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ALASKA DEPARTMENT OF FISH AND GAME  
DIVISION OF COMMERCIAL FISHERIES

BRISTOL BAY AREA

Preliminary Review of the  
Bristol Bay Salmon Fishery  
-1983-

BRISTOL BAY DATA REPORT NO. 84-5

Annual Salmon Management Report  
to the Board of Fisheries

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## INTRODUCTION

The Bristol Bay area, which includes all coastal waters and inland drainages east of a line from Cape Newenham to Cape Menshikof, is the largest sockeye salmon producing region in the world (Figure 1). In addition to substantial returns of other salmon species, the Togiak herring fishery has developed into the State's largest sac roe fishery.

The area wide salmon catch during the 1983 season amounted to 39.1 million fish of all species, breaking the previous largest of 28.1 million in 1980, and was equal to 1/4 billion pounds valued at over \$145 million to participating fishermen. Sockeye salmon completely dominated the commercial harvest, accounting for 37.3 million of the harvest, and breaking the previous high catch of 25.6 million set in 1981. The Bristol Bay harvest in 1983 accounted for 31% of the Statewide commercial catch, and helped to make 1983 the largest Alaska salmon catch since records were first maintained in the late 1800's.

The management objective for all districts in Bristol Bay is the achievement of escapement goals for major salmon species while at the same time allowing for the orderly harvest of all fish surplus to spawning requirements. Escapement objectives were met in 1983 in all river systems where spawning requirements have been defined.

Runs of all species, except coho salmon, equaled or exceeded preseason expectations and were highlighted by an all time off-peak year sockeye salmon return of 45.8 million fish. The exceptional sockeye return in 1983 was the third largest ever recorded for Bristol Bay, with only peak-year total returns in 1965 (53.1 million) and 1980 (62.5 million) exhibiting larger runs.

## 1983 COMMERCIAL SALMON FISHERY

All five species of Pacific salmon are found in Bristol Bay and are the focus of commercial, subsistence and sport fisheries. The sockeye salmon run is the most significant, but there are also important runs of king, chum, coho, and in even-years, pink salmon. Numerically, based on 20-year data (1963-82), the average annual commercial catches are as follows: 10.1 million sockeye salmon; 121,000 kings, 755,000 chums; 119,000 cohos; and 1.8 million even-year pink salmon (Table 3). Subsistence catches average approximately 150,000 salmon per year, mostly sockeye, while sport fisheries operate to varying degrees of intensity on all species of salmon, with most effort directed toward king and coho salmon stocks.

Bristol Bay is divided into five major and discrete fishing districts that are related to major river systems entering the Bay (Figure 1). Consequently, they are also the main migratory routes through which salmon must pass to ascend these rivers. The fishing districts are intentionally confined to areas as near as practical to the river mouths in order to minimize the interception of salmon destined for other, adjacent river systems. Specific river stock management is highly desirable and the physical geography of Bristol Bay is advantageous in this regard. Some districts are further divided into sections in order to accommodate local geographical features where several stocks may be involved, and to provide more management flexibility in controlling the exploitation rate on individual river system stocks.

Contrary to recent previous years when early season fishing time was reduced as fishermen and processors negotiated salmon prices, 1983 saw early price agreements and fishing schedules were not adversely affected.

## Sockeye Salmon

The sockeye salmon run progressed evenly and pretty much on schedule through the South Unimak/Shumagin cape fisheries and past the Department's test fishing site at Port Moller. Preseason run timing based on: (1) Adak-Cold Bay air temperatures indicated a July 2 peak for Naknek-Kvichak and July 3-4 for Nushagak district; (2) South Unimak/Shumagin sockeye catches indicated a July 2 peak; while (3) the Department Port Moller test boat basically confirmed the "slightly early" run timing. Actual run timing in the Naknek-Kvichak and Nushagak districts peaked on July 2-3 (Table 4). In addition to run timing information, the Port Moller test fish program gives indications of run size (magnitude) and age composition of the sockeye run one week in advance of the inshore Bristol Bay fishery. Sampling of the sockeye run as it passed Port Moller indicated an age composition nearly identical to the forecast. However, run magnitude based on gill net sampling indicated a run considerably stronger than the forecast of 27 million fish.

It became readily apparent that a very strong sockeye run was in progress as the fish began entering the commercial fishing districts in the Bay (Table 4). Also apparent was the "holding pattern" of sockeye in virtually all districts. Fish movement and run timing was near normal as fish moved into Bristol Bay from the Bering Sea, but there was considerable delay in fish movement through the commercial districts and into the river systems. The delay resulted in very high initial harvest rates (up to 95%) and virtually no fish escapement past the fishery. The unusual holding pattern was thought to be a result of warmer than normal water temperatures, and especially to the very low discharge of water volume due to lack of snow-pack and low spring rainfall. River discharge in most rivers was well below normal, and fish migration patterns were abnormal once the fish

did enter the rivers, as evidenced by: (1) flushing of fish back past our inriver test fish sites, which in turn affected the reliability of escapement estimates produced; and (2) "wandering" of fish once in the rivers, which slowed upriver migration and contributed to lower efficiency of river escapement estimates by aerial surveys.

Management of the Naknek-Kvichak district was complicated by the holding pattern of fish in the district and the resulting high harvest rates, as well as an exceptionally strong sockeye run to Kvichak River compared with weaker Naknek River run strength. As the sockeye run progressed, it became necessary to close the entire district for 14 hours on July 6-7 to increase the Naknek River rate of escapement and to obtain additional fish from the later Kvichak River run segment. A second 52 hour closure of Naknek River section was required July 9-11 to obtain escapement needs.

The Naknek-Kvichak district sockeye run totaled 25.9 million, almost double the preseason forecast of 13.2 million (Tables 1 and 2). The commercial catch of 21.3 million broke the previous highest of 21.0 million set in 1938. Escapement goals were achieved in both the Kvichak and Naknek Rivers.

The Egegik district sockeye run totaled 7.5 million fish, 221% of the preseason forecast of 3.4 million, and broke the previous largest run to this district by over 2 million fish (Tables 1 and 2). Heavy daily catches of 300 to 400,000 were sustained for 12 straight days between June 27 and July 8, and by season-end had amounted to 6.7 million, breaking the old catch record of 4.4 million set in 1981 (Table 4). The Egegik River escapement goal was achieved for the seventh consecutive year.

The Ugashik district also saw a record return of sockeye salmon. The total run of 4.3 million just broke the previous highest of 4.2 million in 1980, while the commercial catch of 3.3 million broke the recent record of 2.1 million set in 1981 (Table 2). The run peaked on July 8-12 and by season-end the catch and escapement was almost identical to the pre-season forecast of 4.2 million (Table 1 and 2). The Ugashik River escapement goal was achieved for the fifth consecutive year.

In the Nushagak district the total sockeye salmon return of 7.2 million fish was the sixth consecutive year of outstanding returns, and was 125% of the preseason forecast to this district (Tables 1 and 2). Escapement goals were achieved in all of this district's river systems, although a midseason 4-day closure from June 29 through July 2 was required to move "holding fish" out of the fishing district and into the various river systems. The Department's district test fish program was instrumental this season in defining fish movements within the upper district and in obtaining escapement goals.

Since 1978, the Nushagak district sockeye catch has averaged 5.0 million fish, well above the long-term average of 943,000 for 1958-77. In 1983 the final sockeye catch of 5.3 million and escapement of 1.9 million equalled a total run of 7.2 million, the fourth largest run in the past 46 years (Table 2). Escapement objectives were achieved in all river systems of this district.

In the Togiak district the 1983 total sockeye return of 824,000 was the fourth largest on record, while the 584,000 harvest was the third largest to the record catch of 640,000 set in 1981 (Table 2). Sockeye escapements were achieved in all river systems and totaled over 240,000 (Table 2).



### King Salmon

Over 201,000 king salmon were commercially harvested in 1983, and the total harvest exceeded 200,000 for the fourth time in the past five years (Table 3). The Nushagak district, which normally accounts for over 70% of the Bristol Bay total return, produced a catch of 139,000 and escapement of 162,000, while the Togiak district contributed a catch of 38,000 and escapement of 22,000 (Table 3). Record or near record escapements were achieved in all districts.

Although total escapement estimates are not available for the smaller king salmon producing districts in the Bay, it is reasonable to assume that total runs have averaged well over 300,000 kings in recent years (1976-83) throughout Bristol Bay. In 1983 approximately 425,000 kings returned to all river systems (catch and estimated escapement combined), and the outlook for the next several years is promising due to very good brood escapements in recent years.

### Chum Salmon

The chum salmon harvest in Bristol Bay was 1.5 million and was the fourth largest harvest in the history of the fishery. All-time record catches were established at: Egegik - 124,000, previous best was 87,000 in 1981; Ugashik - 108,000, previous best was 50,000 in 1982; and Togiak - 323,000, previous high was 300,000 in 1980 (Table 3). Nushagak district produced an above average harvest of 586,000 chums.

Escapements were strong to adequate in all districts where chum escapement surveys are conducted:

- Naknek-Kvichak - adequate
- Egegik - very strong
- Ugashik - very strong
- Nushagak - 164,000
- Togiak - 165,000

### Pink Salmon

Bristol Bay exhibits a very dominant even-year pink salmon run. The commercial harvest of less than 1,000 pinks and minimal escapement in 1983 is typical for odd-year pink returns.

### Coho Salmon

The commercial coho salmon harvest of 117,000 was equal to the 20-year long-term average, but was a disappointment after four consecutive years of strong returns (Table 3). The actual return exhibited late run timing, but the overall strength was well under that seen in past years, with possible exception of Togiak.

Nushagak district's catch of 81,000 was below the recent 10-year average of 104,000, while the escapement of about 80,000 (sonar and aerial survey estimate) was deemed adequate. At Togiak the coho run did not materialize as expected, and this district was closed to fishing on Sept. 5 to obtain additional escapement. The Togiak district did not reopen to fishing, as intensified aerial surveillance and analysis of weir counts from a new coho project initiated at Togiak this season, failed to detect adequate coho run strength. The eventual district coho escapement was estimated at 10-15,000 with a commercial harvest of only 6,000 (Table 3).

Coho catches in Naknek-Kvichak, Egegik and Ugashik districts were all well below recent year catches (Table 3).

### 1983 SALMON PRODUCTION AND PROCESSING SUMMARY

Even though 1983 saw record daily salmon catches, very little, if any, harvest was lost due to processor limits or suspensions. The sockeye run held in most districts, and the "holding pattern" allowed very high harvest rates, all of which kept the escapement from rapidly outdistancing the catch.

Post season analysis showed that the daily sustained processing production in 1983 amounted to 2.1 million fish for 16 days from June 28 through July 13, compared with 1.2 million fish in 1982 and 1.6 million in 1981 (Table 4). The heavy daily production in 1983 resulted in a dramatic increase of canned production over previous years; however, the rapid shift in emphasis from canning to frozen and fresh markets continued and is shown below since 1978 by comparing the percent of total Bristol Bay production by product type:

<u>Type Production</u>	<u>Percent of Total Production</u>					
	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Canned	63	36	34	38	15	21
Frozen/Cured	12	32	27	36	61	53
Fresh Export	9	18	18	13	21	14
Brine/RSW Export	16	14	21	13	3	12

### 1983 SUBSISTENCE SALMON FISHERY

Records of subsistence salmon harvests have been maintained since a permit system was first instituted in the early 1960's. Subsistence catches of all species in Bristol Bay normally range between 150-200,000 fish. Preliminary results of the 1983 permit returns to date indicates a new record total subsistence harvest of 219,000 fish by an estimated 805 permit holders (Table 6).

## DISTRICT BOUNDARIES AND MARKERS

The Department has continued to upgrade the buoy and marker system in Bristol Bay since bond money was made available after the 1979 fishing season. The original allocation of \$350,000 was funded to improve methods of marking and defining fishing district boundaries in Bristol Bay.

A major purchase of new can buoys, radar reflectors, anchors and chain, buoy strobe lights and range lights was completed prior to the 1980 fishing season, but due to the large expected record run the traditional fishing areas were enlarged to help achieve high initial exploitation rates, and the new buoys and lights were not put into use.

The 1981 fishing season was the first major test of the newly purchased equipment, and based on their successful use, additional range and buoy lights and anchors and accessories were purchased and put into use in 1982. A new experimental lighted steel tower/range marker was also purchased for the 1982 season, as well as solar panels to charge storage batteries which power the range lights. Both systems proved to be feasible. New steel towers were purchased in 1983 to replace most wooden tripod markers now in use in the Naknek-Kvichak and Egegik districts. Additional tower units and solar panels will be purchased in 1984 for Naknek-Kvichak, Egegik, Ugashik and Nushagak districts, and will be installed as time and funds allow.

For the 1984 fishing season we plan the following buoy and marker program improvements:

- (1) Naknek-Kvichak District - A set of range lights and solar panels will be installed on both east and west sides of the outer district line, and new steel lighted towers with solar panels will be installed on each side of upper Kvichak River boundary. Lighted buoys will be placed as in prior years.

- (2) Egegik District - Range lights and solar panels will be placed on both north and south boundaries of the district and new, unlighted steel towers will be placed on either side of the upper Egegik River boundary. Lighted buoys will be placed as in prior years.
- (3) Ugashik District - Additional lighted buoys will be placed along the outer district boundary line, and other range lights and towers are planned and will be installed as funds allow.
- (4) Nushagak District - The Etolin Point wooden tripod tower will be replaced with a new steel tower with range lights powered by solar panels. The added height will allow the beach range light to be moved to the upper bluff edge, which will make both range lights visible for greater distances. Additional preparatory work will continue for new steel lighted towers at Nichols Spit and Nichols Hills, but these planned units will not be operational until 1985. Lighted buoys will be placed as in prior years.

## SALMON MANAGEMENT OUTLOOK FOR 1984

The inshore sockeye salmon forecast for 1984 of 31.1 million will allow a potential commercial harvest of 13.4 to 17.4 million after escapement requirements are met (Table 7). The combined sockeye escapement goals for all eleven of the major river systems in Bristol Bay total 17.8 million, if a peak year escapement goal of 14.0 million is the management strategy selected for Kvichak River. If peak year escapement requirements for Kvichak River are deferred until 1985, the 1984 goal will equal 6.0 million fish, the standard escapement requirement in the year preceding the peak cycle year, and the potential Kvichak district catch will increase by 4.0 million fish to 13.0 million.

The projected sockeye harvest of 13.4 to 17.4 million fish (21.4 million if Kvichak River escapement goal is set at 6.0 million) will surpass the average catch of 8.8 million for the previous comparable four cycle year average. Large numbers of sockeye will be in excess of escapement requirements in all districts. Ultimate fishing time allowed in the various districts will depend upon actual run strength; however, early season fishing time will be necessary to gauge district run strength and to allow the processors and fishermen adequate break in time for an efficient operation.

King and chum salmon returns are expected to be strong as well, producing a total harvest in excess of 200,000 and 1.0 million, respectively.

The even-year pink salmon run to Nushagak district in 1984 is expected to produce 0.9 to 2.6 million fish from the 1982 brood year escapement of 1.7 million. Close scrutiny of the pink run will be necessary because of large differences in the past between forecasts and actual returns.

The coho salmon return to Bristol Bay in 1984 should be stronger than 1983, when 117,000 fish were commercially harvested. The 1984 harvest should equal or exceed the previous 10 year average harvest of 200,000.

# BRISTOL BAY AREA

REVISED 1978  
DRAWN BY S. ELBNER

Figure 1. Bristol Bay Area  
Commercial Fisheries  
Salmon Management  
Districts.

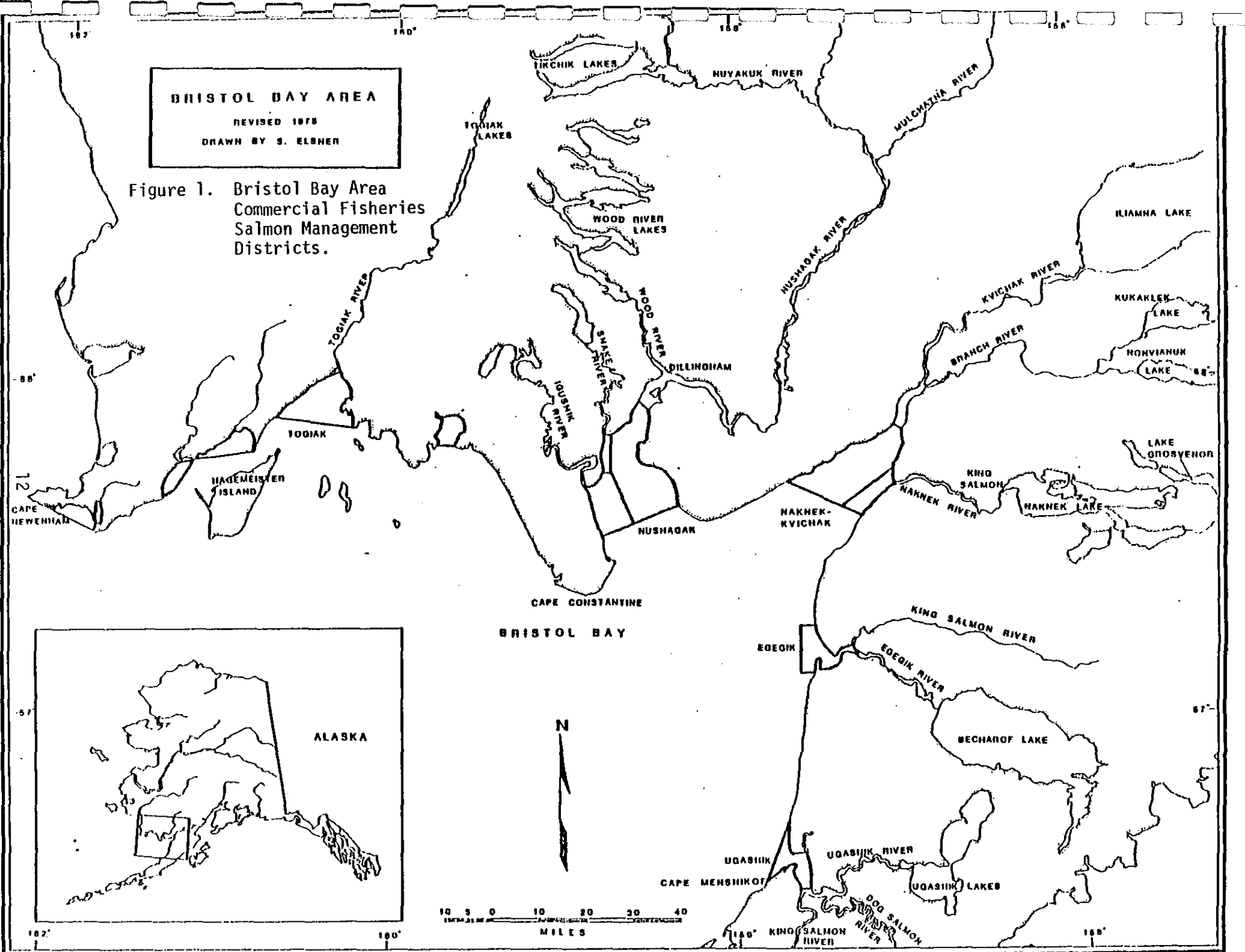


Table 1. Sockeye salmon forecast, escapement goals, and projected potential commercial harvest by river system, Bristol Bay, 1983.

District/System	Sockeye Salmon (in 1,000's of Fish)		
	Forecast of Total Run	Escapement Goal	Projected Harvest
<u>NAKNEK-KVICHAK DISTRICT:</u>			
Kvichak River	9,738	2,000	7,738
Branch River	468	185	283
Naknek River	2,944	800	2,144
Total	13,150	2,985	10,165
<u>EGEGIK DISTRICT</u>			
	3,415	600	2,815
<u>UGASHIK DISTRICT</u>			
	4,177	500	3,677
<u>NUSHAGAK DISTRICT:</u>			
Wood River	3,256	1,000	2,256
Igushik River	640	200	440
Nuyakuk River	1,586	300	1,213
Nushagak-Mulchatna	263	50	213
Snake River	41	40	1
Total	5,786	1,590	4,196
<u>TOGIAK DISTRICT</u>			
	589	100	489
TOTAL BRISTOL BAY <sup>1/</sup>	27,117	5,775	21,342

<sup>1/</sup> Sockeye salmon of several minor age classes would be expected to contribute an additional 1-2 percent to the total run.



Table 2. Sockeye salmon inshore catch and escapement by river system, Bristol Bay, 1983.<sup>1/</sup>

District and River System	Sockeye Salmon (in 1,000's of Fish)			Percent of Forecast
	Catch	Escapement	Total Run	
<u>NAKNEK-KVICHAK DISTRICT:</u>				
Kvichak River	16,352	3,570	19,922	
Branch River	456	96	552	
Naknek River	4,506	888	5,394	
Total	23,314	4,554	25,868	(197%)
<u>EGEGIK DISTRICT</u>				
	6,740	792	7,532	(221%)
<u>UGASHIK DISTRICT</u>				
	3,342	1,001	4,343	(104%)
<u>NUSHAGAK DISTRICT:</u>				
Wood River	3,186	1,361	4,547	
Igushik River	497	180	677	
Nuyakuk River	1,253	319	1,572	
Nushagak-Mulchatna River	351	85	436	
Snake River	9	3	12	
Total	5,296	1,948	7,244	(125%)
<u>TOGIAL DISTRICT</u>				
	584	240	824	(140%)
<u>TOTAL BRISTOL BAY</u>				
	37,276	8,535	45,811	(169%)

<sup>1/</sup> Catches are preliminary while escapements are final; all figures rounded to nearest thousand.

Comparison of historical sockeye salmon catch and escapement, Bristol Bay, (in thousands):

Period	Sockeye Salmon (in 1,000's of Fish)		
	Catch	Escapement	Total Run
1963-72 (10-Yr. Average)	8,850	9,805	18,655
1973-82 (10-Yr. Average)	11,350	12,456	23,806
1963-82 (20-Yr. Average)	10,100	11,130	21,230
1973	761	1,683	2,444
74	1,362	9,603	10,965
75	4,899	19,333	24,232
76	5,619	5,920	11,539
77	4,878	4,844	9,722
78	9,928	9,996	19,924
79	21,429	18,475	39,904
1980	23,762	38,727	62,489
81	25,603	8,872	34,475
82	15,146	7,104	22,250
83	37,276	8,535	45,811

Table 3. Commercial inshore salmon catch by district and species, Bristol Bay, 1983.<sup>1/</sup>

District	Catch by Species (in 1,000's of Fish)					Total
	Sockeye	King	Chum	Pink	Coho	
Naknek-Kvichak	21,314	10	326	+	+	21,650
Egegik	6,740	5	124	+	22	6,891
Ugashik	3,342	9	108	+	8	3,467
Nushagak	5,296	139	586	+	81	6,102
Togiak	584	38	323	+	6	951
Total	37,276	201	1,467	+	117	39,061

<sup>1/</sup> Preliminary.

Comparison of historical commercial salmon catch by species, Bristol Bay:

Period	Catch by Species (in 1,000's of Fish)					Total
	Sockeye	King	Chum	Pink <sup>1/</sup>	Coho	
1963-72 (10-Yr. Av.)	8,850	107	510	1,312	40	10,163
1973-82 (10-Yr. Av.)	11,350	135	1,001	2,226	199	13,800
1963-82 (20-Yr. Av.)	10,100	121	755	1,769	119	11,981
1973	761	44	684	+	57	1,547
74	1,362	46	286	940	44	2,678
75	4,899	30	325	+	46	5,301
76	5,619	96	1,329	1,037	27	8,108
77	4,878	131	1,598	5	107	6,718
78	9,928	192	1,158	5,153	94	16,525
79	21,429	213	907	4	294	22,847
1980	23,762	96	1,301	2,563	348	28,070
81	25,603	237	1,505	7	314	27,666
82	15,146	265	942	1,437	663	18,453
83	37,276	201	1,467	+	117	39,061

<sup>1/</sup> Includes only even-numbered years.

Table 4. Total commercial salmon catch by date and district, Bristol Bay, 1983.

Date	Salmon Catch by Day (in 1,000's of Fish)					Total Daily
	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	
June 22	86	35	14	-	5	140
23	172	54	6	51	6	289
24	-	-	-	-	4	4
25	-	-	-	26	+	26
26	-	15	+	512	-	527
27	-	477	70	-	4	551
28	1,804	340	1	554	18	2,717
29	996	437	72	-	19	1,524
30	2,038	405	166	-	22	2,631
July 1	1,055	456	140	-	20	1,671
2	1,611	384	1	-	4	2,000
3	1,783	398	127	874	-	3,182
4	1,272	416	245	507	23	2,463
5	1,521	447	154	625	42	2,789
6	1,488	445	1	387	40	2,361
7	828	481	28	406	31	1,774
8	890	335	437	338	16	2,016
9	844	198	74	158	3	1,277
10	1,034	305	447	179	-	1,965
11	978	236	402	248	40	1,904
12	678	201	419	255	57	1,610
13	943	161	182	350	59	1,695
14	489	188	81	136	60	954
15	67	87	56	64	45	319
16	218	68	54	54	20	414
17	-	17	92	62	26	197
18	275	40	43	46	60	464
Season Total	21,650	6,891	3,467	6,102	951	39,061

Table 5. Sockeye salmon escapements by river system compared with escapement ranges and goals, Bristol Bay, 1983.

River System	Escapement (in 1,000's of Fish)			
	Actual	Goal	Management Range	Actual/Goal
Kvichak	3,570	2,000	1,500-2,500	1.79
Branch	96	185	170- 200	0.52
Naknek	888	800	700- 900	1.11
Egegik	792	600	500- 700	1.32
Ugashik	1,001	500	400- 600	2.00
Wood	1,361	1,000	800-1,200	1.36
Igushik	180	200	150- 250	0.90
Nuyakuk	319	300	250- 350	1.06
Nushagak-Mulchatna	85	50	40- 60	1.70
Snake	3	40	30- 50	0.08
Togiak	192	100	80- 120	1.92
Total	8,535 <sup>1/</sup>	5,775	4,620-6,930	1.47

<sup>1/</sup> Total Bristol Bay escapement includes aerial survey estimates in several minor sockeye systems.

Table 6. Subsistence salmon catch by district and species, Bristol Bay, 1983.<sup>1/</sup>

District	Permits Issued	Catch by Species (in 1,000's of Fish)					Total
		Sockeye	King	Chum	Pink	Coho	
Naknek-Kvichak	386	132	1	+	+	1	134
Egegik	14	1	0	0	0	+	1
Ugashik	8	1	+	0	0	+	1
Nushagak	359	48	14	10	+	5	77
Togiak	38	1	1	+	3	1	6
Total	805	183	16	10	3	7	219

<sup>1/</sup> Preliminary.

Comparison of historical subsistence salmon catch by species, Bristol Bay:

Period	Permits	Catch by Species (in 1,000's of Fish)					Total
		Sockeye	King	Chum	Pink	Coho	
1963-82 Av.	688	119	8	10	6 <sup>1/</sup>	6	146
1973	452	70	7	8	+	3	88
74	607	150	10	13	6	7	186
75	701	175	9	8	1	9	201
76	716	121	8	9	4	4	146
77	738	128	7	9	+	7	151
78	773	128	8	16	13	4	169
79	829	117	10	8	1	7	142
1980	1,243	169	14	13	10	7	213
81	1,108	101	13	12	2	12	141
82	806	111	14	12	9	12	157
83	805	183	16	10	3	7	219

<sup>1/</sup> Includes only even-numbered years.

Table 7. Sockeye salmon forecast, escapement goals, and projected potential commercial harvest by river system, Bristol Bay, 1984.

District/System	Sockeye Salmon (in 1,000's of Fish)		
	Forecast of Total Run	Escapement Goal	Projected Harvest
<u>NAKNEK-KVICHAK DISTRICT:</u>			
Kvichak River	16,704	10,000-14,000 <sup>1/</sup>	2,704-6,704
Branch River	305	185	120
Naknek River	2,982	800	2,182
Total	19,991	10,985-14,985	5,006-9,006
<u>EGEGIK DISTRICT</u>			
	3,541	600 <sup>1/</sup>	2,941
<u>UGASHIK DISTRICT</u>			
	1,916	500 <sup>1/</sup>	1,416
<u>NUSHAGAK DISTRICT:</u>			
Wood River	2,666	1,000 <sup>1/</sup>	1,666
Igushik River	837	200 <sup>1/</sup>	637
Nuyakuk River	1,560	300 <sup>1/</sup>	1,260
Nushagak-Mulchatna	152	50	102
Snake River	17	40	-
Total	5,232	1,590	3,642
<u>TOGIAK DISTRICT</u>			
	453	100 <sup>1/</sup>	353
<u>TOTAL BRISTOL BAY<sup>2/</sup></u>			
	31,133	13,775-17,775	13,357-17,358

<sup>1/</sup> Escapement goals may be revised upward or downward with a consequent decrease or increase in projected harvest.

<sup>2/</sup> Sockeye salmon of several minor age classes would be expected to contribute an additional 1-2 percent to the total run.

**SUBJECT:** \_\_\_\_\_  
**DATE:** \_\_\_\_\_  
**TIME:** \_\_\_\_\_  
**LOCATION:** \_\_\_\_\_

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