

**Fishery Management Report No. 06-25**

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**Alaska Peninsula - Aleutian Islands Management Area  
Herring Sac Roe Fishery Management Plan, 2006**

by

**James Jackson**

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April 2006

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



## Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the *Système International d'Unités* (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

<b>Weights and measures (metric)</b>		<b>General</b>		<b>Measures (fisheries)</b>	
centimeter	cm	Alaska Administrative Code	AAC	fork length	FL
deciliter	dL			mid-eye-to-fork	MEF
gram	g	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	mid-eye-to-tail-fork	METF
hectare	ha			standard length	SL
kilogram	kg	all commonly accepted		total length	TL
kilometer	km				
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.		
meter	m			<b>Mathematics, statistics</b>	
milliliter	mL	at	@	<i>all standard mathematical signs, symbols and abbreviations</i>	
millimeter	mm	compass directions:		alternate hypothesis	H <sub>A</sub>
		east	E	base of natural logarithm	<i>e</i>
		north	N	catch per unit effort	CPUE
		south	S	coefficient of variation	CV
		west	W	common test statistics	(F, t, $\chi^2$ , etc.)
		copyright	©	confidence interval	CI
		corporate suffixes:		correlation coefficient (multiple)	R
		Company	Co.	correlation coefficient (simple)	r
		Corporation	Corp.	covariance	cov
		Incorporated	Inc.	degree (angular)	°
		Limited	Ltd.	degrees of freedom	df
		District of Columbia	D.C.	expected value	<i>E</i>
		et alii (and others)	et al.	greater than	>
		et cetera (and so forth)	etc.	greater than or equal to	≥
		exempli gratia (for example)	e.g.	harvest per unit effort	HPUE
		Federal Information Code	FIC	less than	<
		id est (that is)	i.e.	less than or equal to	≤
		latitude or longitude	lat. or long.	logarithm (natural)	ln
		monetary symbols (U.S.)	\$, ¢	logarithm (base 10)	log
		months (tables and figures): first three letters	Jan,...,Dec	logarithm (specify base)	log <sub>2</sub> , etc.
		registered trademark	®	minute (angular)	'
		trademark	™	not significant	NS
		United States (adjective)	U.S.	null hypothesis	H <sub>0</sub>
		United States of America (noun)	USA	percent	%
		U.S.C.	United States Code	probability	P
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
				probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
				second (angular)	"
				standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var

<b>Weights and measures (English)</b>					
cubic feet per second	ft <sup>3</sup> /s				
foot	ft				
gallon	gal				
inch	in				
mile	mi				
nautical mile	nmi				
ounce	oz				
pound	lb				
quart	qt				
yard	yd				

<b>Time and temperature</b>					
day	d				
degrees Celsius	°C				
degrees Fahrenheit	°F				
degrees kelvin	K				
hour	h				
minute	min				
second	s				

<b>Physics and chemistry</b>					
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

***FISHERY MANAGEMENT REPORT NO. 06-25***

**ALASKA PENINSULA - ALEUTIAN ISLANDS MANAGEMENT AREA  
HERRING SAC ROE FISHERY MANAGEMENT PLAN, 2006**

by

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April 2006

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## ABSTRACT

A Pacific herring *Clupea pallasii* sac roe fishery may occur during 2006 in the North Peninsula, South Peninsula, and Aleutian Islands waters of the Alaska Peninsula - Aleutian Islands Management Area. This document is a guide for commercial herring harvesters, buyers, and tender operators and describes the 2006 management strategy, and guideline harvest levels, fishing industry requirements for participation, and Alaska Department of Fish and Game contacts. Dates and times for possible commercial fishing periods will be established by emergency order and can be obtained from the Alaska Department of Fish and Game.

Key words: Pacific herring, *Clupea pallasii*, sac roe fisheries, Alaska Peninsula, Aleutian Islands, Area M management plan

## INTRODUCTION

This document provides commercial Pacific herring *Clupea pallasii* harvesters and buyers with guidelines that the Alaska Department of Fish and Game (ADF&G) will use to manage the Alaska Peninsula-Aleutian Islands Management Area commercial herring sac roe fisheries in 2006.

The Alaska Peninsula-Aleutian Islands Herring Management Area (Area M) is divided into three subareas: (1) the North Peninsula, consisting of Bering Sea waters extending west from Cape Mensehikof to Cape Sarichef, (2) the South Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to 163°30' W long., and (3) the Aleutian Islands, consisting of Bering Sea waters extending west of Unimak Pass and Pacific Ocean waters extending west from 163°30' W long. to the International Date Line (Figures 1-7).

The North Peninsula is composed of three districts and 26 statistical areas (Figures 2-4), the South Peninsula includes three districts and 47 statistical areas (Figures 4-5), and the Aleutian Islands includes five districts and 41 statistical areas (Figures 6-7). The North Peninsula and South Peninsula fisheries will be managed separately.

In 2004, the Alaska Board of Fisheries (BOF) established an exploratory herring fishery in the Adak Island area (Figure 8) with a 500 ton allocation (5 AAC 27.657). In that portion of the Adak District, 175° 30' W long. to 177° W long., herring may be taken in the sac roe fishery by gillnet gear only from April 15 through 12:00 NOON June 24 and in the food bait fishery, from 12:00 NOON June 24 through February 28. In the remaining portions of the Adak Districts herring may be taken by purse seine and gillnet gear, in the sac roe fishery, from April 15 through 12:00 NOON June 24 and in the food and bait fishery by gillnet gear from 12:00 NOON June 24 through February 28 and by purse seine from 12:00 NOON July 15 through February 28 (5 AAC 27.610).

The global positioning system (GPS; North American Datum 1983) will be used to determine latitude and longitude coordinates throughout all Alaska Peninsula and Aleutian Islands herring fisheries (5 AAC 27.606).

The North Peninsula herring sac roe fishery occurred annually from 1982 to 1996, and in 1998 (Jackson 2006; Table 1). In 1997 and from 1999 to 2004, herring were not harvested because of poor market conditions and low observed herring biomass. In 2005, ADF&G opened the first sac roe fishery on the North Alaska Peninsula since 1998. However, limited market interest kept the harvest to 351 tons (Jackson *In prep*).

The South Peninsula herring sac roe fishery has occurred annually since 1979, except in 1983 when the BOF allocated the herring harvest to a food and bait fishery, and from 1997 to 1999 when there was little industry interest because of poor market conditions (Table 1). During the 2000 season, the

South Peninsula fishery remained closed to fishing because of the absence of stock data. After 2001, there has been little industry interest because of poor market conditions and/or low observed biomass and fishing has not occurred.

## **2006 MANAGEMENT PLAN**

During the 2006 Alaska Peninsula-Aleutian Islands Management Area herring sac roe fishery, the permit holder and buyer will be responsible for determining acceptable herring quality. ADF&G will not close the herring fishery based on roe quality except in cases where excessive herring are expected to be wasted. Permit holders are encouraged to check with their buyer prior to fishing to determine industry standards for product quality and size. All herring harvested during the sac roe season that are sold as bait or discarded due to quality problems will be included as part of the total herring harvest.

Guideline Harvest Levels (GHLs) are not established for any management units except for the Port Moller (Table 2) and the Adak Districts (5 AAC 27.657; Table 8). All North Peninsula districts and all South Peninsula and Aleutian Islands districts lack recent histories of harvest, have not maintained significant fishing effort within the past six years, and have few or no records of observed biomass. They may open by emergency order during the 2006 season contingent upon: 1) the industry notifying ADF&G of interest in harvesting herring from a specific area; 2) the department documenting herring biomass, and 3) the department establishing a GHL. ADF&G office locations and inseason emergency order broadcast frequencies are listed in Appendix A1.

### **REGISTRATION REQUIREMENTS**

#### **Tenders and Processors**

All herring tenders and processors must register with the ADF&G prior to buying or tendering herring, (5 AAC 27.662) North Peninsula buyers, processors, and tender agents must register at the ADF&G Port Moller office in person or through other means (e.g., radio, fax, or phone) with the approval of ADF&G in Port Moller (Appendix A1). For the South Peninsula and Aleutian Islands districts, registration can also be made at the ADF&G offices in Cold Bay, Sand Point, or Dutch Harbor (Appendix A1). Catch reporting instructions will be explained during the registration process.

#### **Fishing Vessels**

There are no registration requirements for purse seine and gillnet herring sac roe vessels except for the Adak Island area fishery. Permit holders must obtain a Commissioner's permit from the ADF&G before participating in the Adak Island exploratory herring fishery. Commissioner's permits can be obtained by contacting the ADF&G office in Sand Point (Appendix A1).

### **FISHING PERIODS**

In the North Peninsula, the Port Moller, Port Heiden and Amak districts (Figures 2-4) may be opened by emergency order for commercial herring fishing from April 15 through July 15. Herring fishing in the Port Moller District will be allowed only when ADF&G observes at least a 1,000 ton biomass in the area (5 AAC 27.060; Table 2). A minimum of six hours advance notice will be given prior to any fishing period in the Port Moller District, unless it is an extension of a current fishing period. If effort decreases to a level where overharvesting the stock is not a concern, the six hour notice may

be reduced or eliminated. Purse seine and gillnet gear will have concurrent openings throughout the North Peninsula.

South Peninsula waters, which include the Sand Point, Pavlof, and King Cove districts (Figures 4 and 5), and Aleutian Islands waters, which include the Unimak, Akutan, Unalaska, Umnak, and Adak Districts (Figures 6 through 8) may open to commercial herring sac roe fishing by emergency order during the 2006 season. Fishing periods and GHs will be announced by emergency order if there is industry interest in harvesting herring from the area and ADF&G has quantified herring biomass in that area.

## **CATCH REPORTING**

Processors and tender operators must report “in person” daily to the ADF&G while involved in the Alaska Peninsula-Aleutian Islands Area herring sac roe fishery (5 AAC 27.662). Daily reports must include the amount of herring harvested by catcher boats and an accurate estimate of the amount of herring on board tenders. A confidential reporting code will be provided to each processor and tender operator. Because the allowable harvest could quickly be exceeded, harvesters are encouraged to report harvests after each set, while tenders and processors are asked to report immediately upon completion of each delivery.

## **FISH TICKETS**

Permit holders must provide specific harvest locations (statistical area or a specific landmark) to buyers, so that they can be recorded on fish tickets. During the North Peninsula fishery, fish tickets must be delivered to local ADF&G personnel prior to transporting herring out of the Port Moller District or, within 10 days after termination of buying operations in other districts (5 AAC 27.662). During the South Peninsula and Aleutian Islands fishery, fish tickets must be received by ADF&G personnel in Sand Point within 10 days after termination of buying operations (Appendix A1). Fish tickets must include the weight of harvested herring in either units of short tons (2,000 lbs.) or total pounds.

## **GILLNET AND SEINE SPECIFICATIONS**

The aggregate length of herring gillnets in use by a herring Commercial Fisheries Entry Commission (CFEC) permit holder may not exceed 150 fathoms during the Alaska Peninsula - Aleutian Islands Area herring sac roe fishery (5 AAC 27.631). The permit holder must be present while the gillnet is being fished (5 AAC 27.631 (b)). Gillnet mesh sizes of up to 3.5” may only be used in the Akutan and Unalaska Districts (5 AAC 27.631(d)). A purse seine may not exceed 1,000 meshes in depth and 100 fathoms in length (5 AAC 27.632).

## **AIRCRAFT**

There are no restrictions on the use of aircraft in this fishery.

## **INDUSTRY COOPERATION**

Cooperation of harvesters, tender operators, spotter pilots, and processors is encouraged when ADF&G personnel request herring samples from the commercial catch. Samples will be used to monitor age composition, which assists in determining the health of a stock and in forecasting next year’s run strength. The ADF&G will also be monitoring spawning activities and will be soliciting information regarding herring sightings to supplement information gathered by department personnel. ADF&G’s ability to monitor herring biomass is limited by aircraft

availability and funding constraints. Industry cooperation in locating herring will enable the department to more efficiently monitor Alaska Peninsula-Aleutian Islands Area herring stocks. Harvesters and spotter pilots are encouraged to provide herring biomass estimates and spawning information to the ADF&G. The department may use these reports to locate and document herring biomass. Past cooperation has proven valuable when evaluating stock status and managing the fishery.

## **NORTH AND SOUTH PENINSULA HERRING SAC ROE FISHERY**

For the 2006 season, there are no preseason GHGs in the South Peninsula. In the North Peninsula, if ADF&G has documented a harvestable herring biomass, the GHG will be determined using a sliding scale exploitation rate (Table 2).

In the South Peninsula, no more than a 25-ton harvest will be allowed from any section unless ADF&G documents a herring biomass that would support a larger harvest. Fishing openings will be contingent upon industry interest in harvesting herring from a specific area and department documentation of sufficient herring biomass. The department will set a GHG based on the observed biomass. The department has documented little spawning herring biomass in South Peninsula waters, in part because of a limited number of aerial surveys. The ADF&G plans to conduct aerial surveys in 2006 and is requesting that any herring biomass observations are reported to department personnel in Sand Point.

## **ALEUTIAN ISLANDS HERRING SAC ROE FISHERY**

During the 2006 season, all districts within the Aleutian Islands, which include the Unimak, Akutan, Unalaska, Umnak, and Adak Districts, may open to commercial herring sac roe fishing (Figure 6). Between April 15 and NOON June 24 (5 AAC 27.610 (e)(1)). Emergency orders setting fishing periods and GHGs in the Aleutian Islands will be contingent upon industry expressing interest in harvesting herring in a specific area and ADF&G documenting sufficient herring biomass.

In February 2004, the BOF established an exploratory herring fishery in state waters around Adak Island (Figure 8) with a GHG of 500 tons (5 AAC 27.657; Duesterloh and Burkey 2005). Herring may be taken during the sac roe season, in this portion of the Adak District, by gillnet gear only during periods established by Emergency Order from April 15 through NOON, July 24.

Details concerning the Alaska Peninsula and Aleutian Islands herring food and bait fishery can be found in the 2006 Alaska Peninsula-Aleutian Islands Management Area Food and Bait Herring Management Plan (Jackson *In prep*).

## **REFERENCES CITED**

- Duesterloh, S., C. Burkey Jr. 2005. Alaska Peninsula and Aleutian Islands management area herring sac roe and food and bait fisheries annual management report, 2004. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 05-07, Kodiak.
- Jackson, J. 2006. Alaska Peninsula-Aleutian Islands management area herring sac roe and food and bait fisheries annual management report, 2005. Alaska Department of Fish and Game, Fishery Management Report No. 06-20, Anchorage.
- Jackson, J. *In prep*. Alaska Peninsula-Aleutian Islands management area herring food and bait fishery management plan, 2006. Alaska Department of Fish and Game, Fishery Management Report No., Anchorage.

## **TABLES AND FIGURES**

**Table 1.-**Alaska Peninsula commercial herring sac roe harvest by time period, area, and year, 1979-2005.

Year	North Peninsula		South Peninsula		Total Peninsula
	Harvest (Short Tons)	Harvest Time Period	Harvest (Short Tons)	Harvest Time Period	(Short Tons) Harvest
1979	0.0	-	10.1	July 4- July 4	10.1
1980	0.0	-	453.8	May 18-July 14	453.8
1981	0.0	-	797.6	May 9-June 23	797.6
1982	505.5	May 31-June 12	176.2	May 31-June 14	681.7
1983	627.0	May 9-May 29	0.0	-	627.0
1984	431.2	May 24-June 8	210.2	May 13-June 1	641.4
1985	710.2	May 24-June 4	287.7	June 1-June 11	997.9
1986	894.4	May 18-May 30	281.9	June 7-June 14	1,176.3
1987	513.7	May 9-June 5	319.0	June 8-June 19	832.7
1988	294.3	May 17-June 15	376.7	May 31-June 20	671.0
1989	729.0	May 28-June 23	310.3	May 13-June 19	1,039.3
1990	272.8	June 4-June 19	312.2	May 14-June 14	585.0
1991	1,313.0	May 17-July 4	157.4	May 16-June 11	1,470.4
1992	3,969.0	May 23-June 17	180.4	June 4-June 7	4,149.4
1993	535.9	May 8-June 9	97.0	May 27-June 9	632.9
1994	89.8	May 21-June 7	8.2	June 2-June 3	98.0
1995	337.3	May 29-June 20	62.7	June 6-June 17	400.0
1996	<sup>a</sup>	June 12-June 18	117.3	May 10-June 27	<sup>a</sup>
1997	0.0	-	0.0	-	0.0
1998	<sup>a</sup>	May 21-June 3	0.0	-	<sup>a</sup>
1999-2004	0.0	-	0.0	<sup>b</sup>	0.0
2005	351.0	May 11-May 12	0.0	-	0.0
1995-2004					
Average	50.11		18.0		68.1

<sup>a</sup> This information cannot be released due to confidentiality requirements.

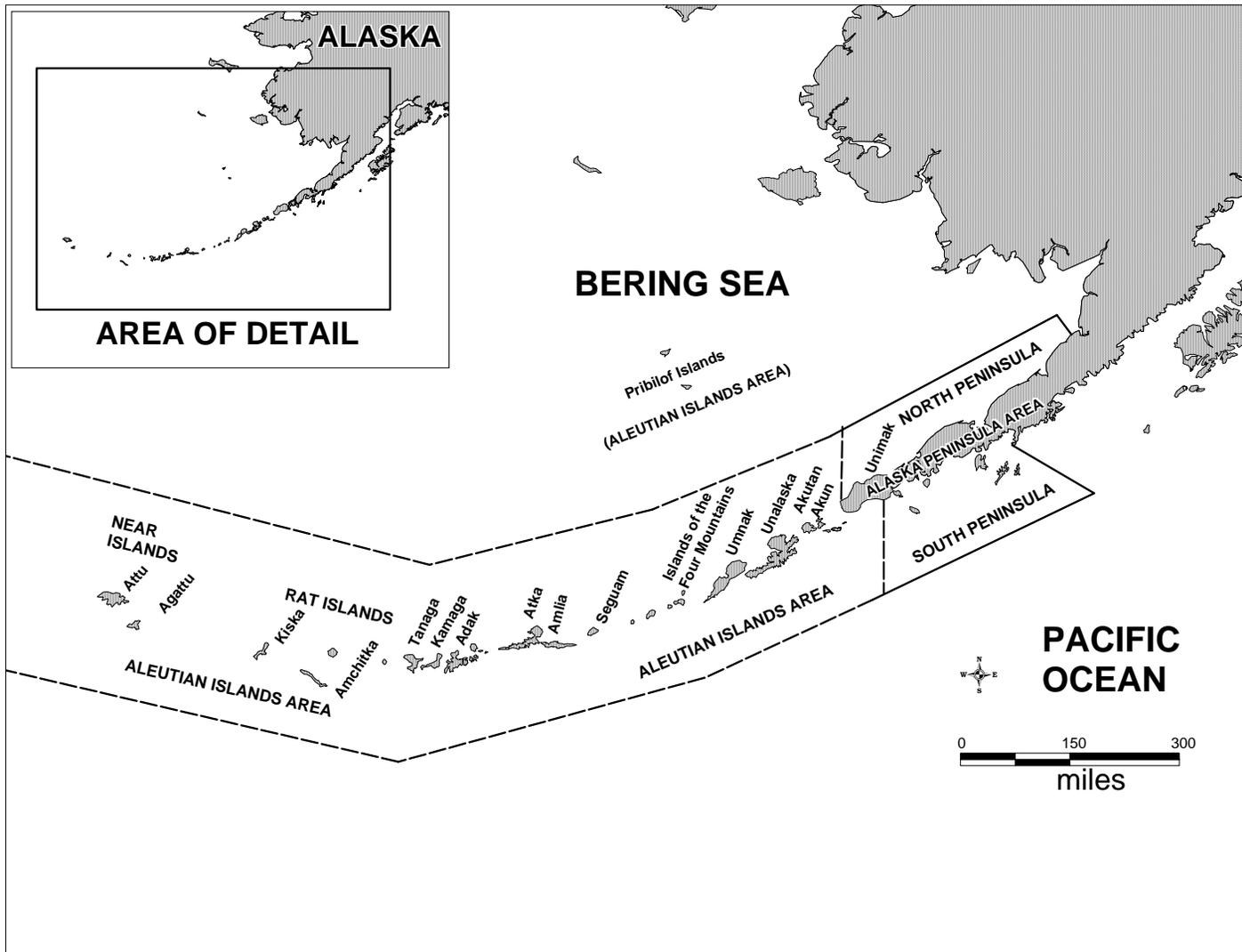
<sup>b</sup> The South Peninsula exploratory herring sac roe fishery was closed during the 2000 season.

**Table 2.-**Port Moller District herring sac roe guideline harvest levels, 2006.

Stock Size (Tons)	Sliding Scale Exploitation Rate <sup>a</sup>	Allowable Harvest <sup>b</sup>
< 1,000	0%	0
1,001-1,500	10%	0-150
1,501-1,999	10%	150-200
2,000-2,500	15%	300-375
2,501-3000	15%	375-450
>3,000	20%	>450

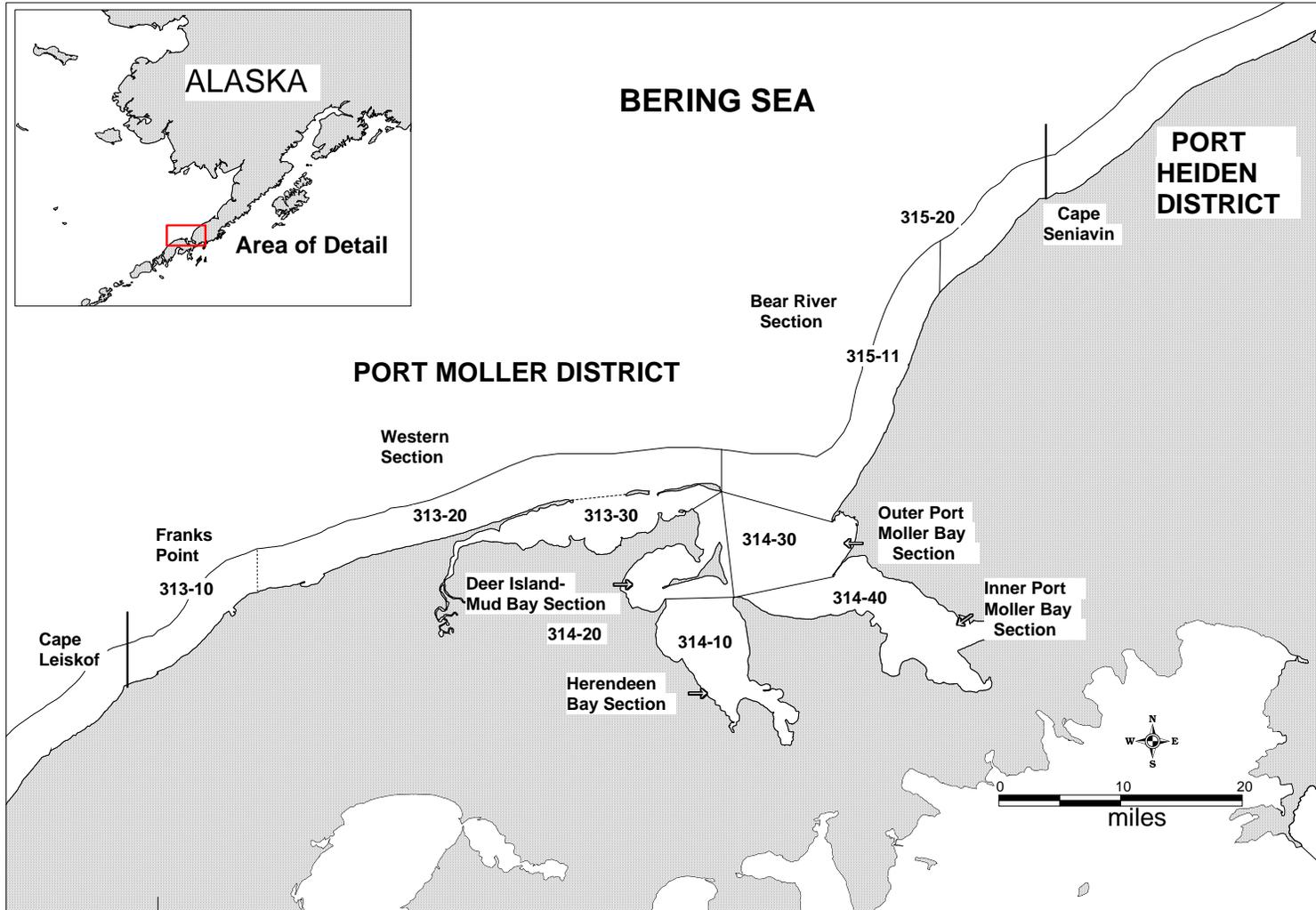
<sup>a</sup> The guideline harvest level (GHL) increases proportionally to spawning biomass observed by ADF&G. A sliding scale exploitation rate will be used to determine the GHL.

<sup>b</sup> Herring harvested along the Bering Sea coast (southwest of Cape Seniavin) will be allocated to the Port Moller and Herendeen bays guideline harvest level if it is determined that these herring were traveling into Port Moller or Herendeen bays.

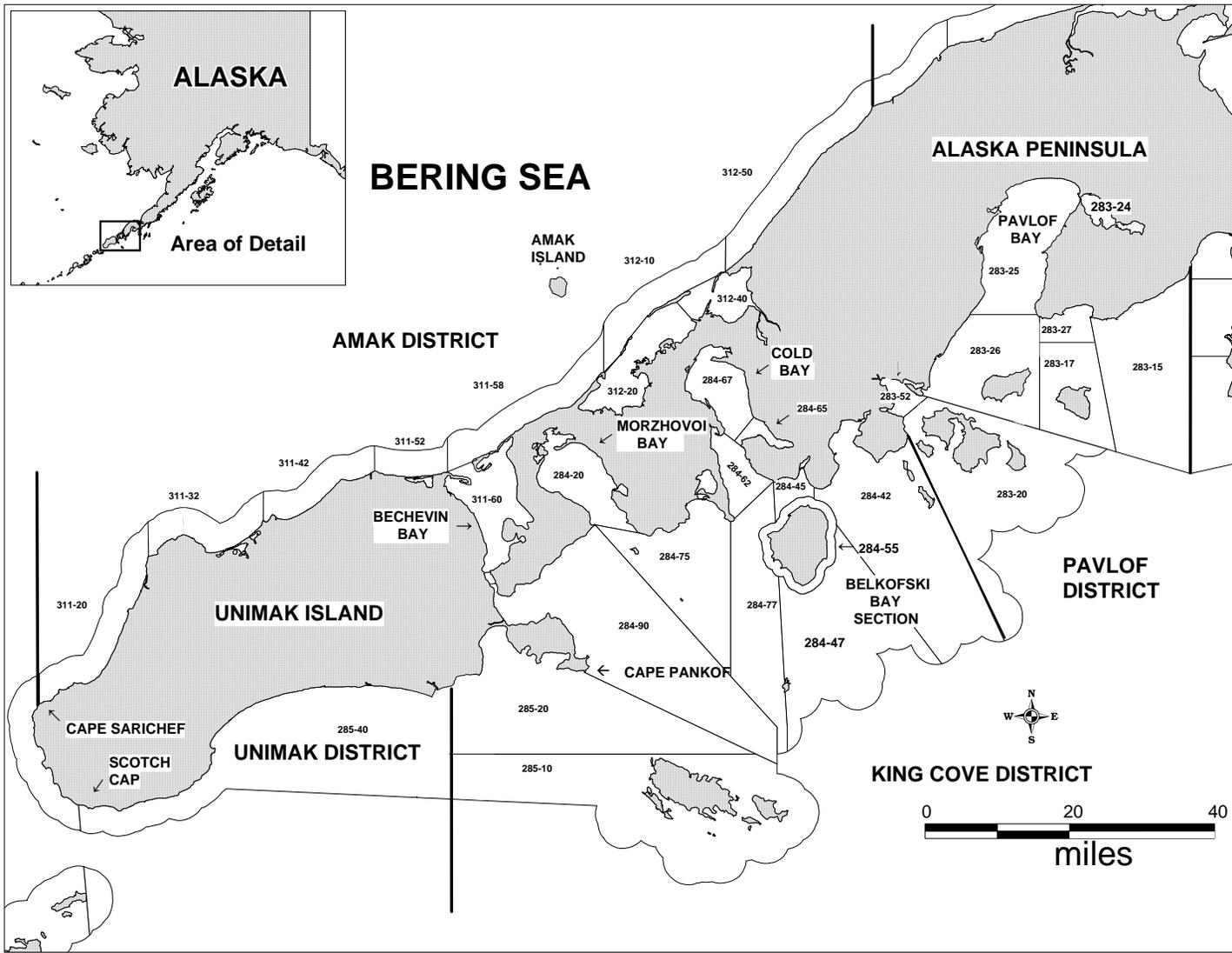


**Figure 1.-**Map of the Alaska Peninsula-Aleutian Islands herring management area.

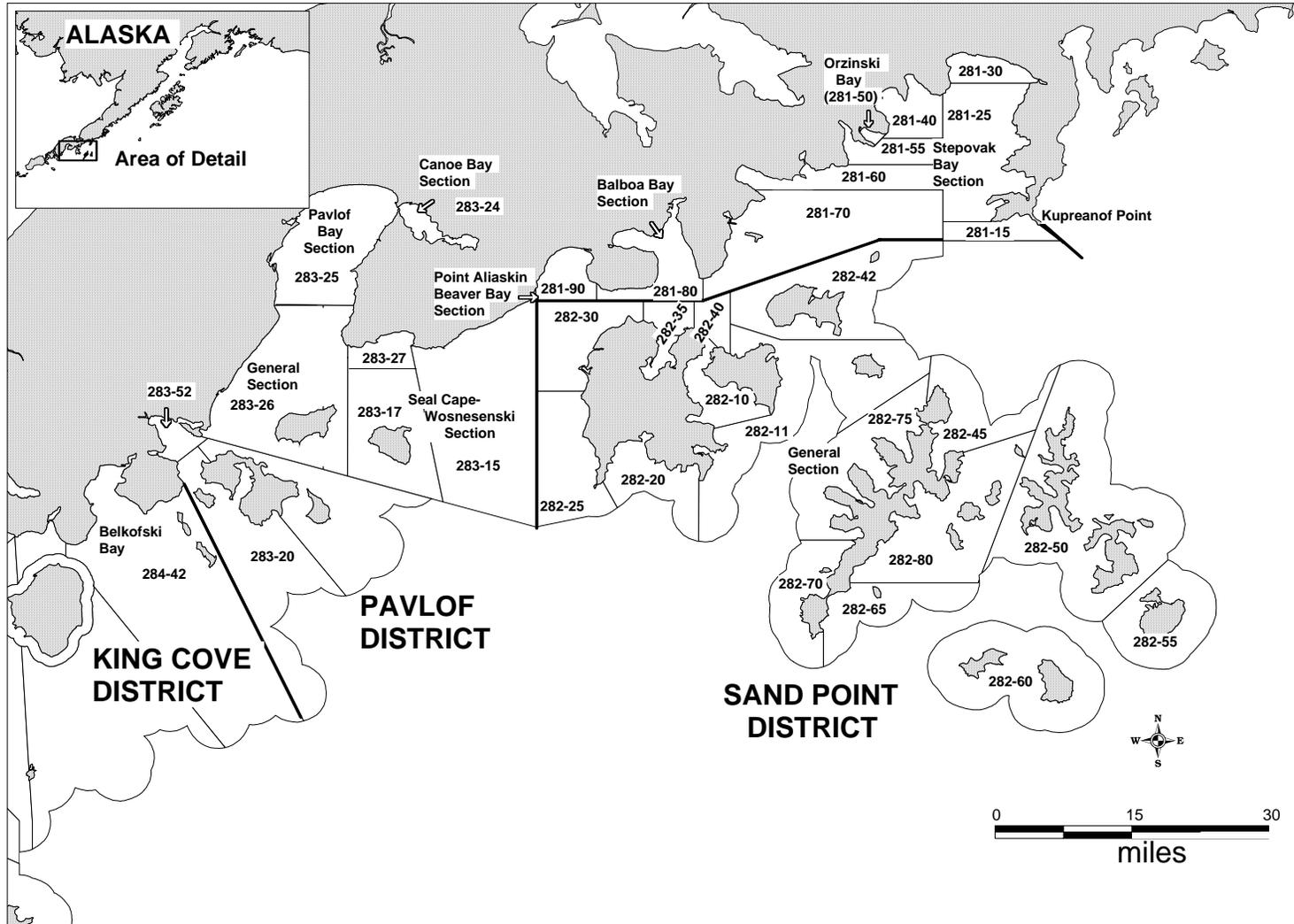




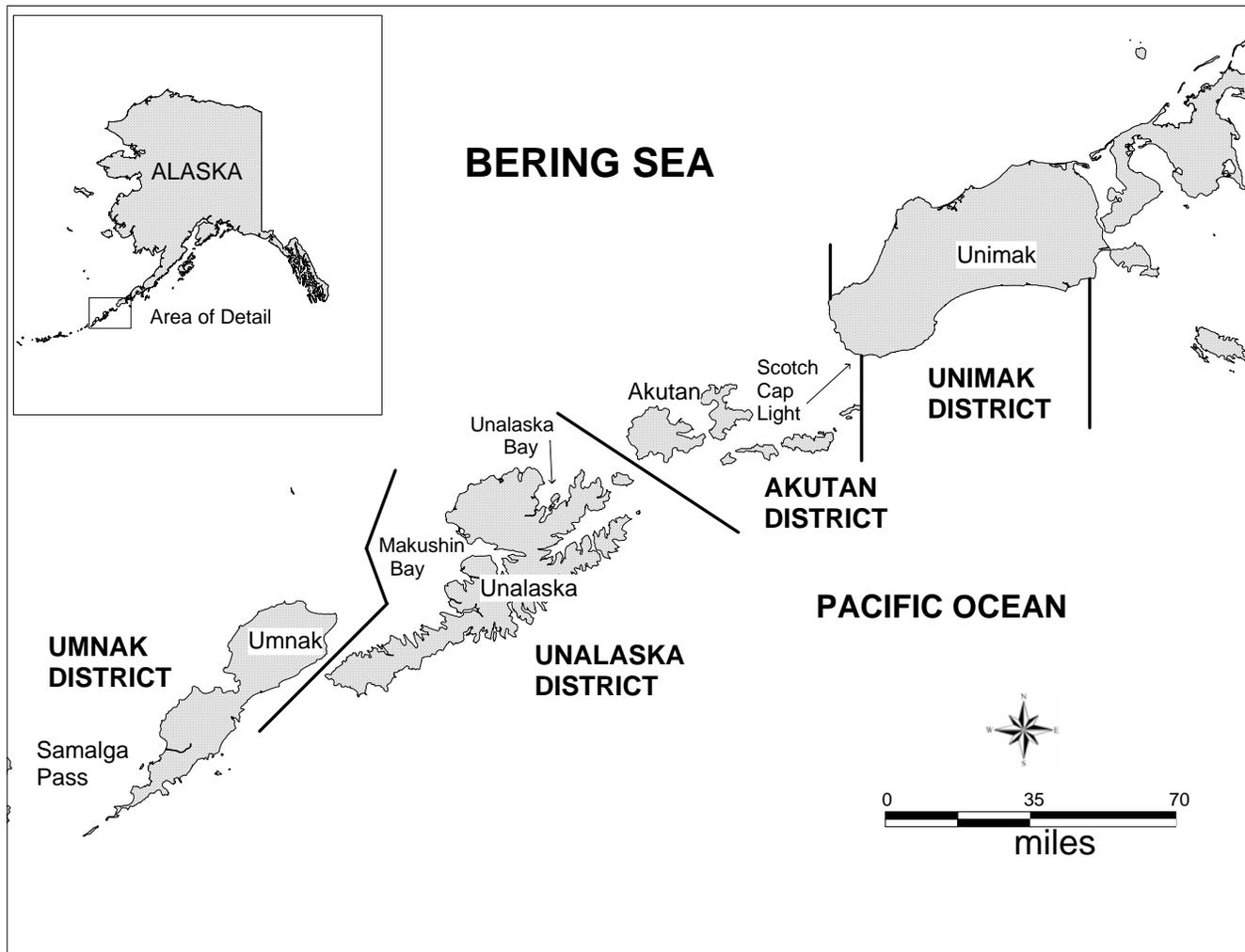
**Figure 3.-**Map of the Port Moller District depicting commercial herring fishing statistical areas.



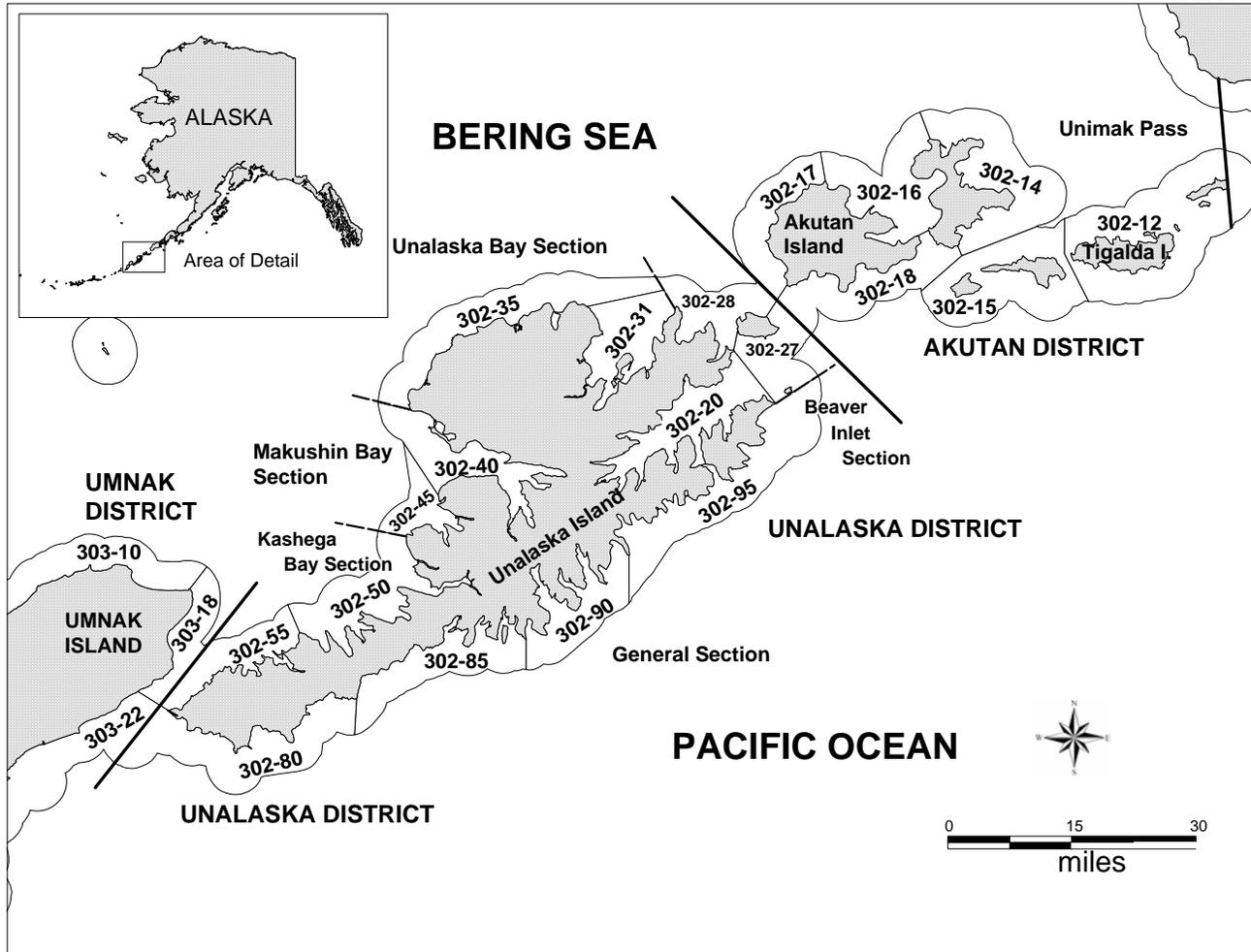
**Figure 4.**-Map of the Alaska Peninsula from Pavlof Bay to Cape Sarichef depicting commercial herring fishing statistical areas.



**Figure 5.**-Map of the Alaska Peninsula from Kupreanof Point to Belkofski Bay depicting commercial herring fishing statistical areas.



**Figure 6.-**Map of the eastern Aleutian Islands from Samalga Pass to Unimak Island depicting commercial herring fishing districts.



**Figure 7.**-Map of the eastern Aleutian Islands from Tigalda Island to Umnak Island depicting commercial herring fishing statistical areas.

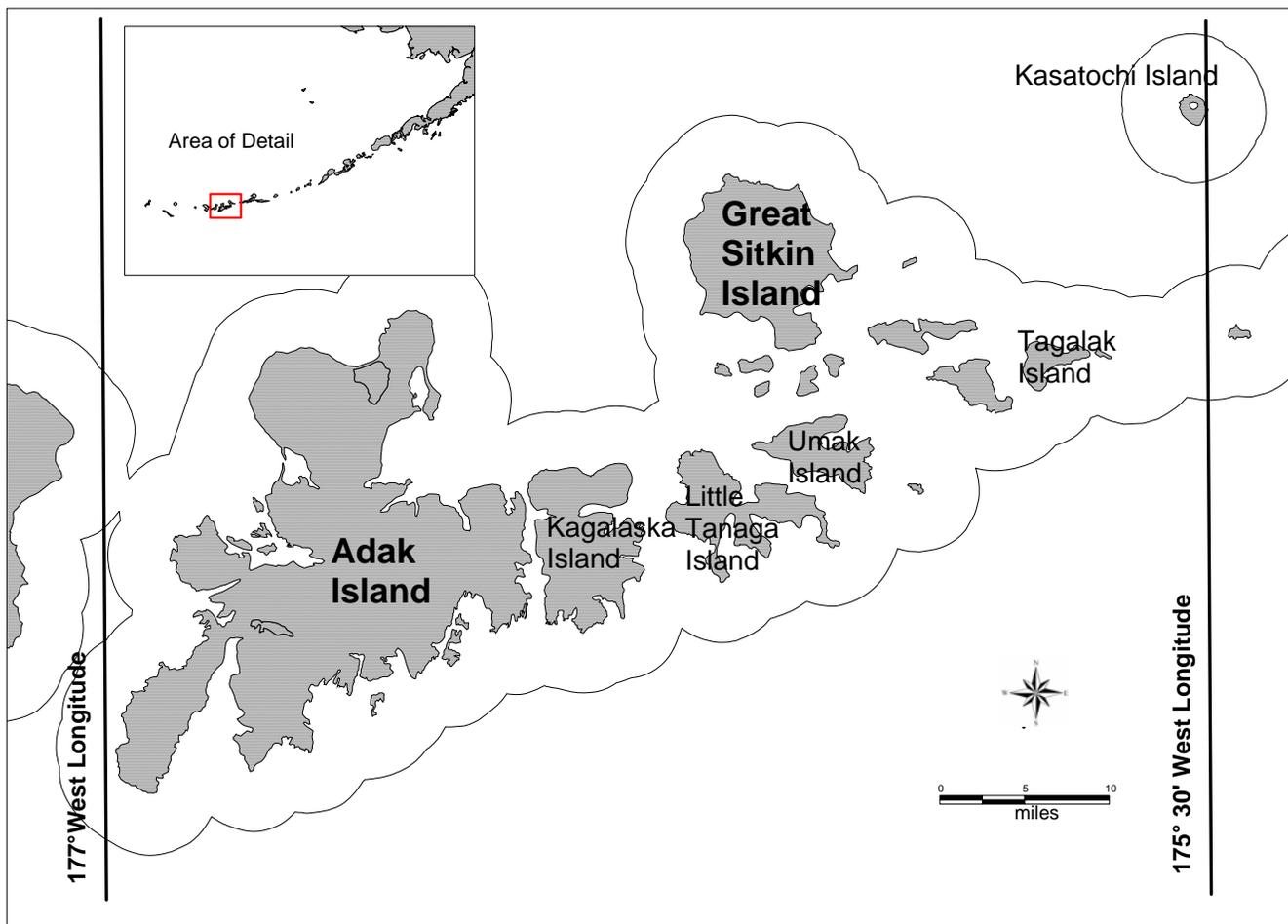


Figure 8.-Map of the Adak Island exploratory fishing area.



## **APPENDIX A: ADF&G OFFICE ADDRESSES**

**Appendix A1.-Local offices of the Alaska Department of Fish and Game.**

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***Sand Point***

Alaska Department of Fish and Game  
P.O. Box 129  
Sand Point, AK 99661

phone (907) 383-2066  
fax (907) 383-2606

recorded message (907) 383-2334

VHF 6 and 73  
Single Side Band 3.230 MHz  
KWB 362

***Cold Bay***

Alaska Department of Fish and Game  
P.O. Box 50  
Cold Bay, AK 99571

phone (907) 532-2419  
fax (907) 532-2470

VHF 6  
Single Side Band 3.230 and 3.261 MHz  
KCO 332/KXP 78

***Dutch Harbor***

Alaska Department of Fish and Game  
P.O. Box 920587  
Dutch Harbor, AK 99692

phone (907) 581-1219  
fax (907) 581-1572

VHF 9

Single Side Band 4.125 MHz  
WIM 76

***Port Moller***

Alaska Department of Fish and Game  
P.O. Box 163  
Port Moller, AK 99571-8999

phone (907) 375-2716  
fax (907) 375-2715

VHF 72  
Single Side Band 3.230 MHz  
WNGV 537

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