

ALEUTIAN ISLANDS AND ATKA-AMLIA ISLANDS
MANAGEMENT AREAS SALMON MANAGEMENT REPORT

REPORT TO THE ALASKA BOARD OF FISHERIES, 2004



By

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ABSTRACT

The Aleutian Islands and Atka-Amlia Islands Management Areas include all of the Aleutian Islands west of Unimak Island.

No commercial salmon harvests have occurred in either the Aleutian Islands or the Atka-Amlia Islands Management Areas since 2000. Although there is a history of commercial harvest, lack of adequate markets has discouraged the exploitation of this resource during recent years.

Salmon are an important subsistence resource in these areas. Permit reports have documented an increased annual harvest near Unalaska and a decreased harvest near Adak in recent years. Subsistence harvests of salmon in other areas are poorly documented.

Salmon escapement information for the Aleutian Islands and Atka-Amlia Islands Management Areas is incomplete. Historically, stream surveys were most commonly conducted on Unalaska Island streams. Weirs have been recently established on two different streams to enumerate salmon. In 2003, a record 101,793 sockeye salmon were enumerated at McLees Lake weir. Lack of funding has limited opportunities to gather detailed information about this resource.

INTRODUCTION

The Aleutian Islands Management Area (ADF&G 2001) includes the waters of Alaska west of Unimak Island, including the Pribilof Islands, but excluding 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 1). The Alaska Department of Fish and Game (ADF&G) has been responsible for managing human use of the salmon resources of the Aleutian Islands and Atka-Amlia Islands Management Areas since 1960. This report presents commercial and subsistence salmon harvest and escapement information for these areas.

The Aleutian Islands Management Area is part of salmon net registration area Area M that also includes the Alaska Peninsula Salmon Management Area. Seining is the only legal method to commercially harvest 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 and small commercial harvests occurred in this fishery from 1992 through 1994. Legal harvest methods for the Atka-Amlia Islands Management Area include both set gillnetting and purse seining (5 AAC 11.333). Area M seine permits are also valid in Area F.

The history of salmon markets in these areas has never been robust. Prior to 1979, fishermen salted some fish (usually sockeye salmon) for sale. Processors located at 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 during recent years, most of the harvest has been transported to the Alaska Peninsula for canning. Recently near Unalaska, markets only developed if pink salmon abundance and prices warranted tenders traveling long distances (from King Cove), or if a floating processor moved into the area.

SALMON DISTRIBUTION AND RUN TIMING

The Aleutian Islands produce runs of sockeye *Oncorhynchus nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon. There are no known chinook salmon *O. tshawytscha* producing streams in the Aleutian Islands. Pink salmon are the most abundant and widespread of the species and historically have attracted the most commercial interest.

Unalaska, Umnak, Unimak, Atka, Amlia, Adak, and Attu Islands produce large pink salmon runs during some years. Tanaga, Kanaga, and Kiska Islands each have at least one substantial pink salmon stream (Figure 1).

The timing of Aleutian Island pink salmon migrating into freshwater varies considerably between years and between streams. Pink salmon often begin to enter streams in late July and during large runs (usually even-years) may trickle in throughout September at both Atka and

Unalaska Islands. Sometimes pink salmon are not observed in streams until mid August. Observations by United States Fish and Wildlife Service (FWS) indicate a similar pattern in streams located on Adak Island (Palmer 1995). Aleutian Islands pink salmon also tend to be of smaller size than those of Alaska Peninsula stocks (Shaul and Berceli 1995); however, Unalaska Island pink salmon were larger than Alaska Peninsula pink salmon during 2000 (Shaul and Dinnocenzo 2003).

Aleutian Islands pink salmon runs tend to be much larger during even-numbered years (Shaul and Dinnocenzo 2003). An occasional exception is Unalaska Bay, which may sometimes produce large pink salmon runs during odd years.

ESCAPEMENTS

Escapement information is incomplete for most of the Aleutian Islands and Atka-Amlia Islands Management Areas. In 1982, ADF&G conducted a comprehensive short-term escapement and distribution study of the Aleutian Islands from Unalaska Island to, and including part of, Attu Island (Holmes 1997). The United States Energy Research and Development Administration conducted limited studies on Amchitka Island in 1977 (Seimenstad et al. 1977; Valdez et al. 1977). ADF&G did repetitive surveys on some Atka and Amlia Islands streams in 1992, 1993, and 1994 (Holmes 1995); and the FWS did additional abundance and distribution research at Adak Island in 1993 and 1994 (Palmer 1995).

On a more regular basis, foot and aerial surveys were conducted on some streams on Unalaska Island. Poor weather conditions, remoteness, availability of suitable aircraft, limited staffing and fiscal constraints have limited survey efforts. The resulting data are incomplete and, consequently, of only limited use in fisheries management.

Unalaska Lake did not reach its minimum sockeye salmon escapement objective of 400 fish from 1988 through 1997 (Table 1). Siltation has occurred in this lake and its drainages since World War II (Holmes 1997). 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). Since 1998, sockeye salmon escapements to this system have been generally adequate (Table 1).

In response to an oil spill, a weir was operated by ADF&G at Summer Bay Lake, on Unalaska Island, from 1998 through 2001 (Honnold et al. 1999; McCullough 2000; and McCullough and Bouwens *in press*). FWS also operated a weir at Mclees Lake on Unalaska Island from 2001 through 2003 and plans to continue to operate it in the near future (Palmer 2003; Palmer personal communication). These projects (Tables 2 and 3) documented larger runs of sockeye salmon than had been previously observed in these streams. These results also raised concern for the small numbers of coho salmon escaping into Summer Bay Lake.

COMMERCIAL FISHERY

Aleutian Islands Area

The annual historical harvest of salmon in the Aleutian Islands Management Area is shown in Table 4. Commercial salmon harvests were first recorded in 1911 in the Aleutian Islands Management Area (Shaul and Dinnocenzo 2003). Pink salmon have been the most economically important species in the Aleutian Islands. Often there is no commercial harvest during odd-numbered years.

Nearly all of the commercial harvest in the Aleutian Islands Area has occurred around Unalaska Island except for occasional fishing effort near Umnak Island during the 1950s and early 1960s, and a commercial expedition to Attu Island in 1963 (Shaul and Dinnocenzo 2003; Figure 2). The Aleutian Islands Area average even-year harvest of pink salmon during 1984-2002 is 424,276 fish; the odd-year average pink salmon harvest for 1983-2001 is 880 fish (Table 4). The largest annual Aleutian Islands Area pink salmon harvest of 2,597,461 fish was taken in Unalaska Island waters in 1980 (Table 4). Approximately 2.0 million of the pink salmon harvested in 1980 were caught in Makushin Bay (Figure 2). Since 1994 a commercial harvest has occurred during only one year (2000) since 1994 due to the lack of markets.

Atka-Amlia Islands Area

Historically, only set gillnet fishermen have reported commercial salmon harvests from the Atka-Amlia Islands Area (Shaul and Dinnocenzo 2003; Table 5). Interest in this fishery diminished due to lack of markets, high processing costs, and low volumes of fish (Holmes 1997).

PERSONAL USE AND SUBSISTENCE FISHERIES

Subsistence salmon fishing is very important to Aleutian Islands communities (Veltre and Veltre 1981, Veltre and Veltre 1983; L. Scarborough, personal communication). Subsistence salmon fishing permits are required only in the Unalaska and Adak Districts (5 AAC 01.380; Shaul and Dinnocenzo 2003). Unalaska and Adak are the only communities from which subsistence information is compiled on an annual basis. Historical harvests are shown in Tables 6 and 7.

Because of a large population increase on Unalaska Island in recent years, additional subsistence restrictions have become necessary to protect salmon stocks. ADF&G has increased monitoring efforts for Unalaska Island subsistence salmon fisheries. The number of subsistence permits issued increased from 65 in 1985 to 231 in 2002 (Table 6). Sockeye salmon appear to be the preferred species of subsistence harvesters. The average estimated annual sockeye salmon harvest has increased from 2,253 fish from 1985 through 1997 to 3,644 fish from 1998 through

2002. Most of the sockeye salmon catch in recent years came from Reese Bay, also known as Wislow (Figure 3). The total 2002 Unalaska Island sockeye salmon harvest was an estimated 5,267 fish of which 4,694 (89%) were taken at Reese Bay (Table 6). This was the highest sockeye salmon subsistence harvest on record for the Unalaska District and Reese Bay (Shaul and Dinnocenzo 2003). The 2003 harvest reports are not yet compiled.

Unalaska Lake sockeye salmon are very important to local residents who cannot travel to other locations to catch sockeye salmon. Beginning in 1997, waters closed to subsistence fishing were expanded around the outlet to Unalaska Lake to protect this small stock of sockeye salmon and to increase escapements (5 AAC 01.375). In 2002, the Unalaska Lake sockeye salmon harvest was an estimated 90 fish (Shaul and Dinnocenzo 2003) and the peak escapement was estimated to be 500 fish (Table 1).

In 2002, an estimated 643 coho salmon were harvested for subsistence in Unalaska District (Table 6), of which 414 (64.4%) were harvested in Broad Bay (Shaul and Dinnocenzo 2003; Figure 3). The 2002 estimated pink salmon subsistence harvest in Unalaska District was 277 fish (Table 6). Chinook and chum salmon are not abundant in Unalaska District waters and account for only a small portion of the subsistence harvest (Table 6). In 2002, an estimated 2 chinook and 63 chum salmon were caught in the Unalaska District subsistence harvest.

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 Island. Fishing effort in this area declined during 1993-1996, when the U.S. Navy phased out operations, but rebounded somewhat in 1997 with an increase in the civilian population. In 1998, the BOF reinstated the subsistence salmon fishery in the Adak District. From 1998 through 2002, the number of Adak District subsistence permits has ranged from 3 in 2002 to 17 in 2001 for an average of 10 permits issued (Table 7). Data from 2003 has not yet been compiled.

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. In 1994, 28 of 29 households were surveyed. The 1994 Atka subsistence harvest was 2,504 salmon, composed of 12 chinook, 431 sockeye, 567 coho, 1,387 pink, and 107 chum salmon (Shaul and Dinnocenzo 2003).

Additional subsistence information will be available in the Aleutian Islands and Atka-Amlia Islands Management Areas Annual Salmon Management Report (Shaul and Dinnocenzo, *in press*).

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Table 1. Unalaska Lake and Creek salmon peak escapement estimates, 1961-2003.

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

^a Estimates are based on the highest observed escapement during all surveys conducted that year. Blanks in the data indicate times when either no detectable amount of a species was present or no survey was done.

^b Surveys in many years were not done at optimum times for all species.

Table 2. 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 through 10/3	0	2,641	101	7,290	0
1999	5/30 through 9/9	0	3,375	20	2,250	0
2000	6/4 through 10/5	1	2,905	401	7,918	0
2001	6/1 through 9/11	0	5,388	23	4,114	0

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

Table 3. McLees Lake annual weir counts of salmon, by species and year, 2001-2003.

Year	Dates of Operation	Number of Fish ^a				
		Chinook	Sockeye	Coho	Pink	Chum
2001	6/15 through 7/30	1	45,866	1	0	0
2002	6/1 through 7/29	1	97,780	0	0	0
2003	5/30 through 7/28	0	101,793	0	19	0

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

Table 4. Aleutian Islands Management Area (excluding Atka-Amlia Islands Management Area) commercial salmon harvests, in numbers of fish by year, 1911-2003.

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

-Continued-

Table 4. (page 2 of 2)

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum	Total
1972	8	28	0	69	1	2,784	6	2,860
1973	b	b	0	0	0	2,042	0	2,042
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
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	b	40	2,750	0	90	14,175	17,055
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	4315	7	183,109	450	187,881
1989	b	b	0	8248	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
2001-2003	0	0	0	0	0	0	0	0
Odd-Year Average Pink Harvest, 1983-2001						880		
Even-Year Average Pink Harvest, 1984-2002						424,276		

^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 5. Atka-Amlia Islands Management Area commercial salmon harvests, in numbers of fish by year, 1992 to 2003.

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
1998-2003	0	0	0	0	0	0	0	0

Table 6. Estimated Unalaska District subsistence salmon harvest, in numbers of fish by year, 1985-2002.

Year	Permits Issued	Permits Returned	Percent Returned	Estimated Salmon Harvest ^a					
				Chinook	Sockeye	Coho	Pink	Chum	Total
1985	65	28	43	0	897	208	1,293	20	2,418
1986	121	22	18	0	3,449	847	2,468	375	7,139
1987	81	49	60	0	1,097	378	1,780	151	3,406
1988	77	45	58	3	966	390	2,627	83	4,069
1989	74	42	57	2	1,112	470	1,292	36	2,912
1990	96	37	39	4	2,357	681	1,428	100	4,570
1991	89	48	54	0	1,294	666	1,075	45	3,080
1992	144	102	71	7	2,739	587	1,723	11	5,067
1993	139	102	73	17	2,831	697	587	136	4,268
1994	150	120	80	1	2,759	774	1,053	48	4,635
1995	160	129	81	23	4,484	484	791	23	5,805
1996	189	123	65	5	1,107	1,033	492	49	2,686
1997	221	163	74	8	4,192	864	554	110	5,728
1998	206	161	78	4	3,317	731	729	26	4,807
1999	211	142	67	0	2,707	1,327	1,018	13	5,065
2000	212	148	70	7	3,077	570	325	24	4,003
2001	203	141	69	4	3,850	563	763	100	5,280
2002	231	159	69	2	5,267	643	277	63	6,252
1985-1997 AVG	124	78	59	5	2,253	621	1,320	91	4,291
1998-2002 AVG	213	150	71	3	3,644	767	622	45	5,081

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

Table 7. Estimated Adak District subsistence/personal use salmon harvest, in numbers of fish by year, 1988-2002.

Year	Permits	Permits	Percent	Estimated Catch					Total
	Issued	Returned	Returned	Chinook	Sockeye	Coho	Pink	Chum	
Personal Use									
1988	43	29	67	0	503	23	150	0	676
1989	64	47	73	0	382	0	117	0	499
1990	61	29	48	0	800	47	41	0	888
1991	37	31	87	0	281	6	34	0	321
1992	52	41	79	0	572	30	4	0	606
1993	4	3	75	0	156	0	0	0	156
1994 ^a	0	0	0	0	0	0	0	0	0
1995	4	3	75	0	156	0	0	0	156
1996	6	6	100	0	91	0	0	0	91
1997 ^b	18	12	67	0	229	0	0	4	233
1988-97									
Average	29	20	67	0	317	11	35	0	363
Subsistence									
1998	13	10	77	0	399	0	25	0	424
1999	5	5	100	0	164	4	0	0	168
2000	13	12	92	0	265	4	78	0	347
2001	17	14	82	0	474	19	17	0	510
2002	^c	^c	^c	^c	^c	^c	^c	^c	^c

^a U.S. Navy personnel were reduced at Adak, personal use permits were not requested.

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

^c Confidentiality rules prohibit the release of this information.

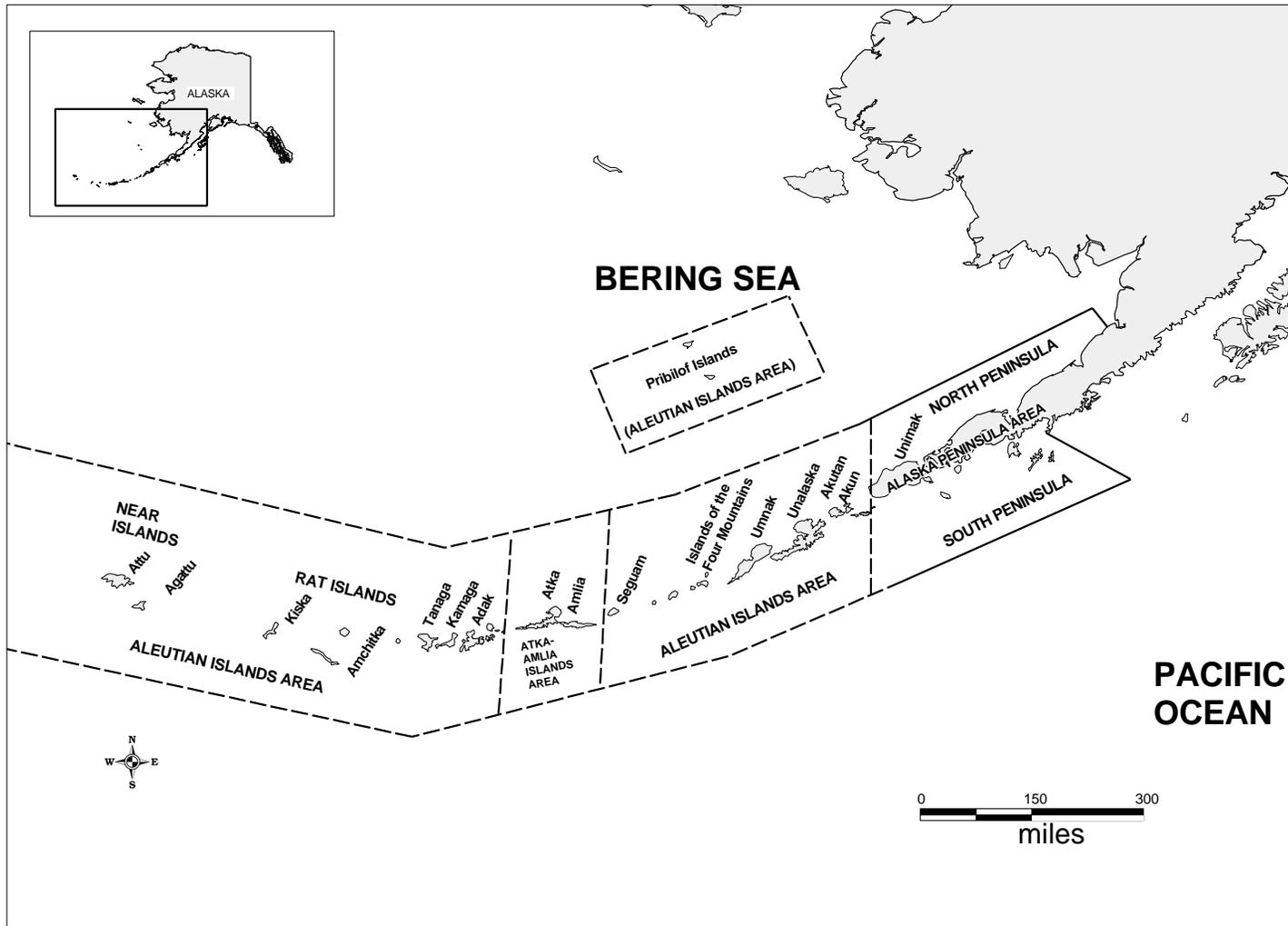


Figure 1. Map of the Aleutian Islands, Atka-Amlia Islands, and Alaska Peninsula Management Areas.

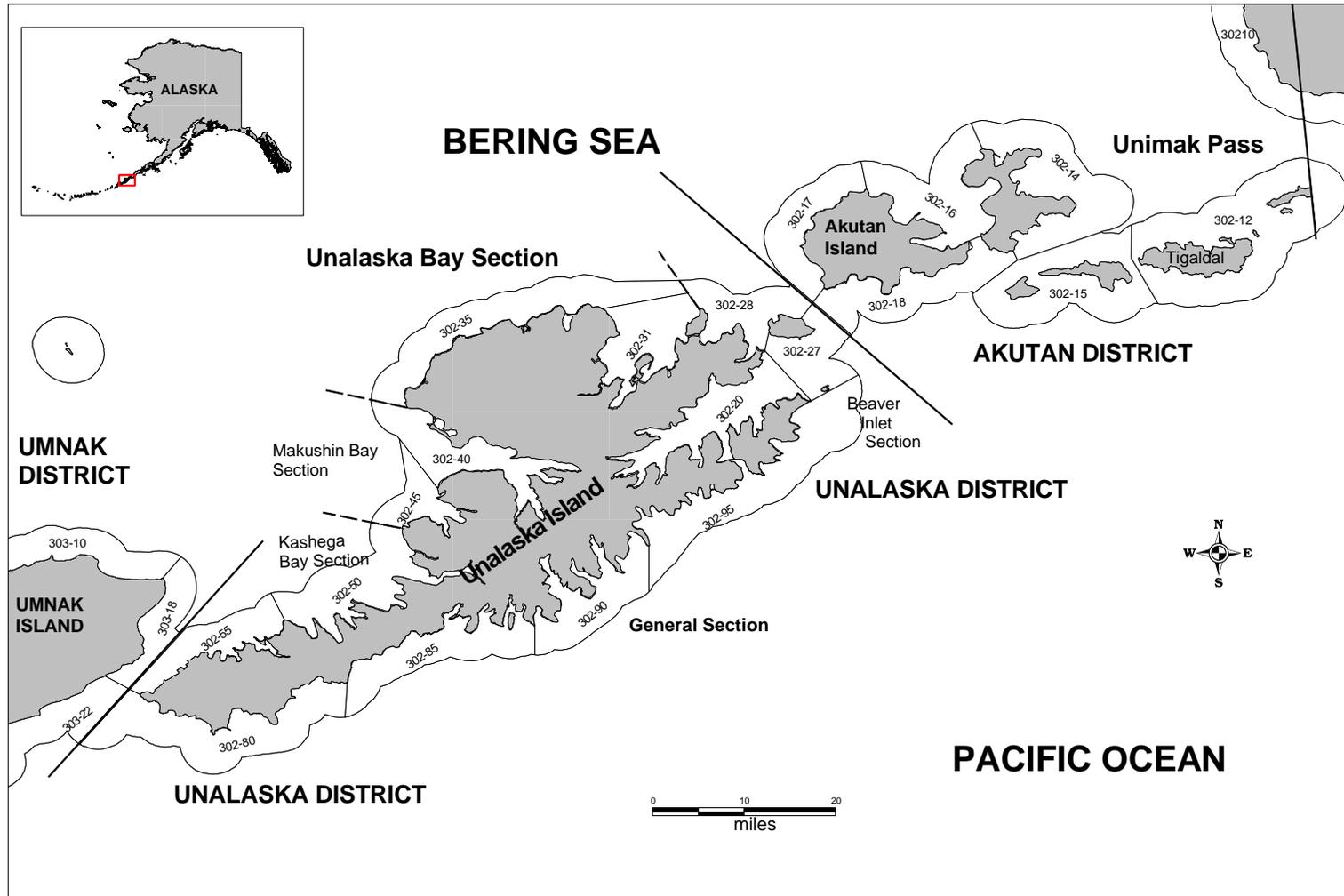


Figure 2. Map of the Aleutian Islands Management Area from Unimak Island to Umnak Island with the statistical salmon fishing areas shown

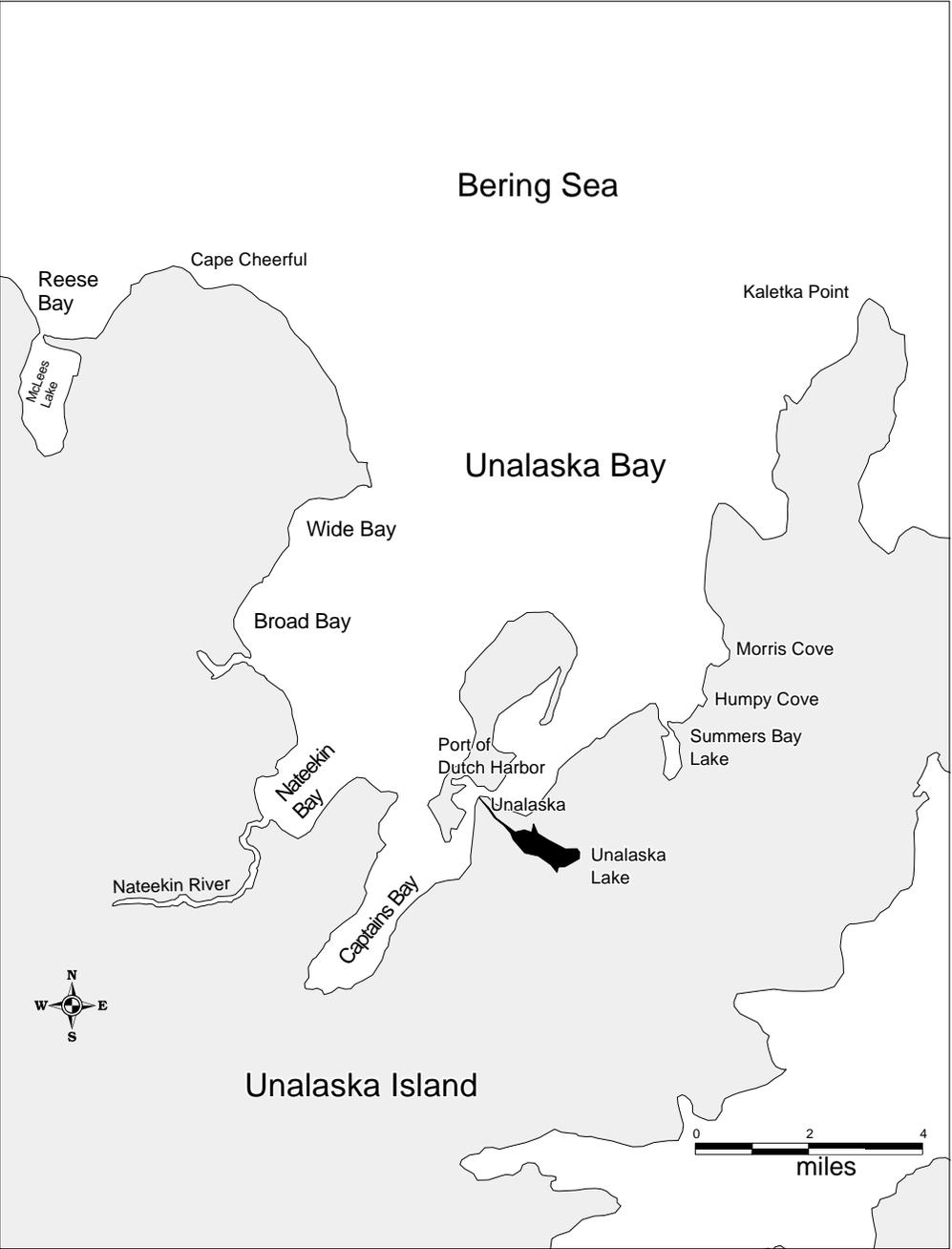


Figure 3. Unalaska Bay Vicinity.

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