ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT

-1969-

ARCTIC-YUKON-KUSKOKWIM AREA

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PREFACE

This report presents all available information concerning the management of commercial and subsistence fisheries in the Arctic-Yukon-Kuskokwim Area. Although data from many special research projects are included in this report, complete documentation of these projects and results will be presented in separate reports.

Data presented in this report supercedes information found in previous management reports. An attempt has been made to correct errors in previous reports and previously unrecorded data have been incorporated into this report which are so indicated by appropriate footnotes.

The report is organized into the following major sections:

1. Area Introduction. This is a general and brief description of the area, inhabitants, fishery resources, fisheries, and management practices.

2. Area Summary. This section summarizes current year data for the area and makes comparisons with previous years.

3. District Reports. There are several unique and separate fishing districts in the area and separate comprehensive reports are presented for each.

In order to facilitate use of this report, the tabular data has been separated into current year tables and appendix tables where annual comparisons are made. The text for each major section is followed by current year tables and then by appendix tables.

All 1969 commercial catch information is preliminary and subject to minor revision in subsequent reports.

The following is an explanation of how effort and catch per unit effort data, presented throughout this report, have been derived. Boat (or fisherman) hours is computed by arbitrarily assuming that if a fishing boat delivers in any 24 hour fishing period, it fished the entire period. If the period was more than 24 hours long, then the vessel is assumed to have fished the complete period for as many hours as was open to commercial fishing.

Catch per fisherman (or boat) hour is obtained by dividing the total fisherman hours into the catch for the corresponding period of time.

Total fishermen (or boats) is the total number of fishermen making deliveries, irrespectively of how many deliveries made or days fished during a particular "season". There are a number of fishermen who deliver only once or twice during the entire season.

"Total days Fished" is the total number of hours open for commercial fishing during the season divided by 24.

AREA INTRODUCTION

Boundaries

The Arctic-Yukon-Kuskokwim Area, as shown in Figure 1, is that portion of the State north of the Alaska Range and the Bristol Bay drainage. It includes all of the drainages of the Bering Sea and the Arctic Ocean from Cape Newenham to Demarcation Point at the Canadian border. In addition it includes the following Bering Sea Islands: Nunivak, St. Lawrence and St. Matthew. This is the largest management area in the State comprising over 400,000 square miles which is equal to the combined areas of California, Oregon, Washington and Idaho.

Fishery Resources

All five species of Pacific salmon are indigenous to the area with chum salmon being the most abundant. It is estimated that pink salmon, king salmon, coho salmon and red salmon follow in order of abundance.

Chum and pink salmon are found throughout the area although these species become relatively scarce north of the Kotzebue Sound drainage. Chum and pink salmon have been found as far north as Barrow and in the Beaufort Sea adjacent to the mouth of the Colville River. The largest spawning runs of king salmon occur from Cape Newenham to Norton Sound. King salmon are uncommon north of the Shaktoolik River in Norton Sound but have been found as far north as the Wulik River located about 100 miles northwest of Kotzebue. The greatest coho salmon runs occur in the Kuskokwim district and occurrence of this species has not been documented north of the Seward Peninsula. Red salmon are common in the Kuskokwim district and a small population exists in Salmon Lake on the Seward Peninsula. Occurrence of this species is very rare in the other districts.

Other species common to the freshwater and coastal marine habitats are: sheefish, several species of whitefish, arctic char, lake trout, rainbow trout, grayling, burbot, suckers, sculpins, blackfish, sticklebacks, lampreys, smelt, herring and several species of cods, flatfishes, crabs, shrimps and mollusks.

Water Quality

Water quality and spawning habitats in the area have been largely preserved in their original condition because pollution, logging and dam construction activities have been minimal or non-existent. It remains to be seen what impact the recent oil development activity will have on water quality and fishery resources in the area.

Commercial Fishing

The relatively recent development and expansion of the commercial salmon fishery has enabled many area residents to obtain a cash income when other employment is often sporadic or non-existent. Although commercial salmon fishing

in the area dates back to 1913, the only district having a sustained fishery prior to statehood (1959) was the Yukon district. In 1959 and 1960 Department biologists conducted reconnaissance surveys which indicated that harvestable surpluses of salmon were available in several districts that were not being commercially fished. The Department then liberalized certain regulations and encouraged processors to explore and develop new fishing grounds. As a result, sustained commercial salmon fisheries have been developed in the Kuskokwim, Norton Sound and Kotzebue districts. Even as late as 1968, a completely new salmon commercial fishery was initiated in Goodnews Bay, which is located just south of the Kuskokwim River mouth.

Nearly all of the area's commercial fishermen are resident Eskimos and Indians as are the vast majority of processing plant workers. Depending on the district being fished, commercial fishermen operate set and drift gill nets to capture salmon although a few fishwheels are still used in the upper Yukon River. Most fishermen operate small inexpensive skiffs powered with outboard motors. In the Yukon and Kuskokwim districts commercial fishing is prohibited outside the river mouths with the exception of two small marine fisheries in Kuskokwim Bay. In the Norton Sound and Kotzebue districts, all commercial salmon fishing is done in the coastal marine waters.

The decline in subsistence utilization of salmon has made it possible to increase commercial utilization in some districts during recent years. Also there has been an increased demand from Japanese markets forfresh frozen and cured A-Y-K salmon, especially chums. These trends are expected to continue, which should result in a moderate increase in production and economic value of the commercial fishery over the next few years.

Subsistence Utilization

There are approximately 30,000-40,000 Eskimo and Indian people in the area, the majority of which reside in excess of 110 small villages scattered along the coast and the major river systems. Nearly all of these native people are dependent to varying degrees on the fish and game resources for their livelihood.

Subsistence fishermen operate gill nets in the main rivers andto a lesser extent in the coastal marine waters to capture mainly salmon, whitefish and sheefish. Fishwheels take considerable number of salmon in the Yukon and Kuskokwim Rivers. Beach seines are occasionally used near the spawning grounds to catch schooling or spawning salmon as well as several other species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, sheefish, blackfish and burbot. Sheefish, pike, char, tomcod and king crab are frequently taken through the ice by handlines.

Compared to commercially caught fish there is very little wastage of any portion of the fish taken for subsistence purposes. Themajor portion of the fish is sun-dryed or smoked for later consumption while the head and viscera are usually fed to sled dogs.

The Department has conducted annual surveys of the important subsistence salmon fisheries since the early 1960's. During this period the recorded annual subsistence harvests have ranged between 580,000 to 850,000 salmon. The majority of salmon taken are chums. Subsistence harvest information prior to 1960 is incomplete or entirely lacking for many years, but there are some records indicating that in excess of two million salmon were taken in some years during the early 1900's.

About 1930, the airplane began replacing the sled dog as a mail carrier, and this started the gradual decline of the subsistence salmon fishery. This decline has been accelerated in the past few years as increased welfare payments and employment opportunities, including commercial fishing activities, have become available to the native people. Another very important factor tending to affect subsistence fishing effort during recent years is the increasing use of snow vehicles which may be replacing sled dogs at a faster rate than did the airplane. Since considerable numbers of salmon and other fish are fed to sled dogs, fewer fish will be required for subsistence purposes as the canine population declines. The decline in subsistence fishing is not related necessarily to fish abundance, but mainly reflects decreases in effort and dependence due to a changing way of life.

Management

The Division of Commercial Fisheries of the Alaska Department of Fish and Game is responsible for the management of commercial and subsistence fisheries in this vast area. There are three fishery management biologists assigned to the area which includes the area management biologist stationed in Anchorage and the two assistant management biologists, one stationed in Bethel and the other in Nome. A research biologist, presently conducting studies of Yukon River salmon, is also stationed in Anchorage. In addition, from twenty to thirty summer employees are hired each season to assist the permanent staff in conducting various management and research studies.

Operating expenses for the A-Y-K area management and research program from July 1, 1968 through June 30,1969 were approximately $160,000. Of this total, State and Federal funds provided $113,000 and $47,000 respectively.

Table 1 lists special studies undertaken during 1970 and includes a summary of objectives, procedures and results for each.

The main objective of the Department's program is to manage the commercial salmon fisheries on a sustained yield basis in addition to obtaining needed information to determine the potential for commercial fisheries on under-utilized species, such as herring, char and whitefish. Present commercial salmon fishing regulations are still relatively restrictive in order to insure that sufficient salmon are provided for subsistence fishery and spawning ground requirements.

The basic regulation that governs the commercial salmon harvest in all districts is the scheduled weekly fishing period. Commercial fishing is normally allowed for a total of from two to four days a week during the open season, which depends on the district and species involved. The fishing effort usually occurs during the entire run and not just during any particular segment of the run. Occasionally more or less fishing time is allowed, depending upon fishing conditions and the strength of the runs or spawning escapements as determined by special studies conducted by the Department.

Due to the vast size of the area and the silty characteristics of many streams, accurate estimates of the size of salmon runs and the spawning escapements are difficult to obtain. Fishery management is alsohampered by the relative lack of comparative catch and return information since all the fisheries were either initiated or expanded through regulation changes only since 1961 or 1962. The management problem is further compounded by having to provide sufficient escapement after commercial fishing for the important subsistence fishery as well as for spawning purposes.

For these reasons, the present commercial fishery is still considered to be somewhat experimental in nature. Ithas been a policy of the Alaska Department of Fish and Game to maintain recent levels of commercial utilization for a few years in order to establishdefinite trends in subsistence utilization and to obtain more information on the relationship between the salmon catch and return.

If there is no apparent change in run size, it is the Department's policy to increase commercial utilization once trends in declining subsistence utilization can be established. It should be pointed out that increases in commercial fishing efficiency are expected in some districts and may balance any immediate decline in subsistence utilization with the result that present regulations will be maintained or even made more restrictive.

A unique problem in the area is the so-called language barrier. Many of the older native people cannot read or speak English. Therefore the staff must use translators when conducting the many public meetings that are annually conducted throughout the area. In addition many special regulation notices are distributed in both the English and Eskimo language. While it may normally take only a half hour or so to conduct a public meeting or hearing in English, it usually takes two to three times that long when Eskimo translators are used. To assist in the education and information program, a weekly fishery program is broadcasted during the fishing season over radio station KICY in Nome. This broadcast reaches most area fishermen.

Table 1. Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1969.

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1. Quinhagak Salmon Tag and Recovery

   a. location: in Kuskokwim River adjacent to mouth of Kanektok River and the village of Quinhagak.

   b. objectives: determine the degree of intermingling of Kuskokwim River and Kanektok River salmon stocks in the Quinhagak subdistrict of the Kuskokwim district.

   c. results: a total of 450 kings were tagged and released in the Quinhagak fishery. Recoveries of these tagged fish indicated that the vast majority of fish were of Kanektok River origin.

2. Kuskokwim River Test Fishing

   a. location: Kweegooyuk on the east bank of the Kuskokwim River located 56 river miles below Bethel.

   b. objectives: determine run timing and relative abundance of king, red and chum salmon.

   c. results: a total of 831 king salmon were taken in test fishing set gill nets that were fished from May 30 through July 12. The king salmon run occurred over a time span of at least 45 days with the run peaking June 7-10. Above 25 percent of the king salmon run passed through the main commercial fishing areas after the closure of the commercial fishing season.

3. Yukon Test Fishing

   a. location: Flat Island in the south mouth of the Yukon River.

   b. objectives: determine run timing and relative abundance of king and summer chum salmon in the south mouth channel of the Yukon River.

   c. results: a total of 1,185 kings and 2,685 chum salmon were taken in the index set gill nets from June 4 through July 7. The seasonal catch per net hour of .72 king salmon was relatively low compared to previous seasons. Comparison of catches between this site, upriver

Table 1. (continued) Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1969.

commercial catches and at the Ohogamiut sites (see Yukon Tag and Recovery) indicated poor king salmon escapements were being realized and fishing time was reduced during the season.

4. Subsistence Salmon Fishery Surveys

   a. location: Kuskokwim River, Yukon River, Norton Sound, Port Clarence and Kotzebue Sound.

   b. objectives: determine subsistence utilization of salmon and fishing effort needed for formulating future management procedures and goals, also collect tag recoveries from high seas and Department tagging programs.

   c. results: a total of 1,282 fishing families were surveyed and their catches totalled 57,214 king salmon and 535,114 other salmon. A total of 2,500 river miles were travelled by boat and 1,500 air miles by single engine aircraft in the conduct of the survey.

5. Kogrukluk River Counting Tower

   a. location: mouth of the Kogrukluk River tributary to the Holitna River (Kuskokwim River system).

   b. objectives: determine daily and seasonal timing and magnitude of all species of salmon entering this stream; also it is planned to establish a weir at this site by 1971 in order to enumerate and sample salmon for age, sex and size information.

   c. results: a total of 3,456 king, 267 red, 7,376 chum and 15 pink salmon were estimated to have entered the river in 1969. Based on comparisons with previous aerial survey counts, the king salmon escapement was judged at least equal to previous seasons.

6. Kwiniuk River Counting Tower

   a. location: about five miles upstream from the mouth of the Kwiniuk River in Norton Sound located about 100 miles east of Nome

Table 1. (continued) Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1969.

b. objectives: determine daily and seasonal timing and magnitude of the chum and pink salmon runs, also to determine accuracy of aerial survey counts.

c. results: a total of 19,749 chum, 57,497 pink and 12 king salmon was counted past the tower in 1969. The pink salmon escapement represented a 16-fold increase over the parent year escapement of only 3,508 fish. A July 9 aerial survey estimate of spawning salmon represented 96.2 percent of the cumulative tower count for that date.

7. Yukon River Salmon Tag and Recovery (Federally funded project)

a. location: Ohogamiut (Mile 185) on the Yukon River.

b. objectives: determine population sizes and escapements of anadromous fish passing through the Ohogamiut area, also to develop special techniques and fishing gear.

c. results: of 537 king salmon captured, 293 were tagged and released. The recovery rate was 26.3 percent with over 93 percent of the recoveries coming from the Russian Mission-Holy Cross area. A Peterson population estimate was made based on limited data and indicated an escapement of 52,599 and total run of 160,564 king salmon, of 2,677 chum salmon captured 1,508 were tagged and released.

8. Lower Kuskokwim River Whitefish Investigations

a. location: Kuskokwim River drainage below Bethel.

b. objectives: determine whitefish movements, location of spawning areas and age, sex and size composition of various subsistence and test fishing catches.

c. results: a total of 1,039 whitefish, 119 sheefish, 129 pike and 58 burbot were tagged during the fall of 1969 in the Gallik River. Recoveries from these tagged fish are still being returned to the Bethel office.

Table 1. (continued) Summary of special projects conducted in the Arctic-Yukon-Kuskokwim area by the Division of Commercial Fisheries, 1969.

9. Kotzebue Sheefish Investigations

a. location: Upper Kobuk River and Selawik areas.

b. objectives: determine movements and distribution of Selawik and Kobuk River sheefish, also to obtain various life history information and estimation of spawning populations.

c. results: a total of 278 and 844 sheefish were tagged in the Upper Kobuk River and Selawik areas respectively. Results from tag and recovery studies made during recent years indicate that Kobuk River and Selawik River populations intermingle in wintering areas, especially in Selawik Lake. Considerable age and growth information, including age of maturity, has been obtained. The upper Kobuk spawning population was estimated at 5,930 fish.

10. Upper Yukon River Salmon Investigations

a. location: upper Yukon River from Ruby to Fort Yukon including Koyukuk and Tanana Rivers.

b. objectives: obtain accurate commercial catch information in addition to collecting age, sex and size data and tag recoveries; distribute information regarding licensing and regulations.

c. results: a temporary F.B. I, stationed in Fairbanks, made several trips during the season to important villages in the area. The commercial catch consisted of 985 kings, 95 cohos and 703 chums. A total of 115 king salmon were sampled for age, sex and size data.

11. Commercial Salmon Catch Sampling

a. various locations: in all districts

b. objectives: obtain age, sex and size information for commercially caught fish.

c. results: several thousand samples of all species were taken in 1969. this information has been tabulated and analyzed and will be presented in subsequent separate reports.

AREA SUMMARY, 1969

Commercial Fishery

Table 2 presents commercial catches by district for the 1969 season. The total area catch included 157,392 kings, 10,362 reds, 132,290 cohos, 88,248 pinks and 384,367 chums totalling 772,659 salmon. This was the largest harvest ever recorded for the area.

Appendix Table 1 compares the area commercial catches during the 1960-1969 period. The 1969 king, coho and chum salmon catches were the second largest recorded for the area.

Table 3 is a list of 1969 buyers and processors, showing associated processing information for each.

During 1969 approximately $983,000 was paid to fishermen for salmon deliveries. Wages earned by processing plant employees, tenderboat operators, etc. added another estimated $400,000 to the economy of the area.

Subsistence Fishery

In 1969 a minimum total of 57,214 kings and 535,114 other salmon, mostly chums, were taken by 1,282 fishing families. Table 2 shows subsistence catches by district for 1969 and Appendix Table 1 compares area catches made during the 1960-1969 period.

Table 2. Arctic-Yukon-Kuskokwim area total salmon catch by district, 1969.

	Kings	Reds	Cohos	Pinks	Chums	All species
Kuskokwim:						
Commercial	64,777	10,362	110,473	1,251	50,377	237,240
Subsistence	41,802		45,266		205,810[1/]	292,878
Subtotal	106,579	10,362	155,739	1,251	256,187	530,118
Yukon:						
Commercial	90,223		14,981		191,860	297,064
Subsistence	14,974				216,243[1/]	231,217
Subtotal	105,197		14,981		408,103	528,281
Norton Sound:						
Commercial	2,392		6,836	86,949	82,795	178,972
Subsistence	436		2,191	18,562	15,615	36,804
Subtotal	2,828		9,027	105,511	98,410	215,776
Port Clarence:						
Commercial						
Subsistence	2	128	27	538	922	1,617
Subtotal	2	128	27	538	922	1,617
Kotzebue:						
Commercial				48	59,335	59,383
Subsistence					29,812	29,812
Subtotal				48	89,147	89,195
Grand total for A-Y-K Area						
Commercial	157,392	10,362	132,290	88,248	384,367	772,659
Subsistence	57,214	128	47,484	19,100	468,402	592,328
Totals	214,606	10,490	179,774	107,348	852,769	1,364,987
Totals, 1968	201,319	6,572	177,014	185,815	666,172	1,236,892
Totals, 1967	243,328	2,722	73,100	47,335	706,830	1,073,315
Totals, 1966	184,268	2,137	51,100	28,740	640,273	906,518

1/ Mostly chum salmon but includes some red, coho and pink salmon.

Table 3. 1969 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Fish per case	Average price paid to fishermen (estimated)	District
Kotzebue Sound Area Fishery Co-op Box 270 Kotzebue, Alaska	Fresh & salted salmon		.15 per lb.	Kotzebue
	Fresh sheefish, char		.15 per lb.	
Peninsula Fisheries Co. 1402 K Street Anchorage, Alaska	Frozen salmon			
	Kings		.25 per lb.	Norton Sound
	Cohos		.14 per lb.	
	Pinks		.06 per lb.	
	Chums		.10 per lb.	
Northern Commercial Co. Nome, Alaska Unalakleet, Alaska	Fresh & frozen salmon			
	Kings		.30 per lb.	Norton Sound
	Pinks		.06 per lb.	
	Chums		.10 per lb.	
U.S. Mercantile Co. Nome, Alaska	Fresh & frozen salmon			
	Pinks		1.50 each	Norton Sound
	Chums		1.00 each	
Bering Sea Fisheries Co-op Elim, Alaska	Salted salmon			
	Kings		3.61 each	Norton Sound
	Pinks		.21 each	
	Chums		.56 each	
Mountain Village Fish Co. Mountain Village, Alaska	Canned 1/2# flats			
	Kings	3.3	4.50 each	Yukon
	Chums	11.6	.30 each	
	Hard salt kings		4.50 each	
	Salmon Roe			

Table 3. (continued) 1969 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Fish per case	Average price paid to fishermen (estimated)	District
Point Adams Packing Co. Hammond, Oregon	Canned 1# and 1/2# ovals Canned 1/2# flats Kings	3.4	.18-3/4 per lb.	Yukon
Paul Beard Tanana, Alaska	Fresh king salmon		.25 per lb.	Yukon
Weisner Trading Co. Rampart, Alaska	Canned 1# talls Kings	4.2	.22 per lb.	Yukon
Bering Sea Fisheries, Inc. 611 Lowman Bldg. Seattle, Washington	Frozen salmon (in round) and canned (1# talls) Kings Chums Cohos Salmon roe	3.5 12.5 13.0	.22 per lb. .50 each .55 each	Yukon
Arnold Akers Chuloonawick, Alaska (via Kotlik, Alaska)	Mild cure Kings Chums Salmon roe		4.58 each .50 each	Yukon
Felix Rasmus 254 Ellingsen Fairbanks, Alaska	Fresh salmon Kings Chums		1.50 each 1.50 each	Yukon
Northern Commercial Co. 419 Colman Building Seattle, Washington	Mild cured, hard salt & frozen Kings Chums Salmon roe		.17-.20 per lb. .50 each	Yukon

Table 3. (continued) 1969 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Fish per case	Average price paid to fishermen (estimated)	District
Peter E. Merry 1206 Coppet Fairbanks, Alaska	Fresh king salmon		1/	Yukon
John Amukon Scammon Bay, Alaska	Hard salt kings		4.50 -4.75 each	Yukon
Yukon Delta Fish Marketing Co-op, Inc. Emmonak, Alaska	Frozen and salted salmon Cohos Chums Salmon roe		 .55 each .50 each	Yukon
Wilfred C. Kozevnikoff Box 112 Tanana, Alaska	Fresh salmon Kings		 1/	Yukon
Thomas Albert North Nenana, Alaska	Fresh and dried salmon Kings Chums		 1/ 1/	Yukon
Theodore Fisheries 700 Overlake Drive E. Bellevue, Washington	Frozen salmon Kings Reds Cohos Pinks Chums Salmon roe		 2.50-4.00 each .60 each .90 each .20 each .40 each	Kuskokwim
Swanson Brothers Bethel, Alaska	Frozen king salmon		2.50 each	Kuskokwim

Table 3. (continued) 1969 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Fish per case	Average price paid to fishermen (estimated)	District
Clark Fishing Enterprise Aniak, Alaska	Fresh dressed salmon			Kuskokwim and Yukon
	Kings		4.00 each	
	Cohos		.50 each	
	Chums		.50 each	
	Salmon roe			
Kuskokwim Fishermen's Co-op Bethel, Alaska	Fresh salmon			Kuskokwim
	Kings		.16-.18 per lb.	
	Reds		.14 per lb.	
	Cohos		.15 per lb.	
	Pinks		.06 per lb.	
	Chums		.10 per lb.	
Kuskokwim Packing Co. Bethel, Alaska	Mild cure king salmon		3.92 each	Kuskokwim
	Fresh frozen salmon			
	Cohos		.83 each	
	Chums		.40 each	
	Salmon roe			
Northern Commercial Co. Bethel, Alaska	Frozen salmon			Kuskokwim
	Kings		1/	
	Cohos		1/	
Schenk Seafood Sales 1600 Britton Road Bellingham, Washington 98225	Fresh salmon			Kuskokwim
	Kings		3.90 each	
	Cohos		.83 each	
	Chums		.50 each	
	Salmon roe			

Table 3. (continued) 1969 Arctic-Yukon-Kuskokwim area processors and associated data.

Commercial operator	Product	Fish per case	Average price paid to fishermen (estimated)	District
Dion Anderson Box 295 Bethel, Alaska	Fresh salmon Kings		.33 per lb.	Kuskokwim
Goodnews Bay Fisheries, Inc.	Salted salmon Kings Reds Cohos Pinks Chums Frozen salmon Kings Salmon roe		3.72 each 1.18 each .60 each .30 each .50 each 3.72 each	Kuskokwim

1/ Data unavailable.

Appendix Table 1. Arctic-Yukon-Kuskokwim total salmon catch, 1960-1969.

Year	Commercial catch						Subsistence catch		
	King	Red	Coho	Pink	Chum	Total	King	Other salmon[1/]	Total
1960	73,560	5,649	5,498			84,707	19,457	337,067	356,524
1961	148,741	2,308	21,752	34,443	109,657	316,901	52,617	593,115	645,732
1962	122,907	10,415	45,094	37,666	412,168	628,250	33,506	622,858	656,364
1963	142,185	38	37,994	56,031	209,234	445,482	67,271	593,584	660,855
1964	116,835	13,548	31,536	14,511	234,415	410,845	54,235	757,734	811,969
1965	144,512	1,886	14,571	220	104,388	265,577	45,376	800,371	845,747
1966	120,692	1,137	47,994	13,177	186,016	369,016	63,576	473,926	537,502
1967	161,496	654	71,646	29,052	128,329	391,177	81,832	600,306	682,138
1968	150,728	5,884	174,490	146,997	162,661	640,760	50,591	545,541	596,132
1969	157,392	10,362	132,290	88,248	384,367	772,659	57,214	535,114	592,328

Year	Total catch					
	King	Red	Coho	Pink	Chum[2/]	Total
1960	93,017	5,649	5,498		337,067	441,231
1961	201,358	2,308	21,752	34,443	702,772	962,633
1962	156,413	10,415	45,094	37,666	1,035,026	1,284,614
1963	209,456	38	37,994	56,031	802,818	1,106,337
1964	171,070	13,548	31,536	14,511	992,149	1,222,814
1965	189,888	1,886	14,571	220	904,759	1,111,324
1966	184,268	1,137	47,994	13,177	659,942	906,518
1967	243,328	654	71,646	29,052	728,635	1,073,315
1968	201,319	5,884	174,490	146,997	708,202	1,236,892
1969	214,606	10,362	132,290	88,248	919,481	1,364,987

1/ Majority are chum salmon but some red, coho and pinks.

2/ Subsistence catch of "other salmon" included under total chum salmon catch.

YUKON DISTRICT

DISTRICT AND SUBDISTRICT BOUNDARIES

This district includes all waters of the Yukon River and its tributary streams and all coastal waters from Cape Stephens, including Stuart Island, southward to 62° North Latitude (Figure 1). The Yukon River is the largest river in the State and is the fifth largest in North America. It originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea draining an area of about 330,000 square miles. With the possible exception of a few fish taken at the mouth or adjacent coastal villages, only salmon of Yukon River origin are harvested in this district.

The present subdistrict boundaries were established in 1961 and 1962. The commercial fishing area is divided into four subdistricts for management and regulatory purposes: subdistrict 334-10 (mouth to Anuk River including Black River), subdistrict 334-20 (Anuk River to Owl Slough near Marshall), subdistrict 334-30 (Owl Slough to the mouth of the Koyukuk River) and subdistrict 334-40 (the remaining drainage above the Koyukuk River). These subdistricts are further subdivided into statistical areas for management and research purposes (Figures 3 and 4).

COMMERCIAL FISHERY

Introduction

The first recorded commercial salmon harvest in the district dates back to 1903 when 70,000 pounds of king and chum salmon were taken in Yukon Territory, Canada. A small commercial fishery for these species still exists in Yukon Territory, primarily at Dawson.

The first recorded commercial salmon harvest in Alaska was in 1918 when Carlisle Packing Company operated a floating cannery at Andreafsky (now St. Marys). Relatively large catches of king, coho and chum salmon were made during the first four years of this fishery (Appendix Table 16). Although restrictions were placed only on commercial fishing inside the river's mouth, a majority of the catch was made in "outside" waters. Because of the existence of a large upriver subsistence fishery, the early commercial fishery met considerable opposition and was closed completely during 1925-1930. Commercial fishing for king salmon was resumed at a much lower level in 1932 and this species has been taken commercially each year since then. Since 1922 commercial catches of chum and/or coho salmon have been made only during 1952,1956 and 1961-1969.

Since the 1950's commercial salmon fishing has been permitted only upstream from the mouth of the Yukon and Black Rivers. During the 1954-1960

period, a 65,000 king salmon quota was in effect for the river. Of this total not more than 50,000 could be taken below the mouth of the Anuk River, 10,000 in the area between the mouths of the Anuk and Anvik Rivers and 5,000 above the Anvik River. During these years fishing was allowed for five and one-half days a week until the specific quotas were obtained.

King salmon catch quotas were eliminated for subdistricts 334-10 and 334-20 in 1961 and these fisheries have been regulated by scheduled weekly fishing periods since then. The king salmon season in these two subdistricts opens June 1 and is closed by emergency order by late June or early July depending on the timing and magnitude of the runs. Fishing time during this season was allowed for four days a week during 1961-1967, but was reduced to three and one-half days a week beginning in 1968. This was done to insure adequate king salmon escapements in the face of increasing fishing effort and efficiency.

Commercial fishing in subdistrict 334-30 is allowed for a total of four days a week until quotas of 3,000 king and 3,000 chum and coho salmon combined are taken. In subdistrict 334-40 fishing is allowed seven days a week until quotas of 2,000 king and 2,000 chum and coho salmon combined are taken. these quotas have been established for the purpose of allowing a very limited commercial utilization which traditionally has occurred for many years.

Since 1961 commercial fishing for four days a week has been re-opened in subdistrict 334-10 when buyers have been available. This season is referred to as the fall season and primarily fall chum and coho salmon are taken. Opening dates for the fall season have ranged from July 11 to August 3 and the season ends in late August or early September when buyers terminate their operations. The mid-season closure during July and often including late June is for the purpose of insuring an adequate supply of summer chum salmon for upriver subsistence fishermen.

Excluding the 1920's, the sale of other species of salmon captured during the king salmon season in the area of the present lower two subdistrictshas been allowed only since 1967. The incidental catch of summer chum salmon is limited during this season as only gill nets of eight inches stretched measure or greater can be operated.

Set gill nets, drift gill nets and fishwheels are legal forms of commercial fishing gear. Set gill nets in use by any individual fisherman cannot exceed 150 fathoms in length and drift gill nets cannot exceed 50 fathoms. Set gill nets are most commonly used, especially near the river mouth, but the use of drift gill nets is increasing each season. Most fishermen operate small outboard powered skiffs of 16 to 20 feet in length and do not use gill net rollers, power reels, etc., of any type. Finally, subsistence fishing is prohibited during the closed fishing periods of the commercial fishing season in the lower two subdistricts

Appendix Table 18 presents commercial catches for each subdistrict since 1960.

1969 District Summary

In 1969 there were 90,223 kings; 14,981 cohos and 191,860 chums totalling 297,064 salmon taken for commercial purposes (Table 18). This was the smallest king salmon catch since 1960 but was the second largest catch in history for chum salmon and for all species combined (Appendix Table 16).

A total of 590 commercial, 498 fishing vessel (excluding tenders), 437 set gill net and 252 drift gill net licenses were issued in 1969. The 1969 license sales were similar to 1968, but vessel licenses decreased slightly and commercial and gear licenses increased slightly (Appendix Table 17). Also in 1969, eleven registering fishermen indicated they planned to operate fish-wheels, all in subdistrict 334-40. The vast majority of the commercial fishermen are Eskimo and Indian residents of the Yukon River drainage.

A nearly equal volume of king salmon was handled by canning, mild cure, hard salt, and fresh frozen processors. Production of canned king salmon was at a very low level since one cannery did not operate in 1969 and another closed prematurely during the king salmon season in subdistrict 334-10 (Appendix Table 21). The majority of the chum and coho salmon were frozen in the round by a domestic freezer barge and a small shore freezer plant for the Japanese market. For the first time one operator salted dressed, heads on, coho and chum salmon for the Japanese market. Table 3 includes all buyers and processors that operated in the Yukon district during 1969.

Yukon district commercial fishermen received about $519,200 for their catches. In addition, a minimum of $234,000 in wages was estimated to have been earned by processing plant employees and tenderboat operators. The latter figure was obtained from information supplied by a majority of the buyers and processors. The first wholesale value of the 1969 pack was estimated at $1,976,179 (Appendix Table 22).

Appendix Tables 23 and 24 present mean fish prices and mean salmon weights for 1960-1969 respectively.

King Salmon Season: Under the new regulations established by the Department since 1961, the annual king salmon catch has averaged 107,049 compared to 63,023 for the previous nine year period (1952-1960), an increase of about 70 percent (Appendix Table 18). The 1969 catch of 90,223 king salmon was the lowest since 1960 and was 18,929 less fish than the previous eight year average. The greatest catch ever made in the district was 129,706 king salmon taken in 1967.

The low 1969 catch was a result of the following:

1) less than average sized run that resulted in issuance of emergency orders decreasing fishing time and 2) three buyers prematurely terminated their operations which reduced processing capabilities and fishing effort late during the season in subdistrict 334-10.

The 1969 catch data presented elsewhere in this report does not include 1,640 king and 2,279 chum salmon taken commercially by Canadian commercial fishermen in Yukon Territory.

Table 19 shows the king salmon catches (and incidental chum salmon catches) made in each subdistrict and statistical area during the 1969 king salmon season. Tables 20 through 22 present daily catch data for the lower three subdistricts. Daily catch data for 334-40 are not shown.

The average king salmon catch per boat hour (king salmon season) of .83 and .53 for subdistricts 334-10 and 334-20 respectively was the second lowest recorded since 1960. The seasonal catch per boat hour for subdistrict 334-30 is shown but is not sufficiently reliable to indicate relative salmon abundance from year to year (Appendix Table 19).

An early spring was encountered in 1969 as breakup of the river ice in the Alakanuk area began on May 18, and the mouth was completely ice free by May 25. The first reported king salmon catches were made on May 26 in the south mouth, May 27 at Mt. Village, May 30 at Marshall and June 9 at Tanana.

During the first two and one-half weeks of the 1969 season the catch data indicated that a majority of the king salmon were entering the river by the south mouth route. Escapement of this segment of the run was judged extremely poor as indicated by small catches made by upriver fishermen. Salmon passing through the south mouth or statistical area 334-12 are fished intensively as about one-third of the entire subdistrict 334-10 effort occurs there. Also south mouth fishermen operate only set gill nets which were very efficient due to the extremely low water conditions in 1969. The water level in the middle and lower Yukon River was an estimated 10 to 15 feet lower than normal and the king salmon seemingly migrated closer to shore and were more vulnerable to set gill nets, the ends of which are usually anchored on or near shore. Drift gill net fishermen made relatively poor catches during the entire season.

Because of the poor catches being made in commercial fishing areas above the mouth, fishing time was reduced from 3-1/2 days to 2 days during the week of June 19-25 in subdistrict 334-10 and June 22-28 in subdistrict 334-20. Due to an error made in notices that were posted in the villages of Mt. Village, St. Marys, Pilot Station and Marshall nearly all subdistrict 334-20 fishermen fished a normal 36 hours during the June 26-28 period instead of the special 24 hours scheduled for June 26-27.

Catch data indicated that after June 19, a majority of the king salmon run began utilizing the Kwiguk mouth (334-14), middle mouth (334-15) and north mouth (334-16) entry routes. There is less fishing effort in these areas compared to the south mouth and since this run of fish was coincidental with reduced fishing time, escapement through the lower 150 miles of river was considered good.

Figure 5 compares catches made at Department test fishing sites located at Flat Island (south mouth) and Ohogamiut (mile 185). Differences in the magnitudes of the catches between these two sites reflect the influence of the intensive downriver commercial fishery on the salmon migrations. Relatively poor catches made at Ohogamiut prior to June 22 represent overharvest of salmon in the south mouth during the first half of the season. Peak catches at Ohogamiut were made during June 23-24 which can be traced to the portion of the run that entered the middle and north mouth after June 19.

A large shore cannery, operating in subdistrict 334-10, voluntarily closed in mid-June because of alleged sanitation problems reported by a Department of Food and Drug Administration inspection team. This eliminated some fishermen, especially those who operated "company gear" and reduced processing capabilities. Closure of this plant caused the various other plants in the lower river to operate at near-capacity levels during the remainder of the season which were forced to accept fish from a limited number of fishermen. In addition two mild cure operators ran out of tierces and did not operate during the last fishing period (6/26-28) in subdistrict 334-10. Reduced fishing effort during this last fishing period prevented a serious glut problem for the few remaining buyers and further enhanced escapement. During the final fishing period most of the catches were made in statistical areas 334-13, 334-17 and 334-18 which were close to the remaining buyers.

The king salmon seasons were closed by emergency orders on June 28, July 1 and June 27 for subdistricts 334-10, 334-20 and 334-30 respectively. The quota for subdistrict 334-40 was never exceeded. Results from the Department's Flat Island test fishing site indicated that only about 5 percent of the run entered the river after the close of lower river fishery on June 28 (Figure 5).

Chum and coho salmon fishery: Tables 20 through 22 also show commercial catch data by fishing period for these species. A total of 14,981 coho and 191,860 chum salmon were taken in the district during 1969. The chum harvest was the second largest ever made and exceeded the previous eight year average by 146,818 fish. The coho catch was also relatively good exceeding the previous eight year average by 5,262 fish (Appendix Table 20).

There were 41,418 incidentally captured chum salmon sold in the two lower subdistricts compared to 14,362 in 1968 and 10,919 in 1967. As indicated by Department studies and the comparatively large commercial catch, the 1969 summer chum salmon run was exceptionally large. It is estimated that at least double this amount would have been sold if adequate processing and tendering facilities were available to all fishermen.

Summer chum salmon were taken as early as June 2 near the mouth and based on Department test fishing catches the peak in the run occurred during June 19-June 30.

Because of the indicated large chum salmon run, it was decided to re-open the fall season in subdistrict 334-10 as soon as possible after the last stages of the king salmon run has passed through the fishery. Commercial fishing in subdistrict 334-10 was re-opened effective 6:00 p.m. July 11 with a weekly fishing period of four days per week. This was the earliest opening on record for this season. The fall season was not opened in subdistrict 334-20 as there were no available buyers.

During this season in subdistrict 334-10, which ended on August 23 when the last of the two buyers terminated operations, a total of 274 king; 14,041 coho and 148,017 chum salmon were taken (Table 20). The chum salmon catch per vessel hour for the fall season was the greatest recorded since 1960 (Appendix Table 20). Fishing effort in terms of participating fishermen was about one-third compared to that during the king salmon season. Most of the effort and catches were made in statistical areas 334-12 and 334-13.

The beginning of the fall chum run, which are normally larger, better quality fish bound for the upper portion of the Yukon River drainage, is difficult to determine because of the mid-season closure to commercial fishing and termination of the Department's test fishing site. Normally this run begins sometime in early or mid-July. The first fishing period's catch of the fall season probably contained a mixture of both summer and fall chums. Quality of the fall season's catch through July 19 was only fair due probably to the poor quality of late running summer chums. It was estimated that about 20 percent of the catch made during July 11-July 19 was canned because of poor quality. The fall run is normally characterized by its sporadic run timing. In 1969 the best catches were made after the July 21-23 period.

Other commercial catches include 845 coho and 1,722 chum salmon taken in subdistrict 334-30. Also 95 coho and 703 chum salmon were taken in subdistrict 334-40 during July-September.

Enforcement

With the exception of subdistrict 334-20 fishermen fishing during a closed period due to error in notices posted in several villages, there were very few infractions observed during the king salmon season involving fishing during closed periods. The most common infractions involve identification and separation of fishing gear, in addition to increasing number of fishermen fishing just outside the river mouth.

During the fall season in subdistrict 334-10 fishing during closed periods began to increase sharply after mid-August, presumably because of the lack of recent enforcement patrols.

SUBSISTENCE FISHERY

Comprehensive annual surveys of the Yukon River subsistence salmon fishery were initiated by the Department in 1961 but the data obtained cannot be easily compared with that of earlier seasons. The methods and coverage of these earlier surveys were not documented and their accuracy cannot be determined.

Methods used to survey the Yukon subsistence fishery and treatment of this data is very similar to that previously described for the Kuskokwim district. Since 1961 the Department has annually surveyed all fishermen along the main river in Alaska including the Tanana River as far upstream as the village of Nenana and the village of Venetie on the Chandalar River. Catch data from the Canadian portion of the drainage has been supplied by personnel of the Canadian Department of Fisheries since 1962. In recent years the Department has conducted surveys of Koyukuk River villages.

Yukon River subsistence fishermen took an estimated 14,946 king salmon and 213,725 "other salmon", mostly chums, during 1969. This catch was taken from both the Alaskan and Canadian portions of the drainage. Table 23 shows 1969 catch data for each Yukon River village and Appendix Table 25 shows comparative Yukon River catch data for 1961-1969. Table 23 also includes 28 kings and 2,518 other salmon taken by fishermen from the village of Stebbins located northeast of the Yukon River mouth.

During the last two seasons, a greater attempt was made to contact all residents in all Yukon River villages. A total of 669 families were recorded but only 501 had one or more members that were subsistence fishermen. The 168 non-fishing families,numbering 894 persons, owned 611 dogs and 93 snow-machines (Table 24).

Comparing catches from villages surveyed each year since 1961 ("Equivalent catches") the 1969 Yukon River king salmon harvest was 3,458 less fish than the previous eight year average. The king salmon harvest was considered fair in light of the absence of a large percentage of fishermen who were called upon for fire fighting. Also high water and accompanying debris forced the suspension of fishwheel operation in the upper river during a portion of the king run.

For the fourth consecutive season, a relatively small catch of other salmon species, primarily chums, was taken from the river. Equivalent catches (Appendix Table 25) averaged 400,874 during 1961-1965, compared to an average of only 206,959 during 1966-1969, a decrease of nearly 50 percent.

From all indications the annual Yukon River subsistence salmon harvests for some years in the early 1900's and even as late as the 1950's, exceeded one million fish (Appendix Table 16). Recent declines in subsistence catches are not necessarily due to fish abundance, as evidenced by the 1969 chum salmon fishery and run, but mainly reflect decreases in fishing effort and dependence due to a changing way of life.

To illustrate changes in effort there were 320 fishwheels operated on the Yukon River in 1920. Fishwheels are very effective and each wheel is capable of taking from 2,000 to 5,000 chum salmon annually if fished properly. The number of fishwheels recorded during the 1969 survey was an all-time low of 63, a decrease of 80 percent. In 1961 each fishing family kept an average of 7.7 sled dogs, while in 1969 this figure was down 5.3 sled dogs. Finally, the number of snow machines owned by fishing families were documented beginning

with the 1967 season when only four out of ten families owned such a vehicle. In 1969 eight out of ten fishing families own and operated a snow vehicle of some type (Appendix Table 25).

ESCAPEMENT

The Yukon River drainage (330,000 square miles) is too extensive for complete aerial survey coverage during any given season. In addition poor survey conditions have prevented surveys from being flown during some years. Although most tributaries were low and clear just prior to the time of salmon spawning, subsequent rainstorms and overcast skies made counting very difficult during 1969. Table 25 presents aerial survey data from all surveys made in 1969.

Appendix Table 26 presents comparative king salmon escapement data for certain tributaries during the 1960-1969 period. These data indicate that relatively small escapements have been made during the 1965-1969 period. The 1969 Whitehorse dam count was the lowest since construction of fish passage facilities in 1959. Because of poor survey conditions, escapements in the Andreafsky, Anvik and Salcha Rivers were probably considerably greater than recorded.

Systematic aerial surveys of selected king salmon spawning tributaries in Yukon Territory have been made during 1968 and 1969. Results of these surveys are compared below which indicate a smaller escapement in Yukon Territory in 1969:

Nisutlin River	1968	1969
Sidney Creek-Hundred Mile Creek	407	105
Nisutlin Lake Outlet	84	100
Big Salmon River	807	286
Little Salmon River	173	120

A survey of the Andreafsky River system on July 21 indicated the large size of the summer chum run as 278,000 fish were counted. The Anvik River consistently has a larger chum salmon spawning run but high and muddy water precluded surveying of this stream.

OUTLOOK FOR 1970

Based on comparative commercial and subsistence catch data, plus limited escapement information, the 1970 king salmon run should be at least average in magnitude. Escapement in 1964, brood year for the dominant 6 year age class, was considered relatively good.

There is little information on which to estimate the relative size of the 1970 runs of the other species of salmon. Due to recent declines in subsistence utilization, the commercial harvest of chum salmon in 1970 should be better than average due to regulation liberalizations.

Table 18. Commercial salmon catches by species and subdistrict, Yukon district, 1969.

Subdistrict	Kings	Cohos	Chums	Total
334-10 (Mouth - Anuk River)				
King Salmon season (6/2-6/28)	70,588	0	36,394	106,982
Fall season (7/11-8/23)	274	14,041	148,017	162,332
Total	70,862	14,041	184,411	269,314
334-20 (Anuk River - Owl Slough)				
King Salmon season (6/1-7/1)	14,799	0	5,024	19,823
334-30 (Owl Slough - Koyukuk River)	3,577	845	1,722	6,144
334-40 (above Koyukuk River)	985	95	703	1,783
Total	90,223	14,981	191,860	297,064

Table 19. Commercial salmon catches by statistical area, during king salmon season, Yukon district, 1969

Statistical area	King	Coho	Chum
334-11	1,405		
334-12	21,894		16,212
334-13	9,635		10,134
334-14	5,594		1,536
334-15	12,875		3,014
334-16	3,833		17
334-17	9,930		2,388
334-18	5,422		3,093
Sub-total 334-10	70,588		36,394
334-21	4,642		1,533
334-22	5,384		1,530
334-23	2,969		361
334-24	1,804		1,600
Sub-total 334-20	14,799		5,024
334-31	1,518		
334-32	2,059		
Sub-total 334-30	3,577		
334-40	985		
Sub-total 334-40	985		
Total 334	89,949		41,418

Table 20. Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
6/ 2	6		53		1	53		1
6/ 3	24		2,107		1	2,160		2
6/ 4	6		1,687		-	3,849		-
	36	253	3,849 (0.4)		2 (+)			
6/ 5	6		49		-	3,898		-
6/ 6	24		2,205		11	6,103		13
6/ 7	18		1,997		24	8,100		37
	48	301	4,251 (0.3)		35 (+)			
6/ 9	6		1,889		3	9,989		40
6/10	24		9,970		129	19,959		169
6/11	6		6,856		151	26,815		320
	36	339	18,715 (1.5)		283 (+)			
6/12	6		598		55	27,413		375
6/13	24		8,827		861	36,240		1,236
6/14	18		5,422		1,882	41,662		3,118
	48	353	14,847 (0.9)		2,798 (0.2)			
6/16	6		563		57	42,225		3,175
6/17	24		3,653		1,986	45,878		5,161
6/18	6		2,040		1,044	47,918		6,205
	36	310	6,256 (0.6)		3,087 (0.3)			
6/19	6		1,037		350	48,955		6,555
6/20	18		9,372		8,208	58,327		14,763
	24	289	10,409 (1.5)		8,558 (1.2)			
6/23	6		821		829	59,148		15,592
6/24	18		7,164		11,962	66,312		27,554
	24	284	7,985 (1.2)		12,791 (1.9)			

Table 20. (continued) Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
6/26	6		230		648	66,542		28,202
6/27	24		2,088		4,659	68,630		32,861
6/28	18		1,958		3,533	70,588		36,394
	48	151	4,276(0.6)		8,840(1.2)			
Subtotal[1/]	300		70,588(0.8)		36,394(0.4)			
7/11	6		-		-	-		-
7/12	18		44		9,558	44		9,558
	24	51	44(+)		9,558(7.8)			
7/14	6		3		481	47		10,039
7/15	24		31		3,535	78		13,574
7/16	18		19		1,863	97		15,437
	48	68	53(+)		5,879(1.8)			
7/17	6		-		479	-		15,916
7/18	24		22		1,709	119		17,625
7/19	18		25		1,526	144		19,151
	48	72	47(+)		3,714(1.1)			
7/21	6		2		1,033	146		20,184
7/22	24		31		11,987	177		37,171
7/23	18		23		12,916	200		45,087
	48	93	56(+)		25,936(5.8)			

Table 20 (continued) Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
7/24	6		5	-	326	205	-	45,413
7/25	24		7	2	3,321	212	2	48,734
7/26	18		13	1	11,121	225	3	59,855
	48	101	25 (+)	3 (+)	14,768 (3.1)			
7/28	6		-	-	1,408	-	-	61,263
7/29	24		6	4	2,801	231	7	64,064
7/30	18		6	9	8,315	237	16	72,379
	48	101	12 (+)	13 (+)	12,524 (2.6)			
7/31	6		1	1	328	238	17	72,707
8/ 1	24		5	7	3,909	243	24	76,616
8/ 2	18		8	60	10,518	251	84	87,134
	48	101	14 (+)	68 (+)	14,755 (3.0)			
8/ 4	6		-	3	575			
8/ 5	24		4	144	13,939	-	87	87,709
8/ 6	18		3	204	7,896	255	231	101,648
	48	101	7 (+)	351 (0.1)	22,410 (4.6)	258	435	109,544
8/ 7	6		1	9	1,146			
8/ 8	24		4	386	7,401	259	444	110,690
8/ 9	18		6	740	5,871	263	830	118,091
	48	97	11 (+)	1,135 (0.2)	14,418 (3.1)	269	1,570	123,962
8/11	6		-	-	-			
8/12	24		-	435	1,135	-	-	-
8/13	18		-	681	2,800	-	2,005	125,097
	48	65		1,116 (0.4)	3,935 (1.3)	-	2,686	127,897

Table 20. (continued) Commercial salmon catches from subdistrict 334-10, Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
8/14	6		-	4	2	-	2,690	127,899
8/15	24		-	631	2,173	-	3,321	130,072
8/16	18		-	1,328	6,039	-	4,649	136,111
	48	60		1,963 (0.7)	8,214 (2.9)			
8/18	6		-	25	26	-	4,674	136,137
8/19	24		1	2,807	4,135	270	7,481	140,272
8/20	18		1	3,993	5,579	271	11,474	145,851
	48	63	2 (+)	6,825 (2.3)	9,740 (3.2)			
8/21	6		1	274	283	272	11,748	146,134
8/22	24		1	1,196	1,152	273	12,944	147,286
8/23	18		1	1,097	731	274	14,041	148,017
	48	39	3 (+)	2,567 (1.4)	2,166 (1.6)			
Subtotal 2/	600		274 (+)	14,041 (0.3)	148,017 (3.1)			
Grand total	900		70,862	14,041	184,411			

1/ King salmon season (6/2-6/28)

2/ Fall season (7/11-8/23)

Table 21. Commercial salmon catches from subdistrict 334-20, Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Chum	Cumulative catch King	Chum
6/ 1	6		-		-	
6/ 2	24		30		30	
6/ 3	18		208		238	
	48	26	238 (0.2)			
6/ 5	6		-		-	
6/ 6	24		202		440	
6/ 7	6		382		822	
	36	72	584 (0.2)			
6/ 8	6		-		-	
6/ 9	24		40		862	
6/10	18		814		1,676	
	48	80	854 (0.2)			
6/12	6		7		1,683	
6/13	24		787		2,470	
6/14	6		647		3,117	
	36	98	1,441 (0.4)			
6/15	6		-	-	-	-
6/16	24		236	-	3,353	-
6/17	18		1,213	88	4,566	88
	48	80	1,449 (0.4)	88 (+)		
6/19	6		-	-	-	-
6/20	24		573	120	5,139	208
6/21	6		1,098	24	6,237	232
	36	86	1,671 (0.5)	144 (+)		

Table 21. (continued) Commercial salmon catches from subdistrict 334-20 Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Total catch (catch/boat hour) Chum	Cumulative catch King	Cumulative catch Chum
6/23	6		-	-	-	-
6/24	18		3,965	1,173	10,202	1,405
	24	94	3,965 (1.8)	1,173 (0.5)		
6/26	6		-	-	-	-
6/27	24		1,809	999	12,011	2,404
6/28	6		927	1,126	12,938	3,530
	36	93	2,736 (0.8)	2,125 (0.6)		
6/29	6		-	-	-	-
6/30	24		735	982	13,673	4,512
7/ 1	18		1,126	512	14,799	5,024
	48	85	1,861 (0.5)	1,494 (0.4)		
Totals	360		14,799 (0.5)	5,024 (0.2)		

Table 22. Commercial salmon catches from subdistrict 334-30 Yukon district, drift and set gill nets combined, 1969.

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
6/10	24		-					
6/11	24		69			69		
6/12	24		190			259		
6/13	18		215			474		
	90	15	474 (0.4)					
6/16	6		-					
6/17	24		163			637		
6/18	24		151			788		
6/19	24		242			1,030		
6/20	18		247			1,277		
	96	20	803 (0.4)					
6/23	6		-					
6/24	24		537			1,814		
6/25	24		499			2,313		
6/26	24		537			2,850		
6/27	18		727			3,577		
	96	18	2,300 (1.3)					
Sub-totals[1/]	264		3,577 (0.7)	0	0			
8/11	6				-			-
8/12	24				154			154
8/13	24				90			244
8/14	24				87			331
8/15	18				182			513
	96	3			513 (1.8)			

Table 22. (continued) Commercial salmon catches from subdistrict 334-30 Yukon district, drift and set gill nets combined, 1969

Date of landing	Hours fished	No. of boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch King	Coho	Chum
8/18	6				53			566
8/19	24				87			653
8/20	24				176			829
8/21	24				82			911
8/22	18				179			1,090
	96	2			577 (3.0)			
8/25	6				-			
8/26	24				55			-
8/27	24				153			1,145
8/28	24				82			1,298
8/29	18				342			1,380
	96	2			632 (3.3)			1,722
9/ 1	6				-			-
9/ 2	24				76			76
9/ 3	24				95			171
9/ 4	24				98			269
9/ 5	18				185			454
	96	2			454 (2.4)			
9/ 8	6				-			-
9/ 9	24				85			539
9/10	24				76			615
9/11	24				120			735
9/12	18				110			845
	96	2			391 (2.0)			
Sub-total[2]	480				845 (0.8)	1,722 (1.6)		
Grand total	744		3,577		845	1,722		

1/ King salmon season or until king salmon quota is taken (6/10-6/27).
2/ Remainder of season (8/11-9/12).

Figure [redacted] King salmon daily catches at Flat Island and [redacted]gamiut, Yukon River, 1969. [redacted]

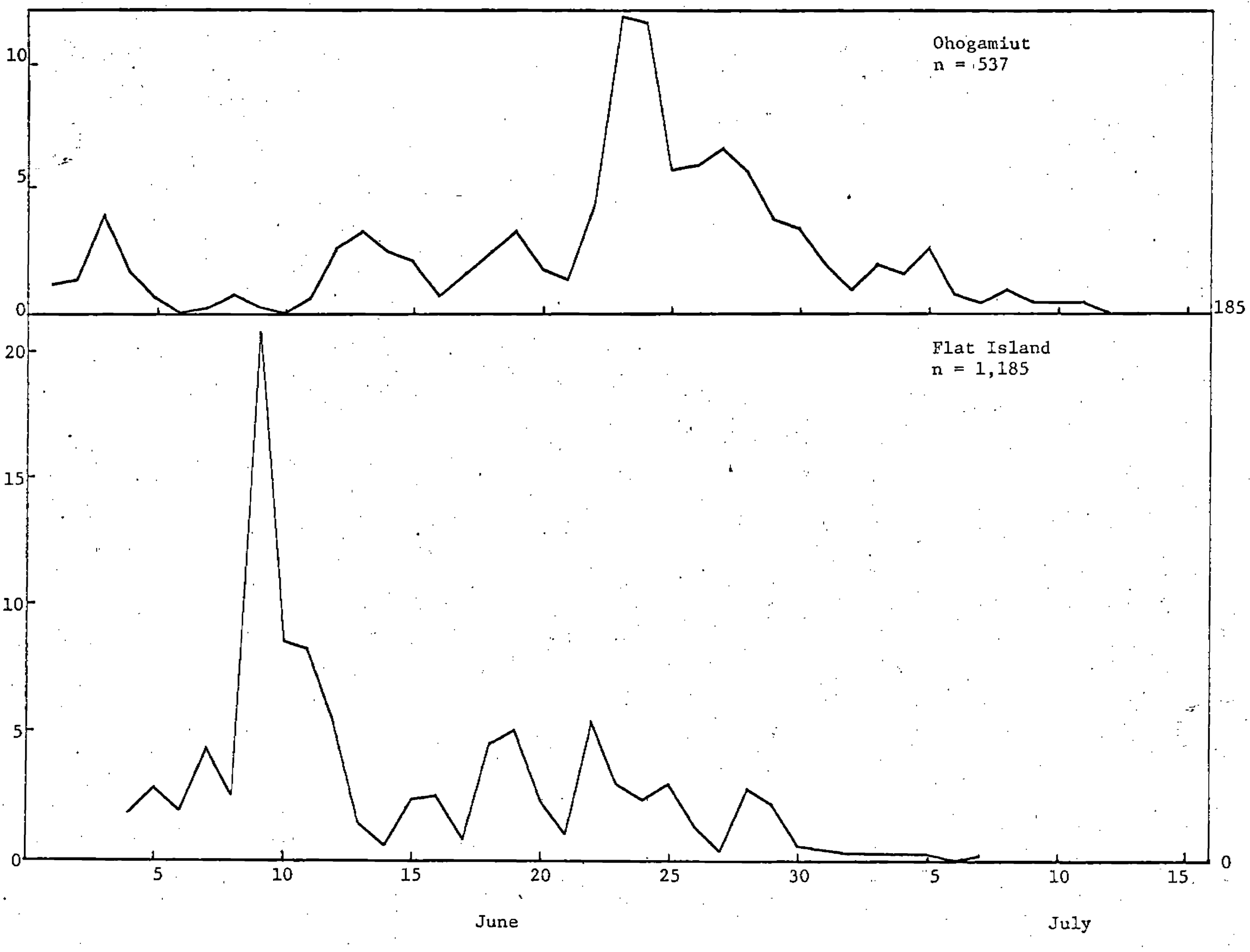

Table 23. Yukon River subsistence catch data, 1969 (includes Canadian catches)

Village	Date of survey	Fishing families	Dogs[1]	Snow-machines[1]	Kings	Other[2] salmon	Total salmon	Units of Gear: 5-1/2" nets	Units of Gear: 8-1/2" nets	Units of Gear: Fish-wheels
Alakanuk	8/2-4	57	179	60	852	15,806	16,658	121	62	0
Sheldon's Point	8/1	14	92	11	728	5,573	6,301	21	4	0
Emmonak	8/5-6	45	67	35	810	12,836	13,646	80	59	0
Aproka Pass & Vicinity	8/7	13	26	13	238	4,048	4,286	36	6	0
Kotlik	8/9	25	37	26	551	6,391	6,942	38	8	0
Mt. Village & Vicinity	8/11	37	100	38	557	10,676	11,233	44	46	0
Pitkas Point-St. Marys	8/12-13	39	162	29	737	11,586	12,323	47	26	0
Pilot Station	8/16	33	150	23	367	7,515	7,882	34	33	0
Marshall	8/18	20	158	12	564	6,606	7,170	27	38	0
Russian Mission	8/23	16	97	5	707	3,668	4,375	16	14	0
Holy Cross	8/24	18	71	9	1,877	6,037	7,914	11	26	3
Anvik	8/26	12	61	10	71	8,925	8,996	16	1	3
Grayling	8/26	16	113	11	187	18,037	18,224	13	1	8
Kaltag	8/28	20	175	11	232	9,942	10,174	21	0	4
Nulato	8/29	26	278	15	771	23,853	24,624	41	0	5
Koyukuk	8/30	9	75	4	357	3,359	3,716	10	3	0
Galena	8/30	5	65	8	263	2,422	2,685	4	0	3
Ruby	8/31	11	86	9	1,619	5,201	6,820	8	0	5
Tanana	9/4-5	10	162	4	683	12,455	13,138	0	1	9
Rampart	9/6	5	35	2	321	8,935	9,256	1	1	4
Stevens Village	9/6	7	63	4	350	2,725	3,075	1	5	2
Beaver	9/7	6	49	4	458	1,965	2,423	4	2	1
Fort Yukon	9/6	10	89	3	75	3,338	3,413	0	0	11

Table 23. (continued) Yukon River subsistence catch data, 1969 (includes Canadian catches)

Village	Date of survey	Fishing families	Dogs[1/]	Snow-machines[1/]	Kings	Other[2/] salmon	Total salmon	Units of gear: 5-1/2" nets	Units of gear: 8-1/2" nets	Units of gear: Fish-wheels
Fort Selkirk [3/]					22	500	522	1	0	0
Carmacks[3/]					450	400	850	5	0	0
Pelly River[3/]					200	300	500	5	0	0
Tatchun Creek[3/]					100	0	100	1	0	0
Teslin River[3/]					175	0	175	1	0	0
Minto[3/]					0	100	100	1	0	0
Kluane River[3/]					0	760	760	3	0	0
Main River totals		454+	2,390+	346+	14,322	193,959	208,281	611	336	58
Allakaket	8/22	13	102	4	15	3,254	3,269	30	0	0
Alatna	8/22	3	30	2	8	830	838	9	0	0
Hughes	8/22	8	58	5	10	3,112	3,122	12	2	0
Huslia	8/23	11	68	8	16	2,466	2,482	12	0	0
Koyukuk River totals		35	258	19	49	9,662	9,711	63	2	0
Manley Hot Springs	9/4	1	2	1	75	200	275	0	0	1
Minto	9/4	2	21	0	1	130	131	0	0	2
Nenana	9/4	2	35	2	465	3,247	3,712	0	0	2
Tanana River totals		5	58	3	541	3,577	4,118	0	0	5
Venetie	9/7	7	149	5	7	3,116	3,123	14	0	0
Chandalar River totals		7	149	5	7	3,116	3,123	14	0	0
Old Crow[3/]					27	3,411	3,438	?	0	0
Porcupine River totals					27	3,411	3,438	?	0	0
Grand total - Yukon River		501+	2,855+	373+	14,946	213,725	228,671	688+	338	63
Stebbins	8/19	21	51	17	28	2,518	2,546	21	0	0

1/ Data from fishing families only.
2/ Mostly chum salmon but includes small numbers of pink and coho salmon.
3/ From Canadian Department of Fisheries, Whitehorse, only catch and type of gear available.

Table 24. Yukon River subsistence fishery data from non-fishermen, 1969.

Village	Non-fishing families	People in families	Dogs	Snow machines
Alakanuk	14	57	14	13
Sheldons Pt.	3	13	9	2
Emmonak	14	61	20	11
Aproka Pass	1	9	1	1
Kotlik	5	17	3	2
Mt. Village	11	50	16	10
Pitkas Pt.				
St. Marys	10	62	17	8
Pilot Station	9	52	40	2
Marshall	4	23	8	1
Russian Mission	5	61	51	3
Holy Cross	16	72	23	6
Anvik	6	19	21	4
Grayling	1	7	0	1
Kaltag	11	39	41	5
Nulato	6	42	27	2
Koyukuk	9	58	39	6
Galena	3	22	8	5
Ruby	4	19	38	2
Tanana	5	25	22	3
Rampart	0	0	0	0
Stevens Village	3	16	17	0
Beaver	1	3	7	0
Fort Yukon	5	27	41	1
Allakaket	0	0	0	0
Alatna	0	0	0	0
Hughes	0	0	0	0
Huslia	2	3	1	0
Manly Hot Springs	1	13	7	1
Minto	15	107	123	2
Nenana	1	1	0	0
Venetie	3	16	17	2
Total	168	894	611	93

Table 25. Aerial survey data from Yukon River tributaries, 1969[1/]

Stream	Date	Aerial survey rating	Kings	Chums
Andreafsky River				
West Fork	7/21	Poor-Fair	231	159,500[2/]
East Fork	7/21	Poor-Fair	274	119,000[3/]
Total			505	278,500
Anvik River	7/23	Poor	296	[4/]
Salcha River	8/ 1	Poor	461	425
Nisutlin River	8/15	Fair		205
Big Salmon River	8/15	Fair		286
Northern Lake outlet[5/]	8/15			5
Little Salmon River	8/17	Fair		120

1/ If more than one survey of a stream was flown, only the "high count" is presented.

2/ Includes an estimated 14,500 carcasses.

3/ Includes an estimated 11,000 carcasses.

4/ Impossible to count.

5/ Foot survey of upper 1/2 mile.

APPENDIX TABLES - YUKON DISTRICT

Appendix Table 16. Yukon district commercial and subsistence salmon catches, 1918-1969[1/]

Year	Commercial catch				Subsistence catch		
	King	Coho	Chum	Total	King	Other salmon[2/]	Total
1918	12,239	26,144	73,921	112,304		1,400,000	1,400,000
1919	104,822	37,070	327,898	469,790		269,000	269,000
1920	58,467		155,655	214,122	20,000	860,000	880,000
1921	69,646	1,000	111,098	181,744			
1922	16,825			16,825	15,000	330,000	345,000
1923	13,393			13,393	17,500	435,000	452,500
1924	27,375			27,375		1,130,000	1,130,000
1925					15,000	259,000	274,000
1926					20,500	555,000	575,500
1927						520,000	520,000
1928						670,000	670,000
1929						537,000	537,000
1930						633,000	633,000
1931					26,693	565,000	591,693
1932	4,739		4,739		23,160	1,092,000	1,115,160
1933	8,829		8,829		19,950	603,000	622,950
1934	25,365		25,365			474,000	474,000
1935	7,265		7,265		20,400	537,000	557,400
1936	20,963		20,963		22,750	560,000	582,750
1937	6,226		6,226		5,528	346,000	351,528
1938	13,727		13,727		19,244	340,450	359,694
1939	9,987		9,987		18,050	327,650	345,700
1940	18,053		18,053		14,400	1,029,000	1,043,400
1941	29,905		29,905		17,703	438,000	455,703
1942	22,487		22,487			197,000	197,000
1943	27,650		27,650			200,000	200,000
1944	14,232		14,232				
1945	19,727		19,727				
1946	22,782		22,782				
1947	54,026		54,026				
1948	33,842		33,842				
1949	36,379		36,379				

Appendix Table 16. (continued) Yukon district commercial and subsistence salmon catches, 1918-1969[1/]

Year	Commercial catch				Subsistence catch		
	King	Coho	Chum	Total	King	Other salmon	Total
1950	41,808			41,808			
1951	47,196			47,196			
1952	34,405	10,868[4/]		45,273			
1953	59,273			59,273		380,000	380,000
1954	59,401			59,401			
1955	58,684			58,684			
1956	63,478		8,000	71,478			
1957	63,623			63,623			
1958	63,259			63,259	11,890	337,500	349,390
1959	78,632			78,632			
1960	67,591			67,591			
1961	120,260	2,855	42,577[3/]	165,692	23,719	407,814	431,533
1962	94,734	22,926	53,160[3/]	170,820	19,910	358,441	378,351
1963	116,994	5,572		122,566	32,656	421,625	454,281
1964	93,587	2,446	8,347	104,380	22,817	485,630	508,447
1965	118,098	350	23,317	141,765	19,723	458,379	478,102
1966	93,315	19,254	71,045	183,614	14,017	214,236	228,253
1967	129,706	11,047	49,453[3/]	190,206	19,661	288,595	308,256
1968	106,526	13,303	67,395	187,224	14,832	189,607	204,439
1969	90,223	14,981	191,860	297,064	14,946	213,725	228,671

1/ Includes only Yukon River catches.
2/ Mostly chum salmon but including small numbers of pink and coho salmon.
3/ Includes small numbers of pink or red salmon (less than 300).
4/ Previously unreported in Fishery Reports, taken from catch records of Yukon Fishermen Cooperative association probably includes some chum salmon.

Appendix Table 17. Yukon district commercial, vessel and gill net licenses issued by sub-district, 1960-1969[1/]

	Year	334-10	334-20	334-30	334-40[2/]	Totals
Commercial	1960	193	96		18	307
	1961	238	130	26	18	412
	1962	321	148	46	18	533
	1963	285	131	30	5	451
	1964	319	119	31	18	487
	1965	327	143	34	35	539
	1966	393	143	21	20	577
	1967					607
	1968					585
	1969	406	131	32	21	590
Fishing vessel	1960	186	33		10	229
	1961	210	112	18	10	350
	1962	320	127	31	12	490
	1963	272	113	22	6	413
	1964	314	101	24	12	451
	1965	322	111	26	27	486
	1966	365	113	18	20	516
	1967	381	126	22	20	549
	1968	340	124	26	20	510
	1969	361	93	24	20	498
Set net	1960	183	59		2	244
	1961	217	101	19	1	338
	1962	303	117	14	2	436
	1963	259	101	21	2	383
	1964	277	100	28	4	409
	1965	292	98	23	7	420
	1966	345	101	17	5	468
	1967	333	72	21	5	431
	1968	314	62	26	8	410
	1969	346	62	15	14	437

Appendix Table 17 (continued) Yukon district commercial, vessel and gill net licenses issued by sub-district, 1960-1969[1/]

	Year	334-10	334-20	334-30	334-40	Totals
Drift net	1960	2	44			46
	1961	17	86			103
	1962	55	98	24		177
	1963	24	85	5		114
	1964	65	89	5		159
	1965	62	98	4		164
	1966	97	88	4		189
	1967	135	109	5		249
	1968	111	104	8		223
	1969	142	100	10		252

1/ Distribution of licenses by sub-district represents that at the beginning of the fishing season (June 1), some fishermen transfer to other sub-districts during the season.

2/ A total of 5, 17,?, 10 and 11 fishwheels were operated commercially during 1965, 1966, 1967, 1968, and 1969.

Appendix Table 18. Commercial salmon catches by species and subdistrict, Yukon district, 1960-1969.

Year	King salmon 334-10	334-20	334-30	334-40	Total	Coho salmon 334-10	334-20	334-30	334-40	Total
1960	50,713	15,994	-	884	67,591	-	-	-	-	-
1961	84,463	29,028	4,965	1,804	120,260	2,855	-	-	-	2,855
1962	67,099	22,224	4,687	724	94,734	22,926	-	-	-	22,926
1963	85,004	24,211	6,976	803	116,994	5,572	-	-	-	5,572
1964	67,555	20,246	4,705	1,081	93,587	2,446	-	-	-	2,446
1965	89,268	23,763	3,204	1,863	118,098	350	-	-	-	350
1966	70,788	16,927	3,612	1,988	93,315	19,254	-	-	-	19,254
1967	104,350	20,289	3,618	1,449	129,706	9,925	-	1,122	-	11,047
1968	79,465	21,392	4,543	1,126	106,526	13,153	0	150	0	13,303
1969	70,862	14,799	3,577	985	90,223	14,041	0	845	95	14,981

Year	Chum salmon 334-10	334-20	334-30	334-40	Total	Total salmon 334-10	334-20	334-30	334-40	Total
1960	-	-	-	-	-	50,713	15,994	-	884	67,591
1961	42,577[1/]	-	-	-	42,577[1/]	129,895	29,028	4,965	1,804	165,692
1962	53,160[1/]	-	-	-	53,160[1/]	143,185	22,224	4,687	724	170,820
1963	-	-	-	-	-	90,576	24,211	6,976	803	122,566
1964	8,347	-	-	-	8,347	78,348	20,246	4,705	1,081	104,380
1965	22,936	-	-	381	23,317	112,554	23,763	3,204	2,244	141,765
1966	69,836	-	1,209	-	71,045	159,878	16,927	4,821	1,988	183,614
1967	46,148	1,425	1,880	-	49,453	160,423	21,714	6,620	1,449	190,206
1968	62,852[1/]	1,407	3,136	0	67,395	155,470	22,799	7,829	1,126	187,224
1969	184,411	5,024	1,722	703	191,860	269,314	19,823	6,144	1,783	297,064

1/ includes small numbers of pink or red salmon

Appendix Table 19. Comparative commercial king salmon catch data, Yukon district, 1960-1969[1/].

	Year	334-10	334-20	Sub-total (10+20)	334-30	334-40	Totals -334
Commercial Catch							
	1960	50,713	15,994	66,707		884	67,591
	1961	84,406	29,028	113,434	4,965	1,804	120,203
	1962	67,072	22,224	89,296	4,687	724	94,707
	1963	85,004	24,211	109,215	6,976	803	116,994
	1964	67,555	20,246	87,801	4,705	1,081	93,587
	1965	89,268	23,763	113,031	3,204	1,863	118,098
	1966	70,783	16,927	87,710	3,612	1,988	93,310
	1967	104,335	20,289	124,624	3,618	1,449	129,691
	1968	79,465	21,392	100,857	4,543	1,126	106,526
	1969	70,588	14,799	85,387	3,577	985	89,949

	Year	334-10	334-20	Sub-total (10+20)	334-30
Boat Hours (Catch per boat hour)	1960	40,848 (1.24)	34,914 (0.46)	75,762 (0.88)	
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)	2,808 (1.77)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)	2,520 (1.86)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)	5,616 (1.24)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)	4,596 (1.02)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)	2,286 (1.40)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)	1,782 (1.23)[2/]
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)	4,050 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)	3,745 (1.21)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)	3,577 (0.72)

1/ 334-10 and 334-20 data are only for the king salmon season (June & early July).
2/ Catch per vessel hour does not include 1,421 king salmon captured by an unknown number of fishermen.

Appendix Table 20. Comparative commercial coho and chum salmon catch data for the fall season, subdistrict 334-10 Yukon district, 1961-1969

Year	Duration	Days[1/] fished	Boat hours	Commercial catch (catch/boat hour) Coho	Chum
1961		16	14,772	2,855 (0.2)	42,461 (2.9)
1962		21	46,950	22,926 (0.5)	53,116 (1.1)
1963		18	2,100	5,572 (2.7)	no purchases
1964		17	8,346	2,446 (0.3)	8,347 (1.0)
1965		2/	2/	350 (2/)	22,936 (2/)
1966		28	41,994	19,254 (0.5)	69,836 (1.7)
1967		21	19,272	9,925 (0.5)	36,451 (1.9)
1968		22	47,232	13,153 (0.3)	49,857 (1.1)
1969	7/11-8/23	25	47,352	14,041 (0.3)	148,017 (3.1)
	7/21-8/23[3/]	20	39,408	14,041 (0.4)	128,866 (3.3)

1/ One "day" is equivalent to 24 hours during open fishing period.

2/ Information not available.

3/ Comparable to duration of fishing for past seasons.

Appendix Table 21. Commercial salmon pack by species and type of processing, Yukon district, 1960-1969[1/]

Year	Cases (48#)			Fresh-frozen (round wt. in lbs.)			Cured King Salmon		Salmon
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2-Tierce	Roe (lbs)
1960	13,000			2/	2/	2/	250	180	
1961	19,474			"	"	"	504	146	
1962	15,959	512	1,760	"	"	"	464	280	
1963	16,400	1,190		"	"	"	2/	2/	
1964	12,041			"	17,100	66,770	537	499	
1965	18,149			275,000	2,500	160,500	670	67	
1966	14,026	836	2,812	414,000	61,355	301,240	398	60	
1967	21,503		126	475,900	66,400	366,496	627	96	1,755
1968	19,499		816	561,690	93,154	454,409	351	170	21,000
1969	9,560	1,104	4,499	423,597	26,973[3/]	841,586[3/]	647	95	29,000

1/ Pack represents type of processing when fish were shipped out of district.

2/ Information not available.

3/ Includes approximately 11,600 and 110,500 lbs. (round weight) of coho and chum salmon respectively as salted fish for Japanese market. Also includes 15 tierces of mild cured chum salmon (12,000 lbs round weight).

Appendix Table 22. Dollar value estimates of Yukon district commercial fishery, 1960-1969[1/]

Year	Gross value of catch to fishermen	Wages earned[2/]	Total income to district	Wholesale value of pack[3/]	Tax revenues to State
1960	$	$	$	$	$
1961	437,000.00			1,292,300.00	37,500.00
1962	361,900.00			1,275,250.00	50,400.00
1963	412,300.00			1,550,400.00	42,000.00
1964	354,400.00			1,203,800.00	35,000.00
1965	542,300.00			1,412,700.00	42,000.00
1966	454,500.00			1,308,100.00	37,000.00
1967	606,400.00	250,000.00	856,400.00	1,864,800.00	41,700.00
1968	535,000.00	264,000.00+	799,000.00+	1,655,156.00	47,000.00
1969	519,200.00	234,000.00+	753,000.00+	1,976,179.00	40,000.00

1/ Information not available for 1960 and wages earned during 1961-1966.

2/ Includes wages paid to tender boat operators, processing plant employees in district.

3/ Based on type of processing when fish were shipped out of the district.

Appendix Table 23. Estimated mean prices paid to fishermen, Yukon district, 1961-1969[1/] (prices per fish)

Year	King	Coho	Chum	Other
1961	$3.50	$	$	$
1962	3.50			
1963	3.50			
1964	3.75	.50	.25	
1965	4.50		.35	
1966	4.50	.50	.35	
1967	4.50	.50	.35	
1968	4.64	.50	.50	
1969	4.60	.55	.50	

1/ Information not available for some species.

Appendix Table 24 Mean weights and numbers of salmon per case, Yukon district, 1962-1969[1/]

	Mean round weight in pounds[2/]			Mean no. of fish/case[3/]		
Year	King	Coho	Chum	King	Coho	Chum
1962				3.2	13.3	10.5
1963						
1964	22.6		8.0	3.4		
1965	23.0		6.6	3.3		
1966	23.0		6.9	3.5		
1967	24.0	7.3	7.0	3.2		
1968	26.5		8.3	3.3		11.0
1969	23.9	6.7	6.5	3.4	10.0	12.0

1/ Information is not available for some species.
2/ Based on age-length-weight samples or fish ticket entries.
3/ Standard 48 lb. case.

Appendix Table 25. Yukon River comparative subsistence catch and effort data, 1961-1969 (numbers per fishing family are in parenthesis)

Year	Total catch		Equivalent catch[1]		Mean equivalent catch per family[1]	
	King salmon	Other salmon[2]	King salmon	Other salmon[2]	King salmon	Other salmon[2]
1961	23,719	407,814	23,719	405,632	38	650
1962	19,910	358,441	13,010	329,144	23	583
1963	32,656	421,625	26,141	372,578	44	624
1964	22,817	485,630	19,480	460,712	32	765
1965	19,723	458,379	16,950	436,306	31	806
1966	14,017	214,236	11,507	204,913	23	415
1967	19,661	288,595	16,306	256,926	35	545
1968[3]	14,832	189,607	11,883	170,522	25	358
1969	14,946	213,725	13,916	195,476	30	426

Year	Fishing families surveyed[1]	People in fishing families[1]	Snow machines[1]	Sled dogs[1]	Gear operated[1]	
					Gill nets	Fishwheels
1961	624	3,626(5.8)		4,806(7.7)	577	169
1962	564	3,279(5.8)		3,848(6.8)	613	138
1963	597	3,460(6.9)		4,155(7.0)	716	156
1964	602	3,524(6.0)		4,003(6.6)	840	155
1965	541	3,453(7.3)		3,974(7.3)	647	127
1966	494	3,144(6.4)		3,112(6.3)	578	116
1967	471	2,756(5.9)	192(0.4)	2,752(5.8)	530	87
1968	476	3,109(6.5)	262(0.6)	2,719(5.7)	565	71
1969	459	2,974(6.5)	349(0.8)	2,442(5.3)	594	63

1/ Data from villages surveyed each year since 1961: mouth to Fort Yukon and Tanana River.
2/ Mostly chum salmon, some pinks and cohos.
3/ Total king and other salmon catches have been corrected.

Appendix Table 26. Comparative king salmon escapement data for 1960-1969, Yukon River drainage[1/]

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
East Fork, Andreafsky River	1,020	1,003	675*	-	867	-	361	-	380	231*
West Fork, Andreafsky River	1,220	-	762*	-	705	355*	303	276*	383	274*
Totals, Andreafsky River	2,240	-	1,437*	-	1,572	-	664	-	763	505*
Anvik River	1,950	1,226	-	-	-	650*	638	336*	297*	296*
Salcha River	1,660	2,878	937	-	450	408	800	-	735	461*
Whitehorse Dam Bypass Actual count[2/]	660	1,068	1,500	484	587	903	563	533	407	334

1/ With exception of Whitehorse Dam Count, escapement data are from aerial surveys, a (*) indicates poor survey conditions.

2/ 1,054 counted in 1959, 1959-1969 data from Canadian Department of Fisheries, Whitehorse.