

Report
to the
Alaska Board of Fisheries

KUSKOKWIM AREA SALMON, 1985

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BACKGROUND

Area and District Boundaries

The Kuskokwim Area includes the Kuskokwim River drainage and all waters of Alaska between Cape Newenham and the Naskonat Peninsula (Figure 1). Commercial salmon fishing takes place in four districts: District 1, the Lower Kuskokwim River consisting of the portion of the Kuskokwim River upstream of Popokamiut to the north mouth of the Mishevik Slough; District 2, the Middle Kuskokwim River consisting of the Kuskokwim River upstream from the north mouth of Mishevik Slough to the Kolmakoff River; District 3, Quinhagak consisting of the Kuskokwim Bay between the mouth of Oyak Creek and the south mouth of the Arolik River; and District 5, Goodnews Bay consisting of the waters of Goodnews Bay.

Management Objectives and Strategies

The Division of Commercial Fisheries of the Alaska Department of Fish and Game is responsible for the management of commercial and subsistence fisheries in the Kuskokwim Area. The main objective of the Department's program is to manage both fisheries on a sustained yield basis in accordance with policies set forth by the Alaska Board of Fisheries, including assignment of subsistence as the highest priority among beneficial uses of the resources.

The area's commercial fishery has expanded greatly during the last ten years as a result of increased participation by individual fishermen, improvements in fishing gear and greater tendering and processing capabilities. Permit renewals have averaged 809 in the previous five years, 820 permits were renewed in 1985. Establishment of harvest guidelines and gear restrictions for commercial fishing have been promulgated to offset the increases in fishing effort and efficiency so

that adequate subsistence harvests and spawning escapements can be maintained.

In 1983, provisional spawning escapement objectives were established for the area's major spawning systems. These objectives were established based on the average escapement counts obtained in these systems since 1960. The objectives are considered to represent the escapement levels needed to maintain the salmon stocks at past levels of abundance. Continuing assessment of salmon returns may require future adjustment the objectives to maximize salmon production. Spawning escapement assessment is emphasized in the Department's program to provide greater species and geographic coverage than has been possible in the past.

The Kuskokwim River subsistence salmon fishery is one of the largest and most important in the state. Subsistence catches of chinook salmon in the Kuskokwim River often exceed the commercial catches of this species. Technological improvements in commercial fishing gear have increased efficiency of the subsistence fishery since the same units of gear are frequently used in both fisheries.

Adjustments of commercial fishing time are made during the season in response to return magnitude as indicated by commercial catch data and various Department field studies. A recently established Department test fishing program near Bethel has provided promising new information on return timing and magnitude. Evaluation of annual spawning escapements is accomplished through aerial surveys of "key" streams and lakes throughout the area, a weir project in the Holitna drainage, sonar counters on the Aniak and Kanektok Rivers and a counting tower on the Goodnews River.

Due to turbid water conditions and inclement weather, accurate estimates of escapements in all streams cannot always be obtained. Most spawning streams are located many miles upstream from the commercial fishing districts so that timely escapement estimates for in-season management are difficult to obtain. In recent years as the

data base for the various escapement projects has expanded, it has become possible to use these projects for in-season management by analysis of migratory timing.

Subsistence has been designated by the Legislature (State Law 151) as having highest priority among beneficial uses of the fish and game resources. Except in areas where intensive commercial fisheries occur, the subsistence fishery is subject to very few restrictions in order to give preference to subsistence users. In all commercial fishing areas the majority of the fishermen usually take salmon for both commercial and subsistence purposes. Short subsistence fishing closures each week are used in Districts 1, 3 and 5 to discourage illegal commercial fishing under the guise of subsistence fishing and to provide for adequate spawning escapements. Substantially more subsistence fishing time is allowed compared to commercial fishing in all areas. For example, during the 1985 fishing season (June - August) in the lower Kuskokwim River, subsistence fishing was allowed for approximately 72 days out of the 90 days when harvestable numbers of salmon were present.

Chinook or "king" salmon (Oncorhynchus tshawytscha):

To provide for a subsistence harvest that has averaged nearly 60,000 chinook salmon during the past five years and to maintain average spawning escapements, management of commercial chinook fisheries in the Kuskokwim River continues to be highly restrictive. The management strategy used from 1972 through 1984 resulted in an overharvest of chinook salmon in six of the 13 years it was used. The Board of Fisheries made major changes in the regulations to correct the situation in 1984. These regulations established a 15-30,000 chinook salmon harvest guideline and restricted the fishery to gillnets of 6-inch or smaller mesh size for the entire season.

Timing of the chinook salmon migration run varies in response to weather conditions. The opening of the season in District 1 and 2

occurs when chinook salmon are distributed throughout the river below Aniak and the Department test fishing results and subsistence catches indicate that a sustained run is in progress. The Department attempts to give three or four days advance public notice of the season opening. The District 1 season opened during the middle of June (10 June to 18 June) during the previous five years. This strategy is designed to allow:

- 1.) uninterrupted subsistence fishing during the early run.
- 2.) the harvest to be spread over a greater portion of the peak of the run, reducing the risk of overharvest of discrete stocks.
- 3.) determination of early run strength through analysis of test fishing and subsistence catches.

Commercial fishing is opened and closed by emergency order. Maximum gill nets specifications are for 6-inch or smaller mesh, 50 fathoms in length and 45 meshes depth. Fishing periods are usually six hours in duration (1800 to 2400 hours) and are scheduled two times per week (Monday and Thursday). The 1800 to 2400 hours schedule is preferred by local fishermen at this time of year. This schedule allows subsistence fishermen to anticipate commercial openings and the associated subsistence closures which helps avoid the communication problems involved in contacting the subsistence fishing community.

The Board of Fisheries has established harvest guidelines of 15 to 30,000 chinook salmon in District 1 and 2,000 to 4,000 chinook salmon in District 2. The fishery may be terminated before or after the harvest guidelines are attained depending on indicated in-season run strength.

The commercial chinook salmon season in the two coastal districts, District 3, Quinhagak and District 5, Goodnews Bay, is normally opened between 11 June and 20 June depending on the entry pattern of chinook

salmon into the Kanektok and Goodnews Rivers. Commercial fishing in these two districts is allowed only in marine waters. Commercial fishing is normally scheduled for two 12-hour periods per week from mid-June to early July when the primary target species is chinook salmon. Maximum gill nets specifications are identical to those in the Kuskokwim River districts. The commercial chinook salmon catch in District 3 and 5 should not exceed 15,000 and 5,000 respectively, unless strong runs are indicated by the Department sonar, test fishing and tower projects.

Chum salmon (Oncorhynchus keta):

Official harvest guidelines for chum salmon have not been established. However the commercial chum salmon harvest for the Kuskokwim River (District 1 and 2) should range from 200,000 to 400,000 salmon. Catches within this range normally provide for traditional subsistence requirements and adequate spawning escapements. The commercial harvest will not greatly exceed 400,000 fish except under the following conditions:

- 1.) Test fishing catches indicate a large migration of chum salmon is in progress.
- 2.) Commercial catch per unit effort (especially late in the season) is above average.
- 3.) Observations indicate that no more than average subsistence fishing effort is occurring, and that adequate subsistence catches have already been made.
- 3.) Chum salmon escapement projects indicate adequate escapements are occurring.

If the Kuskokwim River chum salmon run proves to be very small, management options for insuring adequate escapements include in order of priority:

- 1.) Commercial harvest fishing time restrictions, including early closure.
- 2.) Subsistence harvest fishing time restrictions.

District 1 has no harvest guideline and is managed based on in-season run strength evaluation based on Department test fishing escapement information and commercial-subsistence catch data. District 2 has a 4,000 to 8,000 chum salmon harvest guideline.

In early July chum salmon is the targeted species in District 4, Quinhagak. Commercial fishing is normally scheduled for three 12-hour periods per week from early July to late July unless changed by emergency order. Fishing times may vary depending on the run strength and escapement as indicated by Department sonar and test fishing projects and by comparing the commercial harvest statistics to the historical average.

Chum salmon are harvested incidentally to other species in District 5, Goodnews Bay.

Sockeye Salmon (Oncorhynchus nerka):

Sockeye salmon are harvested incidentally to the other salmon in Districts 1, 2 and 3. Historically, fishermen haven't accurately identified sockeye and chum salmon in their commercial or subsistence catches in the Kuskokwim River. For this reason, the true magnitude of the sockeye and chum salmon harvest in the main Kuskokwim River has not been accurately documented. In recent years, fishermen, processors and the Department have worked together to properly identify each species in the commercial harvest. The 1981 season was the first year that a

significant sockeye salmon harvest and run was documented. Sockeye salmon have comprised 10 to 20 percent of the chum-sockeye catch since 1981. Prior to 1981, the reported sockeye salmon catch was less than 2 percent of the chum-sockeye salmon catch.

In July sockeye salmon is the target species in District 5, Goodnews Bay. Commercial fishing is normally on a schedule of three 12-hour periods per week, unless changed by emergency order.

Coho Salmon (Oncorhynchus kistuch):

The late season in the Kuskokwim River opens when coho salmon predominate test fishing and subsistence catches usually by August 1. A daylight fishing schedule of two 6-hour fishing periods a week (normally 900 to 1500 hours on Monday and Thursday) has been used since 1979.

The commercial coho salmon harvest range for the Kuskokwim River normally should be 150-250,000 fish. Commercial catches within this range should provide adequate spawning escapements and subsistence harvests under a wide range of return magnitudes. The harvest guideline of 2 to 4,000 coho salmon is established by regulation for District 2.

Commercial coho salmon harvest in District 4 have ranged from 11,000 to 135,000 fish. Occasional aerial escapement surveys and commercial catch data are the only in-season indicators of run strength. Normally, three (Monday, Wednesday, Friday) 12-hour (600 to 1800 hours) fishing periods are allowed per week. This schedule has, in the past allowed commercial catches that provide adequate spawning escapements and subsistence harvests. Inclement weather frequently disrupts the fishing effort in District 4 during the coho return. The three time a week schedule is normally frequent enough to compensate for any "lost" fishing time. District 4 closes by regulation on September 8.

The commercial harvest of coho salmon in District 5 has ranged from 10,000 to 71,000 fish. Aerial survey and commercial catch data are the only in-season indicators of run strength, as in District 4. The same basic management strategy (three 12-hour periods per week) is used in this district as in District 4. District 5 also closes by regulation on September 8.

STATUS OF FISHERY AND STOCKS

Kuskokwim Area fisheries have expanded greatly as a result of increasing effort by participants, improvements in fishing gear, boats and motors and greater tendering and processing capabilities. The number of gear operators in the area has increased from 210 in 1966 to a high of 781 in 1985.

Commercial salmon fishermen were paid an average of 0.3 million dollars from 1970 through 1974. During the period 1980 through 1984, the average annual catch value to the salmon fishermen was 3.8 million dollars.

Commercial and subsistence catches in the Kuskokwim Area since 1913 are summarized in Table 1.

Kuskokwim River Chinook Salmon

The combined chinook salmon commercial and subsistence harvest averaged 56,000 fish for the 10 year period 1960-1969, to 81,000 during 1970-1979 and 96,000 during 1980-1984.

A commercial harvest target of from 30,000 to 40,000 was in effect from 1973-1984 to stabilize catches until the impacts of such a harvest could be evaluated. Returns experienced indicated that the 30,000 to

43,000 harvest range was too high during weaker return years. In 1984, the Board of Fisheries reduced the range to a 15,000-30,000 chinook salmon harvest guideline in District 1. The harvest guideline was exceeded in 1985 with a chinook salmon catch of 36,159 (Table 3). As a result chinook salmon escapements in 1985 were 25 to 43 percent of the desired objectives. There is some indication that the six-inch mesh restriction may have resulted in a improvement in quality of the escapement with an increase in the proportion of females in spawning populations.

*plus share of
increase of
males in
population*

Kuskokwim River Chum Salmon

Prior to 1971, very small commercial chum salmon harvests represented fish taken incidentally during the chinook and coho salmon fisheries. Expansion of the commercial chum salmon fishery was allowed in 1971 when it was apparent that a moderate increase in chum salmon utilization would be biologically sound. The Kuskokwim River subsistence chum salmon harvest was estimated to average 442,000 fish annually between 1924-1943, decreasing to about 215,000 fish annually between 1960-1965 and then to about 189,000 fish annually between 1966-1972. Based upon past subsistence harvest estimates (1924-1943 levels), a 400,000 combined commercial and subsistence harvest appeared to be consistent with the reproductive potential of the run. The 400,000 combined catch figure was a stated management goal during the early 1970's.

Subsistence catches for the entire river have ranged from 116,000 to 277,000 chum salmon since the inception of the commercial fishery in 1971. The recent five year average annual harvest (1980-1984) is 157,360. Combined harvest levels since 1971 have ranged from 185,305 (1971) to 647,000 (1980) and the recent 5 year average (1980-1984) is 503,546.

Prior to 1979, commercial fishing was only allowed in the lower 49 miles of District 1. In 1979, the Board of Fisheries expanded the area

open to the lower 78 miles of District 1. The Board opened the entire length of District 1 for the first time in 1985.

Commercial fishing effort has ranged from 216 fishermen in 1971 to 619 fishermen in 1984.

Kuskokwim River Coho Salmon

Commercial catches for the entire river since statehood have ranged from of 2,498 in 1960 to 623,000 in 1984 (Table 2). The recent five year annual average (1980-1984) is 340,000 fish. Effort in numbers of fishing permits has ranged from 83 in 1971 to 617 in 1985 (Table 4).

Traditionally, relatively few coho salmon were taken in the subsistence fishery due to poor drying conditions and the fact that subsistence needs were normally met by earlier migrating species. This pattern has been changing gradually since increasing numbers of families own freezers. Coho salmon is the preferred species for freezing, accounting in part for the increased documented subsistence use of coho salmon during the last five years.

With the exception of 1983, coho salmon returns and escapement have been average to above average in magnitude during the past nine years.

District 4, Quinhagak, Salmon--All Species:

The commercial fishery in District 4, Quinhagak was very sporadic due to unreliable processing facilities; however, the fishery has stabilized in recent years. Beginning with the 1971 season, fishing was reduced to two or three 12-hour periods per week.

Commercial fishing is allowed only in Kuskokwim Bay waters to ensure escapement of adequate numbers of salmon up the narrow Kanektok and Arolik Rivers. The vast majority of gear consists of drift gill nets that are fished at low tide in tidal channels two to five miles offshore. During high tide nets are fished next to shore. Most of the fishing takes place near the mouth of the Kanektok River.

The recent (1980-1984) five year average harvest is 169,728 salmon of all species (Table 2). Coho salmon is the most abundant followed closely by chum and chinook salmon. Recent chinook salmon harvests have been large with a record 46,385 chinook salmon harvested in 1983.

District 5, Goodnews Bay, Salmon--All Species:

Commercial salmon fishing in District 5, has been allowed since 1968. Commercial fishing is allowed only in waters of Goodnews Bay, to prevent interception of salmon bound for other fishing districts. The vast majority of gear operated consists of drift gill nets that are fished in tidal channels that radiate into Goodnews Bay from the Goodnews River.

The recent (1980-1984) five year average for this fishery is 90,955 salmon harvested. Similar to District 4, coho salmon is the most abundant species harvested, followed by sockeye then chinook salmon.

SEASON SUMMARY

The total 1985 Kuskokwim Area season commercial salmon catches (District 1, 2, 4 and 5) consisted of 74,083 chinook, 121,221 sockeye, 382,096 coho, 111 pink and 224,680 chum salmon (Table 1).

Kuskokwim River:

The commercial salmon season began on the usual two 6-hour fishing periods per week on 20 June in both districts on the Kuskokwim River (Table 3). This was the first time District 2 was opened coincidentally with District 1, a measure taken to spread the harvest over a larger portion of the return and to improve the quality of the salmon taken in District 2. The catch per fishermen hour of chinook salmon was unexpectedly high, well above any previous catches recorded with 6-inch gear. The chinook salmon catch was 17,000 following the second period on June 24, exceeding the lower bound of the guideline harvest level. Fishing was allowed to continue because:

1. compliance with the 6-inch mesh restriction indicated that escapement of larger chinooks, should have been enhanced. A higher proportion of smaller chinook in commercial catch samples indicated that this expectation was realized;
2. based on run timing analysis, the total catch was expected to be 21,000 to 22,000 within the harvest guideline level;
3. the commercial catch was comparable to previous years catches with large mesh gear which we felt indicated a strong chinook return;
4. the sockeye salmon return was stronger than expected.

Fishing continued on the two period a week schedule through 4 July. At the close of the fifth period, the catch stood at 35,578 chinook salmon, a record 104,030 sockeye salmon and 185,793 chum salmon (Table 3). The commercial chum catch was declining when normally it would be increasing. Early escapement results indicated both poor chinook and chum salmon escapements. Test fishing and catch sampling also indicated declining run strength and a lack of 4 year old chum salmon which normally dominate the return. The fishery was closed which was the earliest closure in the history of the fishery. The fishery reopened on 1 August when the Department test fishery and subsistence

catch reports indicated that the majority of fish available were coho salmon. District 2 was closed on August 16 when the harvest guideline of 4,000 coho salmon was exceeded by a catch of 5,668 (Table 3). District 1 remained on the twice a week schedule until the 1 September regulatory closing date. The total catch was 329,684 coho salmon (Table 3).

The combined chinook salmon catch for both districts of 37,889 was below the previous five year average of 39,338 (Table 2). Chinook salmon escapements were below objective levels for the third consecutive year, but the quality (proportion of females) in the escapement improved (21 percent to 35 percent). *2 how documented*

The sockeye salmon harvest of 106,647 was the largest ever recorded and nearly 3 times the previous five year average of 39,864 (Table 2).

The commercial chum salmon catch of 199,478 was the lowest since 1976 and much less than the previous five year average of 374,322 (Table 2). Escapements of chum salmon were also poor, ranging from 21 to 75 percent of the objectives in spite of a long closure of the fishery. The 4 year old age class was very weak and their weakness was responsible for the poor return. Parent year escapements were good and the reason for the weak 4 year old return is unknown.

The coho salmon catch of 335,606 is the third largest on record (Table 2). Escapement enumeration of coho salmon was severely restricted by weather but available data indicates that good escapements were achieved.

Several research projects are presently underway or completed to assist with assessing in-season run strength. They included a Bethel drift test fishing project which completed its second full season and appears to have been very successful at determining in-season run strength. Analysis of migratory timing information collected from commercial catches, sonar counting stations and weir locations has helped to

better identify the probable stage of the return and anticipated abundance for the remaining portion of the run.

Kuskokwim Bay:

Commercial fishing opened in District 4, Quinhagak and District 5, Goodnews Bay on 20 June. The schedule remained on a two 12-hour periods per week during the chinook, sockeye and chum salmon migrations. A poor return of sockeye and chum salmon was indicated by Department projects and commercial harvest statistics. Consequently, fishing time remained at two periods per week until both districts were closed early on 15 July. Escapement objectives were not met for chum or sockeye salmon.

Commercial fishing was reopened on 1 August for two 12-hour periods per week until mid-August when fishing time was increased to three 12-hour periods per week during the coho salmon return. Both districts closed by regulation on September 6.

District 4, Quinhagak:

The commercial catch in District 4 totaled 30,401 chinook salmon, 7,876 sockeye, 29,992 coho, 28 pink and 20,418 chum salmon (Table 2). The chinook salmon catch was above the previous five year average, while sockeye, coho and chum salmon catches were below average (Table 2).

This district experienced an increase in fishing effort over prior years. A record total of 300 fishermen made at least one delivery in this district in 1985 (Table 4). Effort peaked on 8 July with 191 boats fishing District 4 during a 12 hour period (Table 3). This increase was probably due to a shift in effort caused by the closure of the Kuskokwim River districts.

District 5, Goodnews Bay:

The commercial catch in District 5 totaled 5,793 chinook, 6,698 sockeye, 16,498 coho, 8 pink and 4,784 chum salmon (Table 2). The 1985 catches of all species were below the previous five year averages (Table 2). A single commercial fishing period was cancelled on 4 July when it was apparent that chinook salmon escapements were lagging. This closure resulted in chinook salmon escapement objectives being achieved.

Effort in Goodnews Bay remained steady throughout the season with 30-47 boats fishing each period (Table 3). A total of 69 fishermen made at least one delivery in this district in 1985 (Table 4).

OUTLOOK FOR 1986

The majority of the returning chinook salmon in 1986 will be five and six years of age. The Kuskokwim Area is still developing a data base for future return projections and only crude forecasts can be made by examining the brood year's escapement. The brood year escapement for the majority of returning 1986 chinook salmon was average in magnitude for Kuskokwim, Kanektok and Goodnews River stocks. The 1986 return is also expected to be average.

Goodnews Bay (District 5) is the only fishery within the Kuskokwim area which targets on sockeye salmon. The majority of sockeye salmon return at five years of age with a few maturing at four years. Escapement assessment was initiated at the Goodnews River counting tower site for the first time in 1981. The escapement past the counting tower in 1981 and 1982 was good, and a good return from these escapements is expected.

Chum salmon return as five and four year old fish. The 1986 return would come from the 1981 and 1982 brood year escapement. The

escapements in those two years were average in all systems. Therefore the chum salmon return is expected to be average.

Little information is available to assess coho abundance in 1986. Escapement assessment was initiated at the Kogruklu River Weir site for the first time in 1981. The majority of coho salmon mature at four years of age. The 1982 coho salmon escapement past the weir was good. The 1986 return for the Kuskokwim River from this brood year is also expected to be good.

Table 1. Kuskokwim Area commercial and subsistence salmon catches, 1912-1985.

| DATE | COMMERCIAL CATCH | | | | | | SUBSISTENCE CATCH ¹ | | |
|------|------------------|---------|-------|-------|------|--------|--------------------------------|------------------------------|---------|
| | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL | CHINOOK | OTHER ² SALMON | TOTAL |
| 1913 | 7,800 | ... | ... | ... | ... | 7,800 | ... | ... | ... |
| 1914 | ... | 2,667 | ... | ... | ... | 2,667 | ... | ... | ... |
| 1915 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1916 | 949 | ... | ... | ... | ... | 949 | ... | ... | ... |
| 1917 | 7,878 | ... | ... | ... | ... | 7,878 | ... | ... | ... |
| 1918 | 3,055 | ... | ... | ... | ... | 3,055 | ... | ... | ... |
| 1919 | 4,836 | ... | ... | ... | ... | 4,836 | ... | ... | ... |
| 1920 | 34,853 | ... | ... | ... | ... | 34,853 | ... | ... | ... |
| 1921 | 9,854 | ... | ... | ... | ... | 9,854 | ... | ... | ... |
| 1922 | 8,944 | 6,120 | ... | ... | ... | 15,064 | ... | ... | 180,000 |
| 1923 | 7,254 | ... | ... | ... | ... | 7,254 | ... | ... | ... |
| 1924 | 19,253 | 900 | 7,167 | 7,167 | ... | 34,487 | 17,700 | 203,148 | 217,848 |
| 1925 | 1,644 | 5,800 | ... | ... | ... | 7,514 | 10,800 | 230,850 | 241,650 |
| 1926 | ... | ... | ... | ... | ... | ... | ... | ... | 738,576 |
| 1927 | ... | ... | ... | ... | ... | ... | ... | ... | 286,254 |
| 1928 | ... | ... | ... | ... | ... | ... | ... | ... | 481,090 |
| 1929 | ... | ... | ... | ... | ... | ... | ... | ... | 560,196 |
| 1930 | 7,626 | 2,448 | ... | ... | ... | 9,963 | ... | ... | 538,650 |
| 1931 | 8,541 | ... | ... | ... | ... | 8,541 | ... | ... | 389,367 |
| 1932 | 9,339 | ... | ... | ... | ... | 9,339 | ... | ... | 746,415 |
| 1933 | ... | ... | ... | ... | ... | ... | 6,290 | 443,998 | 440,288 |
| 1934 | ... | ... | ... | ... | ... | ... | 20,800 | 597,132 | 617,932 |
| 1935 | 6,448 | ... | 8,296 | ... | ... | 14,744 | 22,930 | 554,040 | 576,980 |
| 1936 | 624 | ... | ... | ... | ... | 624 | 33,500 | 549,423 | 582,923 |
| 1937 | 480 | ... | ... | ... | ... | 480 | ... | ... | 537,111 |
| 1938 | 624 | ... | 828 | ... | ... | 1,452 | 10,153 | 400,242 | 410,395 |
| 1939 | 134 | ... | ... | ... | ... | 134 | 14,000 | 125,425 | 139,425 |
| 1940 | 247 | ... | 500 | ... | ... | 747 | 8,000 | 415,523 | 423,523 |
| 1941 | 187 | ... | 674 | ... | ... | 861 | 8,000 | 415,523 | 423,523 |
| 1942 | ... | ... | ... | ... | ... | ... | 6,400 | 325,339 | 331,739 |

Table 1 Kuskokwim Area commercial and subsistence salmon catches, 1912-1985, (continued).

| DATE | COMMERCIAL CATCH | | | | | TOTAL | SUBSISTENCE CATCH ¹ | | |
|------|------------------|---------|---------|--------|---------|---------|--------------------------------|---------------------------|---------|
| | CHINOOK | SOCKEYE | COHO | PINK | CHUM | | CHINOOK | OTHER ² SALMON | TOTAL |
| 1943 | ... | ... | ... | ... | ... | ... | 6,400 | 325,339 | 331,739 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1946 | 2,288 | ... | 674 | ... | ... | 2,962 | ... | ... | ... |
| 1947 | 5,356 | ... | ... | ... | ... | 5,356 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1951 | 4,210 | ... | ... | ... | ... | 4,210 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1954 | 57 | ... | ... | ... | ... | 57 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1959 | 3,760 | ... | ... | ... | ... | 3,760 | ... | ... | ... |
| 1960 | 5,969 | 5,649 | 5,498 | ... | 3 | 17,119 | 20,361 | 327,297 | 347,658 |
| 1961 | 23,246 | 2,308 | 5,090 | 91 | 18,864 | 49,599 | 30,910 | 185,447 | 216,357 |
| 1962 | 20,867 | 10,313 | 12,598 | 4,340 | 45,707 | 93,831 | 14,642 | 165,626 | 180,268 |
| 1963 | 18,571 | ... | 15,660 | ... | ... | 34,231 | 37,246 | 141,550 | 178,796 |
| 1964 | 21,230 | 13,422 | 28,992 | 939 | 707 | 65,290 | 30,853 | 214,942 | 245,795 |
| 1965 | 24,965 | 1,886 | 12,191 | ... | 4,242 | 43,284 | 31,143 | 323,002 | 354,145 |
| 1966 | 25,823 | 1,030 | 22,985 | 268 | 2,610 | 52,716 | 53,606 | 201,002 | 254,608 |
| 1967 | 29,986 | 652 | 58,239 | ... | 8,235 | 97,112 | 61,224 | 252,447 | 313,671 |
| 1968 | 43,157 | 5,887 | 154,302 | 75,818 | 19,694 | 298,845 | 34,986 | 301,531 | 336,517 |
| 1969 | 64,777 | 10,362 | 110,473 | 1,251 | 50,377 | 237,240 | 43,732 | 245,299 | 289,031 |
| 1970 | 65,032 | 12,654 | 62,245 | 27,422 | 60,566 | 227,979 | 71,376 | 263,746 | 335,112 |
| 1971 | 44,936 | 6,054 | 10,006 | 13 | 99,423 | 160,432 | 45,465 | 130,329 | 175,974 |
| 1972 | 55,482 | 4,312 | 23,880 | 1,952 | 97,197 | 182,823 | 43,335 | 131,514 | 184,849 |
| 1973 | 51,374 | 5,224 | 152,408 | 634 | 184,207 | 393,847 | 41,697 | 211,468 | 253,165 |
| 1974 | 30,670 | 29,003 | 179,579 | 60,052 | 196,127 | 495,431 | 29,590 | 321,358 | 350,848 |
| 1975 | 27,799 | 17,535 | 109,814 | 899 | 223,532 | 379,579 | 51,045 | 180,429 | 231,474 |
| 1976 | 49,262 | 13,636 | 112,130 | 39,998 | 231,877 | 447,903 | 60,603 | 239,461 | 300,064 |
| 1977 | 58,256 | 18,621 | 263,728 | 434 | 298,959 | 629,998 | 58,163 | 218,824 | 276,987 |
| 1978 | 63,194 | 13,734 | 247,271 | 61,968 | 282,044 | 668,211 | 38,209 | 137,489 | 175,698 |
| 1979 | 53,314 | 39,463 | 308,683 | 574 | 297,167 | 299,201 | 57,283 | 190,582 | 247,865 |

Table 1. Kuskokwim Area commercial and subsistence salmon catches, 1912-1985, (continued).

| DATE | COMMERCIAL CATCH | | | | | | SUBSISTENCE CATCH ¹ | | |
|----------------------------------|------------------|---------|---------|--------|---------|-----------|--------------------------------|---------------------------|----------------------|
| | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL | CHINOOK | OTHER SALMON ² | TOTAL |
| 1980 | 48,242 | 42,213 | 327,908 | 30,306 | 561,483 | 1,010,152 | 59,900 | 105,000 | 224,900 |
| 1981 | 79,378 | 105,940 | 278,587 | 463 | 485,635 | 950,003 | 63,640 | 187,932 | 251,572 |
| 1982 | 79,816 | 97,716 | 567,451 | 18,259 | 325,471 | 1,088,713 | 61,342 | 240,897 | 302,239 |
| 1983 | 93,676 | 90,834 | 249,018 | 379 | 306,554 | 740,461 | 60,944 ³ | 166,525 ³ | 227,469 ³ |
| 1984 | 74,006 | 81,307 | 793,078 | 23,902 | 488,482 | 1,458,507 | 50,496 ³ | 136,866 ³ | 187,362 ³ |
| 1985 | 74,083 | 121,221 | 382,096 | 111 | 224,680 | 802,191 | 52,189 ³ | 153,457 ³ | 205,646 ³ |
| 5 YEAR AVERAGE (1980-1984) | 75,024 | 83,602 | 443,208 | 14,662 | 443,525 | 1,049,567 | 59,264 | 167,444 | 238,708 |

1. Primarily chum salmon and coho salmon.
2. Goodnews Bay not surveyed prior to 1977.
3. Preliminary data.

Table 2. Kuskokwim area commercial catches by drainage, 1960-1985.

| KUSKOKWIM | | | | | | |
|-------------------------------|---------|---------|---------|-------|---------|-----------|
| RIVER ¹ | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL |
| 1960 | 5,969 | 0 | 2,498 | 0 | 0 | 8,467 |
| 1961 | 18,918 | 0 | 5,044 | 0 | 0 | 23,962 |
| 1962 | 15,341 | 0 | 12,432 | 0 | 0 | 27,773 |
| 1963 | 12,016 | 0 | 15,660 | 0 | 0 | 27,676 |
| 1964 | 17,149 | 0 | 28,613 | 0 | 0 | 45,762 |
| 1965 | 21,989 | 0 | 12,191 | 0 | 0 | 34,180 |
| 1966 | 25,545 | 0 | 22,985 | 0 | 0 | 34,180 |
| 1967 | 29,986 | 0 | 56,313 | 0 | 148 | 86,447 |
| 1968 | 34,278 | 0 | 127,306 | 0 | 187 | 161,771 |
| 1969 | 43,997 | 322 | 83,765 | 0 | 7,165 | 135,249 |
| 1970 | 39,290 | 117 | 38,601 | 44 | 1,664 | 79,716 |
| 1971 | 40,274 | 2,606 | 5,253 | 0 | 68,914 | 117,047 |
| 1972 | 39,454 | 102 | 22,579 | 8 | 78,619 | 140,762 |
| 1973 | 32,838 | 369 | 130,876 | 33 | 148,746 | 312,862 |
| 1974 | 18,664 | 136 | 147,269 | 84 | 171,887 | 337,984 |
| 1975 | 21,720 | 23 | 81,945 | 10 | 181,840 | 285,538 |
| 1976 | 30,735 | 2,971 | 88,501 | 133 | 177,864 | 300,204 |
| 1977 | 35,830 | 9,379 | 241,364 | 203 | 248,721 | 535,451 |
| 1978 | 45,641 | 733 | 213,393 | 5,832 | 248,656 | 514,255 |
| 1979 | 38,966 | 1,054 | 219,060 | 78 | 261,874 | 521,032 |
| 1980 | 35,881 | 360 | 222,012 | 803 | 483,211 | 742,297 |
| 1981 | 47,663 | 48,375 | 211,251 | 292 | 418,677 | 726,258 |
| 1982 | 48,234 | 33,154 | 447,117 | 1,748 | 278,306 | 808,559 |
| 1983 | 33,174 | 68,855 | 196,287 | 211 | 267,698 | 575,225 |
| 1984 | 31,742 | 48,575 | 623,447 | 2,942 | 523,718 | 1,130,424 |
| 1985 | 37,889 | 106,647 | 335,606 | 75 | 199,478 | 679,695 |
| 5 year average (1980-1984) | 39,339 | 39,864 | 340,023 | 1,199 | 376,122 | 796,547 |

1. District 1 and District 2 combined.

Table 2. Kuskokwim area commercial catches by drainage, 1960-1985,
(continued).

| QUINHAGAK | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL |
|-------------------------------|---------|---------|---------|--------|--------|---------|
| 1960 | 0 | 5,649 | 3,000 | 0 | 0 | 8,649 |
| 1961 | 4,328 | 2,308 | 46 | 90 | 18,854 | 25,636 |
| 1962 | 5,526 | 10,313 | 0 | 4,340 | 45,707 | 65,886 |
| 1963 | 6,555 | 0 | 0 | 0 | 0 | 6,555 |
| 1964 | 4,081 | 13,422 | 379 | 939 | 707 | 19,528 |
| 1965 | 2,976 | 1,886 | 0 | 0 | 4,242 | 9,104 |
| 1966 | 278 | 1,030 | 0 | 268 | 2,610 | 4,186 |
| 1967 | 0 | 652 | 1,926 | 0 | 8,087 | 10,665 |
| 1968 | 8,879 | 5,884 | 21,511 | 75,818 | 19,497 | 131,589 |
| 1969 | 16,802 | 3,784 | 15,077 | 953 | 38,206 | 74,822 |
| 1970 | 18,269 | 5,393 | 16,850 | 15,195 | 46,556 | 102,623 |
| 1971 | 4,185 | 3,118 | 2,982 | 12 | 30,203 | 40,506 |
| 1972 | 15,880 | 3,286 | 376 | 1,878 | 17,247 | 38,667 |
| 1973 | 14,993 | 2,783 | 16,515 | 277 | 19,680 | 54,248 |
| 1974 | 8,704 | 19,510 | 10,979 | 43,642 | 15,928 | 98,133 |
| 1975 | 3,928 | 8,584 | 10,742 | 486 | 35,233 | 58,973 |
| 1976 | 14,110 | 6,090 | 13,777 | 31,412 | 43,659 | 109,048 |
| 1977 | 19,090 | 5,519 | 0,028 | 202 | 43,707 | 77,546 |
| 1978 | 12,335 | 7,589 | 20,114 | 47,033 | 24,798 | 111,869 |
| 1979 | 11,144 | 18,828 | 47,525 | 295 | 25,995 | 103,787 |
| 1980 | 10,387 | 13,221 | 62,610 | 21,671 | 65,984 | 173,873 |
| 1981 | 24,525 | 17,292 | 47,587 | 160 | 53,316 | 142,880 |
| 1982 | 22,106 | 25,685 | 73,651 | 11,838 | 33,336 | 166,616 |
| 1983 | 46,385 | 10,263 | 32,442 | 168 | 23,090 | 112,348 |
| 1984 | 33,652 | 17,258 | 135,342 | 16,249 | 50,424 | 252,925 |
| 1985 | 30,401 | 7,876 | 29,992 | 28 | 20,418 | 88,715 |
| 5 Year Average (1980-1984) | 27,411 | 16,744 | 70,326 | 10,017 | 45,230 | 169,728 |

Table 2. Kuskokwim area commercial catches by drainage, 1960-1985,
(continued).

| GOODNEWS BAY | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL |
|-------------------------------|---------|---------|--------|--------|--------|---------|
| 1968 | 0 | 0 | 5,485 | 0 | 0 | 5,485 |
| 1969 ¹ | 3,987 | 6,256 | 11,631 | 298 | 5,006 | 27,169 |
| 1970 | 7,163 | 7,144 | 6,974 | 12,183 | 12,346 | 45,630 |
| 1971 | 477 | 330 | 1,771 | 0 | 301 | 2,879 |
| 1972 | 264 | 924 | 925 | 66 | 1,331 | 3,510 |
| 1973 | 3,543 | 2,072 | 5,017 | 324 | 15,781 | 26,737 |
| 1974 | 3,302 | 9,357 | 21,340 | 16,373 | 8,942 | 59,314 |
| 1975 | 2,156 | 9,098 | 17,889 | 419 | 5,904 | 35,466 |
| 1976 | 4,417 | 5,575 | 9,852 | 8,453 | 10,354 | 38,651 |
| 1977 | 3,336 | 3,723 | 13,335 | 29 | 6,531 | 26,954 |
| 1978 | 5,218 | 5,412 | 13,764 | 9,103 | 8,590 | 42,087 |
| 1979 | 3,204 | 19,581 | 42,098 | 201 | 9,298 | 74,382 |
| 1980 | 2,331 | 28,632 | 43,256 | 7,832 | 11,748 | 93,799 |
| 1981 | 7,190 | 40,273 | 19,749 | 11 | 13,642 | 80,865 |
| 1982 | 9,476 | 38,877 | 46,683 | 4,673 | 13,829 | 113,538 |
| 1983 | 14,117 | 11,716 | 19,660 | 0 | 6,766 | 52,259 |
| 1984 | 8,612 | 15,474 | 71,176 | 4,711 | 14,340 | 114,313 |
| 1985 | 5,793 | 6,698 | 16,498 | 8 | 4,784 | 33,781 |
| <hr/> | | | | | | |
| 5 Year Average (1980-1984) | 8,345 | 26,994 | 40,105 | 3,445 | 12,065 | 90,955 |

1. Includes Chagvan Bay.

Table 3. Season Summary, Kuskokwim Area, 1985.

District 1, Lower Kuskokwim River

| PERIODS DATES | HOURS FISHED | FISH- ERMEN | PERIOD CATCH AND CATCH PER UNIT EFFORT | | | | | | | | | | |
|------------------|-----------------|----------------|--|--------|---------|---------|-------|---------|-------|------|-------|---------|-------|
| | | | CHINOOK | CPUE | SOCKEYE | CPUE | COHO | CPUE | PINK | CPUE | CHUMS | CPUE | |
| 1 | 6/20-6/20 | 6 | 423 | 6,519 | 2.57 | 5,246 | 2.07 | 0 | 0.00 | 0 | 0.00 | 19,762 | 7.79 |
| 2 | 6/24-6/24 | 6 | 488 | 10,413 | 3.56 | 25,536 | 8.72 | 0 | 0.00 | 2 | 0.00 | 42,778 | 14.61 |
| 3 | 6/27-6/27 | 6 | 492 | 8,792 | 2.98 | 26,155 | 8.86 | 0 | 0.00 | 2 | 0.00 | 47,443 | 16.07 |
| 4 | 7/01-7/01 | 6 | 514 | 6,168 | 2.00 | 31,082 | 10.08 | 0 | 0.00 | 2 | 0.00 | 47,471 | 15.39 |
| 5 | 7/04-7/04 | 6 | 460 | 3,774 | 1.37 | 16,114 | 5.84 | 0 | 0.00 | 5 | 0.00 | 28,581 | 10.36 |
| 6 | 8/01-8/01 | 6 | 487 | 204 | 0.07 | 174 | 0.06 | 34,052 | 11.65 | 27 | 0.01 | 2,470 | 0.85 |
| 7 | 8/05-8/05 | 6 | 527 | 121 | 0.04 | 33 | 0.01 | 54,819 | 17.34 | 9 | 0.00 | 1,558 | 0.49 |
| 8 | 8/08-8/08 | 6 | 525 | 58 | 0.02 | 3 | 0.00 | 78,149 | 24.81 | 10 | 0.00 | 472 | 0.15 |
| 9 | 8/12-8/12 | 6 | 530 | 44 | 0.01 | 7 | 0.00 | 77,809 | 24.47 | 10 | 0.00 | 342 | 0.11 |
| 10 | 8/15-8/15 | 6 | 441 | 28 | 0.01 | 0 | 0.00 | 28,013 | 10.59 | 6 | 0.00 | 193 | 0.07 |
| 11 | 8/19-8/19 | 6 | 406 | 13 | 0.01 | 2 | 0.00 | 19,316 | 7.93 | 1 | 0.00 | 32 | 0.01 |
| 12 | 8/22-8/22 | 6 | 390 | 10 | 0.00 | 0 | 0.00 | 17,534 | 7.49 | 0 | 0.00 | 56 | 0.02 |
| 13 | 8/26-8/26 | 6 | 297 | 8 | 0.00 | 0 | 0.00 | 10,688 | 6.00 | 3 | 0.00 | 22 | 0.01 |
| 14 | 8/29-8/29 | 6 | 262 | 8 | 0.01 | 1 | 0.00 | 9,568 | 6.09 | 4 | 0.00 | 28 | 0.02 |
| SEASON TOTAL | | 84 | 654 | 36,159 | | 104,353 | | 329,948 | | 74 | | 191,20* | |

Table 3. Season summary, 1985 (continued).

District 2, Middle Kuskokwim River

| | PERIODS DATES | HOURS FISHED | FISH- ERMEN | P E R I O D C A T C H A N D C A T C H P E R U N I T E F F O R T | | | | | | | | | |
|--------------|------------------|-----------------|----------------|---|------|---------|-------|-------|-------|------|------|-------|-------|
| | | | | CHINOOK | CPUE | SOCKEYE | CPUE | COHO | CPUE | PINK | CPUE | CHUMS | CPUE |
| 1 | 6/20-6/20 | 6 | 8 | 136 | 2.83 | 115 | 2.40 | 0 | 0.00 | 0 | 0.00 | 647 | 13.48 |
| 2 | 6/24-6/24 | 6 | 11 | 263 | 3.98 | 340 | 5.15 | 0 | 0.00 | 0 | 0.00 | 2,411 | 36.53 |
| 3 | 6/27-6/27 | 6 | 12 | 548 | 7.61 | 739 | 10.26 | 0 | 0.00 | 0 | 0.00 | 2,263 | 31.43 |
| 4 | 7/01-7/01 | 6 | 15 | 779 | 8.66 | 1,100 | 12.22 | 0 | 0.00 | 0 | 0.00 | 2,854 | 31.71 |
| 5 | 7/04-7/04 | 6 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 6 | 8/08-8/08 | 6 | 6 | 0 | 0.00 | 0 | 0.00 | 739 | 20.53 | 0 | 0.00 | 41 | 1.14 |
| 7 | 8/12-8/12 | 6 | 14 | 3 | 0.04 | 0 | 0.00 | 2,914 | 34.69 | 1 | 0.01 | 45 | 0.54 |
| 8 | 8/15-8/15 | 6 | 11 | 1 | 0.02 | 0 | 0.00 | 2,005 | 30.38 | 0 | 0.00 | 9 | 0.14 |
| SEASON TOTAL | | 48 | 23 | 1,730 | | 2,294 | | 5,658 | | 1 | | 8,270 | |

Table 3. Season Summary, 1985 (continued).

District 4, Quinhagak

| | PERIODS DATES | HOURS FISHED | FISH- ERMEN | PERIOD CATCH AND CATCH PER UNIT EFFORT | | | | | | | | | |
|--------------|------------------|-----------------|----------------|--|------|---------|------|--------|------|------|------|--------|------|
| | | | | CHINOOK | CPUE | SOCKEYE | CPUE | COHO | CPUE | PINK | CPUE | CHUMS | CPUE |
| 1 | 6/20-6/20 | 12 | 161 | 6,617 | 3.42 | 111 | 0.06 | 0 | 0.00 | 0 | 0.00 | 968 | 0.50 |
| 2 | 6/24-6/24 | 12 | 110 | 6,698 | 5.07 | 638 | 0.48 | 0 | 0.00 | 0 | 0.00 | 3,228 | 2.45 |
| 3 | 6/27-6/27 | 12 | 78 | 3,795 | 4.05 | 461 | 0.49 | 0 | 0.00 | 0 | 0.00 | 1,847 | 2.00 |
| 4 | 7/01-7/01 | 12 | 97 | 3,752 | 3.22 | 975 | 0.84 | 0 | 0.00 | 0 | 0.00 | 2,131 | 1.83 |
| 5 | 7/04-7/04 | 12 | 126 | 4,068 | 2.69 | 1,201 | 0.79 | 0 | 0.00 | 0 | 0.00 | 3,155 | 2.09 |
| 6 | 7/08-7/08 | 12 | 191 | 2,407 | 1.05 | 1,289 | 0.56 | 0 | 0.00 | 0 | 0.00 | 3,231 | 1.41 |
| 7 | 7/11-7/11 | 12 | 146 | 1,545 | 0.88 | 1,901 | 1.09 | 0 | 0.00 | 0 | 0.00 | 2,552 | 1.46 |
| 8 | 7/15-7/15 | 12 | 177 | 1,306 | 0.61 | 1,240 | 0.58 | 18 | 0.01 | 0 | 0.00 | 2,796 | 1.32 |
| 9 | 8/01-8/01 | 12 | 60 | 93 | 0.13 | 42 | 0.06 | 910 | 1.26 | 11 | 0.02 | 247 | 0.34 |
| 10 | 8/05-8/05 | 12 | 62 | 55 | 0.07 | 6 | 0.01 | 2,234 | 3.00 | 5 | 0.01 | 143 | 0.19 |
| 11 | 8/08-8/08 | 12 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| 12 | 8/12-8/12 | 15 | 75 | 24 | 0.02 | 1 | 0.00 | 3,894 | 3.46 | 0 | 0.00 | 15 | 0.01 |
| 13 | 8/14-8/14 | 12 | 69 | 6 | 0.01 | 1 | 0.00 | 3,543 | 4.28 | 0 | 0.00 | 24 | 0.03 |
| 14 | 8/16-8/16 | 12 | 83 | 10 | 0.01 | 3 | 0.00 | 4,643 | 4.66 | 1 | 0.00 | 23 | 0.02 |
| 15 | 8/19-8/19 | 12 | 63 | 3 | 0.00 | 2 | 0.00 | 2,532 | 3.35 | 2 | 0.00 | 5 | 0.01 |
| 16 | 8/21-8/21 | 12 | 67 | 4 | 0.00 | 0 | 0.00 | 2,819 | 3.51 | 2 | 0.00 | 11 | 0.01 |
| 17 | 8/23-8/23 | 12 | 77 | 5 | 0.01 | 1 | 0.00 | 2,542 | 2.75 | 0 | 0.00 | 11 | 0.01 |
| 18 | 8/26-8/26 | 12 | 48 | 5 | 0.01 | 2 | 0.00 | 1,419 | 2.46 | 1 | 0.00 | 9 | 0.00 |
| 19 | 8/28-8/28 | 12 | 41 | 3 | 0.01 | 1 | 0.00 | 1,514 | 3.08 | 2 | 0.00 | 4 | 0.01 |
| 20 | 8/30-8/30 | 12 | 51 | 1 | 0.00 | 0 | 0.00 | 1,054 | 1.72 | 3 | 0.00 | 1 | 0.00 |
| 21 | 9/02-9/02 | 12 | 7 | 1 | 0.01 | 0 | 0.00 | 535 | 6.37 | 0 | 0.00 | 1 | 0.01 |
| 22 | 9/04-9/04 | 12 | 35 | 2 | 0.00 | 0 | 0.00 | 1,177 | 2.80 | 0 | 0.00 | 0 | 0.00 |
| 23 | 9/06-9/06 | 12 | 31 | 1 | 0.00 | 1 | 0.00 | 1,158 | 3.11 | 1 | 0.00 | 0 | 0.00 |
| SEASON TOTAL | | 279 | 300 | 30,401 | | 7,876 | | 29,992 | | 28 | | 20,418 | |

Table 3. Season summary, 1985 (continued).

District 5, Goodnews Bay

| PERIODS DATES | HOURS FISHED | FISH- ERMEN | PERIOD CATCH AND CATCH PER UNIT EFFORT | | | | | | | | | | |
|------------------|-----------------|----------------|--|-------|---------|-------|------|--------|------|------|-------|-------|------|
| | | | CHINOOK | CPUE | SOCKEYE | CPUE | COHO | CPUE | PINK | CPUE | CHUMS | CPUE | |
| 1 | 6/20-6/20 | 12 | 32 | 648 | 1.69 | 102 | 0.27 | 0 | 0.00 | 0 | 0.00 | 165 | 0.43 |
| 2 | 6/24-6/24 | 12 | 44 | 988 | 1.87 | 536 | 1.13 | 0 | 0.00 | 0 | 0.00 | 821 | 1.55 |
| 3 | 6/27-6/27 | 12 | 41 | 1,627 | 3.31 | 685 | 1.39 | 0 | 0.00 | 0 | 0.00 | 691 | 1.40 |
| 4 | 7/01-7/01 | 12 | 43 | 1,156 | 2.24 | 1,143 | 2.22 | 0 | 0.00 | 0 | 0.00 | 710 | 1.38 |
| 5 | 7/08-7/08 | 12 | 47 | 495 | 0.88 | 1,231 | 2.18 | 0 | 0.00 | 0 | 0.00 | 949 | 1.68 |
| 6 | 7/11-7/11 | 12 | 38 | 408 | 0.89 | 1,397 | 3.06 | 0 | 0.00 | 0 | 0.00 | 562 | 1.23 |
| 7 | 7/15-7/15 | 12 | 45 | 354 | 0.66 | 1,229 | 2.28 | 0 | 0.00 | 2 | 0.00 | 767 | 1.42 |
| 8 | 8/01-8/01 | 12 | 31 | 24 | 0.06 | 173 | 0.47 | 241 | 0.65 | 3 | 0.01 | 59 | 0.16 |
| 9 | 8/05-8/05 | 12 | 21 | 18 | 0.07 | 94 | 0.37 | 497 | 1.97 | 0 | 0.00 | 23 | 0.09 |
| 10 | 8/08-8/08 | 12 | 12 | 7 | 0.05 | 4 | 0.03 | 547 | 3.80 | 0 | 0.00 | 2 | 0.01 |
| 11 | 8/12-8/12 | 12 | 27 | 20 | 0.06 | 17 | 0.05 | 1,255 | 3.87 | 0 | 0.00 | 7 | 0.02 |
| 12 | 8/14-8/14 | 12 | 28 | 8 | 0.02 | 4 | 0.01 | 1,325 | 3.94 | 0 | 0.00 | 10 | 0.03 |
| 13 | 8/16-8/16 | 12 | 28 | 12 | 0.04 | 5 | 0.01 | 1,667 | 4.96 | 0 | 0.00 | 5 | 0.01 |
| 14 | 8/19-8/19 | 12 | 34 | 5 | 0.01 | 5 | 0.01 | 1,394 | 3.42 | 1 | 0.00 | 2 | 0.00 |
| 15 | 8/21-8/21 | 12 | 34 | 6 | 0.01 | 1 | 0.00 | 1,510 | 3.70 | 0 | 0.00 | 1 | 0.00 |
| 16 | 8/23-8/23 | 12 | 33 | 6 | 0.02 | 4 | 0.01 | 1,308 | 3.30 | 0 | 0.00 | 0 | 0.00 |
| 17 | 8/26-8/26 | 12 | 39 | 6 | 0.01 | 0 | 0.00 | 2,033 | 4.34 | 0 | 0.00 | 4 | 0.01 |
| 18 | 8/28-8/28 | 12 | 37 | 3 | 0.01 | 1 | 0.00 | 1,896 | 4.27 | 0 | 0.00 | 2 | 0.00 |
| 19 | 8/30-8/30 | 12 | 40 | 1 | 0.00 | 4 | 0.01 | 1,798 | 3.75 | 0 | 0.00 | 1 | 0.00 |
| 20 | 9/02-9/02 | 12 | 34 | 1 | 0.00 | 2 | 0.00 | 653 | 1.60 | 1 | 0.00 | 3 | 0.01 |
| 21 | 9/04-9/04 | 12 | 24 | 0 | 0.00 | 1 | 0.00 | 374 | 1.30 | 1 | 0.00 | 0 | 0.00 |
| 22 | 9/06-9/06 | 12 | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| SEASON TOTAL | | | 264 | 69 | 5,793 | 6,698 | | 16,498 | | 8 | | 4,784 | |

Table 4. Kuskokwim Area commercial effort by district, 1970-1985¹ (continued)

| YEAR | CHINOOK SEASON | CHUM SEASON | COHO SEASON | TOTAL |
|---|------------------|-------------|-------------|-------|
| <u>DISTRICT 1</u> | | | | |
| 1970 | 361 | 2 | 266 | 387 |
| 1971 | 418 | 216 | 83 | 422 |
| 1972 | 405 | 176 | 245 | 425 |
| 1973 | 456 | 341 | 411 | 530 |
| 1974 | 606 | 467 | 516 | 666 |
| 1975 | 472 | 540 | 533 | 737 |
| 1976 | 561 | 517 | 516 | 674 |
| 1977 | 563 | 522 | 572 | 653 |
| 1978 | 615 | 61 | 597 | 723 |
| 1979 | 591 | 617 | 613 | 685 |
| 1980 | 553 | 579 | 586 | 663 |
| 1981 | 589 | 613 | 586 | 679 |
| 1982 | 610 | 576 | 596 | 686 |
| 1983 | 544 | 619 | 577 | 679 |
| 1984 | 520 ₃ | 586 | 619 | 654 |
| 1985 | | 598 | 627 | 654 |
| <hr/> | | | | |
| Previous 5 Year Average (1980-1984) | 563 | 595 | 593 | 672 |

Table 4. Kuskokwim Area, commercial effort by district, 1970-1985¹ (continued).

| YEAR | CHINOOK SEASON | CHUM SEASON | COHO SEASON | TOTAL |
|---|----------------|-------------|-------------|-------|
| <u>DISTRICT 2</u> | | | | |
| 1970 | 10 | 2/ | 11 | 18 |
| 1971 | 22 | 2/ | 2/ | 22 |
| 1972 | 12 | 2/ | 2/ | 12 |
| 1973 | 28 | 2/ | 2/ | 28 |
| 1974 | 36 | 2/ | 16 | 37 |
| 1975 | 38 | 2/ | 2/ | 38 |
| 1976 | 55 | 2/ | 11 | 57 |
| 1977 | 83 | 54 | 24 | 105 |
| 1978 | 28 | 2/ | 16 | 43 |
| 1979 | 41 | 2/ | 20 | 43 |
| 1980 | 37 | 21 | 12 | 43 |
| 1981 | 153 | 11 | 16 | 153 |
| 1982 | 38 | 50 | 25 | 60 |
| 1983 | 14 | 42 | 9 | 43 |
| 1984 | 15 | 49 | 32 | 49 |
| 1985 | - | 17 | 16 | 23 |
| <hr/> | | | | |
| Previous 5 Year Average (1970-1984) | 51 | 35 | 19 | 70 |

Table 4. Kuskokwim Area, commercial effort by district, 1970-1985 ¹ (continued)

| <u>District 4</u> | | <u>District 5</u> | |
|-------------------------------|-------|-------------------|-------|
| YEAR | TOTAL | YEAR | TOTAL |
| 1970 | 88 | 1970 | 35 |
| 1971 | 61 | 1971 | 16 |
| 1972 | 107 | 1972 | 14 |
| 1973 | 109 | 1973 | 21 |
| 1974 | 196 | 1974 | 49 |
| 1975 | 197 | 1975 | 50 |
| 1976 | 181 | 1976 | 40 |
| 1977 | 258 | 1977 | 34 |
| 1978 | 200 | 1978 | 35 |
| 1979 | 206 | 1979 | 30 |
| 1980 | 169 | 1980 | 48 |
| 1981 | 186 | 1981 | 48 |
| 1982 | 177 | 1982 | 48 |
| 1983 | 226 | 1983 | 79 |
| 1984 | 260 | 1984 | 77 |
| 1985 | 300 | 1985 | 69 |
| Previous Five Year Average | 192 | | 60 |

1. Number of actual fishing vessels
2. No commercial fishing allowed.
3. Chinook salmon season (unrestricted mesh) estimated by regulation.

Table 5. Dollar value estimates of Kuskokwim Area commercial salmon fishery, 1964-1984. 1/

| YEAR | GROSS VALUE OF CATCH TO FISHERMEN | WAGES EARNED 2/ | TOTAL INCOME TO DISTRICT | WHOLESALE | |
|------|---|--------------------|-----------------------------|---------------------|----------------------------|
| | | | | VALUE OF PACK 3/ | TAX REVENUE TO STATE 4/ |
| 1964 | 83,030.00 | | | 409,700.00 | 6,100.00 |
| 1965 | 90,950.00 | | | 370,000.00 | 8,200.00 |
| 1966 | 87,466.00 | | | 406,500.00 | 8,100.00 |
| 1967 | 138,647.00 | 20,000.00 | 158,647.00 | 727,000.00 | N/A |
| 1968 | 290,370.00 | 40,000.00 | 330,370.00 | 1,135,000.00 | 17,000.00 |
| 1969 | 297,233.00 | 60,435.00 | 357,668.00 | N/A | N/A |
| 1970 | 362,470.00 | 127,327.00 | 489,797.00 | 1,300,000.00 | 20,000.00 |
| 1971 | 371,220.00 | 80,510.00 | 451,730.00 | 72,180.00 | 16,770.00 |
| 1972 | 360,727.00 | 85,895.00 | 447,662.00 | N/A | N/A |
| 1973 | 827,735.00 | 150,000.00 | 977,735.00 | 3,600,000.99 | 32,000.00 |
| 1974 | 1,056,042.00 | 150,000.00 | 1,206,042.00 | N/A | N/A |
| 1975 | 899,178.00 | 165,000.00 | | 2,000,000.00 | 25,000.00 |
| 1976 | 1,380,229.00 | 175,000.00 | 1,555,229.00 | N/A | N/A |
| 1977 | 3,891,950.00 | 200,000.00 | 4,091,950.00 | N/A | N/A |
| 1978 | 2,337,470.00 | 250,000.00 | 2,578,470.00 | N/A | N/A |
| 1979 | 3,678,000.00 | 275,000.00 | 3,953,000.00 | N/A | N/A |
| 1980 | 2,725,134.00 | 300,000.00 | 3,025,134.00 | N/A | N/A |
| 1981 | 3,766,525.00 | 325,000.00 | 4,091,525.00 | N/A | N/A |
| 1982 | 4,213,954.00 | 350,000.00 | 4,563,954.00 | N/A | 98,240.00 5/ |
| 1983 | 2,670,400.00 | N/A | N/A | N/A | 37,254.00 |
| 1984 | 5,809,000.00 | N/A | N/A | N/A | N/A |
| 1985 | 3,252,618.00 | N/A | N/A | N/A | N/A |

- 1/ Information not available for wages earned during 1964-1966
- 2/ Includes wages paid to tenderboat operators, processing plant and employees in the district.
- 3/ Based on type of processing when fish were shipped out of the district.
- 4/ Audit Division, Department of Revenue
- 5/ One-half of this revenue is "shared back" to city of Bethel.

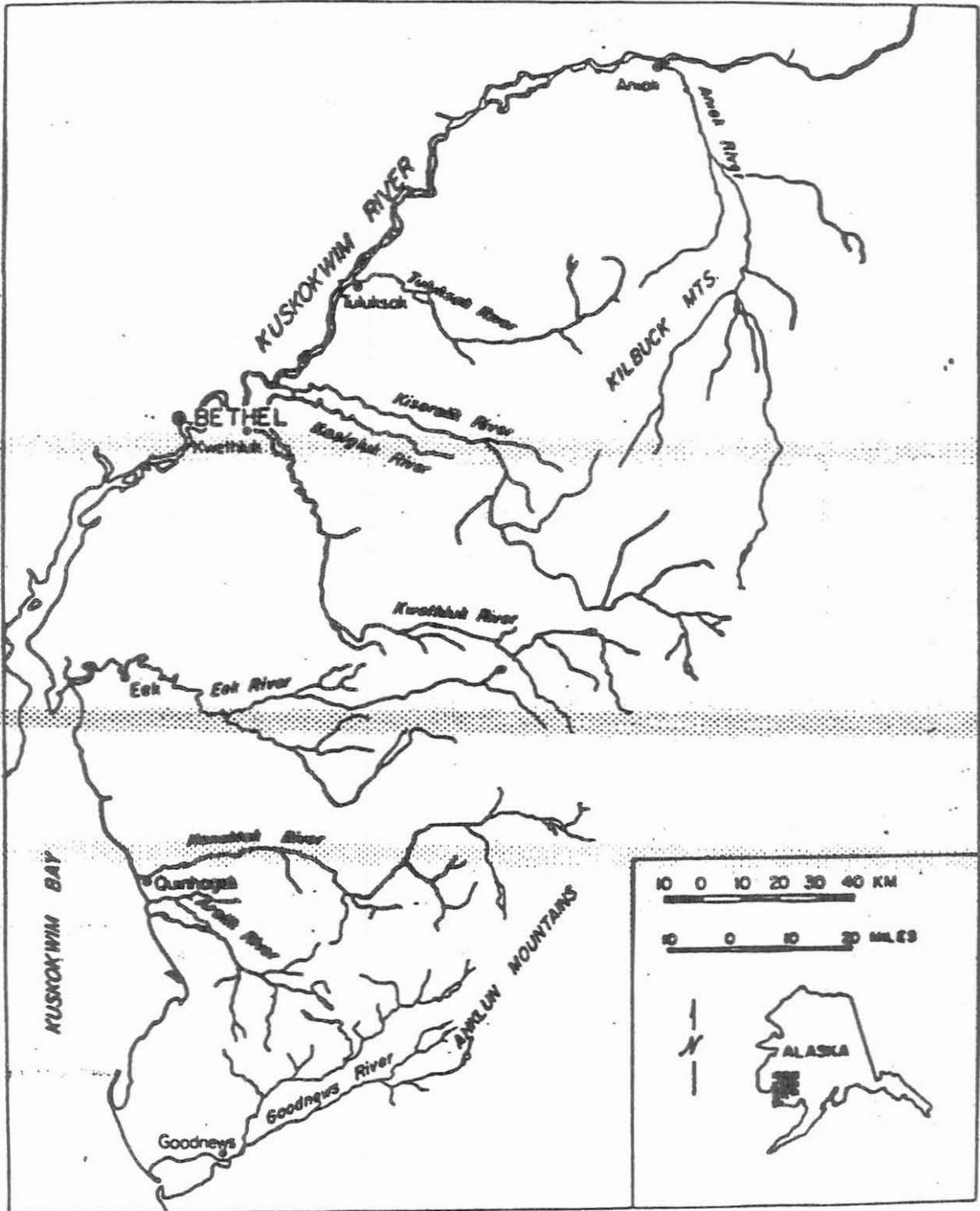


Figure 1. Lower Kuskokwim River and Kuskokwim Bay study area. Inset shows Alaskan location.