

ALEUTIAN ISLANDS AND ATKA-AMLIA ISLANDS MANAGEMENT AREAS
SALMON MANAGEMENT REPORT, 1998

By

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INTRODUCTION

This report presents salmon harvest and limited escapement information (where available) for the Aleutian Islands and Atka-Amlia Islands Management Areas.

The Aleutian Islands Management Area consists of the Aleutian Islands west of Unimak Island, excluding the Atka-Amlia Islands Management Area which encompass all Aleutian Islands waters located between Seguam Pass (172°50'.00 W. long.) and Atka Pass (175°23'.00 W. long.) (Figure 1; ADF&G, 1998a).

The Aleutian Islands Area is part of salmon permit Area M. Seining is the only legal method to harvest salmon in the Aleutian Islands Area. Legal harvest methods for Atka-Amlia Islands, Area F, includes both set gillnet gear and purse seines. To date, only set gillnet fishermen have reported harvest from the Atka-Amlia Islands Area (Holmes 1998).

The Aleutian Islands produce runs of sockeye, coho, pink, and chum salmon. However, only pink salmon have proven to be of commercial importance during most years (Table 1). There have been years when substantial harvests of sockeye and chum salmon have been taken in the Aleutian Islands Area, however some of the catches of these species may be taken in locations where fish destined for distant waters are available. This was the case in 1984 when approximately 64,000 sockeye and 10,000 chum salmon were harvested in Unimak Pass, a major migration area. Also, harvest data in the early years of the fisheries may not be accurate in some cases. Unalaska, Umnak, Unimak, Atka, Amlia, Adak, and Attu Islands produce commercial sized pink salmon runs during some years. Tanaga, Kanaga, and Kiska Islands all have at least one important pink salmon stream.

Nearly all commercial fishing effort has been confined to Unalaska Island (Figure 2), except for occasional fishing on Umnak Island during the 1950s and early 1960s, and a 1963 Attu Island expedition. The Atka-Amlia Islands fishery has yet to be a commercial success. Only a few pink salmon were landed at Atka Island in 1992, 1993, and 1994 (Table 2; Holmes 1995).

Aleutian Islands pink salmon runs tend to be much larger during even years (Holmes 1998). Often there is no commercial harvest during odd years. The largest Aleutian pink salmon catch, of nearly 2.6 million fish, was taken in Unalaska Island waters in 1980 (Table 1). Approximately 2.0 million fish were caught in Makushin Bay that year (Figure 2). The Nateekin River in Unalaska Bay historically produced large runs during both odd and even years, but has not produced a strong odd year run since 1981. Pink salmon runs are often unstable, producing very high returns and then collapsing for no apparent reason; stream scouring from violent storms and variations in marine survival are suspected factors.

Historical salmon harvests for the Aleutian Islands and Atka-Amlia Islands Areas are reported in Tables 1 and 2. The average Aleutian Islands Area even year pink salmon catch during 1984-1994 catch is about 700,000 fish; the odd year average pink harvest for 1985-1995 is approximately 1,000 fish (Table 1). There have been no reported commercial salmon catches in the Atka-Amlia Islands Area since 1994 (Table 2).

Only two emergency orders were issued for the Aleutian Islands Area and none for the Atka-Amlia Islands Area during 1998 (Table 3). Both emergency orders provided commercial time to test run strength, after (July 18) the regulations specified that fishing would only be allowed during periods established by emergency order. Initial liberal fishing periods were needed to entice fishermen and processors.

Subsistence salmon fishing is very important to Aleutian Islands communities. However, due to the remoteness of most villages, subsistence salmon fishing permits are only required in the Unalaska and Adak Districts (ADF&G, 1998b). Unalaska and Adak are the only communities where subsistence information (from returned permits) is compiled on an annual basis. In 1994, personnel from the Alaska Department of Fish and Game (ADF&G) Subsistence Division surveyed 28 of 29 Atka households and reported a subsistence harvest of 2,504 salmon (Table 4). No subsistence surveys have been conducted at Atka since 1994. From 1994 through 1998, the number of subsistence salmon permits issued for Unalaska Island averaged 185, and 206 permits were issued in 1998 (Table 5). The Unalaska Island estimated subsistence harvest averaged 4,732 salmon from 1994 through 1998 and a estimated harvest of 4,807 salmon occurred in 1998 (Table 5). The majority of the subsistence harvest was sockeye (3,317) and most of those (2,866) came from Reese Bay (Table 6). Due to the large population increase in recent years, Unalaska subsistence use is reaching the level where additional restrictions have been implemented to protect the stocks. Efforts are being made to better monitor Unalaska Island subsistence salmon fisheries. The subsistence fishing effort at Adak declined during 1993-96 when the U.S. Navy phased out operations but has rebounded somewhat during 1997-98 with an increase in the civilian population (Table 7).

Unalaska Island salmon escapement data are incomplete for most years due to poor weather, remoteness, suitable aircraft is often unavailable, and the high cost of aircraft charters. Escapement information is nearly nonexistent for the balance of the Aleutian Islands Area. The only comprehensive escapement and distribution study of the entire Aleutian chain was done by ADF&G in 1982 (Holmes 1997). Limited studies have also been conducted on Amchitka Island in 1977 by the United States Energy Research and Development Administration (Seimenstad 1977; Valdez 1977), the ADF&G did repetitive surveys on some Atka and Amlia Islands streams in 1992, 1993, and 1994 (Holmes 1995) and the U.S. Fish and Wildlife Service (USFWS) did additional abundance and distribution research at Adak Island in 1993 and 1994 (Palmer 1995).

Aleutian Island pink salmon time of entry varies considerably between years and between streams; it is much more variable than on the South Peninsula. Pink salmon often begin to enter streams in late July and may trickle in throughout September at both Atka and Unalaska Islands during large runs (usually even years). Observations by USFWS indicate a similar pattern at Adak Island.

Aleutian pink and sockeye salmon (within a given age group) tend to be of smaller size and weight than those of Alaska Peninsula stocks (Shaul and Berceci 1994).

Markets often limit commercial salmon harvests in the Aleutian Islands. This has been true for both Unalaska Island and the Atka-Amlia Island fisheries. At Unalaska markets only develop if pink salmon abundance warrants tenders traveling from King Cove or a small floating processor

moves into the area. Some fish (usually sockeye salmon) were salted by local fishermen prior to 1979. Processors located at Unalaska-Dutch Harbor or Akutan, purchased most of the salmon from 1979 through 1988. Due to the decline in demand for frozen pink salmon during recent years, most of the harvest has been transported to the Alaska Peninsula for canning. The lack of a market for pink salmon has also been the major factor limiting harvest in the Atka-Amliia Islands Area.

REGULATION CHANGES

In 1998, the Alaska Board of Fisheries (BOF) implemented the following regulation changes;

Commercial Fisheries

1. The waters of Humpback Bay (part of Makushin Bay) are closed waters to commercial salmon fishing.
2. The closed waters in the vicinity of the town of Unalaska are expanded to include the area between Agnes Beach and the Unalaska-Dutch Harbor bridge.

Subsistence Fisheries

1. Subsistence fishing was reinstated again in the Adak District and replaced Adak-Kagalaska Islands personal use fishing. The number of salmon allowed is the same as in the Unalaska District. Closed waters are all fresh water, and all salt water within 100 yards of a stream terminus. A subsistence salmon fishing permit is required in the Adak District.
2. The closed waters in the vicinity of the town of Unalaska are redefined to include the waters between the "Bishop's House" at 530 52.64' N. lat., 1660 32.30' W. long. to a point on Amaknak Island at 530 52.82' N. lat., 1660 32.13' W. long., and north of a line from a point south of Agnes Beach at 530 52.28' N. lat., 1660 32.68' W. long., to a point at 530 52.35' N. lat., 1660 32.95' W. long. on Amaknak Island.
3. Within Unalaska Bay south of a line from the northern tip of Cape Cheerful to the northern tip of Kalekta Point, excluding the above closed waters in the vicinity of the town of Unalaska, all waters are closed to subsistence salmon fishing within 250 yards of an anadromous stream. Subsistence salmon is not allowed in fresh water in Unalaska Bay.
4. The waters of McLees Lake, including its tributaries and outlet stream are closed to subsistence salmon fishing. During July 1 through July 9, salmon may not be taken within 500 yards of the McLees Lake outlet terminus. These regulations were implemented by ADF&G for approximately 12 years prior to BOF action.

5. In the Unalaska District, a subsistence permit holder must be physically present at the fishing site during the operation of net gear.

1998 SEASON

The commercial salmon fishery was managed by the ADF&G staff in Cold Bay. During 1995 and 1996 a ADF&G salmon biologist was stationed in Dutch Harbor to assist in managing the local fishery and monitor escapements. This individual also assisted with the Dutch Harbor food and bait herring fishery, monitored the commercial fisheries at Atka and Unalaska Islands, the Unalaska sport and subsistence fisheries and addressed habitat issues. Budget reductions forced the closure of this program. Salmon subsistence permits were issued and harvest reports compiled in Dutch Harbor. Harvest data was summarized by the salmon staff, based in Kodiak during the winter.

Commercial Harvest

The Aleutian Islands remain the State's smallest and least productive salmon fishery. For the fourth year in a row there were no commercial landings at Unalaska or Atka Islands.

The commercial season opened as provided for in the regulation book at both Unalaska and Atka-Amlia Islands; however, commercial fishing effort did not occur.

Subsistence and Personal Use Harvest

Subsistence salmon harvests are very important to the communities of Unalaska and Atka. (Tables 4,5, and 6; Veltre and Veltre, 1982, 1983, L. Scarborough, ADF&G Anchorage, personal communication).

Salmon personal use information for the former military community of Adak is presented in Table 7. In 1998, subsistence fishing replaced personal use fishing in the Adak District after Adak became a civilian community. Sockeye salmon are the most desired species in Aleutian Island communities.

The number of sockeye salmon caught and the fishing effort at Unalaska have increased considerably in recent years (Table 5). The estimated sockeye salmon harvest increased by 61% to 4,484 fish, from 1994 to 1995. The number of permits increased from 150 in 1994 to 189 in 1996 but the subsistence harvest of sockeye salmon fell nearly 75% in 1996, to a five year low of 1,107 fish. Most of the sockeye salmon catch in recent years came from Reese Bay (McLees Lake) (Table 6). Over 85% (968 fish) of the 1996 subsistence sockeye salmon catch were taken at McLees Lake. In 1997, 221 subsistence permits were issued and 163 were returned (reported). The total 1997 Unalaska Island sockeye salmon harvest was estimated to be 4,192 fish of which 3,945 (94%) were caught at Reese Bay. In 1998, 206 subsistence permits were

issued and 161 people reported their catches by returning the permits. The total 1998 Unalaska Island sockeye salmon harvest was estimated to be 3,317 fish of which 2,866 (86%) were caught at Reese Bay. Most of the subsistence fishing effort that usually targeted Unalaska Lake sockeye salmon shifted to Reese Bay due to subsistence restrictions implemented in 1997 by emergency order and by BOF adopted regulation in 1998.

The estimated subsistence harvest of sockeye salmon (36 fish) from Unalaska Lake was only a small portion of the Island's overall subsistence catch (less than 1 % of the total island catch) in 1997 (Table 6). In 1998, the Unalaska Lake subsistence harvest was estimated to be 53 fish (1.6% of the island harvest). Unalaska Lake sockeye are extremely important to local residents who cannot travel to other places to catch sockeye salmon.

In 1998, an estimated 731 coho salmon were harvested under subsistence regulations on Unalaska Island (Table 5), of which 553 (75.6%) were harvested in Broad Bay (Table 6).

Nateekin Bay was the major 1998 pink salmon subsistence harvest location on Unalaska Island with an estimated catch of 349 fish (48.8% of the island total). Chinook and chum salmon are of minor abundance in Unalaska Island waters and account for a very small portion of the subsistence harvest (Table 5).

In the past, Atka subsistence data was collected by interviews conducted by ADF&G Subsistence Division; due to budget reductions, the last survey was in 1994 (Table 4). The subsistence harvest levels and fishing methods have remained relatively stable at the small (pop. 80-90) community of Atka; with a catch of 400-500 sockeye and a total harvest of around 2,500 salmon. Annual harvest varies slightly with changes in population and salmon run strength.

A total of 13 Adak District subsistence salmon permits were issued in 1998, and 10 permits were returned (reported). The total estimated Adak subsistence salmon harvest was 399 sockeye and 26 pink salmon. All of the sockeye salmon were harvested along Kagalaska Island while the pink salmon were caught on the north end of Adak Island. The 1998 harvest was larger than any of the personal use harvests during 1993-97 after the U.S. Navy began moving out of Adak but was generally lower than the personal use catches during 1988-92 (Table 7).

Additional subsistence information may be found in the "Annual Summary of the Commercial Salmon Fishery and a Report on Salmon Subsistence Fisheries for the Alaska Peninsula Area and Aleutian Islands, 1998" by Shaul and Dinnocenzo (*in press*).

Escapements

The 1998 Unalaska Lake sockeye salmon escapement was estimated to be 800 fish based on a August 11 aerial survey (Table 8). This is at the upper end of the 400 to 800 escapement goal and is the highest Unalaska Lake sockeye salmon escapement on record (however escapement monitoring has been limited and sporadic). A total of 300 sockeye salmon were estimated to be in Unalaska Lake during an aerial survey during September 11, these fish were likely additional to those observed on August 11.

The McLees Lake system was surveyed on August 11 and the sockeye salmon escapement was estimated at 3,500 fish. The eagle predation on spawning sockeye salmon was unusually high. The reason that the intensity of eagle predation was so great on McLees Lake sockeye salmon on August 11 appeared to be that pink salmon spawning on Unalaska Island had not yet begun, nor were sockeye salmon observed spawning in streams other than McLees Lake tributaries. Eagles also seemed to be abundant in general at Unalaska. The eagles probably ate a substantial number of salmon before they spawned.

Pink salmon escapements were generally poor for an even year cycle run. Exceptions were the streams in Kismaliuk, Aspid, and Summer Bays and the stream at the head of Pumicestone Bay where pink salmon escapements were strong (Table 8).

Some Umnak Island streams were surveyed on August 11 (Table 8). Pink salmon were just entering a couple of the creeks and it appears that Umnak pink salmon runs are later than those on Unalaska Island. Unalaska and Umnak Islands were the only islands in the Aleutians, west of Unimak Island (part of the Alaska Peninsula Area), where salmon escapement data was collected in 1998.

Kuroshima Oil Spill

In November 1997, the freighter KUROSHIMA ran aground in front of the outlet of Summer Bay Lake in Unalaska Bay. It was months before the vessel was removed and some bunker fuel leaked from the ship and entered Summer Bay Lake.

1999 OUTLOOK

Since Aleutian Islands pink salmon runs are usually weaker in odd numbered years and market conditions remain poor, no commercial salmon harvest is anticipated in either the Aleutian Islands or the Atka-Amlia Islands Areas in 1999.

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Table 1. Aleutian Islands Area (excluding Atka and Amlia Islands)
commercial salmon harvests in numbers of fish by year, 1911-98.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1911	0	9,300	0	0	0	9,300
1912-15	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
1928-50						
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	6	208	135	644,121	3,029	647,499
1971	0	333	2	45,141	58	45,507
1972	0	69	1	2,784	6	2,860
1973	0	0	0	2,042	0	2,042
1974	0	0	0	0	0	0
1975	0	19,402	0	659	1,881	21,942
1976-77	0	0	0	0	0	0
1978	0	1,829	0	38,109	6	39,944
1979	0	12,206	0	539,393	242	551,841

-Continued-

Table 1. (page 2 of 2)

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1980	2	9,226	0	2,597,502	4,874	2,611,565
1981	16	5,430	188	302,786	6,553	314,973
1982	0	2,672	28	1,447,818	6,148	1,456,666
1983	0	4,405	0	2,005	11,361	17,771
1984	26	67,163	1,923	2,309,665	33,025	2,410,802
1985	40	2,750	0	90	14,175	17,055
1986	11	7,702	60	42,621	38,819	89,213
1987	0	75	0	0	0	75
1988	0	4,315	7	183,109	450	187,881
1989	0	8,248	0	6,700	0	14,948
1990	0	12,435	74	282,823	1,038	296,372
1991	0	796	0	0	0	796
1992	0	3,082	0	312,072	1,230	316,348
1993	0	0	0	0	0	0
1994	47	6	0	858,787	617	859,457
1995-98	0	0	0	0	0	0
<hr/>						
Average						
1988-1997	5	2,888	8	164,349	334	167,584
<hr/>						
Even Year Average Pink Catch, 1984-1994				664,846		
Odd Year Average Pink Catch, 1985-1995				1,132		

Table 2. Atka-Amlia Islands Area commercial salmon catches (in numbers of fish), 1992-1998.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum	Total
1992 ^a	13	41	0	231	42	7,972	308	8,553
1993 ^b	9	10	0	24	4	145	563	736
1994 ^{b,c}	6	7	0	16	0	896	0	912
1995 ^{b,c}	8	0	0	0	0	0	0	0
1996 ^{b,c}	10	0	0	0	0	0	0	0
1997 ^c	7	0	0	0	0	0	0	0
1998 ^d	0	0	0	0	0	0	0	0
Average	8	8	0	39	7	1,288	124	1,458

^a Processor never paid fishermen.

^b No local market for salmon, catch retained for personal halibut bait and subsistence.

^c Small salmon return, no market, fishermen fished for halibut.

^d No one applied for permits.

Table 3. Emergency orders for Aleutian Islands Area, 1998.

EMERGENCY ORDER NO. 4-FS-M-CB-55-98

EFFECTIVE DATE: August 3, 1998

EXPLANATION:

This emergency order establishes a 8:00 a.m. August 3 until 9:00 p.m. August 7 commercial salmon fishing period in the Aleutian Islands Area.

JUSTIFICATION:

A strong pink salmon run is anticipated in the Aleutian Islands. However, fishing effort is anticipated to be light due to poor market conditions and large Alaska Peninsula pink salmon runs. Fishing time is needed for fishermen to test run strength and harvest Aleutian Island Area pink salmon.

EMERGENCY ORDER NO: 4-FS-M-CB-61-98

EFFECTIVE DATE: 9:00 p.m. August 7, 1998

EXPLANATION:

This emergency order extends commercial fishing time one week until 9:00 p.m. August 14 in the Aleutian Islands Area.

JUSTIFICATION:

Strong pink salmon runs are anticipated in the Aleutians. Due to poor market conditions, no commercial fishing effort has taken place. More fishing time is needed to encourage fishermen and processors to test run strength and to harvest the resource.

Table 4. Estimated subsistence salmon harvest by gear type for the community of Atka, 1994.^{a,b}

Species	Subsistence Methods					Total
	Set Gillnet	Beach Seine	Removed From Commercial Catch	Rod and Reel	Other	
Chinook	1	0	0	11	0	12
Sockeye	242	0	0 ^c	149	40	431
Coho	303	0	0	264	0	567
Pink	715	0	200 ^d	472	0	1,387
Chum	59	0	0 ^c	28	20	107
Total	1,320	0	200	924	60	2,504

^a Twenty eight out of twenty nine households surveyed for 1994, no survey conducted since.

^b Data gathered by Lisa Scarbrough, ADF&G, Subsistence Division, and Moses Dirks, USF&WS.

^c One household removed 100 sockeye and 75 chum salmon from commercial catch at Unalaska.

^d Additional 30 pink salmon removed from the commercial catch, area unspecified.

Table 5. Estimated subsistence salmon harvest^a for Unalaska Island, 1985-1998.

Year	Permits Issued	Chinook	Sockeye	Coho	Pink	Chum	Total
UNALASKA LOCAL COMMUNITY RESIDENTS							
1985	65	0	897	208	1,293	20	2,483
1986	121	0	3,449	847	2,468	375	7,139
1987	81	0	1,097	378	1,780	151	3,406
1988	74	1	962	390	2,626	83	4,062
1989	70	2	1,064	470	1,292	36	2,864
1990	94	4	2,357	681	1,428	100	4,570
1991	89	0	1,294	666	1,075	45	3,080
1992	144	7	2,739	587	1,723	11	5,067
1993	137	17	2,831	697	587	136	4,268
1994	150	1	2,759	774	1,053	48	4,635
1995	159	23	4,446	480	784	23	5,756
1996	189	5	1,107	1,033	492	49	2,686
1997	218	8	4,192	864	440	110	5,614
1998	206	4	3,317	731	729	26	4,807
1994-98 AVG.	184.4	6.2	3,164.2	776.4	699.6	51.2	4,699.6
UNALASKA-ALEUTIAN ISLANDS NON-LOCAL COMMUNITY RESIDENTS							
1985	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0
1988	3	2	4	0	1	0	7
1989	4	0	48	0	0	0	48
1990	2	0	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	2	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	1	0	38	4	7	0	49
1996	0	0	0	0	0	0	0
1997	3	0	0	0	114	0	114
1998	0	0	0	0	0	0	0
1994-98 AVG.	0.8	0	7.6	0.8	24.2	0	32.6
TOTAL UNALASKA							
1985	65	0	897	208	1,293	20	2,418
1986	121	0	3,449	847	2,468	375	7,139
1987	81	0	1,097	378	1,780	151	3,406
1988	77	3	966	390	2,627	83	4,069
1989	74	2	1,112	470	1,292	36	2,912
1990	94	4	2,357	681	1,428	100	4,570
1991	89	0	1,294	666	1,075	45	3,080
1992	144	7	2,739	587	1,723	11	5,067
1993	139	17	2,831	697	587	136	4,268
1994	150	1	2,759	774	1,053	48	4,635
1995	160	23	4,484	484	791	23	5,805
1996	189	5	1,107	1,033	492	49	2,686
1997	221	8	4,192	864	554	110	5,728
1998	206	4	3,317	731	729	26	4,807
1994-98 AVG.	185.2	8.2	3,171.8	777.2	723.8	51.2	4,732.2

^a Harvest estimated from average catch from returned permits.

Table 6. Estimated Unalaska Island subsistence salmon harvests by major harvest location, in numbers of fish (figures in parenthesis are estimated number of permit holders fishing).

Year	SOCKEYE		COHO			PINK	
	Reese Bay	Front Beach/ Agnes Beach	Front Beach/ Agnes Beach	Nateekin Bay	Broad Bay	Nateekin Bay	Broad Bay
1985	(23) 669						
1986	(54) 2,824						
1987	(20) 806						
1988	(21) 792						
1989	(12) 436						
1990	(12) 1,421						
1991	(35) 1,180						
1992	(59) 2,479						
1993	(37) 1,425						
1994	(60) 2,298						
1995	(82) 3,985						
1996	(45) 968						
1997	(121) 3,945	(8) 36	(8) 12	(28) 148	(31) 536	(28) 456	(31) 53
1998	(89) 2,845	(4) 53	(4) 72	(18) 61	(34) 553	(18) 349	(34) 82

Table 7. Adak- Kagalaska Islands estimated personal use salmon catches, 1988-1997 and 1998 Adak District subsistence harvest.

Year	Permits Issued	Permits Returned	Percent Returned	Estimated Catch					
				Chinook	Sockeye	Coho	Pink	Chum	Total
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 ^c									
Average	29	20	67	0	317	11	35	0	363
1998									
Subsistence	13	10	77	0	399	0	25	0	424

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

^b Estimated catch based on 61% returns of 18 personal use permits issued.

^c Average includes 1994.

Table 8. Salmon escapement survey counts in the Aleutian Area, 1998.

Stream	Date	Observer	Location	Visi- bility	Chinook	Sockeye	Species Coho	Pink	Chum	Observer Remarks
Station Bay, W. Arm, 302-1104	08/11/1998	Arnie Shaul	Stream Mouth Bay	G	0	0	0	500	0	ALL SCHOOLED IN LOWER END.
Station Bay, East, 302-1106	08/11/1998	Arnie Shaul	Stream Mouth Bay	G	0	0	0	1,200		ALL SCHOOLED IN LOWER END.
Chernofski Hbr. Cr., 302-1108	08/11/1998	Arnie Shaul	Stream Mouth Bay	G	0	0	0	1,200	0	ALL IN LOWER END.
Aspid Bay, 302-1201	08/11/1998	Arnie Shaul	Stream Mouth Bay	G G G	0 0 0	0 0 0	0 0 0	900 0 5,000	0 0 0	
Kismaliuk Bay, West, 302-1203	08/11/1998	Arnie Shaul	Stream Mouth Bay	G	0	0	0	6,000	0	ALL IN LOWER END.
Kismaliuk Bay, East, 302-1205	08/11/1998	Arnie Shaul	Stream Mouth Bay	G	0	0	0	13,000	0	ALL IN LOWER END.
Kashoga Lake System, 302-1207	08/11/1998	Arnie Shaul	Stream Mouth Bay	G G	0 0	10,200 0	0 0	4,000 2,000	0 0	PINKS SCHOOLED IN OUTLET. 7,200 REDS NEARLY ALL SCHOOLED IN EAST LAKE, 3,000 REDS SCHOOLED IN WEST LAKE. EXCELLENT VIS. IN EAST LAKE, BUT POOR IN W. LAKE DUE TO PATCHY FOG.
Pumicestone Bay, 302-1211	08/11/1998	Arnie Shaul	Stream Mouth Bay	E	0	0	0	17,000	0	LOOKS GOOD IN LWR END.

-Continued-

Table 8. (page 2 of 6)

Stream	Date	Observer	Location	Visi- bility	Chinook	Sockeye	Species Coho	Pink	Clum	Observer Remarks
Skan Bay #2, 302-1306	08/11/1998	Arnie Shaul	Stream	E	0	0	0	3,500	0	VERY POOR ESCAPEMENT FOR THIS DATE.
			Mouth Bay	G	0	0	0	0	0	
Humpback Bay #1, 302-1416	08/11/1998	Arnie Shaul	Stream	E	0	0	0	14,000	0	ALL IN LOWER END. VERY POOR ESCAPEMENT FOR THIS DATE.
			Mouth Bay	G	0	0	0	2,000	0	
	09/11/1998	Dan Connolly	Stream		0	0	0	41,000	0	GOOD VISIBILITY.
			Mouth Bay		0	0	0	0	0	
Humpback Bay #2, 302-1417	08/11/1998	Arnie Shaul	Stream	G	0	0	0	1,000	0	
			Mouth Bay	G	0	0	0	500	0	
	09/11/1998	Dan Connolly	Stream	G	0	0	0	9,800	0	GOOD VISIBILITY.
			Mouth Bay		0	0	0	0	0	
Mclees Lake, 302-1507	08/11/1998	Arnie Shaul	Stream	G	0	3,500	0	0	0	2,100 SPAWNING IN E. FK. 600 SPAWNING IN W. FK. WITH 400 SCHOOLED OFF OF EACH. SEVERE EAGLE PREDATION ON SPAWNING GROUNDS.
			Mouth Bay							
	09/11/1998	Dan Connolly	Stream	F	0	0	0	0	0	5800 SALMON ALL IN SPAWNING TRIBS. UNABLE TO DIFFERENTIATE SPECIES. AT LEAST 10-15% WERE SOCKEYE.
			Mouth Bay		0	0	0	0	0	
Unnamed, Kalekta Bay, 302-3001	09/13/1998	Ted Spencer	Stream Mouth Bay	G	0	0	0	1,000	0	FISH IN GRAVEL AREAS. MOST OF THE STREAM HAS A SANDY BOTTOM.

-Continued-

Table 8. (page 3 of 6)

Stream	Date	Observer	Location	Visi- bility	Chinook	Sockeye	Species Coho	Pink	Chum	Observer Remarks
Unnamed, Wide Bay, 302-4001	09/06/1998	Ted Spencer	Stream Mouth Bay	E	0	0	0	1,450	0	NEEDS TO BE ADDED TO ANADROMOUS FISH CATALOGUE.
Makushin Valley, 302-4003	08/11/1998	Arnie Shaul	Stream Mouth Bay	G	0	0	0	300	0	UNUSUALLY GOOD CONDITIONS FOR THIS STREAM. VERY POOR ESCAPEMENT.
	09/11/1998	Dan Connolly	Stream Mouth Bay	G	0	0	0	370	0	FAIR VISIBILITY, EXCEPT IN DEEP HOLES WHERE VISIBILITY WAS POOR.
	10/14/1998	Ted Spencer	Stream Mouth Bay	G	0	0	211	61	0	SURVEYED LOWER HALF OF VALLEY. ADDITIONAL 39 PINK SALMON CARCASSES.
Nateekin River, 302-4005	08/11/1998	Arnie Shaul	Stream Mouth Bay	E	0	0	0	11,700	0	VERY POOR FOR THIS DATE.
	09/11/1998	Dan Connolly	Stream Mouth Bay	G	0	0	0	21,300	0	
	10/17/1998	Ted Spencer	Stream Mouth Bay	G	0	0	250	0	0	1,283 PINK CARCASSES AND ADDITIONAL 2 COHO MORTALITIES.
	11/12/1998	Ted Spencer	Stream Mouth Bay	E	0	0	414	0	0	310 ABOVE SPORTFISH MARKER.
Captain's Bay Stream, 302-4006	08/11/1998	Arnie Shaul	Stream Mouth Bay	E	0	0	0	500	0	
				G	0	0	0	300	0	

-Continued-

Table 8. (page 4 of 6)

Stream	Date	Observer	Location	Visi- bility	Chinook	Sockeye	Species Coho	Pink	Chum	Observer Remarks
	09/11/1998	Dan Connolly	Stream Mouth Bay	G	0	0	0	3,200	0	
					0	0	0	0	0	
					0	0	0	0	0	
	10/03/1998	Ted Spencer	Stream Mouth Bay	G	0	0	0	0	0	OBSERVED 10 COHO IN VERY SMALL STREAM TO NORTH OF MAIN STREAM.
Unalaska Village, 302-4008	08/11/1998	Amie Shaul	Stream Mouth Bay	G	0	800	0	5,000	0	A FEW REDS STARTING TO SPAWN, BUT MOST STILL SCHOOLED IN THE CHURCH HOLE.
	08/17/1998	Bouwens	Stream Mouth Bay	G	0	0	0	491	0	FOOT SURVEY - MOUTH & STREAM ONLY.
				G	0	2	0	100	0	
	09/07/1998	Ted Spencer	Stream Mouth Bay	G	0	4	0	3,032	0	ONLY SURVEYED STREAM ABOVE LAKE. REDS AND 1,763 PINKS WERE ABOVE BRIDGE.
				G	0	0	0	0	0	
	09/11/1998	Dan Connolly	Stream Mouth Bay	G	0	300	0	5,600	0	DID NOT SURVEY ABOVE LAKE.
					0	0	0	0	0	
					0	0	0	0	0	
Summer Bay, 302-4009	08/06/1998	Bouwens	Stream Mouth Bay	G	0	4	0	0	0	FOOT SURVEY OF INLET STREAM ONLY. 20-30 DOLLY VARDEN.
	08/11/1998	Amie Shaul	Stream Mouth Bay	E	0	0	0	300	0	ONLY SURVEYED OUTLET.
				G	0	0	0	3,000	0	
	08/13/1998	Bouwens	Stream Mouth Bay	G	0	233	0	418	0	FOOT SURVEY - INLET STREAM ONLY. MORE FISH IN LAKE ON WEST SIDE, NO COUNT.
	08/25/1998	Bouwens	Stream Mouth Bay	G	0	191	0	2,050	0	FOOT SURVEY - INLET STREAM ONLY.

-Continued-

Table 8. (page 5 of 6)

Stream	Date	Observer	Location	Visi- bility	Chinook	Sockeye	Specics Coho	Pink	Chum	Observer Remarks
	10/26/1998	Ted Spencer	Stream Mouth Bay	G	0	13	1	0	0	314 DEAD PINKS. SURVEYED TRIBUTOR ABOVE LAKE ONLY.
	11/22/1998	George Pappas	Stream Mouth Bay	G	0	0	0	0	0	SURVEYED TRIBUTORY ABOVE LAKE ONLY.
	11/25/1998	George Pappas	Stream Mouth Bay	E	0	0	0	0	0	SURVEYED TRIBUTORY ABOVE LAKE ONLY.
Humpy Cove(sum. Bay), 302-4010										
	08/11/1998	Arnie Shaul	Stream Mouth Bay	G G	0 0	0 0	0 0	1,600 4,000	0 0	
	08/18/1998	Bouwens	Stream Mouth Bay	G G	0 0	0 0	0 0	997 4,094	0 0	FOOT SURVEY - MOUTH & STREAM ONLY.
	09/04/1998	Ted Spencer	Stream Mouth Bay	G F	0 0	0 0	0 0	8,025 0	0 0	1,665 WERE ABOVE BRIDGE.
Morse Cove, 302-4011										
	08/10/1998	Bouwens	Stream Mouth Bay	G G	0 0	0 0	0 0	0 0	0 0	FOOT SURVEY-ONLY MOUTH & STREAM SURVEYED.
	08/17/1998	Bouwens	Stream Mouth Bay	G G	0 0	7 0	0 0	0 0	0 0	FOOT SURVEY - ONLY MOUTH & STREAM.
Unnamed Stream, 302-5010										
	10/05/1998	Ted Spencer	Stream Mouth Bay	G	0	0	2	0	0	18 DOLLY VARDEN.

-Continued-

Table 8. (page 6 of 6)

Stream	Date	Observer	Location	Visi- bility	Chinook	Sockeye	Species Coho	Pink	Chum	Observer Remarks
	10/16/1998	Ted Spencer	Stream Mouth Bay	G	0	0	5	0	0	ADDITIONAL 7 COHO MORTALS. 23 DOLLY YARDEN.
Cape Kigunak East, 303-1029	08/11/1998	Amie Shaul	Stream Mouth Bay	E	0	0	0	0	0	LOCATED BETWEEN CAPE KIGUNAK AND C. ASLIK. DECENT LOOKING STREAM. LISTED AS 303-10-13500 IN ANAD. STRM. CAT.
Geysir Bight, 303-1035	08/11/1998	Amie Shaul	Stream Mouth Bay	E	0	0	0	0	0	GOOD LOOKING STREAM, NO FISH. LISTED AS 303-10-13500 IN ANAD. STRM. CAT.
Amos Cove, 303-2112	08/11/1998	Amie Shaul	Stream Mouth Bay	E G	0 0	0 0	0 0	0 200	0 0	GOOD LOOKING STREAM. THERE ARE SEVERAL OTHER GOOD LOOKING STREAMS IN VICINITY WHICH WERE NOT SURVEYED. 303-21-11200 IN ANAD. STRM. CAT.
2.25mi S. 302-2050, 303-2230	08/11/1998	Amie Shaul	Stream Mouth Bay	E G	0 0	0 0	0 0	300 0	0 0	GOOD LOOKING STREAM. LISTED AS 303-22-10300 IN ANADROMOUS STREAM CATALOGUE.
Russian Bay Crk., 303-2250	08/11/1998	Amie Shaul	Stream Mouth Bay	E G	0 0	0 0	0 0	0 0	0 0	NICE LOOKING STREAM. NO FISH.
Thumb Point South, 303-2260	08/11/1998	Amie Shaul	Stream Mouth Bay	F G	0 0	0 0	0 0	0 0	0 0	LAKE LOOKS LIKE IT CAN PRODUCE A FEW HUNDRED REDS. LISTED AS 303-22-10600 IN ANAD. STREAM CATALOGUE.

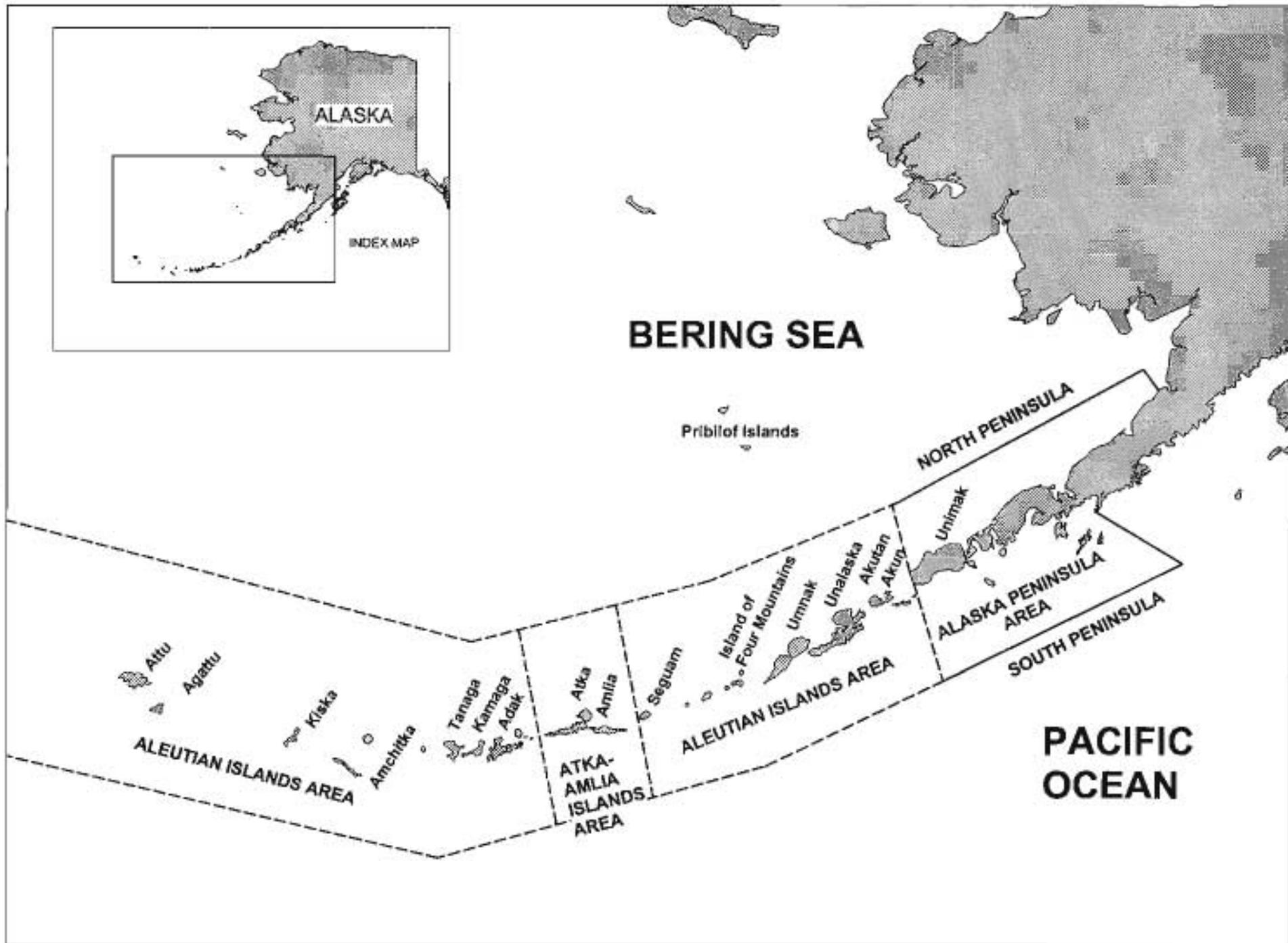


Figure 1. Map of the Aleutain Islands, Atka-Amlia Islands, and Alaska Peninsula Areas.

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