Fishery Management Report No. 13-24

Aleutian Islands and Atka-Amlia Islands Management Areas Salmon Annual Management Report, 2012

by

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and

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June 2013

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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June 2013

The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone regional peer review.

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This document should be cited as:
Poetter, A. D., and N. W. Nichols. 2013. Aleutian Islands and Atka-Amlia Islands management areas salmon annual management report, 2012. Alaska Department of Fish and Game, Fishery Management Report No. 13-24, Anchorage.

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ABSTRACT

The 2012 commercial salmon harvest in the Aleutian Islands Management Area consisted primarily of 173,252 pink salmon, *Oncorhynchus gorbuscha*. The entire 2012 Aleutian Islands Management Area harvest occurred around the island of Unalaska. No commercial salmon fishing has occurred in the Atka-Amlia Islands Management Area since 1996.

Subsistence salmon harvest information is compiled from permits that are returned when subsistence fishing activities are completed. In 2012, the estimated Unalaska District subsistence salmon harvest was 16 Chinook *O. tshawytscha* salmon, 4,911 sockeye *O. nerka* salmon, 431 coho *O. kisutch* salmon, 496 pink salmon, and 35 chum *O. keta* salmon. Two permits were issued to residents in the Adak District in 2012.

Salmon escapement information for the Aleutian Islands and Atka-Amlia Islands Management Areas is sporadically collected. Salmon enumeration weirs have been operated at Summer Bay Lake (1998–2001) and McLees Lake (2001-present) on Unalaska Island to assess salmon escapement. In 2012, 15,111 sockeye salmon were counted at the McLees Lake weir while in 2003, 101,793 sockeye salmon were counted. Limited aerial surveys were conducted in the Aleutian Islands in 2012.

Key words: Aleutian Islands, Atka-Amlia Islands, annual management report, commercial salmon harvest, subsistence salmon harvest, Chinook salmon, *Oncorhynchus tshawytscha*, sockeye salmon, *Oncorhynchus nerka*, coho salmon, *Oncorhynchus kisutch*, pink salmon, *Oncorhynchus gorbuscha*, chum salmon, *Oncorhynchus keta*, sustainable escapement goal, AMR, SEG

INTRODUCTION

The Aleutian Islands Management Area is part of the Alaska Peninsula Salmon Management Area (Area M) and includes the State waters west of Cape Sarichef Light and Scotch Cap (both located on Unimak Island), the Pribilof Islands, but excludes the Atka-Amlia Islands Management Area (5 AAC 12.100; Figure 1). The Atka-Amlia Islands Management Area encompasses all Aleutian Islands waters between Seguam Pass (172° 50.00' W. long.) and Atka Pass (175° 23.00' W. long.; 5 AAC 11.101; Figure 2). The Alaska Department of Fish and Game (ADF&G) has been responsible for managing the salmon resources of the Aleutian Islands and Atka-Amlia Islands Management areas since 1960. In this report we present commercial and subsistence salmon harvest and escapement information for these areas.

Purse seines, hand purse seines, and beach seines are the only legal gear types allowed to fish for salmon in the Aleutian Islands Area (5 AAC 12.330).

The Alaska Board of Fisheries (BOF) created the Atka-Amlia Islands Management Area (Area F) in 1992 to provide a harvest opportunity for local fishermen on local area pink salmon *Oncorhynchus gorbuscha* runs. Legal harvest methods for the Atka-Amlia Islands Management Area include both set gillnetting and purse seining (5 AAC 11.333). To date, only set gillnet fishermen have reported commercial salmon harvests from the Atka-Amlia Islands Area (Poetter and Keyse 2011). Area M Commercial Fisheries Entry Commission permits are also valid in Area F.

COMMERCIAL SALMON FISHING

Runs of sockeye *O. nerka*, coho *O. kisutch*, pink, and chum *O. keta* salmon occur in Aleutian Islands streams; however, poor salmon markets have generally limited commercial salmon harvests in both the Unalaska Island and Atka-Amlia Island fisheries. Pink salmon are the dominant species in the Aleutian Islands, and runs tended to be stronger during even-numbered years through the year 2000 (Poetter and Keyse 2011). Information collected since suggests that there has been a shift to odd-year dominant pink salmon runs. Commercial salmon harvest records for these areas date back to 1911 (Table 1). Aleutian Islands harvest data from 1928-1950 cannot be separated from Alaska Peninsula salmon harvests, because the total number of fish harvested was estimated from the number of cases of salmon canned for both areas. There was occasional fishing near Umnak Island during the 1950s and early 1960s, and a fishing expedition to Attu Island in 1963 (Figure 1; Poetter and Keyse 2011). Processors in Unalaska-Dutch Harbor or Akutan purchased most of the commercially harvested salmon from 1979 through 1988.

Because of the decline in demand for pink salmon after 1988, processing facilities in Dutch Harbor did not purchase salmon and any harvest was transported to the Alaska Peninsula for processing.

Small commercial harvests occurred in the Atka-Amlia Islands Management Area between 1992 and 1996 with no commercial effort since that time (Table 2). Interest in this fishery diminished due to lack of markets, high processing costs, and low volumes of fish (Holmes 1997).

Since 2006, markets have developed for pink salmon creating a renewed interest in the Aleutian Islands salmon runs. Commercial salmon fisheries have taken place (2006–2012) in the Aleutian Islands Area and all of the harvest has occurred around Unalaska Island (Table 1). Odd-year average pink salmon harvest for 1993–2011 was 327,596 fish while the even-year average harvest for 1992–2010 was 322,909 fish (Table 1).The largest Aleutian Islands Area pink salmon harvest of 2,597,461 fish was taken in 1980 (Table 1). Of these, approximately 2.0 million pink salmon were harvested in the Makushin Bay Section (Figure 3).

SUBSISTENCE SALMON FISHING

Under Alaska state law, subsistence fishing allows the taking of fish by specified means by a resident of the State of Alaska who is domiciled in a rural area (AS 16.05.940 (31)). Subsistence uses of wild resources are defined as noncommercial, customary and traditional uses for a variety of purposes (AS 16.05.940 (33)). These include: direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption. Whenever it is necessary to restrict harvests, subsistence fisheries have a preference over other uses of the stock (AS 16.05.258(b)).

Personal use fisheries are different from subsistence fisheries because they do not meet the criteria established by the Joint Board of Fisheries and Game for identifying customary and traditional fisheries (5 AAC 99.010), or because they occur within nonsubsistence areas where dependence upon subsistence is not a principle characteristic of the economy, culture, and way of life (AS 16.05.258(c)). Personal use fisheries provide opportunities for harvesting fish with gear other than rod and reel in nonsubsistence areas. However, personal use fisheries do not enjoy the priority over other uses of the resource in times of restricted harvest that subsistence fisheries do.

Subsistence salmon fishing is important to Aleutian Islands communities (Tables 3 and 4; Veltre and Veltre 1981, 1983). However, due to the remoteness of most villages in the Aleutians Islands Area, subsistence salmon fishing permits are only required in the larger communities in the Unalaska and Adak districts (5 AAC 01.380; Shaul and Dinnocenzo 2005). Subsequently, Unalaska and Adak are the only communities from which subsistence information (from returned permits) is compiled on an annual basis.

Because of a large population increase and an increase in subsistence fishing effort on Unalaska Island in recent years, subsistence restrictions have become necessary to protect salmon stocks in some areas (5 AAC 01.375). A gradual increase of permits occurred from 1985 (65 permits) to a high in 2002 (231 permits; Table 3). More recently the number of permits has increased from 178 to 230 between 2007 and 2011 (Table 3).

Sockeye salmon are the preferred species in the Unalaska subsistence fishery. Unalaska Lake sockeye salmon are important to local residents due to the lake's proximity to the community. Beginning in 1997, the waters closed to subsistence fishing were expanded around the outlet of Unalaska Lake to protect this small stock of sockeye salmon and to increase escapements (5 AAC 01.375). Most of the sockeye salmon catch in recent years was harvested in Reese Bay, presumably bound for McLees Lake (Figure 4). The Unalaska District annual sockeye salmon harvest in 2012 was estimated 4,911 fish (Table 3).

The BOF eliminated subsistence salmon fishing in the Adak District from 1988 through 1997 and created a personal use salmon fishery for the residents of Adak and Kagalaska islands in response to a large influx of military personnel. After 1993, the personal use effort decreased from previous years due to reductions in U.S. Navy personnel stationed at Adak. Fishing effort in this area declined during 1993-1996 when the

U.S. Navy phased out operations, but the civilian population of Adak rebounded briefly in 1997 because of military base cleanup work. In 1998, the BOF reinstated the subsistence salmon fishery in the Adak District. From 1998 through 2010, the number of Adak District subsistence permits has ranged from zero (2011) to 17 (2001), with an average of 4 permits issued annually (Table 5).

In the past, Atka subsistence data were collected by interviews conducted by the ADF&G Subsistence Division. Due to budget reductions, the last survey was conducted in 1994 (Poetter and Keyse 2011).

SALMON ESCAPEMENT, DISTRIBUTION, AND RUN TIMING

The Aleutian Islands have runs of sockeye, coho, pink, and chum salmon. There are no known Chinook salmon producing streams in the Aleutian Islands. Streams on Unalaska, Umnak, Atka, Amlia, Adak, and Attu Islands produce relatively large pink salmon runs during even-numbered years (Figure 1). Tanaga, Kanaga, and Kiska Islands (Figure 1) each have at least one important pink salmon stream.

There is very little salmon escapement information collected for the Aleutian Islands and Atka-Amlia Islands areas. Poor weather, remoteness, unavailability of suitable aircraft, and the high cost of aircraft charters limit surveys. The United States Energy Research and Development Administration conducted limited studies on Amchitka Island in 1977 (Seimenstad et al. 1977; Valdez et al. 1977). A salmon escapement and distribution study of the entire Aleutian chain was conducted by the ADF&G in 1982 (Holmes 1997). The ADF&G conducted repetitive surveys on some Atka and Amlia Islands streams in 1992, 1993, and 1994 (Holmes 1995). The U.S. Fish and Wildlife Service (USFWS) conducted salmon abundance and distribution research on Adak Island in 1993 and 1994 (Palmer 1995). Foot and aerial surveys have been conducted by ADF&G on a more regular basis on some streams on Unalaska Island; however, these survey efforts have been limited. The resulting data are incomplete and of limited use in fisheries management.

In response to an oil spill from the 1997 grounding of the *M/V Kuroshima*, a weir was operated by ADF&G at Summer Bay Lake, on Unalaska Island, from 1998 through 2001 (Table 6; Figure 4; Honnold et al. 1999; McCullough 2000). The USFWS has also operated a weir at McLees Lake on Unalaska Island from 2001 through 2011 (Table 7; Palmer 2003). These projects documented larger runs of sockeye salmon than had been previously observed in these streams. Sockeye salmon escapements into McLees Lake increased between 2001 and 2003 when the run peaked at 101,793 fish, but then decreased to fewer than 9,000 fish in 2008 (Tables 7 and 8). Aerial surveys confirmed that the sockeye salmon escapements into McLees Lake during 2001 and 2002 were unusually large; however, in 2003 it was not possible to survey McLees Lake until September 1, at which point most of the fish had already spawned and died. Historical aerial survey information was deemed to be unreliable and did not correlate with weir counts. No aerial surveys of McLees Lake have occurred since 2003. The sustainable escapement goal (SEG) adopted in 1993 of 4,000–6,000 sockeye salmon for McLees Lake was eliminated in 2004 because no commercial fishery targets those stocks. Due to weak runs, the subsistence salmon fishing closed waters markers were adjusted inseason by emergency order for the conservation of McLees Lake sockeye salmon in 2006 and 2008 through 2010.

Unalaska Lake did not reach its minimum sockeye salmon peak count escapement objective of 400 fish in numerous years between 1987 and 2006 though no surveys of Unalaska Lake have been conducted since 2006 (Table 9). In 1997, the waters closed to subsistence fishing at the mouth of the stream were increased to conserve additional fish for escapement (5 AAC 01.375). Between 1998 and 2004, sockeye salmon escapements to this system have been generally adequate, but only 9 fish were documented in 2005 and 12 fish in 2006 under unfavorable survey conditions (Table 9). Surveys have not been conducted on Unalaska Lake since 2006.

2012 SEASON

The commercial salmon fishery in the Aleutian Islands and Atka-Amlia areas was managed by the ADF&G staff in Sand Point. Unalaska District salmon subsistence permits were issued by the ADF&G staff in Dutch Harbor while Adak subsistence salmon permits were issued by ADF&G in Cold Bay.

COMMERCIAL HARVEST

In 2012, the commercial harvest in the Aleutian Islands Area was 173,252 pink salmon (Table 1). In addition, 245 chum salmon were harvested. The larger pink salmon harvests over the past five years have been mainly attributed to increased harvester and processor interest. All commercial harvest was in Unalaska Bay on Unalaska Island. There was no commercial salmon harvest in the Atka-Amlia Islands Area in 2012 (Table 2).

SUBSISTENCE AND PERSONAL USE HARVEST

A total of 211 subsistence permits were issued for the Unalaska District in 2012 (Table 3). The total estimated harvest of 5,889 salmon in 2012 was more than the 2007–2011 average estimated harvest of 4,392 salmon (Table 3). The 2012 total estimated sockeye salmon subsistence harvest of 4,911 fish was higher than the 2007–2011 average harvest of 3,367 fish (Table 3). An estimated 4,347 sockeye salmon, which represented 89% of the total Unalaska District harvest (4,911), were caught in Reese Bay (Table 3 and 4). The Unalaska Lake sockeye salmon harvest was an estimated 142 fish (Table 4).

The 2012 estimated coho salmon harvest of 431 fish was comparable to the recent five year average (2007–2011) of 427 fish. The pink salmon subsistence harvest around Unalaska Island in 2012 was an estimated 496 fish (Table 3). Chinook and chum salmon are not abundant in Unalaska Island waters and account for only a small portion of the subsistence harvest. In 2012, an estimated 16 Chinook and 35 chum salmon were caught in the Unalaska District subsistence fishery (Table 3). Two subsistence permits were issued in the Adak District in 2012 and were attributed a harvest of 25 sockeye salmon (Table 5).

ESCAPEMENT

One aerial survey was conducted in the Aleutian Islands Management Area in 2012. Observations from that survey indicated management objectives for pink salmon in Unalaska Bay streams had been reached and that pink salmon returning to Makushin Bay streams were well behind schedule. Foot surveys were not conducted in 2012.

In February 2009, ADF&G staff reviewed sockeye salmon escapement data for the McLees Lake system. From this review, an SEG of 10,000–60,000 sockeye salmon was established for McLees Lake in years that a weir is operated. In the absence of a weir there would be no SEG as escapement would only be monitored via aerial surveys (Witteveen et al. 2009). In 2012, ADF&G took over operations of the McLees Lake weir project from USFWS and operated the weir at the outlet of McLees Lake (which empties into Reese Bay) from July 9 through July 31 (Table 8; Figure 4). A total of 15,111 sockeye salmon were counted through the weir, meeting the SEG.

ACKNOWLEDGMENTS

The Dutch Harbor shellfish staff, especially Kathleen Herring, was very helpful in issuing and collecting subsistence permits. Dutch Harbor personnel spent considerable time enforcing subsistence fishing regulations and assisting with the McLees Lake weir project. A special thanks to the Qawalangin Tribe for their partnership with the McLees Lake weir project and to Matt Keyse and Ken Koolmo for their tireless efforts in getting the project off the ground. The authors would also like to thank Dawn Wilburn, Charles Russell, Mary Beth Loewen, Jeff Wadle, and Nick Sagalkin for reviewing this publication. We also thank the U.S. Fish and Wildlife Service for providing McLees Lake equipment and support.

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TABLES AND FIGURES

Table 1.–Aleutian Islands Area (excluding Atka-Amlia Islands Area) commercial salmon harvests in numbers of fish by year, 1911–2012.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum	Total
1911			0	9,300	0	0	0	9,300
1912–1915			0	0	0	0	0	0
1916			0	76,500	1,200	180,300	100	258,100
1917			0	70,400	3,800	600	23,100	97,900
1918			0	55,200	4,400	75,600	135,200	270,400
1919			0	3,900	800	4,000	0	8,700
1920			0	10,100	2,800	0	0	12,900
1921			0	0	0	0	0	0
1922			0	14,000	0	0	0	14,000
1923			0	0	0	0	0	0
1924			0	24,900	0	673,800	100	698,800
1925			0	18,600	0	3,800	9,100	31,500
1926			0	1,300	0	521,700	7,800	530,800
1927			0	17,300	0	334,600	0	351,900
1928–1950 [a]								0
1951			0	11,700	400	500	94,500	107,100
1952			200	42,800	0	31,800	25,700	100,500
1953			0	4,200	500	69,200	800	74,700
1954			0	6,300	800	566,500	200	573,800
1955			0	12,600	100	31,100	400	44,200
1956			0	400	0	33,900	0	34,300
1957			2,300	27,300	100	500	13,900	44,100
1958			0	300	0	613,200	3,700	617,200
1959			0	6,100	0	12,000	100	18,200
1960			0	7,600	0	444,900	300	452,800
1961			0	2,700	0	94,000	200	96,900
1962			0	5,500	100	2,001,700	1,200	2,008,500
1963			0	4,500	0	93,900	300	98,700
1964			0	200	0	194,100	2,300	196,600
1965			0	0	0	0	0	0
1966			0	1,000	0	63,500	700	65,200
1967			0	200	0	7,900	0	8,100
1968			0	2,000	100	902,800	800	905,700
1969			0	1,900	0	242,200	1,500	245,600
1970	45	361	6	208	135	644,121	3,029	647,499
1971	11	105	0	333	2	45,114	58	45,507
1972	8	28	0	69	1	2,784	6	2,860
1973 [b]								
1974	0	0	0	0	0	0	0	0
1975	5	6	0	19,402	0	659	1,881	21,942
1976–1977	0	0	0	0	0	0	0	0
1978	6	32	0	1,829	0	38,109	6	39,944
1979	10	124	0	12,206	0	539,393	242	551,841
1980	28	263	2	9,226	2	2,597,461	4,874	2,611,565
1981	16	85	16	5,430	188	302,786	6,553	314,973

-continued-

Table 1.–Page 2 of 2.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum	Total
1982	15	164	0	2,672	28	1,447,818	6,148	1,456,666
1983	– [b]	– [b]	0	4,405	0	2,005	11,361	17,771
1984	37	281	26	67,163	1,923	2,309,665	32,025	2,410,802
1985 [b]								
1986	9	31	11	7,702	60	42,621	38,819	89,213
1987	– [b]	– [b]	0	75	0	0	0	75
1988	– [b]	– [b]	0	4,315	7	183,109	450	187,881
1989	– [b]	– [b]	0	8,248	0	6,700	0	14,948
1990	15	49	2	12,435	74	282,823	1,038	296,372
1991	– [b]	– [b]	0	796	0	0	0	796
1992	4	20	0	3,082	0	312,072	1,230	316,384
1993	0	0	0	0	0	0	0	0
1994	10	64	0	47	6	858,787	617	859,457
1995–1999	0	0	0	0	0	0	0	0
2000	– [b]	– [b]	1	0	59	256,050	0	256,110
2001–2005	0	0	0	0	0	0	0	0
2006	3	43	0	2,329	0	991,687	1,534	995,550
2007	– [b]	– [b]	0	0	0	1,017,164	0	1,017,164
2008	4	44	1	29	48	784,828	261	785,167
2009	6	89	0	703	16	1,625,910	2,005	1,628,634
2010	9	14	2	1,263	0	25,668	4,862	31,795
2011	8	37	2	1,863	2	632,889	235	634,991
2012	9	23	0	0	0	173,252	245	173,497
Odd-Year Average Pink Harvest, 1993–2011						327,596		
Even-Year Average Pink Harvest, 1992–2010						322,909		

[a] The Aleutian Islands catches cannot be separated from those of the Alaska Peninsula Area during 1928–1950.

[b] Confidentiality rules prohibit the release of this information.

Table 2.–Atka-Amlia Islands Area commercial salmon harvests in numbers of fish, by year, 1992–2012.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum	Total
1992	13	41	0	231	42	7,972	308	8,553
1993	9	10	0	24	4	145	563	736
1994	6	7	0	16	0	896	0	912
1995	0	0	0	0	0	0	0	0
1996	[a]	[a]	0	0	0	20	0	20
1997–2012	0	0	0	0	0	0	0	0

[a] Confidentiality rules prohibit the release of this information.

Table 3.–Estimated subsistence harvest for Unalaska Island, 1985–2012.

Year	Permits Issued	Permits Returned	Chinook	Sockeye	Coho	Pink	Chum	Total
Unalaska Local Community Residents[a]								
1985	65	28	0	897	208	1,293	20	2,418
1986	121	22	0	3,449	847	2,468	375	7,139
1987	81	49	0	1,097	378	1,780	151	3,406
1988	74	43	1	962	390	2,626	83	4,062
1989	70	41	2	1,064	470	1,292	36	2,864
1990	94	36	4	2,357	681	1,428	100	4,570
1991	89	48	0	1,294	666	1,075	45	3,080
1992	144	102	7	2,739	587	1,723	11	5,067
1993	137	102	17	2,831	697	587	136	4,268
1994	150	120	1	2,759	774	1,053	48	4,635
1995	159	129	23	4,446	480	784	23	5,756
1996	189	123	5	1,107	1,033	492	49	2,686
1997	218	161	8	4,192	864	440	110	5,614
1998	206	161	4	3,317	731	729	26	4,807
1999	208	140	0	2,707	1,327	1,018	13	5,065
2000	205	142	7	3,073	569	315	24	3,988
2001	201	140	4	3,850	563	763	100	5,280
2002	226	156	2	5,267	643	277	63	6,252
2003	220	149	27	4,814	558	408	41	5,848
2004	207	141	4	4,343	792	343	26	5,508
2005	207	123	6	4,210	356	587	15	5,174
2006	193	116	10	1,722	363	745	92	2,932
2007	171	104	16	2,391	207	750	36	3,400
2008	195	117	2	1,833	726	567	115	3,243
2009	205	125	5	3,260	610	444	182	4,501
2010	211	143	2	3,959	307	387	26	4,681
2011	218	140	8	5,191	275	375	72	5,921
2012	206	158	16	4,905	420	496	35	5,872
Average								
2002–2011	205	131	8	3,699	484	488	67	4,746
2007–2011	200	126	7	3,327	425	505	86	4,349
Alaska State Residents Not Local To The Unalaska District[a]								
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	3	2	2	4	0	1	0	7
1989	4	1	0	48	0	0	0	48
1990	2	1	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	2	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0
1995	1	0	0	38	4	7	0	49
1996	0	0	0	0	0	0	0	0
1997	3	2	0	0	0	114	0	114
1998	0	0	0	0	0	0	0	0

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Table 3.–Page 2 of 2.

(Alaska state residents not local to the Unalaska District continued)

Year	Permits Issued	Permits Returned	Chinook	Sockeye	Coho	Pink	Chum	Total
1999	3	2	0	0	0	0	0	0
2000	7	6	0	4	1	10	0	15
2001	2	1	0	0	0	0	0	0
2002	5	3	0	0	0	0	0	0
2003	7	7	0	30	0	0	0	30
2004	2	1	0	30	0	0	0	30
2005	10	6	1	23	0	0	0	24
2006	6	3	0	0	0	0	0	0
2007	7	4	0	0	0	0	0	0
2008	9	5	0	0	0	0	0	0
2009	10	5	0	2	10	0	0	12
2010	6	5	0	29	0	1	0	30
2011	12	5	2	168	0	0	0	170
2012	5	5	0	6	11	0	0	17
Average								
2002–2011	7	4	0	28	1	0	0	30
2007–2011	9	5	0	40	2	0	0	42
Total Unalaska[a]								
1985	65	28	0	897	208	1,293	20	2,418
1986	121	22	0	3,449	847	2,468	375	7,139
1987	81	49	0	1,097	378	1,780	151	3,406
1988	77	45	3	966	390	2,627	83	4,069
1989	74	42	2	1,112	470	1,292	36	2,912
1990	96	37	4	2,357	681	1,428	100	4,570
1991	89	48	0	1,294	666	1,075	45	3,080
1992	144	102	7	2,739	587	1,723	11	5,067
1993	139	102	17	2,831	697	587	136	4,268
1994	150	120	1	2,759	774	1,053	48	4,635
1995	160	129	23	4,484	484	791	23	5,805
1996	189	123	5	1,107	1,033	492	49	2,686
1997	221	163	8	4,192	864	554	110	5,728
1998	206	161	4	3,317	731	729	26	4,807
1999	211	142	0	2,707	1,327	1,018	13	5,065
2000	212	148	7	3,077	570	325	24	4,003
2001	203	141	4	3,850	563	763	100	5,280
2002	231	159	2	5,267	643	277	63	6,252
2003	227	156	27	4,844	558	408	41	5,878
2004	209	142	4	4,373	792	343	26	5,538
2005	217	129	7	4,233	356	587	15	5,198
2006	199	119	10	1,722	363	745	92	2,932
2007	178	108	16	2,391	207	750	36	3,400
2008	204	122	2	1,833	726	567	115	3,243
2009	215	130	5	3,262	620	444	182	4,513
2010	217	148	2	3,988	307	388	26	4,711
2011	230	145	10	5,359	275	375	72	6,091
2012	211	163	16	4,911	431	496	35	5,889
Average								
2002–2011	213	136	9	3,727	485	488	67	4,776
2007–2011	209	131	7	3,367	427	505	86	4,392

[a] Harvest estimated by extrapolating the catches from returned permits to the total number of permits issued.

Table 4.–Estimated Unalaska Island subsistence harvests of sockeye and coho salmon by major location, 2012.

Location	Species	Harvest [a]	Percent of Total Harvest
Reese Bay (Wislow)	Sockeye	4,347	92%
	Coho	0	0%
Broad Bay	Sockeye	6	0%
	Coho	184	48%
Wide Bay	Sockeye	22	0%
	Coho	0	0%
Nateeken Bay	Sockeye	33	1%
	Coho	106	28%
Captains Bay	Sockeye	13	0%
	Coho	53	14%
Unalaska Lake vicinity	Sockeye	142	3%
	Coho	22	6%
Other locations	Sockeye	144	3%
	Coho	19	5%
Totals [b]	Sockeye	4,707	100%
	Coho	384	100%

[a] The numbers of salmon harvested are extrapolated from returned permits.

[b] Totals may not add to 100% due to rounding.

Table 5.–Adak-Kagalaska islands estimated personal use harvest, 1988–1997 and Adak District estimated subsistence harvest 1998–2012.

Year	Permits Issued	Permits Returned	Percent Returned	Chinook	Sockeye	Coho	Pink	Chum	Total
Personal Use[a]									
1988	43	29	67.4%	0	503	23	150	0	676
1989	64	47	73.4%	0	382	0	117	0	499
1990	61	29	47.5%	0	800	47	41	0	888
1991	37	31	83.8%	0	281	6	34	0	321
1992	52	41	78.8%	0	572	30	4	0	606
1993	4	3	75.0%	0	156	0	0	0	156
1994 [b]	0	0	0.0%	–	–	–	–	–	–
1995	4	3	75.0%	0	156	0	0	0	156
1996	6	6	100.0%	0	91	0	0	0	91
1997 [c]	18	12	66.7%	0	229	0	0	4	233
1988–1997 [d] Average	29	20	69.6%	0	352	12	38	0	403
Subsistence[a]									
1998	13	10	76.9%	0	399	0	25	0	424
1999	5	5	100.0%	0	164	4	0	0	168
2000	13	12	92.3%	0	265	4	78	0	347
2001	17	14	82.4%	0	474	19	17	0	510
2002	3	3	100.0%	0	150	0	0	0	150
2003	6	5	83.3%	0	363	0	0	0	363
2004	6	4	66.7%	0	336	0	0	0	336
2005	2	2	100.0%	0	188	0	0	0	188
2006	1	1	100.0%	0	74	0	1	0	75
2007	9	6	66.7%	0	488	3	38	0	529
2008	10	6	60.0%	0	397	0	19	0	416
2009	1	1	100.0%	0	25	0	0	0	25
2010	2	1	50.0%	0	50	0	0	0	50
2011	0	0	0.0%	–	–	–	–	–	–
2012	2	2	100.0%	0	25	0	0	0	25
2002–2011 Average	4	3	72.7%	0	230	0	6	0	237

Note: "–" = No data.

[a] Harvest estimated by extrapolating the reported catches on returned permits to the total number of permits issued.

[b] U.S. Navy personnel reduced at Adak, personal use permits not requested.

[c] In 1997, a substantial number of civilians were hired by the Navy to work in a cleanup effort at Adak.

[d] Average includes 1994.

Table 6.–Summer Bay Lake annual weir counts of salmon, by species and year, 1998–2001.

Year	Dates of Operation	Number of Fish[a]				
		Chinook	Sockeye	Coho	Pink	Chum
1998	6/12 – 10/3	0	2,641	101	7,290	0
1999	5/30 – 9/9	0	3,375	20	2,250	0
2000	6/4 – 10/5	1	2,905	401	7,918	0
2001	6/1 – 9/11	0	5,388	23	4,114	0
Weir discontinued						

[a] Does not include estimates of salmon escapement before or after weir operations.

Table 7.–McLees Lake annual weir counts of salmon by species and year, 2001–2012.

Year	Dates of Operation	Number of Fish[a]				
		Chinook	Sockeye	Coho	Pink	Chum
2001	6/15 – 7/30	1	45,866	1	0	0
2002	6/1 – 7/29	1	97,780	0	0	0
2003	5/30 – 7/28	0	101,793	0	19	0
2004	6/1 – 7/24	0	40,328	0	1	3
2005	5/29 – 7/26	0	12,066	0	3	1
2006	5/30 – 7/28	0	12,936	0	268	0
2007	6/1 – 7/28	1	21,428	2	2	0
2008	5/30 – 7/20	1	8,661	8	25	0
2009	6/1 – 7/19	0	10,120	0	2	289
2010	6/1 – 7/23	54	32,842	74	59	17
2011	6/10 – 7/17	0	36,602	2	0	0
2012	7/10 – 7/31	0	15,111	0	1	0

[a] Does not include estimates of salmon escapement before or after weir operations.

Table 8.–Sockeye salmon daily and cumulative escapement counts through McLees Lake weir, 2012.

Date	Daily Count	Cumulative Count
9-Jul	0	0
10-Jul	1,086	1,086
11-Jul	1,410	2,496
12-Jul	797	3,293
13-Jul	1,178	4,471
14-Jul	532	5,003
15-Jul	331	5,334
16-Jul	846	6,180
17-Jul	316	6,496
18-Jul	565	7,061
19-Jul	2,126	9,187
20-Jul	644	9,831
21-Jul	479	10,310
22-Jul	928	11,238
23-Jul	705	11,943
24-Jul	505	12,448
25-Jul	421	12,869
26-Jul	222	13,091
27-Jul	538	13,629
28-Jul	499	14,128
29-Jul	215	14,343
30-Jul	355	14,698
31-Jul	413	15,111

Table 9.–Unalaska Lake peak salmon escapement estimates in number of fish, 1961–2012.

Year	Peak Estimate [a]		
	Sockeye	Coho	Pink
1961	0	0	3,400
1962	0	0	1,500
1963	0	0	1,600
1964	-	-	-
1965	-	-	-
1966	-	-	-
1967	-	-	-
1968	500	0	1,000
1969	-	-	-
1970	250	0	2,850
1971	0	0	150
1972	200	0	400
1973	400	0	500
1974	0	0	1,400
1975	200	0	3,500
1976	-	-	-
1977	400	0	6,600
1978	0	0	4,500
1979	300	0	1,700
1980	100	0	3,000
1981	100	0	1,500
1982	150	0	16,000
1983	50	0	900
1984	0	0	22,600
1985	0	0	3,500
1986	0	0	6,500
1987	400	0	7,100
1988	0	0	31,500
1989	0	0	2,926
1990	0	0	13,000
1991	3 [b]	1 [b]	7,193
1992	0	0	9,000
1993	0	0	10,200
1994	41	0	11,000
1995	255	0	5,199
1996	250	0	7,500
1997	330	0	12,300
1998	800	355	5,600
1999	1,250	61	3,936
2000	300	0	24,200
2001	1,000	0	6,000
2002	500	0	11,000
2003	750	68	25,000

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Year	Peak Estimate [a] Sockeye	Coho	Pink
2004	3,000	80	1,530
2005	9 [b]	35 [b]	4,212
2006	12 [b]	6 [b]	4,250
2007–2012 [c]			
2002–2011 Average	854	32	8,665

Note: "–" = No data.

[a] Estimates are based on the highest observed escapement during all surveys conducted that year.

[b] Surveys not conducted at optimum times for all species

[c] No survey conducted.

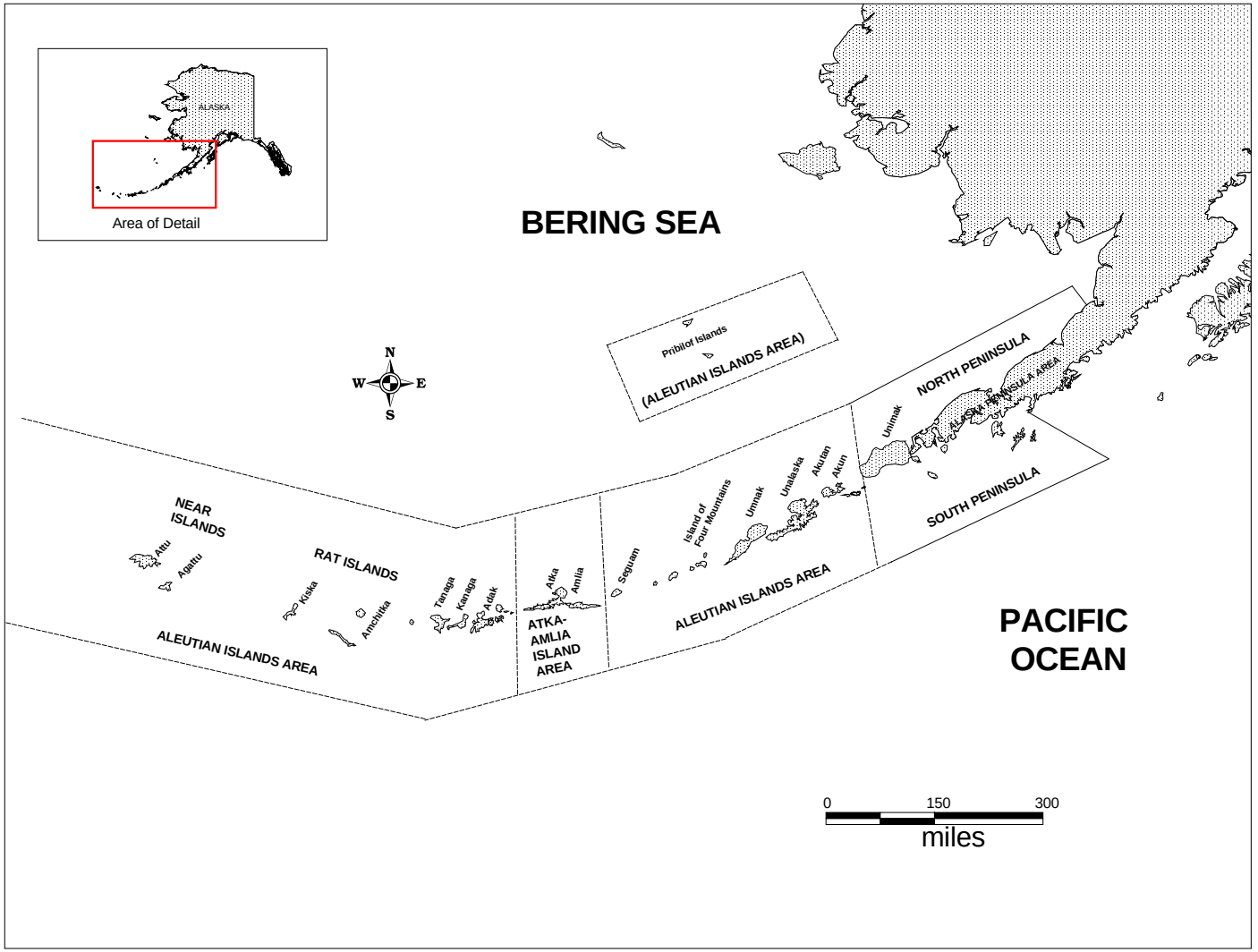

Figure 1.–Map of the Aleutians Islands and Alaska Peninsula salmon management areas (Area M), and the Atka-Amlia Islands Management Area (Area F).

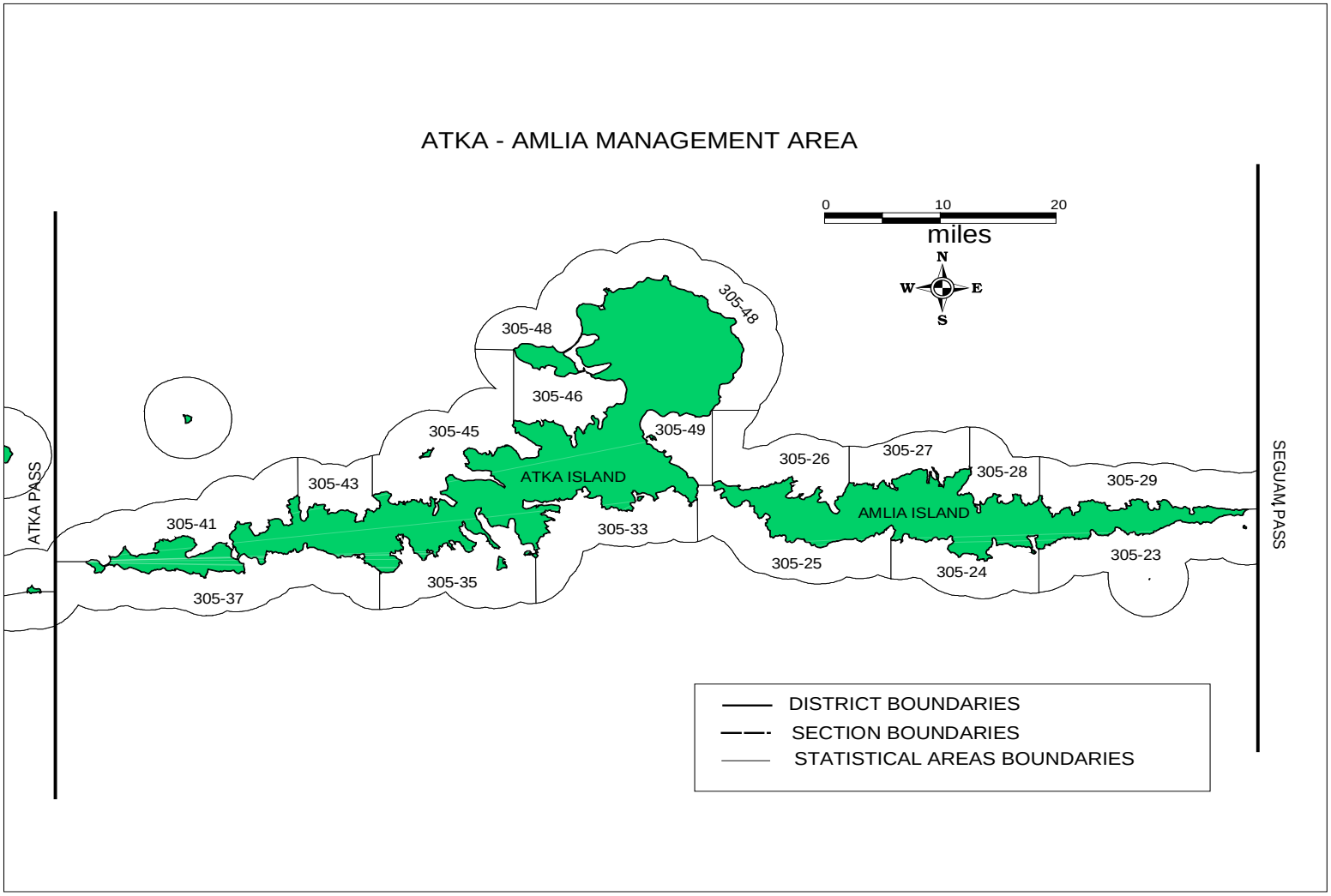

Figure 2.–Map of the Atka-Amlia Management Area from Seguam Pass to Atka Pass, with statistical salmon fishing areas shown.

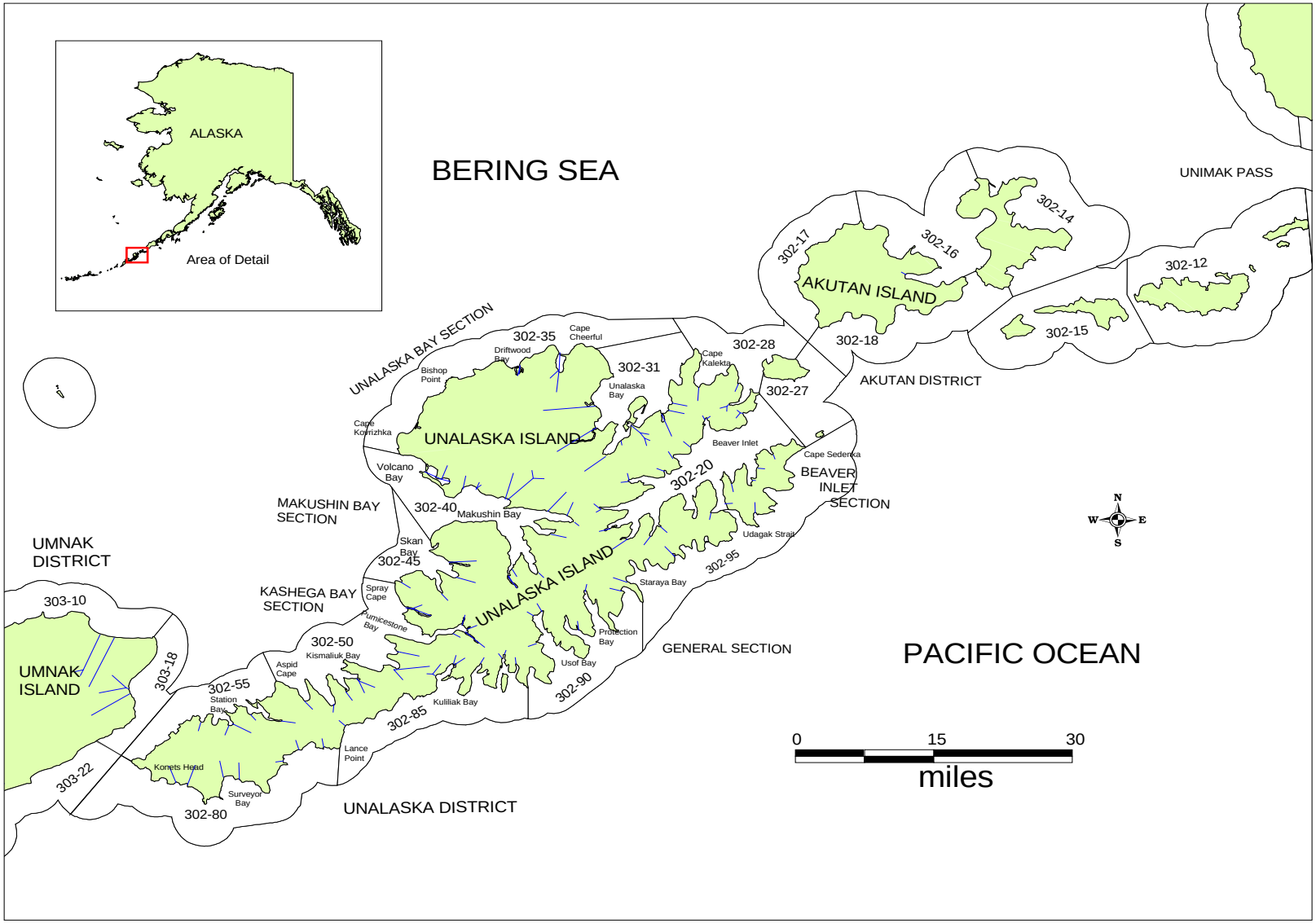

Figure 3.–Map of the Aleutian Islands Management Area from Unimak Pass to Umnak Island, with statistical salmon fishing areas shown.

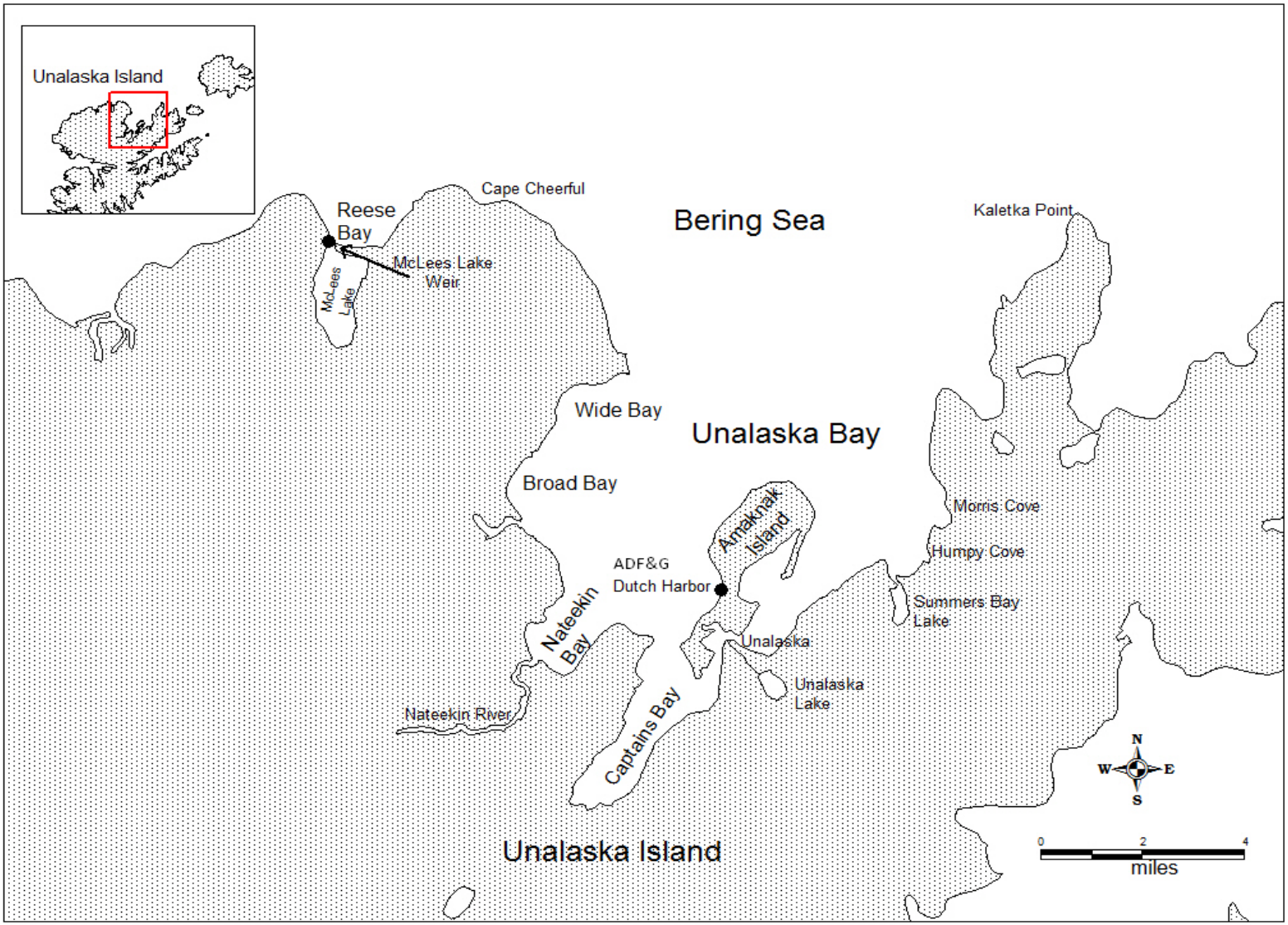

Figure 4.–Map of Unalaska Bay vicinity, with McLees Lake weir and ADF&G Dutch Harbor office.