Fishery Management Report No. 14-19

Alaska Peninsula-Aleutian Islands Management Area Sac Roe Herring Fishery Management Plans, 2014

by

Nathaniel W. Nichols

April 2014

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.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

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

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$log_{2,}$ etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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ALASKA PENINSULA-ALEUTIAN ISLANDS MANAGEMENT AREA SAC ROE HERRING FISHERY MANAGEMENT PLANS, 2014

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April 2014

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This document should be cited as:
Nichols, N. W. 2014. Alaska Peninsula-Aleutian Islands Management Area sac roe herring fishery management plans, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 14-19, Anchorage.

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ABSTRACT

A Pacific herring *Clupea pallasii* sac roe fishery may occur in the Alaska Peninsula-Aleutian Islands Management Area (Area M) in 2014. This document is a guide for commercial herring harvesters, buyers, and tender operators and describes the management strategy, guideline harvest levels (GHLs), fishing industry requirements for participation, and provides Alaska Department of Fish and Game (ADF&G) contact information. Dates and times for possible commercial fishing periods will be established by emergency order and can be obtained from ADF&G.

Key words: Pacific herring, *Clupea pallasii*, sac roe, Alaska Peninsula, Aleutian Islands, Area M, North Peninsula, South Peninsula, Port Moller, Sand Point, management plan, Alaska Board of Fisheries, guideline harvest level.

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 (Area M) commercial herring sac roe fisheries.

Area M (Figure 1) is divided into three herring management subareas: the North Alaska Peninsula, consisting of Bering Sea waters extending west from Cape Menshikof to Cape Sarichef (Figures 2–4); the South Alaska Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to near Cape Lazaref, on the south side of Unimak Island, 163°30' W long (Figures 4 and 5); and 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 (Figure 1 and Figures 6–8). The North Peninsula, South Peninsula, and Aleutian Islands fisheries will be managed independently of each other.

The North Alaska Peninsula sac roe herring fishery occurred annually from 1982 through 1996, and sporadically from 1998 through 2013 (Nichols *In prep*). In 2013, 280 tons of sac roe herring was harvested in the waters of the North Alaska Peninsula (Nichols *In prep*).

The South Alaska Peninsula sac roe herring fishery occurred annually from 1980 through 1996, except in 1983 when the Alaska Board of Fisheries (BOF) allocated the herring harvest to a food and bait fishery. Since 1997, there has been little industry interest due to poor market conditions and no harvest has taken place (Nichols *In prep*).

In 2004, the BOF established the Alaska Peninsula-Aleutian Islands Herring Management Plan (5 AAC 27.657). This plan sets a 500-ton herring guideline harvest level (GHL) in the Adak District, for harvest as either sac roe or food and bait. In 2010, the BOF amended the plan to allow both purse seine and gillnet gear the ability to harvest the GHL. Season dates are from June 24 through February 28. To date, no herring have been harvested in this fishery.

MANAGEMENT PLAN

In the Alaska Peninsula-Aleutian Islands Management Area sac roe herring fishery, the permit holder and buyer will be responsible for determining acceptable herring quality. The herring fishery will not be closed by ADF&G 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.

GHLs are not established for any management units except for the Port Moller (Table 1) and Adak districts (5 AAC 27.657). The South Alaska Peninsula and Aleutian Islands districts lack recent histories of herring sac roe harvest and have few records of observed biomass, whereas the North Peninsula has data pertaining to catch, harvest, and biomass as recent as 2013. The sac roe herring fisheries may open contingent upon 1) the industry notifying ADF&G of interest in harvesting herring from a specific area, 2) ADF&G documenting herring biomass, and 3) ADF&G establishing a GHL. ADF&G office locations and inseason news release broadcast frequencies are listed in Appendix A1.

A 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).

NORTH AND SOUTH ALASKA PENINSULA

The North Alaska Peninsula Management area and the Port Heiden, Port Moller, and Amak districts (Figures 2–4) may be opened for commercial sac roe herring fishing from April 15 through July 15. In accordance with the Bering Sea Herring Fishery Management Plan (5 AAC 27.060(c)), herring fishing in the Port Moller District will be allowed only if ADF&G has documented a herring biomass threshold of at least 1,000 tons in the area. The GHL will be determined using a sliding scale exploitation rate, in which the allowable exploitation rate increases with stock abundance (Table 1). A minimum of six hours advance notice will be given prior to any fishing period in the Port Moller area, unless it is an extension of a current fishing period. If effort decreases, the six hour notice may be reduced or eliminated. Purse seine and gillnet gear will have concurrent openings throughout the North Alaska Peninsula.

In the South Alaska Peninsula Management area, the Sand Point, Pavlof, and King Cove districts (Figures 4 and 5) may be opened for commercial sac roe herring fishing from April 15 through July 15 (5 AAC 27.610(a)). Fishing openings will be contingent upon industry interest in harvesting herring from a specific area and ADF&G documentation of sufficient herring biomass. 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. Little spawning herring biomass has been documented in South Alaska Peninsula waters, in part because of a limited number of aerial surveys. ADF&G plans to conduct aerial surveys and is requesting that any herring biomass observations be reported to ADF&G personnel in Sand Point.

ALEUTIAN ISLANDS

All districts within the Aleutian Islands, which include the Unimak, Akutan, Unalaska, and Umnak districts may open to commercial sac roe herring fishing between April 15 through noon June 24 (Figure 6; 5 AAC 27.610(e)(1)). Fishing periods and GHLs in the Aleutian Islands will be contingent upon the industry expressing interest in harvesting herring in a specific area and ADF&G documenting sufficient herring biomass.

In the Adak District (Figure 8), up to 500 tons of herring may be taken during the periods established by emergency order from June 24 through February 28 (5 AAC 27.657).

REGISTRATION REQUIREMENTS

Fishing Vessels

All Alaska Peninsula-Aleutian Islands Area seine and gillnet commercial herring permit holders must register by contacting ADF&G in Dutch Harbor, Cold Bay, Sand Point, or Port Moller at least 48 hours before the sac roe season opens.

Tenders and Processors

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

CATCH REPORTING

Processors and tender operators must report daily to ADF&G while involved in the sac roe herring fishery (Appendix A1; 5 AAC 27.662). Daily reports must include the amount of herring harvested by catcher boats and an accurate estimate of herring onboard tenders. 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 locations can be recorded on fish tickets. Fish tickets must be delivered to local ADF&G personnel prior to departure from the area, and no later than 10 days after termination of buying operations in the area, or as otherwise specified by local representatives of ADF&G (5 AAC 27.662; Appendix A1). Fish tickets must include the weight of harvested herring in either units of short tons (2,000 lb.) 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 and the gillnet mesh may be up to 2.5″, except that in the Akutan and Unalaska districts gillnet mesh may be up to 3.5″ (5 AAC 27.631(d)). The permit holder must be present while gillnet gear is being fished (5 AAC 27.631(a)(b)). A purse seine may not exceed 1,000 meshes in depth and 100 fathoms in length (5 AAC 27.632).

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 collected for monitoring age composition, which assists in determining the health of a stock and in forecasting the following year's run strength. ADF&G will also be monitoring spawning activities and will be soliciting information regarding herring sightings to supplement

information gathered by ADF&G personnel. ADF&G's ability to monitor herring biomass is limited by aircraft availability and funding constraints. Industry cooperation in locating herring will enable ADF&G 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 ADF&G. Past cooperation has proven valuable when evaluating stock status and managing the fishery.

REFERENCES CITED

Nichols, N. W. *In prep*. Alaska Peninsula-Aleutian Islands Management Area herring sac roe and food and bait fisheries annual management report, 2014. Alaska Department of Fish and Game, Fishery Management Report, Anchorage.

TABLES AND FIGURES

Table 1.–Port Moller District herring sac roe guideline harvest levels.

Stock Size (Tons)	Sliding Scale Exploitation Rate [a]	Allowable Harvest (tons) [b]
< 1,000	0%	0
1,001–1,500	10%	100–150
1,501–2,000	10%	150–200
2,001–2,500	15%	300–375
2,501–3,000	15%	375–450
> 3,001	20%	> 600

[a] 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.

[b] 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.

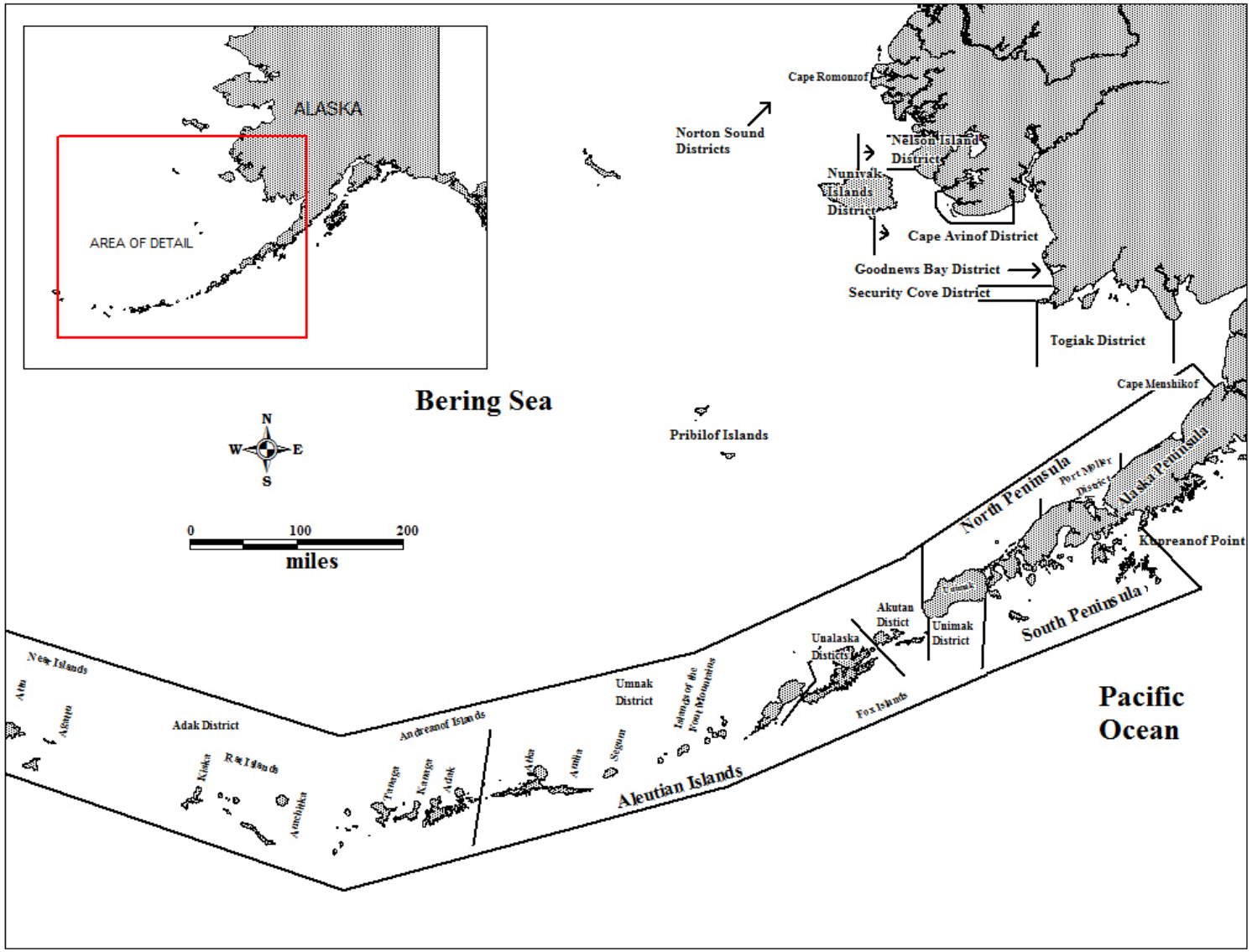

Figure 1.–Map of the Alaska Peninsula-Aleutian Islands herring management area.

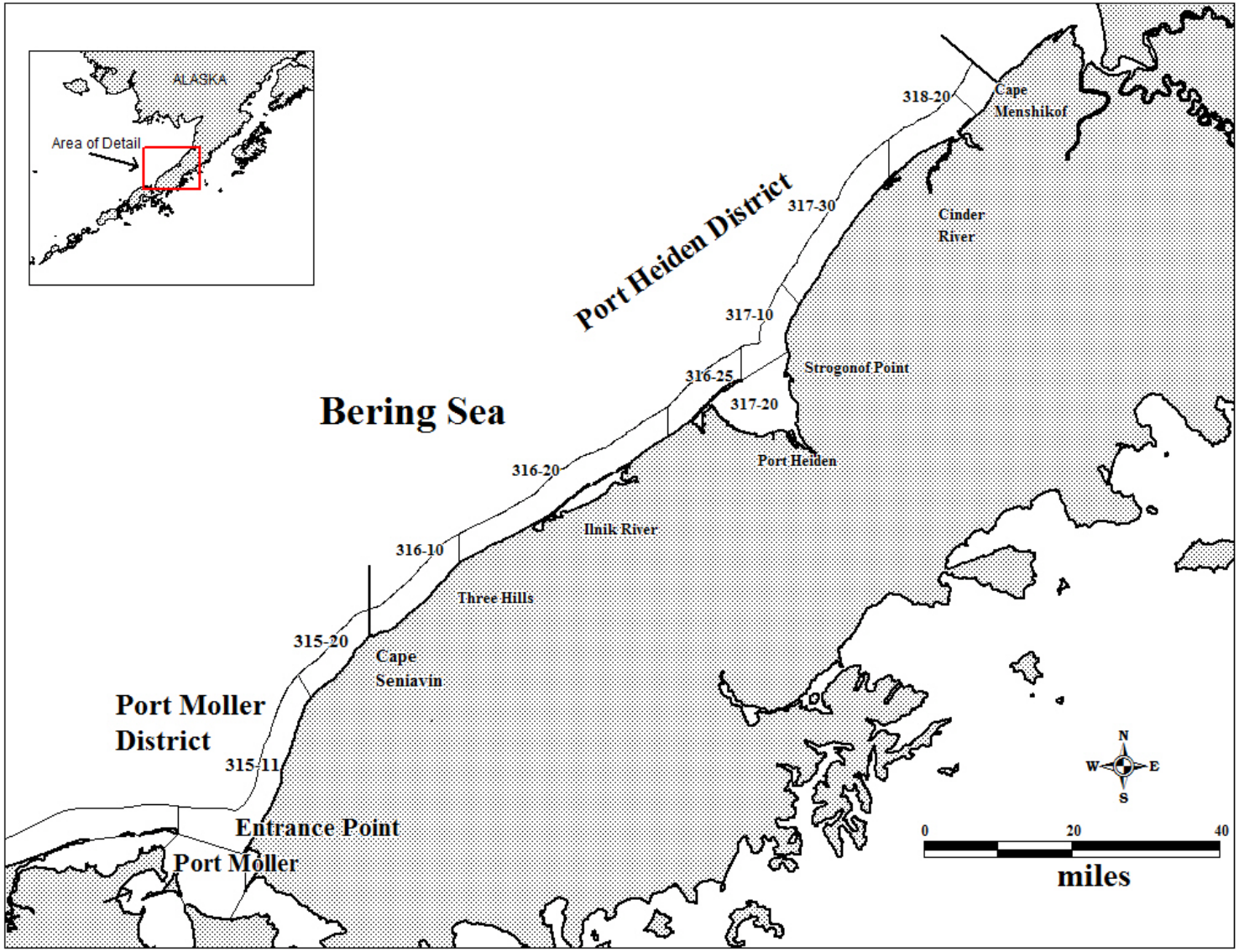

Figure 2.–Map of the Port Heiden and Port Moller districts with commercial herring fishing statistical areas shown.

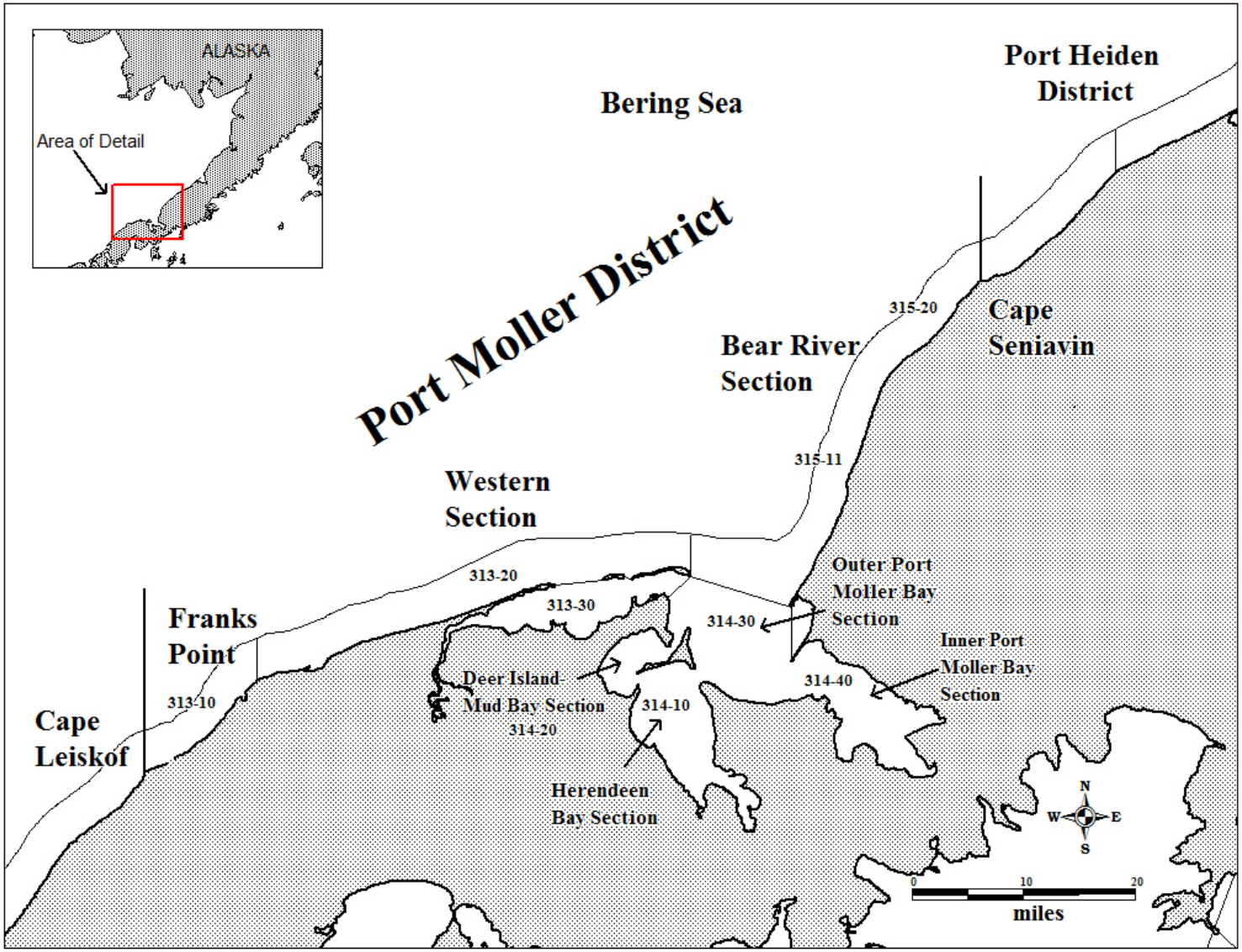

Figure 3.–Map of the Port Moller District depicting commercial herring fishing statistical areas.

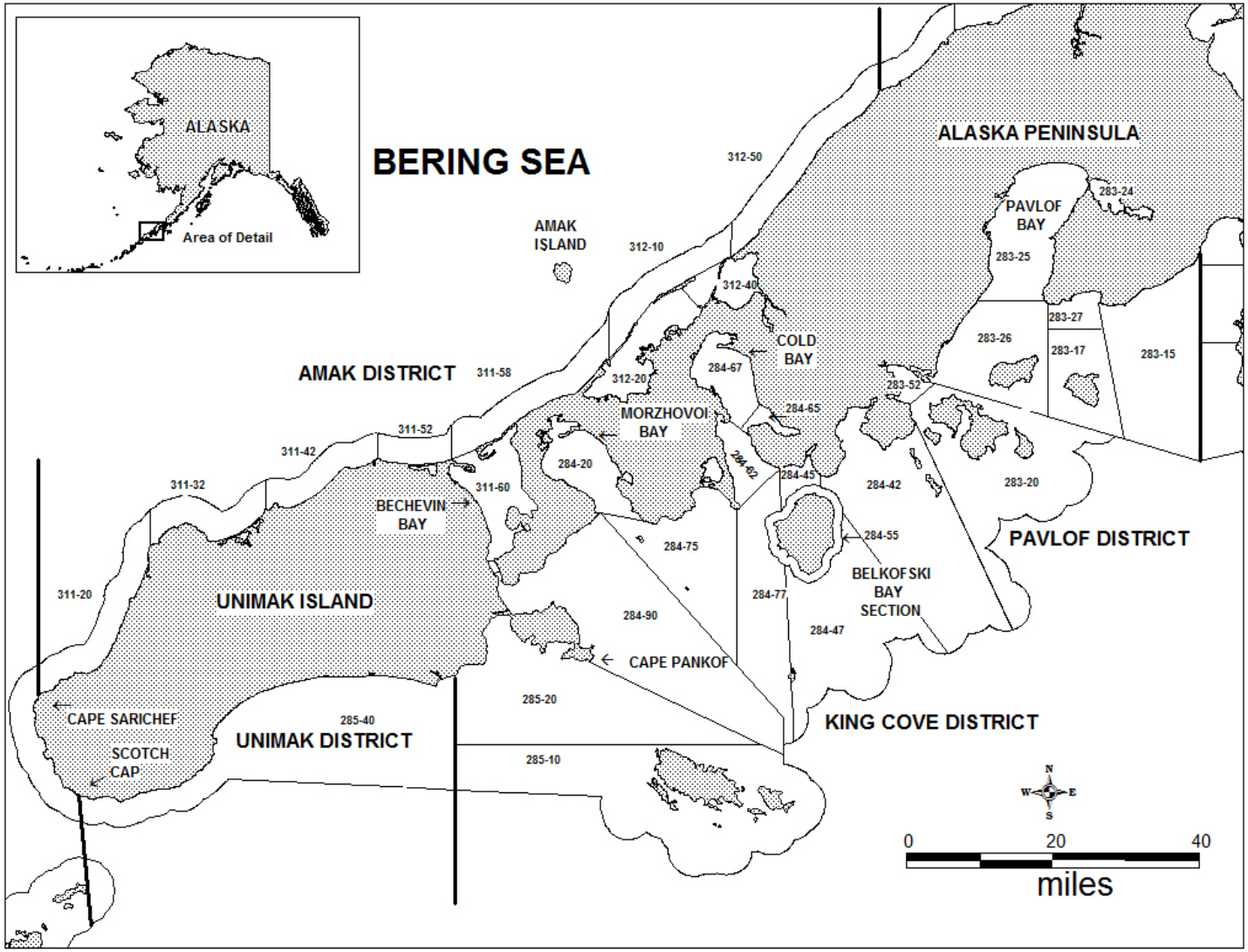

Figure 4.–Map of the Alaska Peninsula from Pavlof Bay to Cape Sarichef depicting commercial herring fishing statistical areas.

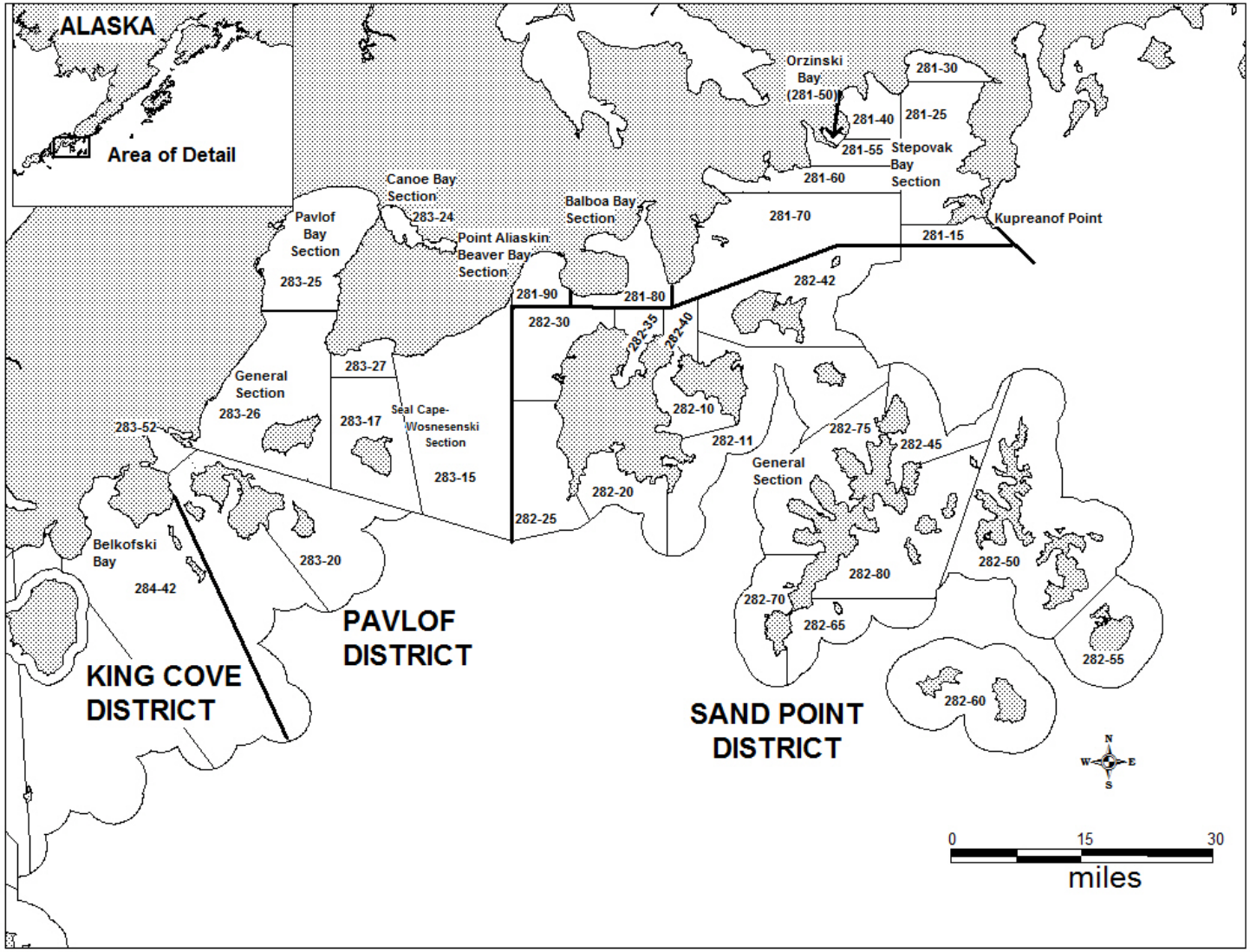

Figure 5.–Map of the Alaska Peninsula from Kupreanof Point to Belkofski Bay depicting commercial herring fishing statistical areas.

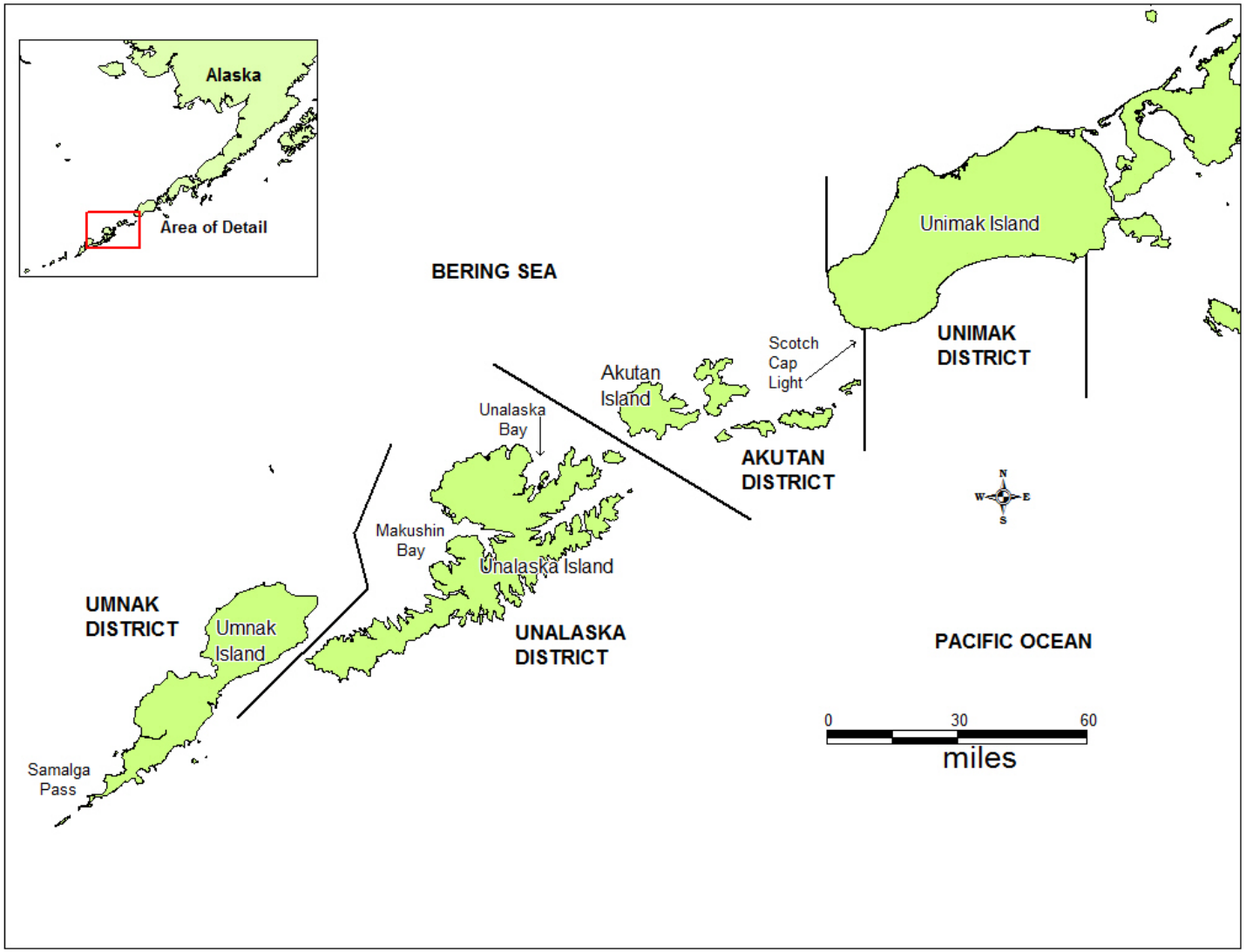

Figure 6.–Map of the eastern Aleutian Islands from Unimak Island to Samalga Pass depicting commercial herring fishing districts.

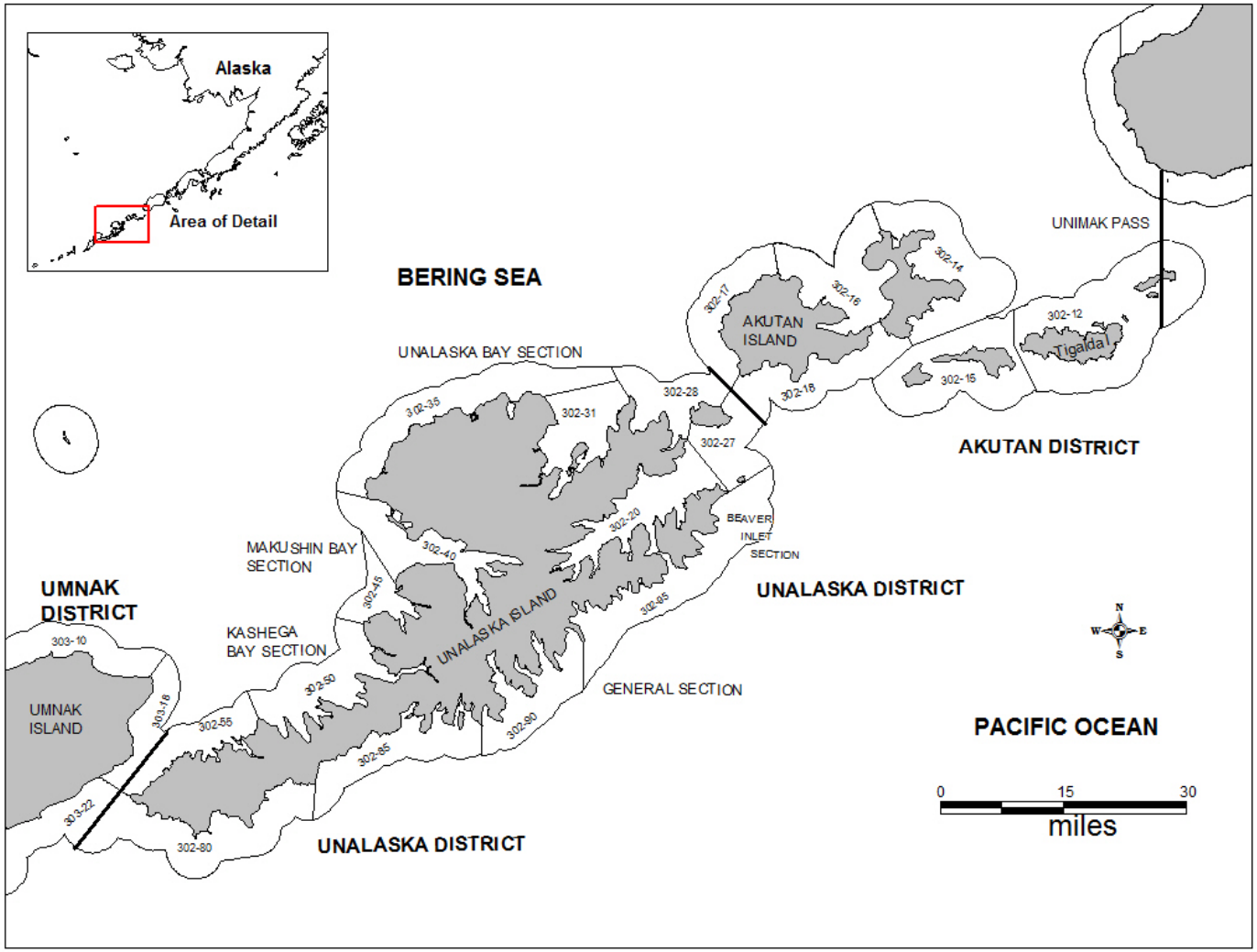

Figure 7.–Map of the eastern Aleutian Islands from Tigalda Island to Umnak Island depicting commercial herring fishing statistical areas.

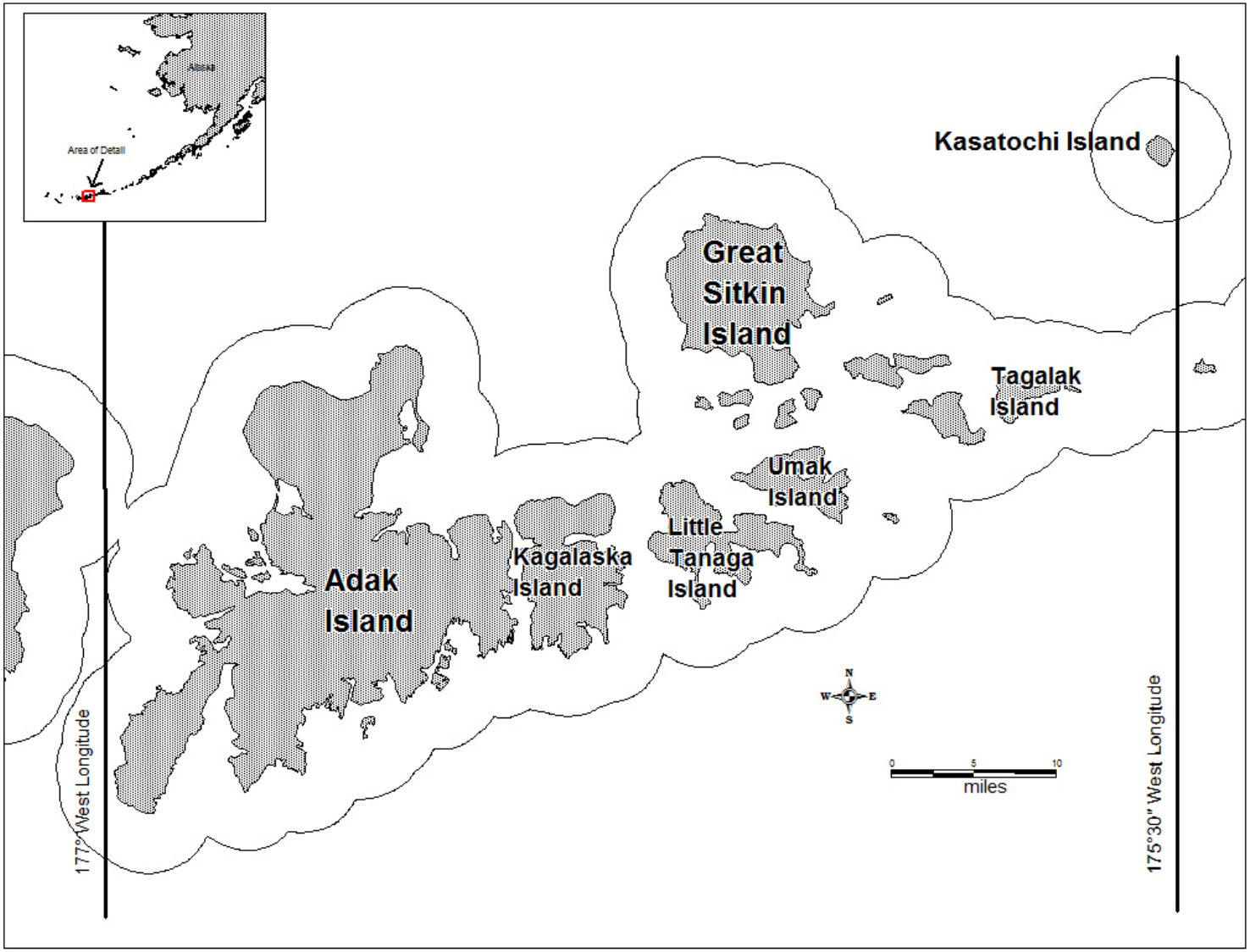

Figure 8.–Map of the Adak District exploratory fishing area.

APPENDIX A. ADF&G OFFICE CONTACTS

Appendix A1.–Alaska Peninsula and Aleutian Islands Alaska Department of Fish and Game office information.

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

Dutch Harbor

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

phone (907) 581-1239
fax (907) 581-1572

VHF 9

Single Side Band 4.125 MHz
WIM 76

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

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

Kodiak

Alaska Department of Fish and Game
351 Research Court
Kodiak, AK 99615

phone (907) 486-1830
fax (907) 486-1841

VHF 6
Single Side Band 3.230 MHz
WON 32