using jig gear.

Option 1: Do not prohibit directed fishing for Bering Sea Atka mackerel by vessels using non-jig gear and provide for a separate Bering Sea TAC under the annual specification process. This option would not require any change to the FMP or to its implementing regulations.

The small boat jig gear fleet typically operates in spring and summer months in the southern Bering Sea, compared to trawl fishery operations that typically occur in late winter and early spring in the Aleutians. The 10 nm trawl exclusion zones around Steller sea lion rookery and haul out sites do not apply to vessels using jig gear, although even these vessels may not enter within 3 nm of these areas. Although the spatial distribution of jig gear operations may be limited and relatively close to shore, localized depletion of the Atka mackerel resource is unlikely given that the daily harvesting capacity and fleet size is so small. Furthermore, the importance of Atka mackerel in the diet of Steller sea lions during summer months is less in the southern Bering sea where the jig gear fleet operates, compared to the more westward Aleutian Islands districts. To the extent they are warranted, any concerns for localized depletion by the jig gear fleet could increase under Alternative 3 if the TAC specified for the Bering Sea provided for a jig gear harvest in excess of the harvest allowed under the options provided in Alternative 2. Alternative 3 also could provide for additional trawl harvest in the Bering sea if the TAC were sufficiently large and a bycatch only status for the trawl fleet were not justified by management agencies. Atka mackerel tend to be larger in this area (Lowe and Fritz 1996) and increased interest to fish in the southern Bering Sea is not unlikely if a separate TAC is established.

Preliminary analyses of fishery and NMFS survey data suggest that males and females segregate during the spawning period (July - October in the Bering Sea). Males presumably remain on the near shore spawning grounds guarding nests, and females move offshore where they are found in exploitable concentrations. An increase in the near shore jig gear harvest during the summer months, therefore, could result in a disproportionate harvest of male fish who reside in the area protecting egg clusters and aggressively strike jig hooks. Sufficient information is not available to assess the potential impact of this effect except that, to the extent it occurs, the impact would be greater with increased near shore harvests of Atka mackerel during summer months.

Jig gear operations assumedly take some salmon as bycatch, but no quantitative information is available to estimate bycatch in the jig gear fisheries because most of the fleet is less than 60 ft LOA and largely unobserved. The bycatch of other prohibited species such as halibut or crab, as well as catch of other groundfish, also is assumedly low given that overall harvest amounts of target species are small and jig gear can be fished selectively to avoid unwanted species.

Under the status quo alternative, annual closures of the Eastern AI/Bering Sea to directed fishing for Atka mackerel, the area most accessible to the small boat fleet currently using jig gear, likely will continue to occur by early to mid February. Thus any opportunity for the small boat jig fleet to fish

for Atka mackerel when weather and sea conditions are more favorable is forgone and opportunity is lost for these vessels to develop a small fresh fish or bait market. Jig gear fishermen who rely on Atka mackerel for use as bait in the Pacific cod fishery would need to pursue other bait alternatives, including the current practice of purchasing bait at $.50/lb that is shipped from the East Coast of the United States.

Under Alternative 2, the potential total revenue to vessels using jig gear that results from the maximum allocation of Atka mackerel could range from $ 52,000 to $ 104,000 annually, depending on the percentage of TAC allocated to the jig gear fleet and assuming that all Atka mackerel caught are retained and delivered shoreside. These results are intended to show a relative potential for revenue. In reality, these results tend to overstate the potential gains to these vessels because of physical limitations in their ability to actually harvest the amount of Atka mackerel allocated to them and the assumption that all Atka mackerel harvest would be retained.

Similarly, the potential loss to vessels using trawl gear in at-sea processing operations ($ 90,000 - 180,000) likely is overstated to the extent that a portion of the Atka mackerel harvested is not retained or to the extent that TACs or TAC allocations are not fully harvested during a year. Regulatory provisions that would allow incremental allocations to the jig gear fleet upon demonstrated harvest capacity or that would allow unharvested portions of the jig gear allocation to be reallocated to vessels using other gear types (i.e., the trawl gear fishery) may reduce potential losses to the trawl fleet that could result from an allocation of Atka mackerel to jig gear vessels. Conversely, any unused amounts of the jig gear allocation that subsequently is reallocated to trawl vessels likely would be so small relative to the fishing capacity of the trawl fleet that little or no additional fishing time would result. No change to the harvest of Atka mackerel by vessels using pot or hook-and-line gear is assumed because this species is harvested only as bycatch in other fisheries and typically is not retained.

Under Alternative 2, option 2 most closely reflects historical needs of the jig gear fleet, although this option still would allocate an amount of Atka mackerel to vessels using jig gear that exceeds by 4 times the largest harvest of this species by the jig gear fleet as recorded in 1993 on ADF&G fish tickets (36 mt). The extent to which the jig fleet would have expanded its historical harvesting activities for Atka mackerel but was preempted from doing so because of fishery closures is not known. Conversely, option 3 seems to provide a significant excess of Atka mackerel relative to historical needs. Furthermore, access to fishing grounds west of the Eastern AI district may be increasingly difficult for the small boat jig-gear fleet and the potential benefits to the jig gear fleet of allocations of Atka mackerel in the Central and Western AI may not be realized for this reason.

Alternative 3 most closely reflects the status quo alternative while providing for increased opportunity for a near-shore jig fishery in the southern Bering Sea. This alternative would not address jig gear preemption concerns if the jig gear fishery expanded beyond the southern Bering Sea into the Aleutian Island Districts. To date, however, the nature of the bait fishery for Atka mackerel suggests that expansion is unlikely in the near future.

Under Alternative 2, the economic impact on catcher vessels would depend upon the option implemented. The greater the amount of Atka mackerel allocated to jig gear vessels, the greater the potential economic gain to this sector of the harvesting fleet. These gains could exceed 5 percent of existing gross annual revenues currently experienced by this fleet. Although quantitative data are not available to assess whether a significant positive economic impact would occur, a 5 percent gain in total annual revenues is not unreasonable even under option 2, which provides the least amount of

direct allocation to the jig gear fleet.

The benefits to the jig gear fleet under Alternative 3 would be similar in scope to those discussed for Alternative 2. The compensatory impact on the trawl fleet likely would be minimized because no changes are proposed to the management of the Atka mackerel fishery in the Aleutian Islands districts, the area where the directed trawl fishery for Atka mackerel typically occurs. Alternative 3 also provides enhanced flexibility to accommodate changing needs of the jig gear fishery by not limiting it to a predetermined quota.

Any loss in gross annual revenues that would be incurred by trawl catcher vessels under Alternatives 2 or 3 likely would not be significant (exceed 5 percent of a vessel's total annual revenue) because these vessel are larger (> 60 ft LOA) and participate in other lucrative groundfish fisheries. Potential economic impacts to trawl vessels under Alternative 2 could be minimized to the extent that the authority to allocate Atka mackerel to vessels using jig gear includes a step-up provision tailored to jig gear harvest capacity. Impact on the trawl fleet could be minimized further if such allocation is restricted to the Eastern AI/Bering Sea area (options 1 or 2) or if provisions are established that provide for the reallocation of unharvested amounts of the jig gear allocation to vessels using other gear types within a time frame that would allow for its harvest.

Significant positive impacts on the small jig gear fleets could occur under Alternatives 2 or 3 to the extent the jig gear fleet realized potential gains through increased harvests of Atka mackerel.

1.0 INTRODUCTION

The groundfish fisheries in the Exclusive Economic Zone (3 to 200 miles offshore) of the Bering Sea and Aleutian Islands management area (BSAI) are managed under the Fishery Management Plan for the Groundfish Fisheries of the Bering Sea and Aleutian Islands Area (FMP). The FMP was prepared by the North Pacific Fishery Management Council (Council) under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and become effective in 1982.

Actions taken to amend the FMP 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).

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

This Environmental Assessment/Regulatory Impact Review/ Final Regulatory Flexibility Analysis (EA/RIR/FRFA) addresses a proposed amendment to the FMP (Amendment 34) that would authorize the allocation of a portion of the annual total allowable catch (TAC) specified for Atka mackerel to vessels using jig gear.

1.1 Purpose of and Need for the Action

At its December 1996 meeting, the Council reviewed proposals received from management agencies, the fishing industry, conservation groups, and other interested members of the public for changes to the FMP or regulations implementing the FMP. One proposal received from the Unalaska Native Fishermen's Association requested that 2 percent of the TAC annually specified for Bering Sea Atka mackerel be allocated to vessels using jig gear. The purpose of this proposal would be to provide more opportunity to a local small-vessel jig gear fleet to fish for Atka mackerel for use as bait in the Pacific cod jig gear fishery as well as supply an allegedly promising fresh fish market for this species, without direct competition from the large, high capacity trawl fleet that harvests Atka mackerel. Fishermen participating in the Pacific cod jig gear fishery assert they pay up to $ 0.50 per pound for frozen bait from the East Coast if Atka mackerel or other local bait source is not available.

The Unalaska Native Fishermen's Association note that Atka mackerel are distributed predominately in Federal waters. Thus any management action to provide more opportunity to the jig gear fleet to harvest Atka mackerel must be initiated through a recommendation by the Council that is subsequently approved by NMFS. Action by the State of Alaska to provide Unalaska area fishermen in Alaska State waters greater access to the Atka mackerel resources is not a practical alternative given the distribution of this species.

1.2 Alternatives Considered

1.2.1 Alternative 1: Status quo, no action. The jig gear fleet would continue to compete with trawl gear operations for access to the Atka mackerel fishery.

1.2.2 Alternative 2 (Preferred): Allocate a portion of the annual Atka mackerel TAC specified for one or more of the Aleutian Island (AI) districts to vessels using jig gear. Under any of the allocation options listed below, a step-up provision may be adopted that would allow a gradual increase of the jig gear allocation during the annual groundfish specifications process based on the determination that the previous year's allocation had been reached and the anticipated harvest of Atka mackerel by the jig gear fleet during the upcoming fishing year.

Option 1: **(Preferred)** Allocate 2 percent of the Atka mackerel TAC specified for the Eastern AI/ Bering Sea subarea to vessels using jig gear.

Option 2: Allocate 1 percent of the Atka mackerel TAC specified for the Eastern AI/ Bering Sea subarea to vessels using jig gear.

Option 3: Allocate 2 percent of the Atka mackerel TAC specified for each BSAI subarea or district.

Option 4: Allocate 1 percent of the Atka mackerel TAC specified for each BSAI subarea or district.

1.2.3 Alternative 3: Establish separate Atka mackerel TACs for the Eastern Aleutian Islands District and the Bering Sea and authorize directed fishing for Atka mackerel in the Bering Sea only by vessels using jig gear.

Option 1: Do not prohibit directed fishing for Bering Sea Atka mackerel by vessels using non-jig gear and provide for a separate Bering Sea TAC under the annual specification process. This option would not require any change to the FMP or to its implementing regulations.

1.3 Background

1.3.1 Distribution of the BSAI Atka mackerel resource

A summary of information on the distribution of Atka mackerel (Pleurogrammus monopterygius) in the BSAI is provided in the 1996 Stock Assessment and Fishery Evaluation Report (SAFE) (NPFMC 1996). This species is distributed from the east coast of the Kamchatka Peninsula throughout the Komondorskiye and Aleutian Islands, north to the Pribilof Islands in the eastern Bering Sea, and eastward through the Gulf of Alaska to southeast Alaska. Based on trawl surveys, the center of abundance appears to be the Aleutian Islands, particularly from Buldir Island to Sequam Pass (Figures 1 and 2)

Atka mackerel are pelagic during much of the year, but they migrate annually from the lower edge of the shelf to the shallow coastal waters where they become demersal during spawning. While spawning, they are distributed in dense aggregations near the bottom. In Alaskan waters, spawning is reported to peak from July to October (McDermott and Lowe 1977).

NMFS trawl survey data indicate that the distribution of biomass in the Central and Eastern Aleutians and the southern Bering Sea shifted between 1991 and 1994. In both 1991 and 1994, the Western Aleutian Islands district contributed approximately half of the total estimated Aleutian biomass. In 1994, 14 percent of the Aleutian biomass was found in the Central area compared to 45 percent in 1991. The contribution of the Eastern area biomass increased to 34 percent in 1994 from 11 percent in 1991. In 1994, a significant concentration of biomass was detected in the southern Bering Sea (Table 1). Nearly all of the Atka mackerel biomass was encountered in the 1-200 m depth strata in the 1991 and 1994 surveys, however, the proportion in the 1-100 m and 100-200 m strata differed between surveys. The distribution of Atka mackerel was about equal in both depth strata during the 1991 survey, but in 1994, the biomass of Atka mackerel in the deeper strata was about 4 times larger than the shallow strata (Lowe and Fritz 1996).

Under Alternative 3, the Eastern AI/BS TAC currently specified for Atka mackerel would be split so that separate Atka mackerel TAC amounts would be specified for the Eastern AI District and the Bering Sea subarea. Using NMFS trawl survey data and the method currently used to distribute TAC among the Aleutian Island districts based on biomass distribution, the potential TAC amounts for the Bering Sea subarea during the past 6 years would have ranged from 6,900 mt in 1996 to 26 mt in 1992 (Table 2).

1.3.2 History and current fleet profile of the Atka mackerel fishery

Annual catches of Atka mackerel in the Bering Sea and Aleutian Islands subarea increased during the 1970s reaching an initial peak of over 24,000 mt in 1978 (Lowe and Friz, 1996). Catches by subarea and corresponding TAC from 1978 are listed in Table 3.

The following description of the Atka mackerel fishery is quoted from Lowe and Fritz (1996):

> From 1970-1979, Atka mackerel were landed off Alaska exclusively by the distant water fleets of the U.S.S.R., Japan and the Republic of Korea. U.S. joint venture fisheries began in 1980 and dominated the landings of Atka mackerel from 1982 through 1988. The last joint venture allocation of Atka mackerel off Alaska was in 1989, and since 1990, all Atka mackerel landings have been made by U.S. fishermen. Total landings declined from 1980-1983 primarily due to changes in target species and allocations to various nations rather than changes in stock abundance. From 1985-87, Atka mackerel catches were some of the highest on record, averaging 34,000 mt annually. Beginning in 1992, TACs increased steadily in response to evidence of a large exploitable biomass, particularly in the central and western Aleutian Islands.
>
> The patterns of the Atka mackerel fishery generally reflect the behavior of the species: (1) the fishery is highly localized and usually occurs in the same few locations each year; (2) the schooling semi-pelagic nature of the species makes it particularly susceptible to trawl gear fished on the bottom; and (3) trawling occurs almost exclusively at depths less than 200 m. In the early 1970s, most Atka mackerel catches were made in the western Aleutian Islands

(west of 180°W longitude). In the late 1970s and through the 1980s, fishing effort moved eastward, with the majority of landings occurring near Seguam and Amlia Islands. In 1984 and 1985 the majority of landings came from a single 1/2° latitude by 1° longitude block bounded by 52°30'N, 53°N, 172°W, and 173°W in Seguam Pass (73% in 1984, 52% in 1985). Other areas fished since the mid-1980s include north of the eastern Aleutian Islands (in areas 518 and 519 in the eastern Bering Sea), Tanaga Pass, north of the Delarof Islands, Petrel Bank, south of Amchitka Island, east and west of Kiska Island, and on the seamounts and reefs near Buldir Island (Figure 2).

.....Through 1990, the Atka mackerel fishery had taken place primarily in the spring and summer. However, in both 1991 and 1992, the Atka mackerel fishery was closed by April, reflecting both the increase in targeting on Atka mackerel as well as the speed with which the catcher/processor fleet caught the TACs of other species, principally pollock. In 1993, an initial Atka mackerel TAC of 32,000 mt was caught by March 11, almost entirely south of Seguam Island (Seguam Bank). This initial TAC represented the amount of Atka mackerel which the Council thought could be harvested in the eastern portion of the Aleutian Islands subarea (based on the assessment for 1993; Lowe 1992) since there was no mechanism in place at the time to spatially allocate TACs in the Aleutians to minimize the likelihood of localized depletions. In mid-1993, however, Amendment 28 to the Bering Sea/Aleutian Islands Fishery Management Plan became effective, dividing the Aleutian subarea into three districts at 177°W and 177°E longitudes for the purposes of spatially apportioning TACs (Figures 2 and 3). On August 11, 1993, an additional 32,000 mt of Atka mackerel TAC was released to the Central (27,000 mt) and Western (5,000 mt) districts. The fishery in the Central area (542) was closed on October 29, 1993 after landings of 26,560 mt were made. Only 2,285 mt were landed in the Western area (543) in all of 1993; annual landings for 1993 in the eastern area (541) and the EBB totaled 36,892 mt.

In 1994-1997, the BSAI TACs were allocated to the three Aleutian Island districts (541-543; Figure 3) based on the biomass distribution of Atka mackerel from the 1991 and 1994 bottom trawl surveys. Table 4 lists the resulting TACs, catch distributions, and dates when the directed fishery was open or when Atka mackerel became a prohibited species in each district .

In 1997 through March, a total of 224 vessel owners have been issued Federal fisheries permit to fish for BSAI groundfish using jig gear. "Jig" is defined in regulations governing the Alaska groundfish fisheries (50 CFR 679.2) as an "authorized gear type" that is a single, non-buoyed, non-anchored line with hooks attached, or the taking of fish by means of such a device. Most of the vessels permitted to fish with jig gear (71 percent) were less than 60 ft length overall. Federal fisheries permits are issued without cost and many vessel owners who apply to fish for groundfish with jig gear do not.

Number of vessel, by size categories, that were issued Federal fisheries permits to fish for BSAI groundfish in 1997 using jig gear

< 60 ft LOA	≥ 60 ft - < 125 ft LOA	≥ 125 ft LOA
160 vessels	55 vessels	9 vessels

Under the existing FMP, a closure to directed fishing for Atka mackerel applies to all vessels. Thus vessels using jig gear are prevented from directed fishing for Atka mackerel once these directed fishing closures are effective, although bycatch amounts of Atka mackerel may be retained during a fishing trip equal to 20 percent of the retained amount of other species open to directed fishing. Atka mackerel may not be retained on board a vessel once Atka mackerel becomes a prohibited species upon the attainment of TAC or because of overfishing concerns for other species taken as bycatch in the Atka mackerel fishery (e.g., sharpchin and northern rockfish in 1996 and shortraker/rougheye rockfish in 1997).

Vessels using trawl gear harvest most (over 99 percent) of the available Atka mackerel. Most of the retained catch is processed into a headed and gutted product, although surimi production is increasing. As a result, the competition within the trawl fleet for access to the Atka mackerel resource is heightened, further aggravating the fast-paced nature of this fishery.

Retained catch of Atka mackerel by the head-and-gut and surimi trawl fleets, 1996-1997

Product	1996		1997 (thru 5/3/97)	
	metric tons production	% total	metric tons production	% total
Whole fish	11,727	15	6,342	13
Head & Gut	62,313	78	35,069	69
Surimi	5,493	7	9,245	18
total production	79,533	100	50,656	100

The amounts of Atka mackerel harvested by vessels using different gear types are listed in Table 5. In 1994 and 1995, 15 and 19 vessels using jig gear harvested 36 and 13 mt of Atka mackerel, respectively, in the Eastern AI/Bering Sea. These amounts equate to 0.22 percent and 0. 09 percent of the harvest in the Eastern AI/Bering Sea during these 2 years. Based on ADF&G fish tickets, no Atka mackerel were harvested by vessels using jig gear in 1996, although catch of fish for personal use bait is not required to be reported on fish tickets. Atka mackerel was not a prohibited species in the Eastern AI/Bering Sea during 1996 until August 8. Vessels using jig gear have not fished in the Central or Western AI districts, which is not surprising considering that most vessels using this gear type are less than 60 ft LOA and fish out of Dutch Harbor..

Anecdotal information indicate that most of the Atka mackerel harvested by the jig gear fleet is used as bait in the jig gear fishery for Pacific cod[1], although interest exists to develop a smoked fish product for this species. Alternative sources of bait for the jig gear fleet exist, but can be relatively

[1] Mike Sloan, NMFS, Alaska Region, P.O. Box 920225, Dutch Harbor, AK 99692-0225.

expensive; up to $.50/lb for frozen herring shipped from the East Coast of the United States.[2] Available catch data also indicate that the harvest of Atka mackerel by vessels using jig gear has been a localized activity restricted to the southern Bering Sea in reporting areas 519 and 518 (Figure 3). Conversely, most of the trawl harvest in the Eastern AL/Bering Sea occurred in reporting area 541 (Eastern Aleutian District), as shown below.

Distribution of Atka Mackerel Harvest in the Eastern Aleutian Islands/Bering Sea by vessels using jig and All Other Gear Types *

Reporting area	Gear	Harvest amounts (mt) by year		
		1994	1995	1996
519	jig	35	13	0
	other	34	230	474
518	jig	1	0	0
	other	1	0	4
Other Bering Sea	jig	0	0	0
	other	86	82	305
541	jig	0	0	0
	other	15,842	13,859	27,388
Total Eastern Aleutian/BS	jig	36	13	0
	other	15,964	14,184	28,171

* Over 99 percent of the other gear harvest of Atka mackerel was taken by trawl gear

[2] Bob Storrs, Unalaska Fishing Association, public testimony presented to the Council during its April 1997 meeting.

2.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared for major Federal actions significantly affecting the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives, and a list of document preparers. The purpose and alternatives were discussed in Sections 1.1 and 1.2, and the list of preparers is in Section 7. This section contains the discussion of the environmental impacts of the alternatives including effects on threatened and endangered species and marine mammals.

2.1 Environmental Impacts of the Alternatives

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

The environmental impacts of the groundfish specifications (TACs) are assessed annually in the environmental assessment prepared for these specifications. A description of the effects of the 1997 TACs on the biological environment and associated impacts on species listed under the Endangered Species Act (ESA), or other marine mammals or seabirds and critical habitat is set out in the final EA prepared for the 1997 specifications (NMFS 1997). Since the EA for the 1997 specifications was prepared, NMFS has changed the status of Steller sea lions under the ESA from threatened to endangered (62 FR 24345, May 5, 1997). At this time, no changes to the regulations governing the groundfish fisheries have been implemented in response to the change in status, although NMFS may do so in the future.

Atka mackerel are an important forage fish for other groundfish, seabirds, and marine mammals, including the Steller sea lion (NMFS, 1995). The proposed action would not change the amount of groundfish harvested, although shifts in the relative amounts harvested by vessels using trawl and jig gear could occur. Up to 2 percent of the Atka mackerel TAC would be allocated to vessels using jig gear under Alternative 2. Under Alternative 3, the annual specification process would be used to assign a TAC for Atka mackerel in the Bering Sea that could accommodate a directed jig gear fishery and bycatch needs in other trawl, hook-and-line, and pot gear fisheries. *Under no alternative would fishing be allowed to exceed the specified TACs specified for Atka mackerel.*

Under Alternatives 2 and 3, less Atka mackerel could be harvested by vessels using trawl gear to provide for a corresponding explicit or implicit allocation of Atka mackerel to vessels using jig gear. In 1994 and 1995, the amount of Atka mackerel harvested by the jig gear fleet totaled only .22-.09

percent of the Eastern AI/Bering Sea harvest or 0. 05-0.016 percent of the total BSAI harvest, respectively. The maximum allocation to the jig gear fleet, or 2 percent of the BSAI TAC under option 3 of Alternative 2, still is a relatively small amount of fish (e.g., 314 mt Eastern AI/BS; 390 mt Central AI; and 644 mt Western AI) relative to the total 66,700 mt Atka mackerel TAC specified for 1997) that, if harvested, would not be expected to significantly alter fishing activities from those already identified in the 1997 EA.

The potential Atka mackerel harvest in the Bering Sea subarea under Alternative 3 could increase significantly, depending on the methodology used to establish and manage these harvest amounts. The potential TAC amounts derived in Table 5 for the past 6-year period range widely (26 mt in 1992 to 6,900 mt in 1996) because of the wide range in the percentage of the total BSAI survey biomass estimated for the southern Bering Sea in 1991 and 1994. In 1997, the potential TAC is estimated at 4,335 mt. This amount represents a 13-6 fold increase relative to the 1995 and 1996 harvest in the Bering Sea subarea by all gear types (325 mt and 783 mt, respectively). An Atka mackerel TAC of 4,335 mt exceeds current directed fishing needs of the jig gear fleet and bycatch needs for other gear types in the Bering Sea and the Council could adjust the TAC downward accordingly to meet these two management needs more appropriately. Alternatively, if a TAC for the Bering were specified that could accommodate directed fishing operations by both jig and trawl gear operations, pressure may exist to do so given that Atka mackerel in this area tend to be relatively large fish that are desirable in the increasingly competitive trawl fishery for this species. Data from the 1994 NMFS survey show a clear east to west size cline in length at age with the largest fish found in the eastern Aleutians (Lowe and Fritz 1996).

If the TAC specified for Atka mackerel under Alternative 3 is adjusted downward during those years that the potential TAC exceeds the needs of the jig gear fleet and bycatch needs in other groundfish fisheries, the potential Atka mackerel harvest under Alternative 3 likely would provide the least potential for change in distribution of fishing effort by different gear types while providing for an enhanced opportunity to fish for Atka mackerel with jig gear in the southern Bering Sea. Currently, the TACs annually specified for Atka mackerel are apportioned among the Aleutian Island Districts based on the species' biomass distribution derived from NMFS trawl surveys. Limited data exist from NMFS trawl surveys on the biomass of Atka mackerel in the southern Bering Sea. Lacking more definitive information, the derivation of TAC for the southern Bering Sea listed in Table 2 could consider data other than the biomass distribution of Atka mackerel (i.e., anticipated harvest by jig gear in a directed fishery plus bycatch amounts in other fisheries). Using these parameters and the above information on catch distribution and amounts in the Southern Bering Sea, the resulting TAC could be relatively small (300-500 mt) to meet the intent of the proposed action.

Although vessels less than 60 ft LOA are not required to carry observers, the small percentage of the total TAC that would be allocated to these vessels using jig gear likely would not result in a significant reduction in observer coverage in the Atka mackerel fishery. Given the current harvest capacity of the jig gear fleet, little change would be expected in the overall rate or location of Atka mackerel fishery removals that would affect predator/prey relationships in ways not already considered under previous section 7 consultations cited in the EA prepared for the 1997 harvest specifications. Nonetheless, harvest capacity could increase. This being the case, specific concerns are discussed below.

2.1.1 Steller sea lion concerns

Since 1992, trawling was prohibited within 10 nm of all Steller sea lion rookeries in the BSAI and Gulf of Alaska to aid in the recovery of this species. Five of these sites are located in the southern Bering Sea. In addition, 20 nm no trawl zones were implemented around six rookeries in the eastern Aleutian Islands/BS during the pollock roe season to address concerns about large removals of potential prey during winter months. Four of these are in the southeastern Bering Sea subarea (Sea Lion rocks, Ugamak, Akun, and Akutan) and two are in the Aleutian Islands subarea (Seguam and Agligadak). The intent of these trawl closures was to exclude trawl fishing from areas known to be important for sea lion foraging and reproduction. The following discussion is excerpted from the Lowe and Fritz 1996):

> While there is no proven cause and effect relationship between the decline in Steller sea lion numbers and increases in fishery removals near terrestrial sea lion habitats, NMFS imposed the trawl exclusion zones based on general conservation principles in an effort to promote sea lion recovery. In 1993, NMFS designated critical habitat (as defined by the ESA) for the Steller sea lion, part of which included aquatic areas within 20 nm if all rookeries and major haulouts west of 144° W longitude (Figure 4).....Recent food habits data from the Aleutian Islands indicates that Atka mackerel is an important part of the diet of Steller sea lions, at least during summer months. The prevalence of Atka mackerel and walleye pollock in sea lion scats reflected the distributions of each species in the Aleutian Islands. The percentage occurrence of Atka mackerel was progressively greater in samples taken in central and western Aleutian Islands (to as high as 90 percent), where most of the Atka mackerel biomass is located. Conversely, the percentage of pollock was greatest in the eastern Aleutian Islands..

The small boat jig gear fleet typically operates in spring and summer months in the southern Bering Sea, compared to trawl fishery operations that typically occur in late winter and early spring in the Aleutians. The 10 nm trawl exclusion zones around Steller sea lion rookery and haul out sites do not apply to vessels using jig gear, although even these vessels may not enter within 3 nm of these areas. Although the spatial distribution of jig gear operations may be limited and relatively close to shore, localized depletion of the Atka mackerel resource is unlikely given that the daily harvesting capacity and fleet size is so small. Furthermore, the importance of Atka mackerel in the diet of Steller sea lions during summer months is less in the southern Bering sea where the jig gear fleet operates, compared to the more westward Aleutian Islands districts. To the extent they are warranted, any concerns for localized depletion by the jig gear fleet could increase under Alternative 3 if the TAC specified for the Bering Sea provided for a jig gear harvest in excess of the harvest allowed under the options provided in Alternative 2. Alternative 3 also could provide for additional trawl harvest in the Bering sea if the TAC were sufficiently large and a bycatch only status for the trawl fleet were not justified by management agencies. Atka mackerel tend to be larger in this area (Lowe and Fritz 1996) and increased interest to fish in the southern Bering Sea is not unlikely if a separate TAC is established.

2.1.2 Impact on Atka mackerel spawning aggregations

Atka mackerel are a pelagic species much of the year, but during summer months they migrate to shallow coastal waters where they spawn demersally. Females spawn their eggs in Alaskan waters from July to October in rock crevices or among stones, which are guarded by males until hatching

occurs (McDermott and Lowe, 1997). Preliminary analyses of fishery and NMFS survey data suggest that males and females segregate during the spawning period. Males presumably remain on the spawning grounds guarding nests, and females move offshore where they are found in exploitable concentrations. An increase in the near shore jig gear harvest during the summer months, therefore, could result in a disproportionate harvest of male fish who reside in the area protecting egg clusters and aggressively strike jig hooks. Russian research suggests that 90 percent of the eggs in nests that no longer have males to protect and aerate them soon die.[3] Sufficient information is not available to assess the potential impact of this effect except that, to the extent it occurs, the impact would be greater with increased near shore harvests of Atka mackerel during summer months.

2.1.3 Impacts on prohibited species

Jig gear operations assumedly take salmon as bycatch, but very little quantitative information is available to estimate bycatch in the jig gear fisheries because most of the fleet is less than 60 ft LOA and largely unobserved. Jig gear fisheries tend to operate in summer months. Based on observer data collected in the BSAI trawl fisheries, chinook salmon bycatch is lowest during this time of year; however chum salmon bycatch tends to relatively high. Anecdotal information from representatives of the jig gear fleet suggests that the number of salmon taken in the Pacific cod and Atka mackerel jig gear fisheries is very low. The bycatch of other prohibited species such as halibut or crab, as well as catch of other groundfish fisheries, also is assumedly low given that overall harvest amounts of target species are small and jig gear can be fished selectively to avoid unwanted species.

2.2 Coastal Zone Management Act

Implementation of any of the alternatives would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of Section 30(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

2.3 Conclusions or Finding of No Significant Impact

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

DEC 11 1997

Assistant Administrator for Fisheries, NOAA — Date

[3] Lowell Fritz, Alaska Fisheries Science Center, NMFS. Personal communication, May 1997.

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

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

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

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

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

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

> (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
>
> (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
>
> (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
>
> (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

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

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

In 1995, 110 vessels were used to fish for Atka mackerel. Of these, 19 catcher vessels used jig gear. Vessels using jig gear did not report landings of Atka mackerel on ADF&G fish tickets in 1996, although 50 trawl vessels, 25 pot gear vessels and 25 vessels using hook-and-line gear caught Atka mackerel (Table 5). Assumedly, vessels using jig gear to fish for Atka mackerel for personal use bait did continue to do so in 1996, although this harvest is not required to be reported on ADF&G fish tickets.

Implications of the proposed groundfish Community Development Quota (CDQ) program: In June 1995, the North Pacific Fishery Management Council approved a permanent 7.5 percent CDQ allocation of all groundfish and crab in the BSAI. The proposed CDQ program is undergoing development and review by NMFS. CDQ eligible communities are located on or within 50 miles of the Bering Sea coast from the Bering Strait to the western most Aleutian islands, or are located on islands within the Bering Sea. CDQ communities on the Aleutian Islands and Alaska Peninsula that are located in an area accessible to Atka mackerel fishing grounds by a small boat fleet include: Atka, Nikolski, Akutan, False Pass and Nelson Lagoon. Of these areas, only Atka is located adjacent to waters within statistical area 541. The remaining communities are located adjacent to the southern Bering sea subarea. Dutch Harbor is not a CDQ community. To date, the jig gear fleet works out of Dutch Harbor, but no reason exists to believe that Atka Mackerel jig gear operations could not develop in other Aleutian Islands communities.

Under the CDQ program, local fishing organizations from eligible communities and local economic development organizations are eligible to apply for a share of the CDQ allocation. CDQ applicants compete with each other for quota awards on the basis of goals and objectives, realistic measurable milestones for determining progress, methods for developing self-sustaining local fisheries economies, levels of local employment, amount of capital or equity generated for local fisheries investment, and profit-sharing arrangements. The State of Alaska requires active, not passive, CDQ operations so that the mere sale of an applicants quota and receipt of dividends is not acceptable.

Thus, a likely expectation exists that the CDQ communities in the Aleutian Islands would actively harvest any Atka mackerel CDQ that is apportioned to them. Any local vessel owners from CDQ communities wishing to use jig gear to harvest Atka mackerel could do so under the CDQ program if the CDQ applicant made appropriate provisions for this fleet relative to trawl gear operations. These vessels also could harvest any allocations to the open access jig gear fleet under Alternative 2. Provisions for the jig gear fleet under Alternative 3 (separate TAC for the Bering Sea) may not easily benefit small jig vessels from the Aleutian Islands CDQ communities (Atka) to the extent that vessel owners from these communities choose not to fish in the Bering Sea subarea. Alternative 3, however, could directly benefit the Dutch Harbor jig gear fleet, which would not be a recipient under the groundfish CDQ program.

3.2 Economic and Social Impacts of the Alternatives

3.2.1 Impacts of Alternative 1 - Status Quo

The status quo alternative would not allocate a portion of the Atka mackerel TAC to vessels using jig gear. When the Atka mackerel directed fishing allowances are harvested, primarily by vessels using

trawl gear, the resulting directed fishing closures would continue to limit the opportunity of jig gear vessels to fish for this species. Annual closures of the Eastern AI/Bering Sea to directed fishing for Atka mackerel, the area most accessible to the small boat fleet currently using jig gear, likely will continue to occur by early to mid February. Thus any opportunity for the small boat jig fleet to fish for Atka mackerel when weather and sea conditions are more favorable is forgone and opportunity is lost for these vessels to develop a small fresh fish or bait market. Jig gear fishermen who rely on Atka mackerel for use as bait in the Pacific cod fishery would need to pursue other bait alternatives, including the current practice of purchasing bait at $.50/lb that is shipped from the East Coast of the U.S.

3.2.2 Impacts of Alternative 2 (Preferred) -Allocate a portion of the Atka mackerel TAC to vessels using jig gear.

Under Alternative 2, vessels using jig gear would be allocated a portion of the annual BSAI Atka mackerel TACs. Typically, the annually specified TACs for Atka mackerel are harvested each year (Table 4). Thus, an allocation of this species to vessels using jig gear could affect the amount of Atka mackerel harvested by vessels using trawl gear, although this effect likely would not be substantial considering that options for the TAC allocation range from 2 percent of the BSAI TAC to only 1 percent of the TAC specified for the Eastern AL/Bering Sea. Furthermore, a step-up provision could be adopted to ensure that incremental allocations meet the capacity of the jig gear fleet to harvest allocated amounts.

The potential revenues to the jig gear fleet from the harvest of the Atka mackerel TAC under Alternatives 1 and 2 are set out in Table 6 for each of the allocation options. Information in Table 6 was derived using the 1997 TAC as an example, as well as a range of exvessel price of $ 0.15 per lb (shoreside delivery price reported on 1994-95 ADF&G fish tickets) and $0.26 per lb (estimated price for 1997 at-sea processing operations) for whole Atka mackerel. These prices understate the potential benefit to owners of vessels using jig gear to the extent the owners would pay $.50/lb for bait if Atka mackerel were not available. For simplicity, this relative assessment of potential gains and losses assumes that all Atka mackerel caught is retained, although the rate of discard of Atka mackerel in the 1994 and 1995 Atka mackerel fishery was 16.5 percent and 20.7 percent, respectively (Table 6).

Under the preferred action (Alternative 2, option 1), the potential total revenue to vessels using jig gear that results from the maximum allocation of Atka mackerel could range from $ 52,000 to $ 104,000 annually, depending on the percentage of TAC annually allocated to the jig gear fleet and assuming that all Atka mackerel caught are retained and delivered shoreside. These results are intended to show a relative potential for revenue. In reality, these results tend to overstate the potential gains to these vessels because of physical limitations in their ability to actually harvest the amount of Atka mackerel allocated to them and the assumption that all Atka mackerel harvest would be retained.

Similarly, the potential loss to vessels using trawl gear in at-sea processing operations ($ 90,000 - 180,000) likely is overstated to the extent that a portion of the Atka mackerel harvested is not retained or to the extent that TACs or TAC allocations are not fully harvested during a year. Regulatory provisions that would allow incremental allocations to the jig gear fleet upon demonstrated harvest capacity or that would allow unharvested portions of the jig gear allocation to be reallocated to vessels using other gear types (i.e., the trawl gear fishery) may reduce potential losses to the trawl fleet that could result from an allocation of Atka mackerel to jig gear vessels. Conversely, any unused amounts

of the jig gear allocation that subsequently is reallocated to trawl vessels likely would be so small relative to the fishing capacity of the trawl fleet that little or no additional fishing time would result. No change to the harvest of Atka mackerel by vessels using pot or hook-and-line gear is assumed because this species is harvested only as bycatch in other fisheries and typically is not retained.

Under Alternative 2, option 2 most closely reflects historical needs of the jig gear fleet, although this option still would allocate an amount of Atka mackerel to vessels using jig gear that exceeds by 4 times the largest harvest of this species by the jig gear fleet as recorded in 1993 on ADF&G fish tickets (36 mt). The extent to which the jig fleet would have expanded its historical harvesting activities for Atka mackerel but was preempted from doing so because of fishery closures is not known. Conversely, option 3 seems to provide a significant excess of Atka mackerel relative to historical needs. Furthermore, access to fishing grounds west of the Eastern AI district may be increasingly difficult for the small boat jig-gear fleet and the potential benefits to the jig gear fleet of allocations of Atka mackerel in the Central and Western AI may not be realized for this reason.

3.2.3 Impacts of Alternative 3 - Establish separate Atka mackerel TACs for the Eastern Aleutian Islands District and the Bering Sea and authorize directed fishing for Atka mackerel in the Bering Sea only by vessels using jig gear

Alternative 3 most closely reflects the status quo alternative while providing for increased opportunity for a near-shore jig fishery in the southern Bering Sea. This alternative would not address jig gear preemption concerns if the jig gear fishery expanded beyond the southern Bering Sea into the Aleutian Island Districts. To date, the nature of the bait fishery for Atka mackerel suggests that expansion is unlikely in the near future.

Vessels using trawl, pot, or hook-and-line gear in the Bering Sea catch relatively small bycatch amounts of Atka mackerel that typically are not retained. The directed fishery for Atka mackerel with trawl gear occurs east of the southern Bering Sea in the Aleutian Islands districts and would not be directly impacted under Alternative 3. The current maximum retainable bycatch (MRB) percentage for Atka mackerel relative to other groundfish species is 20 percent. This MRB percentage would allow for the retention of bycatch amounts of Atka mackerel in the Bering Sea by non-jig fishing operations should the vessel operator desire. Under option 1, an FMP amendment would not be implemented to prohibit directed fishing on Bering Sea Atka mackerel by non-jig vessels. Instead, adoption of this option would be based on the assumption that trawl vessel operators would not participate in a directed fishery for Atka mackerel in the Bering Sea and trawl fisheries for this species would continue to operate only in the Aleutian Islands districts. This premise may be erroneous if larger Atka mackerel are desirable to the trawl fleet and these fish generally are more abundant in the Eastern AI district and southern Bering Sea as indicated by NMFS trawl surveys (Lowe and Fritz 1996).

The establishment of a separate TAC for the Bering Sea could result in a reduction of the amount of TAC available to vessels in the Eastern AI district to the extent that this latter TAC is reduced from the status quo as a result of a split of the Eastern AI/Bering Sea management area.

3.3 Administrative, Enforcement and Information Costs

No new recordkeeping or reporting costs would result from any of the alternatives. Current

regulations already require that species catch be separately reported by gear and reporting area.

The preferred action under Alternative 2 would require that one additional quota be established for Atka mackerel and monitored, managed and enforced. Additional inseason actions would be required to manage the jig gear quotas. Alternative 3 would add one additional quota to monitor and manage (Bering Sea Atka mackerel TAC). The required costs for administration, enforcement, or information requirements could be accommodated with existing human and fiscal resources, although at times the management of the jig gear allocation may require that other existing management tasks be reprioritized to lower status.

4.0 FINAL REGULATORY FLEXIBILITY ANALYSIS

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

The Small Business Administration has defined all fish-harvesting or hatchery businesses that are independently owned and operated, not dominant in their field of operation, with annual receipts not in excess of $3,000,000 as small businesses. In addition, seafood processors with 500 employees or fewer, wholesale industry members with 100 employees or fewer, not-for-profit enterprises, and government jurisdictions with a population of 50,000 or less are considered small entities. NMFS has determined that a "substantial number" of small entities would generally be 20 percent of the total universe of small entities affected by the regulation. A regulation would have a "significant impact" on these small entities if it reduced annual gross revenues by more than 5 percent, increased total costs of production by more than 5 percent, or resulted in compliance costs for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities.

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

(1) a description and estimate of the number of small entities and total number of entities in a particular affected sector, and total number of small entities affected; and

(2) analysis of economic impact on small entities, including direct and indirect compliance costs, burden of completing paperwork or recordkeeping requirements, effect on the competitive position of small entities, effect on the small entity's cashflow and liquidity, and ability of small entities to remain in the market.

4.1 Economic Impact on Small Entities

Most catcher vessels, and certainly all jig gear vessels, harvesting groundfish off Alaska meet the definition of a small entity under the RFA. In 1995, 361 catcher vessels were used to catch BSAI groundfish; of these, 15 used jig gear to harvest Atka mackerel, or 4 percent of the BSAI catcher vessel fleet.

No regulatory measures are called for under Alternative 1, therefore, small entities would not be economically impacted as a result of regulatory action. Nonetheless, owners of small vessels using jig gear may continue to experience restricted opportunity to fish for Atka mackerel because of fishery closures due primarily to trawl operations for this species.

Under the preferred action (Alternative 2, option 1) the economic impact on the catcher vessels using jig gear to harvest Atka mackerel would depend upon the amount of Atka mackerel annually allocated to the jig gear fleet. The greater the amount of Atka mackerel allocated to jig gear vessels, the greater the potential economic gain to this sector of the harvesting fleet. These gains could exceed 5 percent of existing gross annual revenues currently experienced by this fleet. Although quantitative data are not available to assess whether a significant positive economic impact would occur, a 5 percent gain in total annual revenues is not unreasonable even under option 2, which provides the least amount of direct allocation to the jig gear fleet.

The benefits to the jig gear fleet under Alternative 3 would be similar in scope to those discussed for Alternative 2. The compensatory impact on the trawl fleet likely would be minimized because no changes are proposed to the management of the Atka mackerel fishery in the Aleutian Islands districts, the area where the directed trawl fishery for Atka mackerel typically occurs. Alternative 3 also provides enhanced flexibility to accommodate changing needs of the jig gear fishery by not limiting it to a predetermined quota.

Any loss in gross annual revenues that would be incurred by trawl catcher vessels under Alternatives 2 or 3 likely would not be significant (exceed 5 percent of a vessel's total annual revenue) because these vessel are larger (> 60 ft LOA) and participate in other lucrative groundfish fisheries. Potential economic impacts to trawl vessels under Alternative 2 could be minimized to the extent that the authority to allocate Atka mackerel to vessels using jig gear includes a step-up provision tailored to jig gear harvest capacity. Impact on the trawl fleet could be minimized further if such allocation is restricted to the Eastern AI/Bering Sea area (preferred action under option 1).

Significant positive impacts on the small jig gear fleets could occur under Alternatives 2 or 3 to the extent the jig gear fleet realized potential gains through increased harvests of Atka mackerel.

The proposed rule to implement Amendment 34 was published in the Federal Register on September 22, 1997 (62 FR 49464) and comments were invited on the IRFA. No comments were received on the IRFA.

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8.0 LIST OF TABLES

Table 1. Atka mackerel biomass in metric tons from the bottom trawl survey, by subregion, depth interval, and survey year, with the corresponding coefficients of variation. The proportions of total Aleutian biomass contributed by each subregion are shown in parentheses (From Lowe and Fritz 1996).

Table 2. Derivation of potential Bering Sea subarea Atka mackerel TAC based on historic survey biomass distribution and amounts (Sandra Lowe and Lowell Fritz, AFSC, personnel communication).

Table 3. Annual historical catches of Atka mackerel in the eastern Bering Sea and Aleutian Islands.

Table 4. 1995 - 1997 Atka mackerel TACs, catch, and dates when the directed fishery for this species was open or when Atka mackerel became prohibited species

Table 5. Atka Mackerel Catch (mt) and Fishing Effort (number of unique vessels) by Area and Gear 1994-1996.

Table 6. Potential harvest (mt) and value ($1,000) of Atka mackerel under Alternatives 1 and 2

Table 7 . Estimates of Discarded and Retained Atka mackerel by Groundfish Fisheries in the Bering Sea and Aleutian Islands, 1990-95. Rate=discards/retained*100 for the Atka mackerel fishery only (from Lowe and Friz, 1996).

9.0 LIST OF FIGURES

Figure 1. Map of the Aleutian Islands region showing major concentrations of Atka mackerel found in resource assessment surveys.

Figure 2. Locations fished by the 1994 Atka mackerel fishery in the Aleutian Islands.

Figure 3. BSAI statistical and reporting areas.

Figure 4. Steller Sea lion critical habitat and trawl exclusion zones in the BSAI.

Table 1. Atka mackerel biomass in metric tons from the bottom trawl survey, by subregion, depth interval, and survey year, with the corresponding coefficients of variation. The proportions of total Aleutian biomass contributed by each subregion are shown in parentheses (From Lowe and Fritz 1996).

Area	Depth (m)	Biomass (mt) 1991		Biomass (mt) 1994		Coefficient of Variation 1991	Coefficient of Variation 1994
Aleutian	1-100	349,146		114,558			
	101-200	338,563		507,107			
	201-300	441		2,140			
	301-500	0		21			
Total		688,150	(100%)	623,826	(100%)	0.266	0.366
Western	1-100	100,045		68,699			
	101-200	205,879		253,020			
	201-300	163		2,107			
	301-500	0		6			
Total		306,087	(44.5%)	323,832	(51.9%)	0.445	0.627
Central	1-100	181,439		45,299			
	101-200	126,074		42,090			
	201-300	101		16			
	301-500	0		3			
Total		307,614	(44.7%)	87,408	(14.0%)	0.355	0.445
Eastern	1-100	67,662		560			
	101-200	6,610		211,997			
	201-300	177		17			
	301-500	0		12			
Total		74,449	(10.8%)	212,586	(34.1%)	0.753	0.445
S.Bering Sea	1-100	59		93,170			
	101-200	4		80			
	201-300	25		4			
	301-500	0		7			
Total		88		93,261		0.261	0.991

Table 2. Derivation of potential southern Bering Sea Atka mackerel TAC based on historic survey biomass distribution and amounts (Sandra Lowe and Lowell Fritz, AFSC, personnel communication).

Survey data

Year	Southern BS Biomass (mt)	% of total BSAI survey biomass attributed to southern BS
1980	19,832	13.000
1983	10	0.003
1986	645	0.100
1991	88	0.010
1994	93,261	13.000

Back calculation of southern BS total allowable catch since 1992*

Year	Total BSAI TAC	Survey years (ave. % distribution)	**Potential Bering Sea TAC allocation (mt)**
1997	66,700	1991 & 1994 (6.5%)	**4,335**
1996	106,157	1991 & 1994 (6.5%)	**6,900**
1995	80,000	1991 & 1994 (6.5%)	**5,200**
1994	68,000	1991 & 1994 (6.5%)	**4,420**
1993	64,000	1986 & 1991 (0.06 %)	**38**
1992	43,000	1986 & 1991 (0.06 %)	**26**

* The average of the two most recent survey biomass distributions (%) by area currently are used to allocate the Aleutian Island TAC. This same method using the average percentage of biomass distribution in the southern Bering Sea and historical TACS provided the potential Bering Sea allocations.

Table 3. Annual historical catches of Atka mackerel in the eastern Bering Sea and Aleutian Islands.

	Eastern Bering Sea				Aleutians Region				EBS-AI	
Year	Foreign	Domestic JVP	Domestic DAP	Total	Foreign	Domestic JVP	Domestic DAP	Total	Total	TAC
1978	831	0	0	831	23,418	0	0	23,418	24,249	24,800
1979	1,985	0	0	1,985	21,279	0	0	21,279	23,264	24,800
1980	4,690	265	0	4,955	15,533	0	0	15,533	20,488	24,800
1981	3,027	0	0	3,027	15,028	1,633	0	16,661	19,688	24,800
1982	282	46	0	328	7,117	12,429	0	19,546	19,874	24,800
1983	140	1	0	141	1,074	10,511	0	11,585	11,726	24,800
1984	41	16	0	57	71	35,927	0	35,998	36,055	23,130
1985	1	3	0	4	0	37,856	0	37,856	37,860	37,700
1986	6	6	0	12	0	31,978	0	31,978	31,990	30,800
1987	tr	12	0	12	0	30,049	0	30,049	30,061	30,800
1988	0	43	385	428	0	19,577	2,080	21,656	22,084	21,000
1989	0	56	3,070	3,126	0	0	14,868	14,868	17,994	20,285
1990	0	0	480	480	0	0	21,725	21,725	22,205	23,500
1991	0	0	2,596	2,596	0	0	24,144	24,144	26,740	24,000
1992	0	0	2,610	2,610	0	0	47,425	47,425	50,035	43,000
1993	0	0	213	213	0	0	65,524	65,524	65,737	64,000
1994	0	0	189	189	0	0	69,401	69,401	69,590	68,000
1995	0	0	b	b	0	0	81,552	81,552	81,552	80,000
1996	0	0	b	b	0	0	103,870	103,870	103,870	106,157
1997a	0	0	b	b	0	0	43,653	43,653	43,653	66,700

a) 1997 data as of 3/22/97 from NMFS Alaska Regional Office Home Page.
b) Eastern Bering Sea catches included with Aleutian Islands.

Table 4. 1995 - 1997 Atka mackerel TACs, catch, and dates when the directed fishery for this species was open or when Atka mackerel became prohibited species

		Aleutian Subarea		
Year		541&EBS	542	543
1994	TAC (mt)	13,475	44,525	10,000
	Catch (mt)	15,974	43,481	10,048
	Dates Open	1/1-2/13	1/1-6/7; 7/4-7/28	1/1-6/30
	Dates Prohibited	4/9 - 12/31	--	--
1995	TAC (mt)	13,500	50,000	16,500
	Catch (mt)	14,197	50,388	16,967
	Dates Open	1/1-2/2	1/1-4/25; 7/1-7/17	1/1-5/15
	Dates Prohibited	2/10 - 12/31	--	6/7 - 12/31
1996	TAC (mt)	26,700	33,600	45,857
	Catch (mt)	28,171	33,519	42,180
	Dates Open	1/1-2/14; 7/1-7/8; 7-31-8/2	1/1-4/14; 7/1-7/13 7/31-8/4	1/1-8/7[1]
	Dates Prohibited[1]	8/7 - 12/31	8/7 - 12/31	8/7 - 12/31
1997	TAC (mt)	15,000	19,500	32,200
	Catch (mt)[2]	16,146	19,422	29,186
	Dates Open	1/1 - 2/4	1/1 - 3/15	1/1 - 4/21
	Dates Prohibited	2/28 - 12/31	4/21 - 12/31	4/21 - 12/31

1. In 1996, BSAI Atka mackerel became a prohibited species on August 7 to prevent further retention
of sharpchin and northern rockfish.
2. 1997 catch as of May 3 from NMFS Alaska Region Home Page.

Table 5. Atka Mackerel Catch (mt) and Fishing Effort (number of unique vessels) by Area and Gear 1994-1996*

	1994		1995		1996	
BS & EASTERN AI (541)	Effort	Total Catch	Effort	Total Catch	Effort	Total Catch
TRW	49	15,947	52	14,062	50	28,090
POT	15	7	22	78	25	53
HAL	26	10	17	44	25	28
JIG	15	36	19	13	0	0
Total	105	16,000	110	14,197	100	28,171
CENTRAL AI (542)						
TRW	16	43,481	27	50,385	21	33,514
POT	0	0	2	1	4	0
HAL	8	30	3	2	7	5
JIG	0	0	0	0	0	0
Total	24	43,511	32	50,388	32	33,519
WESTERN AI (543)						
TRW	6	10,041	14	16,966	12	42,177
POT	0	0	0	0	3	0
HAL	4	7	2	1	2	3
JIG	0	0	0	0	0	0
Total	10	10,048	16	16,967	17	42,180
* Data from Blend Data and ADFG Fish Ticket Data						

Table 6. Potential harvest (mt) and value ($1,000) of Atka mackerel under Alternatives 1 and 2 based on 1997 TAC amounts.

	Eastern AI/BS	Central AI	W
ALTERNATIVE 1			
Total 1996 TAC and relative value ($)[1]	15,700 ($ 5,192 - 9,000)	19,500 ($ 6,449 - 11,17	18,157)
ALTERNATIVE 2			
TAC allocation (and value)[1] under option 1 - jig gear allocated 2 % Eastern AI/BS TAC			
Jig gear	314 ($ 104 - 180)	---	
Non-jig gear	15,386 ($5,088 - 8,819)	---	
All gear combined	---	19,500 ($ 6,449 - 11,177)	
TAC allocation (and value)[1] under option 2 -jig gear allocated 1 % Eastern AI/BS TAC			
Jig gear	157 ($ 52 - 90)	---	
Non-jig gear	15,543 ($5,140 - 8,909)	---	
All gear combined	---	19,500 ($ 6,449 - 11,177)	
TAC allocation (and value)[1] under option 3 - jig gear allocated 2 % BSAI TAC			
Jig gear	314 ($ 104 - 180)	390 ($ 129 - 2	)
Non-jig gear	15,386 ($5,088 - 8,819)	19,110 ($ 6,320 - 10,95	18,089)
All gear combined	---		
TAC allocation (and value)[1] under option 4 - jig gear allocated 1 % BSAI TAC			
Jig gear	157 ($ 52 - 90)	195 ($ 64 - 1	)
Non-jig gear	15,543 ($ 5,140 - 8,909)	19,305 ($ 6,384 - 11,06	18,273)
All gear combined	---	---	

1/ Value range of whole fish based on $0.15/lb reported on 1994 - 1995 ADF&G fish tickets and $0.26/lb estimated for recent at-sea operations.

Table 7. Estimates of Discarded and Retained Atka mackerel by Groundfish Fisheries in the Bering Sea and Aleutian Islands, 1990-95. Rate=discards/retained*100 for the Atka mackerel fishery only (from Lowe and Friz, 1996).

Year	Fishery	Discarded	Retained	Total	Rate
1990	Atka mackerel	2,247 mt	18,900 mt	21,147 mt	11.9%
	All others	1,354	1,399	2,753	
	All	3,601	20,299	23,900	
1991	Atka mackerel	2,693	23,060	25,753	11.7
	All others	2,099	428	2,527	
	All	4,792	23,487	28,280	
1992	Atka mackerel	7,236	37,972	45,208	19.1
	All others	3,595	2,352	5,947	
	All	10,831	40,324	51,155	
1993	Atka mackerel	12,517	48,164	60,682	26.0
	All others	4,184	2,084	6,268	
	All	16,702	50,248	66,950	
1994	Atka mackerel	9,597	58,224	67,821	16.5
	All others	754	1,016	1,770	
	All	10,351	59,240	69,590	
1995	Atka mackerel	13,669	66,153	79,823	20.7
	All others	1,230	501	1,731	
	All	14,899	66,654	81,554	

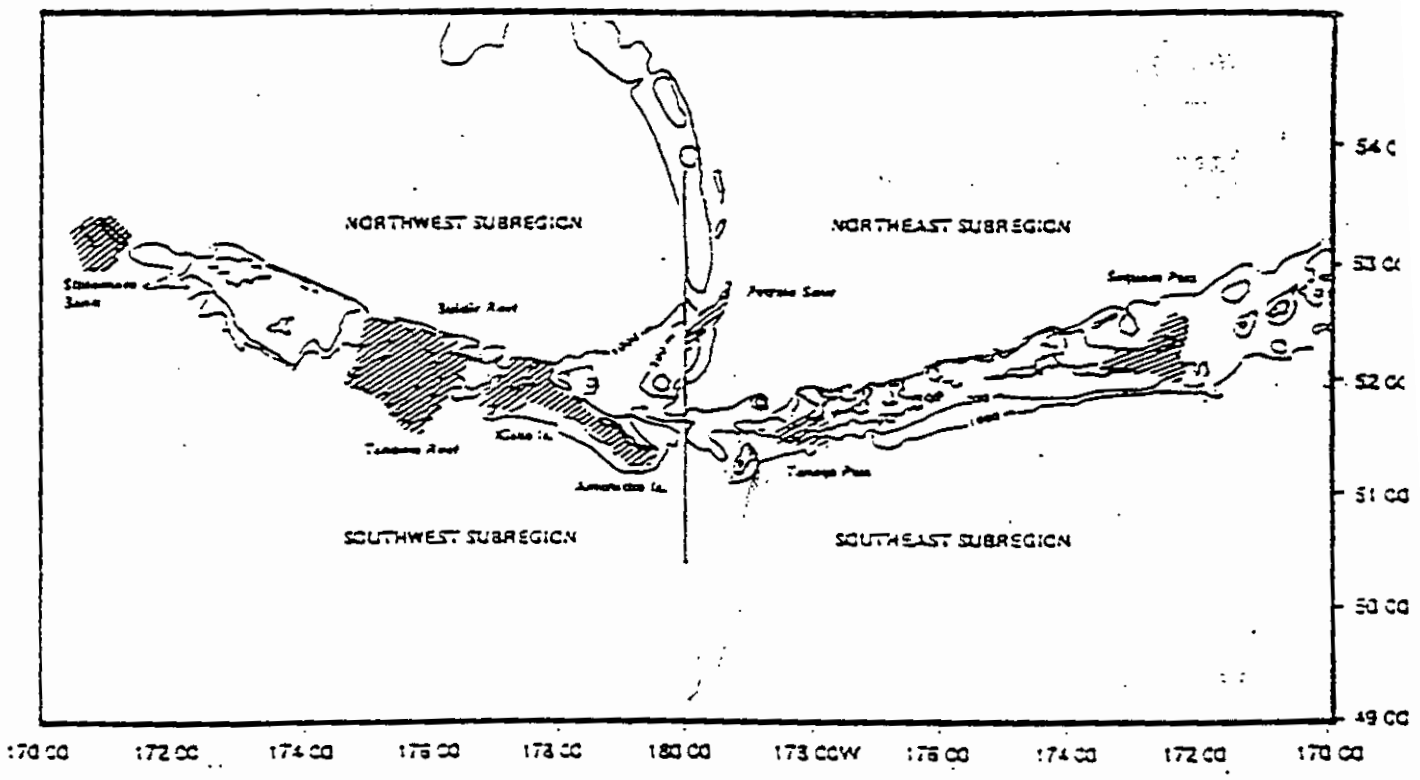


Figure 1 Map of the Aleutian Islands region showing major concentrations of Atka mackerel found in resource assessment surveys.

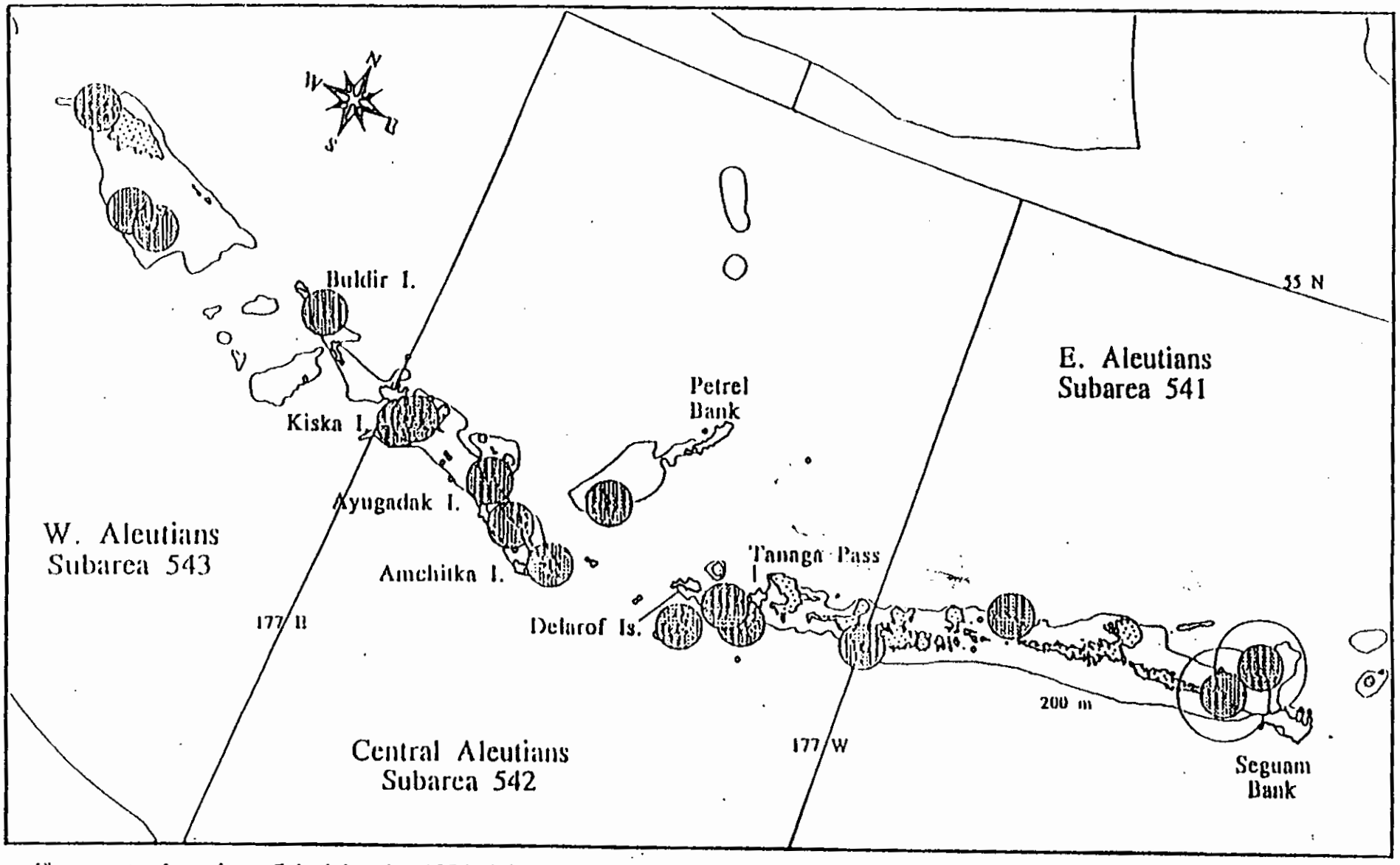
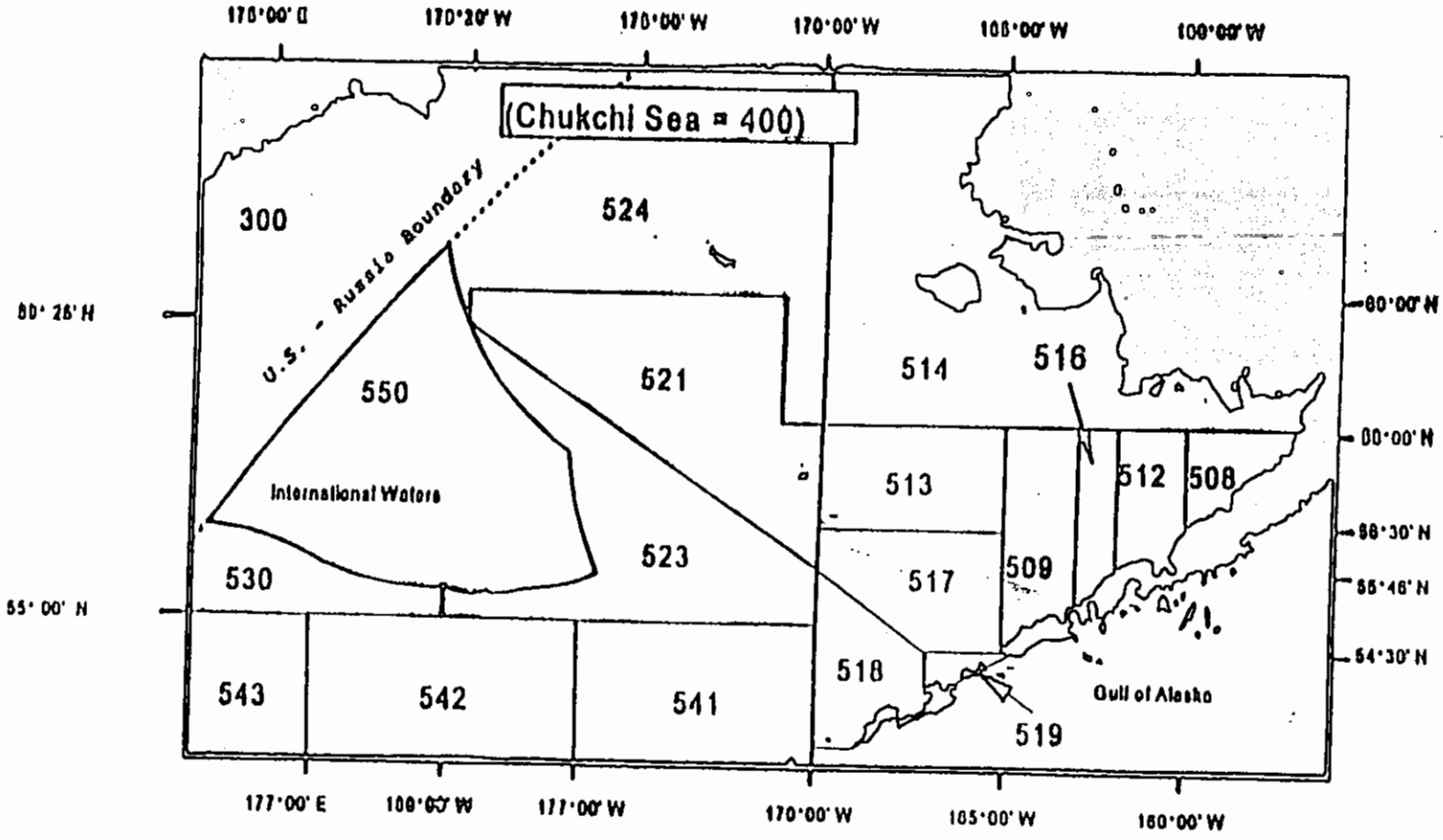


Figure 12 Locations fished by the 1994 Atka mackerel fishery in the Aleutian Islands (black dots). Major areas fished in each Aleutian management subarea are noted. Shaded small circles represent annual 10 nm trawl exclusion zones around Steller sea lion rookeries; larger unshaded circles represent 20 nm trawl exclusion zones during the BSAI pollock A-season around Seguam and Agligadak Islands.



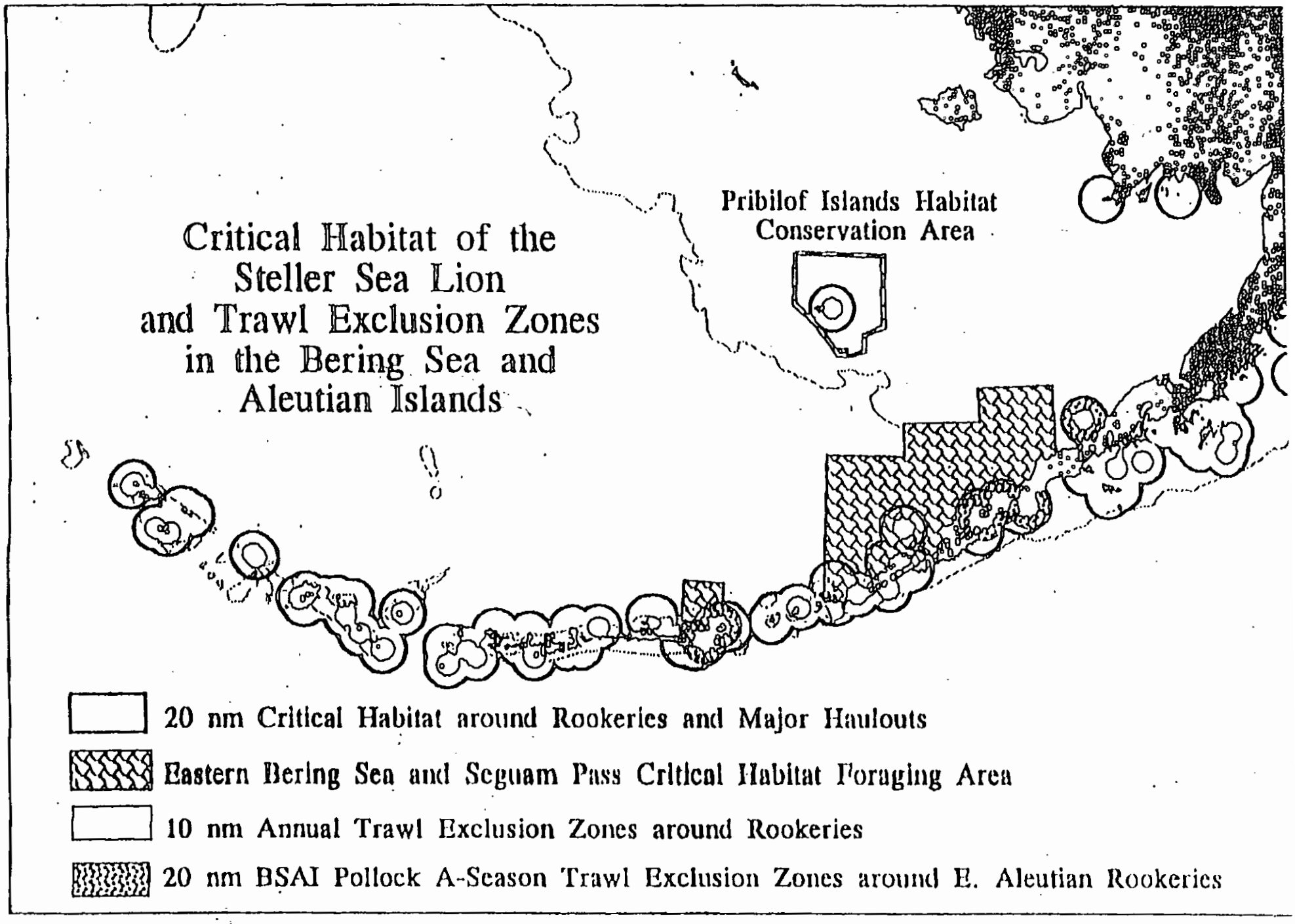
BYCATCH PROTECTION AREAS

Zone 1 = 508 + 509 + 512 +516

Zone 2 = 513 + 517 + 521

10/94

Figure 3 BSAI Statistical and Reporting Areas



sion zones in the BSAI

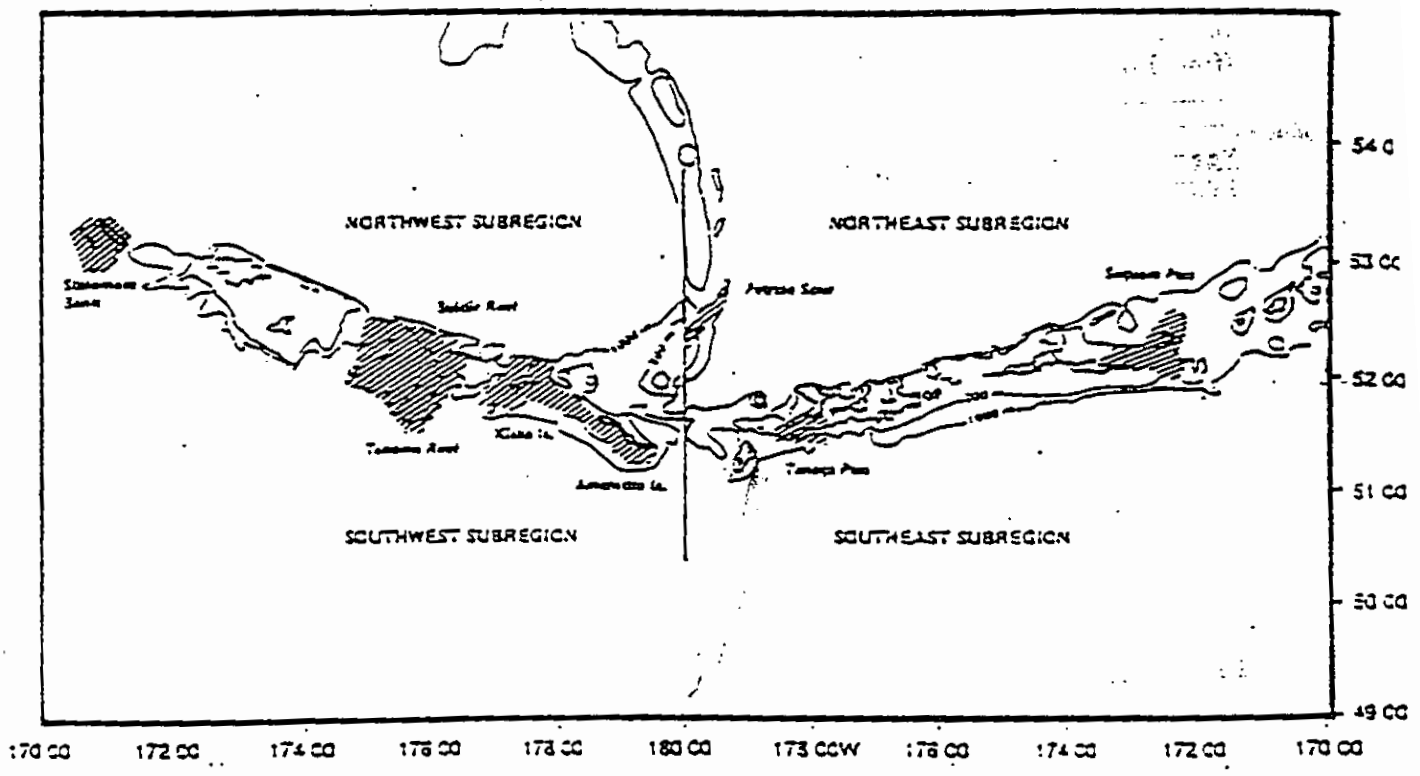


Figure 1 Map of the Aleutian Islands region showing major concentrations of Atka mackerel found in resource assessment surveys.

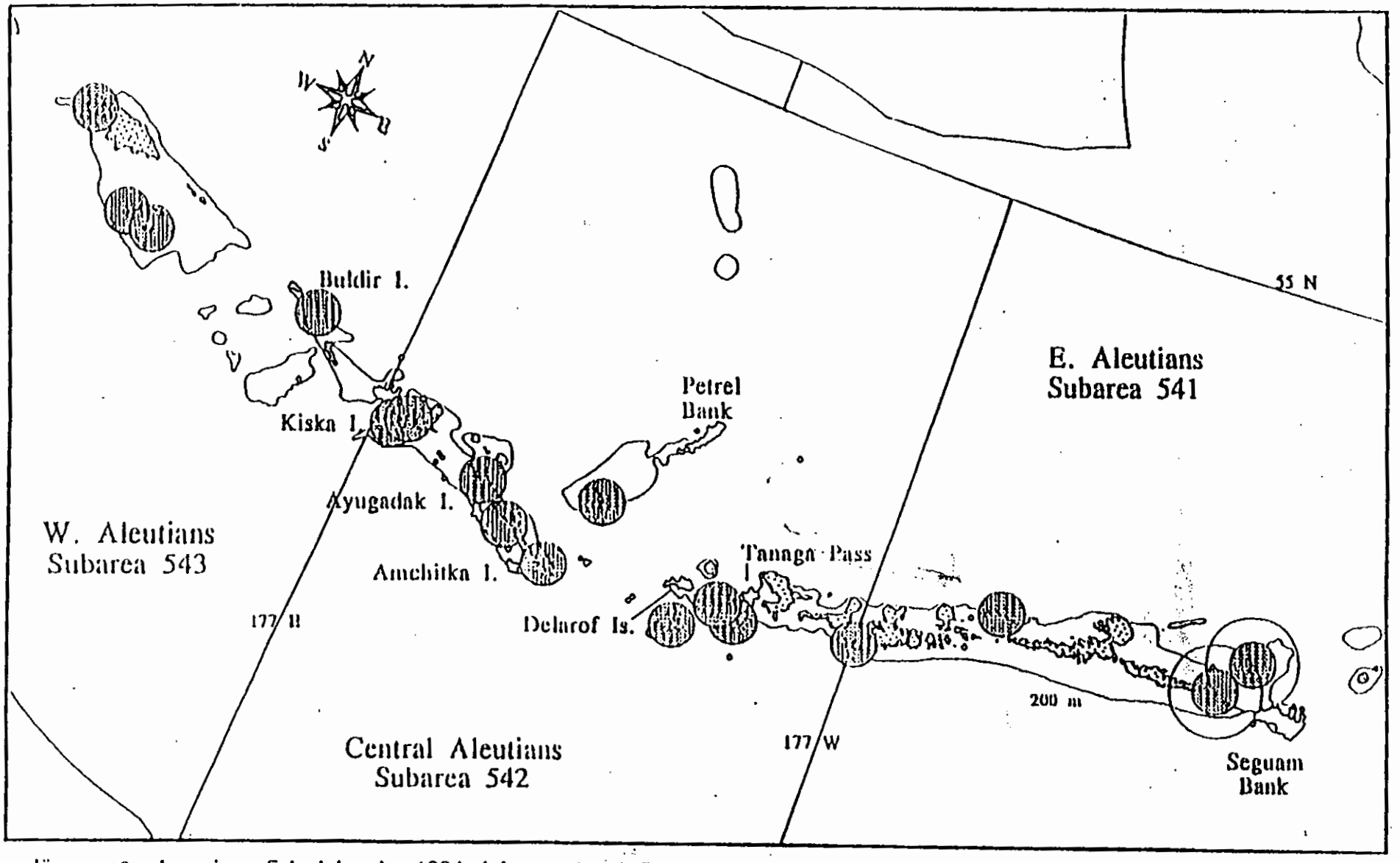
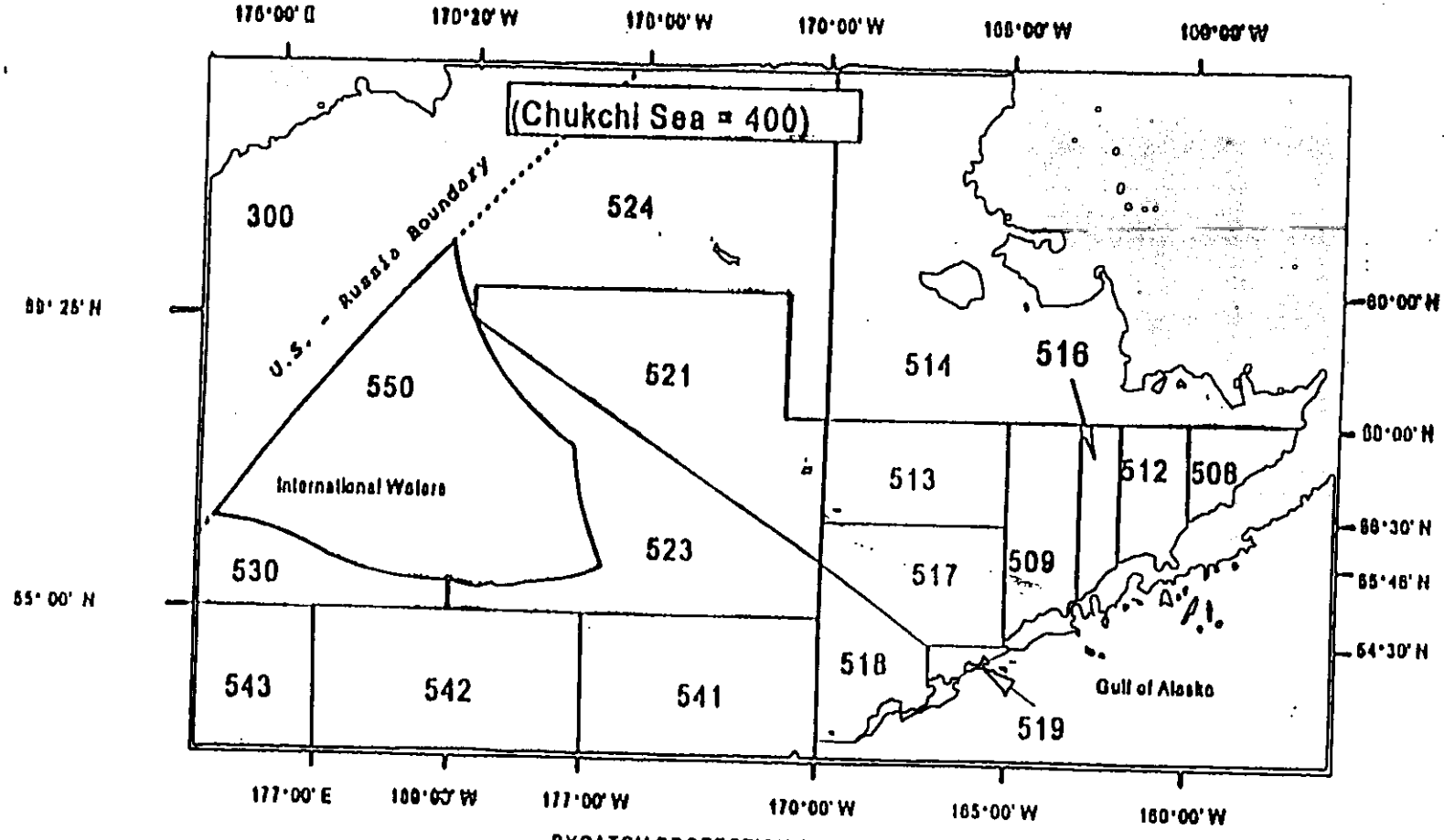


Figure 2 Locations fished by the 1994 Atka mackerel fishery in the Aleutian Islands (black dots). Major areas fished in each Aleutian management subarea are noted. Shaded small circles represent annual 10 nm trawl exclusion zones around Steller sea lion rookeries; larger unshaded circles represent 20 nm trawl exclusion zones during the BSAI pollock A-season around Seguam and Agligadak Islands.



BYCATCH PROTECTION AREAS
Zone 1 = 508 + 509 + 512 +516
Zone 2 = 513 + 517 + 521

10/04

Figure 3 BSAI Statistical and Reporting Areas

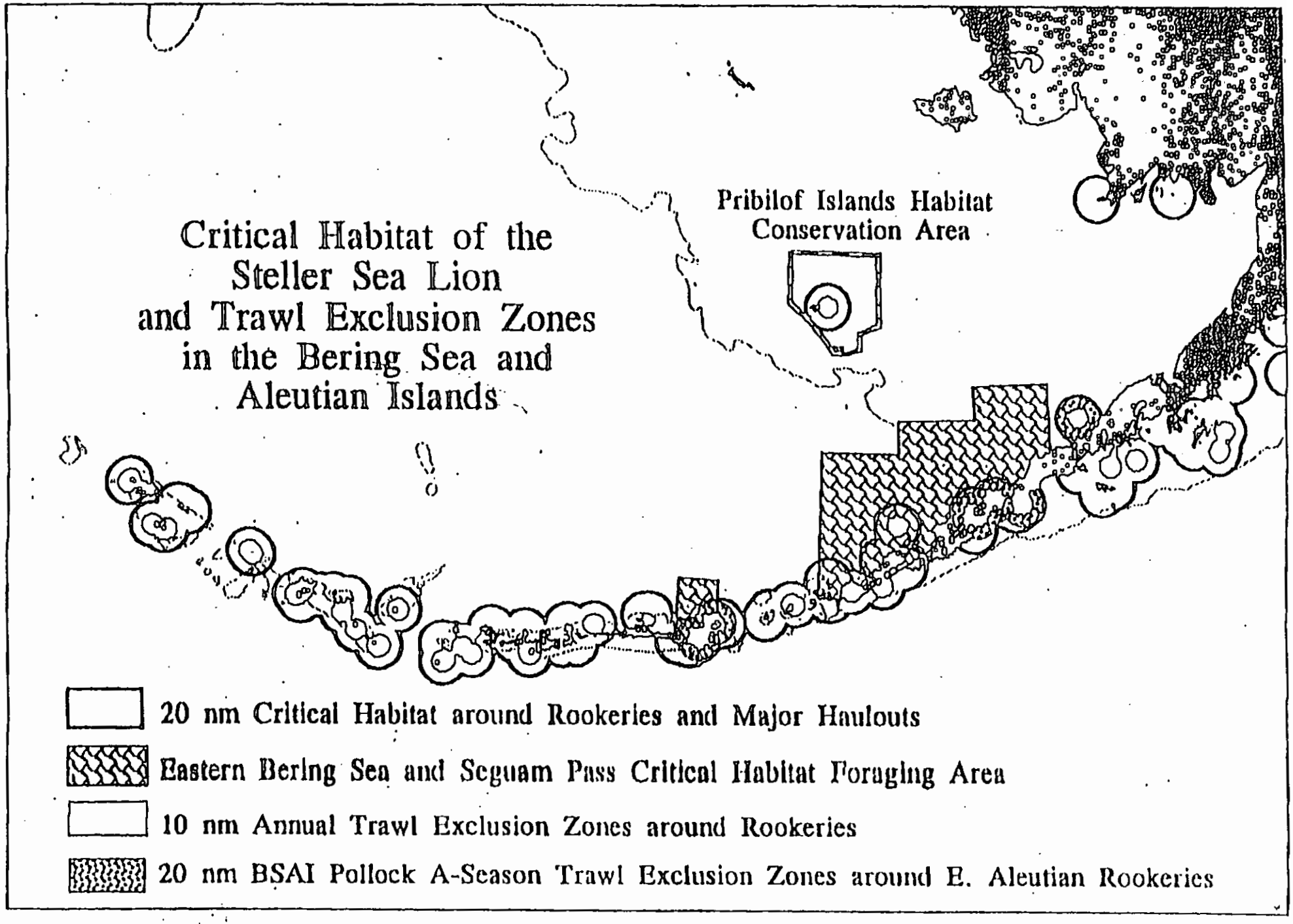


Figure 4. Critical habitat of the steller sea lion and trawl exclusion zones in the BSAI