ANNUAL MANAGEMENT REPORT FOR THE SUBSISTENCE AND COMMERCIAL FISHERIES OF THE KUSKOKWIM AREA

1994

By:
R. Kim Francisco
Cindy Anderson
Charles Burkey Jr.
Mary Fogarty
Douglas B. Molyneaux
Charles Utermole
Kyle Vaught

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AUTHORS

R. Kim Francisco is Kuskokwim Area Management Biologist for the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, P.O. Box 1467, Bethel, AK 99559-1467

Cindy J. Anderson is Assistant Area Management Biologist for the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, 333 Raspberry Road, Anchorage, AK 99518-1599.

Charles Burkey Jr. is Assistant Area Management Biologist for the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, P.O. Box 1467, Bethel, AK 99559-1467

Douglas B. Molyneaux is Salmon Research Project Leader for the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, 333 Raspberry Road, Anchorage, AK 99518-1599.

Mary Fogarty is Resource Specialist for the Alaska Department of Fish and Game, Division of Subsistence, P.O. Box 1788, Bethel, Ak. 99559-1788

Charles Utermole is Regional Biometrician for the Alaska Department of Fish and Game, Division of Subsistence, 333 Raspberry Road, Anchorage, Ak. 99518-1599

Kyle Vaught is Kuskokwim Sonar Project Leader for the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, 333 Raspberry Road, Anchorage, AK 99518-1599

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PREFACE

This is the thirty-third (1985/1986 was a single report) annual management report detailing the management activities of the Division of Commercial Fisheries Management & Development Division staff in the Kuskokwim Area. The 1960-1974 management reports for the "Kuskokwim District" appear in the Arctic-Yukon-Kuskokwim Area report series. The 1975-1986 management reports appear in the Kuskokwim Area Annual Report series. The annual management report became a part of the Regional Information Report Series in 1987.

Data presented in this report supersede information found in previous management reports. This report includes summary data from many special research projects. Complete documentation of these projects and results appear in separate reports. The bibliography includes both referenced and unreferenced reports concerning the Kuskokwim Area fisheries. Some of the data presented is preliminary and may be presented with minor differences in future reports.

Subsistence catch estimates for the years before 1978 are different from the estimates presented in the Kuskokwim Area Annual Management Reports for 1978 through 1984. The historical data was reanalyzed in 1978 and tables were revised. The method and the reason for the revision was not recorded. In an effort to standardize the subsistence catch data, the estimates originally reported in the Management Reports before 1978 have replaced the 1978 revisions.

To simplify use of this report, the tabular data are separated into current year tables and appendices. The appendices are separated by fishery and fishing district. The appendices show annual comparisons and information that seldom change.

The ages of fish in this report are presented as both total age, year spawned to year recorded and in the European notation. In the European system the number of winters in freshwater after hatching is followed by the number of winters in salt water. The fresh and salt water winters are separated by a decimal point. To derive total age from the European system you must add the fresh and saltwater winters and add one for the year of spawning. For example an age 1.3 chinook salmon's total age is 5 years; 1+3+1=5.

PART I. SALMON FISHERY

Fishery Resources

Six species of Pacific salmon are indigenous to the area; chinook or "king" salmon (Oncorhynchus tshawytscha), sockeye or "red" salmon (O. nerka), coho or "silver" salmon (O. kisutch), pink or "humpy" salmon (O. gorbuscha) chum or "dog" salmon (O. keta) and rainbow trout (O. mykis). The Kuskokwim River drainage has the largest populations of chinook, sockeye, coho and chum salmon in the area. Pink salmon occur throughout the area. Little quantitative data on the population size of pink salmon is available because of the lack of commercial

markets and interest by subsistence fishers. Rainbow trout are rare or absent upstream of the Aniak River drainage and west of the Kuskokwim River. The largest populations in the area are found in the Kanektok and Goodnews Rivers. There is no commercial fishery on rainbow trout. Their contribution to the subsistence fishery has not been quantified, except in the Kanektok River (Wagner 1991). There is a growing sport fishery on all six species that is documented by the Division of Sport Fish.

Management Programs

The management objective for chinook, coho, and chum salmon in Districts 1 and 2 is to achieve desired escapement objectives and allow for the orderly harvest of fish surplus to spawning requirements. Sockeye and pink salmon are not actively managed.

The management objective for chinook, coho, and sockeye salmon in Districts 4 and 5 is to achieve desired escapement objectives and allow for the orderly harvest of fish surplus to spawning requirements. Chum and pink salmon are not actively managed.

Subsistence uses receive the highest priority among consumptive uses of the resources. In-season management depends heavily on commercial catch data, the test fisheries and escapement models. Escapement models estimate the final escapement by extrapolating the in-season counts using the historical percentage of run passage for that date.

COMMERCIAL FISHERY

Prior to 1983, a management strategy of conservatively increasing the commercial catch harvest guidelines to establish definite trends between catch and escapement allowed development of the fishery. The change from a harvest-guideline-based management strategy to an escapement-objective-based strategy in 1983 is increasing the average harvest (Appendix A.2). The only stock in the Kuskokwim Area which is a conservation concern[2] is Goodnews Bay chinook salmon. The failure of Aniak River chum salmon to reach its escapement objective in 1992 and 1993 will require special management measures in the 1996 through 1998 return years to prevent the creation of a conservation concern.

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[2] A conservation concern is a stock which fails to reach its escapement objective despite repeated proactive management measures.

ESCAPEMENT MONITORING

The area's escapement data base allowed the assignment of provisional salmon spawning escapement objectives in major spawning systems in 1983. These objectives are the average escapement counts obtained under acceptable conditions by aerial survey, tower, weir, and sonar indices in these systems since 1959 (Appendix A.1). Indices obtained under poor conditions (primarily turbid water or radically incomplete counts) were excluded. Surveys of an unusual magnitude were not used to calculate the index because of their disproportionate effect. The objectives represent the minimum escapement levels needed to maintain the salmon stocks at past levels of abundance. Continuing evaluation of the escapement data provided for refinements to the objectives.

Aerial surveys of "key" streams and lakes throughout the area provided the escapement indexes presented in Table 1. The United States Fish and Wildlife Service (USFWS) operated a weir on the Tuluksak River for the fourth year in 1994 (Table 2 & Appendixes B.32 & B.33). A sonar project on the Aniak River provided the escapement results shown on Table 3 in 1994 (Appendix B. 34). The escapement counted at the weir in the Kogrukluk River is presented in Tables 4 through 8 and Appendixes B. 35 through 40. The escapement obtained at the weir in the Goodnews River is presented in Table 9 and Appendixes D.10 through 14.

Turbid water conditions and inclement weather often prevent accurate estimates of escapements by aerial survey. Timely escapement estimates for in-season management are difficult to obtain. Most spawning streams are many miles upstream of the commercial fishing districts. This results in a long delay between the commercial periods and their visible effects on escapement. In-season management depends heavily on commercial catch data, the test fisheries and escapement models. Escapement models estimate the final escapement by extrapolating the in-season counts by the historical percentage of run passage for that date (Tables 3, 5-8).

A processor sponsored test fishery near Eek (Figure 2) operated from 1988 through 1990. They were unable to provide for the fishery in 1991. The Department funded the fishery beginning the last week of July 1992 through the end of the 1993 season. Funding for this project in 1994 came from a grant by the Bureau of Indian Affairs to the Bering Sea Fishermen's Association. This fishery provides information on the entry timing of salmon into the river (Appendices B.2-B.5). In 1994, large numbers of chum salmon entered the Kuskokwim River via the west channel. This resulted in the Eek Test Fishery, which is conducted in the east channel and the Bethel Test Fishery showing quite different abundance indexes. The Kuskokwim River Salmon Management Working Group and Department will be looking at ways to improve this test fishery.

The Department operated the Bethel Test Fishery for the eleventh year in 1994. This data base coupled with consistent methodology allows this test fishery to provide the best in-season information on run abundance (Appendices B.6-B.9).

In 1992, the processor in Aniak funded new test fisheries at two locations; Aniak and Chuathbaluk, (Figure 3). This was the third year of operation for the Aniak

Test Fishery. The increasing data base is improving interpretation of the data from this fishery (Appendices B.10-B.13).

For various reasons, the Chuathbaluk Test Fishery had inconsistent results. In addition, a number of people in the area objected to the numbers of fish being taken in both test fisheries. As a result, the Department discontinued the Chuathbaluk Test Fishery in 1994.

Catch per unit effort in the test fisheries is a standardized value to enhance comparability of the catch results. The test fishery CPUE considers differences in the length of the net used and the mean fishing time of each sampling period. The CPUE is expressed in terms of the number of fish that would have been caught if 180 m (100 fathoms) of net were fished for 60 minutes.

The Kuskokwim River sonar project provides daily passage estimates for chinook, chum, sockeye, and coho salmon. Total passage estimates in 1994 (5 June through 15 August) were 110,445 chinook, 307,319 sockeye, 779,037 chum, and 405,903 coho salmon (Table 10). The sonar site is located approximately 5 km (3 mi) upstream from Bethel, just upstream from the downstream mouth of Church Slough.

The Kuskokwim River sonar project began as a feasibility project in 1987, and has continued to evolve as a tool for managing the salmon fisheries on the Kuskokwim River. As part of this evolution, several changes were made in project design in 1994. A graphing fathometer was used in bank-to-bank transects to estimate passage from 190 to 260 m (0 = right bank, 350 = left bank, facing downstream), where side-looking sonar beams did not sample. A 7.0 cm (2.75 in) mesh net was added to the suite of gillnets drifted to estimate species proportions. This net primarily targeted whitefish and ciscos. The full suite of mesh sizes used in 1994 was: 7.0 cm (2.75 in), 10.2 cm (4.0 in), 13.7 cm (5.4 in), 16.5 cm (6.5 in), and 20.3 cm (8.0 in). To more accurately estimate passage of each species throughout the river's cross-section, species proportions were applied to total fish passage in a stratified design. Four sonar strata were defined as follows: 0-40 m, 40-11467 m, 11467-260 m, and 260-350 m . Set gillnets were used in the 0-40 m strata and drift gillnets were used in the remaining strata for estimation of species proportions. Sixty-cycle filters were used on both banks to filter out electronic noise introduced by generators.

Two significant changes to the project's design were made in-season. On 18 June, a transducer was added to the right bank to better detect offshore fish near the bottom. On 8 July, nets 8.5 m deep (twice normal depth) were included in the suite of nets drifted in the 190-260 m strata and found chum salmon to be primarily caught in the bottom half of these nets.

Dual beam data for target strength analysis was collected from 29 June through 15 August. Preliminary in-season analysis of dual-beam data from standard target spheres verified that equipment performance remained stable throughout the period of data collection in 1994. Bethel test fish daily and cumulative CPUE trended closely with sonar species passage estimates, with the exception of coho salmon. This was also the case in 1993.

Area and District Boundaries

The Kuskokwim Area includes all waters of Alaska between Cape Newenham and the Naskonat Peninsula, plus Nunivak and St. Matthew Islands (Figure 1). Commercial salmon fishing occurs in four districts in the area:

District 1, the Lower Kuskokwim River, consists of the Kuskokwim River from a line between Apokak Slough and Popokamiut, upstream to a line between ADF&G regulatory markers located about one mile above the Tuluksak River (Figure 2). The downstream boundary has been in effect since 1986 and the upstream boundary was established in 1990 (Appendix A.3).

District 2, the Middle Kuskokwim River, consists of the Kuskokwim River from ADF&G regulatory markers located at the upstream entrance to the second slough on the west bank downstream from Kalskag to the regulatory markers at Chuathbaluk (Figure 3). The downstream boundary of District 2 was used for the first time in 1990 (Appendix A.3).

District 4, Quinhagak, consists of the waters of Kuskokwim Bay between the mouth of Weelung Creek (misspelled in the regulations as Wheeling) and the South Mouth of the Arolik River (Figure 4). The northern boundary was new in 1990 and the first boundary change since 1960 (Appendix A.3).

District 5 consists of the waters of Goodnews Bay (Figure 5). This boundary has been in effect since the inception of the fishery in 1968.

"W" is the letter code assigned to the Kuskokwim Area by the Commercial Fisheries Entry Commission. It precedes the district number on the figures and in news releases (eg. W-1). This helps the public differentiate between announcements for the Yukon River districts (Y) and the Kuskokwim River (W) districts.

Public Communications

Communicating management plans and decisions to the public is always difficult. Many people in the Kuskokwim Area cannot read or speak English. More often English is a second language, which increases the challenge of communicating management plans and decisions. The Department and the Working Group's relationship has dramatically improved the acceptance and understanding of many users. Special regulation notices are broadcast over local radio stations, VHF and CB radio in English and Yup'ik. The Department participates in school and workshop programs in the winter. News releases are now much more widely distributed through a computerized FAX system.

Commercial Fishery Data

Commercial catch per unit effort (CPUE) is catch during a fishing period divided by the product of the number of CFEC permit holders participating in a fishing

period multiplied by the total number of hours the district was open to commercial fishing. Commercial CPUE equals catch per permit-hour in this report.

Computer tabulations of fish tickets provide the commercial catch data presented in this report. The computer software program used to tabulate fish ticket data is the statewide system provided by the Division of Commercial Fisheries Computer Services section. During 1994 the Bethel office tabulated 12,890 fish tickets (Table 11).

The relative lack of comparative catch data, caused by the expansion of the fisheries since their initiation, hampers management. Management of the commercial harvest is complicated by the need to provide optimum spawning escapements, as well as sufficient harvest to the important subsistence fishery. In recent years, salmon migratory timing data bases have become extensive enough to assist inseason management.

The commercial fishery's expansion has begun to stabilize in recent years. In 1994, 797 of the 832 permit holders made at least one landing (Table 12 & Appendix A.4). The number of permits fished in 1994 was below average. Since the peak of 824 permits fished in 1989 and 1990, the number of active permits has declined slightly (Appendix A.4). The number of fishers participating in each fishing period also showed a decline in 1994 (Appendix A.5).

The number of permit-hours fished was slightly below average at 96,800 in 1994 (Appendix A.6). Permit-hours were below average in Districts 1 and 2 due to the long closure during the chum salmon fishery. The closure during the chinook fishery in District 4 probably caused the below average effort in that district (Appendix A.6). District 5 had a record number of permit-hours in 1994. Effort in this district seems to be showing an increasing trend (Appendix A.6).

Appendix A.6 shows that permit-hours peaked in 1975; probably due to the impending limited entry permit moratorium. Since that time, maintaining adequate subsistence harvests and average spawning escapements required reductions in fishing time. Fisher efficiency has increased, as the increase in harvest (Appendix A.2) and the decrease in permit-hours (Appendix A.6) shows. Commercial harvest guidelines and gear restrictions have offset increases in fishing efficiency. Improved run strength, escapement based management, and increased participation has resulted in permit-hours stabilizing around 105,000 since 1988 (Appendix A.6). The drops in 1993 and 1994 were due to restrictive actions to protect Kuskokwim River chum salmon.

Commercial fishing regulations set maximum gill net specifications of; 6-inch or smaller mesh, 50 fathoms in length and 45 meshes in depth for all districts. Fishing periods in District 1 and 2 are usually six hours in duration from 1:00 p.m. until 7:00 p.m., as required by the management plan. Longer fishing periods divide the extra time before 1:00 p.m. and after 7:00 p.m. In Districts 4 and 5 fishing periods are normally 12 to 24 hours in length. Fishers prefer daylight fishing hours so the periods are normally 9:00 a.m. until 9:00 p.m.

Adjustments of the number and duration of commercial fishing periods and time intervals between periods are the primary methods of distributing the harvest throughout the run. This avoids over harvesting discrete stocks and allows

harvests to remain within guidelines, achievement of escapement objectives, and sufficient fishing time for the subsistence fishery. Commercial fishing periods varied between 6 and 12 hours in length depending on the species, effort, and return magnitude. Run magnitude is measured by commercial catch data and by various Department, USFWS, BIA, and industry sponsored projects.

Kuskokwim Area fishers owned 98 percent of the commercial permits in 1994 (excluding educational permits held by local schools). Non-local Alaskan residents owned 2 percent (16) of the permits. Only 4 permits are owned by non-residents.

SEASON SUMMARY

The 1994 Kuskokwim Area commercial salmon catch (Districts 1, 2, 4 and 5) consisted of 27,345 chinook, 191,169 sockeye, 856,100 coho, 84,870 pink and 360,893 chum salmon (Appendix A.2). In 1994 the average income per permit holder was $6,526 (Appendix A.4). The total amount paid to fishers was $5,201,611, excluding bonuses and other incentives (Appendix A.4). The value of the 1994 catch was $400,370 below average. Prices for all species of salmon were below average (Appendix A.7). Chinook, coho, and pink salmon were heavier than average in 1994 (Appendix A.7). Coho salmon were the most abundant and valuable species bringing fishers over 71 percent of the exvessel value (Table 13).

Kuskokwim River (District 1 and 2)

The Kuskokwim River Salmon Management Working Group (Working Group) continued to work closely with the Department in 1994. Representatives of Kuskokwim River salmon users comprise the Working Group. Through uncommon dedication by all the concerned parties the Working Group provided in-season management recommendations that helped accomplish management objectives (Table 14). During the season, the Working Group met 23 times to evaluate the status of the salmon runs and make recommendations to the Department.

In 1993, the chum salmon return to the Aniak River drainage was well below the level necessary to meet escapement needs. As a result, there was only one commercial chum salmon fishing period, the chum salmon sport fishery was closed, and the subsistence fishery was restricted. This was the first time that restrictions were placed on the subsistence fishery other than the normal closures associated with commercial fishing.

The 1994 chum salmon return was expected to be below average. The five year old fish, spawned in 1989, were expected to be weak due to their poor return as four year old salmon in 1993. The four year old chum salmon from the 1990 escapement were expected to be average in abundance.

In order to minimize the possibility of subsistence fishing restrictions in 1994, the Department's management of the commercial fishery was more conservative than

in previous years. No commercial chum salmon fishing was allowed until a surplus of chum salmon above escapement and subsistence needs had been identified.

There were four commercial fishing periods during the chum salmon season in District 1, the lower Kuskokwim River (Table 15). There were no commercial openings targeting chum salmon in District 2, the middle Kuskokwim River (Table 16). The total chum harvest was 271,115, the fourth lowest chum salmon harvest since 1983, when the fishery changed from harvest quota to escapement based management (Appendix B.14). The average price per pound for chum salmon was $0.22 making the ex-vessel value of the catch worth $383,630 (Table 13).

Run assessment through mid-June showed above average chum salmon abundance. The Working Group and the Department agreed to open the commercial fishery on 24 June for eight hours downstream of Bethel in compliance with 5 AAC 07.365 KUSKOKWIM RIVER SALMON MANAGEMENT PLAN. The catch of 87,720 chum salmon was above the historical average for that date (Appendix B.21).

Immediately following the commercial period run strength indicators showed very weak chum salmon passage. At its next two meetings (27 June and 30 June) the Working Group did not recommend setting a commercial period but agreed to meet again to reassess the run. During the 2 July meeting, the Working Group recommended a four hour fishing period on 3 July for District 1 downstream of Bethel and in District 2. The department vetoed the recommendation due to the continued low level of chum salmon passage (Table 14).

Starting on 6 July, the chum salmon run showed dramatic improvement. The conservative management plan adopted for 1994 required that indicators show a harvestable surplus for 3 days in a row before commercial fishing could be considered. At a special public meeting on 10 July, which the Commissioner attended by teleconference, the Co-chairs of the Working Group called a meeting for 12 July based on Department's run assessment and processor's estimate of capacity availability (Table 14).

Commercial fishing did not reopen until 14 July when processing capacity became available. This four hour commercial opening was the first period in the Kuskokwim Area under six hours in length. Chum salmon CPUE in District 1 was 21.97 (Table 15). The next period (19 July) was 6 hours in length but the chum salmon CPUE was 20.03 (Table 15). Previously periods of less than 6 hours had not been used as a management tool because it was believed that reducing the fishing time would not reduce the catch significantly. This was supported by back to back periods of 6 to 8 or 9 hours where CPUE were identical if fishing hours were held constant in the calculation. The similarity of CPUE in the 14 and 19 July periods showed that reducing fishing time did reduce the catch. This single instance may have been an anomaly but does show that further experimentation with shorter fishing periods is appropriate in the future when run assessment shows a six hour period can not be supported by salmon abundance.

There were three commercial periods between 19 July and 26 July. After the 26 July opening, when the coho salmon catch exceeded that of chum salmon, management emphasis switched to coho salmon (Table 15).

The department and the Working Group agreed to reopen the commercial fishery on 29 July for 6 hours in District 1. Concerns for chum salmon escapement by the Working Group kept District 2 closed since coho salmon did not predominate in that district. The processor sponsored test fishery, located in District 2, indicated a predominance of coho salmon following the 29 July period (Appendices B.12 & B.13). This allowed the Working Group to open District 2 to commercial fishing on 4 August (Table 16).

The Working Group set a total of 12 fishing periods in District 1 (Table 14) and 8 periods in District 2 (Table 16) during the 1994 coho salmon season. During the management of coho salmon, the Working Group recommended five 6 hour fishing periods (Table 14). The Working Group increased fishing from beyond the Department's 6 hour recommendation to 8 hours in District 1, for a total of 6 periods during the 1994 season (Table 15). On one occasion the department recommended an opening, but the Working Group voted to set another meeting instead of fishing for conservation reasons (Table 14).

Coho salmon management during 1994 went smoothly since early indicators of abundance continued to predict making or exceeding escapement goals in the Kuskokwim River drainage. The Department followed a conservative method of management in the early portion of the run, until test fishing, commercial catch statistics and the Kogrukluk River Weir, indicated that the coho run was strong. As the season progressed and escapement indicators predicted making or exceeding project escapement needs, the Working Group recommended switching from 6 to 8 hour periods. This continued until 27 August.

One unusual aspect of this coho season was a Working Group recommendation to close fishing along the south side of the main stem Kuskokwim River from Aniak River to 1 mile below Crow village, during the period held on 19 August. This recommendation was made to reduce the harvest of coho salmon destined for the Aniak River drainage, based upon public concerns about lagging escapement. Usual coho season commercial fishing continued until the Working Group meeting of 29 August. Based on further input from Working Group members in the middle and upper Kuskokwim River, during the last 2 periods only District 1 was open downstream of Bethel. This allowed uninterrupted subsistence fishing in District 2 and decreased exploitation rates on the later portion of the coho salmon run.

Chinook Salmon

The combined commercial and subsistence chinook salmon harvest has increased from an average of 56,000 fish from 1960-1969 to 100,240 during 1983-1992 (Appendix B.30). A conservation concern for Kuskokwim River chinook salmon developed following a series of poor chinook salmon escapements in the mid 1980's (Figure 6). Besides the poor escapement, the low number of female chinook salmon in the escapement compounded the conservation concern (Appendix B.40).

Beginning in 1984, the Board began restricting the commercial fishery since the Department was unable to correct the problem through in-season management measures. In 1985, a shift to 6-inch or smaller commercial gillnets reduced the harvest of larger female chinook salmon. This gear change was successful in shifting the sex ratio of the commercial catch from 43 percent female to 29

percent female (Appendix B.27). Total escapement continued to decline (Figure 6). To provide for the subsistence harvest and maintain average spawning escapements the directed commercial harvest of chinook salmon was prohibited in 1987. This action resulted in chinook salmon approaching or reaching the escapement objective in subsequent years (Figure 6). An unexpected benefit of this action was an increase in the commercial harvest of chinook salmon (Appendix B.30). The subsistence fishery continues to target large chinook salmon with "king" gear. Improved survival (perhaps related to reductions and most recently elimination of the directed high seas salmon fishery) played a role in the success of these management changes. Chinook salmon escapement goals were achieved in 1994 (Figure 6). The increase in male salmon on the spawning grounds in 1993 and 1994 is probably a result of the reduced exploitation rate caused by chum salmon conservation measures (Appendix B.40).

Sockeye Salmon

The sockeye salmon catch is incidental to the chum salmon fishery in Districts 1 and 2. Before 1981, sockeye and chum salmon were not accurately identified in commercial or subsistence catches. This prevented an accurate record of the sockeye and chum salmon harvest in the Kuskokwim River. Sockeye salmon comprised 5 to 33 percent of the sockeye-chum salmon catch since 1981 (Appendix B.14). Before 1981, the reported sockeye salmon catch was less than 2 percent of the sockeye-chum salmon catch (Appendix B.14). In 1994, the commercial harvest of 49,365 sockeye salmon was well below the recent ten year average of 83,507 (Appendix B.14). This drop was due to the reduced commercial effort taken for chum salmon conservation.

Sockeye salmon escapement is documented ancillary to the other species. The Kogrukluk weir escapement estimate of 14,192 sockeye salmon in 1994 was above average (Appendix A.8). The reduced harvest in 1994 increased sockeye salmon escapement.

Chum Salmon

Before 1971, chum salmon were an incidental catch during the chinook and coho salmon fisheries. The expansion of the commercial chum salmon fishery began in 1971. Based upon 1924-1943 subsistence harvest estimates, a total chum salmon harvest of 400,000 appeared to be consistent with the reproductive potential of the run (Appendix A.2). A combined catch of 400,000 chum salmon was the management goal from 1971 to 1979 (Appendix B.31). Subsistence catches for the entire river have declined since the inception of the commercial fishery in 1971 (Appendix B.31). From 1971 to 1980 the average subsistence harvest was 173,680. The average harvest declined to 127,862 for the period 1981 to 1990 (Appendix B.31). This is due to the decline in the use of dog teams for transportation. This decline has allowed an increase in the commercial harvest. Escapement based management beginning in 1983 also resulted in an increased in the commercial harvest (Appendix B.31).

The commercial chum salmon harvest for the Kuskokwim River (Districts 1 and 2) has averaged 491,897 salmon in the last ten years (Appendix B.14). This mean value is dominated by the strong year class that dominated the catch in 1988 and

1989. The median catch of 424,000 is more representative of the average harvest. The following guidelines are employed to manage the commercial harvest:

1. Test fishing indexes showing relative abundance of chum salmon is similar to years in which adequate escapement occurred.

2. Commercial catch per unit effort compares to previous years when escapement was adequate.

3. Subsistence fishers report adequate subsistence catches.

4. Chum salmon escapement projects projecting adequate escapements will occur.

Declining run strength normally results in a 2 to 3 week closure beginning in early to mid-July. Before 1985, only that portion of District 1 downstream of Bethel was open to commercial fishing during the chum salmon fishery. The Board instructed the Department to use the entire length of District 1 beginning in 1985. This increased the efficiency of the fleet and resulted in low chum escapements in 1986 and 1987. Returns in 1988 and 1989 were at record high levels, but to reach escapement objectives required more time between fishing periods. The 1990 and 1991 returns were smaller but 4 to 6 day spacing between periods resulted in approaching or reaching chum salmon escapement objectives.

The Eek test fishery was a very poor indicator of chum salmon run strength in 1994. The chum salmon index at Eek was the lowest on record, indicating that the chum salmon run was much weaker than it actually was (Appendix B.5). The Kuskokwim River has two major channels at the site where the Eek test fishery occurs. The Eek test fishery operates in only the eastern channel. The most obvious explanation is that a higher than normal proportion of chum salmon entered the river via the western channel. This presumption was supported by anecdotal information from subsistence fishers in Tuntutuliak. The Bethel test fish index for chum salmon was the third highest on record (Appendix B.9). The Aniak test fishery (in its third year of operation) had record indices for chum salmon (Appendix B.13).

The Kogrukluk Weir (the index stream for fish upstream of Aniak) easily exceeded its chum salmon objective (Appendix A.8). The final escapement for the Aniak Sonar was 55 percent above its objective (Appendix A.8). In its fourth year of operation, the Tuluksak River weir (the index stream for District 1 spawning tributaries) had a record escapement of chum salmon (Appendix A.8).

Parent year escapements were good in the 1989 and slightly below objective in the 1990 brood years. The 5 year old return was higher than expected considering the extremely poor showing of 4 year olds in 1993 (Appendix B.29). The 4 year old return was average in strength.

Coho Salmon

Kuskokwim River managers have several indicators of coho salmon run strength in the drainage: 3 test fisheries (at Eek, Bethel and Aniak), Kogrukluk River and Tuluksak River Weirs, commercial catch data, and partial funding of the mainstem

sonar for part of the coho salmon run. They provide rough abundance indicators for management. The longest running escapement project in the Kuskokwim is the Kogrukluk Weir, which has a coho salmon escapement objective of 25,000 fish. CPUE in District 2 during coho season has become a more recent tool for managers since the removal of harvest guidelines. In years when the CPUE through District 2 has been at or above 34, Kogrukluk Weir (an indicator of escapement in upper drainage) has reached its coho salmon escapement goal. This has also proven to be a useful tool when the weir data is unavailable.

The U.S. Fish and Wildlife Service has operated a weir on the Tuluksak River for 4 consecutive years. This project provides an indication of relative abundance of coho salmon in the lower portion of the Kuskokwim River drainage. Due to the rainy weather that is typical for August in the Kuskokwim drainage, aerial surveys are seldom available as indicators of coho abundance.

Subsistence use of coho salmon has increased in areas where freezers are available to preserve fish. Traditionally in the lower portions of the Kuskokwim River drainage, coho salmon were not heavily utilized because of the poor drying conditions during the months of August and September. In recent years, Subsistence Division staff have started the surveys after coho salmon have completed migration to the upper river villages. This has probably increased numbers of coho salmon reported because subsistence users have completed their coho salmon catches by the time the survey data is collected in October and November.

Commercial fishing begins to target on coho salmon in the Kuskokwim River when coho salmon predominate in the commercial fishery. The strength of the coho salmon run is assessed by comparing test fishing catches throughout the drainage, CPUE of the commercial fleet, and escapement trends at Kogrukluk and Tuluksak rivers weirs. Run strength determines the amount of fishing time for both districts. Districts 1 and 2 close by regulation on 1 September. Strong runs in 1984 and 1994 and a late run in 1989 resulted in extending the season into September. The management strategy is similar to chum salmon.

Since statehood the commercial coho salmon catches for the entire river have ranged from 2,498 in 1960 to the record catch of 724,689 in 1994 (Appendix B.14). The previous ten year average (1984-1993) is 521,084 fish (Appendix B.14). Commercial effort during coho season has ranged from 83 permit holders participating in 1971 to 732 permit holders delivering coho salmon in 1989 (Appendixes 24 & 25). During the 1994 coho salmon season, 682 permit holders delivered fish in District 1. Since 1988, the inception of cooperative management with the Kuskokwim River Salmon Management Working Group, the escapement objective has been reached in three of seven years (Appendix A.8). Over-fishing has been the cause. Distrust of the test fish data by the Working Group, lag time of useful data from the Kogrukluk Weir and lack of mainstem passage data from the mainstem sonar at Bethel contributed to the over fishing. The Department's uncertainty during the early portions of the run often caused corrective action to be too late to make a significant difference in management of the fishery.

In 1994 the Kogrukluk Weir had a few days of high water but generally the project was successful. Based on an early run timing model, an estimate of 34,695 coho salmon were enumerated, which exceeds the escapement goal of 25,000.

Commercial CPUE in District 2 has provided a rough estimate of escapement beyond the commercial fishing districts. Historically, if the CPUE was above 34 for the season, escapement goals were achieved at the Department's weir on the Kogrukluk River. In 1994, prior to the period held on 18 August, the cumulative CPUE was 60. This was the highest historically, in comparison to years when the harvest guideline was still in effect in District 2 and fishing was limited. During the later portion of the coho salmon run, for which comparative data does not exist, the CPUE dropped which resulted in an overall CPUE of 30.

The Bethel Test Fishery cumulative CPUE index was comparable to years when the escapement objective was reached (Appendix B.8). The Aniak Test Fishery CPUE in 1994 was greater than the previous 2 years of operation (Appendix B.12). The escapement objective was exceeded at Kogrukluk Weir during the 1994 commercial coho season (Appendix A.8). The Tuluksak River Weir, which is operated by the U.S. Fish and Wildlife Service, has operated for the 4th consecutive year. The 1994 coho salmon escapement on the Tuluksak River appears to be average in comparison to previous years (Appendix A.8).

In 1994 the Working Group succeeded in achieving escapement during the coho salmon season and provided the Kuskokwim River permit holders a record harvest of this commercially valuable species.

Quinhagak (District 4)

District 4 is located in the marine waters adjacent to the village of Quinhagak, at the mouth of the Kanektok River, about 25 miles south of the Kuskokwim River (Figure 4). Commercial fishing occurs only in the marine waters of Kuskokwim Bay to ensure adequate escapement of salmon into the Kanektok and Arolik Rivers. Commercial fishing occurs primarily in the tidal channels that radiate out into the bay from freshwater streams in the district.

Commercial fishing effort in this district has increased considerably in the last decade (Appendix C.6). Effort in the last decade has ranged from 227 permits in 1989 to a record high during the 1993 season of 409 permit holders. The past 10 year average is 321 permit holders. Effort was below average in 1994. In the Kuskokwim Area, permit holders have unrestricted movement between commercial fishing districts. Recent changes in the Kuskokwim River June commercial fishery have shifted effort to this district, which has a targeted chinook salmon fishery.

District 4 opened on 15 June in compliance with 5 AAC 07.367 DISTRICT 4 SALMON MANAGEMENT PLAN, which requires an opening before 16 June (Table 21). This first opening resulted in a below average catch for chinook salmon (Appendix C.2). Commercial fishing was delayed for 5 days to allow escapement into the Kanektok River drainage, and to provide uninterrupted subsistence fishing for chinook

salmon. The chinook salmon catch on 20 June was also below average (Table 21 & Appendix C.2).

In 1994, early aerial surveys of the Kanektok River drainage were unsuccessful due to high, turbid water. Since the commercial fleet had 2 consecutive poor chinook periods, and aerial survey data was not available, commercial fishing was postponed until 1 July. Commercial fishing resumed on a regular schedule of three 12 hour periods a week until 8 September when it closed by regulation. During the 1994 season, 308 permit holders made deliveries (Appendix C.6). The decrease in effort was probably due to the closure during the chinook salmon directed fishery in June.

The chinook salmon catch of 8,564 is the lowest catch in the last decade, well below the 10 year average of 21,771 (Appendix C.1). Buyers paid an average price of $.50 per pound. The ex-vessel value of chinook salmon was $66,918, well below the 1988-93 average of $207,701 (Table 13). An aerial survey flown of the Kanektok River drainage on 22 July documented 7,386 chinook salmon, which exceeds the escapement goal of 5,800 chinook salmon (Appendix C.10).

When commercial fishing resumed on 1 July, after a closure of 10 days, an above average harvest of sockeye salmon resulted. The directed sockeye salmon fishery continued to fish 3 periods per week and the peak harvest period occurred on 13 July at 13,450 sockeye salmon catch (Table 21). The sockeye salmon catch of 72,314 is almost twice the ten year average of 37,442 fish (Appendix C.1).

An aerial survey on 22 July provided an index count of 30,090 sockeye salmon in the Kanektok River drainage, which exceeds the objective of 15,000 (Appendix C.10). The average price paid for sockeye salmon was $.54 per pound. The ex-vessel value for sockeye in District 4 was $256,091, 30 per cent of the total value of the commercial catch (Table 13).

Chum salmon are an incidental catch in the chinook and sockeye salmon commercial fisheries in District 4. The 1994 chum salmon catch was 61,301; which is above the 10 year average of 39,421 fish (Appendix C.1). Chum salmon brought an average of $.20 per pound, resulting in $84,351 in payment to permit holders (Table 13). This was 10% of the total value of the fishery in this district. The escapement objective for chum salmon is 30,500; an aerial survey on 22 July made a rough estimate of 10,000 fish during a chinook/sockeye directed survey that was flown prior to peak chum salmon escapement (Appendix C.10).

Coho salmon dominated the commercial catch in this district on 1 August (Table 21). Commercial catches, when compared with historical catches, indicated that the coho salmon run in this district was strong (Appendix C.4). Historical catches and escapements have shown that during strong runs fishing can continue uninterrupted for three 12 hour periods per week without jeopardizing escapement. This district had a peak catch of 12,298 fish on 8 August (Table 21). The commercial salmon fishing season closed by regulation on 8 September. The 1994 coho salmon harvest of 83,912 fish is above the 10 year average of 59,786 fish (Appendix C.1). Permit holders were paid an average of $.62 per pound. The ex-vessel value of coho salmon in District 4 was $423,612, which was 50% of the total value of the fishery for 1994 (Table 13). Weather and water conditions

prevented coho escapement assessment by aerial surveys, but sport fishing catches indicated coho salmon were well distributed throughout the drainage.

Goodnews Bay (District 5)

The Goodnews Bay fishing district is the southernmost salmon district in the Kuskokwim Area (Figure 5). Fishing is with drift gill nets in tidal channels in Goodnews Bay and a few set nets near the mouth of the bay. The 30-35 permit holders, who reside in the villages of Platinum and Goodnews Bay, fished steadily during the season (Table 12). The 1994 effort increased to a peak of 116 permit holders due to closures in other Kuskokwim districts and extension of fishing periods in the Goodnews Bay district (Table 22). Goodnews Bay effort peaked in 1988 at 125 permits and in the last decade has averaged 90 permit holders (Appendix D.6).

A counting tower on the middle fork of the Goodnews River provided estimates of salmon escapement from 1981 through 1990. In 1991 a weir replaced the tower. This provided more accurate counts at a lower cost; the savings has allowed the project to enumerate the coho salmon return. The primary objective of this project is to provide daily escapement information to improve management of the commercial fishery. The Goodnews River weir project also provides a calibration of aerial survey accuracy.

In 1994 the Goodnews Bay district opened to commercial fishing on 27 June and fished two periods a week until the majority of the chinook salmon run had passed the commercial fishery (Table 22). In the last 4 years, the chinook salmon management strategy in this district has been to open the commercial fishery 5 to 7 days later than the normal historical opening date. This allows an increased escapement of chinook salmon into the Goodnews River drainage. In 1994, this strategy helped achieve an estimated passage of 3,856 chinook salmon through the Goodnews River Weir (Appendix A.8). This exceeds the escapement goal of 3,500 fish. This is only the third time in the last ten years that the escapement objective was achieved (Appendix A.8). This poor performance has resulted in the Goodnews chinook salmon run becoming a conservation concern. The change in management strategy appears to be improving escapement and future production should increase. The commercial harvest of 2,570 chinook salmon was below the ten year average of 3,828 fish (Appendix D.1). Buyers in this district paid an average of $.50 per pound, which totaled $21,732 paid for this species (Table 13). This was 3% of the total value of the commercial fishery in this district (Table 13).

Sockeye salmon catches in Goodnews Bay were above average the first commercial period this season. As the season progressed sockeye salmon increased in abundance in the district and escapement remained strong. When the department's weir on the Goodnews River began passing record numbers of sockeye, and it became apparent that the escapement goal was being approached, fishing time was increased from 12 to 36 hour periods for a week (Table 22). The commercial harvest in 1994 of 69,490 sockeye salmon was more than double the ten year average (Appendix D.1). Sockeye salmon prices averaged $.53 per pound resulting in $309,577 paid to permit holders in 1994 (Table 13). This species was 47% of the 1994 total value of the Goodnews Bay District. The Department's weir on the

middle fork of the Goodnews estimated a sockeye salmon passage of 55,751, well beyond the escapement goal of 25,000 fish (Appendix A.8).

The chum salmon catch is incidental to the sockeye salmon fishery in District 5. The 1994 catch of 28,477 fish was above the ten year average of 15,480 fish (Appendix D.1). Permit holders were paid $.21 per pound for this species, which totaled $41,309 (Table 13). This represents 6% of the total commercial fishery value in this district (Table 13). The chum salmon escapement of 34,849 fish at the Goodnews River Weir exceeded the goal of 15,000 fish (Appendix A.8).

The 1994 coho salmon catch of 47,499 fish was the second highest catch on record. The 10 year average for this species is 25,980 fish (Appendix D.1). Commercial permit holders received $271,687 for this species (Table 13). This represents 41% of the value of the 1994 commercial harvest in this district. High water prevented the Goodnews River weir from completing enumeration of coho salmon. High water and poor flying conditions prevented any aerial surveys of the Goodnews River drainage.

Enforcement

The Fish and Wildlife Protection Division of the Department of Public Safety were present in the Kuskokwim Area from early June until early September. Personnel available for this program were four commissioned and one non-commissioned officer. They used one C-185 and three Supercub aircraft and one Boston Whaler. Citations issued, broken down by area and violation type, are as follows:

Violation	Number of Citations
Kuskokwim River (W-1)	
Commercial fishing in closed waters, closed season or closed period	39
No commercial fishing license and employing unlicensed crew members	11
Identification of vessels and gear	6
Kuskokwim River (W-2)	
Buyer/tender reporting requirements	2
Quinhagak (W-4)	
Commercial fishing in closed waters, closed season or closed period	9
Employing unlicensed crew members	4
Goodnews Bay (W-5)	
Commercial fishing in closed waters, closed season or closed period	18
Employing unlicensed crew members	3
Identification of vessels and gear	4

Approximately 14 citations were issued to processors and tender operators for failure to provide required information on fish tickets.

Approximately 12 subsistence gill nets were found fishing during periods closed to subsistence fishing. Ten of these nets were set in the Kuskokwim River while two were in the Kanektok River.

OUTLOOK FOR 1995

The Kuskokwim Area has no formal forecast for salmon returns. Broad expectations are announced based on an evaluation of brood year escapements, trends in harvest, and trends in return-per-spawner information.

Chinook Salmon

Most chinook salmon return to the Kuskokwim Area at age 6, 5, or 4 so the primary brood years for 1995 will be 1989, 1990 and 1991.

Chinook salmon escapements in Districts 1 and 2 of the Kuskokwim River were generally good during these brood years, suggesting an average return in 1995. The Kuskokwim River Aerial Index, which is a composite of aerial surveys from 13 streams, was near average in all the brood years (Figure 6). In addition, the aerial index shows a marked improvement over the poor escapements which occurred throughout most of the 1980's. At the Kogrukluk River weir the chinook escapement was above objective in 1989 and 1990, however in 1991 the count was 21% below objective (Appendix A.8). The overall parent year escapements were good and chinook salmon abundance should be good in 1995. Coupling that with the expectation of more normal levels of effort in the chum directed commercial fishery, should result in an incidental commercial harvest of chinook salmon from the Kuskokwim River between 37,000 and 56,000 which is average to above average (Table 23).

District 4, Quinhagak, has the only directed chinook salmon fishery in the Kuskokwim area. In the Kanektok River the chinook salmon escapement index was below objective levels in two of the three brood years (Appendix C.10). The harvest trend in recent years has also been below average. The 1995 commercial harvest will likely be between 8,000 to 20,000, the lower half of the historic range (Table 23).

In District 5, Goodnews Bay, the chinook stocks have been depressed for several years. Escapement to Goodnews River was below objective in two of the three brood years (Appendix A.8). The harvest trend in recent years has been below average due to weak returns and the impact of the chinook salmon rebuilding program. For the 1995 season the incidental catch of chinook in District 5 will probably be between 1,000 and 4,000 which is about the lower half of the historic range (Table 23).

Sockeye Salmon

Sockeye salmon return primarily at age 5 in the Kuskokwim Area so the 1990 brood year will have the most influence on the 1995 returns. In the Kuskokwim River, sockeye salmon harvest is incidental to the directed commercial fishery on chum salmon. Districts 4 and 5 of Kuskokwim Bay both support directed sockeye fisheries.

The return of sockeye salmon to the Kuskokwim River is expected to be above average in 1995. Escapement at the Kogrukluk River Weir was above average in the 1990 brood year, but the Kogrukluk Weir is probably not a good indicator of drainage wide production (Appendix A.8). The quantity of sockeye salmon harvested in the Kuskokwim River will be driven by the intensity of the chum fishery in late June and early July. Given the projection for 1995 chum salmon returns to the Kuskokwim River, the incidental sockeye harvest is expected to be between 84,000 and 137,000 which is above the ten year average (Table 23).

Sockeye salmon returns to District 4 are expected to be good in 1995. The 1990 brood year escapement as indexed by aerial surveys in the Kanektok River was 32,000 sockeye salmon, which is well above the escapement objective of 15,000 (Appendix C.10). The 1990 return supported a record commercial harvest of 83,700 sockeye (Appendix C.1). In the last few years the trend has been toward record or near record commercial harvest while still achieving escapement objectives. The sockeye salmon harvest in District 4 is expected to be between 40,000 and 80,000 which is above average (Table 23).

The 1995 sockeye salmon return in District 5 is expected to be good. The 1990 brood year escapement past the Goodnews River Weir was 32,000, which exceeded the objective of 20,000 to 30,000. As in District 4, the commercial harvest in recent years has tended towards record or near record commercial harvest while still achieving escapement needs. The District 5 sockeye harvest should again be above average, perhaps 35,000 to 69,000 (Table 23).

Chum Salmon

Chum salmon return to the Kuskokwim Area primarily at 5 and 4 years of age, so the main brood years will be 1990 and 1991. The commercial fisheries in Districts 1 and 2 of the Kuskokwim River target chum salmon. Chum salmon catches in Districts 4 and 5 of Kuskokwim Bay are incidental to the directed sockeye fisheries.

Near average numbers of chum salmon are expected to return to the Kuskokwim River in 1995. Returns for the early part of the season are best indexed by the Kogrukluk River weir. Brood year escapements at Kogrukluk weir were 11 and 19 percent below objective (Appendix A.8). This may result in below average abundance at the start of the 1995 season. However, this may be offset by the expected good return of age 5 chum salmon, which tend to arrive early in the season. The Aniak River drainage is a major producer of Kuskokwim River chum salmon. Chum salmon escapement to the Aniak River in 1990 was 7 percent below

objective and 26% above objective in 1991. In recent years the Aniak River has demonstrated some widely fluctuating productivity in its chum salmon stocks. The cause of this volatility is unknown, but the effect is a heightened chance for error in preseason outlook. The 1995 chum salmon harvest in the Kuskokwim River is expected to be near average, perhaps 350,000 to 550,000 (Table 23).

In District 4, aerial surveys of the Kanektok River have shown chum salmon escapements to be well below objective for the past several years (Appendix C.10). It is difficult to conduct aerial surveys for three or more species simultaneously. With the shift in harvest direction the surveys have concentrated on chinook and sockeye salmon. Attempts have been made to conduct follow up surveys for chum salmon but these are often not possible. This has resulted in the chum salmon surveys being of lessor quality than for the other species. The incidental harvest of chum salmon taken during the sockeye directed fishery has been well above average (Appendix C.1). The chum salmon harvest is driven by the level of commercial effort directed at sockeye salmon. The above average abundance of sockeye salmon in recent years has resulted in an above average harvest of chum salmon. The expected abundance of sockeye salmon in 1995, the chum salmon harvest in District 4 will likely be above average with a harvest of 35,000 to 75,000 (Table 23).

In District 5, chum salmon escapement past the Goodnews River weir was 57 percent below objective in 1990, but 83 percent above objective in 1991 (Appendix A.8). As in District 4, the incidental chum salmon harvest is driven by efforts to catch sockeye salmon. Given the good outlook for sockeye salmon in 1995, the incidental chum salmon harvest in District 5 will probably range from 10,000 to 30,000.

Coho Salmon

Coho salmon return to the Kuskokwim Area primarily as 4 year old fish so 1991 will be the key brood year for 1995 returns. There is very little information on which to base the coho salmon run outlooks. The Kogrukluk River and Tuluksak River weirs are the only coho salmon escapement projects in the Kuskokwim Area and both these projects are located on small to moderate sized tributaries of the Kuskokwim River.

Coho salmon escapement past Kogrukluk River weir in the 1991 brood year was 60 percent below objective. Tuluksak River weir was in its first year of operation in 1991 and total coho passage was the lowest yet observed at that project. These escapement results suggest a below average coho return in 1995, still that may not be the case. Poor escapements at Kogrukluk River weir in 1988 and 1990 did not foretell the record coho returns in 1992 and 1994. This apparent inconsistency in the ability to use escapement data to predict coho salmon abundance in the return year has not been the case historically, at least not for the Kogrukluk River. For reasons unknown, it appears that coho salmon survival has been well above average in recent years. The reduction in coho salmon catch that resulted from regulation changes in the directed high seas salmon fishery in 1979 resulted in an increase in the western Alaska in-shore fisheries. The recent elimination of the directed high seas fishery may be the cause for the

unexpected improvement of coho salmon survival. The 1995 return may be substantially larger than parent year data suggest. Given this uncertainty, the outlook for the Kuskokwim River coho return ranges from below average to above average. Harvest is expected to be between 400,000 and 700,000 (Table 23).

Commercial harvest data are the only guide to forecasting coho salmon returns in Districts 4 and 5. In 1991 the coho harvests were below average in both Districts 4 and 5 (Appendixes C.1 & D.1). In the last five years coho salmon catches have ranged from 27,000 to 86,000 in District 4 and from 8,000 to 47,000 in District 5. Based on brood year commercial catch data the 1995 harvest is expected to be in the lower half of these ranges (Table 23). The recent high survival trend described for Kuskokwim River may apply to Kuskokwim Bay, and this trend suggests catches may be in the upper half of the historic range.

SUBSISTENCE SALMON FISHERY

Background

Subsistence fishing and summer fishing camps have a long history in the Kuskokwim Area. The harvest of fish and wildlife for subsistence use continues to be an important component of the mixed subsistence-cash economy throughout the area. During summer, early June through August, the day-to-day activities of many Kuskokwim Area households revolve around the harvesting, processing, and preserving of salmon for subsistence use.

The Kuskokwim Area subsistence salmon fishery is one of the largest and most important in the state. More than 1,300 households in the region annually harvest salmon for subsistence use. Many other households, which are not directly involved in catching salmon, participate by assisting family and friends with cutting, drying, smoking, and associated preservation activities (salting, canning and freezing).

There are 37 communities consisting of approximately 4,000 households within the Kuskokwim Area (Figure 1). During 1994, 2,544 households were located in 26 communities situated along the Kuskokwim River or its tributaries. Residents of Kwigillingok, Kongiganak and Kipnuk, located along the northern shore of Kuskokwim Bay, comprised 174 households and are thought to harvest primarily Kuskokwim River salmon stocks, however, local salmon stocks are also utilized.

In the southern portion of the Kuskokwim Area, residents of Quinhagak, Goodnews Bay, and Platinum, comprised approximately 192 households and utilize salmon stocks primarily from the Kanektok, Arolik, and Goodnews rivers systems. Residents of Bering Sea coast communities of Mekoryuk, Toksook Bay, Nightmute, Tununak, and Newtok, consisted of 271 households, harvested salmon bound for both local and more distant (Yukon-Kuskokwim) drainages.

Six species of salmon (chinook, chum, sockeye, coho, pink and rainbow trout) are harvested in the Kuskokwim Area for subsistence use. Annual subsistence harvest surveys have been aimed at gathering data on only chinook, sockeye, chum, and coho salmon. Subsistence catches of chinook salmon in the Kuskokwim Area often exceed the commercial catch of this species (Appendix A.2.).

Subsistence Salmon Fishing Regulations

Participation

Beginning in 1990 individuals who had been Alaskan residents for the preceding 12 consecutive months were eligible to harvest Kuskokwim Area salmon for subsistence use. Prior to 1990 there were additional restrictions on participation in the fishery. These are described in earlier annual management reports for the Kuskokwim Area. The majority of those individuals subsistence fishing for salmon in the Kuskokwim Area are residents of the area, some people living in other parts of the state who have family or friends in the region return each year to harvest or help process salmon.

Licenses, Permits, and Gear

In 1994 licenses and permits were not required for subsistence fishing in the Kuskokwim Area. Salmon harvested for subsistence use could be caught using set and drift gill nets, beach seines, and fish wheels. In the Holitna, Kanektok, Arolik, and Goodnews rivers drainages only, spears could also be used. The total length of set or drift gill nets in use by an individual could not exceed 50 fathoms. Unless changed by emergency order, gill nets used for harvesting salmon anywhere in the Kuskokwim Area could be of any sized mesh, nets with six inch or smaller mesh could not be more than 45 meshes in depth and nets with greater than six inch mesh could not be more than 35 meshes in depth. All gill nets used for subsistence fishing were required to have a buoy attached with the name and address of the operator written on it. Fish wheels were required to have the name and address of the operator inscribed on the side of the fish wheel facing midstream of the river (ADF&G 1992). There were no restrictions on the number of salmon that could be harvested by individual fishers or households.

In-Season Closures

Subsistence salmon fishing is periodically closed in the commercial fishing districts and adjacent areas before, during, and after commercial fishing periods. Generally speaking, the majority of commercial fishers are local residents who also participate in the subsistence fishery. The purpose of these closures is to discourage illegal commercial fishing and to help prevent the sale of subsistence caught salmon in the commercial fishery.

Regulations adopted by the Alaska Board of Fisheries closed subsistence salmon fishing in each of the four commercial salmon fishing districts 16 hours before, during, and 6 hours after each commercial salmon fishing period in the respective fishing district. The Kanektok and Arolik Rivers in District 4 and Goodnews River in District 5 were closed to all subsistence fishing with nets 16 hours before, during and 6 hours after each commercial fishing period in those districts. Only in District 2 did the tributaries close to subsistence salmon fishing before, during and after the commercial fishing periods. In District 1, Kuskokuak Slough opened to subsistence fishing after each commercial fishing period. That portion of the Kuskokwim River between Districts 1 and 2 was closed to subsistence fishing at the same time subsistence closures occurred in District 1.

SUBSISTENCE SALMON HARVEST SURVEYS

The management of Kuskokwim Area salmon fisheries requires that the Department know how many salmon are harvested in both the subsistence and commercial fisheries. Data on the subsistence harvest of salmon is collected annually. The Division of Commercial Fisheries Management and Development began annual subsistence salmon harvest surveys along the Kuskokwim River in 1960, in Quinhagak in 1967, and in Goodnews Bay and Platinum in 1979. In 1988, the Division of Subsistence took over the annual subsistence salmon harvest surveys under a memorandum of agreement with the Division of Commercial Fisheries Management and Development and have been responsible for collecting and analyzing the data since then.

Methods

During 1994, four methods were used to gather subsistence salmon harvest data. These methods were:

1) subsistence salmon catch calendars,

2) post-season community surveys of Kuskokwim Area households,

3) postcard surveys,

4) telephone surveys.

After the 1993 data analysis had been completed, the Division of Subsistence updated its household list database in order to better define households potentially harvesting Kuskokwim Area salmon stocks in 1994 for subsistence use. Each household in the database was designated as either "usually fish" or "does not usually fish" depending on past fishing history. Households listed in the database were the basis of sampling and estimation of subsistence salmon harvests for the Kuskokwim Area. Each household on the list was assigned a unique identifier through which subsequent information could be tracked.

The goals of the post-season survey were to:

1) collect harvest data that would result in a total harvest estimate for subsistence salmon by species for the Kuskokwim Fisheries Management Area by community;

2) compile information on fishing effort, gear types, participation rates, and timing of the subsistence harvest;

3) update community household lists and identify fishing households;

4) identify if subsistence salmon needs were being met and if not why.

Catch Calendars

In May 1994, subsistence salmon catch calendars were mailed to all Kuskokwim Area households which had been identified as "usually fish." Three similar but unique catch calendars (Appendix S.1) were designed for recording the daily catch of each salmon species harvested for subsistence use. One style of calendar was sent to households in communities along the Lower and Middle regions of the Kuskokwim River, to communities along the Bering Sea coast and along North Kuskokwim Bay, as well as those communities in the Upper Kuskokwim River region upstream as far as the community of Stony River. A second style of calendar was sent to the remaining households in the Upper Kuskokwim River region and a third style was sent to households in Quinhagak, Goodnews Bay, and Platinum. Where addresses were available, the calendars were mailed to post office boxes; otherwise calendars were sent general delivery for the post office clerk to distribute. Each calendar was postage paid and addressed for return to the Bethel Division of Subsistence office. Subsistence salmon catch calendars were distributed to 1,714 households.

Household Surveys

The second method of collecting subsistence salmon harvest information was the post-season household surveys. With this method, staff traveled to communities in the Kuskokwim Area and went house-to-house interviewing residents about their 1994 salmon fishing efforts. Similar to the approach used in developing the catch calendars, three color coded survey instruments were developed and used (Appendix S.2). Except for local terms used for the salmon species, the survey questions asked in each region were identical.

Twenty-nine communities were targeted for post-season surveys over a two month period beginning in early October after most residents had completed salmon fishing for the season and after most hunters had returned home from fall moose and caribou hunting. Communities in which residents usually harvest salmon through October were surveyed in November. Division of Subsistence staff conducted house-to-house surveys in 25 communities. House-to-house surveys were not attempted in 11 communities (Bethel, McGrath, Telida, Kipnuk, Kwigillingok, Kasigluk, Mekoryuk, Newtok, Nightmute, Toksook Bay, and Tununak). Communities where house-to-house surveys were not attempted were surveyed using calendar, postcard, or telephone surveys. Since 1988 the Division has made an effort to survey all the villages in the Kuskokwim Area. The villages of Kwigillingok and Kipnuk have not been willing to participate in the survey for the majority of those years, and the village of Kasigluk has declined to participate since 1992. Budget constraints have precluded attempts to conduct house-to-house surveys in Bethel, Mekoryuk, Newtok, Nightmute, Toksook Bay, Tununak, and Chefornak.

Survey work was conducted systematically. Prior to beginning the community surveys, efforts were made to inform and prepare residents for the arrival of staff doing the surveys. This was done weeks or days in advance of their arrival through letters to City, IRA, or Traditional council offices in each community, radio announcements, posters in public buildings and phone calls to community officials.

Upon arrival in a community, staff checked in with the City or Council office to introduce themselves and outline their task. Staff used community household "checklists", prepared in advance, to help them identify households they needed to contact while conducting the household surveys. Each "checklist" contained a listing of all known households in the community, identified those households which were reported to have subsistence fished in 1993, households which were mailed 1994 catch calendars, and identified which households had already returned their 1994 catch calendars to the Department. Knowledgeable individuals in the community helped to update the community household list and identify which households "usually fish" and which households "usually did not fish." These individuals helped to identify households that subsistence fished for salmon in 1994.

Staff attempted to contact all households that were either identified as "usually fish" or were known to have fished during 1994. Structured interviews were conducted with these households through the use of a survey instrument. Subsistence salmon catch calendars that had not been mailed back to the department were also collected. If time permitted, other households on the community list were contacted about their salmon fishing activities. Nearly 1,100 households were surveyed using this method.

Postcard Surveys

The third method of collecting information on subsistence harvest of salmon was through the use of postcard surveys (Appendix S.3). The postcard survey simply asked if the household harvested salmon from the Kuskokwim Area for subsistence use, the species and quantities harvested, the type of fishing gear used, if subsistence salmon needs were met, and if not, why. The postcard could be separated in half and returned postage paid. This type of survey was the primary method of obtaining harvest data from "usually fish" households in Bethel, McGrath, Kipnuk, Kwigillingok, Kasigluk, Mekoryuk, Newtok, Nightmute, Toksook Bay, and Tununak.

Postcard surveys were mailed out to Bethel and McGrath households in late September. Households that had not returned their catch calendar or postcard survey were contacted by telephone in November. If the households did not have a telephone, a second postcard was sent to them in November. A primary factor limiting contacts of Bethel households was that for many, neither a mailing address nor telephone number was available. Households in other communities that were not available during the staff visits to conduct house-to-house surveys or had not returned their salmon catch calendar were also mailed postcard surveys. Approximately 1,500 households were mailed postcard surveys.

Telephone Surveys

The fourth method of collecting information on subsistence harvest of salmon was through telephone surveys. These surveys were conducted in Bethel, McGrath, and Lime Village and followed the questioning format of the postcards except households were not asked if their subsistence needs were met. A total of 349 households were surveyed using this method.

Subsistence Salmon Harvest Estimation

Information from the four information sources (catch calendars, household, postcard, and telephone surveys) was entered into a computer database. Data were verified against source documents, and several logic checks of the data were made. The master list of names and addresses of resident households was updated to reflect changes in household composition and number of households residing in each community. The unique household numbering system was maintained on the master list and on the database tables containing information from each of the four information sources.

In order to provide a single best estimate for a household's harvest of a salmon species during 1994, information was composited from the various information sources. This process was conducted by a single researcher on the project to ensure data consistency. In most cases, there were few discrepancies between the information available from the different sources. In those cases where a household was determined to have fished for salmon, but no salmon harvest could be quantified through any information source, the harvest was identified as "missing."

Guidelines developed during the course of the process to composite harvest information included the assumptions that:

(1) the salmon catch calendar contained the best means of recording the household's harvest;

(2) information from the different sources needed to be evaluated concurrently in order to identify the harvest for each species;

(3) information from the different sources for a particular species may be different due to the timing of the collection of this information;

(4) information on the use of salmon to feed dogs be used as a minimum estimate of the household's harvest if no other information was available.

Salmon harvests identified as "removed from the commercial catch for subsistence use" were included in the household's subsistence harvest.

The average community catch (C_k) was estimated for salmon species from the composite catch per household data. Mean community catch (C_k) was estimated by:

$$C_k = \Sigma^1_{i=0} (N_{ki} * C_{ki}) / \Sigma^1_{i=0} N_{ki}$$

where
k = community
i = indicates whether the group "usually fishes" (1) or "usually does not fish"(0)
N_{ki} = number of households that "usually fish" or "usually do not fish "
C_{ki} = mean harvest for households that "usually fish" or "usually do not fish"

The total community catch (T_k) was estimated by $T_k = \Sigma^1_{i=0} (N_{ki} * C_{ki})$ and its variance (V_k) includes a finite population correction factor:

$$V_k = \Sigma^1_{i=0} ((N_{ki}^2)(1-(n_{ki}/ N_{ki}))(s_{ki}^2/ n_{ki}))$$

where n_{ki} = number of households for which information is available that "usually fish" or "usually do not fish" and S_{ki}^2 = variance for the amount harvested for the "usually fish" or "usually do not fish" households.

If fewer than 30 households or less than 50% of all households in a community were contacted, the reported harvest was used for the estimated harvest. Community catch estimates and their variances were summed across communities for region subtotals and across all regions for Area totals.

1994 Sampling Summary

A summary of the sampling information by community and fishing area are presented in Table 24. Of the estimated 3,183 households located in the Kuskokwim Area, information was obtained on 2,074 (65%).

In total 1,709 households have been classified as "usually fish." In 1994, subsistence salmon harvest information was collected from 1,478 (86%) of these households. In total 1,474 households have been classified as "usually do not fish" for subsistence salmon. Information was collected from 545 (37%) of these households. Many (43%) of the households classified as "usually do not fish" resided in Bethel.

Of the total 2,544 defined households living in the Kuskokwim River drainage, 1,815 (68%) were contacted. Information was especially absent for Bethel where 576 (57%) households did not provide fishing or harvest data to the Department or were otherwise not contacted. Forty-nine percent of the Kuskokwim River drainage households contacted (1,240) fished for subsistence salmon in 1994.

In the District 4 and District 5 communities of Quinhagak, Goodnews Bay, and Platinum, the majority, 164 (85%), of the 192 households living in the region were contacted. Of these contacted households, 124 (76%) fished for subsistence salmon in 1994.

In Kongiganak, Kipnuk, and Kwigillingok, communities along northern Kuskokwim Bay, data was obtained from 60 households (34%). The majority of the data available came from Kongiganak (53 households) and there was very little response from either Kipnuk (6) or Kwigillingok (1). Seventy-seven percent of the households in Kongiganak reported fishing for subsistence salmon in 1994.

In total 271 households have been identified in the Bering Sea coast communities of Mekoryuk, Newtok, Nightmute, Toksook Bay, and Tununak. Because house-to-house surveys were not conducted in these communities, data was obtained only by catch calendars and postcards. Thirty-five households in this region provided information and 20 reported harvesting salmon. Based on data gathered in other

years, actual participation in salmon harvesting activities is thought to be much greater than that reported by catch calendars or postcard surveys.

House-to-house surveys continue to be the primary vehicle for gathering data on harvest and use of subsistence salmon. Except for Bethel and McGrath where postcard surveys and telephone interviews were the primary data collection method, house-to-house surveys accounted for 54 percent of all households contacted.

In total 16% (271) of the 1,714 subsistence salmon calendars which were mailed pre-season were used and returned. More than half of those returned were actually collected during the house-to-house surveys. There were responses to 18% (272) of the 1,510 postcard surveys which were mailed to Kuskokwim Area households who had not returned harvest calendars and were not interviewed by staff.

1994 Harvest Summary

A summary of the subsistence salmon harvest estimates by community and fishing area are presented in Table 25. The 1994 total subsistence salmon harvest estimates for the Kuskokwim Area are 84,009 chinook, 63,831 chum, 32,403 sockeye, and 29,914 coho salmon.

Chinook and chum salmon harvests usually account for the largest proportion of the total subsistence salmon harvest and this was again the case in 1994. During most years the total subsistence chum salmon harvest is usually greater than each of the other salmon species. In 1994 the number of chinook salmon harvested outnumbered chum, by 20,181 fish.

Subsistence harvests in the District 1 usually account for 73 percent of the total annual subsistence salmon harvest in the Kuskokwim area. Correspondingly, approximately 70 percent of the area population resides in District 1.

A total of 726 households responded to a survey question aimed at determining if households caught enough salmon to meet their subsistence salmon needs for the year. A total of 590 (81%) of the households responding indicated that their subsistence salmon needs were met, 136 (19%) reported that their household's subsistence salmon needs were not met.

The percentage of households from each area responding that subsistence needs were met was as follows; North Kuskokwim Bay (86%), District 1 (86%), District 2 (75%), Upper Kuskokwim (65%), District 4 (84%) and District 5 (70%). The percentage of households from each area responding that subsistence needs were not met was as follows; North Kuskokwim Bay (13%), District 1 (13%), District 2 (25%), Upper Kuskokwim (35%), District 4 (16%), and District 5 (29%).

Nearly three-quarters (78%) of the households whose needs were not met gave reasons of a personal nature as the cause. These personal reasons included: lack of necessary equipment such as a boat, motor, fish-camp, or lack of money to repair equipment or buy gasoline; sickness or physical disability, a death in the family, other health reasons; lack of time due to wage employment or other

job related obligations; or the primary household fishers and processors were not at home during the summer.

Other reasons given for unmet salmon subsistence needs were given as follows: Low salmon abundance (9%), natural factors such as high water (6%), subsistence closure (2%), and regulatory reasons (1%). Three percent of these respondents did not provide a reason why their subsistence salmon needs were not met.

A cross-district comparison of these responses shows a few minor distinctions. Personal reasons were given by the majority of all respondents in all the districts of the region. The comments on closure and abundance came from Districts 1 and 2 alone. Natural factors were cited in all but District 5.

When staff asked households how they expected to meet their subsistence shortfalls, 101 (74%) of the above 136 households responded. A total of 42 (30%) reported that they hoped to harvest other fish including whitefish, sheefish, pike, burbot, tomcod, blackfish, smelt, and trout. Thirty-four (25%) respondents remarked that they would supplement with caribou and moose. Fourteen percent of the respondents planned to buy groceries and (2%) said they weren't sure how they would compensate for the shortage of subsistence salmon. Others suggested the options of seal, birds, berries, trapping, rabbit, beaver, ducks, ptarmigan, work, eggs, food stamps, buying dry fish, and asking other villagers for help. Two households specifically told staff that they would buy commercial dog food to feed their dog teams.

Gear Type

When asked what gear type was used to harvest subsistence salmon 1,068 households provided information. Of these respondents 714 indicated they used drift gill nets, while 259 used set gill nets, 88 used a rod and reel, 5 used a fish wheel, and 2 a seine. When asked what gill net mesh sizes they used to harvest chinook salmon, 50 percent of the 490 respondents noted that they used an 8" mesh or larger. Forty-one percent used mesh in the 5" to 6" range. A more detailed description of the various mesh sizes used by region is offered in Table 26.

PART II: FRESHWATER FIN FISH FISHERY

Several species other than salmon, herring, and halibut are used for commercial, subsistence, and recreation purposes in the Kuskokwim Area. They are inconnu or sheefish (Stenodus leucichthys), whitefish (Coregonus spp. and Prosopium spp.), char (Salvelinus sp), rainbow trout (Oncorhynchus mykiss), burbot (Lota lota), Arctic grayling (Thymallus arcticus), northern pike (Esox lucius), Arctic lamprey (Lamperta japonica), rainbow smelt (Osmerus mordax), blackfish (Dallia pectoralis) and longnose sucker (Catostomus catostomus) (Appendix A.9). The Division of Sport Fish documents the recreational fisheries.

Subsistence Fishery

Miscellaneous fin fish are taken by seine, set and drift gillnets, fish pots (traps), dip nets, "jigging" through the ice and rod and reel. Subsistence catches taken during the winter are usually stored frozen. Human consumption is the primary use but dog food is a significant use. No regulations limit the number of these miscellaneous species taken for subsistence. There is no funding to monitor this harvest.

Commercial Fishery

The commercial fishery has been sporadic, primarily harvesting whitefish and burbot for local markets. Most of the whitefish harvest occurs under the ice in the winter.

A permit from the Commercial Fisheries Entry Commission is required. A permit from the Department to conduct commercial fisheries on whitefish, smelt, pike, smelt, burbot, and lamprey is also required. Those species may be taken incidentally to commercial salmon fishing. There were five freshwater permits issued in 1994 for the Kuskokwim Area. Three fishers made landings (Appendix F.1). The guidelines for permits are:

1. All waters of the area are open to commercial freshwater fin fishing, except for the Johnson River drainage and Whitefish Lake. The heavy subsistence utilization of those species in these areas is the reason for the closure.

2. Whitefish, cisco, smelt, pike, burbot, and lamprey may be taken. Sheefish, char, and trout may not be taken due to their small population, low reproductive rates, and their heavy utilization in the subsistence and sport fisheries.

3. All legal commercial gear types are allowed.

4. Gill nets must be greater than 5 inches stretch mesh. Long lines and set lines must use hooks with a gap between point and shank larger than 3/4 inch. These restrictions minimize the incidental catch of grayling, trout, char and other forbidden species and the catch of whitefish, burbot, and pike is predominantly of older age fish that have spawned at least once.

In 1994, three special permits allowing the use of smaller than 5 inch mesh gear were issued for the Kuskokwim River. Two of these permits actually made landings. A targeted cisco fishery was the purpose of these permits. A daily catch log was required for these experimental permits (Tables 27). A 3 inch mesh net, fished in August in Statistical Area 335-13 (Figure 2), caught 54 percent whitefish and 42 percent cisco. A 3 1/2 inch mesh net fished in October and November caught 84 percent whitefish and 10 percent cisco. Cisco were 73 percent of the catch in the 3 3/4 inch mesh net fished in statistical area 335-13 for one day in July. The catch in the 4 inch net caught 86 percent whitefish, 6 percent

cisco, 5 percent each northern pike and sheefish. The 4.5 inch mesh net fished in statistical area 335-13 caught no cisco and 93 percent whitefish.

The 1991, 1992, 1993, and 1994 catch logs showed nets with mesh larger than 3 inch mesh were unsuccessful in targeting cisco. Their catch was predominately whitefish in the winter and salmon in the summer. Based on the data collected, to date mesh sizes from greater than 3 inch to five inch mesh have an unacceptably high catch of fish other than cisco and there use in the commercial fishery should be discontinued.

Appendix F.1 presents the freshwater fin fish fishery catches and value since 1977. Only 3 permits landed fish in 1994. The $4,345 earned was the fourth most valuable harvest on record.

Status of the Stocks

The Department does not monitor the status of the freshwater species in the Kuskokwim Area. Limited Department observations, advisory committee recommendations and fishers interviews give no indication of declining populations.

PART III: MISCELLANEOUS SALTWATER FINFISH

An "undocumented commercial" fishery on Saffron or "Tom Cod" has occurred in the Kuskokwim Area for some time. These fish were surplus to subsistence needs and fishers and local stores were (often still are) unaware of the regulatory requirements. The Department has been trying to inform buyers and sellers of these requirements. Since 1988 we have had information on the sale of fish exported from the coastal villages to Bethel. Sales within the villages are still undocumented. The available data on this fishery is reported in Appendix G.1. One landing was documented in 1994.

PART IV. HERRING FISHERY

INTRODUCTION

Area and District Boundaries

There are five commercial gillnet sac roe districts and a subsistence herring fishery in the Kuskokwim Area. The Security Cove District includes all waters between the latitude of Cape Newenham and the latitude of the Salmon River (Figure 7). The Goodnews Bay District includes the waters of Goodnews Bay inside the north and south spits at the mouth and a line between the Ukfigag and Tunulik Rivers. The Cape Avinof District (Figure 8) consists of all waters landward of Kikegtek, Pingurbek and Kwigluk Islands from the longitude of Ishkowik River (162° 44' W. long) to the longitude of the Ursukfak River (164° 11' W. long). The Nelson Island District consists of all waters north of Chinigyak Cape and east of Atrnak Point, and all waters north of Talurarevuk Point and south of the southernmost tip of Chinit Point and east of 165° 30' W. long., and all waters north of the northernmost tip of Chinit Point and south of Kigigak Island and east of 165° 30' W. long. (Figure 9). The Nunivak Island District includes all waters extending three miles seaward of mean low water along the northern and east sides of Nunivak Islands from Kikoojit Rocks (60° 20' 00" N. lat., 166° 39' 05" W. long.) to Kaksajookalik Island (59° 45' 10" N. lat., 166° 14' 20" W. long.), the western most point of Cape Mendenhall (Figure 10).

Management Programs

The Security Cove and Goodnews Bay commercial herring fisheries are managed under the Bering Sea Herring Fishery Management Plan which sets the maximum exploitation rate at 20% of the estimated spawning biomass. The Department attempts to harvest stocks in good condition (large volume, increasing abundance, good recruitment) at the upper end of the exploitation range (15-20%). Stocks in poor condition (small volume, decreasing abundance, poor recruitment) are exploited at lower than maximum rates (0-15%). The Alaska Board of Fisheries has directed the Department to manage the commercial herring fisheries in the Nelson Island, and Cape Avinof Districts for an exploitation rate not to exceed 15% of the estimated available biomass. To provide additional protection for the subsistence herring harvest in the Nelson Island District, the following guidelines have been established by the Board of Fisheries:

1. The commercial fishery will be allowed to take up to 15% of the herring biomass, compared to up to 20% for most other fisheries having stocks of similar size and condition.

2. The commercial fishing season will be opened when a biomass of 3,000 tons or spawning activity is documented.

3. Periodic closures of the commercial fishery will be scheduled, during which time only subsistence fishing will be allowed.

4. Several important subsistence use areas occur throughout the district (e.g. waters around Cape Vancouver) and specific areas may be closed to commercial fishing to insure the adequacy of subsistence harvests.

5. The Department will use all available means, including input from local residents, to insure the adequacy of subsistence herring harvests during the commercial fishing season.

In 1990 the Nelson and Nunivak Island Districts were given limited entry status by the Commercial Fisheries Entry Commissions. Entry permits were issued to qualified applicants who had fished in these fisheries before 1 January 1988.

Season Summary

The total Kuskokwim Area Pacific herring harvest for 1994 was approximately 2,220 tons with a total estimated value to the fishers of approximately $787,000 (Appendix H.1). The average price paid in all districts was the same as in 1993, $300 per ton for 10% roe recovery, with an increase or decrease of $30 per ton for each percentage point above or below 10%. This was $150 less per ton than in 1992. Commercial fisheries occurred in all but the Security Cove District. The only food/bait fishery in this area occurs during the sac roe fishery when the roe content is below the processors' acceptable minimums. Food/bait sales are a smaller portion of the harvest. Food/bait sales totaled 4 tons, while the sac roe harvest was 2,215 tons. One ton of herring was dumped after processors refused purchase.

Fishing effort, measured in number of fishers who made deliveries, increased from 1993 levels by 63% in Goodnews Bay, and 42% in Nelson Island while decreasing 12% at Cape Avinof (Appendix H.2). A total of 304 permit holders landed herring in the Kuskokwim Area, an increase of 26% from 1993. Only three companies bought herring in the Kuskokwim Area in 1994. Average percent roe recovery, from sac roe quality herring, ranged from 8.6 in the Nunivak Island District to 12.3 in the Goodnews Bay District. The overall average sac roe content was 11.8%, a record for the Kuskokwim Area. Percent harvest of estimated herring biomass ranged from 0.3 in the Nunivak Island District to 18.7 in the Goodnews Bay District (Appendix H.1).

The 1994 total estimated herring spawning biomass was 26,629 tons for the surveyed portion of the Kuskokwim Area herring districts. This was 2% higher than the 1993 estimate (Appendix H.1). Ages 9 and older herring comprised 40% of the total biomass (Table 28). Younger age fish (ages 3, 4, and 5) accounted for 18% of the total run in number of fish (Table 29).

STOCK STATUS

Assessment Methods

Aerial surveys were flown throughout the Pacific herring spawning season in all Kuskokwim Area commercial fishing districts to determine relative abundance, distribution, and biomass of herring. Occurrence and extent of milt, numbers of fishing vessels, and visibility features affecting survey quality were also recorded. Data collection methods were similar to those used since 1978.

Approximately 31 hours were spent conducting aerial surveys in the Kuskokwim Area: 11 hours in Security Cove and Goodnews Bay, 4 hours in the Cape Avinof District, 7 hours in Nelson Island and 9 hours in Nunivak Island. Weather and sea conditions were fair at best in all Districts, with the majority of surveys being conducted under poor conditions.

Standard conversions of 1.52 tons/538 ft^2 (water depths less than 16 ft), 2.58 tons/538 ft^2 (water depths between 16 and 26 ft) and 2.83 tons/538 ft^2 (water depths greater than 26 ft) were used to convert estimated herring school surface areas to biomass within all districts.

Test fishing with variable mesh gillnets occurred in all districts to determine age, sex, size and sexual maturity of herring and to note occurrence of other schooling fishes. The sampling goal for test fish catches was to sample a minimum of 60 herring per day or 420 per week from each district. Commercial landings were sampled in the Security Cove, Goodnews Bay, Cape Avinof and Nelson Island fishing districts. Age composition of herring collected from the Department test fishery and the commercial catch is summarized, by district, in Table 29. Additionally, volunteer gillnet vessels collected herring samples within all districts. This information allows interpretation and modification of aerial survey biomass data.

Ground surveys conducted in some districts provide information on the distribution and density of eel grass beds and herring spawn deposition.

Spawning Populations

Security Cove District

Nine aerial surveys were flown on 8 days during the 1994 season, from 6 May to 27 May. Only four of these surveys were flown under acceptable conditions, all of which occurred between May 11 and May 14. Herring schools were first observed in the district on 11 May (741 tons). On May 14, 4,563 st of herring were observed during an aerial survey. The herring biomass expected to return to the Security Cove District in 1994 was 7,638 st based on preseason projections. Since no acceptable surveys occurred outside the May 11-14 period, the preseason forecasted biomass of 7,638 st was used as the total biomass estimate for 1994.

A total of 11.5 miles of spawn was observed in the district with peak spawning activity (6.0 miles) on May 14.

The Security Cove test fish crew fished from 5 May to 26 May with variable mesh gillnets. From this catch, 1,142 herring were sampled for age, sex, size and maturity. Age 9 and older herring comprised 39% of the biomass (Table 28) while 3 to 5 year old fish were 11% of the return in numbers of fish (Table 29).

Volunteer commercial fishers collected herring samples from designated areas of the district that industry roe technicians evaluated for roe quality. This program allowed the openings to be timed to maximize roe production.

Goodnews Bay District

Nine aerial surveys were flown on 9 days during the 1994 season, from 6 May to 28 May. Only 2 of these were flown under satisfactory conditions. A survey on 14 May saw 4,189 tons in the district. The herring biomass expected to return to the Goodnews Bay District in 1994 was 5,679 st based on preseason projections. Since no acceptable surveys occurred outside the 12-14 May period, the preseason forecasted biomass of 5,679 st was used as the total biomass estimate for 1994. Three miles of spawn was observed during aerial surveys of the district with a peak of 2.0 miles seen on 12 May.

Test fishing occurred from 5 May to 27 May. The catch of 1,359 herring were sampled for age-sex-size data. Age 6 herring dominated both the biomass (24%) and the return in numbers of fish (31%) (Figure 12). Age 9 and older herring made up 42% of the biomass (Table 28) while aged 3 to 5 fish were 11% of the test catch (Table 29).

Volunteer commercial fishers collected herring samples from designated areas of the Bay which industry roe technicians evaluated for roe quality. This program allowed the openings to be timed to maximize roe production.

Cape Avinof District

Between 27 May and 6 June, 5 aerial surveys were flown in the Cape Avinof District. Only one of these surveys was flown under satisfactory conditions. An aerial survey on 2 June saw 2,269 tons of herring. The total biomass present in the district was estimated to be 2,827 tons based on the projected return from the 1993 escapement. One spawn (1.0 miles on 6 June) was observed in the Cape Avinof District in 1994.

The Department's test fishery near Kipnuk captured 1,072 herring between 25 May and 8 June to sample for age-sex-size data. Age 6 herring were the predominant age class (36%) while 20% of the biomass was age 9 or older (Table 28). Recruit herring represented 35% of the return in numbers of fish (Table 29).

Commercial fishers brought in herring samples from various areas in the district for industry roe technicians to evaluate. This information was used to help determine the timing of fishing periods.

Nelson Island District

Eleven aerial surveys were flown on 10 days from 18 May to 6 June during the 1994 season. Three of these surveys were made under acceptable conditions. During an aerial survey on 24 May, 4,134 st of herring were observed in the district. On a second survey, flown 2 June, 4,321 st of herring were seen. Changes in age composition of test catches before and after 29 May indicate that some new fish had entered the district after 28 May. The total biomass estimate of 5,564 st was calculated by adding fish seen on the 28 May survey that were not present on 24 May and the commercial harvest before 24 May to the 24 May biomass. A total of 25.5 miles of spawn was observed during aerial surveys of the district. Peak spawning was observed on 20 May and 3 June when 6.0 miles of spawn were sighted on both days.

Test fishing with variable mesh gillnets occurred from 18 May to 15 June. Age, sex, size and maturity information was taken from 1,907 herring. Age 3 to 5 fish made up 24% of the test catch with 36% being age 9 or older herring. Age 6 herring dominated the return in both biomass (17%) (Table 28) and numbers of fish (21%) (Table 29).

Nunivak Island District

Eight aerial surveys were flown on 7 days between 20 May and 6 June during the 1994 season. Five surveys were made under acceptable conditions. During an aerial survey on 28 May, 4,921 tons of herring were observed. A total of 11.3 linear miles of spawn was observed during aerial surveys with a peak spawn of 3.8 miles documented on 23 May.

The Department test fishery sampled 1,234 herring for biological data between 21 May and 7 June. Age 6 herring dominated the return in both biomass (32%) (Table 28) and number of fish (38%) (Table 29). Recruit herring were 17% of the run in number of fish.

SUBSISTENCE FISHERY

Subsistence fishing for Pacific herring in the northeastern Bering Sea is very important in villages of the Yukon-Kuskokwim River delta. The subsistence fishery is conducted primarily by residents of the coastal villages of Kwigillingok, Kongiganak, Kipnuk, Chefornak, Toksook Bay, Umkumiut, Nightmute, Tununak, and Newtok. The herring stocks utilized by the subsistence fishery are the same ones targeted by the commercial fishery in the nearby commercial fishing districts.

Subsistence harvest surveys have occurred annually in Nelson Island villages since 1985 and sporadically in Kuskokwim delta villages since 1975. Average annual herring subsistence harvests have been at least 110 tons since 1975 (Appendix H.3). The 1994 subsistence survey of Nelson Island communities resulted in an estimated 117 tons of subsistence herring harvested. Subsistence survey results reflect harvest trends and reported catches represent minimum

figures since not all fishers are contacted and other Kuskokwim River delta villages were not surveyed.

Most Nelson Island families expressed satisfaction with this year's subsistence herring fishery. Timing of the fishery, quality and quantity of herring and excellent drying weather cooperated to produce a good season. Herring of high fat content were relatively few which minimized spoilage.

COMMERCIAL FISHERY

Security Cove District

The commercial herring fishery in the Security Cove District has opened and closed by emergency order since 1981 to provide for an orderly fishery and periodic assessment of herring biomass. There were no commercial openings in the Security Cove District in 1994 (Table 30).

The lack of harvest in the Security Cove District was due to the relatively late arrival of fishers and processors. The district was placed on two hour advanced notice for commercial fishing on 12 May. Fishers did not arrive in the district until 21 May. The average time between the first commercial periods in the Togiak and Security Cove Districts is four days (range 2 to 9 days). This year the Togiak District was open 10 days before fishers arrived in the Security Cove District. There were a total of 11.5 miles of spawn observed in the district before 21 May.

Goodnews Bay District

Since 1981, to provide for an orderly fishery and periodic reassessments of herring biomass, commercial herring fishing in Goodnews Bay has opened and closed by emergency order. A total of 1,062 tons was taken during 38 hours of fishing over 8 periods (Table 30).

A meeting with fishers and processors was held on 20 May. Commercial fishers brought catch samples to the meetings for evaluation by industry roe technicians. Roe content of commercial test fish samples averaged 13.1%. Fishers refused to commercial fish because the only available processor was offering $200 per ton for herring with 10% roe content. Commercial test fish samples on 21 May produced an average roe content of 12.3%. The arrival of a second processor in the bay raised the price of herring to $300 per ton for 10% roe content. The price was acceptable to the fishers.

The fishery first opened on 22 May for 6 hours with 74 fishers delivering 177.7 st of sac roe herring with an average roe content of 12.6%. Total catch in 1994 was 1,060.9 st of sac roe quality herring with an average roe content of 12.3% and 1.0 st of waste. Catches ranged from 42.7 st on 26 May to 211.8 st on 23 May. During the fishery, roe contents ranged from 11.3% to 13.3%. Three

processors bought herring from 103 permit holders who made 683 deliveries with an estimated ex-vessel value of $391,000. The exploitation rate was 18.7% of the available biomass (Appendix H.1).

A sample of 416 herring was taken from the commercial catch. Ages 9 and older herring comprised 79% of the total harvest by weight. Younger herring (ages 4 and 5) comprised 1% of the harvest sample.

Management of the 1994 herring fishery in Goodnews Bay was without major problems. Fish and Wildlife Protection officers patrolled the district during the season. Several fishing violations were reported.

Cape Avinof District

This was the seventh year that a commercial herring fishery occurred in the Cape Avinof District. As in all other Kuskokwim Bay districts, commercial herring fishing is regulated by emergency order. A total of 427 tons of herring were harvested during 62 hours of fishing time (Table 30).

Samples from Kipnuk commercial fishers on 27 May had an average roe content of 13.4%. The district was first opened to commercial fishing for 4 hours starting at 11:00 am on 28 May. The harvest was 18.6 tons of sac roe herring with an average roe content of 11.2%. Forty-five fishers made deliveries. Between 28 May and 1 June the district was reopened eight times for 58 hours of fishing time. Catches ranged from 87.4 tons on 31 May to 8.8 tons on the second opening of 28 May. Roe contents ranged from 11.4% to 13.1%. A total of 427.2 tons of sac roe quality herring with an average roe content of 12.2% were caught.

One processor paid approximately $156,000 to 85 fishers who made 502 deliveries. The exploitation rate of herring was 15.1% of the estimated available biomass (Appendix H.1).

A commercial catch sample of 430 herring was obtained. Ages 9 and older herring comprised 67% of the catch by weight. Young herring (ages 3, 4, and 5) made up only 1% of the harvest.

Nelson Island District

The commercial harvest of herring began in the Nelson Island District in 1985. To provide for an adequate subsistence harvest, an orderly commercial fishery, and to allow for periodic assessment of the herring biomass, the commercial fishery has opened and closed by emergency order.

The Nelson Island District did not open to commercial fishing in 1990 or 1991 because the herring biomass was below the level necessary to allow a fishery. A total of 717 tons of herring was taken in 5 periods in 1994.

The first opening was for 4 hours starting at 6:00 am on 23 May. Effort was very low and the estimated harvest of 0.2 st was taken by 4 fishers for subsistence

purposes. The second opening was for 6 hours beginning 5:00 pm on 23 May. Seventy-five fishers made landings with 184.6 st of sac roe herring with an average roe content of 10.2%. The next commercial period was on 24 May for 6 hours starting at 6:00 pm. Catch from this period was 260.2 st of sac roe herring with a roe content of 10.7% and 4.3 st of bait. Ninety permit holders made 134 deliveries. The 25 May period saw a total catch of 152.9 st of sac roe quality herring at 12.7% average roe content. The final period ran 4 hours starting at 9:00 pm on 26 May. Eighty-six fishers delivered 115.1 st with an average roe content of 10.6%

Three processor paid approximately $235,000 to 104 fishers who made 409 deliveries. The exploitation rate was 12.9% of the available biomass. A total of 432 herring was sampled from the commercial catch. The age composition showed that 82% of the catch was age 9 or older. Less than 1% of the harvest was recruit herring.

Nunivak Island District

The initial commercial fishery for herring in the Nunivak Island District occurred in 1985. To provide for an orderly fishery and to allow for periodic assessment of herring biomass the fishery has opened and closed by emergency order.

The Nunivak Island District had one commercial fishing period in 1994. On 3 June 12 fishers caught 13.9 tons herring with an average sac roe content of 8.6%. The tender left the Nunivak Island District for the season on 3 June.

Enforcement

The Department of Public Safety, Division of Fish and Wildlife Protection was present in all but the Security Cove and Nunivak Island Districts during the 1994 commercial herring fishery. A C-185 aircraft, two Supercubs and a helicopter were present in the Goodnews Bay, Nelson Island, and Cape Avinof Districts. All four citations issued in 1994 were for fishing during closed periods in the Cape Avinof District.

OUTLOOK AND MANAGEMENT STRATEGY FOR 1995

Projections from post-season escapement estimates, using historic mean rates of survival and growth for each age class (Bromaghin and Hamner 1993, ADF&G, Anchorage, personal communication), and estimates of recruitment (Wespedstad, 1982), indicate that the 1995 spawning biomass for the Kuskokwim Area herring stocks (Security Cove to Nelson Island) should be roughly 22,609 tons (Table 31). These projections can be viewed as minimums since a total estimate of recruit herring is not included. However, variability in the quality of aerial survey assessments of biomass and deviations from the assumed survival or recruitment

rates may result in the observed biomass being either above or below these projections.

Recruitment of younger age classes (ages 4 to 5) was relatively low in all districts in 1994. Ages 2, 3, 4, and 5 herring comprised 18% of the herring population. Since accurate methods to forecast herring returns are not available, harvest levels will be adjusted during the season according to observed herring spawning biomass. In addition, in accordance with the AYK Region harvest policy, newly recruited age classes will not be targeted by the commercial fishery. If it is not possible to determine herring abundance using aerial survey methods, stock abundance will be assessed using information from the projected biomass, test and commercial catches, and spawn deposition observations.

Security Cove District

The commercial season opens when the biomass reaches 1,200 tons or spawning activity is observed. The occurrence and length of fishing periods will depend on stock strength, fishing effort, and spawning activity. The increased recruitment of younger age fish into the population allows a 20% exploitation rate for the Security Cove herring stock in 1995. A 20% exploitation rate on the projected return of 6,702 tons would result in a harvest of about 1,340 tons (Table 31). A larger catch may occur if the 1995 biomass assessment is greater than the projection.

Ages 7 and 8 are expected to dominate the return. Age 9 and older herring are expected to comprise approximately 32% of the biomass.

Goodnews Bay District

Management strategy for this district will be similar to that used for Security Cove. The season will open and close by emergency order when a biomass of 1,200 tons is observed or spawning activity occurs. The 1995 projected return of herring to the Goodnews Bay District is 4,224 tons. A 20% exploitation rate would result in a harvest of 845 tons (Table 31). A larger catch may occur if the 1995 biomass assessment is greater than the projection.

Ages 7 and 8 herring are expected to be the dominant year classes in the return. Age 9 and older herring are expected to comprise approximately 29% of the biomass.

Cape Avinof District

Either spawning activity or a biomass of 500 tons must be observed before the commercial herring season can be opened. The season will open and close by emergency order. The projected 1995 biomass for the Cape Avinof area stock is 2,644 tons (Table 31). The 15% exploitation rate will take into account the

limited data base for this area and insure recognition of the subsistence fishing priority. Assuming a 15% commercial exploitation rate, the projected harvest would be 397 tons of herring.

Age 7 herring are expected to be the largest year class in the returning population. Age 9 and older herring are expected to comprise approximately 12% of the returning population.

Nelson Island District

In the Bering Sea Herring Fishery Management Plan the Alaska Board of Fisheries set a minimum biomass level of 3,000 tons for the Nelson Island District. The in-season estimate of herring biomass must exceed the threshold level before a commercial fishery can be allowed.

The spawning biomass projected to return to the Nelson Island District in 1995 is 4,460 tons (Table 31). At the 15% exploitation rate the harvest will be 669 tons. A larger harvest may occur if the 1995 biomass assessment is greater than the projection.

Age 7 herring are expected to be the dominant are group. Herring age 9 and older are expected to comprise 39% of the return.

Nunivak Island District

The commercial season opens when the biomass reaches 1,500 tons or when significant spawning is observed. The projected biomass of herring returning to the Nunivak Island District in 1995 is 4,579 tons. The maximum exploitation rate for herring in the Nunivak Island District commercial fishery was increased to 20% by the Alaska Board of Fisheries in 1994. A 20% exploitation rate would result in a 916 ton harvest (Table 31). A larger catch may occur if the 1995 biomass assessment is greater than the projection.

Age 7 herring are expected to be the dominant age group. Herring age 9 and older are expected to comprise 32% of the return.

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TABLES

Table 1. Peak aerial survey salmon escapement estimates in Kuskokwim Area spawning tributaries by species, 1994[a].

Location	Date	Chinook	Sockeye	Coho	Chum
KUSKOKWIM RIVER:					
Tuluksak River	26-Jul	285	0	na	162
Aniak River	26-Jul	876	0	na	710
Salmon River (Aniak)	26-Jul	1,218	0	na	1,520
Kipchuk River	26-Jul	1,520	0	na	130
Kasigluk River	27-Jul	0	0	na	0
Kisaralik River	27-Jul	1,021	0	na	222
Kwethluk River	27-Jul	8	0	na	10
Canyon Creek	27-Jul	106	0	na	0
Gagaryak River	29-Jul	807	0	na	0
Cheeneetnuk River	29-Jul	1,206	0	na	680
Salmon R. (Pitka Fork)	30-Jul	1,010	0	na	0
Tatliwiksuk River	31-Jul	424	0	na	5,219
KUSKOKWIM BAY:					
Kanektok River	22-Jul	7,386	30,090	na	10,000
Arolik River	08-Aug	507	3,360	3,530	813

a Peak aerial salmon escapement index count. Aerial index counts do not represent total escapement, but reflect annual spawner abundance trends when made using standard survey methods under acceptable conditions.

Table 2. Daily and cumulative salmon escapement for the Tuluksak River weir, 1994.

Date	Chinook		Sockeye		Chum		Pink		Coho	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/29	0	0	0	0	8	8	1	1	0	0
6/30	5	5	0	0	4	12	0	1	0	0
7/01	4	9	0	0	8	20	0	1	0	0
7/02	5	14	0	0	34	54	0	1	0	0
7/03	3	17	0	0	35	89	0	1	0	0
7/04	26	43	0	0	96	185	0	1	0	0
7/05	69	112	0	0	121	306	0	1	0	0
7/06	29	141	0	0	70	376	0	1	0	0
7/07	391	532	0	0	321	697	3	4	0	0
7/08	109	641	0	0	294	991	9	13	0	0
7/09	184	825	0	0	288	1279	6	19	0	0
7/10	70	895	2	2	211	1490	0	19	0	0
7/11	144	1039	0	2	495	1985	12	31	0	0
7/12	254	1293	0	2	401	2386	18	49	0	0
7/13	176	1469	0	2	553	2939	12	61	0	0
7/14	160	1629	0	2	476	3415	48	109	0	0
7/15	142	1771	0	2	754	4169	30	139	0	0
7/16	83	1854	0	2	615	4784	19	158	0	0
7/17	85	1939	2	4	625	5409	20	178	0	0
7/18	150	2089	3	7	587	5996	28	206	0	0
7/19	191	2280	0	7	942	6938	50	256	0	0
7/20	165	2445	1	8	808	7746	54	310	0	0
7/21	96	2541	1	9	690	8436	80	390	0	0
7/22	77	2618	1	10	1006	9442	68	458	0	0
7/23	18	2636	0	10	952	10394	71	529	0	0
7/24	32	2668	6	16	589	10983	24	553	0	0
7/25	60	2728	11	27	747	11730	57	610	3	3
7/26	23	2751	2	29	525	12255	35	645	7	10
7/27	36	2787	1	30	799	13054	76	721	7	17
7/28	36	2823	3	33	487	13541	52	773	7	24
7/29	9	2832	3	36	374	13915	78	851	7	31
7/30	12	2844	2	38	194	14109	94	945	14	45
7/31	2	2846	2	40	191	14300	95	1040	7	52
8/01	8	2854	1	41	173	14473	114	1154	8	60
8/02	5	2859	2	43	188	14661	102	1256	10	70
8/03	5	2864	2	45	170	14831	192	1448	20	90
8/04	4	2868	3	48	175	15006	201	1649	27	117
8/05	6	2874	3	51	202	15208	186	1835	33	150
8/06	8	2882	3	54	130	15338	206	2041	30	180
8/07	2	2884	1	55	89	15427	193	2234	14	194
8/08	5	2889	1	56	54	15481	181	2415	34	228
8/09	2	2891	2	58	53	15534	92	2507	2	230
8/10	1	2892	2	60	63	15597	115	2622	32	262
8/11	2	2894	6	66	37	15634	108	2730	44	306
8/12	0	2894	0	66	7	15641	27	2757	12	318
8/13	2	2896	1	67	23	15664	150	2907	42	360
8/14	1	2897	0	67	22	15686	105	3012	29	389
8/15	2	2899	2	69	33	15719	84	3096	70	459
8/16	1	2900	5	74	22	15741	80	3176	102	561
8/17	0	2900	0	74	19	15760	51	3227	429	990
8/18	1	2901	0	74	18	15778	16	3243	122	1112
8/19	0	2901	3	77	7	15785	12	3255	122	1234
8/20	1	2902	0	77	9	15794	11	3266	101	1335
8/21	1	2903	0	77	2	15796	8	3274	124	1459
8/22	0	2903	1	78	3	15799	9	3283	225	1684
8/23	0	2903	1	79	6	15805	12	3295	601	2285
8/24	0	2903	1	80	5	15810	11	3306	363	2648
8/25	~~0~~	~~2903~~	~~0~~	~~80~~	~~1~~	~~15811~~	~~0~~	~~3306~~	807	3455
8/26	0	2903 *	0	80 *	0	15811 *	1	3307 *	292	3747 *
8/27	0	2903 *	0	80 *	0	15811 *	0	3307 *	292	4039 *
8/28	0	2903 *	0	80 *	0	15811 *	0	3307 *	292	4331 *
8/29	0	2903 *	0	80 *	0	15811 *	0	3307 *	292	4623 *
8/30	0	2903 *	0	80 *	0	15811 *	0	3307 *	292	4915 *
8/31	~~0~~	~~2903 *~~	~~0~~	~~80 *~~	~~0~~	~~15811 *~~	~~0~~	~~3307 *~~	292	5207 *
9/01	0	2903 *	0	80 *	3	15814 *	6	3313 *	292	5499 *
9/02	0	2903	0	80	3	15817	9	3322	107	5606
9/03	0	2903	0	80	1	15818	8	3330	101	5707
9/04	1	2904	0	80	8	15826	13	3343	183	5890
9/05	0	2904	0	80	3	15829	5	3348	266	6156
9/06	0	2904	0	80	2	15831	7	3355	212	6368
9/07	0	2904	0	80	4	15835	8	3363	109	6477
9/08	0	2904	0	80	5	15840	16	3379	273	6750
9/09	0	2904 *	0	80 *	0	15840 *	0	3379 *	188	6938 *
9/10	0	2904 *	0	80 *	2	15842 *	0	3379 *	188	7126 *
9/11	1	2905 *	0	80 *	3	15845 *	0	3379 *	103	7229 *

* = estimate

Table 3. Chum salmon escapement estimation for 1994 using side scan sonar migration timing data from the years 1980-93, Aniak River, Alaska[a]

	Normal Timing		Late Timing		Early Timing		Estimated	
Date	Daily Prop.	Cum. Prop.	Daily Prop.	Cum. Prop.	Daily Prop.	Cum. Prop.	Adjusted Count	Daily Escapement
15-Jun	0.00000	0.00000	0.00000	0.00000	0.00019	0.00019	0	0.0
16-Jun	0.00000	0.00000	0.00000	0.00000	0.00143	0.00162	0	0.0
17-Jun	0.00032	0.00032	0.00000	0.00000	0.00163	0.00325	77.8	126.0
18-Jun	0.00053	0.00085	0.00000	0.00000	0.00209	0.00534	126.5	204.9
19-Jun	0.00192	0.00277	0.00000	0.00000	0.00358	0.00892	459.4	744.3
20-Jun	0.00279	0.00556	0.00009	0.00009	0.00531	0.01422	669.6	1084.7
21-Jun	0.00389	0.00944	0.00018	0.00027	0.00763	0.02185	931.9	1509.8
22-Jun	0.00409	0.01353	0.00026	0.00053	0.01043	0.03228	981.0	1589.2
23-Jun	0.00548	0.01902	0.00058	0.00111	0.01050	0.04278	1315.4	2131.0
24-Jun	0.00663	0.02565	0.00085	0.00196	0.01139	0.05417	1589.8	2575.5
25-Jun	0.00823	0.03388	0.00152	0.00348	0.01530	0.06946	1973.9	3197.7
26-Jun	0.00971	0.04358	0.00197	0.00544	0.01797	0.08743	2328.1	3771.5
27-Jun	0.01207	0.05566	0.00308	0.00852	0.01853	0.10595	2895.8	4691.1
28-Jun	0.01320	0.06885	0.00490	0.01342	0.02007	0.12603	2691	4359.4
29-Jun	0.01500	0.08386	0.00709	0.02052	0.02101	0.14704	3711	6011.8
30-Jun	0.01699	0.10085	0.00849	0.02901	0.02505	0.17208	7891	12783.4
01-Jul	0.01993	0.12078	0.01144	0.04045	0.02962	0.20171	4688	7594.6
02-Jul	0.02599	0.14676	0.01479	0.05524	0.03730	0.23900	1420	2300.4
03-Jul	0.03299	0.17975	0.01787	0.07311	0.03943	0.27844	773	1252.3
04-Jul	0.03807	0.21782	0.01994	0.09305	0.03776	0.31619	2337	3785.9
05-Jul	0.03748	0.25530	0.02254	0.11559	0.03267	0.34886	4529	7337.0
06-Jul	0.03697	0.29227	0.02415	0.13973	0.02941	0.37828	4091	6627.4
07-Jul	0.03212	0.32439	0.02455	0.16429	0.02775	0.40603	2620	4244.4
08-Jul	0.03149	0.35588	0.02586	0.19014	0.03262	0.43864	11385	18443.7
09-Jul	0.02822	0.38410	0.02642	0.21656	0.03955	0.47820	8650	14013.0
10-Jul	0.03094	0.41504	0.02815	0.24471	0.04151	0.51970	8466	13714.9
11-Jul	0.03000	0.44504	0.02820	0.27291	0.04351	0.56322	13632	22083.8
12-Jul	0.03312	0.47816	0.02845	0.30137	0.04241	0.60563	10406	16857.7
13-Jul	0.02946	0.50761	0.02654	0.32791	0.03927	0.64490	9290	15049.8
14-Jul	0.03103	0.53865	0.02771	0.35562	0.03746	0.68236	13172	21338.6
15-Jul	0.03073	0.56938	0.02913	0.38474	0.03664	0.71900	16511	26747.8
16-Jul	0.03155	0.60094	0.02952	0.41427	0.03259	0.75159	10197	16519.1
17-Jul	0.02784	0.62877	0.02906	0.44333	0.02902	0.78060	8087	13100.9
18-Jul	0.02949	0.65827	0.02967	0.47300	0.02747	0.80807	11950	19359.0
19-Jul	0.03013	0.68840	0.02972	0.50272	0.02452	0.83259	8968	14528.2
20-Jul	0.02684	0.71523	0.03542	0.53814	0.02348	0.85606	6985	11315.7
21-Jul	0.02671	0.74195	0.03780	0.57594	0.02223	0.87830	3619	5862.8
22-Jul	0.02811	0.77005	0.04108	0.61702	0.02083	0.89913	4176	6765.1
23-Jul	0.02313	0.79318	0.04033	0.65735	0.01941	0.91854	4337	7025.9
24-Jul	0.01851	0.81169	0.04026	0.69761	0.01799	0.93653	2198	3560.8
25-Jul	0.01831	0.83001	0.03286	0.73048	0.01584	0.95236	1714	2776.7
26-Jul	0.01944	0.84945	0.02950	0.75998	0.01483	0.96719	994	1610.3
27-Jul	0.01762	0.86706	0.02628	0.78626	0.01154	0.97873	4555	7379.1
28-Jul	0.01826	0.88532	0.02482	0.81108	0.00874	0.98747	4956	8028.7
29-Jul	0.01725	0.90258	0.02297	0.83405	0.00642	0.99389	4138.3	6704.1
30-Jul	0.01689	0.91947	0.02254	0.85659	0.00362	0.99751	4052.0	6564.2
31-Jul	0.01336	0.93283	0.02224	0.87883	0.00133	0.99884	3203.7	5190.0
01-Aug	0.01317	0.94600	0.02251	0.90134	0.00081	0.99965	3158.2	5116.3
02-Aug	0.01284	0.95883	0.02372	0.92506	0.00035	1.00000	3078.9	4987.8
03-Aug	0.01324	0.97207	0.02328	0.94833	0.00000	1.00000	3174.8	5143.1
04-Aug	0.01079	0.98286	0.01926	0.96759	0.00000	1.00000	2587.6	4191.9
05-Aug	0.01191	0.99476	0.01996	0.98755	0.00000	1.00000	2855.9	4626.6
06-Aug	0.00524	1.00000	0.01245	1.00000	0.00000	1.00000	1256.1	2034.8

Escapement Objective = 250,000 Estimated Total Escapement = 388,563

a Daily escapements for the periods June 15-27 and July 29 - August 5 were estimated from historic daily proportions for a normal migration. All other daily estimates were determined from adjusted daily counts as listed. Daily escapement estimates represent adjusted sonar counts which have been expanded by a factor of 1.62 to account for salmon which swim outside of the ensonified water column.

Table 4. Daily and cumulative salmon escapement for the Kogrukluk Weir, 1994.

	Chinook		Sockeye		Coho		Chum	
Date	Daily count	Cum. count	Daily count	Cum. count	Daily count	Cum. count	Daily count	Cum. count
17-Jun	0.0	0	0.0	0	0.0	0	1.0	1
18-Jun	0.0	0	0.0	0	0.0	0	1.0	2
19-Jun	1.0	1	0.0	0	0.0	0	2.0	4
20-Jun	1.0	2	0.0	0	0.0	0	6.0	10
21-Jun	3.0	5	0.0	0	0.0	0	7.0	17
22-Jun	7.0	12	1.0	1	0.0	0	16.0	33
23-Jun	13.0	25	2.0	3	0.0	0	33.0	66
24-Jun	22.0	47	5.0	8	0.0	0	32.0	98
25-Jun	40.0	87	8.0	16	0.0	0	53.0	151
26-Jun	46.0	133	9.0	25	0.0	0	92.0	243
27-Jun	88.0	221	16.0	41	0.0	0	197.0	440
28-Jun	116.0	337	22.0	63	0.0	0	249.0	689
29-Jun	175.0	512	56.0	119	0.0	0	302.0	991
30-Jun	192.0	704	81.0	200	0.0	0	354.0	1345
01-Jul	344.0	1048	105.0	305	0.0	0	406.0	1751
02-Jul	423	1471	7	312	0	0	459	2210
03-Jul	268	1739	8	320	0	0	511	2721
04-Jul	458	2197	10	330	0	0	547	3268
05-Jul	1130	3327	24	354	0	0	593	3861
06-Jul	1110	4437	52	406	0	0	1135	4996
07-Jul	937	5374	120	526	0	0	1630	6626
08-Jul	692	6066	140	666	0	0	2439	9065
09-Jul	1245	7311	205	871	0	0	3317	12382
10-Jul	775	8086	126	997	0	0	2421	14803
11-Jul	929.0	9015	795.0	1792	0.0	0	2683.0	17486
12-Jul	1035.0	10050	784.0	2576	0.0	0	2744.0	20230
13-Jul	1094.0	11144	848.0	3424	0.0	0	2476.0	22706
14-Jul	984.0	12128	848.0	4272	0.0	0	2533.0	25239
15-Jul	919.0	13047	864.0	5136	0.0	0	2448.0	27687
16-Jul	851.0	13898	770.0	5906	0.0	0	2283.0	29970
17-Jul	741.0	14639	685.0	6591	0.0	0	2041.0	32011
18-Jul	598	15237	1123	7714	0	0	2784	34795
19-Jul	559.0	15796	432.0	8146	0.0	0	1348.0	36143
20-Jul	453.0	16249	422.0	8568	0.0	0	1242.0	37385
21-Jul	465.0	16714	458.0	9026	0.0	0	1399.0	38784
22-Jul	313.0	17027	352.0	9378	0.0	0	1117.0	39901
23-Jul	278.0	17305	286.0	9664	0.0	0	986.0	40887
24-Jul	299.0	17604	306.0	9970	0.0	0	1030.0	41917
25-Jul	193.0	17797	256.0	10226	0.0	0	817.0	42734
26-Jul	184.0	17981	184.0	10410	0.0	0	644.0	43378
27-Jul	119.0	18100	177.0	10587	0	0	595.0	43973
28-Jul	47	18147	450	11037	12	12	681	44654
29-Jul	141	18288	665	11702	22	34	1418	46072
30-Jul	108	18396	690	12392	29	63	1354	47426
31-Jul	86	18482	552	12944	23	86	1272	48698
01-Aug	58	18540	427	13371	51	137	793	49491
02-Aug	27	18567	226	13597	30	167	642	50133
03-Aug	25	18592	235	13832	50	217	655	50788
04-Aug	25.0	18617	36.0	13868	59.0	276	227.0	51015
05-Aug	24.0	18641	23.0	13891	68.0	344	159.0	51174
06-Aug	22.0	18663	24.0	13915	77.0	421	122.0	51296
07-Aug	16	18679	75	13990	86	507	185	51481
08-Aug	19	18698	62	14052	123	630	183	51664
09-Aug	2	18700	30	14082	103	733	118	51782
10-Aug	6	18706	32	14114	108	841	100	51882
11-Aug	6.0	18712	23.0	14137	162.0	1003	76.0	51958

- continued -

Table 4. (page 2 of 2)

Date	Chinook Daily count	Chinook Cum. count	Sockeye Daily count	Sockeye Cum. count	Coho Daily count	Coho Cum. count	Chum Daily count	Chum Cum. count
12-Aug	6	18718	13	14150	215	1218	51	52009
13-Aug	5	18723	4	14154	209	1427	36	52045
14-Aug	9	18732	9	14163	296	1723	39	52084
15-Aug	7	18739	1	14164	439	2162	26	52110
16-Aug	4	18743	7	14171	416	2578	20	52130
17-Aug	3	18746	4	14175	581	3159	19	52149
18-Aug	0	18746	2	14177	837	3996	15	52164
19-Aug	5	18751	1	14178	761	4757	5	52169
20-Aug	1	18752	1	14179	829	5586	7	52176
21-Aug	3	18755	1	14180	597	6183	3	52179
22-Aug	1	18756	1	14181	469	6652	1	52180
23-Aug	0	18756	1	14182	439	7091	2	52182
24-Aug	0	18756	1	14183	841	7932	4	52186
25-Aug	0	18756	2	14185	2096	10028	2	52188
26-Aug	0	18756	1	14186	2943	12971	5	52193
27-Aug	0	18756	2	14188	2713	15684	5	52198
28-Aug	0	18756	0	14188	1887	17571	2	52200
29-Aug	0	18756	0	14188	1007	18578	0	52200
30-Aug	2	18758	0	14188	396	18974	1	52201
31-Aug	0	18758	0	14188	842	19816	2	52203
01-Sep	0	18758	1	14189	1947	21763	1	52204
02-Sep	1	18759	0	14189	1400	23163	2	52206
03-Sep	1	18760	1	14190	1155	24318	1	52207
04-Sep	0	18760	0	14190	643	24961	0	52207
05-Sep	0	18760	0	14190	630	25591	0	52207
06-Sep	1	18761	0	14190	425	26016	1	52208
07-Sep	0	18761	0	14190	384	26400	0	52208
08-Sep	1	18762	1	14191	527	26927	0	52208
09-Sep	0	18762	1	14192	436	27363	0	52208
10-Sep	0	18762	0	14192	356	27719	0	52208
11-Sep	0.0	18762	0.0	14192	514.0	28233	0.0	52208
12-Sep	0.0	18762	0.0	14192	567.0	28800	0.0	52208
13-Sep	0.0	18762	0.0	14192	1082.0	29882	0.0	52208
14-Sep	0.0	18762	0.0	14192	1068.0	30950	0.0	52208
15-Sep	0.0	18762	0.0	14192	737.0	31687	0.0	52208
16-Sep	0.0	18762	0.0	14192	601.0	32288	0.0	52208
17-Sep	0.0	18762	0.0	14192	415.0	32703	0.0	52208
18-Sep	0.0	18762	0.0	14192	707.0	33410	0.0	52208
19-Sep	0.0	18762	0.0	14192	354.0	33764	0.0	52208
20-Sep	0.0	18762	0.0	14192	348.0	34112	0.0	52208
21-Sep	0.0	18762	0.0	14192	143.0	34255	0.0	52208
22-Sep	0.0	18762	0.0	14192	137.0	34392	0.0	52208
23-Sep	0.0	18762	0.0	14192	19.0	34411	0.0	52208
24-Sep	0.0	18762	0.0	14192	3.0	34414	0.0	52208
25-Sep	0.0	18762	0.0	14192	13.0	34427	0.0	52208
26-Sep	0.0	18762	0.0	14192	268.0	34695	0.0	52208
27-Sep	0.0	18762	0.0	14192	0.0	34695	0.0	52208
28-Sep	0.0	18762	0.0	14192	0.0	34695	0.0	52208
29-Sep	0.0	18762	0.0	14192	0.0	34695	0.0	52208
30-Sep	0.0	18762	0.0	14192	0.0	34695	0.0	52208

Note: Numbers with decimal points are estimates calculated from historical passage data.

Table 5. Daily chinook salmon estimated season escapements using early, normal and late timing models, Kogrukluk River, Alaska, 1994.

			Early Run Timing		Normal Run Timing		Late Run Timing	
Date	Daily Count	Cum. Count	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.
18-Jun	0.9	1	0.00006	15166	0.00001	136490	0.00000	
19-Jun	2.2	3	0.00020	15166	0.00006	55095	0.00000	
20-Jun	4.2	7	0.00048	15166	0.00013	55342	0.00000	
21-Jun	9.1	16	0.00108	15166	0.00029	57471	0.00000	
22-Jun	18.2	35	0.00228	15166	0.00062	55456	0.00000	
23-Jun	38.5	73	0.00482	15166	0.00135	54299	0.00000	
24-Jun	70.8	144	0.00949	15166	0.00251	57226	0.00000	
25-Jun	145.7	290	0.01909	15166	0.00465	62257	0.00000	
26-Jun	91.1	381	0.02510	15166	0.00707	53870	0.00000	
27-Jun	291.4	672	0.04431	15166	0.01181	56923	0.00000	
28-Jun	304.1	976	0.06497	15166	0.01794	54424	0.00000	
29-Jun	485.3	1461	0.09637	15166	0.02727	53594	0.00001	219066275
30-Jun	511.7	1973	0.13011	15166	0.03754	52568	0.00060	3313669
01-Jul	561.8	2535	0.16716	15166	0.05583	45404	0.00375	676007
02-Jul	423	2958	0.22144	13358	0.08235	35922	0.00411	720215
03-Jul	268	3226	0.27421	11765	0.11507	28035	0.00732	440628
04-Jul	458	3684	0.31864	11562	0.14312	25741	0.01000	368403
05-Jul	1130	4814	0.37875	12710	0.17696	27204	0.02250	213957
06-Jul	1110	5924	0.44359	13355	0.21191	27955	0.03018	196299
07-Jul	937	6861	0.51654	13283	0.24962	27486	0.04196	163497
08-Jul	692	7553	0.56295	13417	0.29324	25757	0.07000	107900
09-Jul	1245	8798	0.62582	14058	0.34932	25186	0.12571	69984
10-Jul	775	9573	0.68484	13978	0.41757	22926	0.20804	46016
11-Jul	682.0	10255	0.72981	14052	0.46710	21955	0.25980	39473
12-Jul	479.0	10734	0.76139	14098	0.52228	20552	0.30468	35230
13-Jul	447.1	11181	0.79087	14138	0.58058	19258	0.37887	29512
14-Jul	417.0	11598	0.81837	14172	0.63303	18322	0.43711	26534
15-Jul	509.9	12108	0.85200	14211	0.68202	17753	0.46872	25832
16-Jul	411.6	12520	0.87914	14241	0.72735	17213	0.53831	23257
17-Jul	345.1	12865	0.90189	14264	0.76684	16776	0.57682	22303
18-Jul	598	13463	0.92122	14614	0.80633	16696	0.63617	21162
19-Jul	271.3	13734	0.93912	14624	0.83616	16425	0.68757	19975
20-Jul	221.3	13955	0.95371	14633	0.86029	16222	0.72668	19204
21-Jul	170.3	14126	0.96494	14639	0.88505	15960	0.75665	18669
22-Jul	166.6	14292	0.97592	14645	0.90173	15850	0.77491	18444
23-Jul	107.4	14400	0.98301	14649	0.91655	15711	0.79555	18100
24-Jul	71.0	14471	0.98769	14651	0.93249	15518	0.83823	17263
25-Jul	38.2	14509	0.99021	14652	0.94279	15389	0.86125	16846
26-Jul	37.3	14546	0.99267	14654	0.95260	15270	0.88904	16362
27-Jul	28.2	14575	0.99454	14655	0.95891	15199	0.90214	16155
28-Jul	47	14622	0.99670	14670	0.96595	15137	0.92160	15865
29-Jul	141	14763	0.99856	14784	0.97152	15195	0.93251	15831
30-Jul	108	14871	1.00000	14871	0.97540	15246	0.94006	15819
31-Jul	86	14957	1.00000	14957	0.97889	15279	0.94661	15800
01-Aug	58	15015	1.00000	15015	0.98204	15289	0.95494	15723
02-Aug	27	15042	1.00000	15042	0.98512	15269	0.96189	15637
03-Aug	25	15067	1.00000	15067	0.98750	15257	0.96705	15580
04-Aug	22.8	15089	1.00000	15089	0.98885	15260	0.96844	15581
05-Aug	20.5	15110	1.00000	15110	0.99012	15261	0.97142	15554
06-Aug	18.3	15128	1.00000	15128	0.99132	15261	0.97420	15529
07-Aug	16	15144	1.00000	15144	0.99220	15263	0.97730	15496
08-Aug	19	15163	1.00000	15163	0.99361	15260	0.98085	15459
09-Aug	2	15165	1.00000	15165	0.99443	15250	0.98408	15410
10-Aug	6	15171	1.00000	15171	0.99552	15239	0.98671	15375
11-Aug	6.0	15177	1.00000	15177	0.99647	15231	0.98811	15360
12-Aug	6	15183	1.00000	15183	0.99731	15224	0.98945	15345
13-Aug	5	15188	1.00000	15188	0.99786	15221	0.99068	15331
14-Aug	9	15197	1.00000	15197	1.00000	15197	0.99267	15309
15-Aug	7	15204	1.00000	15204	1.00000	15204	0.99454	15288
16-Aug	4	15208	1.00000	15208	1.00000	15208	0.99670	15258
17-Aug	3	15211	1.00000	15211	1.00000	15211	0.99856	15233
18-Aug	16	15227	1.00000	15227	1.00000	15227	1.00000	15227

Note: Numbers with decimal points are estimates calculated from historical passage data.

Table 6. Daily sockeye salmon estimated season escapements using early, normal and late timing models, Kogrukluk River, Alaska, 1994.

			Early Run Timing		Normal Run Timing		Late Run Timing	
Date	Daily Count	Cum. Count	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.
21-Jun	0.3	0	0.00024	1387	0.00002	14192	0.00000	
22-Jun	0.8	1	0.00055	1973	0.00008	14192	0.00000	
23-Jun	1.7	3	0.00161	1753	0.00020	14192	0.00000	
24-Jun	5.5	8	0.00437	1894	0.00058	14192	0.00000	
25-Jun	8.2	16	0.00858	1920	0.00116	14192	0.00000	
26-Jun	8.9	25	0.01362	1860	0.00178	14192	0.00000	
27-Jun	15.6	41	0.02076	1970	0.00288	14192	0.00000	
28-Jun	22.1	63	0.03305	1907	0.00444	14192	0.00000	
29-Jun	56.2	119	0.06294	1895	0.00840	14192	0.00002	5038183
30-Jun	80.3	200	0.10196	1958	0.01406	14192	0.00008	2593564
01-Jul	104.9	305	0.15587	1954	0.02146	14192	0.00020	1535449
02-Jul	7	312	0.22517	1383	0.03487	8934	0.00038	818658
03-Jul	8	320	0.27721	1153	0.05047	6331	0.00069	464253
04-Jul	10	330	0.31175	1057	0.06702	4916	0.00252	130577
05-Jul	24	354	0.35592	993	0.08507	4155	0.00344	102731
06-Jul	52	406	0.40247	1008	0.11262	3601	0.00551	73651
07-Jul	120	526	0.43540	1207	0.14174	3708	0.00986	53272
08-Jul	140	666	0.47061	1414	0.18631	3572	0.02134	31193
09-Jul	205	871	0.50947	1709	0.23679	3676	0.03877	22453
10-Jul	126	997	0.54015	1845	0.29430	3386	0.05965	16707
11-Jul	795.4	1792	0.58340	3071	0.35035	5115	0.08924	20079
12-Jul	784.0	2576	0.66636	3866	0.40559	6351	0.13994	18407
13-Jul	847.9	3424	0.72072	4750	0.46534	7358	0.19362	17683
14-Jul	848.6	4272	0.78281	5458	0.52513	8136	0.22689	18830
15-Jul	863.5	5136	0.84558	6074	0.58598	8765	0.26772	19183
16-Jul	769.8	5906	0.88629	6663	0.64022	9224	0.31544	18722
17-Jul	685.5	6591	0.94250	6993	0.68852	9573	0.35788	18417
18-Jul	1123	7714	0.94565	8157	0.72971	10571	0.39757	19403
19-Jul	432.0	8146	0.95730	8509	0.76015	10716	0.45699	17826
20-Jul	421.7	8568	0.96665	8863	0.78987	10847	0.49736	17226
21-Jul	457.9	9026	0.97388	9268	0.82214	10978	0.54485	16565
22-Jul	352.5	9378	0.98001	9569	0.84698	11073	0.57398	16339
23-Jul	286.2	9664	0.98497	9812	0.86715	11145	0.60037	16098
24-Jul	305.7	9970	0.98840	10087	0.88869	11219	0.65244	15281
25-Jul	255.4	10226	0.99091	10319	0.90668	11278	0.70796	14444
26-Jul	184.4	10410	0.99252	10488	0.91968	11319	0.74467	13979
27-Jul	177.0	10587	0.99425	10648	0.93215	11358	0.78229	13533
28-Jul	450	11037	0.99554	11086	0.94565	11671	0.82680	13349
29-Jul	665	11702	0.99652	11743	0.95730	12224	0.86281	13563
30-Jul	690	12392	0.99715	12427	0.96665	12820	0.89287	13879
31-Jul	552	12944	0.99770	12974	0.97388	13291	0.91420	14159
01-Aug	427	13371	0.99810	13396	0.98001	13644	0.93898	14240
02-Aug	226	13597	0.99870	13615	0.98497	13804	0.95205	14282
03-Aug	235	13832	0.99890	13847	0.98840	13994	0.96192	14380
04-Aug	35.7	13868	0.99895	13882	0.99091	13995	0.97132	14277
05-Aug	22.8	13891	0.99898	13905	0.99252	13995	0.97752	14210
06-Aug	24.5	13915	0.99901	13929	0.99425	13996	0.98371	14145
07-Aug	75	13990	0.99940	13998	0.99554	14053	0.98591	14190
08-Aug	62	14052	0.99970	14056	0.99652	14101	0.98871	14213
09-Aug	30	14082	0.99979	14085	0.99715	14122	0.99124	14207
10-Aug	32	14114	1.00000	14114	0.99770	14147	0.99268	14218
11-Aug	22.5	14137	1.00000	14137	0.99810	14164	0.99444	14216
12-Aug	13	14150	1.00000	14150	0.99870	14168	0.99631	14202
13-Aug	4	14154	1.00000	14154	0.99895	14168	0.99670	14200
14-Aug	9	14163	1.00000	14163	1.00000	14163	0.99742	14199
15-Aug	1	14164	1.00000	14164	1.00000	14164	0.99814	14190
16-Aug	7	14171	1.00000	14171	1.00000	14171	0.99885	14187
17-Aug	4	14175	1.00000	14175	1.00000	14175	0.99957	14181
18-Aug	2	14177	1.00000	14177	1.00000	14177	1.00000	14177
19-Aug	1	14178	1.00000	14178	1.00000	14178	1.00000	14178
20-Aug	1	14179	1.00000	14179	1.00000	14179	1.00000	14179
21-Aug	13	14192	1.00000	14192	1.00000	14192	1.00000	14192

Note: Numbers with decimal points are estimates calculated from historical passage data.

Table 7. Daily chum salmon estimated season escapements using early, normal and late timing models, Kogrukluk River, Alaska, 1994.

			Early Run Timing		Normal Run Timing		Late Run Timing	
Date	Daily Count	Cum. Count	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.
15-Jun	0.1	0	0.00003	3802	0.00000	53227	0.00000	
16-Jun	0.2	0	0.00004	6991	0.00001	53227	0.00000	
17-Jun	1.0	1	0.00011	12435	0.00003	53227	0.00000	
18-Jun	0.9	2	0.00019	11907	0.00004	53227	0.00000	
19-Jun	1.7	4	0.00024	16244	0.00007	53227	0.00001	726256
20-Jun	6.3	10	0.00059	17319	0.00019	53227	0.00003	407738
21-Jun	6.8	17	0.00115	14791	0.00032	53227	0.00004	396704
22-Jun	16.4	33	0.00188	17768	0.00063	53227	0.00007	449117
23-Jun	32.7	66	0.00355	18631	0.00124	53227	0.00013	496017
24-Jun	32.2	98	0.00581	16937	0.00185	53227	0.00013	737857
25-Jun	53.1	151	0.00812	18652	0.00285	53227	0.00013	1136121
26-Jun	92.1	243	0.01196	20362	0.00457	53227	0.00073	332155
27-Jun	196.8	440	0.01923	22899	0.00733	60078	0.00093	471907
28-Jun	249.2	689	0.04020	17151	0.01186	58152	0.00180	383165
29-Jun	301.5	991	0.07967	12440	0.02046	48434	0.00388	255452
30-Jun	353.9	1345	0.11897	11304	0.03252	41361	0.00720	186854
01-Jul	406.3	1751	0.16517	10602	0.05205	33645	0.01006	174015
02-Jul	458.6	2210	0.22646	9758	0.07966	27739	0.01260	175439
03-Jul	511	2721	0.28934	9403	0.11367	23937	0.02739	99332
04-Jul	547	3268	0.32607	10022	0.14907	21921	0.04572	71477
05-Jul	593	3861	0.35982	10730	0.18327	21066	0.07351	52522
06-Jul	1135	4996	0.40990	12188	0.21696	23027	0.08839	56519
07-Jul	1630	6626	0.44905	14755	0.25142	26353	0.10232	64757
08-Jul	2439	9065	0.48218	18800	0.28918	31347	0.11388	79602
09-Jul	3317	12382	0.53259	23248	0.33740	36698	0.12662	97787
10-Jul	2421	14803	0.59383	24928	0.38629	38320	0.15711	94222
11-Jul	2634.6	17437	0.64417	27069	0.43669	39931	0.20361	85640
12-Jul	3473.5	20911	0.71055	29429	0.48825	42828	0.26958	77567
13-Jul	2594.1	23505	0.76012	30923	0.53478	43953	0.33389	70398
14-Jul	2750.3	26255	0.81267	32307	0.58237	45084	0.38101	68911
15-Jul	2345.3	28601	0.85749	33354	0.62835	45517	0.41813	68402
16-Jul	1319.6	29920	0.88270	33896	0.67124	44574	0.47384	63144
17-Jul	962.2	30882	0.90109	34272	0.70958	43522	0.52209	59151
18-Jul	2784	33666	0.91146	36937	0.74455	43217	0.56514	59571
19-Jul	607.5	34274	0.92307	37131	0.76989	44518	0.60700	56465
20-Jul	443.4	34717	0.93154	37269	0.79323	43767	0.64105	54157
21-Jul	455.3	35173	0.94024	37408	0.81950	42919	0.67251	52301
22-Jul	304.4	35477	0.94605	37500	0.84049	42210	0.69821	50811
23-Jul	255.4	35732	0.95094	37576	0.85901	41597	0.72267	49445
24-Jul	1020.3	36753	0.97043	37873	0.87836	41843	0.76894	47796
25-Jul	477.1	37230	0.97955	38007	0.89371	41658	0.80726	46119
26-Jul	206.3	37436	0.98349	38065	0.90582	41329	0.82284	45496
27-Jul	212.8	37649	0.98756	38123	0.91700	41057	0.84155	44738
28-Jul	681	38330	0.98904	38755	0.92797	41305	0.86187	44473
29-Jul	1418	39748	0.99199	40069	0.93854	42351	0.88833	44745
30-Jul	1354	41102	0.99372	41362	0.94829	43343	0.90892	45221
31-Jul	1272	42374	0.99458	42605	0.95805	44230	0.92838	45643
01-Aug	793	43167	0.99606	43338	0.96601	44686	0.93942	45951
02-Aug	642	43809	0.99754	43917	0.97307	45021	0.94935	46146
03-Aug	655	44464	0.99815	44546	0.97849	45442	0.95541	46539
04-Aug	537.5	45001	0.99926	45035	0.98274	45792	0.96121	46817
05-Aug	420.0	45421	0.99938	45449	0.98572	46079	0.96508	47065
06-Aug	302.5	45724	0.99938	45752	0.98803	46278	0.96854	47209
07-Aug	185	45909	0.99951	45932	0.98997	46374	0.96884	47386
08-Aug	183	46092	0.99963	46109	0.99163	46481	0.97444	47301
09-Aug	118	46210	0.99975	46221	0.99287	46542	0.97919	47192
10-Aug	100	46310	0.99988	46316	0.99434	46574	0.98277	47122
11-Aug	75.5	46385	1.00000	46385	0.99542	46599	0.98582	47053
12-Aug	51	46436	1.00000	46436	0.99635	46606	0.98772	47014
13-Aug	36	46472	1.00000	46472	0.99715	46605	0.98916	46982
14-Aug	39	46511	1.00000	46511	0.99770	46619	0.99199	46887
15-Aug	26	46537	1.00000	46537	0.99815	46624	0.99372	46832
16-Aug	20	46557	1.00000	46557	0.99855	46625	0.99458	46811
17-Aug	19	46576	1.00000	46576	0.99895	46625	0.99606	46761
18-Aug	15	46591	1.00000	46591	0.99929	46625	0.99754	46707
19-Aug	5	46596	1.00000	46596	0.99949	46620	0.99815	46683
20-Aug	7	46603	1.00000	46603	1.00000	46603	0.99926	46638
21-Aug	3	46606	1.00000	46606	1.00000	46606	0.99938	46635
22-Aug	1	46607	1.00000	46607	1.00000	46607	0.99938	46636
23-Aug	2	46609	1.00000	46609	1.00000	46609	0.99951	46632
24-Aug	4	46613	1.00000	46613	1.00000	46613	0.99963	46631
25-Aug	2	46615	1.00000	46615	1.00000	46615	0.99975	46627
26-Aug	5	46620	1.00000	46620	1.00000	46620	0.99988	46626
27-Aug	15	46635	1.00000	46635	1.00000	46635	1.00000	46635

Note: Numbers with decimal points are estimates calculated from historical passage data.

Table 8. Daily coho salmon estimated season escapements using early, normal and late timing models, Kogrukluk River, Alaska, 1994.

			Early Run Timing		Normal Run Timing		Late Run Timing	
Date	Daily Count	Cum. Count	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.	Cum. Prop.	Total Esc. Est.
27-Jul	0	0	0.00000		0.00000		0.00000	
28-Jul	12	12	0.00000	3097710	0.00000		0.00000	
29-Jul	22	34	0.00006	586632	0.00000		0.00000	
30-Jul	29	63	0.00009	724663	0.00000		0.00000	
31-Jul	23	86	0.00017	505882	0.00000		0.00000	
01-Aug	51	137	0.00061	224590	0.00000	35365523	0.00000	
02-Aug	30	167	0.00104	160577	0.00006	2881400	0.00000	
03-Aug	50	217	0.00121	179339	0.00009	2496063	0.00000	
04-Aug	59.0	276	0.00208	132692	0.00017	1623529	0.00000	
05-Aug	68.0	344	0.00433	79446	0.00061	563934	0.00000	88801020
06-Aug	77.0	421	0.00606	69472	0.00104	404808	0.00006	7263888
07-Aug	86	507	0.00797	63614	0.00121	419008	0.00009	5831815
08-Aug	123	630	0.01333	47262	0.00208	302885	0.00017	3705882
09-Aug	103	733	0.01643	44614	0.00433	169284	0.00061	1201639
10-Aug	108	841	0.01829	45981	0.00606	138779	0.00104	808654
11-Aug	161.5	1003	0.02832	35399	0.00797	125784	0.00121	828512
12-Aug	215	1218	0.03550	34296	0.01333	91335	0.00208	585337
13-Aug	209	1427	0.04178	34143	0.01643	86823	0.00433	329446
14-Aug	296	1723	0.04931	34932	0.01829	94177	0.00606	284241
15-Aug	439	2162	0.06356	34007	0.02832	76324	0.00797	271205
16-Aug	416	2578	0.07782	33121	0.03550	72606	0.01333	193361
17-Aug	581	3159	0.08609	36688	0.04178	75598	0.01643	192240
18-Aug	837	3996	0.09812	40721	0.04931	81028	0.01829	218453
19-Aug	761	4757	0.11578	41082	0.06356	74835	0.02832	167956
20-Aug	829	5586	0.13282	42053	0.07782	71775	0.03550	157338
21-Aug	597	6183	0.15293	40427	0.08609	71814	0.04178	147978
22-Aug	469	6652	0.16706	39815	0.09812	67789	0.04931	134892
23-Aug	439	7091	0.18465	38400	0.11578	61241	0.06356	111556
24-Aug	841	7932	0.21243	37337	0.13282	59716	0.07782	101921
25-Aug	2096	10028	0.22593	44383	0.15293	65569	0.08609	116477
26-Aug	2943	12971	0.24069	53889	0.16706	77640	0.09812	132190
27-Aug	2713	15684	0.26429	59342	0.18465	84936	0.11578	135459
28-Aug	1887	17571	0.31193	56328	0.21243	82712	0.13282	132288
29-Aug	1007	18578	0.32775	56682	0.22593	82227	0.15293	121477
30-Aug	396	18974	0.36873	51456	0.24069	78830	0.16706	113573
31-Aug	842	19816	0.41702	47517	0.26429	74976	0.18465	107314
01-Sep	1947	21763	0.44618	48775	0.31193	69767	0.21243	102446
02-Sep	1400	23163	0.50792	45603	0.32775	70671	0.22593	102521
03-Sep	1155	24318	0.54214	44855	0.36873	65949	0.24069	101032
04-Sep	643	24961	0.57136	43686	0.41702	59854	0.26429	94444
05-Sep	630	25591	0.60497	42300	0.44618	57355	0.31193	82039
06-Sep	425	26016	0.67099	38772	0.50792	51220	0.32775	79376
07-Sep	384	26400	0.70486	37454	0.54214	48695	0.36873	71596
08-Sep	527	26927	0.71641	37585	0.57136	47127	0.41702	64569
09-Sep	436	27363	0.73726	37114	0.60497	45230	0.44618	61326
10-Sep	356	27719	0.79892	34695	0.67099	41310	0.50792	54573
11-Sep	514.9	28233	0.81376	34695	0.70486	40055	0.54214	52078
12-Sep	566.9	28800	0.83010	34695	0.71641	40201	0.57136	50407
13-Sep	1081.8	29882	0.86128	34695	0.73726	40531	0.60497	49394
14-Sep	1067.6	30950	0.89205	34695	0.79892	38739	0.67099	46125
15-Sep	737.6	31687	0.91331	34695	0.81376	38939	0.70486	44955
16-Sep	600.9	32288	0.93063	34695	0.83010	38897	0.71641	45069
17-Sep	415.0	32703	0.94259	34695	0.86128	37970	0.73726	44358
18-Sep	706.7	33410	0.96296	34695	0.89205	37453	0.79892	41819
19-Sep	354.6	33764	0.97318	34695	0.91331	36969	0.81376	41492
20-Sep	347.3	34112	0.98319	34695	0.93063	36654	0.83010	41094
21-Sep	142.9	34255	0.98731	34695	0.94259	36341	0.86128	39772
22-Sep	137.4	34392	0.99127	34695	0.96296	35715	0.89205	38554
23-Sep	18.8	34411	0.99181	34695	0.97318	35359	0.91331	37677
24-Sep	2.7	34414	0.99189	34695	0.98319	35002	0.93063	36979
25-Sep	13.9	34427	0.99229	34695	0.98731	34870	0.94259	36524
26-Sep	267.5	34695	1.00000	34695	0.99127	35001	0.96296	36029
27-Sep	0.0	34695	1.00000	34695	0.99181	34981	0.97318	35651
28-Sep	0.0	34695	1.00000	34695	0.99189	34979	0.98319	35288
29-Sep	0.0	34695	1.00000	34695	0.99229	34965	0.98731	35141
30-Sep	0.0	34695	1.00000	34695	1.00000	34695	0.99127	35001
01-Oct	0.0	34695	1.00000	34695	1.00000	34695	0.99181	34981
02-Oct	0.0	34695	1.00000	34695	1.00000	34695	0.99189	34979
03-Oct	0.0	34695	1.00000	34695	1.00000	34695	0.99229	34965
04-Oct	0.0	34695	1.00000	34695	1.00000	34695	1.00000	34695

Note: Numbers with decimal points are estimates calculated from historical passage data.

Table 9. 1994 Goodnews River Weir Project Daily Counts

DATE	CHINOOK	SOCKEYE	CHUM	COHO	PINK
6/22	50.0	703.2	37.7		
6/23	5	10	0		
6/24	20	276	3		
6/25	30	673	31		
6/26	15	513	17		
6/27	73	1292	98		
6/28	18	767	77		2
6/29	101	1906	293		8
6/30	211	1922	326		5
7/01	683	2203	288		20
7/02	54	2525	207		21
7/03	3	876	54		2
7/04	18	934	80		0
7/05	131	4376	369		35
7/06	41	1323	323		29
7/07	81	4631	1326		113
7/08	291	3071	1627		401
7/09	1	794	69		19
7/10	72	5029	1410		220
7/11	35	1869	484		186
7/12	400	3410	3071		896
7/13	140.8	1862.7	1438		
7/14	135.4	1739.7	1512.5		
7/15	144.7	1655.8	1716.1		
7/16	133.5	1487.9	1909.5		
7/17	165.8	1202.7	1768.7		
7/18	42	1280	1098		1873
7/19	74	1937	1316		2703
7/20	11	787	707		1843
7/21	13	438	808		1066
7/22	25	836	1693		852
7/23	39	257	1006	0	1108
7/24	26	295	580	0	1308
7/25	46	179	860	0	1628
7/26	43	481	1977	2	3277
7/27	56	363	539	0	1033
7/28	256	893	1827	2	6201
7/29	43	256	890	0	2934
7/30	21	129	494	2	1235
7/31	21	144	732	19	2096
8/01	19	115	278	29	697
8/02	5	86	219	24	1973
8/03	23	33	365	64	2114
8/04	13	33	437	26	1012
8/05	3	22	309	34	384
8/06	3	27	63	20	211
8/07	4	18	84	17	460
8/08	12	68	7	70	740
8/09	5.0	0.0	3.5		
8/10		5.5	3.5		
8/11		0	7.0		
8/12		0	3.5		
8/13		0	0		
8/14		0	7.0		
8/15		5.5			
8/16		11.1			
8/17					
8/18					
8/19					
8/20					
8/21					
8/22					
8/23					
8/24					
8/25					
TOTAL	3,856	55,751	34,849	309	38,705

Table 10. Cumulative passage estimates of fish species in the Kuskokwim River at Bethel, 1994.

Date	Large Chinook	Small Chinook	Sockeye	Chum	Pink	Coho	White	Cisco	Other
01JUN94	0	0	0	0	0	0	0	0	0
02JUN94	0	0	0	0	0	0	0	0	0
03JUN94	0	0	0	0	0	0	0	0	0
04JUN94	0	0	0	0	0	0	0	0	0
05JUN94	1876	3340	0	1308	0	0	66	0	377
06JUN94	3603	6214	0	2469	0	0	123	0	762
07JUN94	4981	8552	0	3406	0	0	169	0	1060
08JUN94	7424	10619	0	5753	0	0	713	0	1060
09JUN94	9528	12513	0	7882	0	0	1343	0	1060
10JUN94	11802	14500	0	10126	0	0	1938	0	1060
11JUN94	12944	16551	17	12494	0	0	2294	0	1554
12JUN94	14330	19018	38	15330	0	0	2741	0	2150
13JUN94	16787	23565	78	20679	0	0	3395	0	3238
14JUN94	19806	25081	750	29318	0	0	4033	0	3509
15JUN94	22799	26571	1411	37943	0	0	4562	0	3783
16JUN94	26157	28279	2169	47461	0	0	5435	0	4077
17JUN94	27723	29143	3466	57524	0	0	5744	108	4119
18JUN94	29125	29837	4572	66040	0	0	6056	220	4160
19JUN94	30634	30809	5952	76838	0	0	6292	289	4199
20JUN94	32603	31609	9079	91351	0	0	6329	289	4209
21JUN94	33893	32127	11398	101824	0	0	6371	289	4228
22JUN94	34870	32555	13442	109933	0	0	6458	289	4245
23JUN94	36950	32853	23951	124846	0	0	6458	289	4474
24JUN94	38593	33099	32922	137630	0	0	6458	289	4695
25JUN94	42209	33619	51371	162461	0	0	6458	289	5145
26JUN94	46480	35974	73560	175203	0	0	7798	289	5145
27JUN94	48851	37279	86362	182532	0	0	8513	289	5145
28JUN94	51114	38429	98475	189405	0	0	9263	289	5145
29JUN94	52770	39046	107458	201303	0	0	11272	399	5356
30JUN94	54483	39705	116551	213313	0	0	13292	524	5592
01JUL94	56774	40531	129174	230068	0	0	16106	662	5865
02JUL94	57618	41269	161303	264574	42	0	20937	900	6057
03JUL94	58437	41985	192476	297977	83	0	25786	1149	6244
04JUL94	59363	42793	227823	335804	129	0	31715	1480	6455
05JUL94	59871	43042	241654	379431	129	0	34479	1954	6743
06JUL94	60443	43315	256953	427805	129	0	37538	2474	7071
07JUL94	60874	43498	267619	462100	129	0	39605	2774	7310
08JUL94	61362	43498	272068	502437	806	27	40569	3216	7342
09JUL94	61864	43498	276979	548394	1535	58	41587	3624	7374
10JUL94	62256	43498	280464	579618	2069	79	42359	3992	7400
11JUL94	62777	43498	285315	599565	4177	266	48750	6391	7736
12JUL94	63209	43498	289255	615410	5894	426	53519	8141	7999
13JUL94	63537	43498	292339	628218	7229	543	57726	9724	8217
14JUL94	63720	43498	293722	641955	8754	773	65577	15105	8217
15JUL94	63897	43498	294754	652232	10057	995	71548	19030	8217
16JUL94	64055	43498	296171	665887	11786	1209	79448	24710	8217
17JUL94	64116	43579	299490	680613	13529	2147	89047	31756	8805
18JUL94	64173	43656	302663	694508	15014	2929	97851	37275	9339
19JUL94	64250	43759	305167	706366	16293	3643	105499	41392	9742
20JUL94	64250	43759	305363	711034	16718	6022	107703	51693	9742
21JUL94	64250	43759	305492	714595	17052	7918	109577	61351	9742
22JUL94	64250	43759	305656	719122	17429	10327	111879	73462	9742
23JUL94	64664	43759	306023	726121	18510	16746	112842	77879	9919
24JUL94	65417	43759	306691	738042	20131	27943	114433	84169	10202
25JUL94	66076	43759	307276	748475	21488	37721	115802	89466	10442
26JUL94	66076	43759	307276	753085	23179	48131	116564	91909	10449
27JUL94	66076	43759	307276	757105	24688	57106	117258	94466	10458
28JUL94	66076	43759	307276	761708	26407	67420	118043	97265	10467
29JUL94	66076	43759	307276	763357	27381	80759	118764	102877	10467
30JUL94	66076	43759	307276	765088	28466	94808	119646	109559	10467
31JUL94	66076	43759	307276	766587	29475	107002	120559	116269	10467
01AUG94	66076	43908	307276	768969	31184	120359	121183	121382	10467
02AUG94	66076	44122	307276	772261	33452	137563	121782	127556	10467
03AUG94	66076	44369	307276	776046	36000	157131	122393	134199	10467
04AUG94	66076	44369	307276	776813	36713	164260	122764	145455	10467
05AUG94	66076	44369	307276	777390	37256	169783	123061	154653	10467
06AUG94	66076	44369	307276	778105	37912	176526	123416	165452	10467
07AUG94	66076	44369	307276	778340	38397	192184	123465	168002	10467
08AUG94	66076	44369	307276	778734	39208	218163	123547	172258	10467
09AUG94	66076	44369	307276	779037	39800	238107	123605	175346	10467
10AUG94	66076	44369	307293	779037	39904	265551	123781	178189	10467
11AUG94	66076	44369	307310	779037	39958	305859	123944	179367	10467
12AUG94	66076	44369	307319	779037	39995	332768	124044	180224	10467
13AUG94	66076	44369	307319	779037	40003	350635	124059	181329	10467
14AUG94	66076	44369	307319	779037	40012	382185	124076	182711	10467
15AUG94	66076	44369	307319	779037	40022	405903	124097	184066	10467

Table 11. 1994 Kuskokwim Area Fish Ticket Summary

STAT AREA	DISTRICT NAME	BATCH RANGE	TICKET RANGE	TOTAL TICKETS
335-10	LOWER KUSKOKWIM (S)	101-153	700,001-708,781	8,781
335-20	MIDDLE KUSKOKWIM (S)	201-206	720,001-720,109	109
335-40	QUINHAGAK (S)	401-423	730,001-732,640	2,640
335-50	GOODNEWS BAY (S)	501-514	740,001-741,459	1,457
335-49	SECURITY COVE (H)			
335-50	GOODNEWS BAY (H)			
335-60	NELSON ISLAND (H)			
335-70	NUNIVAK ISLAND (H)			
335-80	CAPE AVINOF (H)			
TOTAL ALL HERRING DISTRICTS		900-922	725,001-726,612	1,611 TICKETS
TOTAL SALMON		96 BATCHES		12,987 TICKETS
TOTAL HERRING		23 BATCHES		1,611 TICKETS
TOTAL FISH TICKETS		119 BATCHES		14,598 TICKETS

Table 12. Kuskokwim Area salmon entry permits issued by village, 1994

VILLAGE	NUMBER OF ENTRY PERMITS
AKIACHAK	65
AKIAK	24
ANIAK	10
ATMAUTLUAK	26
BETHEL	167
CHUATHBALUK	2
CHEFORNAK	6
EEK	39
GOODNEWS BAY	28
LOWER KALSKAG	3
UPPER KALSKAG	5
KASIGLUK	40
KIPNUK	17
KONGIGANAK	21
KWETHLUK	58
KWIGILLINGOK	20
MEKORYUK	1
NAPAKIAK	40
NAPASKIAK	33
NUNAPITCHUK	47
OSCARVILLE	3
PLATINUM	6
QUINHAGAK	77
SLEETMUTE	1
TULUKSAK	27
TUNTUTULIAK	45
KUSKOKWIM AREA SUBTOTAL	**811**
ANCHORAGE	8
ALEKNAGIK	1
DILLINGHAM	1
HOOPER BAY	1
FAIRBANKS	2
MANOKOTAK	2
TOGIAK	1
NON-LOCAL ALASKA RESIDENTS SUBTOTAL	**16**
VALENCIA, CA	1
DUNWOODY, GA	1
PAUL SMITHS, NY	1
TACOMA, WA	1
NON-RESIDENT SUBTOTAL	**4**
TOTAL # OF PERMITS	**831**

Table 13. Ex-vessel Value of Kuskokwim Area Salmon Catch by District, 1994.

	Chinook	Sockeye	Coho	Pink	Chum	Total
Lower Kuskokwim River, District W-1						
			1994			
Fish	16,201	49,362	690,396	30,930	269,426	1,055,668
Pounds	248,807	362,868	5,135,363	112,095	1,734,722	
Price	0.51	0.52	0.56	0.08	0.22	
Value	$126,892	$188,691	$2,875,803	$8,967	$381,639	$3,581,992
			Ave. 1988-93			
Fish	39,647	72,701	512,006	3,725	549,991	1,178,070
Value	$427,563	$518,868	$2,248,866	$1,490	$1,237,520	$4,434,306
Middle Kuskokwim River, District W-2						
			1994			
Fish	10	3	34,293	19	1,689	36,014
Pounds	178	21	243,430	63	9,956	
Price	0.39	0.62	0.52	0.10	0.20	
Value	$69	$13	$126,584	$6	$1,991	$128,663
			Ave. 1988-93			
Fish	1,366	1,929	20,056	38	18,713	42,102
Value	$16,560	$12,861	$78,604	$21	$32,815	$140,861
Quinhagak, District W-4						
			1994			
Fish	8,564	72,314	83,912	35,904	61,301	261,995
Pounds	133,836	474,242	683,245	127,960	421,756	
Price	0.50	0.54	0.62	0.08	0.20	
Value	$66,918	$256,091	$423,612	$10,237	$84,351	$841,209
			Ave. 1988-93			
Fish	17,466	53,553	54,153	16,321	47,519	189,012
Value	$207,701	$326,269	$283,611	$5,171	$99,940	$922,692
Goodnews Bay, District W-5						
			1994			
Fish	2,570	69,490	47,499	18,017	28,477	166,053
Pounds	43,545	477,411	433,660	68,020	196,708	
Price	0.50	0.53	0.62	0.08	0.21	
Value	$21,732	$309,577	$271,687	$5,442	$41,309	$649,747
			Ave. 1988-93			
Fish	2,965	38,303	20,614	3,427	17,491	82,799
Value	$39,819	$261,502	$121,006	$976	$42,893	$466,196
Kuskokwim Area Total						
			1994			
Fish	27,345	191,169	856,100	84,870	360,893	1,519,228
Pounds	426,366	1,314,542	6,495,698	308,138	2,363,142	
Price	0.51	0.53	0.57	0.08	0.21	
Value	$215,611	$754,372	$3,697,686	$24,652	$509,290	$5,201,611
			Ave. 1988-93			
Fish	61,444	166,485	606,830	23,511	633,713	1,491,983
Value	$691,644	$1,119,500	$2,732,087	$7,657	$1,413,167	$5,964,054

Table 14. Executive summary of working group and department actions, 1994.

DATE	DEPT. RECOMMENDATIONS	WORKING GROUP RECOMMENDATIONS	ACTUAL
10 March		The Working Group failed to achieve a quorum.	
19 March		The Working Group opposed the Department proposal to the Board of Fisheries for rebuilding A-Y-K chum salmon runs. They felt in-season in-river management by the Working Group and Department would provide the needed savings. They supported the proposal allowing seasons, gear, and areas open to commercial, personal use, sport, and subsistence fishing to be modified to improve chum salmon escapements in the Kuskokwim Area. This proposal also outlawed roe striping. The Working Group supported the proposal to minimize the incidental catch of chum salmon in the South Unimak and Shumigans Islands June Salmon management plan and recommended that the Board of Fisheries adopt a 300,000 chum salmon cap. In addition the Working Group passed a resolution encouraging the Board to adopt a resolution supporting full funding of Department projects in the Kuskokwim Area and increased funding for chum salmon research.	
25 April		Meeting canceled because Commissioner Rosier and Director Koenings unable to attend due to press of business in Juneau.	
26 May	Presented Informational Letter explaining upcoming	Joe Lomack and Dr. John White were reelected as Co-chairs for 1994. Meeting was recessed until Work Session on 31 May to discuss season's management plan Department's Informational letter. Meeting to reconvene on 2 June to make recommendations on the Informational Letter.	
31 May	Department explained how test fish and sonar thresholds would be used in the Kuskokwim River.	The Working Group took 2 1/2 hours of public testimony concerning management of the 1994 salmon fishery. A great deal of discussion centered on how and when the mesh size restriction in the subsistence fishery might be used. The Working Group found it impossible to participate in cooperative management without a management plan. A motion to the Commissioner requesting a management plan or that the Informational Letter be titled "Draft Management Plan" passed unanimously. The meeting on 2 June was canceled and the Working Group adjourned until the call of the Co-chairs or the release of a management plan by the Commissioner.	

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DATE	DEPT. RECOMMENDATIONS	WORKING GROUP RECOMMENDATIONS	ACTUAL
02 June		Canceled on 31 May 1994 for lack of a management plan.	
21 June	Six hour period in District 1 downstream of Bethel on 24 June.	Eight hour period, downstream of Bethel on 24 June.	Eight hour period, downstream of Bethel on 24 June.
27 June	Meet again 29 June due to weak chum salmon run.	A motion to meet on 30 June passed.	Working Group met on 30 June.
30 June	Meet again due to improving but still weak chum salmon run.	A motion to meet on 02 July passed.	Working Group met on 02 July.
02 July	Meet again due to weak chum salmon run. 30 June.	Four hour period, downstream of of Bethel & in District 2 on 3 July. A motion to meet on 04 July passed.	Vetoed by Department. Working Group met on 04 July.
30 June	Meet again on 6 July to reassess improving chum salmon run.	Working Group to meet at call of co-chair when Department indicates enough fish for commercial period.	Working Group met on 12 July.
12 July	Open Districts 1 & 2 on 14 July, length of period determined by available processing capacity.	Four hour period in District 1 on 14 July.	Four hour period in District 1 on 14 July.
15 July	Open commercial fishing as soon as processing capacity is available.	1. Districts 1 & 2 open for 6 hours 19 July, 2. next commercial period before 25 July based on processing capacity, 3. third commercial period to be allowed before 25 July if run strength and processing capacity allow.	Six hour period in District 1 on 19 July. Six hour period in District 1 on 23 July. District 2 and third period not opened due to lack of processing capacity.

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DATE	DEPT. RECOMMENDATIONS	WORKING GROUP RECOMMENDATIONS	ACTUAL
25 July	Six hour fishing period in Districts 1 & 2 on 26 July.	Six hours in District 1 on 26 and 28 July. Six hours in District 1 on 26 July.	The Department accepted period on 26 July but felt increasing coho salmon catch prevented setting a period on 28th based on chum salmon.
27 July	Six hour fishing period in District 1 on 29	Six hours in District 1 on 29 July.	Six hour fishing period in District 1 on 29 July.
30 July	Six hour fishing period District 1 on 1 August.	Meet again on 01 August.	The Working Group met on 01 August.
01 August	Six hour period in Districts 1 & 2 on 4 August.	Six hour period in Districts 1 & 2 on 4 August.	Six hour fishing period in Districts 1 & 2 on 4 August.
05 August	Meet again 8 August.	Six hour period in Districts 1 & 2 on 6 August. Six hour period in Districts 1 & 2 on 8 August. Delay for data is a veto. Meet Monday 8 August.	Department vetoed the motion. Department said they would announce before noon 7 August. Working Group met 8 August.
08 August	Six hour fishing in Districts 1 & 2 on 9 August.	Six hour fishing period in District 1 & 2 on 9 August.	Six hour fishing period in Districts 1 & 2 on 9 August.
10 August	Six hour period in Districts 1 & 2 on 12 August.	Eight hour period in Districts 1 & 2 on 12 August.	Eight hour period in 1 & 2 on 12 August.
11 August		Co-chair White called special business meeting. He proposed that the Working Group use the $10,000 allocated by legislature to the Working Group to hire a fisheries consultant. Processors agreed to provide matching funds. The consultant would: 1. Arrive ASAP to talk to Working Group members and fishing public. 2. Review information, biology, and group testimony. 3. Make recommendations to help Work Group process and find answers to current problems. 4. Prepare recommendations and report to the Board of Fisheries at November meeting. A motion approving this proposal passed unanimously.	

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DATE	DEPT. RECOMMENDATIONS	WORKING GROUP RECOMMENDATIONS	ACTUAL
13 August	Six hour period in 1 & 2 on 15 August.	Eight hour period in 1 & 2 on 15 August.	Eight hour period in 1 & 2 on 15 August.
16 August	Six hour period in 1 & 2 on 18 August.	Eight hour periods in 1 & 2 on 18 August	Eight hour periods in 1 & 2 on 18 August.
19 August	Six hour period in 1 & 2 on 22 August.	Eight hour periods in 1 & 2 on 22 August, close south side of District 2 from Aniak River to 1 mile downstream of Crow Village.	Eight hour periods in 1 & 2 on 22 August with the south side of 2 closed from Aniak River to 1 mile downstream of Crow Village.
23 August	Six hour period in 1 & 2 on 25 August.	Eight hour periods in 1 & 2 on 25 August.	Eight hour periods in 1 & 2 on 25 August.
26 August	Six hour period in 1 & 2 on 29 August & 1. September.	Eight hour periods in 1 & 2 on 27 August.	Eight hour periods in 1 & 2 on 27 August.
29 August	Six hour period in 1 & 2 on 30 August & 2 September.	Six hour periods in 1, downstream of Bethel on 30 August & 2 September.	Six hour periods in 1, downstream of Bethel on 30 August & 2 September.

Table 15. Lower Kuskokwim River, District 1, commercial salmon harvest and fishing effort by period, 1994

				CHINOOK		SOCKEYE		COHO		PINK		CHUM	
PERIOD	DATE	HOURS	PERMITS	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE
1	6/24	8	576	14,221	3.09	38,958	8.45					87,214	18.93
2	7/14	4	496	578	.29	3,891	1.96	820	.41	1,431	.72	43,585	21.97
3	7/19	6	500	441	.15	4,475	1.49	7,027	2.34	3,715	1.24	60,104	20.03
4	7/23	6	506	313	.10	1,125	.37	24,213	7.98	5,845	1.93	38,149	12.57
5	7/26	6	552	225	.07	471	.14	39,901	12.05	7,414	2.24	22,460	6.78
6	7/29	6	577	204	.06	159	.05	52,090	15.05	5,910	1.71	11,252	3.25
7	8/04	6	606	88	.02	87	.02	75,514	20.77	3,835	1.05	3,983	1.10
8	8/09	6	530	29	.01	70	.02	129,570	40.75	1,222	.38	1,153	.36
9	8/12	8	606	34	.01	47	.01	117,753	24.29	497	.10	777	.16
10	8/15	8	595	22		33	.01	47,902	10.06	412	.09	321	.07
11	8/18	8	598	20		16		82,750	17.30	265	.06	212	.04
12	8/22	8	554	12		15		44,054	9.94	201	.05	104	.02
13	8/25	8	447	9		7		37,595	10.51	112	.03	63	.02
14	8/27	6	445	3		4		20,526	7.69	43	.02	30	.01
15	8/30	6	263	2		2		8,192	5.19	21	.01	16	.01
16	9/02	6	157			2		2,489	2.64	7	.01	3	
TOTALS			706	16,201	.22	49,362	.66	690,396	9.23	30,930	.41	269,426	3.60

Table 16. Middle Kuskokwim River, District 2, commercial salmon harvest and fishing effort by period, 1994

				CHINOOK		SOCKEYE		COHO		PINK		CHUM	
PERIOD	DATE	HOURS	PERMITS	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE
01	8/04	6	14	6	.07			4,040	48.10	12	.14	808	9.62
02	8/09	6	17	3	.03			5,790	56.76	3	.03	350	3.43
03	8/12	8	17					10,539	77.49			226	1.66
04	8/15	8	16			1	.01	7,190	56.17			151	1.18
05	8/18	8	15	1	.01			2,710	22.58	1	.01	106	.88
06	8/22	8	12			1	.01	1,855	19.32	3	.03	34	.35
07	8/25	8	7					1,492	26.64			12	.21
08	8/27	6	6			1	.03	677	18.81			2	.06
TOTALS			20	10	.01	3		34,293	29.56	19	.02	1,689	1.46

Table 17. The 1994 commercial salmon catch statistics for statistical area 335-11.

Fishing Period	Date	Hours	Permit Hours	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Chum Catch	Chum CPUE	Coho Catch	Coho CPUE
1	6/24	8	928	21,816	23.51	6,720	7.24	13,224	14.25	0	0.00
Subtotal			928	21,816	23.51	6,720	7.24	13,224	14.25	0	0.00
2	7/14	4	268	1,273	4.75	493	1.84	4,691	17.50	382	1.43
Subtotal			268	1,273	4.75	493	1.84	4,691	17.50	382	1.43
3	7/19	6	510	998	1.96	270	0.53	4,428	8.68	1,279	2.51
4	7/23	6	480	606	1.26	274	0.57	1,927	4.01	3,109	6.48
5	7/26	6	654	356	0.54	183	0.28	1,994	3.05	5,314	8.13
6	7/29	6	630	323	0.51	47	0.07	941	1.49	7,498	11.90
Subtotal			2,274	2,283	1.00	774	0.34	9,290	4.09	17,200	7.56
7	8/04	6	720	300	0.42	27	0.04	378	0.53	10,214	14.19
8	8/09	6	402	126	0.31	4	0.01	44	0.11	9,080	22.59
9	8/12	8	904	139	0.15	16	0.02	74	0.08	13,019	14.40
10	8/15	8	872	65	0.07	18	0.02	74	0.08	12,159	13.94
Subtotal			2,898	630	0.22	65	0.02	570	0.20	44,472	15.35
11	8/18	8	768	12	0.02	8	0.01	24	0.03	7,944	10.34
12	8/22	8	704	53	0.08	8	0.01	13	0.02	9,971	14.16
13	8/25	8	432	0	0.00	2	0.00	3	0.01	2,850	6.60
14	8/27	6	372	28	0.08	0	0.00	2	0.01	2,709	7.28
15	~~8/30~~	~~6~~	~~270~~	10	0.04	0	0.00	6	0.02	1,422	5.27
16	9/02	6	120	0	0.00	1	0.01	0	0.00	478	3.98
Subtotal			2,666	103	0.04	19	0.01	48	0.02	25,374	9.52
TOTAL			9,034	26,105		8,071		27,823		87,428	

Table 18. The 1994 commercial salmon catch statistics for statistical area 335-12.

Fishing Period	Date	Hours	Permit Hours	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Chum Catch	Chum CPUE	Coho Catch	Coho CPUE
1	6/24	8	3,680	12,915	3.51	32,238	8.76	73,990	20.11	0	0.00
Subtotal			3,680	12,915	3.51	32,238	8.76	73,990	20.11	0	0.00
2	7/14	4	992	253	0.26	1,186	1.20	21,138	21.31	280	0.28
Subtotal			992	253	0.26	1,186	1.20	21,138	21.31	280	0.28
3	7/19	6	1,476	107	0.07	566	0.38	30,904	20.94	2,553	1.73
4	7/23	6	1,464	114	0.08	184	0.13	21,471	14.67	11,974	8.18
5	7/26	6	1,590	86	0.05	119	0.07	8,168	5.14	17,595	11.07
6	7/29	6	1,674	114	0.07	72	0.04	4,358	2.60	27,548	16.46
Subtotal			6,204	421	0.07	941	0.15	64,901	10.46	59,670	9.62
7	8/04	6	1,794	40	0.02	39	0.02	1,716	0.96	26,966	15.03
8	8/09	6	1,578	8	0.01	58	0.04	627	0.40	58,112	36.83
9	8/12	8	2,112	12	0.01	20	0.01	287	0.14	44,381	21.01
10	8/15	8	2,160	9	0.00	8	0.00	168	0.08	15,883	7.35
Subtotal			7,644	69	0.01	125	0.02	2,798	0.37	145,342	19.01
11	8/18	8	2,096	11	0.01	5	0.00	122	0.06	31,199	14.89
12	8/22	8	2,048	4	0.00	6	0.00	61	0.03	15,696	7.66
13	8/25	8	1,712	4	0.00	4	0.00	47	0.03	16,031	9.36
14	8/27	6	1,092	0	0.00	4	0.00	17	0.02	6,130	5.61
15	8/30	6	1,308	1	0.00	2	0.00	10	0.01	6,770	5.18
16	9/02	6	822	0	0.00	1	0.00	3	0.00	2,011	2.45
Subtotal			9,078	20	0.00	22	0.00	260	0.03	77,837	8.57
TOTAL			27,598	13,678		34,512		163,087		283,129	

Table 19. The 1994 commercial salmon catch statistics for statistical area 335-13.

Fishing Period	Date	Hours	Permit Hours	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Chum Catch	Chum CPUE	Coho Catch	Coho CPUE
1	6/24	8		CLOSED							
	Subtotal										
2	7/14	4	512	163	0.32	1,454	2.84	11,546	22.55	79	0.15
	Subtotal		512	163	0.32	1,454	2.84	11,546	22.55	79	0.15
3	7/19	6	828	153	0.18	2,764	3.34	18,368	22.18	2,625	3.17
4	7/23	6	888	127	0.14	507	0.57	11,053	12.45	7,978	8.98
5	7/26	6	852	91	0.11	62	0.07	8,268	9.70	13,847	16.25
6	7/29	6	888	41	0.05	32	0.04	4,337	4.88	12,660	14.26
	Subtotal		3,456	412	0.12	3,365	0.97	42,026	12.16	37,110	10.74
7	8/04	6	882	28	0.03	20	0.02	1,185	1.34	26,272	29.79
8	8/09	6	954	6	0.01	6	0.01	208	0.22	40,824	42.79
9	8/12	8	1,496	7	0.00	6	0.00	202	0.14	40,117	26.82
10	8/15	8	1,352	5	0.00	7	0.01	45	0.03	14,199	10.50
	Subtotal		4,684	46	0.01	39	0.01	1,640	0.35	121,412	25.92
11	8/18	8	1,488	6	0.00	3	0.00	37	0.02	31,410	21.11
12	8/22	8	1,304	2	0.00	1	0.00	18	0.01	10,675	8.19
13	8/25	8	1,248	3	0.00	1	0.00	9	0.01	15,199	12.18
14	8/27	6	1,002	2	0.00	0	0.00	8	0.01	10,215	10.19
~~15~~	~~8/30~~	~~6~~		~~CLOSED~~							
16	9/02	6		CLOSED							
	Subtotal		5,042	13	0.00	5	0.00	72	0.01	67,499	13.39
	TOTAL		13,694	634		4,863		55,284		226,100	

Table 20. The 1994 commercial salmon catch statistics for statistical area 335-14.

Fishing Period	Date	Hours	Permit Hours	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Chum Catch	Chum CPUE	Coho Catch	Coho CPUE
1	6/24	8		CLOSED							
	Subtotal										
2	7/14	4	212	80	0.38	758	3.58	6,210	29.29	79	0.37
	Subtotal		212	80	0.38	758	3.58	6,210	29.29	79	0.37
3	7/19	6	210	117	0.56	875	4.17	6,404	30.50	570	2.71
4	7/23	6	210	34	0.16	160	0.76	3,698	17.61	1,152	5.49
5	7/26	6	222	17	0.08	107	0.48	4,030	18.15	3,145	14.17
6	7/29	6	270	25	0.09	8	0.03	1,616	5.99	4,384	16.24
	Subtotal		912	193	0.21	1,150	1.26	15,748	17.27	9,251	10.14
7	8/04	6	252	5	0.02	1	0.00	704	2.79	12,062	47.87
8	8/09	6	408	9	0.02	2	0.00	274	0.67	21,554	52.83
9	8/12	8	488	4	0.01	5	0.01	214	0.44	20,236	41.47
10	8/15	8	400	3	0.01	0	0.00	34	0.09	5,661	14.15
	Subtotal		1,548	21	0.01	8	0.01	1,226	0.79	59,513	38.45
11	8/18	8	472	2	0.00	0	0.00	29	0.06	12,197	25.84
12	8/22	8	400	2	0.01	0	0.00	12	0.03	7,712	19.28
13	8/25	8	264	2	0.01	0	0.00	4	0.02	3,515	13.31
14	8/27	6	210	0	0.00	0	0.00	3	0.01	1,472	7.01
15	8/30	6		CLOSED							
16	9/02	6		CLOSED							
	Subtotal		1,346	6	0.00	0	0.00	48	0.04	24,896	18.50
	TOTAL		4,018	300		1,916		23,232		93,739	

Table 21. Quinhagak, District 4, commercial salmon harvest and fishing effort by period, 1994

				CHINOOK		SOCKEYE		COHO		PINK		CHUM	
PERIOD	DATE	HOURS	PERMITS	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE
01	6/15	12	111	1,165	.87	252	.19	2				62	.05
02	6/20	12	95	746	.65	287	.25					187	.16
03	7/01	12	118	2,534	1.79	13,544	9.56	66	.05			6,512	4.60
04	7/04	12	171	836	.41	3,120	1.52	688	.34			5,555	2.71
05	7/06	12	127	692	.45	4,094	2.69	1,114	.73			6,749	4.43
06	7/08	12	131	756	.48	8,296	5.28	1,122	.71			9,304	5.92
07	7/11	12	140	393	.23	2,313	1.38	3,023	1.80	3		5,800	3.45
08	7/13	12	111	362	.27	9,794	7.35	2,251	1.69	17	.01	13,450	10.10
09	7/15	12	80	279	.29	5,791	6.03	1,749	1.82	24	.03	6,687	6.97
10	7/18	12	93	187	.17	3,023	2.71	2,806	2.51	19	.02	5,842	5.23
11	7/20	12	63	159	.21	4,684	6.20	3,523	4.66	75	.10	4,611	6.10
12	7/22	12	83	131	.13	2,696	2.71	5,140	5.16	250	.25	3,537	3.55
13	7/25	12	52	103	.17	1,103	1.77	5,220	8.37	538	.86	1,545	2.48
14	7/27	12	43	40	.08	834	1.62	2,968	5.75	557	1.08	963	1.87
15	7/29	12	25	36	.12	190	.63	1,216	4.05	712	2.37	447	1.49
16	8/01	12	49	51	.09	334	.57	1,672	2.84	2,577	4.38	368	.63
17	8/03	12	51	23	.04	268	.44	1,039	1.70	1,294	2.11	288	.47
18	8/05	12	48	25	.04	277	.48	839	1.46	3,103	5.39	183	.32
19	8/08	12	72	15	.02	234	.27	684	.79	12,298	14.23	93	.11
20	8/10	12	19			9	.04	64	.28	1,237	5.43	10	.04
21	8/12	12	49	12	.02	51	.09	216	.37	2,710	4.61	46	.08
22	8/15	12	59	2		43	.06	94	.13	10,609	14.98	20	.03
23	8/17	12	42	1				18	.04	9,897	19.64	4	.01
24	8/19	12	74	9	.01	37	.04	185	.21	3,624	4.08	16	.02
25	8/22	12	63	3		18	.02	96	.13	8,437	11.16	17	.02
26	8/24	12	40	1		1		18	.04	6,399	13.33	1	
27	8/26	12	29	1		4	.01	4	.01	5,732	16.47	3	.01
28	8/29	12	54	1				31	.05	2,162	3.34	6	.01
29	8/31	12	50			3	.01	28	.05	7,145	11.91	4	.01
30	9/02	12	33			1		13	.03	933	2.36	4	.01
31	9/05	12	27	1				15	.05	2,243	6.92		
32	9/07	12	13							1,317	8.44		
TOTALS			308	8,564	.07	61,301	.52	35,904	.30	83,912	.71	72,314	.61

Table 2. Goodnews Bay, District 5, commercial salmon har . and fishing effort by period, 1994

				CHINOOK		SOCKEYE		COHO		PINK		CHUM	
PERIOD	DATE	HOURS	PERMITS	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE	NUMBER	CPUE
01	6/27	12	41	388	.79	2,795	5.68	112	.23			2,364	4.80
02	6/30	12	53	349	.55	4,651	7.31	216	.34			2,907	4.57
03	7/04	12	40	637	1.33	7,674	15.99	501	1.04			4,075	8.49
04	7/06	12	43	243	.47	7,886	15.28	735	1.42			4,076	7.90
05	7/08	12	52	139	.22	6,261	10.03	931	1.49			2,669	4.28
06	7/12	36	88	313	.10	16,753	5.29	2,755	.87	1		5,498	1.74
07	7/15	36	78	138	.05	8,860	3.16	2,423	.86	2		3,296	1.17
08	7/18	12	0	NO COMMERCIAL FISHING - NO BUYER									
09	7/19	12	42	71	.14	2,693	5.34	1,551	3.08	11	.02	1,470	2.92
10	7/21	12	29	53	.15	2,385	6.85	1,109	3.19	9	.03	563	1.62
11	7/23	12	27	26	.08	1,273	3.93	927	2.86	19	.06	446	1.38
12	7/25	12	25	16	.05	1,206	4.02	1,453	4.84	188	.63	281	.94
13	7/27	12	18	19	.09	1,057	4.89	887	4.11	96	.44	138	.64
14	7/29	12	24	26	.09	810	2.81	895	3.11	343	1.19	166	.58
15	8/01	12	0	NO COMMERCIAL FISHING - NO BUYER									
16	8/02	12	31	13	.03	969	2.60	826	2.22	1,491	4.01	153	.41
17	8/03	12	25	18	.06	761	2.54	793	2.64	1,136	3.79	100	.33
18	8/05	12	28	19	.06	849	2.53	653	1.94	1,146	3.41	77	.23
19	8/08	12	35	13	.03	749	1.78	342	.81	3,090	7.36	60	.14
20	8/10	12	31	14	.04	391	1.05	211	.57	1,854	4.98	44	.12
21	8/12	12	24	26	.09	288	1.00	161	.56	2,699	9.37	31	.11
22	8/15	12	31	14	.04	422	1.13	177	.48	3,724	10.01	23	.06
23	8/17	12	29	7	.02	151	.43	47	.14	4,248	12.21	11	.03
24	8/19	12	29	8	.02	195	.56	89	.26	4,522	12.99	11	.03
25	8/22	12	33	6	.02	131	.33	36	.09	6,126	15.47	2	.01
26	8/24	12	32	2	.01	41	.11	19	.05	5,520	14.38		
27	8/26	12	2	(No Buyer)		1	.04			147	6.13		
28	8/29	12	30	9	.03	90	.25	66	.18	2,557	7.10	5	.01
29	8/31	12	24			50	.17	35	.12	3,097	10.75	4	.01
30	9/02	12	29			44	.13	65	.19	2,149	6.18	2	.01
31	9/05	12	21	2	.01	37	.15	1		1,014	4.02	4	.02
32	9/07	12	23	1		17	.06	1		2,310	8.37	1	
TOTALS			116	2,570	.05	69,490	1.47	18,017	.38	47,499	1.00	28,477	.60

Table 23. Preliminary projections of the 1995 Kuskokwim Area commercial salmon harvest in thousands of fish by species and management district.

	MANAGEMENT DISTRICT											
	KUSKOKWIM RIVER			QUINHAGAK			GOODNEWS BAY			KUSKOKWIM AREA TOTAL		
CHINOOK	37	-	56	8	-	20	1	-	4	46	-	80
SOCKEYE	84	-	137	40	-	80	35	-	69	159	-	286
COHO	400	-	700	27	-	86	8	-	47	435	-	833
PINK		<1[a]			<1[a]			<1[a]			<1[a]	
CHUM	350	-	550	35	-	75	10	-	30	395	-	655
TOTAL	871	-	1,443	110	-	261	54	-	150	1,035	-	1,854

a Kuskokwim Area pink salmon display a strong odd-even year cycle; the 1995 projections are based on the odd year catches only.

ıble 24. 1994 Kuskokwim area subsistence salmon project sampling summary.

Community	Total Households	Calendars Mailed To	Calendars Returned From	Postcards Mailed To	Postcards Returned From	Personal Interviews	Telephone Surveys	Any Info	Reported Subsistence Fishing
North Kusk. Bay									
Kipnuk	82	8	1	81	3	0	0	6	5
Kwigillingok	35	2	0	34	0	0	0	1	1
Kongiganak	57	42	0	16	5	40	0	53	41
Totals	174	52	1	131	8	40	0	60	47
Lower Kuskokwim District 1									
Tuntutuliak	72	58	11	9	1	60	0	69	56
Eek	70	49	16	8	0	58	0	69	52
Kasigluk	78	59	5	77	2	0	0	7	7
Nunapitchuk	94	68	11	26	4	63	0	90	69
Atmautluak	51	45	6	18	2	33	0	50	40
Napakiak	73	55	11	19	1	53	0	69	54
Napaskiak	79	54	12	16	0	60	0	78	57
Oscarville	15	11	6	5	0	10	0	11	9
Bethel	1,075	443	62	633	165	0	331	499	304
Kwethluk	132	102	24	55	4	81	0	112	90
Akiachak	103	90	7	29	5	70	0	97	73
Akiak	58	49	6	20	1	36	0	56	47
Tuluksak	65	57	10	8	4	48	0	64	50
Totals	1,968	1,140	187	923	189	572	331	1,271	908
Middle Kuskokwim District 2									
Lower Kalskag	72	43	15	17	3	54	0	69	52
Upper Kalskag	38	30	6	7	3	30	0	38	24
Aniak	147	104	13	22	5	121	0	133	93
Chuathbaluk	29	24	4	9	4	17	0	29	22
Totals	266	201	38	55	15	222	0	269	191
Kuskokwim									
ıked Creek	27	23	1	11	2	16	0	24	18
Red Devil	20	16	2	8	3	11	0	20	17
Sleetmute	43	34	17	9	0	35	0	43	36
Stony River	19	13	2	3	0	9	0	19	11
Lime Village	16	8	0	0	0	0	4	16	7
McGrath	121	44	1	43	22	0	92	112	33
Takotna	13	0	0	0	0	7	0	13	0
Nikolai	28	19	3	1	0	23	0	28	19
Telida	3	0	0	3	0	0	0	0	0
Totals	290	157	26	78	27	105	92	275	141
KUSKOKWIM RIVER[A] TOTALS	2,698	1,550	252	1,187	239	939	427	1,875	1,287
South Kuskokwim Bay									
Quinhagak	124	100	12	35	4	88	0	105	91
Goodnews Bay	54	35	3	17	2	32	0	45	24
Platinum	14	9	1	3	3	10	0	14	9
Totals	192	144	4	55	5	42	115	597	33
Bering Sea Coast									
Mekoryuk	53	9	1	53	13	0	0	14	10
Newtok	49	0	0	48	5	0	0	5	1
Nightmute	25	3	0	24	2	0	0	2	1
Toksook Bay	75	5	2	74	7	0	0	9	8
Tununak	69	2	0	69	5	0	0	5	0
Totals	271	19	3	268	32	0	0	35	20
Other[B]	2	1	0	0	0	0	0	0	0
KUSKOKWIM AREA TOTALS	3,183	1,714	271	1,510	277	1,069	423	2,074	1,431

ıcludes North Kuskokwim Bay.
ıcludes harvest by fishers living outside of the Kuskokwim fisheries management area.

Table 25. 1994 Kuskokwim area subsistence salmon harvests.

	Households		Chinook		Chum		Sockeye		Coho	
Community	Total	Contacts	Reported Harvest	Est'd Total	Reported Harvest	Est'd Total	Reported Harvest	Est'd Total	Reported Harvest	Est'd Total
Kipnuk[A]	82	5	150	150	169	169	132	132	87	87
Kwigillingok[A]	35	1	7	7	5	5	5	5	0	0
Kongiganak	57	53	934	980	983	1,029	516	541	417	417
North Kuskokwim Bay Totals	174	59	1,091	1,137	1,157	1,203	653	678	504	526
Tuntutuliak	72	69	3,775	3,917	4,221	4,378	2,570	2,664	356	370
Eek	70	69	2,744	2,754	587	587	434	435	401	405
Kasigluk[A]	78	7	694	694	537	537	275	275	387	387
Nunapitchuk	94	89	4,003	4,202	3,918	4,107	1,336	1,399	665	698
Atmautluak	51	50	1,487	1,524	1,197	1,227	653	669	339	348
Napakiak	73	69	2,539	2,646	2,927	3,047	1,164	1,212	657	684
Napaskiak	79	78	4,638	4,712	4,081	4,147	1,406	1,429	1,464	1488
Oscarville	15	11	972	1,188	546	667	265	324	40	49
Bethel	1,075	471	15,359	23,558	7,987	11,914	5,401	7,974	8,181	11,459
Kwethluk	132	110	6,813	7,727	4,523	5,088	2,779	3,120	1,362	1,513
Akiachak	103	97	5,630	5,852	4,379	4,553	2,318	2,412	1,069	1,113
Akiak	58	56	3,198	3,323	3,009	3,136	1,175	1,224	725	756
Tuluksak	65	64	3,755	3,828	2,059	2,098	1,152	1,175	236	241
Lower Kuskokwim District 1 Totals	1,968	1,240	55,607	65,925	39971	45,487	20,928	24,312	15,882	19,509
Lower Kalskag	72	68	3,491	3,619	2,423	2,499	835	859	743	764
Upper Kalskag	38	38	1,179	1,179	760	760	262	262	162	162
Aniak	147	132	2,891	3,125	2,235	2,429	489	529	1,457	1,573
Chuathbaluk	29	29	751	751	1,176	1,176	720	720	578	578
Middle Kuskokwim District 2 Totals	266	267	8,312	8,675	6,594	6,864	2,306	2,370	2,940	3,077
Crooked Creek	27	24	619	685	423	442	334	349	370	415
Red Devil	20	20	259	259	835	835	213	213	680	680
Sleetmute	43	43	1,162	1,162	1,357	1,357	1,013	1,013	568	568
Stony River	19	19	261	261	678	678	583	583	367	367
Lime Village	16	16	135	135	1,300	1,300	1,100	1,100	600	600
McGrath	121	111	973	1,020	795	795	0	0	1,094	1,143
Takotna	13	12	0	0	0	0	0	0	0	0
Nikolai	28	28	429	429	293	293	0	0	119	119
Telida[A]	3	0	0	0	0	0	0	0	0	0
Upper Kuskokwim Totals	290	273	3,838	3,951	5,647	5,700	3,243	3,258	3,798	3,8
KUSKOKWIM RIVER[A,B] TOTALS	2,718	1,839	68,848	79,688	53,369	59,255	27,130	30,619	23,124	27,005
Quinhagak	124	105	2,915	3,336	1,063	1,208	737	823	2,002	2,282
Goodnews Bay	54	45	485	585	297	357	457	551	301	362
Platinum	14	14	72	72	45	45	101	101	77	77
South Kuskokwim Bay Totals	192	164	3,472	3,993	1,405	1,610	1,295	1,475	2,380	2,721
Mekoryuk[A]	53	10	6	6	2,337	2,337	87	87	87	87
Newtok[A]	49	1	2	2	0	0	20	20	0	0
Nightmute[A]	25	1	8	8	7	7	15	15	0	0
Toksook Bay[A]	75	8	313	313	622	622	188	188	101	101
Tununak[A]	69	0	0	0	0	0	0	0	0	0
Bering Sea Coast Totals	271	20	329	329	2,966	2,966	310	310	188	188
Other[C]	2	0	0	0	0	0	0	0	0	0
KUSKOKWIM[B] AREA TOTALS	3,183	2,023	72,649	84,009	57,740	63,831	28,735	32,403	25,692	29,914

A Harvest information not available or not enough fishers reported to allow staff to generate reliable estimates of total community harvests. Where available, reported harvest numbers were used.
B Includes North Kuskokwim Bay.
C Includes harvest by fishers living outside of the Kuskokwim Fisheries Management Area.

ble 26. Gill net mesh sizes used to harvest Subsistence Chinook Salmon in the Kuskokwim region.

District	>5	5	>5<6	*	6	>6<8	8	#	>8	Total
1	0	3	42	4	77	19	120	17	42	324
2	1	2	4	12	23	1	19	20	9	91
Upriver	7	1	4	10	10	1	6	6	2	47
4	0	0	7	0	5	1	3	5	2	23
5	0	0	3	0	5	1	3	0	0	12
TOTAL	8	6	60	26	120	23	151	48	55	490

* Represents the non-numerical response of "red," "dog," "chum," or "commercial" gear.

\# Represents the non-numerical response of "king gear."

Table 27. Catch in commercial freshwater gillnets by day be gear size in District 1. Stat. Area 335-13, 1994

Three Inch Mesh						
Date	Cisco	Whitefish	Pike	Sheefish	Burbot	Other
08-04			Set Net			
08-05	117	199	3	2	0	5 coho
08-06	109	89	1	0	0	9 coho
Total	**226**	**288**	**4**	**2**	**0**	**14 coho**

Three One Half Inch Mesh						
Date	Cisco	Whitefish	Pike	Sheefish	Burbot	Other
10-26			Set Net			
10-27	9	18	0	3	0	0
10-28	8	53	3	2	0	0
10-30	8	49	2	2	0	0
Weekly SubTotal	**25**	**120**	**5**	**7**	**0**	**0**
11-02	9	68	4	3	0	0
11-03	4	76	3	2	0	0
11-05	7	84	2	2	0	0
Weekly SubTotal	**20**	**228**	**9**	**7**	**0**	**0**
11-07	8	74	1	3	0	0
11-09	6	71	0	1	3	0
Weekly SubTotal	**14**	**145**	**1**	**4**	**3**	**0**
Total	**59**	**493**	**15**	**18**	**3**	**0**

Three and Three Quarter Inch Mesh						
Date	Cisco	Whitefish	Pike	Sheefish	Burbot	Other
07-29			Set Net			
07-30	295	104	0	2	0	1 chum 1 chinook
Total	**295**	**104**	**0**	**2**	**0**	**2**

Four Inch Mesh						
Date	Cisco	Whitefish	Pike	Sheefish	Burbot	Other
01-01			Set Net			
01-08	1	16	0	0	1	0
Weekly SubTotal	**1**	**16**	**0**	**0**	**1**	**0**
01-12	0	24	2	1	0	0
Weekly Subtotal	**0**	**24**	**2**	**1**	**0**	**0**
01-16	0	15	0	1	0	0
01-19	0	17	1	2	0	0
01-23	3	19	1	1	0	0
Weekly Subtotal	**3**	**51**	**2**	**4**	**0**	**0**
01-30	1	22	1	2	1	0
Weekly Subtotal	**1**	**22**	**1**	**2**	**1**	**0**
02-02	1	12	1	1	0	0
02-05	1	18	1	1	1	0
Weekly Subtotal	**2**	**30**	**2**	**2**	**1**	**0**
02-08	0	21	0	2	0	0
02-11	0	16	1	1	0	0

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Weekly Subtotal	**0**	**37**	**1**	**3**	**0**	**0**
02-15	0	18	0	1	0	0
02-18	0	11	1	0	1	0
Weekly Subtotal	**0**	**29**	**1**	**1**	**1**	**0**
02-21	0	9	2	0	0	0
Weekly Subtotal	**0**	**9**	**2**	**0**	**0**	**0**
07-30	29	108	2	0	0	3 coho
Weekly Subtotal	**29**	**108**	**2**	**0**	**0**	**3**
10-04			NET SET			
10-05	0	7	3	3	4	0
10-06	0	9	2	0	3	1 coho
10-07	1	6	2	4	3	0
10-08	0	10	0	2	2	0
10-09	0	7	1	3	1	0
Weekly Subtotal	**1**	**39**	**8**	**12**	**13**	**1**
10-10	0	5	2	1	2	0
10-11	0	8	3	2	1	0
Weekly Subtotal	**0**	**13**	**5**	**3**	**3**	**0**
			NET PULLED			
10-29			NET SET			
10-30	0	36	2	2	0	0
Weekly Subtotal	**0**	**36**	**2**	**2**	**0**	**0**
11-03	1	59	3	4	0	0
11-05	1	48	2	1	0	0
11-07	0	61	1	2	0	0
11-09	2	42	2	1	0	0
Weekly Subtotal	4	210	8	8	0	0
Total	**41**	**624**	**36**	**38**	**19**	**4**

r and One Half Inch Mesh

e	Cisco	Whitefish	Pike	Sheefish	Burbot	Other
11-01			Set Net			
11-02	0	32	0	4	1	0
11-03	0	25	0	3	0	0
11-05	0	39	0	2	0	0
Weekly Subtotal	**0**	**96**	**0**	**9**	**1**	**0**
11-07	0	44	0	1	0	0
			NET PULLED			
Weekly Subtotal	**0**	**44**	**0**	**1**	**0**	**0**
Total	**0**	**140**	**0**	**10**	**1**	**0**

Table 28. Kuskokwim area Pacific herring proportion of biomass by age class, 1994.

District	Age (years) 3	4	5	6	7	8	9	10	11	12	13+	Total weight (st)
Commercial catch[a]												
Security Cove[b]												0
Goodnews Bay			0.7	6.4	7.7	6.2	16.6	27.7	16.8	11.1	6.8	1062
Cape Avinof		0.2	0.7	10.3	15.2	6.3	17.1	26.2	16.4	4.7	2.8	427
Nelson Island			0.4	2.8	11.7	3.6	13.2	25.8	17.9	12.7	12.0	717
Nunivak Island[c]				0.7	7.1	7.1	7.1	28.2	28.2	21.4		14
All Districts		0.0	0.6	6.0	10.5	5.4	15.5	26.8	17.1	10.5	7.7	2220
Test Fishery[d]												
Security Cove		1.4	6.0	22.7	26.4	4.2	5.9	10.3	8.9	7.6	6.7	7638
Goodnews Bay		1.5	4.7	23.8	21.4	6.2	7.2	12.6	10.5	6.0	6.1	5679
Cape Avinof	0.7	14.0	9.4	35.5	15.1	5.1	6.5	7.4	3.7	2.0	0.6	2827
Nelson Island	0.7	7.8	4.5	17.4	13.8	5.2	9.0	14.6	12.9	9.0	5.3	5564
Nunivak Island	0.1	5.0	5.6	32.0	15.1	5.2	6.9	12.9	8.7	6.1	2.4	4921
All Districts	0.2	4.8	5.7	24.9	19.4	5.1	7.1	11.9	9.5	6.7	4.8	26629

a Commercial drift gill net
b No commercial fishery in Security Cove
c No samples obtained from Nunivak Island commercial catch
c ADF&G variable mesh gill net

Table 29. Kuskokwim area Pacific herring age frequency by district, 1994.

District	Age (years) 3	4	5	6	7	8	9	10	11	12	13+	Sample Size
Commercial catch[a]												
Security Cove[b]												0
Goodnews Bay			1.1	8.7	14.5	6.4	15.4	24.6	13.4	10.9	5.0	358
Cape Avinof		0.3	1.1	13.2	17.8	6.7	17.3	24.0	13.7	4.0	1.9	371
Nelson Island			0.5	4.1	14.8	4.1	14.1	25.1	16.6	11.3	9.5	391
Nunivak Island[c]												0
All Districts		0.1	0.9	8.6	15.7	5.7	15.6	24.6	14.6	8.8	5.5	1120
Test Fishery[d]												
Security Cove		2.6	8.8	27.8	27.3	3.8	5.2	8.2	6.7	5.3	4.3	1044
Goodnews Bay		3.1	7.0	30.5	23.1	5.9	6.1	9.5	7.4	3.8	3.6	1238
Cape Avinof	1.5	22.4	11.3	35.7	12.8	3.8	4.5	4.6	2.1	1.1	0.3	1003
Nelson Island	2.3	15.1	7.0	21.4	13.7	4.7	7.1	10.6	8.9	5.9	3.2	1805
Nunivak Island	0.2	8.8	7.6	37.5	14.8	4.5	5.3	9.5	6.1	4.1	1.5	1125
All Districts	0.9	10.6	8.1	29.5	17.9	4.6	5.8	8.8	6.6	4.3	2.7	6215

Table 30. Summary of Pacific herring commercial harvest by fishing period for Kuskokwim Area fishing districts, Alaska, 1994.

District	Period	Date	Time	Total hours	Harvest (st)
Security Cove	No Commercial Fishery				
Goodnews Bay	1	5/22	1400-2000	6.0	177.7
	2	5/23	1500-2200	7.0	211.8
	3	5/24	0300-0800	5.0	130.0
	4	5/24	2000-2200	2.0	79.7
	5	5/26	0530-1130	6.0	42.7
	6	5/26-27	1900-0100	6.0	201.4
	7	5/27	1030-1230	2.0	65.9
	8	5/27	2000-2400	4.0	151.6
			Total	38.0	1,060.9
Cape Avinof	1	5/28	1100-1500	4.0	18.6
	2	5/28-29	2100-0400	7.0	8.8
	3	5/29	0900-1600	7.0	15.3
	4	5/29-30	2100-0500	8.0	43.0
	5	5/30	0900-1800	9.0	81.0
	6	5/30-31	2300-0700	8.0	67.9
	7	5/31	1100-1900	8.0	87.4
	8	6/01	0200-0800	6.0	38.0
	9	6/01	1500-2000	5.0	67.3
			Total	62.0	427.2
Nelson Island	1	5/23	0600-1000	4.0	0.2
	2	5/23	1700-2300	6.0	184.6
	3	5/24	1800-2400	6.0	264.5
	4	5/25	1830-0030	6.0	152.9
	5	5/26-27	2100-0100	4.0	115.1
			Total	26.0	717.1
Nunivak Island	1	6/03	0300-0900	6.0	13.9
			Total	6.0	13.9

ble 31. Projections of Pacific herring spawning biomass and harvest for commercial fishing districts in the Kuskokwim Area, Alaska, 1995.

	1995 Projection[a]			
District	Biomass (st)	Threshold (st)[b]	Harvest (st)	Exploitation Rate (%)
Security Cove	6,702	1,200	1,340	20
Goodnews Bay	4,224	1,200	845	20
Cape Avinof	2,644	500	397	15
Nelson Island	4,460	3,000	669	15
Nunivak Island	4,579	1,500	916	20
Total	22,609		4,167	

a Preseason projection. Projection may be adjusted based on inseason biomass estimates.
b Threshold biomass needed to allow a commercial fishery from 5 AAC 27.060 Bering Sea Herring Fishery Management Plan

FIGURES

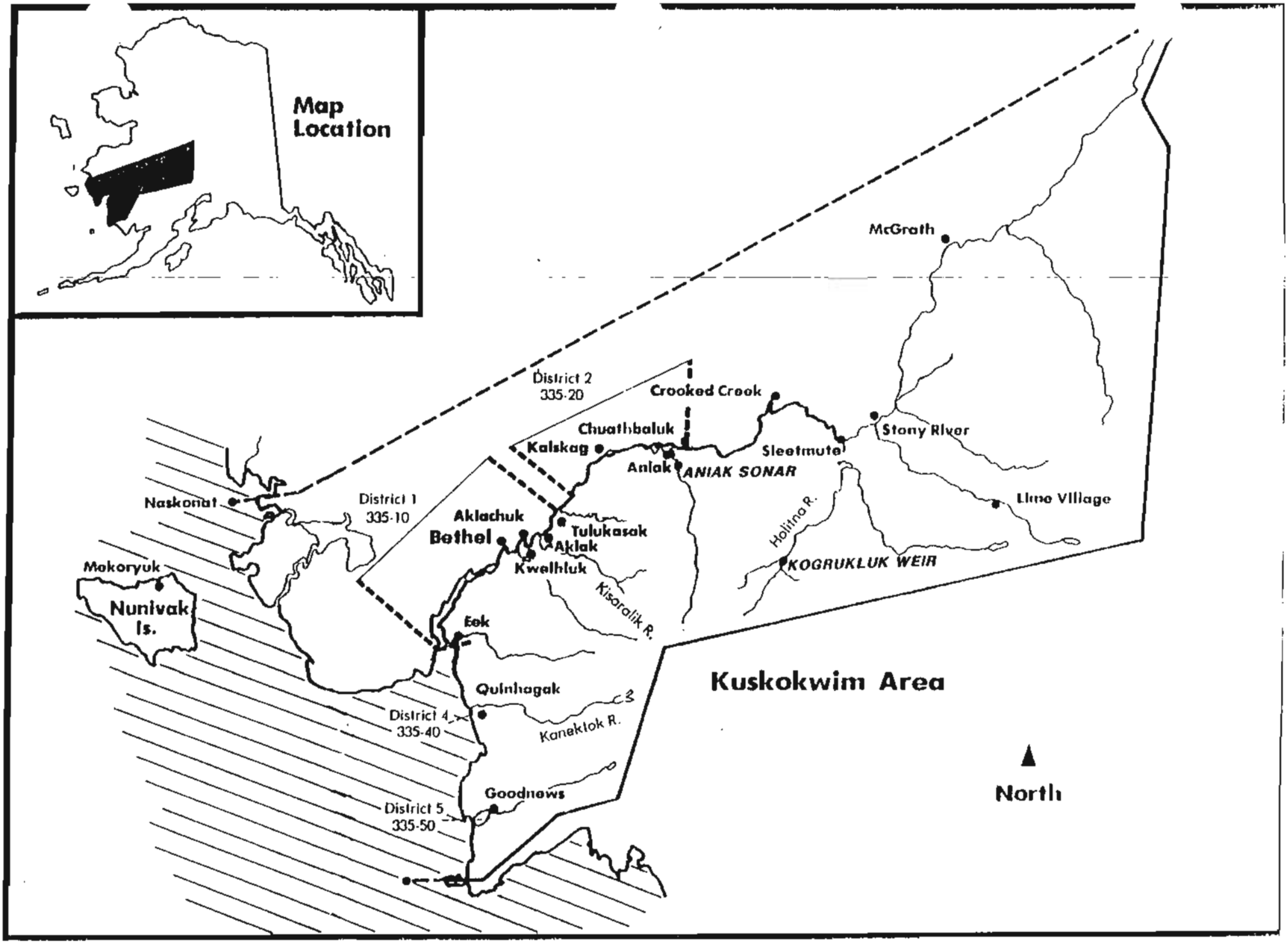

Figure 1. Kuskokwim Area Map.

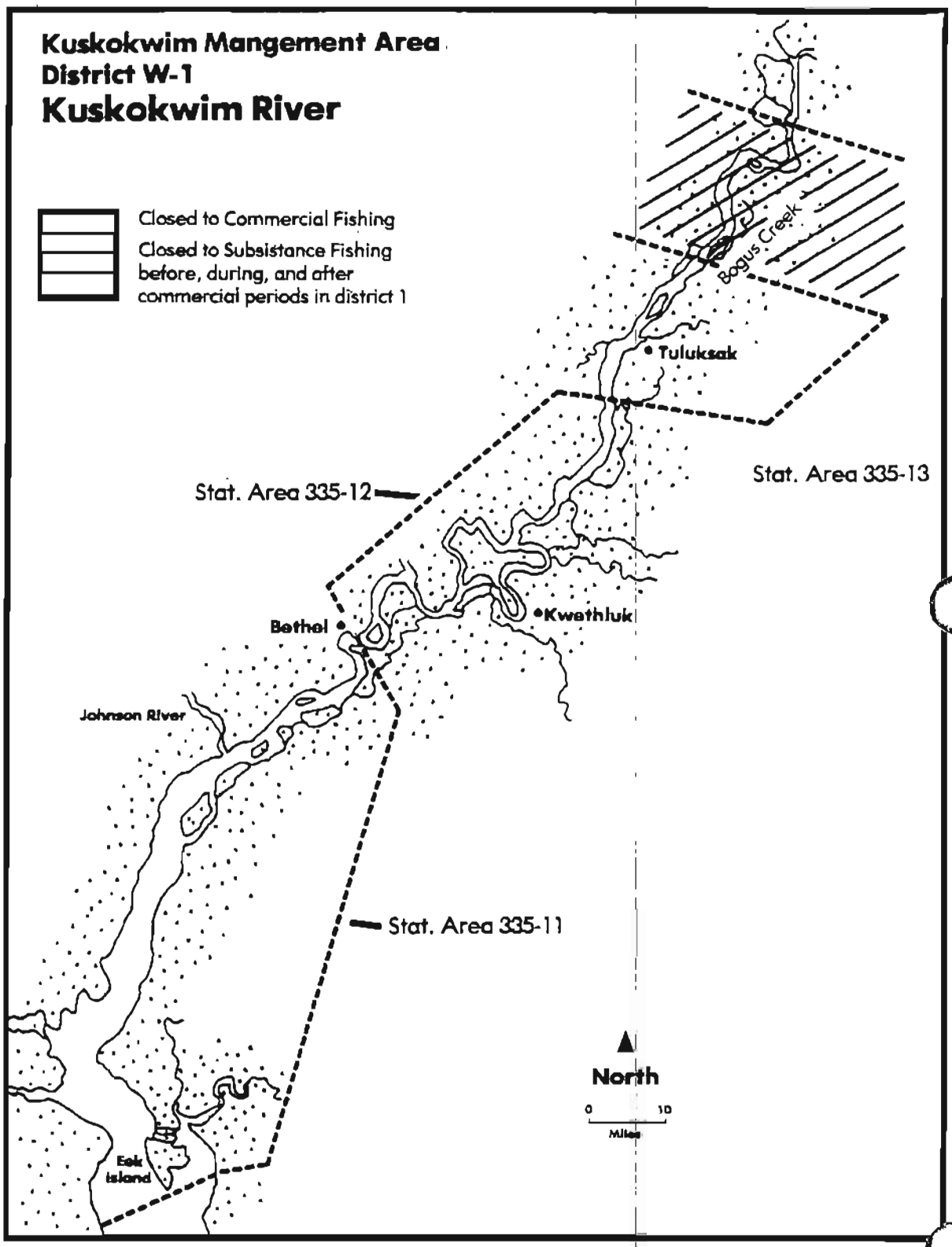

Figure 2. Kuskokwim Management Area, District W-1

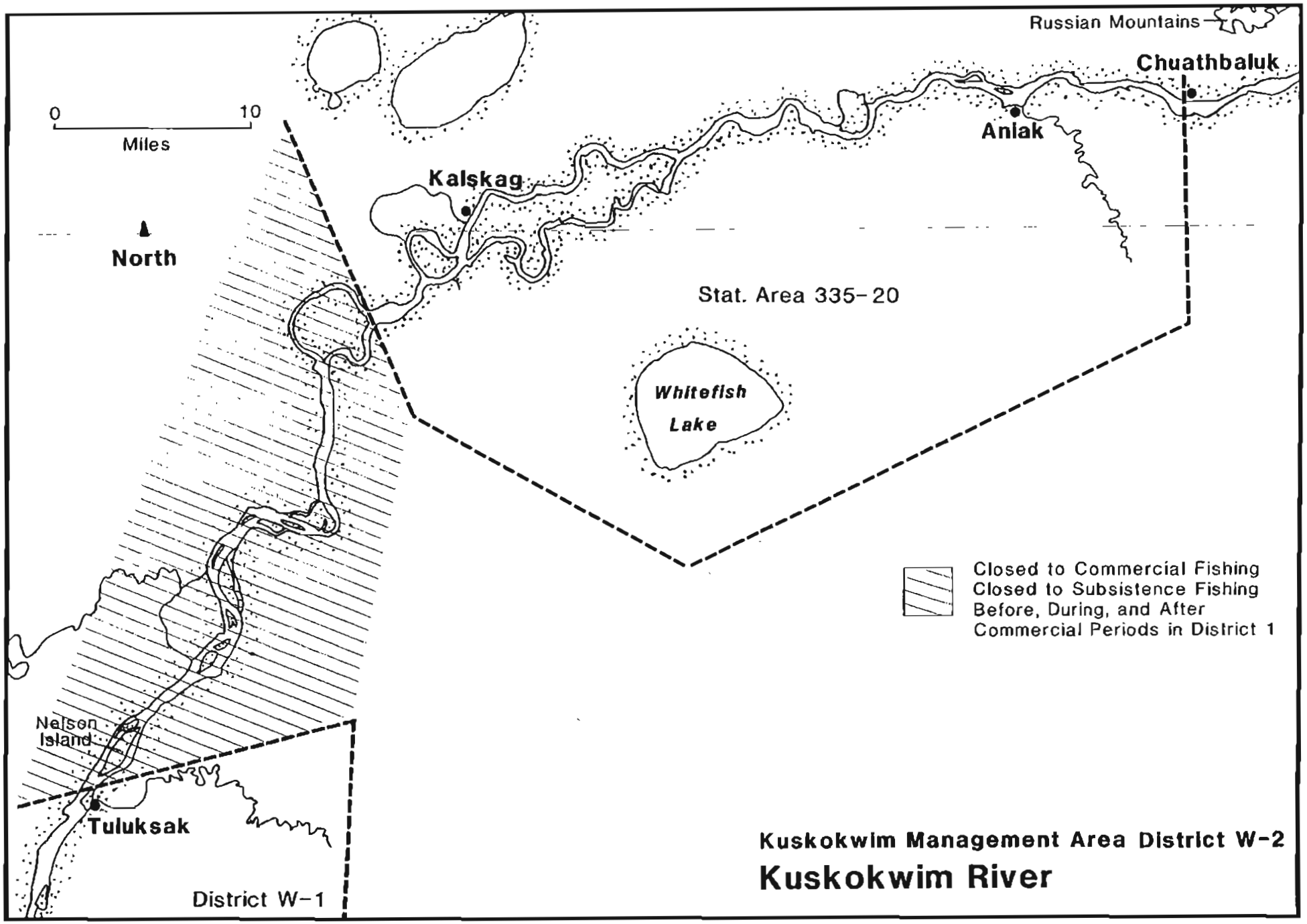

Figure 3. Kuskokwim Management Area, District W-2

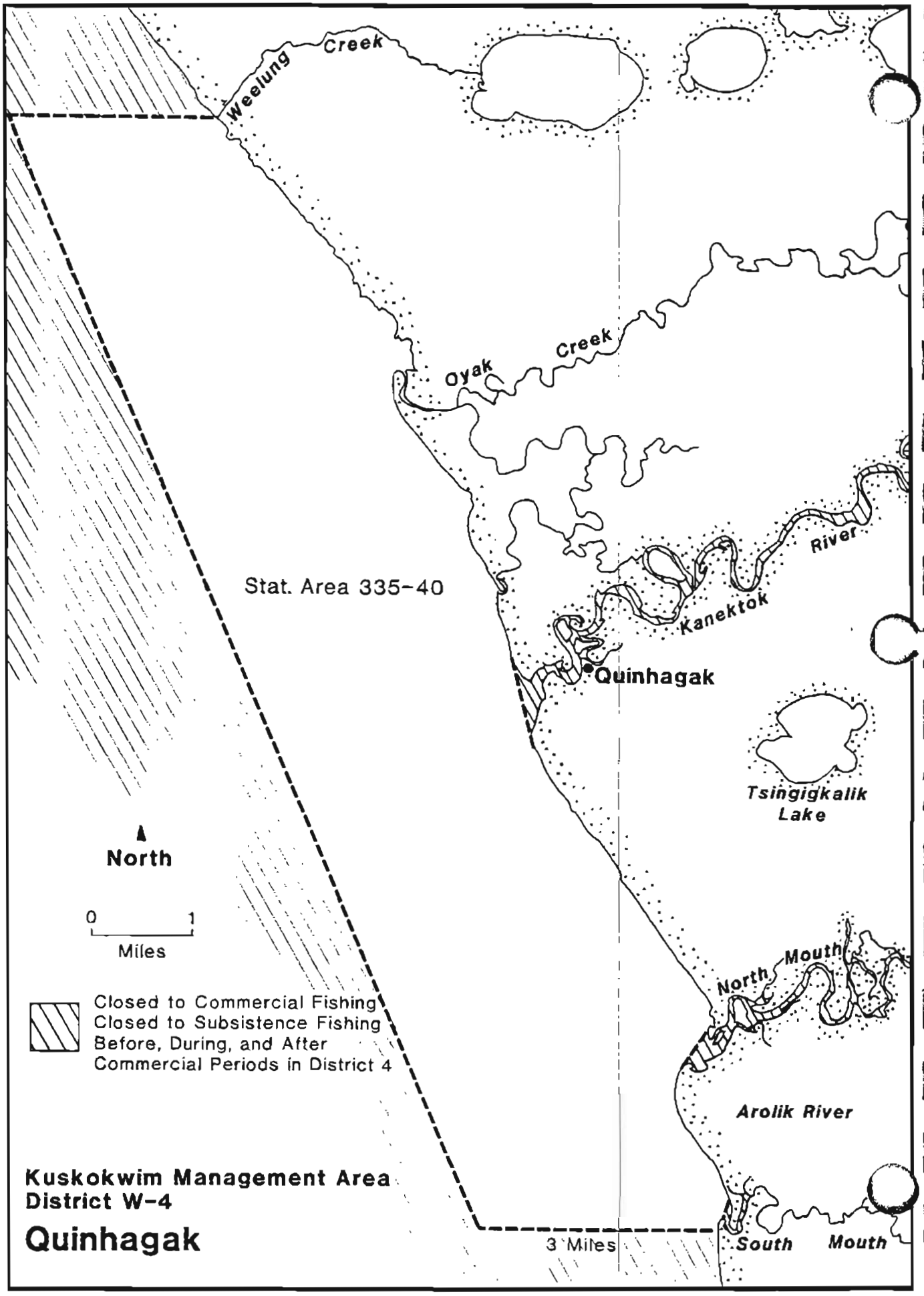

Figure 4 . Kuskokwim Management Area, District W-4

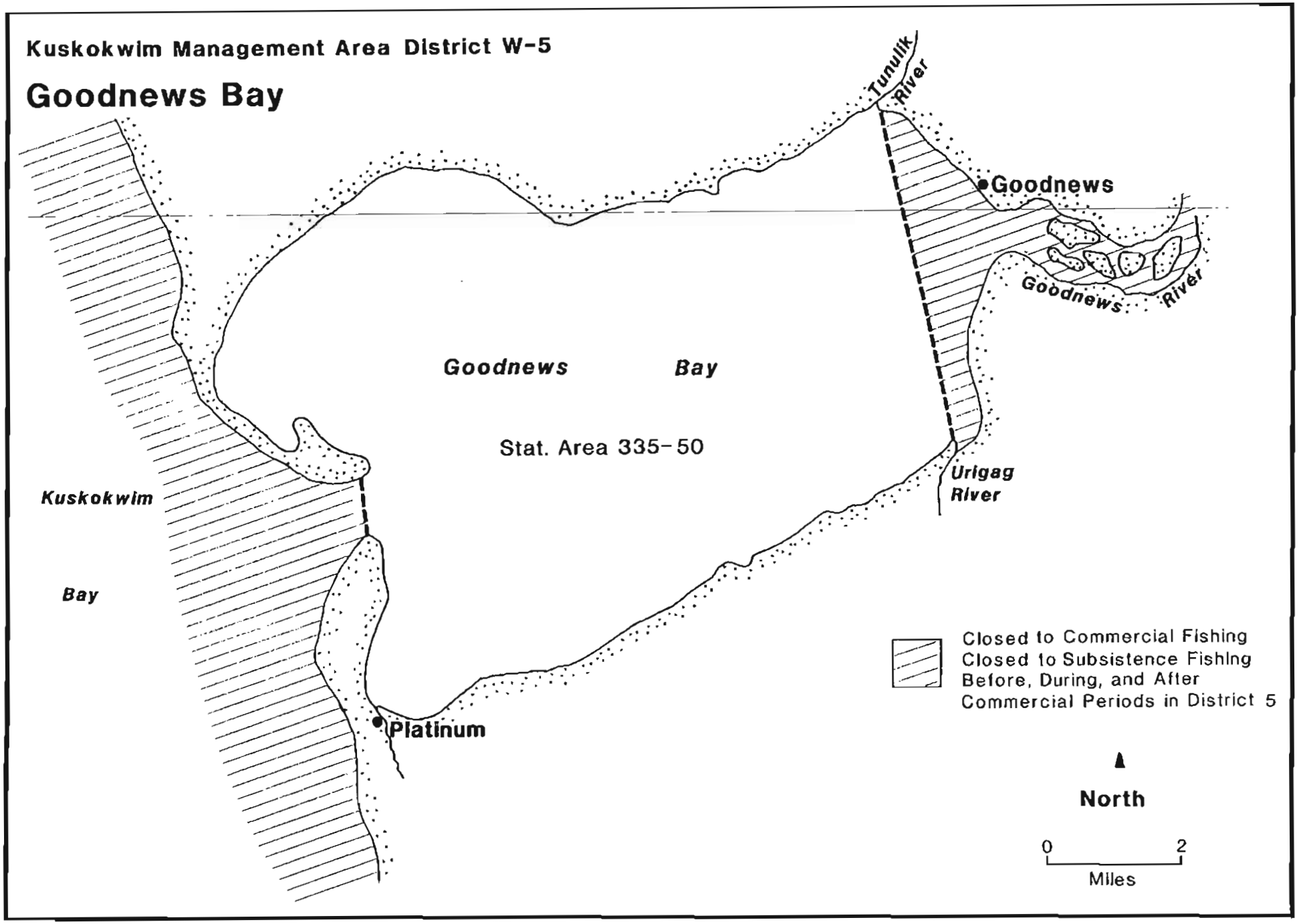

Figure 5. Kuskokwim Management Area. District W-5

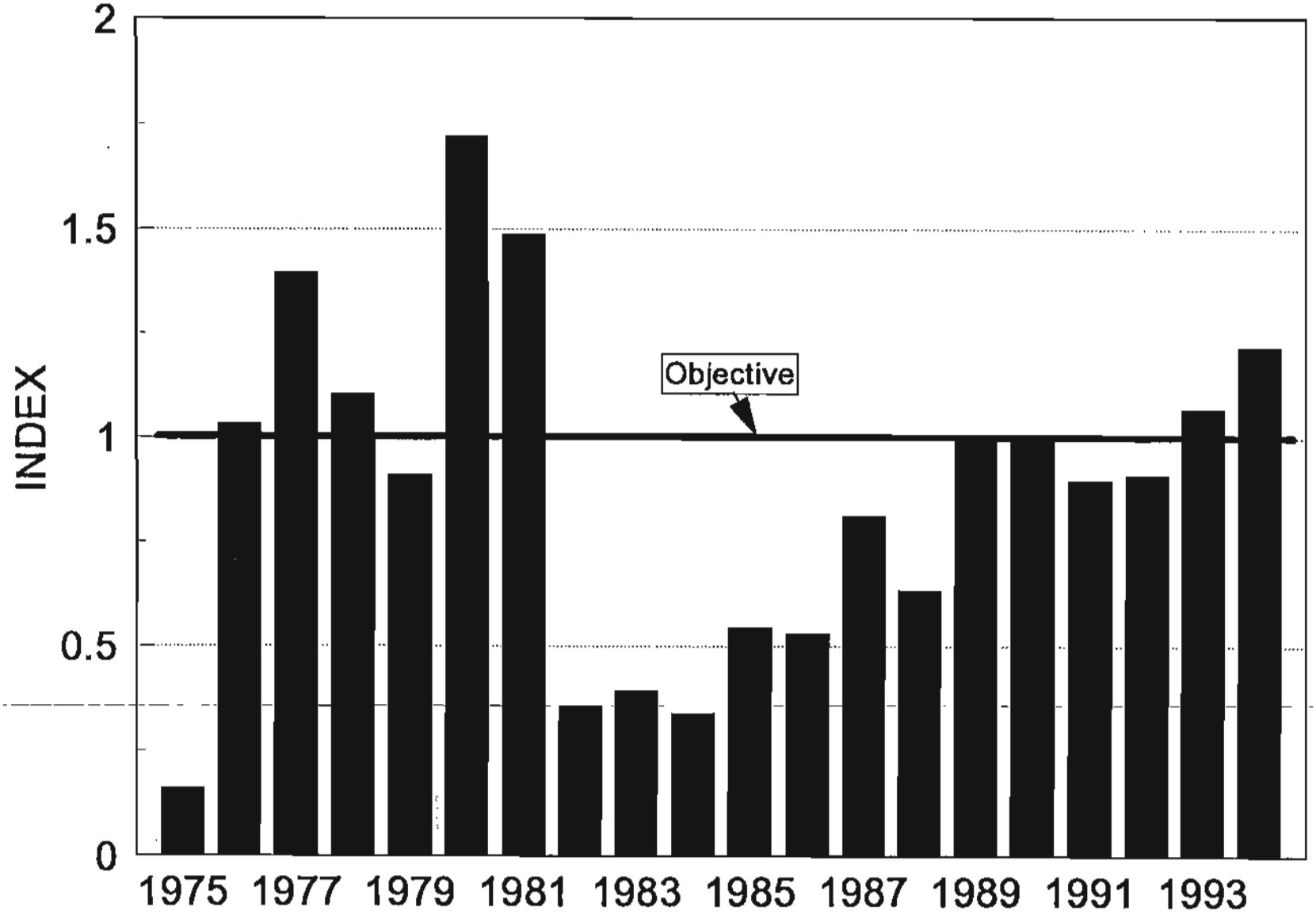

Figure 6. Kuskokwim drainage aerial chinook salmon escapement index, 1974-1994.

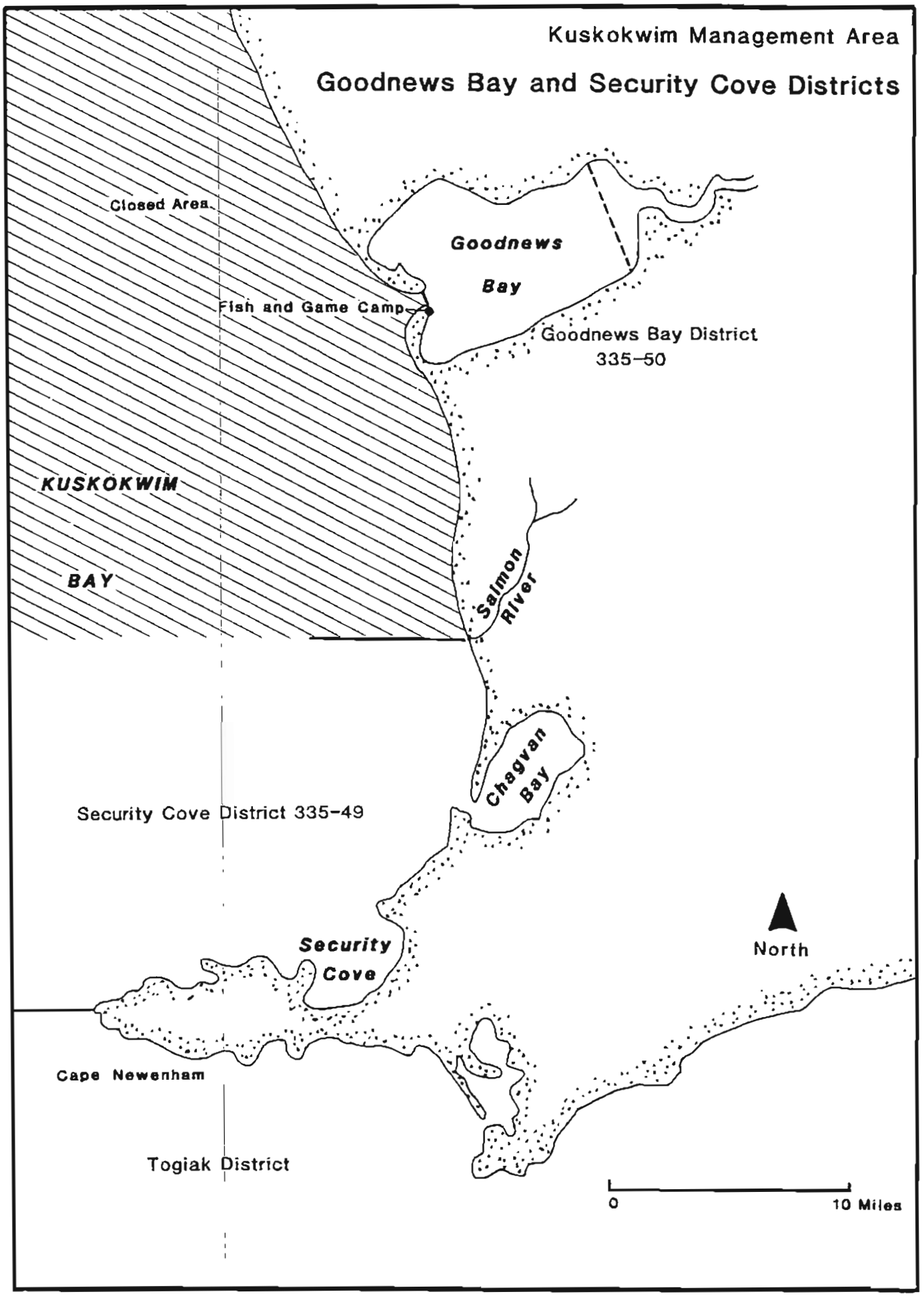

Figure 7 . Goodnews Bay and Security Cove Herring Districts

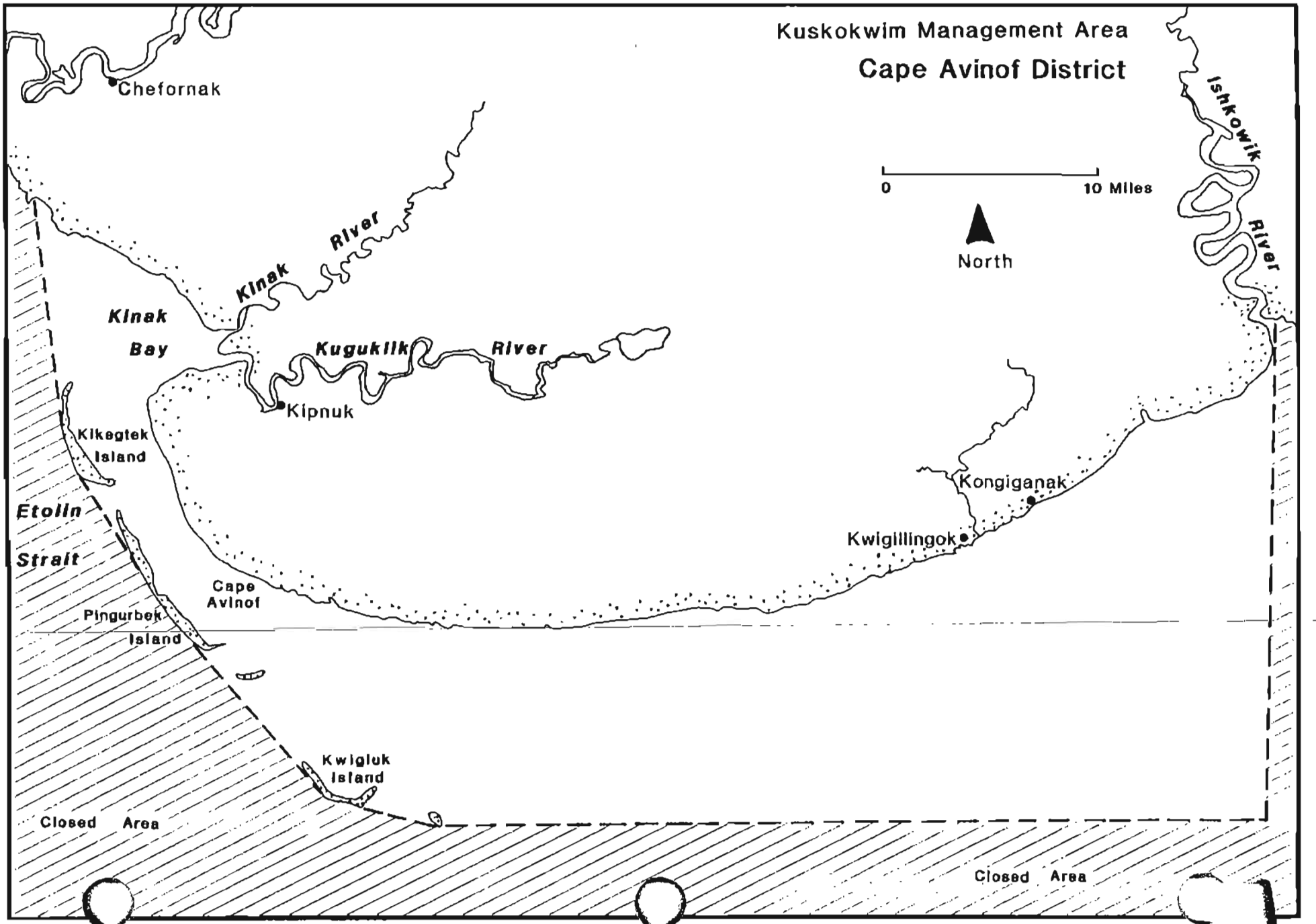

Figure 3. Cape Avinof Hunting District

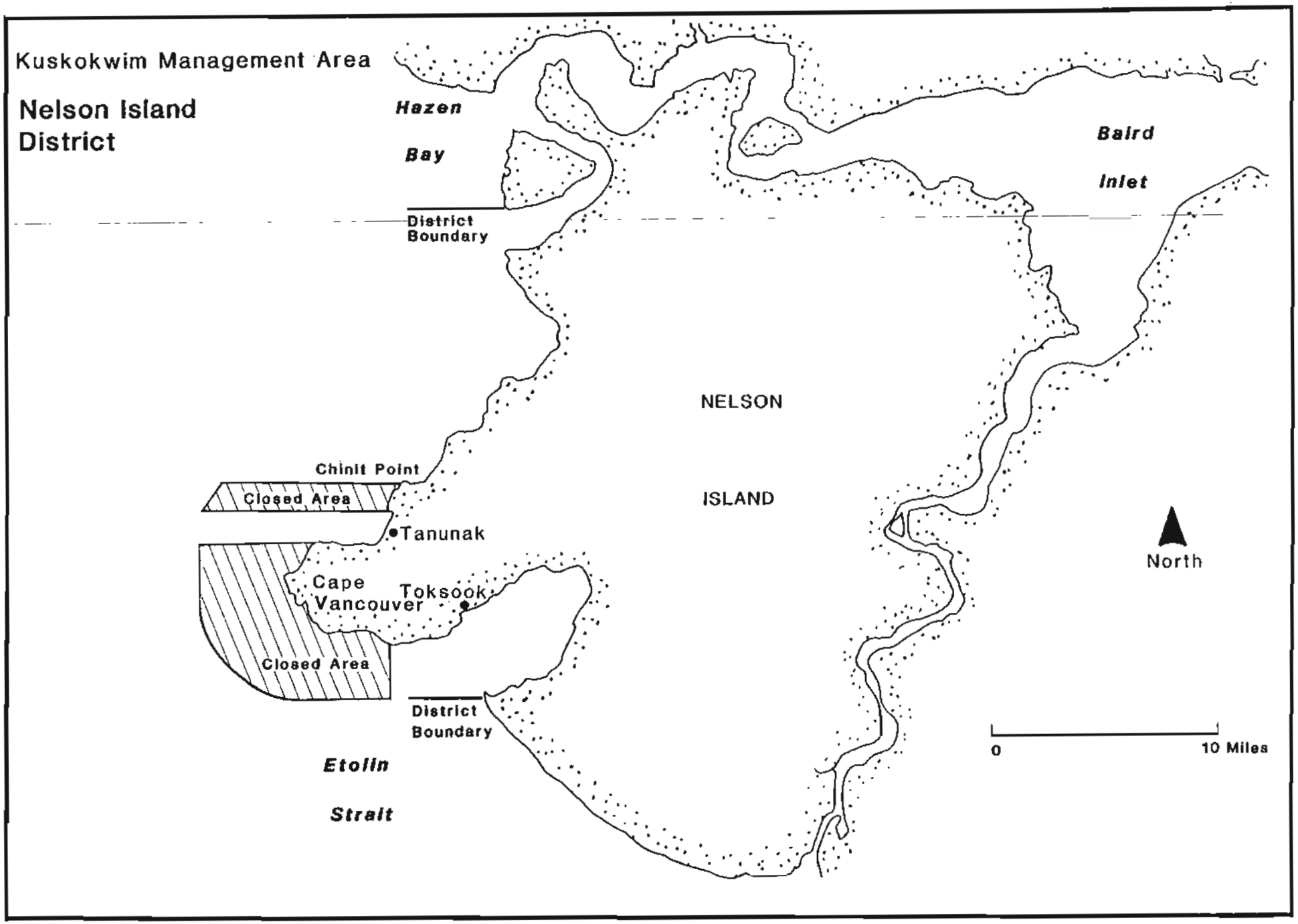

Figure 9. Nelson Island Herring District

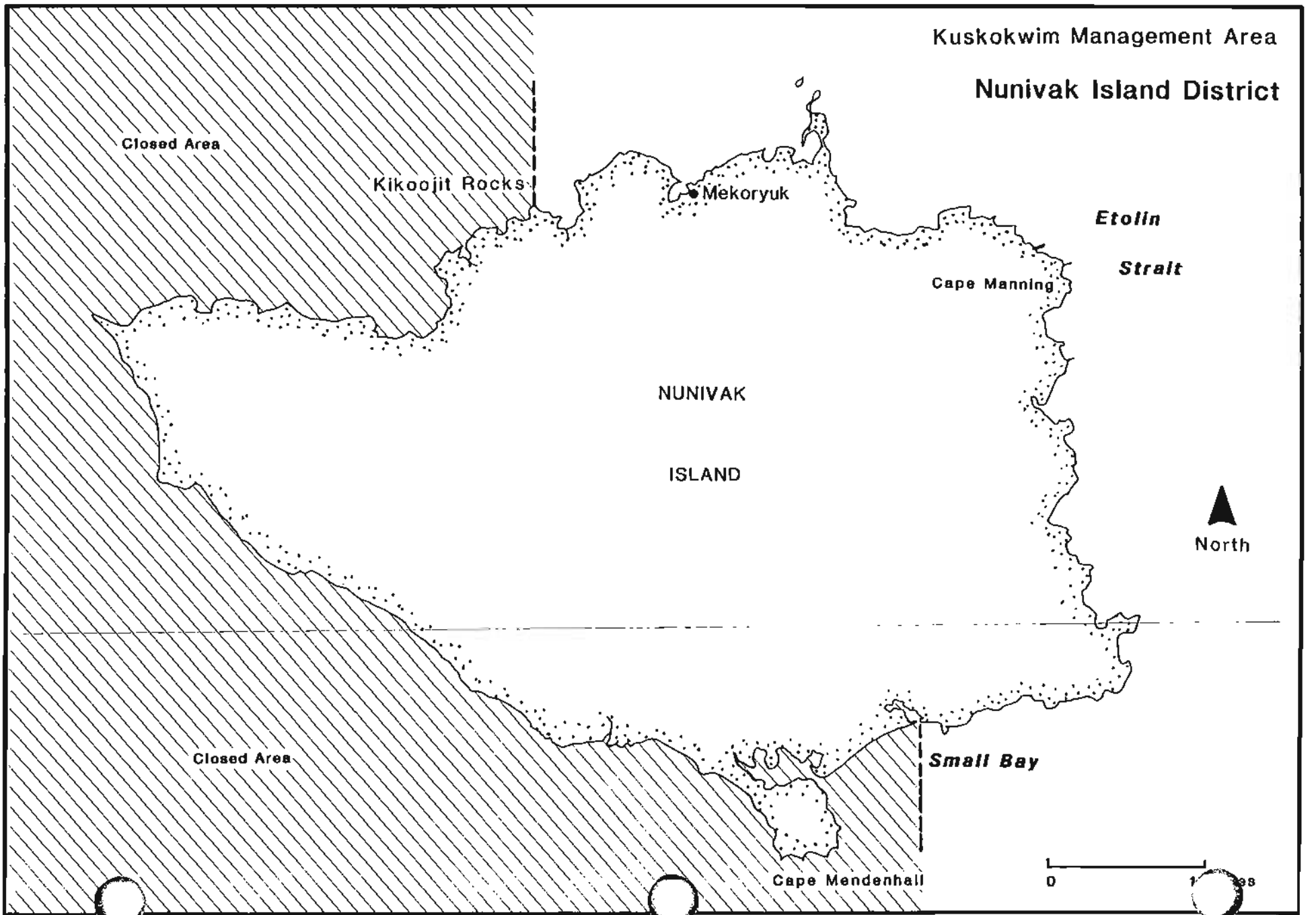

Figure 10. Nunivak Island Herring District.

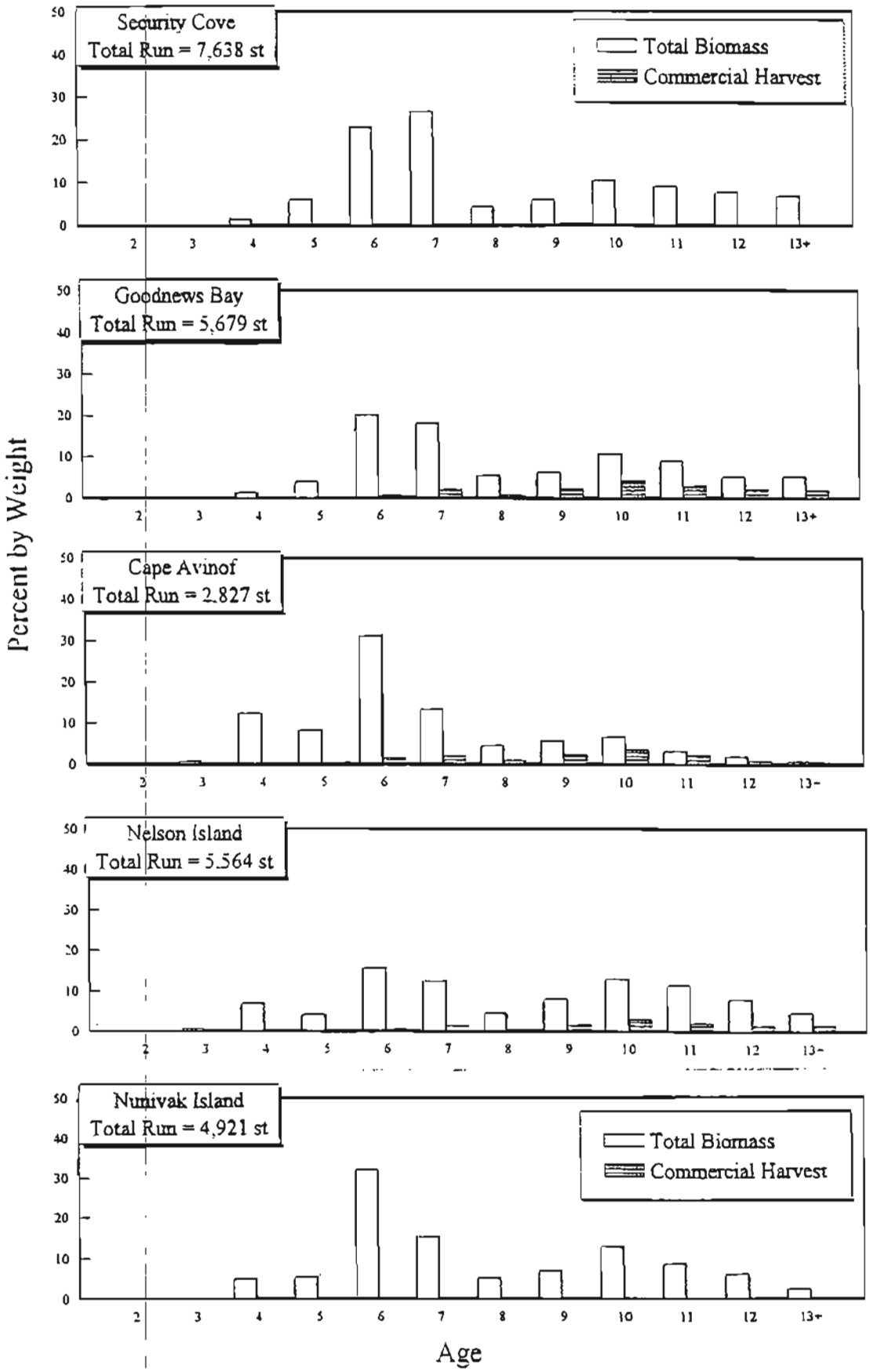

Figure 11. Age composition of Pacific herring in spawning populations and commercial harvest, Kuskokwim Area, 1994.

APPENDICES

APPENDIX A

Appendix A.1 Kuskokwim Area escapement index objectives for chinook, sockeye, coho and chum salmon.

	Escapement Objectives[a]			
	Chinook	Sockeye	Coho	Chum
KUSKOKWIM RIVER:				
1. Kwethluk River				
a. 3-step Mt. to Canyon Cr.	1.0	-	-	7.0
b. Canyon Creek	0.2	-	-	-
2. Kisaralik River				
a. Airstrip to Kisaralik L.	1.0	-	-	8.0
b. Kasigluk R. (upper to lower)	0.1	-	-	4.0
3. Tuluksak R. (Fog R. to Bear Cr.)	0.4	-	-	2.0
4. Aniak River				
a. Buckstock R. to Aniak L.	1.5	-	-	10.0
b. Salmon River	0.6	-	-	3.0
c. Aniak Sonar Project[b]	-	-	-	250.0
5. Holitna River				
a. Nogamut to Kashegelok	2.0	1.0	-	12.0
b. Kogrukluk Weir[c]	10.0	2.0	25.0	30.0
6. Salmon River (Pitka Fork)	1.3	-	-	-
KUSKOKWIM BAY:				
1. Kanektok River to Kagati Lake	5.8	15.0	25.0	30.5
2. Goodnews River System				
a. Main Fork and lakes	1.6	10.4	15.0	17.0
b. Middle Fork and lakes	0.8	5.0	2.0	4.0
c. Middle Fork Tower Project[d]	3.5	25.0	-	15.0

a Escapement objectives in thousands of fish are preliminary and are subject to change as additional data becomes available. Unless otherwise indicated, escapement objectives are based on aerial index counts which do not represent total escapement, but do reflect annual spawner abundance trends when made using standard survey methods under acceptable survey conditions.
b Sonar total escapement estimates.
c Total Kogrukluk River escapement estimates.
d Tower total escapement estimates.

Appendix A.2. Kuskokwim Area commercial, subsistence, and personal use salmon catches, 1913-1994.

	COMMERCIAL CATCH						SUBSISTENCE CATCH			COMBINED TOTAL HARVEST
Year	Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Other	Total	
1913	7,800					7,800				7,800
1914		2,667				2,667				2,567
1915										
1916	949					949				949
1917	7,878					7,878				7,878
1918	3,055					3,055				3,055
1919	4,836					4,836				4,836
1920	34,853					34,853				34,853
1921	9,854					9,854				9,854
1922	8,944	6,120				15,064			180,000	195,064
1923	7,254					7,254				7,254
1924	19,253	900	7,167	7,167		34,487	17,700	203,148	220,848	255,335
1925	1,644	5,800				7,444	10,800	230,850	241,650	249,094
1926									738,576	738,576
1927									286,254	286,254
1928									481,090	481,090
1929									560,196	560,196
1930	7,626	2,448				10,074			538,650	548,724
1931	8,541					8,541			389,367	397,908
1932	9,339					9,339			746,415	755,754
1933							6,290	443,998	450,288	450,288
1934							20,800	597,132	617,932	617,932
1935	6,448		8,296			14,744	22,930	554,040	576,970	591,714
1936	624					624	33,500	549,423	582,923	583,547
1937	480					480			537,111	537,591
1938	624		828			1,452	10,153	400,242	410,395	411,847
1939	134					134	14,000	125,425	139,425	139,559
1940	247		500			747	8,000	415,523	423,523	424,270
1941	187		674			861	8,000	415,523	423,523	424,384
1942							6,400	325,339	331,739	331,739
1943							6,400	325,339	331,739	331,739
:::										
1946	2,288		674			2,962				2,962
1947	5,356					5,356				5,356
:::										
1951	4,210					4,210				4,210
:::										
1954	57					57				57
:::										
:::										
1959	3,760					3,760				3,760
1960	5,969	5,649	5,498		3	17,119	18,752	301,753	320,505	337,624
1961	23,246	2,308	5,090	91	18,864	49,599	27,457	179,529	206,986	256,585

- Continued -

Appendix A.2. (page 2 of 2)

	COMMERCIAL CATCH						SUBSISTENCE CATCH						TOTAL
Year	Chinook	Sockeye	Coho	Pink	Chum	Total	Chinook	Coho[b]	Small[c]	Total			HARVEST
1962	20,867	10,313	12,598	4,340	45,707	93,825	13,455	161,849	175,304	269,129			362,954
1963	18,571		15,660			34,231	33,180	137,649	170,829	205,060			239,291
1964	21,230	13,422	28,992	939	707	65,290	29,017	190,191	219,208	284,498			349,788
1965	24,965	1,886	12,191		4,242	43,284	24,697		250,878	275,575			318,859
1966	25,823	1,030	22,985	268	2,610	52,716	49,022		175,735	224,757			277,473
1967	29,986	652	58,239		8,235	97,112	60,919		214,468	275,387			372,499
1968	43,157	5,887	154,302	75,818	19,694	298,858	35,380		278,008	313,388			612,246
1969	64,777	10,362	110,473	1,251	50,377	237,240	40,208		204,105	244,313			481,553
1970	65,032	12,654	62,245	27,422	60,566	227,919	69,219	11,868	246,810	327,897			555,816
1971	44,936	6,054	10,006	13	99,423	160,432	42,926	6,899	116,391	166,216			326,648
1972	55,482	4,312	23,880	1,952	97,197	182,823	40,145	1,325	120,316	161,786			344,609
1973	51,374	5,224	152,408	634	184,207	393,847	38,526	23,746	179,259	241,531			635,378
1974	30,670	29,003	179,579	60,052	196,127	495,431	26,665	32,780	277,170	336,615			832,046
1975	27,799	17,535	109,814	899	223,532	379,579	47,569		176,389	223,958			603,537
1976	49,262	13,636	112,130	39,998	231,877	446,903	57,899	4,312	223,792	286,003			732,906
1977	58,256	18,621	263,728	434	298,959	639,998	57,925	12,193	203,397	273,515			913,513
1978	63,194	13,734	247,271	61,968	282,044	668,211	38,209	12,437	125,052	175,698			843,909
1979	53,314	39,463	308,683	574	297,167	699,201	57,031		163,451	220,482			919,683
1980	48,242	42,219	327,908	30,306	561,483	1,010,152	62,139	47,335	168,987	278,461			1,288,613
1981	79,378	105,940	278,587	463	485,635	950,003	63,248	28,301	163,554	255,103			1,205,106
1982	79,816	97,716	567,451	18,259	325,471	1,088,713	60,426	45,181	195,691	301,298			1,390,011
1983	93,676	90,834	249,018	379	306,554	740,461	51,020	2,834	149,172	203,026			943,487
1984	74,006	81,307	829,965	23,902	488,482	1,497,662	60,944	15,016	144,651	220,335			1,717,997
1985	74,083	121,221	382,096	111	224,680	802,191	45,720	33,631	24,667	1,062	96,791	201,871	1,004,062
1986	44,972	142,029	736,910	16,569	349,268	1,289,748	54,256		29,742		142,930[c]	226,928	1,516,676
1987	65,558	170,849	478,594	163	603,274	1,318,438	71,804	31,555	18,085	291	70,709	192,444	1,510,882
1988[d]	74,552	149,927	623,719	37,592	1,443,916	2,239,786	56,695	25,571	32,426		118,181	232,873	2,565,615
1989[d]	67,003	82,628	556,312	819	802,199	1,508,961	77,030	33,958	50,046		132,858	293,834	1,802,853
1990	84,706	203,374	445,062	16,082	522,535	1,272,759	77,328	32,218	44,519		108,557	262,622	1,535,381
1991	48,170	202,441	556,818	522	501,692	1,309,643	85,143	51,821	53,478		93,037	283,479	1,593,122
1992	67,597	192,341	772,449	85,978	436,506	1,554,871	61,499	31,497	40,155		87,954	221,105	1,775,956
1993	26,636	167,235	686,570	71	94,937	975,449	75,466	41,323	28,848		48,235	193,872	1,169,321
1994	27,345	191,169	856,100	84,870	360,893	1,519,228	84,142	32,403	29,914		63,831	210,290	1,729,518
Ten Year Average (1984-1993)	62,728	151,335	606,850	36,025[e]	546,749	1,376,951	66,589	35,196[e]	33,698		94,540[f]	232,936	1,619,187

a Primarily chum and coho salmon.
b Reported subsistence coho salmon harvest only. Coho salmon subsistence harvest is poorly documented with no Kuskokwim River estimate attempted prior to 1988.
c Includes sockeye, pink and chum salmon.
d The personal use catch is included with the subsistence catch.
e Even years only.
f Previous nine year average excluding 1986 when the small salmon were not differentiated.

Appendix A.3. Historic events which have potential or actual influence on the commercial salmon fisheries of the Kuskokwim Area.

AR	EVENT
1954	• Commercial chinook salmon quota established.
1959	• First chinook landing since quota established.
1960	• Kanektok Counting Tower (1960-1962) • Kuskokwim Area divided into four subdistricts; Lower Kuskokwim River (Subdistrict 1), Middle Kuskokwim River (Subdistrict 2), Upper Kuskokwim River (Subdistrict 3), Quinhagak (Subdistrict 4). District boundaries are not well recorded; in the Aniak area some commonly used drift sites overlap between District 2 and 3 which confused catch reporting. • Kuskokwim River Drainage Surveys, 1960.
1961	• ADF&G Kuskokwim River tagging study.
1962	• ADF&G Kuskokwim River tagging study. • Boundary between Subdistricts 2 and 3 changed; the new location was not recorded but the most likely location was Kolmakoff River. The reason for the change was to move the boundary to a point which was between commonly used gillnet locations and thereby avoid confusion in catch reporting. As a result, there were no landings in Subdistrict 3.
1963	• ADF&G Kuskokwim River tagging study. • Boundaries of subdistrict documented; Subdistrict 1 extended from Kuskokuak to Mishevik Slough, Subdistrict 2 was from Mishevik Slough to Kolmakoff River, Subdistrict 3 was upstream of Kolmakoff River.
1965	• Kwegooyuk test fishery (1965-1984; no records available for 1965).
1966	• ADF&G Kuskokwim River tagging study. • Subdistrict 3 was deleted from the regulations due to a lack of landings.
1968	• Goodnews Bay was established as District and opened for coho season.
1969	• District 4 tagging study • Kogrukluk River (aka. Holitna River, Ignatti) tower/weir (1969-present).
70	• Effect of explosive detonation in ice on northern pike.
1971	• Commercial fishing time in the Kuskokwim River reduced from two 24 hour periods per week to two 12 hour period per week. • Chum fishery begins in the Kuskokwim River; season was from 25 June to 31 July, location limited to waters downstream of Napakiak, mesh size restricted to 6 in. or smaller. • Fishing periods established by Emergency Order in August. • Gillnet mesh size in Districts 4 and 5 restricted to 6 inch or smaller.
1976	• Commercial fishing time in the Kuskokwim River was reduced from two 12 hour periods per week to two 6 hour periods per week. • Eek River reconnaissance survey. • Study on genetic variants in chum and chinook salmon.
1977	• Fishing periods to be established by Emergency Order before 26 June and after 31 July. • Limited entry permits issued. • Subsistence fishing closed 24 hours before and 6 hours after each commercial fishing period. • Hoholitna River reconnaissance survey.
1978	• Kasigluk River reconnaissance survey. • Kwethluk River sonar project.
1979	• The portion of District 1 used during the chum salmon season was extended from Napakiak upstream to Bethel. • Kasigluk River sonar project. • High seas salmon fleet moved to 20° west.
1980	• Subsistence fishing closed 24 hours before, during and 6 hours after each commercial fishing period. • Aniak River sonar project.
1981	• Pilot test fish and FanScan projects at Bethel. • Inventory of Kisaralik River and Lake. • Goodnews River counting tower (1981-1990). • Salmon River (Pitka Fork drainage) weir project (1981-1984).

-continued-

Appendix A.3. (page 2 of 2)

YEAR	EVENT[a]
1982	• Kanektok River sonar project (1982-1986).
1983	• Pilot test fish project at Bethel using drift gillnets.
1984	• Kwegooyuk test fishery replaced by the Bethel drift test fishery.
1985	• Commercial fishing restricted to mesh sizes less than or equal to 6 inches. • Chum season utilizes entire length of District 1.
1986	• *Migratory timing of coho salmon in the Kuskokwim Area, 1979-1984.* • Kuskokwim River salmon abundance estimate based on calibrated test fish CPUE. • Downstream boundary of District 1 extended to a line from Apokak Slough to Popokamiut.
1987	• Discontinued the directed chinook salmon fishery in the Kuskokwim River. • First fishing period restricted to that portion of District 1 which is downstream of Bethel due to chinook conservation concerns. • Subsistence fishing in all of District is closed before, during and after commercial periods. • South peninsula sockeye and chum salmon tagging study.
1988	• Review of the estimation of Kuskokwim River annual salmon passage through expansion of the Bethel test fish CPUE. • Kuskokwim River sonar project (1988-present). • Kuskokwim River subsistence test fisheries (1988-1990). • District 1 upstream boundary extended to Bogus Creek. • District 2 reduced in size; downstream boundary moved upstream to High Bluffs, the upstream boundary moved downstream to Chuathbaluk. • Portion of Kuskokwim River between Districts 1 and 2 closed to subsistence fishing when District 1 subsistence fishing is closed. • Reorganization of District 1 Statistical Areas. • District 4 Salmon Management Plan adopted. • Establishment of the Kuskokwim River Salmon Management Working Group (1988-present). • Eek Test Fishery (1988-1990, 1992 to present).
1989	• USFWS conducted genetic sampling throughout the Kuskokwim Area. • USFWS conducted chinook tagging study in the lower Kuskokwim River. • Record low temperatures recorded in interior Alaska coupled with shallow snow pack threaten survival of salmon eggs/fry from 1988 spawning.
1990	• ADF&G genetic sampling. • Reorganization of District 1 statistical areas. • Upstream boundary of District 1 moved downstream from Bogus Creek to Big Island. • Downstream boundary of District 2 moved upstream to second slough below Kalskag. • District 4 northern boundary is extended north to Weelung Creek.
1991	• ADF&G genetic sampling. • USFWS begins operation of weir on Tuluksak River (1991-present). • Weir replaces counting tower on Goodnews River (1991-present).
1992	• ADF&G genetic sampling. • Initiation of the Aniak and Chuathbaluk test fisheries. • Eek test fishery is re-established for the coho season. • USFWS begins operation of the Kwethluk River weir (1992) • Ban on high-seas drift gillnet fishing imposed. • Unusual proportion of returning 5 year old chum salmon had a compressed annulus between the second the third winter checks. • Failure of age 4 chum salmon in the Kuskokwim River; Aniak drainage especially hard hit; attributed to cold winter of 1988-89.
1993	• ADF&G genetic sampling. • Failure of age 4 and 5 chum salmon in the Kuskokwim River, Yukon River, and the Norton Sound/Kotzebue Area; cause unknown; especially hard hit were the Aniak drainage and the Yukon fall chum; commercial fishing severely restricted, chum sport fishery was closed, and the subsistence salmon fishery was restricted and closed for a period of time (first time ever).
1993	• ADF&G genetic sampling. • Working Group commissioned and Dr. Mundy started "Recommendations for Strengthing the Cooperative Management Process of the Kuskokwim River Salmon Management Working Group".

a For additional information on specific topics refer to the Region III Report Catalog or historic Area Management Reports for the Kuskokwim Area.

Appendix A.4. Estimated dollar value of Kuskokwim Area commercial salmon fishery, 1964 - 1994.

Year	Gross Value of Catch to Fishermen	Permits Fished[1]	Average Income
1964	83,030		
1965	90,950		
1966	87,466		
1967	138,647		
1968	290,370		
1969	297,233		
1970	362,470		
1971	371,220		
1972	360,727		
1973	827,735		
1974	1,056,042		
1975	899,178		
1976	1,380,229		
1977	3,891,950		
1978	2,337,470		
1979	3,678,000		
1980	2,725,184		
1981	3,766,525		
1982	4,213,954		
1983	2,670,400		
1984	5,809,000	774	7,505
1985	3,248,089	781	4,159
1986	4,746,089	789	6,015
1987	6,392,822	798	8,011
1988	12,514,492	811	15,431
1989	5,194,025	824	6,303
1990	4,895,070	824	5,941
1991	3,961,423	820	4,831
1992	5,295,912	814	6,506
1993	3,962,890	807	4,911
1994	5,201,611	797	6,526
Ten Year Average (1984-1993)	$5,601,981	804	7,961

[1] Permit holders who made at least one delivery. Information not available prior to 1983.

Appendix A.5. Maximum, mean, and minimum number of permits used in a single period by district, 1962 - 1994.

	District 1			District 2			District 4			District 5		
Year	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Min.
1962	190	121	25				32	19	7		Closed	
1963	103	17	1	17	10	2	30	13	1		Closed	
1964	113	30	1	30	4	1	29	15	1		Closed	
1965	164	43	1	5	3	1	31	13	1		Closed	
1966	172	122	61	1	1	1	12	8	1		Closed	
1967	208	144	10	4	2	1	19	8	1		Closed	
1968	262	164	2				78	38	8	17	13	5
1969	274	161	1	11	2	1	119	51	1	28	21	10
1970	320	198	22	11	6	3	75	48	21	25	16	5
1971	355	117	5	20	14	2	48	36	3	11	9	8
1972	341	149	28	12	10	8				12	9	5
1973	372	234	3	18	11	1	70	42	17	17	10	5
1974	444	272	25							40	23	7
1975	483	280	12				106	47	13	30	20	10
1976	495	357	174	55	33	11	99	44	5	35	13	4
1977	487	380	204	83	54	24	172	70	7	21	15	5
1178	509	390	72	24	12	3	123	38	3	24	15	5
1979	549	456	179	33	27	20	126	63	12	27	19	6
1980	482	421	319	37	23	12	101	56	3	35	22	9
1981	541	442	278	151	42	11	106	69	30	38	24	10
1982	499	414	302	47	7	10	107	67	5	30	25	7
1983	547	442	323	34	24	9	134	70	10	62	30	11
1984	542	411	39	33	17	8	165	82	34	47	38	29
1985	530	446	262	15	11	6	191	84	7	47	34	12
1986	600	489	234	27	9	3	216	86	2	52	31	19
1987	607	513	132	22	16	13	253	105	48	75	41	23
1988	640	583	408	21	17	13	202	73	9	68	39	22
1989	679	509	126	22	17	14	140	77	51	65	39	10
1990	653	614	534	18	16	14	218	106	1	58	27	1
1991	662	589	512	19	17	16	227	81	4	50	28	1
1992	653	577	374	21	15	9	187	86	19	91	34	17
1993	654	556	274	17	16	13	219	94	10	80	40	10
1994	606	501	157	17	13	6	171	69	13	88	34	2

Appendix A.6. Commercial Fishing Effort in Kuskokwim Area by Permit-Hour[1], 1960-1994.

Year	Dist. 1	Dist. 2	Dist. 3	Dist. 4	Dist. 5	Total
1960	5,136	960	648	4,368	Closed	11,112
1961	16,200	1,512	1,512	4,992	Closed	24,216
1962	14,274		0	8,434	Closed	22,708
1963	5,712	1,722	0	5,520	Closed	12,954
1964	6,468	1,140	0		Closed	7,608
1965	13,500	546	0	3,696	Closed	17,742
1966	18,270		Closed		Closed	18,270
1967	88,248	1,932		3,954	Closed	94,134
1968	77,466	720		7,986	4,704	90,876
1969	67,140	1,488		29,952	14,055	112,635
1970	56,646	3,414		22,080	9,756	91,896
1971	18,060	1,842				19,902
1972	47,802					47,802
1973	77,478	3,072		18,372	2,928	101,850
1974	124,569	4,950		18,984	8,148	156,651
1975	181,786	3,648		12,312	5,400	203,146
1976	82,788	3,894		14,784	4,848	106,314
1977	73,944	3,426		17,592	3,780	98,742
1978	71,856	1,892		14,952	3,672	92,372
1979	49,608	984		27,096	8,220	85,908
1980	33,370	714		21,636	9,504	65,224
1981	45,096	1,248		25,656	11,256	83,256
1982	46,108	1,128		22,656	14,556	84,448
1983	47,040	708		20,748	9,456	77,952
1984	62,643	1,050		31,488	14,004	109,185
1985	37,452	462		22,254	8,544	68,712
1986	48,744	606		25,740	10,572	85,662
1987	60,525	576		21,222	10,332	92,655
1988	81,724	912		27,440	14,064	124,140
1989	66,470	816		26,134	12,552	105,972
1990	50,642	1,051		44,520	10,548	106,761
1991	62,672	1,320		29,160	11,532	104,684
1992	54,288	1,164		35,380	15,180	106,012
1993	39,210	774		35,988	13,118	89,090
1994	54,750	702		26,580	15,768	96,800
Ten Year Average (1984-93)	56,437	943		29,933	12,045	99,288

[1] The number of permits that made deliveries times the number of hours in the period.

Appendix A.7. Mean salmon weights and prices paid to commercial fishers in the Kuskokwim Area, 1967-1994.

	Mean Weight - Pounds					Average Price - $/Pound				
Year	Chinook	Sockeye	Coho	Pink	Chum	Chinook	Sockeye	Coho	Pink	Chum
1967	27.8	7.4	5.9	a	7.0	0.13	0.05	0.09	a	0.04
1968	23.8	6.2	7.2	4.0	7.9	0.16	0.10	0.09	0.05	0.04
1969	19.6	6.2	7.3	3.6	5.8	0.19	0.15	0.10	0.06	0.07
1970	18.9	5.4	7.3	3.3	6.1	0.20	0.21	0.14	0.08	0.08
1971[b]	26.2	6.9	6.1	a	6.4	0.17	0.10	0.13	a	0.08
1972	a	a	a	a	a	0.20	a	0.16	a	0.08
1973	a	a	a	a	a	0.25	a	0.26	a	0.19
1974	a	a	a	a	a	0.46	0.34	0.27	0.23	0.25
1975	a	a	a	a	a	0.54	a	0.31	a	0.26
1976[c]	17.0	6.7	7.8	3.5	7.0	0.64	0.43	0.40	0.25	0.27
1977	22.7	8.3	7.8	3.9	7.3	1.15	0.45	0.65	0.25	0.45
1978	24.2	6.5	7.1	3.9	8.9	0.50	0.49	0.40	0.12	0.32
1979	16.6	6.9	7.9	3.9	7.0	0.66	0.53	0.75	0.11	0.37
1980	14.1	6.7	6.9	3.6	6.4	0.47	0.31	0.64	0.12	0.24
1981	17.8	7.2	6.4	3.5	7.5	0.84	0.61	0.63	0.11	0.23
1982	19.3	7.2	7.3	3.6	7.3	0.82	0.41	0.53	0.05	0.22
1983	18.8	6.8	6.8	3.5	7.4	0.54	0.51	0.39	0.05	0.33
1984	16.4	6.6	7.7	3.2	6.7	0.89	0.52	0.55	0.07	0.28
1985	17.0	7.0	7.5	3.6	7.1	0.71	0.59	0.51	0.05	0.25
1986	17.0	7.2	6.4	3.4	6.8	0.80	0.70	0.60	0.05	0.25
1987	15.2	7.5	7.2	3.7	6.8	1.10	1.30	0.73	0.10	0.27
1988	15.1	7.3	7.5	3.4	8.1	1.30	1.42	1.25	0.15	0.40
1989	16.6	7.2	7.3	3.4	6.8	0.75	1.20	0.55	0.05	0.26
1990	15.1	6.7	6.5	3.2	6.9	0.56	1.05	0.75	0.12	0.26
1991	15.3	6.9	6.5	3.4	6.3	0.56	0.67	0.45	0.12	0.31
1992	13.4	7.0	7.3	3.9	6.8	0.66	0.90	0.45	0.06	0.32
1993	14.3	7.1	6.6	3.4	6.5	0.62	0.70	0.58	0.25	0.40
1994	15.6	6.9	7.6	3.6	6.6	0.51	0.53	0.57	0.08	0.21
Ten Year Average (1984-93)	15.5	7.0	7.1	3.5	6.9	0.80	0.91	0.64	0.10	0.30

[a] Information unavailable.
[b] Information was not available for district 5.
[c] Information was not available for district 4.

Appendix A.8. Historic salmon escapement data from current Kuskokwim Area projects, 1976-1994.

YAR	Operating Period	SPECIES Chinook	Sockeye	Coho	Pink	Chum
KOGRUGLUK WEIR[a] Objectives		10,000		25,000		30,000
1976	06/29 to 07/31	5,579	2,326	b	-	8,117
1977	07/14 to 07/27	1,945	1,637	b	2	19,444
1978	06/28 to 07/31	13,667	1,670	b	2	48,125
1979	07/01 to 07/24	11,338	2,628	b	1	18,599
1980	07/01 to 07/11	6,572	3,200	b	1	41,777
1981	06/27 to 10/25	16,655	18,066	11,455	6	57,365
1982	07/09 to 09/14	10,993	17,297	37,796	19	64,077
1983	06/22 to 07/02	2,992	1,176	8,538	-	9,407
1984	06/19 to 09/15	4,928	4,133	27,595	-	41,484
1985	06/29 to 09/07	4,619	4,359	16,441	-	15,005
1986	07/06 to 10/05	5,038	4,224	22,506	-	14,693
1987	08/09 to 09/23	4,063	b	22,821	-	17,422
1988	07/05 to 09/17	8,505	4,397	13,512	-	39,540
1989	07/07 to 09/14	11,940	5,811	b	-	39,548
1990	06/28 to 09/07	10,218	8,406	6,132	1	26,765
1991	07/04 to 09/15	7,850	16,455	9,933	4	24,188
1992	07/01 to 08/21	6,755	7,540	26,057	11	34,105
1993	07/02 to 09/06	12,332	29,358	20,517	0	31,899
1994	07/02 to 09/10	15,227	14,192	34,695	23	46,192
ANIAK SONAR[c] Objective						250,000
1980	06/22 to 07/30	56,469	-	-	-	1,169,470
	08/16 to 09/12	-	-	81,556	-	-
1981	06/16 to 08/06	42,060	-	-	-	589,286
1982	06/21 to 08/01	33,864	-	-	-	442,461
1983	06/18 to 07/28	4,911	-	-	-	129,367
1984	06/16 to 07/30	-	-	-	-	266,976
1985	06/22 to 07/28	-	-	-	-	253,051
1986	06/26 to 07/24	-	-	-	-	209,080
1987	06/22 to 07/31	-	-	-	-	193,013
1988	06/22 to 07/31	-	-	-	-	401,511
1989	06/21 to 07/24	-	-	-	-	243,922
1990	06/23 to 08/06	-	-	-	-	232,260
1991	06/29 to 07/29	-	-	-	-	314,166
1992	06/22 to 07/29	-	-	-	-	84,269
1993	06/24 to 07/28	-	-	-	-	13,870
1994	06/28 to 07/28	-	-	-	-	388,163
TULUKSAK RIVER WEIR						
1991	06/12 to 09/18	697	34	4,651	391	7,675
1992	06/24 to 09/10	1,083	129	7,501	2,458	11,183
1993	06/17 to 09/10	2,218	88	8,328	210	13,804
1994	06/29 to 09/11	2,922	94	8,213	3,450	15,707
KWETHLUK RIVER WEIR						
1992	06/18 to 09/12	9,675	1,316	45,605	45,952	30,596
MIDDLE FORK GOODNEWS RIVER TOWER/WEIR[d]						
Objectives		3,500	25,000	NA	NA	15,000
1981	06/13 to 08/15	3,688	49,108	357	1,327	21,827
1982	06/23 to 08/03	1,395	56,255	62	13,855	6,767
1983	06/11 to 07/28	6,027	25,816	0	34	15,548
1984	06/15 to 07/31	3,260	32,053	249	13,744	19,003
1985	06/27 TO 07/31	2,831	24,131	282	144	10,367
1986	06/16 TO 07/24	2,083	51,069	163	8,133	14,756
1987	06/22 to 07/30	2,274	28,871	62	62	17,519
1988	06/23 to 07/30	2,712	15,799	6	6,781	20,799
1989	06/29 to 07/31	1,915	21,196	145	246	10,380
1990	06/19 to 07/24	3,636	31,679	0	3,378	6,410
1991[e]	06/29 to 08/24	2,147	47,397	92	1,694	27,525
1992	06/29 to 08/25	1,899	27,267	150	23,030	22,023
1993	06/22 to 08/18	2,491	26,044	1,451	253	14,287
1994	06/23 to 08/08	3,856	55,751	309	38,705	34,849

a Pink salmon can pass freely through the Kogrukluk Weir.
b No counts or incomplete count as project was not operated during the species' migration.
c Aniak sonar counts are adjusted to provide the total estimated escapements.
d The Goodnews River salmon counting tower's scheduled termination date precludes adequate assessment of the coho and pink salmon escapement.
e The Goodnews tower was converted into a weir in 1991

Appendix A.9. Fish species commonly found in the Kuskokwim Area[a].

Species Code	Genus and Species	Common Name
110	Gadus macrocephalus	Pacific Cod
113	Eleginus gracilis	Saffron Cod
129	Platichthys stellatus	Starry Flounder
122	Pleuronectes glacialis	Arctic Flounder
127	Pleuronectes aspera	Yellowfin Sole
128	Pleuronectes vetulus	English Sole
162	Cottus cognatus	Slimy Sculpin
166	Oligocottus maculosus	Tidepool Sculpin
192	Hexagrammos stelleri	Whitespotted Greenling
200	Hippoglossus stenolepis	Pacific Halibut
230	Clupea pallasi	Pacific Herring
410	Oncorhynchus tshawytscha	Chinook Salmon
420	Onchornynchus nerka	Sockeye Salmon
430	Onchornynchus kisutch	Coho Salmon
440	Onchornynchus gorbuscha	Pink Salmon
450	Onchornynchus keta	Chum Salmon
500	Esox lucius	Northern Pike
513	Osmerus mordax	Rainbow Smelt
514	Hypomesus olidus	Pond Smelt
516	Mallotus villosus	Capelin
520	Salvelinus alpinus	Arctic Char
532	Salvelinus malma	Dolly Varden (none anadromous)
541	Onchornynchus mykiss	Rainbow Trout
550	Salvelinus namaycush	Lake Trout
570	Stenodus leucichthys	Inconnu
588	Coregonus nasus	Broad Whitefish
589	Coregonus pidschian	Humpback Whitefish
583	Coregonus sardinella	Least Cisco
584	Coregonus autumnalis	Arctic Cisco
586	Prosopium cylindraceum	Round Whitefish
590	Lota lota	Burbot
600	Lampetra tridentata	Pacific Lamprey
601	Lampetra japonica	Arctic Lamprey
610	Thymallus arcticus	Arctic Grayling
630	Dallia pectoralis	Alaska Blackfish
640	Catostomus catostomus	Longnose Sucker
660	Gasterosteus aculeatus	Threespine Stickleback
661	Pungitius pungitius	Ninespine Stickleback
670	Percopsis omiscomaycus	Trout Perch
NA	Megalocottus platycephalus	Belligerent Sculpin
NA	Myoxocephalus quadricornis	Fourhorn Sculpin

a Based on American Fisheries Society Special Publication No. 20, Common and Scientific Names of Fishes from the United States and Canada (Fifth Edition). Committee and Names of Fishes, Bethesda, Maryland, 1991.

Appendix A. Kuskokwim Area subsistence chinook salmon harvest by village, 1960-1972.

COMMUNITY	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
KIPNUK		248	11	123	75	a							
KWIGILLINGOK	250	35	43	106	339	a	250	957	70		220	200	10
KONGIGANAK	b	b	b	b						385	891	41	
TUNTUTULIAK	226	2,226	842	2,853	1,826	1,575	3,097	3,462	2,214	2,195	3,558	1,841	3,214
EEK					c	c	2,921	4,572	2,566	2,038	2,065	1,882	1,969
KASIGLUK & EEK					1,857	3,123							
KASIGLUK	135	1,215	127	1,302	c	c	1,032	2,766	1,485	2,888	3,931	1,645	1,292
NUNAPITCHUK	683	2,042	848	1,874	636	490	2,213	1,926	1,750	2,279	4,680	1,978	2,496
ATMAUTLUAK	b	b	b	b	b	b	b	b	b	b	1,205	548	864
NAPAKIAK	1,830	2,573	2,191	3,148	2,677	2,872	3,658	3,895	2,468	3,546	4,960	1,868	2,009
NAPASKIAK	536	1,258	759	1,569	2,201	1,071	2,710	2,998	1,663	2,227	3,446	1,916	1,578
OSCARVILLE	1,968	282	75	309	339	688	322	1,127	393	457	542	570	196
BETHEL	1,923	4,150	1,378	7,019	4,114	3,371	8,046	13,925	6,205	7,472	17,026	8,731	8,371
KWETHLUK	2,692	3,763	2,329	5,050	3,262	2,887	6,551	6,993	2,848	3,187	7,932	5,564	5,137
AKIACHAK	1,626	3,052	1,800	2,533	3,488	3,685	4,904	5,543	3,755	2,602	7,022	4,818	3,872
AKIAK	1,865	3,159	906	2,869	2,495	1,345	3,670	3,660	1,822	1,275	3,290	2,688	1,899
TULUKSAK	737	1,486	493	1,295	572	1,021	1,576	1,709	1,048	1,131	1,995	1,280	1,318
LOWER KALSKAG	961	571	c	c	710	c	c	c	1,502	2,102	2,146	2,355	2,604
UPPER KALSKAG	667	1,049	c	c	1,143	c	c	c	1,619	1,623	734	601	401
KALSKAGS COMB.			805	2,661		1,395	3,379	3,567					
ANIAK	1,057	688	185	602	1,104	c	2,072	1,280	517	1,406	2,136	1,076	2,105
ANIAK[d]						642							
CHUATHBALUK	64	54	10	30	74	c	139	217	34	180	219	179	261
NAPAIMUTE	20	16	44	52	134	a	78	60	94	19	22	17	20
CROOKED CREEK	747	518	561	859	1,358	374	1,446	585	77	541	684	291	183
GEORGETOWN							12		0	9	2	0	0
RED DEVIL	c	40	c	c	c	c			111	142	232	135	182
SLEETMUTE	c	222	c	c	c	c	303	343	207	267	161	181	69
SLEETMUTE[e]	465	262	144	228	314	79			318	409	393	316	251
KASHEGELOK[f]							10						
STONY RIVER	435	25	31		299	79	636	303	176	2,187	105	402	95
LIME VILLAGE										50	15	2,119	
MCGRATH							300	25					
TAKOTNA													
NIKOLAI													
TELIDA													
QUINHAGAK								1,349	2,756				
GOODNEWS BAY													
PLATINUM													
TOTAL	18,887	28,934	13,582	34,482	29,017	24,697	49,325	61,262	35,698	40,617	69,612	43,242	40,396

Explanation of the above footnotes can be found at the end of this table.

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Appendix A.10. (page 2 of 3)

COMMUNITY	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
KIPNUK[g]										60			
KWIGILLINGOK[g]				75	382	75							
KONGIGANAK				122	361					52			235
TUNTUTULIAK	2,859	1,577	3,492	4,807	2,470	1,656	2,268	2,545	4,446	1,984	2,523	3,519	2,644
EEK	1,981	2,356	2,110	3,232	2,675	1,807	2,003	1,557	1,731	2,578	2,040		1,436
KASIGLUK	1,864	1,411	1,713	1,613	1,324	608	1,142	1,704	3,377	3,115			2,054
NUNAPITCHUK	2,663	1,165	2,092	2,578	2,622	2,178	2,109	2,612	2,918	2,577	2,688		2,019
ATMAUTLUAK	1,106	382	1,042	1,159	1,015	966	2,242	1,288	1,247	1,752			1,559
NAPAKIAK	1,763	1,224	2,864	3,330	2,702	2,140	2,191	2,582	3,017	3,500	2,047		1,805
NAPASKIAK	2,048	900	2,303	3,566	1,989	2,122	2,085	3,160	2,911	2,872			2,155
OSCARVILLE	586	180	891	623	672	349	629	477	495	523			916
BETHEL	8,898	4,631	11,688	13,215	9,408	6,905	11,564	12,591	15,367	13,516	8,492	11,066	6,940
KWETHLUK	3,444	2,694	3,179	4,193	5,563	3,172	6,919	7,627	6,167	5,897		6,732	4,937
AKIACHAK	2,592	1,726	3,534	4,915	5,407	2,951	4,818	5,405	3,094	4,468		5,588	3,254
AKIAK	1,895	1,292	2,837	3,076	2,880	1,850	3,567	3,355	2,386	2,745		3,413	2,975
TULUKSAK	1,322	883	1,338	1,411	2,906	1,906	1,489	2,807	2,446	2,220	1,671	2,286	2,749
LOWER KALSKAG	1,309	1,586	2,755	4,536	1,750	1,951	2,821	3,917	3,271	2,594		3,242	1,707
UPPER KALSKAG	938	463	1,752	1,413	2,813	1,253	1,590	1,889	1,171	963		657	605
ANIAK	1,030	1,952	1,391	1,490	4,991	1,331	2,634	2,750	3,102	2,071	3,174	1,847	1,828
CHUATHBALUK	942	674	594	657	1,507	1,238	2,189	1,507	841	1,491			1,102
NAPAIMUTE	13	6	16	420	176	144	149	90	45	138			53
CROOKED CREEK	269	650	238	264	619	488	728	654	512	515			218
GEORGETOWN	0				66	0		93					
RED DEVIL	138	205	623	195	324	153	488	255	298	273			176
SLEETMUTE	504	269	256	356	684	300	755	220	728	242		154	745
SLEETMUTE[e]	642	474	879	551	1,008	453	988	475	1,026	515			921
KASHEGELOK[i]				156	233	92							
STONY RIVER	287	439	761	620	33	182	171	332	233	419			167
LIME VILLAGE			100	33	0		38						
McGRATH							581			160	830	730	59
TAKOTNA							65						
NIKOLAI							60		500	778	750	795	615
TELIDA													
QUINHAGAK					2,012	2,328	1,420	1,940	2,562	2,402	2,542	3,109	2,341
GOODNEWS BAY					574		228	498	1,309	1,185	1,004	597	399
PLATINUM							110	192	100	51	62	32	27
MEKORYUK													
NEWTOK													
NIGHTMUTE													
TOKSOOK BAY													
TUNUNAK													
TOTAL	39,093	27,139	48,448	58,606	59,166	38,598	58,041	62,522	65,300	61,656	51,020[h]	60,668[h]	46,641

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COMMUNITY	1986	1987	1988	1989	1990	1991	1992	1993[i]	1994	1995	1996	1997	1998
KIPNUK[a]				134	108	44		348	150				
KWIGILLINGOK[g]							9	80	7				
KONGIGANAK			468	1,307	915	533	573	507	960				
TUNTUTULIAK	2,452	2,522	2,580	3,552	2,537	3,997	2,175	3,033	3,917				
EEK			1,987	1,685	4,609	2,881	1,772	2,175	2,754				
KASIGLUK			1,077	2,013	2,869	2,566	2,278	548	694				
NUNAPITCHUK	3,410	3,372	1,664	3,087	2,244	3,472	1,695	3,422	4,202				
ATMAUTLUAK			891	1,227	2,067	1,369	1,043	1,654	1,524				
NAPAKIAK		2,760	1,960	3,785	3,413	2,476	2,536	3,173	2,646				
NAPASKIAK		2,907	2,977	4,181	3,413	2,961	2,873	4,192	4,712				
OSCARVILLE		745	415	1,200	721	1,088	856	1,475	1,188				
BETHEL	11,984	8,107	11,671	19,336	18,248	30,233	16,166	21,401	23,558				
KWETHLUK	5,824	8,779	7,543	7,388	7,335	7,072	5,099	7,612	7,727				
AKIACHAK		4,871	5,613	5,438	5,204	4,547	2,907	5,153	5,852				
AKIAK		3,683	3,235	4,562	4,177	2,576	2,117	2,765	3,323				
TULUKSAK		3,712	2,720	3,781	1,706	2,780	1,808	3,159	3,828				
LOWER KALSKAG	1,666		3,312	2,843	2,515	3,835	2,014	2,628	3,619				
UPPER KALSKAG	587		800	1,256	1,446	841	1,285	1,622	1,179				
ANIAK	4,624	2,131	2,709	2,860	3,075	3,303	3,355	3,966	3,125				
CHUATHBALUK			102	446	1,290	672	771	1,145	751				
CROOKED CREEK			481	427	591	1,027	337	581	685				
RED DEVIL			175	156	250	92	280	365	259				
SLEETMUTE			308	420	597	775	686	1,499	1,162				
STONY RIVER			210	692	385	537	161	409	261				
LIME VILLAGE			426	105	205	50	196	35	135				
MCGRATH			253	519	688	821	845	536	1,020				
TAKOTNA			150	62	126	0	0	0	0				
NIKOLAI			150	706	547	316	571	449	429				
TELIDA				1					0				
QUINHAGAK	2,682	3,663	2,508	3,048	5,050	3,536	2,545	3,198	3,336				
GOODNEWS BAY	513	640	289	414	682	664	195	448	585				
PLATINUM	42	176	21	44	177	18	49	50	72				
MEKORYUK[g]				0	0	0		0	6				
NEWTOK[g]			56	5	1				2				
NIGHTMUTE[g]			22		3	10			8				
TOKSOOK BAY[g]			136	136	108	40	49	128	313				
TUNUNAK[g]			64	5	0	10		5	0				
OTHER[g]						0	21		0				
TOTAL	54,256[h]	71,804[h]	56,973	76,821	77,302	85,142	57,267	77,764	84,009				

a Data collected, combined with unspecified village or villages.
b Village not yet founded.
c Data collected, but reported with another village.
d Aniak, Chuathbaluk and Russian Mission.
e Sleetmute to Red Devil.
f Kashegelok and Hoijtna.
g Reported catch only.
h Kuskokwim Area total estimate based on a village subsistence survey.
i Beginning in 1993, estimate based on new formula data not comparable to previous year.

Appendix A.11. Kuskokwim Area subsistence sockeye salmon harvest by village, 1985 - 1994.

COMMUNITY	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
KIPNUK					402	175	38		90	132
KWIGILLINGOK[a]									140	5
KONGIGANAK	130			664	603	264	325	580	452	541
TUNTUTULIAK	1,498	288	991	565	1,018	955	1,646	1,167	788	2,664
EEK	241			302	168	1,212	552	545	335	435
KASIGLUK	1,138			296	231	732	1,249	627	122	275
NUNAPITCHUK	1,447	905	1,187	640	987	702	1,951	1,055	2,279	1,399
ATMAUTLUAK	1,308			252	1,129	1,121	652	1,093	1,269	669
NAPAKIAK	1,242		1,439	689	1,722	1,070	1,150	994	912	1,212
NAPASKIAK	1,181		2,199	855	620	894	2,080	1,681	2,570	1,429
OSCARVILLE	942		438	1,752	329	122	506	677	932	324
BETHEL	3,409	7,730	3,810	4,357	5,712	5,892	18,205	6,708	10,179	7,987
KWETHLUK	5,584	5,423	3,845	3,592	2,443	3,234	3,559	1,438	3,162	3,120
AKIACHAK	3,182		3,532	2,870	2,584	2,115	3,344	2,017	3,232	2,412
AKIAK	1,368		1,883	1,203	1,301	1,393	1,316	986	2,305	1,224
TULUKSAK	1,620		1,733	1,235	2,234	991	2,976	1,643	2,091	1,175
LOWER KALSKAG	948	783		1,732	765	662	925	400	1,583	859
UPPER KALSKAG	187	1,182		321	338	292	237	321	336	262
ANIAK	2,116	2,652	2,101	740	761	1,194	2,086	1,002	1,354	529
CHUATHBALUK	1,797			132	229	885	1,059	384	653	720
NAPAIMUTE	125									
CROOKED CREEK	1,218			254	413	940	1,007	349	623	349
RED DEVIL	205			291	332	408	232	266	538	213
SLEETMUTE	1,351			640	776	890	1,366	715	1,364	1,013
STONY RIVER	585			130	1,084	685	1,753	1,012	2,400	583
LIME VILLAGE				571	5,653	2,100	797	2,850	0	1,100
McGRATH				0	0	0	0	0	0	0
TAKOTNA				0	0	0	0	0	0	0
NIKOLAI	0			0	0	0	0	0	0	0
TELIDA					0					0
QUINHAGAK	106	423	1,067	857	450	1,544	1,538	857	1,035	823
GOODNEWS BAY	562	860	834	898	704	905	780	418	557	551
PLATINUM	142	83	121	167	151	140	120	138	32	101
MEKORYUK[a]				1	0	50	1	0	1	87
NEWTOK[a]				50	10	3			0	20
NIGHTMUTE[a]				510	0	10	110		0	15
TOKSOOK BAY[a]				1,739	286	212	155	1	66	188
TUNUNAK[a]				625	83	7	100		30	0
OTHER[a]							0	1	0	0
TOTAL	33,632	20,239[b]	25,180[b]	28,930	33,518	31,799	51,815	29,925	42,793	32,403

a Reported harvest only.
b Estimated total based on sampled villages.
c Beginning in 1993, estimate based on new formula data not comparable to previous year.

Appendix Kuskokwim Area subsistence coho salmon harvest by village, 1985

COMMUNITY	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
KIPNUK[a]					243	460	30		25	87
KWIGILLINGOK[a]									80	0
KONGIGANAK	88			917	525	265	370	346	322	439
TUNTUTULIAK	371	1,692	760	710	484	759	723	454	691	370
EEK	406			261	299	1,703	457	464	168	405
KASIGLUK	1,763			713	687	908	1,687	999	228	387
NUNAPITCHUK	513	1,084	696	651	487	287	904	1,016	292	698
ATMAUTLUAK	326			266	971	322	294	270	389	348
NAPAKIAK	836		959	373	1,763	1,506	559	934	467	684
NAPASKIAK	415		629	1,148	809	674	595	600	568	1,488
OSCARVILLE	155		40	50	684	34	95	216	0	49
BETHEL	6,094	19,351	8,077	6,434	18,594	18,126	29,229	14,899	13,360	11,459
KWETHLUK	3,041	3,545	2,537	3,649	3,307	3,406	2,185	1,816	1,525	1,513
AKIACHAK	967		286	4,653	1,879	915	1,887	1,402	945	1,113
AKIAK	1,270		1,294	1,377	2,523	1,715	1,660	750	848	756
TULUKSAK	1,723		337	1,271	1,261	846	1,567	1,263	345	241
LOWER KALSKAG	596	2,211		173	731	676	410	413	546	764
UPPER KALSKAG	105	759		126	688	261	387	899	342	162
ANIAK	1,552	1,051	2,302	1,244	2,461	1,094	1,042	1,545	938	1,573
CHUATHBALUK	393			216	305	601	79	278	290	578
NAPAIMUTE	211									
CROOKED CREEK	290			69	536	534	190	315	311	415
RED DEVIL	846			448	1,516	794	617	966	1,359	680
SLEETMUTE	1,330			1,266	1,009	859	1,614	855	747	568
STONY RIVER	395			107	611	195	460	415	470	367
LIME VILLAGE				1,319	2,025	484	280	1,027	530	600
McGRATH				454	697	1,512	818	2,351	1,880	1,143
TAKOTNA				0	40	0	0	0	0	0
NIKOLAI	550			583	328	55	62	163	252	119
TELIDA					60				0	0
QUINHAGAK	67	41	125	2,933	3,346	3,510	2,901	2,172	2,036	2,282
GOODNEWS BAY	210	0	0	1,072	819	1,472	1,222	740	862	362
PLATINUM	11	8	43	90	68	90	31	166	18	77
MEKORYUK[a]					117	52	130	2	53	87
NEWTOK[a]					15	4				0
NIGHTMUTE[a]					70	0	20			0
TOKSOOK BAY[a]					44	15	1	15	57	101
TUNUNAK[a]					9	0	0		70	0
OTHER[a]							39	0		0
TOTAL	24,524	29,742[b]	18,085[b]	32,573	50,011	44,134	52,545	37,751	31,015	29,914

a Reported harvest only.
b Estimated total based on sampled villages.
c Beginning in 1993, estimate based on new formula data not comparable to previous year.

Appendix A.13. Kuskokwim Area subsistence chum salmon harvest by village, 1985 - 1994.

COMMUNITY	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
KIPNUK					37	540	15		601	169
KWIGILLINGOK[a]									200	5
KONGIGANAK	671			1,178	1,830	618	679	951	520	1,029
TUNTUTULIAK	4,346	2,734	5,385	4,424	4,559	4,072	4,620	3,685	2,405	4,378
EEK	401			1,188	966	2,665	843	1,210	204	587
KASIGLUK	4,199			2,788	2,872	2,623	2,972	2,814	374	537
NUNAPITCHUK	4,346	4,676	4,621	5,312	6,674	4,053	5,262	3,902	4,349	4,107
ATMAUTLUAK	4,440			3,701	3,014	3,168	1,801	2,242	1,216	1,227
NAPAKIAK	3,686		2,784	2,876	6,934	6,538	2,272	3,358	1,815	3,047
NAPASKIAK	5,810		6,832	8,876	12,203	5,488	5,042	4,239	2,697	4,147
OSCARVILLE	1,294		1,135	2,461	1,132	676	567	1,209	566	667
BETHEL	9,260	14,778	7,974	13,536	19,214	16,852	23,444	13,922	8,874	11,914
KWETHLUK	6,866	9,736	7,636	14,667	10,237	8,016	4,921	5,910	2,914	5,088
AKIACHAK	5,931		4,355	10,417	7,307	6,222	4,764	3,846	2,511	4,553
AKIAK	6,724		3,837	5,847	7,216	6,227	4,097	3,801	4,666	3,136
TULUKSAK	6,064		3,466	5,826	7,961	4,967	4,697	3,645	3,217	2,098
LOWER KALSKAG	4,637	2,538		9,016	4,069	3,637	2,128	2,433	2,086	2,499
UPPER KALSKAG	1,855	3,684		3,090	3,427	1,320	2,129	2,498	559	760
ANIAK	8,804	5,905	5,751	7,551	9,332	6,175	3,533	6,281	2,486	2,429
CHUATHBALUK	3,782			1,350	2,280	2,102	1,625	2,062	2,296	1,176
NAPAIMUTE	414									
CROOKED CREEK	2,888			597	772	1,760	1,130	571	536	442
RED DEVIL	1,021			2,112	1,153	1,344	674	1,305	753	835
SLEETMUTE	3,689			3,472	1,813	1,574	1,915	2,610	578	1,357
STONY RIVER	722			2,270	1,352	597	552	924	710	678
LIME VILLAGE				570	2,100	2,250	596	1,522	435	1,300
McGRATH				367	2,258	1,833	999	2,394	557	795
TAKOTNA				300	250	128	0	0	0	0
NIKOLAI	2,900			2,644	1,178	829	371	772	334	293
TELIDA					15					0
QUINHAGAK	901	808	1,084	724	1,262	2,620	1,346	1,334	974	1,208
GOODNEWS BAY	339	188	371	405	609	342	102	574	133	357
PLATINUM	9	3	207	43	140	125	4	74	0	45
MEKORYUK[a]				500	3,601	1,067	1,178	0	808	2,337
NEWTOK[a]				22	20	4				0
NIGHTMUTE[a]				218	30	35	60			7
TOKSOOK BAY[a]				745	95	160	253	246	296	622
TUNUNAK[a]				268	16	65	0		30	0
OTHER[a]							3	1		0
TOTAL	95,999	142,930[b]	70,709[b]	119,361	127,928	100,692	84,594	80,335	50,898	63,831

a Reported harvest only.
b Estimated total based on sampled villages.
c Beginning in 1993, estimate based on new formula data not comparable to previous year.

APPENDIX B

Appendix B.1. Kuskokwim River distances[1].

Location	Distance from the Mouth		Distance from Bethel	
	Kilometer	Miles	Kilometer	Miles
Popokamiut (Lower boundary District 1)	-3	-2	-129	-80
Kuskokwim River Mouth 60.80 N, 162.42 W	0	0	-125	-78
Eek Island, Southernmost tip, (Lower boundary District 1)	19	12	-106	-66
Apokak Slough (Lower boundary District 1)	35	22	-90	-56
Eek River	39	24	-87	-54
Kwegooyuk	42	26	-84	-52
Kinak River	48	30	-78	-48
Tuntutuliak Village	56	35	-87	-54
Kialik River	59	37	-66	-41
Fowler Island	83	52	-42	-26
Johnson River	93	58	-32	-20
Napakiak Village	104	65	-21	-13
Napaskiak Village	115	71	-12	-7
Oscarville Village	115	71	-11	-7
Bethel City	125	78	0	0
Gweek River	145	90	20	12
Kwethluk Village	159	99	34	21
Akiachak Village	169	105	43	27
Kasigluk River	173	108	48	30
Kisaralik River	175	109	50	31
Akiak Village	190	118	64	40
Mishevik Slough,	212	132	87	54
Tuluksak Village	218	136	93	58
Nelson Island (District 1 Boundary)	220	137	95	59
Bogus Creek	234	146	109	68
High Bluffs	264	164	139	86
Boundary of District 2	295	183	170	105
Mud Creek Slough	297	185	172	107
Kalskag Village	309	192	184	114
Aniak Village, Aniak River	362	225	237	147
Chuathbaluk Village (Upper boundary District 2)	375	233	250	155
Kolmakof River	395	246	270	168
Napaimiut Village	410	255	285	177
Holokuk River	415	258	290	180
Oskawalik River	449	279	324	201
Crooked Creek Village	466	290	341	212
Georgetown Village, George River	497	309	372	231
Red Devil Village	526	327	401	249
Sleetmute village	539	335	414	257

-continued-

Appendix B.1. (page 2 of 2)

Location	Distance from the Mouth		Distance from From Bethel	
	Kilometer	Miles	Kilometer	Miles
Holitna River	540	336	415	258
Stony River Village	585	364	460	286
Stony River	587	365	462	287
Swift River	611	380	486	302
Tatlawisksuk River	616	383	491	305
Devil's Elbow	645	401	520	323
Vinasale	740	460	615	382
McGrath Village	815	507	690	429
Middle Fork	889	553	764	475
Big River	801	560	776	482
Pitka Fork	920	572	795	494
Medra Village	928	577	803	499
South Fork	931	579	806	501
East Fork	943	586	818	508
North Fork	943	586	818	508
Nikolai Village	999	621	874	543
Swift Fork	1,136	706	1,011	628
Telida Village	1,184	736	1,059	658
Highpower Creek	1,200	746	1,075	668
Fish Creek	1,284	798	1,159	720
North Fork Lake	1,334	829	1,209	751
Top of Kuskokwim Drainage	1,498	931	1,373	853

a These distances were taken from the USGS 1:36,300 series of topographic maps. The "mouth" was defined as the point where the "grassland" banks are 24 miles apart. Some locations are not on the mainstem of the Kuskokwim River, as a result their mileages appear to be out of sequence since they are listed in the order of the turn off.

Appendix 8.2 Historic daily CPUE for chinook salmon catches in the Eek test fishery.

Date	Daily CPUE					Cumulative CPUE (begin 6/7)					Percent Passage					Mean
	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	88-93
06/01			2	17	0											
06/02			4	16	3											
06/03			4	17	16											
06/04		w	7	5	23		w									
06/05		14	27	11	14											
06/06		10	22	3	13											
06/07	9	8	12	5	26	15	8	12	5	26	3	2	3	1	5	2
06/08	15	17	12	8	3	30	25	23	13	30	5	7	5	4	6	5
06/09	9	9	24	10	6	39	34	47	23	36	7	9	11	7	7	8
06/10	24	11	20	24	28	63	45	67	48	63	11	12	15	13	13	13
06/11	29	11	13	13	43	92	57	80	60	106	16	15	18	17	22	17
06/12	12	14	17	10	122	104	71	97	71	228	19	19	22	20	47	20
06/13	38	12	31	29	69o	142	83	128	100	297o	25	23	30	28	62	26
06/14	57	36	0	13	28	199	119	128	113	325	36	32	30	32	67	32
06/15	52	38	19	25	39	251	157	147	138	364	45	43	34	39	75	40
06/16	40c	60	10	11	0	291c	217	157	149	364	52	59	36	42	75	47
06/17	27	12	17	28	36	318	229	174	177	399	57	63	40	50	83	52
06/18	22w	22	12	20	10	339w	251	186	197	409	61	69	43	55	85	57
06/19	22m	12c	12	12	6	361m	263c	198	208	415	65	72	46	58	86	60
06/20	22c	3	10c	6	9	382c	265	208c	214	424	68	73	48	60	88	62
06/21	17	8	8	16	3	399	274	217	231	427	71	75	50	65	89	65
06/22	3	27	16w	3	3	402	301	233w	234	430	72	82	54	66	89	68
06/23	8	19c	23	6	8	410	320c	256	239	438	73	87	59	67	91	72
06/24	8c	12	9	15	4c	418c	332	265	255	442c	75	91	61	71	92	75
06/25	8	4	5c	14c	0	426	335	270c	269c	442	76	92	62	75	92	76
06/26	13	3c	0	13w	5	439	338c	270	282w	447	79	92	62	79	93	78
06/27	18	2	6	12	3	458	340	276	294	450	82	93	64	83	93	80
06/28	10c	0	13	3	3	468c	340	289	297	453	84	93	67	83	94	82
06/29	2	6	12c	4	8	469	346	301c	301	461	84	95	70	84	96	83
06/30	8	3c	10	15	3	478	349c	311	316	464	86	95	72	89	96	85
07/01	20	0	6	6	2	497	349	317	322	466	89	95	73	90	97	87
07/02	11c	0	4	2	2	508c	349	321	323	468	91	95	74	91	97	88
07/03	2	3c	10	10	0	510	353c	331	333	468	91	96	77	93	97	89
07/04	2h	3h	2	2	5	512h	356h	332	335	473	92	97	77	94	98	90
07/05	2c	3c	11c	0	3	514c	359c	343c	335	476	92	98	79	94	99	91
07/06	2	7	20	1	0	517	366	363	336	476	93	100	84	94	99	93
07/07	0	0	7	7	0o	517	366	369	344	476m	93	100	85	96	99	94
07/08	2c	0c	7	3	0m	519c	366c	376	347	476o	93	100	87	97	99	94
07/09	5	0m	5c	2	1o	524	366m	380c	349	477o	94	100	88	98	99	95
07/10	0	0	3	0	2	524	366	384	349	478	94	100	89	98	99	95
07/11	3c	0c	9	2	0	527c	366c	393	350	478	94	100	91	98	99	96
07/12	3w	0	8	3	2	529w	366	401	353	480	95	100	93	99	99	97
07/13	3w	0	7	0	0	532w	366	408	353	480	95	100	94	99	99	97
07/14	3c	0c	3c	2	0c	535c	366c	411c	355	480c	96	100	95	100	99	98
07/15	5	0	0	0	0	540	366	411	355	480	97	100	95	100	99	98
07/16	2	0	0	0	0	542	366	411	355	480	97	100	95	100	99	98
07/17	0	0h	0	1	0	542	366h	411	356	480	97	100	95	100	99	98
07/18	0c	0c	3	0	0	542c	366c	415	356	480	97	100	96	100	99	98
07/19	0	0h	2	0	1c	542	366h	416	356	481c	97	100	96	100	100	98
07/20	0	0h	0	0	2	542	366h	416	356	483	97	100	96	100	100	98
07/21	1c	0h	4	0	0	543c	366h	420	356	483	97	100	97	100	100	99
07/22	1h	0	2h	0	0	543h	366	422h	356	483	97	100	98	100	100	99
07/23	1h	0	0	0	0c	544h	366	422	356	483c	97	100	98	100	100	99
07/24	1h	0	7	0h	0	544h	366	429	356h	483	97	100	99	100	100	99
07/25	1c	0	0	0h	0	545c	366	429	356h	483	98	100	99	100	100	99
07/26	1h	0	0	0	0c	545h	366	429	356	483c	98	100	99	100	100	99
07/27	1h	0c	0	0h	0	546h	366c	429	356h	483	98	100	99	100	100	99
07/28	1c	0	0	0h	0	546c	366	429	356h	483	98	100	99	100	100	99
07/29	2	0	0	0h	0c	548	366	429	356h	483c	98	100	99	100	100	99
07/30	0	0w	0	0	0	548	366w	429	356	483	98	100	99	100	100	99
07/31	0	0	0	0c	0	548	366	429	356c	483	98	100	99	100	100	99

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te	Daily CPUE					Cumulative CPUE (begin 6/7)					Percent Passage					Mean
	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	88-93
/01	2c	0	0c	0w	0	550c	366	429c	356w	483	98	100	99	100	100	99
8/02	4	0	0	0w	0	553	366	429	356w	483	99	100	99	100	100	100
08/03	0	0c	0	0w	0	553	366c	429	356w	483	99	100	99	100	100	100
08/04	0c	0	3	0c	0	553c	366	432	356c	483	99	100	100	100	100	100
08/05	0w	0	0	0w	0	553w	366	432	356w	483	99	100	100	100	100	100
08/06	0	0	0c	0c	0	553	366	432c	356c	483	99	100	100	100	100	100
08/07	2	0c	0	0	0	555	366c	432	356	483	99	100	100	100	100	100
08/08	1c	0	0	0	0	556c	366	432	356	483	100	100	100	100	100	100
08/09	1w	0c	0	0c	0c	557w	366c	432	356c	483c	100	100	100	100	100	100
08/10	1c	0	0c	0	0w	557c	366	432c	356	483w	100	100	100	100	100	100
08/11	1w	0w	0w	0	0	558w	366w	432w	356	483	100	100	100	100	100	100
08/12	1c	0c	0	0	0c	558c	366c	432	356	483c	100	100	100	100	100	100
08/13	0	0	0c	0	0	558	366	432c	356	483	100	100	100	100	100	100
08/14	0w	0	0	0c	0	558w	366	432	356c	483	100	100	100	100	100	100
08/15	0c	0c	0	0w	0c	558c	366c	432	356w	483c	100	100	100	100	100	100
08/16	0	0	0c	0	0w	558	366	432c	356	483w	100	100	100	100	100	100
08/17	0	0	0w	0c	0w	558	366	432w	356c	483w	100	100	100	100	100	100
08/18	0c	0c	0	0	0c	558c	366c	432	356	483c	100	100	100	100	100	100
08/19	0m	0	0	0w	0	558m	366	432	356w	483	100	100	100	100	100	100
08/20	0c	0	0c	0w	0	558c	366	432c	356w	483	100	100	100	100	100	100
08/21	0	0	0w	0c	0	558	366	432w	356c	483	100	100	100	100	100	100
08/22	0	0	0w	0	0c	558	366	432w	356	483c	100	100	100	100	100	100
08/23	0	0c	0w	0	0	558	366c	432w	356	483	100	100	100	100	100	100
08/24	0	0	0	0	0w	558	366	432	356	483w	100	100	100	100	100	100
08/25	0	0	0w	0c	0c	558	366	432w	356c	483c	100	100	100	100	100	100
08/26	0	0c	0	0	0w	558	366c	432	356	483w	100	100	100	100	100	100
08/27	0c	0	0c	0	0c	558c	366	432c	356	483c	100	100	100	100	100	100
08/28	0	0	0	0c	0	558	366	432	356c	483	100	100	100	100	100	100
08/29	0	0c	0	0	0	558	366c	432	356	483	100	100	100	100	100	100
08/30		0		0	0c	558	366	432	356	483c	100	100	100	100	100	100
08/31	c			0	0	558c	366	432	356	483	100	100	100	100	100	100

"c" CPUE is estimated; no test fishing due to commercial fishing period.
"m" CPUE is estimated; no test fishing due to mechanical problems.
"o" CPUE is estimated; no test fishing due to reasons other than those described.
"w" CPUE is estimated; no test fishing due to hazardous weather conditions.

Appendix B.3 Historic daily CPUE for sockeye salmon catches in the Eek test fishery.

Date	Daily CPUE					Cumulative CPUE (begin 6/7)					Percent Passage					Mean
	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	88-93
06/01			0	0	0											
06/02			0	2	0											
06/03			0	0	0											
06/04		w	0	0	0		w									
06/05		0	0	0	0											
06/06		2	0	2	0											
06/07	2	2	3	2	0	1	2	3	2	0	0	1	0	0	0	0
06/08	1	11	2	0	0	3	13	5	2	0	0	4	1	0	0	1
06/09	8	2	6	0	3	11	15	11	2	3	1	5	1	0	1	2
06/10	6	0	2	5	0	17	15	12	6	3	2	5	2	0	1	2
06/11	25	6	8	8	4	41	20	21	14	7	5	7	3	1	1	4
06/12	1	2	17	6	0	42	22	38	20	7	5	7	5	1	1	5
06/13	14	2	11	12	0m	57	24	49	33	7m	7	8	6	2	1	6
06/14	30	16	10	5	7	86	40	59	38	14	10	13	8	3	2	8
06/15	65	23	38	21	6	151	62	97	58	20	18	20	13	4	3	14
06/16	58c	31	15	13	6	209c	93	112	71	27	25	31	15	5	5	19
06/17	51	7	32	17	25	259	100	144	88	52	31	33	19	6	9	22
06/18	45w	24	18	28	10	304w	124	162	116	62	36	41	21	8	11	27
06/19	45m	33c	11	39	17	349m	157c	172	155	79	42	52	22	11	13	32
06/20	45c	42	28c	14	13	394c	200	201c	169	91	47	65	26	12	16	38
06/21	39	13	46	40	0	434	212	246	209	91	52	70	32	15	16	42
06/22	42	35	41w	29	28	475	247	287w	238	119	57	81	37	17	20	48
06/23	73	19c	37	53	23	548	266c	324	291	142	65	87	42	21	24	54
06/24	44c	4	48	184	35c	592c	270	372	474	177c	71	89	48	34	30	61
06/25	15	5	36c	157c	47	607	275	408c	631c	224	72	90	53	46	38	65
06/26	21	3c	24	130w	10	628	279c	432	761w	234	75	91	56	55	40	69
06/27	27	2	25	102	23	655	281	457	864	257	78	92	59	63	44	73
06/28	29c	0	35	71	12	683c	281	492	934	269	82	92	64	68	46	76
06/29	31	15	18c	50	37	714	296	510c	985	306	85	97	66	72	52	80
06/30	47	7c	0	35	29	761	303c	510	1020	335	91	99	66	74	57	83
07/01	17	0	20	19	17	778	303	529	1039	352	93	99	69	76	60	84
07/02	18c	0	9	31	25	796c	303	539	1070	377	95	99	70	78	64	85
07/03	18	0c	13	56	0	815	303c	552	1126	377	97	99	72	82	64	87
07/04	9 h	0 h	29	7	15	824 h	303 h	581	1133	392	98	99	75	82	67	89
07/05	9c	0c	46c	4	30	833c	303c	627c	1137	422	99	99	81	83	72	91
07/06	0	0	63	105	24	833	303	690	1241	446	99	99	90	90	76	95
07/07	0	0	20	19	10m	833	303	710	1260	457m	99	99	92	92	78	96
07/08	0c	0c	3	5	24m	833c	303c	714	1265	481m	99	99	93	92	82	96
07/09	0	0m	8c	2	23o	833	303m	722c	1267	503o	99	99	94	92	86	96
07/10	2	0	13	0	21	835	303	735	1267	524	100	99	95	92	90	97
07/11	1c	0c	14	15	3	836c	303c	749	1282	528	100	99	97	93	90	97
07/12	1w	0	0	31	8	837w	303	749	1313	536	100	99	97	95	91	98
07/13	1w	0	0	7	12	838w	303	749	1320	548	100	99	97	96	94	98
07/14	1c	0c	3c	6	8c	839c	303c	752c	1326	556c	100	99	98	96	95	98
07/15	0	0	6	3	3	839	303	758	1330	559	100	99	98	97	95	99
07/16	0	0	0	0	0	839	303	758	1330	559	100	99	98	97	95	99
07/17	0	0 h	0	7	3	839	303 h	758	1337	562	100	99	98	97	96	99
07/18	0c	0c	0	0	2	839c	303c	758	1337	564	100	99	98	97	96	99
07/19	0	0 h	0	5	1c	839	303 h	758	1342	565c	100	99	98	98	96	99
07/20	0	0 h	0	3	0	839	303 h	758	1345	565	100	99	98	98	96	99
07/21	0c	0 h	0	5	2	839c	303 h	758	1349	566	100	99	98	98	97	99
07/22	0 h	0	0 h	9	4	839 h	303	758 h	1358	570	100	99	98	99	97	99
07/23	0 h	2	0	2	2c	839 h	305	758	1360	572c	100	100	98	99	98	99
07/24	0 h	0	0	2 h	0	839 h	305	758	1362 h	572	100	100	98	99	98	99
07/25	0c	0	0	2 h	2	839c	305	758	1364 h	573	100	100	98	99	98	99
07/26	0 h	0	0	2	1c	839 h	305	758	1366	574c	100	100	98	99	98	99
07/27	0 h	0c	0	1 h	0	839 h	305c	758	1367 h	574	100	100	98	99	98	99
07/28	0c	0	0	1 h	2	839c	305	758	1368 h	576	100	100	98	99	98	99
07/29	0	0	0	1 h	1c	839	305	758	1369 h	576c	100	100	98	99	98	99
07/30	0	0w	0	0	0	839	305w	758	1369	576	100	100	98	99	98	99
07/31	0	0	0	0c	0	839	305	758	1369c	576	100	100	98	99	98	99

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Date	Daily CPUE					Cumulative CPUE (begin 6/7)					Percent Passage					Mean
	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	88-93
08/01	0c	0	0c	0w	0	839c	305	758c	1369w	576	100	100	98	99	98	99
08/02	0	0	0	0w	0	839	305	758	1369w	576	100	100	98	99	98	99
08/03	0	0c	0	0w	0	839	305c	758	1369w	576	100	100	98	99	98	99
08/04	0c	0	4	0c	0	839c	305	761	1369c	576	100	100	99	99	98	100
08/05	0w	0	0	0w	0	839w	305	761	1369w	576	100	100	99	99	98	100
08/06	0	0	3c	0c	0	839	305	764c	1369c	576	100	100	99	99	98	100
08/07	0	0c	6	0	0	839	305c	771	1369	576	100	100	100	99	98	100
08/08	0c	0	0	0	0	839c	305	771	1369	576	100	100	100	99	98	100
08/09	0w	0c	0	0c	0c	839w	305c	771	1369c	576c	100	100	100	99	98	100
08/10	0c	0	0c	1	0w	839c	305	771c	1370	576w	100	100	100	100	98	100
08/11	0w	0w	0w	0	0	839w	305w	771w	1370	576	100	100	100	100	98	100
08/12	0c	0c	0	0	1c	839c	305c	771	1370	577c	100	100	100	100	99	100
08/13	0	0	0c	3	1	839	305	771c	1373	579	100	100	100	100	99	100
08/14	0w	0	0	2c	2	839w	305	771	1375c	581	100	100	100	100	99	100
08/15	0c	0c	0	1w	2c	839c	305c	771	1376w	583c	100	100	100	100	100	100
08/16	0	0	0c	0	1w	839	305	771c	1376	584w	100	100	100	100	100	100
08/17	0	0	0w	0c	1w	839	305	771w	1376c	585w	100	100	100	100	100	100
08/18	0c	0c	0	0	0c	839c	305c	771	1376	586c	100	100	100	100	100	100
08/19	0m	0	0	0w	0	839m	305	771	1376w	586	100	100	100	100	100	100
08/20	0c	0	0c	0w	0	839c	305	771c	1376w	586	100	100	100	100	100	100
08/21	0	0	0w	0c	0	839	305	771w	1376c	586	100	100	100	100	100	100
08/22	0	0	0w	0	0c	839	305	771w	1376	586c	100	100	100	100	100	100
08/23	0	0c	0w	0	0	839	305c	771w	1376	586	100	100	100	100	100	100
08/24	0	0	0	0	0w	839	305	771	1376	586w	100	100	100	100	100	100
08/25	0	0	0	0c	0c	839	305	771w	1376c	586c	100	100	100	100	100	100
08/26	0	0c	0	0	0w	839	305c	771	1376	586w	100	100	100	100	100	100
08/27	0c	0	0c	0	0c	839c	305	771c	1376	586c	100	100	100	100	100	100
08/28	0	0	0	0c	0	839	305	771	1376c	586	100	100	100	100	100	100
08/29	0	0c	0	0	0	839	305c	771	1376	586	100	100	100	100	100	100
08/30		0		0	0c	839	305	771	1376	586c	100	100	100	100	100	100
08/31	c			0	0	839c	305	771	1376	586	100	100	100	100	100	100

"c" CPUE is estimated; no test fishing due to commercial fishing period.
"m" CPUE is estimated; no test fishing due to mechanical problems.
"o" CPUE is estimated; no test fishing due to reasons other than those described.
"w" CPUE is estimated; no test fishing due to hazardous weather conditions.

Appendix B.4 Historic daily CPUE for coho salmon catches in the Eek test fishery.

Date	Daily CPUE						Cumulative CPUE (begin 7/27)						Percent Passage						
	1988	1989	1990	1992	1993	1994	1988	1989	1990	1992	1993	1994	1988	1989	1990	1992	1993	1994	Mean 88-93
07/09	0	0m	0c		0	0o													
07/10	0	0	0		0	0													
07/11	0c	0c	0		0	2													
07/12	1w	0	0		2	3													
07/13	1w	0	0		0	9													
07/14	0c	0c	0c		10	6c													
07/15	2	0	0		8	3													
07/16	0	5	0		7	3													
07/17	4	7h	0		20	19													
07/18	3c	7c	7		0	6													
07/19	2	7h	7		13	6c													
07/20	11	7h	7		39	6													
07/21	79c	7h	3		79	5													
07/22	79h	8	2h		77	50													
07/23	79h	12	0		114	93c													
07/24	79h	0	7		87h	137													
07/25	79c	0	19		60h	39													
07/26	79h	4	83		33	64c													
07/27	79h	10c	63	27	59h	90	79h	10c	63	27	59h	90	3	0	1	0	2	2	1
07/28	79c	17	27	76	84h	70	159c	27	90	103	143h	160	5	1	2	2	5	4	3
07/29	147	16	40	135	110h	45c	306	43	130	238	253h	205c	10	1	3	4	9	6	5
07/30	335	157w	17	191	135	19	641	199w	147	429	388	224	20	7	3	7	14	6	10
07/31	60	298	33	142	130c	91	701	497	180	571	518c	315	22	16	4	9	19	9	14
08/01	140c	105	24c	238	124w	63	841c	602	204c	809	643w	378	27	20	4	13	23	11	17
08/02	220	151	15	114	119w	101	1060	753	218	923	761w	479	33	25	4	15	28	13	21
08/03	209	137c	107	77c	113w	33	1270	890c	325	1000c	875w	513	40	29	6	16	32	14	25
08/04	130c	123	121	40	108c	66c	1400c	1013	446	1040	983c	578c	44	33	9	17	36	16	28
08/05	130w	56	736	59	102w	99	1530w	1069	1182	1099	1085w	677	48	35	23	18	39	19	33
08/06	50	133	512c	623c	97c	140	1580	1202	1694c	1722c	1182c	816	50	39	33	28	43	23	39
08/07	127	240c	287	1186	91	144w	1707	1442c	1981	2908	1273	961w	54	47	39	47	46	27	47
08/08	111c	347	253	69	96	149	1818c	1790	2234	2977	1369	1110	57	59	44	49	50	31	52
08/09	111w	208c	161	148w	54c	203c	1929w	1998c	2395	3124w	1423c	1313c	61	65	47	51	52	37	55
08/10	111c	69	241c	148w	152	257w	2040c	2067	2635c	3272w	1575	1570w	64	68	51	53	57	44	59
08/11	111w	78w	241w	148c	139	310	2151w	2145w	2876w	3420c	1714	1880	68	70	56	56	62	52	62
08/12	111c	78c	320	227	287	237c	2262c	2222c	3196	3647	2002	2118c	71	73	62	60	73	59	68
08/13	95	86	181c	162	211	165	2357	2308	3377c	3809	2213	2283	74	76	66	62	80	64	72
08/14	56w	35	42	227c	156c	108	2413w	2344	3419	4036c	2369c	2391	76	77	67	66	86	67	74
08/15	56c	32c	267	292	102w	112c	2470c	2376c	3685	4328	2471w	2503c	78	78	72	71	90	70	78
08/16	18	29	178c	493	47	116w	2488	2405	3863c	4821	2518	2619w	79	79	75	79	91	73	81
08/17	29	8	178w	380c	28c	120w	2517	2413	4041w	5201c	2547c	2739w	79	79	79	85	92	76	83
08/18	64c	71c	89	268	10	124c	2581c	2484c	4130	5469	2557	2862c	81	81	81	89	93	80	85
08/19	64m	135	254	163w	15w	128	2645m	2619	4384	5631w	2571w	2990	84	86	85	92	93	83	88
08/20	64c	199	151c	163c	19w	96	2710c	2818	4534c	5794c	2590w	3087	86	92	88	95	94	86	91
08/21	99	104	47w	58	24c	179	2809	2922	4582w	5852	2614c	3266	89	96	89	96	95	91	93
08/22	93	8	47w	59	29	106c	2902	2930	4629w	5911	2643	3372c	92	96	90	97	96	94	94
08/23	80	17c	47w	59	13	34	2981	2947c	4676w	5970	2656	3406	94	96	91	97	96	95	95
08/24	48	27	47	34c	26	31w	3029	2974	4724	6004c	2682	3437w	96	97	92	98	97	96	96
08/25	20	16	65w	34w	20c	29c	3050	2990	4788w	6038w	2702c	3466c	96	98	93	99	98	97	97
08/26	17	21c	82	8	15	27w	3067	3011c	4870	6046	2718	3493w	97	99	95	99	99	97	98
08/27	18c	26	91c	12c	14	24c	3085c	3037	4961c	6057c	2732	3517c	97	99	97	99	99	98	98
08/28	19	8	101	17	12c	22	3104	3045	5062	6074	2744c	3539	98	100	99	99	99	99	99
08/29	39	6c	66	22	10	14	3143	3051c	5128	6096	2754	3553	99	100	100	100	100	99	100
08/30	25	4		29	2	15c	3168	3056	5128	6125	2755	3568c	100	100	100	100	100	100	100
08/31	c			c	3	16	3168c	3056	5128	6125c	2759	3585	100	100	100	100	100	100	100

"c" CPUE is estimated; no test fishing due to commercial fishing period.
"m" CPUE is estimated; no test fishing due to mechanical problems.
"o" CPUE is estimated; no test fishing due to reasons other than those described.
"w" CPUE is estimated; no test fishing due to hazardous weather conditions.

Appendix B.5 Historic daily CPUE for chum salmon catches in the Eek test fishery.

te	Daily CPUE 1988	1989	1990	1993	1994	Cumulative CPUE (begin 6/7) 1988	1989	1990	1993	1994	Percent Passage 1988	1989	1990	1993	1994	Mean 88-93
06/01			2	0	0											
06/02			0	0	2											
06/03			2	0	5											
06/04		w	0	4	8		w									
06/05		0	1	0	2											
06/06		17	2	3	7											
06/07	0	2	2	2	1	0	2	0	2	1	0	0	0	0	0	0
06/08	28	26	10	0	2	28	28	10	2	3	0	1	0	0	0	0
06/09	68	33	6	0	2	96	61	16	2	5	2	2	0	0	0	1
06/10	19	22	2	3	3	115	82	18	5	8	2	3	0	0	0	1
06/11	39	10	13	14	4	154	92	31	19	11	2	3	1	1	1	2
06/12	7	41	14	12	11	161	133	45	31	23	3	5	1	2	1	3
06/13	42	31	15	20	23 3	203	164	60	51	46 3	3	6	2	3	3	3
06/14	131	38	21	10	24	333	202	81	61	70	5	8	2	4	4	5
06/15	239	23	27	3	26	572	225	107	64	96	9	9	3	4	6	6
06/16	147c	116	55	6	19	719c	340	162	70	116	11	13	4	4	7	8
06/17	55	46	44	23	32	775	386	207	93	147	12	15	6	5	9	9
06/18	77w	110	14	34	70	852w	496	221	127	217	13	19	6	7	13	11
06/19	77m	101c	5	32	82	930m	597c	226	158	299	15	23	6	9	18	13
06/20	77c	92	52c	12	28	1007c	689	278c	171	327	16	26	7	10	20	15
06/21	100	90	98	28	6	1107	779	376	199	333	17	30	10	12	20	17
06/22	142	278	78w	13	49	1248	1057	454w	212	382	20	40	12	12	23	21
06/23	948	204c	59	66	56	2196	1261c	513	278	439	35	48	14	16	26	28
06/24	555c	131	54	112	75c	2751c	1392	567	391	514c	43	53	15	23	31	34
06/25	162	78	75c	98c	94	2913	1470	642c	489c	607	46	56	17	28	36	37
06/26	166	73c	97	84w	31	3079	1543c	739	573w	638	48	59	20	33	38	40
06/27	169	69	77	69	51	3248	1612	816	641	689	51	61	22	37	41	43
06/28	124c	25	18	52	36	3372c	1637	834	693	725	53	62	22	40	44	44
06/29	78	320	36c	57	104	3450	1957	870c	750	828	54	74	23	44	50	49
06/30	199	181c	54	28	71	3649	2138c	924	778	900	57	81	25	45	54	52
07/01	198	42	89	12	130	3848	2179	1014	790	1029	61	83	27	46	62	54
07/02	211c	39	73	129	47	4059c	2218	1086	919	1077	64	84	29	53	65	58
07/03	223	44c	12	55	27	4282	2262c	1098	975	1104	67	86	29	57	66	60
07/04	153h	44h	105	33	31	4435h	2306h	1203	1007	1135	70	88	32	59	68	62
07/05	153c	44c	99c	27	47	4588c	2350c	1301c	1034	1182	72	89	35	60	71	64
07/06	95	47	93	131	64	4683	2397	1394	1164	1246	74	91	37	68	75	67
07/07	181	21	185	50	46o	4863	2418	1580	1214	1292m	77	92	42	71	78	70
07/08	134c	35c	95	19	24m	4998c	2453c	1674	1234	1316o	79	93	45	72	79	72
07/09	88	35m	125c	22	49o	5085	2488m	1799c	1255	1365o	80	94	48	73	82	74
07/10	204	49	155	33	73	5289	2537	1954	1288	1438	83	96	52	75	86	77
07/11	124c	25c	340	24	21	5413c	2562c	2293	1313	1460	85	97	61	76	88	80
07/12	124w	2	369	60	18	5537w	2564	2662	1372	1477	87	97	71	80	89	84
07/13	124w	12	144	10	30	5661w	2577	2806	1382	1507	89	98	75	80	90	86
/14	124c	6c	157c	41	29c	5785c	2583c	2962c	1423	1536c	91	98	79	83	92	88
/15	43	0	170	43	28	5829	2583	3132	1466	1563	92	98	84	85	94	90
/16	41	0	108	23	8	5870	2583	3240	1489	1571	92	98	87	87	94	91
07/17	54	0h	92	51	8	5924	2583h	3332	1540	1579	93	98	89	90	95	93
07/18	35c	0c	104	33	13	5959c	2583c	3436	1573	1592	94	98	92	91	96	94
07/19	16	0h	67	13	11c	5975	2583h	3503	1586	1604c	94	98	94	92	96	95
07/20	38	0h	31	7	10	6014	2583h	3534	1592	1613	95	98	95	93	97	95
07/21	34c	0h	25	16	3	6048c	2583h	3559	1608	1616	95	98	95	94	97	96
07/22	34h	0	36h	32	3	6081h	2583	3595h	1640	1620	96	98	96	95	97	96
07/23	34h	12	47	29	9c	6115h	2595	3641	1669	1629c	96	98	98	97	98	97
07/24	34h	2	20	19h	15	6149h	2597	3661	1688h	1643	97	99	98	98	99	98
07/25	34c	2	6	10h	2	6183c	2599	3668	1698h	1645	97	99	98	99	99	98
07/26	34h	0	6	0	1c	6217h	2599	3674	1698	1646c	98	99	98	99	99	98
07/27	34h	0c	13	1h	0	6251h	2599c	3687	1699h	1646	98	99	99	99	99	99
07/28	34c	0	0	2h	6	6285c	2599	3687	1700h	1652	99	99	99	99	99	99
07/29	30	2	27	2h	4c	6315	2601	3713	1702h	1656c	99	99	99	99	99	99
07/30	11	1w	0	3	2	6326	2602w	3713	1705	1658	100	99	99	99	100	99
07/31	4	0	4	3c	0	6330	2602	3717	1708c	1658	100	99	100	99	100	99

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Date	Daily CPUE					Cumulative CPUE (begin 6/7)					Percent Passage					
	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	1988	1989	1990	1993	1994	Mean 88-93
08/01	3c	0	2c	3w	0	6333c	2602	3719c	1711w	1658	100	99	100	99	100	99
08/02	2	5	0	2w	1	6335	2607	3719	1713w	1659	100	99	100	100	100	99
08/03	9	3c	7	2w	2	6344	2610c	3726	1715w	1661	100	99	100	100	100	100
08/04	4c	0	7	1c	2	6348c	2610	3733	1716c	1662	100	99	100	100	100	100
08/05	4w	3	0	1w	2	6353w	2612	3733	1717w	1664	100	99	100	100	100	100
08/06	0	3	0c	0c	1	6353	2615	3733c	1717c	1665	100	99	100	100	100	100
08/07	0	1c	0	0	1	6353	2617c	3733	1717	1666	100	99	100	100	100	100
08/08	0c	0	0	0	0	6353c	2617	3733	1717	1666	100	99	100	100	100	100
08/09	0w	1c	0	0c	0c	6353w	2618c	3733	1717c	1666c	100	99	100	100	100	100
08/10	0c	2	0c	1	0w	6353c	2620	3733c	1719	1666w	100	99	100	100	100	100
08/11	0w	1w	0w	1	0	6353w	2621w	3733w	1720	1666	100	99	100	100	100	100
08/12	0c	1c	0	0	0c	6353c	2622c	3733	1720	1666c	100	100	100	100	100	100
08/13	0	0	0c	0	0	6353	2622	3733c	1720	1666	100	100	100	100	100	100
08/14	0w	0	0	0c	0	6353w	2622	3733	1720c	1666	100	100	100	100	100	100
08/15	0c	0c	0	0w	0c	6353c	2622c	3733	1720w	1666c	100	100	100	100	100	100
08/16	0	0	0c	0	0w	6353	2622	3733c	1720	1666w	100	100	100	100	100	100
08/17	0	0	0w	0c	0w	6353	2622	3733w	1720c	1666w	100	100	100	100	100	100
08/18	0c	0c	0	0	0c	6353c	2622c	3733	1720	1666c	100	100	100	100	100	100
08/19	0m	0	0	0w	0	6353m	2622	3733	1720w	1666	100	100	100	100	100	100
08/20	0c	0	0c	0w	0	6353c	2622	3733c	1720w	1666	100	100	100	100	100	100
08/21	0	0	0w	0c	0	6353	2622	3733w	1720c	1666	100	100	100	100	100	100
08/22	0	0	0w	0	0c	6353	2622	3733w	1720	1666c	100	100	100	100	100	100
08/23	0	0c	0w	0	0	6353	2622c	3733w	1720	1666	100	100	100	100	100	100
08/24	0	0	0	0	0w	6353	2622	3733	1720	1666w	100	100	100	100	100	100
08/25	0	0	0w	0c	0c	6353	2622	3733w	1720c	1666c	100	100	100	100	100	100
08/26	2	4c	0	0	0w	6355	2627c	3733	1720	1666w	100	100	100	100	100	100
08/27	1c	8	0c	0	0c	6356c	2635	3733c	1720	1666c	100	100	100	100	100	100
08/28	0	0	0	0c	0	6356	2635	3733	1720c	1666	100	100	100	100	100	100
08/29	0	0c	0	0	0	6356	2635c	3733	1720	1666	100	100	100	100	100	100
08/30		0		0	0c	6356	2635	3733	1720	1666c	100	100	100	100	100	100
08/31	c			0	0	6356c	2635	3733	1720	1666	100	100	100	100	100	100

"c" CPUE is estimated; no test fishing due to commercial fishing period.
"m" CPUE is estimated; no test fishing due to mechanical problems.
"o" CPUE is estimated; no test fishing due to reasons other than those described.
"w" CPUE is estimated; no test fishing due to hazardous weather conditions.

Appendix Historic daily CPUE for chinook salmon catches in the Bethel test . y.

Date	Daily CPUE 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Cumulative CPUE 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Percent Passage (through August) 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Mean 85-93
05/30	0										0																				
05/31	0										0																				
06/01	0				0	0		0	3	3	0				0	0		0	3	3	0	0	0	0	0	0	0	0	1	1	0
06/02	0			3	0	2	0	0	4	2	0			3	0	2	0	0	7	5	0	0	0	1	0	0	0	0	1	1	0
06/03	0	0		0	0	0	0	0	10	3	0	0		3	0	2	0	0	17	7	0	0	0	1	0	0	0	0	4	2	1
06/04	0	3	0	0	0	1	0	0	3	2	0	3	0	3	0	3	0	0	20	9	0	1	0	1	0	1	0	0	4	3	1
06/05	0	1	5	2	0	1	1	0	8	11	0	4	5	5	0	4	1	0	28	20	0	2	1	1	0	1	1	0	6	6	1
06/06	0	1	3	0	0	1	3	2	11	15	0	6	8	5	0	6	4	2	39	35	0	3	1	1	0	1	2	0	8	10	2
06/07	0	5	5	3	2	3	6	0	5	2	0	10	13	8	2	8	10	2	45	37	0	5	2	2	0	2	6	0	9	10	3
06/08	0	0	16	22	7	4	2	3	8	5	0	10	29	30	8	13	11	5	52	42	0	5	5	8	2	3	7	1	11	12	5
06/09	0	1	9	14	9	5	1	6	29	5	0	12	38	44	17	17	13	11	81	47	0	6	7	12	3	4	7	3	17	13	7
06/10	0	0	20	5	15	8	0	7	16	2	0	12	59	49	32	25	13	18	97	49	0	6	10	14	6	6	7	5	20	14	8
06/11	0	0	18	21	4	14	3	21	3	0	0	12	77	71	36	39	16	39	100	49	0	6	13	20	7	9	9	11	21	14	11
06/12	0	0	22	18	9	14	0	22	20	7	0	12	98	89	45	53	16	61	120	55	0	6	17	25	9	12	9	17	25	16	13
06/13	0	0	13	11	11	6	2	21	14	16	0	12	112	100	56	58	17	82	134	71	0	6	19	28	11	13	10	23	28	20	15
06/14	0	1	21	3	27	2	2	18	10	52	0	13	133	103	83	61	19	100	143	123	0	6	23	29	16	14	11	29	30	35	17
06/15	0	9	10	8	19	9	1	11	22	15	0	22	143	111	102	69	20	111	166	138	0	11	25	31	20	16	12	32	35	39	20
06/16	0	20	11	8c	7	11	3	21	17	13	0	42	154	119c	109	81	23	132	182	151	0	21	26	33	21	18	13	38	39	43	23
06/17	0	14	54	21	21	6	3	24	37	14	0	56	208	140	130	87	26	156	220	165	0	28	36	39	25	20	15	45	46	46	28
06/18	0	4	14c	7	35	13	12	9c	30	2	0	59	222c	147	165	100	38	165c	250	166	0	30	38	41	32	23	22	47	53	47	32
06/19	0	15	13	13	19c	26	6	5	29	22	0	74	235	160	185c	126	43	170	279	188	0	37	40	44	35	28	25	49	59	53	35
06/20	1c	3	18	25c	16	9c	15c	9	30	13	1c	77	253	185c	201	135c	59c	179	309	202	1	38	44	51	38	30	34	51	65	57	39
06/21	7	17	23	16	14	12	6	9	27	20	8	94	277	201	215	146	64	188	336	222	7	47	48	56	41	33	37	54	71	63	44
06/22	0	15	30	13	17	19	4	0c	31	29	8	109	306	214	231	165	68	188c	367	251	7	54	53	59	44	37	40	54	78	71	47
06/23	3	14	26	16	23c	9	6	6	13	12	11	123	333	231	255c	174	74	194	380	263	9	61	57	64	49	39	43	56	80	74	51
06/24	0c	13	9c	21c	21	24	6c	14	21	3c	11c	136	342c	252c	276	198	80c	208	401	266c	9	68	59	70	53	45	46	60	85	75	55
06/25	4	1	38	8	26	34c	7	12c	8c	10	15	138	379	260	302	232c	87	220c	409c	276	13	68	65	72	58	52	51	63	86	78	59
06/26	0	5c	20	10	48c	31	4	11	2	2	15	143c	400	270	350c	263	91	230	410	278	13	71	69	75	67	59	53	66	87	78	62
06/27	3c	8	25	14	50	13	2	9	5	11	18c	151	425	284	401	276	93	239	416	289	15	75	73	79	77	62	54	69	88	82	66
06/28	8	0	15	5c	11	25	7	13	5	3	26	151	440	289c	412	301	99	252	420	292	23	75	76	80	79	68	58	72	89	83	69
06/29	9	3	18	3	3	21c	16	11c	7	7	35	154	458	292	415	322c	116	263c	427	300	30	76	79	81	79	73	67	75	90	85	72
06/30	4	3c	12c	3	22c	0	9	6	12	7	38	156c	471c	295	437c	322	125	268	440	306	34	78	81	82	83	73	72	77	93	86	75
07/01	12c	7	15	12	11	2	9c	11	3	5	51c	163	486	307	448	324	133c	279	443	311	44	81	83	85	86	73	77	80	94	88	78
07/02	1	6	9	1c	3	9	8	6	4	3	52	169	495	308c	451	333	141	285	446	314	45	84	85	85	86	75	82	82	94	89	80
07/03	9	7c	3c	5	9c	17	6	7	3	5	60	176c	498c	313	461c	350	147	293	450	319	53	87	86	87	88	79	86	84	95	90	83
07/04	6c	3	8	5	7	20	6	10	3	3	67c	179	506	318	468	370	153	303	453	322	59	89	87	88	89	83	89	87	96	91	85
07/05	9	3	7	8c	10c	5c	1	3	0	5	76	182	513	326c	477c	375c	154	306	453	327	67	90	88	90	91	85	90	88	96	92	87
07/06	8	1	9	0	2	6	2c	0c	0	5	85	183	522	326	479	381	156c	306c	453	332	74	91	90	90	92	86	91	88	96	94	89
07/07	3	1c	15c	0	9	8	3	0	2	11	87	184c	537c	326	488	388	159	306	455	343	77	92	92	90	93	88	92	88	96	97	90
07/08	5	4	0	0c	4c	14	2	3	2	2	93	189	537	326c	492c	403	160	309	457	345	81	94	92	90	94	91	93	89	97	97	91
07/09	5	3	1	0	5	5c	0	0	4	3	98	191	538	326	496	408c	160	309	461	348	86	95	92	90	95	92	93	89	98	98	92
07/10	1	0c	3	0	4	0	2	3	2	0	99	191c	541	326	500	408	162	313	464	348	87	95	93	90	96	92	94	90	98	98	93
07/11	2	2	2c	0c	0c	0	0	4	2	0	102	193	543c	326c	500c	408	162	317	466	348	89	96	93	90	96	92	94	91	99	98	93
07/12	1	0	2	0	1	4	0	4	2	0	103	193	545	326	501	411	162	321	468	348	90	96	94	90	96	93	94	92	99	98	94
07/13	1	0	2	0	0	2	2c	4	0	0	105	193	548	326	501	414	163c	325	468	348	92	96	94	90	96	93	95	93	99	98	94
07/14	0	1	1	8c	0c	2c	1	0	0	0c	105	194	549	334c	501c	416c	165	325	468	348c	92	97	94	92	96	94	96	93	99	98	95
07/15	2	0	0c	0	0	2	1	0	0	0	106	194	549c	334	501	418	166	325	468	348	93	97	94	92	96	94	97	93	99	98	95

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Date	Daily CPUE										Cumulative CPUE										Percent Passage (through August)										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Mean 85-93
07/16	0	0	0	8	0	2	2	4	0	0	108	194	549	341	501	420	168	329	468	348	93	97	94	95	96	95	98	95	99	98	96
07/17	1	0	3	6	1	2	0	5	2	0	107	194	551	347	503	422	168	335	470	348	94	97	95	96	96	95	98	96	100	98	96
07/18	0	0	0	2c	2c	0	2c	6	0	2	107	194	551	349c	504c	422	170c	341	470	350	94	97	95	97	96	95	99	98	100	99	97
07/19	0	0	14	0	1	0	2	3	2	2c	107	194	566	349	505	422	172	344	473	352c	94	97	97	97	97	95	100	99	100	99	97
07/20	0	0	1c	0	5	0	0	0	0	0	107	194	567c	349	510	422	172	344	473	352	94	97	97	97	98	95	100	99	100	99	97
07/21	0	2	2	0c	1	0	0	0	0	0	107	196	569	349c	511	422	172	344	473	352	94	98	98	97	98	95	100	99	100	99	98
07/22	0	2	0	0	6	4	0c	0	0	0	107	198	569	349	518	425	172	c344	473	352	94	99	98	97	99	96	100	99	100	99	98
07/23	0	0	3	0	0	0	0	0	0	0c	107	198	572	349	518	425	172	344	473	352c	94	99	98	97	99	96	100	99	100	99	98
07/24	0	3	0	1	0	2	0	0	0	0	107	201	572	350	518	427	172	344	473	352	94	100	98	97	99	96	100	99	100	99	98
07/25	0	0	0	0c	0	0	0c	0	0	0	107	201	572	350c	518	427	172c	344	473	352	94	100	98	97	99	96	100	99	100	99	98
07/26	0	0	0	2	0	4	0	0	0	0c	107	201	572	352	518	431	172	344	473	352c	94	100	98	98	99	97	100	99	100	99	98
07/27	2	0	4	2	0c	0	0	0	0	0	109	201	577	354	518c	431	172	344	473	352	96	100	99	98	99	97	100	99	100	99	99
07/28	0	0	0	0c	0	2	0	0	0	0	109	201	577	354c	518	433	172	344	473	352	96	100	99	98	99	98	100	99	100	99	99
07/29	2	0	0	0	0	4	0c	0	0	0c	111	201	577	354	518	438	172c	344	473	352c	97	100	99	98	99	99	100	99	100	99	99
07/30	0	0	0	4	0	0	0	0	0	0	111	201	577	358	518	438	172	344	473	352	97	100	99	99	99	99	100	99	100	99	99
07/31	0	0c	0	0	0	0	0	0	0c	0	111	201c	577	358	518	438	172	344	473c	352	97	100	99	99	99	99	100	99	100	99	99
08/01	0	0	0	0c	0	0c	0c	0	0	0	111	201	577	358c	518	438c	172c	344	473	352	97	100	99	99	99	99	100	99	100	99	99
08/02	0c	0	0	0	1	0	0	0	0	0	111c	201	577	358	519	438	172	344	473	352	97	100	99	99	99	99	100	99	100	99	99
08/03	0	0	1	0	0c	0	0	0c	0	0	111	201	578	358	519c	438	172	344c	473	352	97	100	99	99	99	99	100	99	100	99	99
08/04	0	0c	0	0c	0	0	0	0	0c	0c	111	201c	578	358c	519	438	172	344	473c	352c	97	100	99	99	99	99	100	99	100	99	99
08/05	0c	0	0	0	0	0	0c	0	0	0	111c	201	578	358	519	438	172c	344	473	352	97	100	99	99	99	99	100	99	100	99	99
08/06	0	0	0	0	0	2c	0	0c	0c	0	111	201	578	358	519	439c	172	344c	473c	352	97	100	99	99	99	99	100	99	100	99	99
08/07	0	0c	2	0	0c	0	0	2	0	0	111	201c	580	358	519c	439	172	347	473	352	97	100	100	99	99	99	100	99	100	99	99
08/08	2c	0	0c	0c	0	0	0c	0	0	0	113c	201	580c	358c	519	439	172c	347	473	352	99	100	100	99	99	99	100	99	100	99	100
08/09	0	0	0	0	1c	0	0	0	0c	0c	113	201	580	358	520c	439	172	347	473c	352c	99	100	100	99	99	99	100	99	100	99	100
08/10	0	0	0	0c	0	2c	0	0	0	0	113	201	580	358c	520	441c	172	347	473	352	99	100	100	99	99	100	100	99	100	99	100
08/11	0	0c	2	3	0	0	0	0c	0	0	113	201c	582	361	520	441	172	347c	473	352	99	100	100	100	99	100	100	99	100	99	100
08/12	0c	0	0	0c	0c	0	0c	0	0	0c	113c	201	582	361c	520c	441	172c	347	473	352c	99	100	100	100	99	100	100	99	100	99	100
08/13	0	0c	0c	0	2	0c	0	0	0	0	113	201c	582c	361	522	441c	172	347	473	352	99	100	100	100	100	100	100	99	100	99	100
08/14	0	0	0	0	0	0	0c	0c	0c	0	113	201	582	361	522	441	172c	347c	473c	352	99	100	100	100	100	100	100	99	100	99	100
08/15	0c	0c	0	0c	0c	2	0	0	0	0c	113c	201c	582	361c	522c	443	172	347	473	352c	99	100	100	100	100	100	100	99	100	99	100
08/16	0	0	0	0	0	0c	0	0	0	0	113	201	582	361	522	443c	172	347	473	352	99	100	100	100	100	100	100	99	100	99	100
08/17	0	0	0c	0	0	0	0	0c	0c	0	113	201	582c	361	522	443	172	347c	473c	352	99	100	100	100	100	100	100	99	100	99	100
08/18	0	0c	0	0c	0c	0	0	0	0	0c	113	201c	582	361c	522c	443	172	347	473	352c	99	100	100	100	100	100	100	99	100	99	100
08/19	0c	0	0c	0	0	0	0c	2	0	0	113c	201	582c	361	522	443	172c	349	473	352	99	100	100	100	100	100	100	100	100	99	100
08/20	1	0	0	0c	2	0c	0	0c	0	0	114	201	582	361c	523	443c	172	349c	473	352	100	100	100	100	100	100	100	100	100	99	100
08/21	0	0c	0c	0	0	0	0	0	0c	0	114	201c	582c	361	523	443	172	349	473c	352	100	100	100	100	100	100	100	100	100	99	100
08/22	0c	0	0	0	0	0	0	0	0	0c	114c	201	582	361	523	443	172	349	473	352c	100	100	100	100	100	100	100	100	100	99	100
08/23	0	0	0	0	0c	0	0	0	0	0	114	201	582	361	523c	443	172	349	473	352	100	100	100	100	100	100	100	100	100	99	100
08/24	0	0c	0	0	0	0	0	0c	0	2	114	201	582c	361	523	443	172	349c	473	354	100	100	100	100	100	100	100	100	100	100	100
08/25	0	0c	0	0	0	0	0	0	0c	0c	114	201c	582	361	523	443	172	349	473c	354c	100	100	100	100	100	100	100	100	100	100	100
08/26	0c	0	0	0	0c	2	0c	0	0	0	114c	201	582	361	523c	445	172c	349	473	354	100	100	100	100	100	100	100	100	100	100	100
08/27	0	0	0c	0c	0	0c	0	0c	0	0c	114	201	582c	361c	523	445c	172	349c	473	354c	100	100	100	100	100	100	100	100	100	100	100
08/28	0	0c	0	0	0	0	0	0	0c	0	114	201c	582	361	523	445	172	349	473c	354	100	100	100	100	100	100	100	100	100	100	100
08/29	0c		0	0	0c	0	0	0	0	0	114c		582	361	523c	445	172	349	473	354	100	100	100	100	100	100	100	100	100	100	100
08/30	0		0		0	0	0	0	0	0c	114		582		523	445	172	349	473	354c	100	100	100	100	100	100	100	100	100	100	100
08/31			0c	c	0	0	0	0c	0	0			582c	c	523	445	172	349c	473	354	100	100	100	100	100	100	100	100	100	100	100
09/01		c	0		c				c			c	582		c				c												

"c" indicates days when commercial fishing periods occurred in District 1

Appendix B.7 :toric daily CPUE for sockeye salmon catches in the Bethel test fi.

Date	Daily CPUE 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Cumulative CPUE 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Percent Passage (through August) 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Mean 85-93
05/30	0										0																				
05/31	0										0																				
06/01	0				0	0		0	0	0	0				0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/02	0			0	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/03	0	0		0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/04	0	0	6	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/05	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/06	0	0	3	0	3	0	0	0	0	0	0	0	9	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/07	0	6	9	0	0	0	0	0	0	0	0	6	18	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
06/08	0	8	17	12	0	0	0	0	3	0	0	14	35	12	3	0	0	0	3	0	0	1	1	1	0	0	0	0	0	0	0
06/09	0	13	13	14	3	0	0	0	3	0	0	27	48	27	6	0	0	0	6	0	0	1	2	2	1	0	0	0	0	0	1
06/10	0	3	16	12	3	0	0	0	0	0	0	30	64	38	9	0	0	0	6	0	0	1	2	3	1	0	0	0	0	1	0
06/11	0	21	16	43	20	8	0	0	7	0	0	50	80	82	29	8	0	0	14	0	0	2	3	5	4	1	0	0	1	0	2
06/12	0	6	112	62	12	3	0	0	6	0	0	56	191	143	40	11	0	0	20	0	0	2	7	10	5	1	0	0	1	0	3
06/13	0	11	49	47	11	0	3	9	31	0	0	68	240	191	51	11	3	9	50	0	0	3	9	13	6	1	0	1	3	0	4
06/14	0	6	9	14	27	16	3	13	7	3	0	73	249	205	78	27	6	22	57	3	0	3	9	14	10	2	1	2	3	0	5
06/15	0	48	42	9	24	14	3	13	3	3	0	121	290	214	102	41	9	35	60	6	0	5	11	14	13	4	1	3	4	0	6
06/16	0	102	168	7c	15	20	0	14	23	0	0	223	458	221c	117	60	9	49	83	6	0	9	17	15	15	5	1	4	5	0	8
06/17	0	49	252	26	15	63	12	48	66	10	0	273	710	247	132	123	21	97	149	16	0	11	26	16	17	11	4	9	9	1	11
06/18	3	79	69c	48	46	16	51	45c	41	0	3	352	779c	296	178	139	71	142c	190	16	0	14	28	20	22	12	12	13	11	1	15
06/19	13	119	17	98	28c	38	11	9	16	55	16	471	796	394	207c	177	83	151	207	71	1	19	29	26	26	16	14	14	12	5	17
06/20	0c	34	47	26c	19	31c	39	15	63	10	16c	505	843	419c	226	207c	122c	167	269	81	1	21	31	28	28	19	21	15	16	6	20
06/21	12	145	76	135	53	15	9	28	136	76	28	650	919	554	278	222	130	194	406	156	2	27	33	37	35	20	22	18	24	11	24
06/22	11	169	166	135	58	14	43	36c	46	29	40	819	1085	690	336	236	173	230c	451	186	2	34	39	46	42	21	30	21	26	13	29
06/23	97	63	355	117	36c	77	17	39	54	73	137	882	1440	807	372c	313	190	269	506	259	8	36	52	54	47	28	33	24	30	19	35
06/24	0c	33	142c	63c	40	60	6	67	90	109c	137c	915	1582c	869c	412	374	196c	336	596	368c	8	37	57	58	52	34	34	30	35	26	38
06/25	135	226	49	29	83	91c	9	96c	110c	36	272	1141	1631	898	495	464c	204	432c	705c	404	16	47	59	60	62	42	35	39	41	29	45
06/26	128	198c	62	115	26c	25	6	19	23	40	400	1339c	1693	1013	521c	489	210	451	728	443	24	55	61	68	65	44	36	41	43	32	48
06/27	126c	202	34	69	53	43	21	49	21	26	526c	1541	1727	1082	574	532	231	499	749	469	32	63	63	72	72	48	40	45	44	34	53
06/28	117	138	41	42c	40	90	39	141	25	23	643	1679	1768	1124c	614	622	270	640	774	492	39	69	64	75	77	56	46	58	45	35	59
06/29	256	20	37	9	35	104c	25	108c	62	101	899	1699	1805	1133	648	726c	295	748c	836	593	54	70	65	76	81	65	51	68	49	43	64
06/30	150	221c	164c	45	40c	6	20	71	428	20	1049	1920c	1969c	1178	688c	732	315	819	1264	613	63	79	71	78	86	66	54	74	74	44	72
07/01	190c	15	241	91	13	24	28	35	117	13	1239c	1935	2211	1269	702	756	343c	854	1380	626	75	79	80	85	88	68	59	77	81	45	77
07/02	54	98	63	28c	11	24	35	36	55	29	1293	2032	2273	1297c	713	780	378	890	1435	655	78	83	82	86	89	70	65	80	84	47	80
07/03	68	85c	36c	32	22c	65	62	78	14	190	1361	2117c	2309c	1329	736c	845	440	967	1449	844	82	87	84	89	92	76	76	87	85	61	84
07/04	33c	32	124	54	1	96	36	22	57	93	1394c	2149	2433	1383	737	941	476	989	1505	937	84	88	88	92	92	84	82	89	88	68	88
07/05	45	42	166	45c	5c	22c	38	6	10	73	1439	2191	2599	1428c	742c	963c	514	995	1515	1010	87	90	94	95	93	86	89	90	89	73	90
07/06	56	33	12	17	3	3	7	12c	32	160	1495	2224	2611	1445	745	966	521c	1008c	1546	1170	90	91	95	96	93	87	90	91	91	84	92
07/07	58	74c	44c	11	13	23	7	0	20	35	1553	2298c	2655c	1456	759	988	528	1008	1566	1205	94	94	96	97	95	89	91	91	92	87	93
07/08	3	21	6	13c	15c	38	0	13	58	44	1556	2319	2662	1469c	774c	1027	528	1020	1625	1248	94	95	96	98	97	92	91	92	95	90	95
07/09	23	11	30	10	3	29c	27	3	6	86	1579	2330	2691	1478	777	1055c	555	1024	1631	1335	95	95	98	99	97	95	96	92	96	96	96
07/10	6	2c	30	5	0	14	6	4	4	29	1584	2332c	2722	1483	777	1069	561	1028	1635	1363	96	95	99	99	97	96	97	93	96	98	96
07/11	12	9	4c	4c	2c	6	3	7	4	6	1597	2341	2726c	1488c	779c	1076	563	1034	1639	1369	97	96	99	99	98	97	97	93	96	99	97
07/12	6	23	3	0	5	4	3	6	0	4	1603	2365	2729	1488	784	1080	566	1040	1639	1374	97	97	99	99	98	97	98	94	96	99	97
07/13	5	17	7	0	4	8	3	19	21	0	1607	2382	2736	1488	788	1088	569c	1059	1660	1374	97	97	99	99	99	98	98	96	97	99	98
07/14	2	13	5	3c	0c	6c	3	23	30	2c	1609	2395	2741	1491c	788c	1093c	572	1082	1690	1376c	97	98	99	99	99	98	99	98	99	99	98
07/15	0	2	3c	2	0	8	3	4	9	0	1609	2397	2744c	1492	788	1102	575	1086	1698	1376	97	98	99	99	99	99	99	98	100	99	99
07/16	9	8	0	0	8	4	0	10	2	0	1619	2404	2744	1492	795	1106	575	1097	1700	1376	98	98	99	99	100	99	99	99	100	99	99
07/17	4	6	2	3	1	0	2	4	0	2	1622	2411	2746	1496	797	1106	577	1101	1700	1378	98	99	100	100	100	99	99	99	100	99	99
07/18	4	3	0	2c	1c	0	0	6	0	2	1626	2414	2746	1498c	798c	1106	577c	1107	1700	1380	98	99	100	100	100	99	99	100	100	99	99

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Appendix B.7 (page 2 of 2)

Date	Daily CPUE										Cumulative CPUE										Percent Passage (through August)										
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Mean 85-93
07/19	5	4	6	0	1	2	0	0	0	0c	1629	2418	2752	1498	799	1108	577	1107	1700	1380c	98	99	100	100	100	99	99	100	100	99	99
07/20	5	4	3c	0	0	0	0	0	0	0	1635	2421	2755c	1498	799	1108	577	1107	1700	1380	99	99	100	100	100	99	99	100	100	99	100
07/21	5	7	0	0c	0	0	0	0	2	1	1639	2428	2755	1498c	799	1108	577	1107	1703	1381	99	99	100	100	100	99	99	100	100	100	100
07/22	8	3	0	1	0	0	2	0	2	2	1648	2431	2755	1499	799	1108	579c	1107	1705	1383	100	99	100	100	100	99	100	100	100	100	100
07/23	3	3	0	0	0	0	2	0	0	0c	1651	2434	2755	1499	799	1108	581	1107	1705	1383c	100	100	100	100	100	99	100	100	100	100	100
07/24	0	0	0	1	0	0	0	0	0	2	1651	2434	2755	1500	799	1108	581	1107	1705	1385	100	100	100	100	100	99	100	100	100	100	100
07/25	0	0	0	0c	0	0	0	0	0	0	1651	2434	2755	1500c	799	1108	581c	1107	1705	1385	100	100	100	100	100	99	100	100	100	100	100
07/26	2	0	0	0	0	0	0	0	0	0c	1653	2434	2755	1500	799	1108	581	1107	1705	1385c	100	100	100	100	100	99	100	100	100	100	100
07/27	0	1	0	0	0c	0	0	0	0	0	1653	2435	2755	1500	799c	1108	581	1107	1705	1385	100	100	100	100	100	99	100	100	100	100	100
07/28	0	0	0	0c	0	2	0	0	0	0	1653	2435	2755	1500c	799	1109	581	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
07/29	0	2	0	0	0	0	0	0	0	0c	1653	2437	2755	1500	799	1109	581c	1107	1705	1385c	100	100	100	100	100	100	100	100	100	100	100
07/30	0	2	0	0	0	1	0	0	0	0	1653	2439	2755	1500	799	1111	581	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
07/31	0	0c	0	1	0	2	0	0	0c	0	1653	2439c	2755	1501	799	1113	581	1107	1705c	1385	100	100	100	100	100	100	100	100	100	100	100
08/01	0	1	0	0c	0	0c	0	0	0	0	1653	2441	2755	1501c	799	1113c	581c	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
08/02	0c	0	2	0	0	0	0	0	0	0	1653c	2441	2757	1501	799	1113	581	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
08/03	2	0	2	0	0c	0	0	0c	0	0	1654	2441	2759	1501	799c	1113	581	1107c	1705	1385	100	100	100	100	100	100	100	100	100	100	100
08/04	0	0c	0	0c	0	0	0	0	0c	0c	1654	2441c	2759	1501c	799	1113	581	1107	1705c	1385c	100	100	100	100	100	100	100	100	100	100	100
08/05	0c	0	0	0	0	0	0	0	0	0	1654c	2441	2759	1501	799	1113	581c	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
08/06	0	1	0	0	0	2c	0	0c	0c	0	1654	2442	2759	1501	799	1114c	581	1107c	1705c	1385	100	100	100	100	100	100	100	100	100	100	100
08/07	0	0c	0	0	0c	0	0	0	0	0	1654	2442c	2759	1501	799c	1114	581	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
08/08	0c	0	0c	0c	0	0	0	0	0	0	1654c	2442	2759c	1501c	799	1114	581c	1107	1705	1385	100	100	100	100	100	100	100	100	100	100	100
08/09	0	0	0	0	0c	0	0	0	0c	0c	1654	2442	2759	1501	799c	1114	581	1107	1705c	1385c	100	100	100	100	100	100	100	100	100	100	100
08/10	0	3	0	0c	0	0c	0	0	0	2	1654	2444	2759	1501c	799	1114c	581	1107	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/11	0	0c	0	0	0	0	0	0c	0	0	1654	2444c	2759	1501	799	1114	581	1107c	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/12	0c	0	2	0c	0c	0	0	2	0	0c	1654c	2444	2761	1501c	799c	1114	581c	1109	1705	1388c	100	100	100	100	100	100	100	100	100	100	100
08/13	0	0c	0c	0	0	0c	0	0	0	0	1654	2444c	2761c	1501	799	1114c	581	1109	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/14	0	0	0	0	0	0	0	0c	0c	0	1654	2444	2761	1501	799	1114	581c	1109c	1705c	1388	100	100	100	100	100	100	100	100	100	100	100
08/15	0c	0c	0	0c	0c	0	0	0	0	0c	1654c	2444c	2761	1501c	799c	1114	581	1109	1705	1388c	100	100	100	100	100	100	100	100	100	100	100
08/16	0	0	0	0	0	0c	0	0	0	0	1654	2444	2761	1501	799	1114c	581	1109	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/17	0	0	0c	0	0	0	0	0c	0c	0	1654	2444	2761c	1501	799	1114	581	1109c	1705c	1388	100	100	100	100	100	100	100	100	100	100	100
08/18	0	0c	0	0c	0c	0	0	0	0	0c	1654	2444c	2761	1501c	799c	1114	581	1109	1705	1388c	100	100	100	100	100	100	100	100	100	100	100
08/19	0c	0	0c	0	0	0	0	0	0	0	1654c	2444	2761c	1501	799	1114	581c	1109	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/20	0	0	0	0c	0	0c	0	0c	0	0	1654	2444	2761	1501c	799	1114c	581	1109c	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/21	0	0c	0c	0	0	0	0	0	0c	0	1654	2444c	2761c	1501	799	1114	581	1109	1705c	1388	100	100	100	100	100	100	100	100	100	100	100
08/22	0c	0	0	0	0	0	0	0	0	0c	1654c	2444	2761	1501	799	1114	581	1109	1705	1388c	100	100	100	100	100	100	100	100	100	100	100
08/23	0	0	0	0	0c	0	0	0	0	0	1654	2444	2761	1501	799c	1114	581	1109	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/24	0	1	1c	0	0	0	0	0c	0	0	1654	2445	2762c	1501	799	1114	581	1109c	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/25	0	0c	0	0	0	0	0	0	0c	0c	1654	2445c	2762	1501	799	1114	581	1109	1705c	1388c	100	100	100	100	100	100	100	100	100	100	100
08/26	0c	0	0	0	0c	0	0	0	0	0	1654c	2445	2762	1501	799c	1114	581c	1109	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/27	0	0	0c	0c	0	0c	0	0c	0	0c	1654	2445	2762c	1501c	799	1114c	581	1109c	1705	1388c	100	100	100	100	100	100	100	100	100	100	100
08/28	0	0c	0	0	0	0	0	0	0c	0	1654	2445c	2762	1501	799	1114	581	1109	1705c	1388	100	100	100	100	100	100	100	100	100	100	100
08/29	0c		0	0	0c	0	0	0	0	0	1654c		2762	1501	799c	1114	581	1109	1705	1388	100	100	100	100	100	100	100	100	100	100	100
08/30	0		0		0	0	0	0	0	0c	1654		2762		799	1114	581	1109	1705	1388c	100	100	100	100	100	100	100	100	100	100	100
08/31			0c	c	0	0	0	0c	0	0			2762c	c	799	1114	581	1109c	1705	1388	100	100	100	100	100	100	100	100	100	100	100
09/01		c	0		c				c			c	2762		c				c												

"c" indicates days when commercial fishing periods occurred in District 1

Appendix 8.8 : daily CPUE for coho salmon catches in the Bethel test fishery.

Date	Daily CPUE 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
07/09	0	0	0	0	0	0	0c	0	0	0	3
07/10	0	0	0c	0	0	0	0	0	0	0	0
07/11	0	0	0	0c	0c	0c	0	0	0	0	0
07/12	0	0	0	0	0	0	0	0	0	0	0
07/13	0	0	0	0	2	2	0	0c	6	7	0
07/14	0	0	0	0	0c	2c	0c	0	2	0	0c
07/15	0	0	2	0c	0	2	0	0	0	0	2
07/16	2	0	2	0	0	0	0	0	2	0	2
07/17	2	2	2	0	4	2	0	0	1	0	0
07/18	3	0	2	0	0c	4c	0	0c	7	0	2
07/19	7	2	4	0	0	0	4	2	9	9	9c
07/20	7	4	4	0c	4	10	13	6	5	2	0
07/21	5	5	10	0	2c	7	10	7	3	5	0
07/22	5	20	8	7	4	16	7	4c	7	24	22
07/23	12	0	21	2	0	6	3	6	2	28	14c
07/24	9	2	54	0	12	6	8	4	4	9	48
07/25	16	24	29	0	16c	4	2	7c	9	6	38
07/26	12	21	26	0	8	0	2	2	11	4	11c
07/27	18	8	74	2	44	2c	10	23	10	20	13
07/28	29	15	20	2	72c	9	43	34	11	71	27
07/29	60	40	64	12	28	8	35	42c	23	67	26c
07/30	201c	14	54	5	43	37	12	71	25	69	66
07/31	154	29	31c	5	75	343	10	64	13	73c	101
08/01	179	50c	323	13	43c	218	26c	42c	32	73	75
08/02	104c	37	101	40	32	447	22	24	17	148	33
08/03	312	69	404	93	79	78c	21	118	50c	302	21
08/04	45	60	419c	69	42c	24	54	124	11	538c	13c
08/05	78	47c	253	27	45	159	65	10c	11	127	2
08/06	169c	92	249	42c	300	348	78c	32	57c	318c	24
08/07	45	182	210c	103	370	195c	50	20	56	102	178
08/08	108	86c	86	53	183c	54	73	64c	115	73	230
08/09	76c	114	180	34	41	185c	118	43	250	34c	156c
08/10	55	124	297	43	106c	33	58c	42	675	11	190
08/11	105	218	87c	35	257	111	64	35	420c	25	392
08/12	98	96c	326	189	256c	74c	210	248c	91	66	137c
08/13	25c	75	96c	142c	68	24	180c	91	123	32	64
08/14	24	29	64	348	174	17	166	40c	128c	0c	93
08/15	113	84c	180c	205	185c	2c	258	36	41	9	66c
08/16	10c	68	55	121	58	0	108c	20	80	109	72
08/17	279	19	48	107c	152	15	91	25	78c	18c	307
08/18	304	23	101c	52	112c	4c	86	88	41	33	188c
08/19	204	8c	91	19c	35	6	61	35c	32	136	22
08/20	6c	12	30	9	41c	14	83c	26	137c	114	60
08/21	28	17	94c	16c	10	35	39	38	17	27c	64
08/22	110	0c	52	9	74	22	69	20	42	4	19c
08/23	4c	17	136	21	68	11c	131	10	53	0	13
08/24	8	8	100	25c	108	3	40	26	4c	4	141
08/25	33	12	26c	9	121	26	61	14	21	9c	81c
08/26	26	0c	43	19	89	10c	56	42c	13	18	42
08/27	24c	10	10	32c	64c	17	39c	17	9c	10	59c
08/28	14	34	4c	50	9	17	2	18	4	12c	19
08/29	48	12c		35	4	6c	13	18	2	13	2
08/30	21c	0		48		2	8	9	5	5	9c
08/31	24			0c	c	7	0	0	4c	2	0
09/01	5		c	20		c				c	

Date	Cumulative CPUE 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
07/09	0	0	0	0	0	0	0c	0	0	0	3
07/10	0	0	0c	0	0	0	0	0	0	0	3
07/11	0	0	0	0c	0c	0c	0	0	0	0	3
07/12	0	0	0	0	0	0	0	0	0	0	3
07/13	0	0	0	0	2	2	0	0c	6	7	3
07/14	0	0	0	0	2c	4c	0c	0	8	7	3c
07/15	0	0	2	0c	2	6	0	0	8	7	5
07/16	2	0	4	0	2	6	0	0	10	7	8
07/17	4	2	6	0	6	8	0	0	11	7	8
07/18	7	2	8	0	6c	12c	0	0c	18	7	10
07/19	13	3	11	0	6	12	4	2	27	16	18c
07/20	21	7	15	0c	10	22	17	8	31	18	18
07/21	26	12	25	0	12c	30	27	15	34	23	18
07/22	31	33	33	7	16	46	34	19c	40	47	40
07/23	43	33	54	9	16	51	37	25	43	75	54c
07/24	51	35	107	9	28	57	45	29	47	84	102
07/25	67	59	136	9	44c	61	47	36c	55	90	141
07/26	79	80	163	9	53	61	49	38	66	95	152c
07/27	97	88	236	11	97	63c	59	61	76	114	164
07/28	126	103	256	14	169c	72	102	95	86	185	192
07/29	186	143	320	25	197	80	136	137c	110	252	218c
07/30	307c	157	374	30	239	117	148	208	135	322	284
07/31	541	186	405c	35	314	460	158	271	148	395c	385
08/01	720	237c	727	47	358c	678	184c	314c	179	468	460
08/02	824c	274	828	87	390	1125	205	337	196	616	493
08/03	1136	343	1233	180	468	1203c	226	455	246c	917	515
08/04	1182	402	1652c	249	511c	1227	280	579	257	1455c	528c
08/05	1259	450c	1905	276	556	1386	345	589c	268	1582	530
08/06	1428c	542	2154	318c	856	1734	423c	621	325c	1900c	554
08/07	1473	724	2363c	421	1226	1929c	473	641	381	2002	731
08/08	1581	809c	2450	475	1409c	1983	546	705c	496	2075	961
08/09	1657c	924	2630	509	1450	2168c	664	748	746	2108c	1117c
08/10	1712	1047	2927	651	1556c	2202	722c	790	1421	2120	1307
08/11	1817	1266	3014c	587	1813	2312	786	824	1841c	2144	1699
08/12	1915	1361c	3340	776	2070c	2386c	996	1072c	1932	2210	1836c
08/13	1940c	1437	3436c	918c	2138	2410	1176c	1163	2056	2242	1900
08/14	1964	1466	3501	1266	2312	2427	1342	1203c	2183c	2242c	1993
08/15	2077	1550c	3681c	1470	2497c	2429c	1600	1239	2224	2252	2059c
08/16	2087c	1619	3735	1591	2555	2429	1708c	1259	2304	2361	2131
08/17	2366	1637	3784	1699c	2706	2444	1798	1284	2382c	2379c	2438
08/18	2669	1661	3885c	1751	2818c	2448c	1884	1371	2422	2412	2626c
08/19	2874	1669c	3976	1770c	2853	2455	1945	1406c	2455	2548	2648
08/20	2880c	1680	4006	1779	2894c	2468	2029c	1433	2592c	2662	2708
08/21	2908	1698	4100c	1795c	2903	2503	2067	1471	2609	2689c	2772
08/22	3017	1698c	4152	1804	2978	2525	2136	1491	2651	2693	2792c
08/23	3021c	1715	4288	1825	3046	2536c	2267	1501	2703	2693	2805
08/24	3030	1723	4389	1850c	3154	2539	2307	1527	2707c	2697	2946
08/25	3062	1734	4414c	1859	3275	2564	2368	1540	2729	2706c	3027c
08/26	3088	1734c	4457	1878	3364	2574c	2424	1583c	2741	2724	3069
08/27	3112c	1744	4467	1910c	3428c	2591	2463c	1600	2750c	2734	3127c
08/28	3126	1778	4471c	1960	3437	2609	2465	1618	2754	2745c	3146
08/29	3175	1790c		1995	3441	2615c	2477	1636	2757	2758	3148
08/30	3196c	1790		2043		2616	2485	1645	2762	2763	3158c
08/31	3219			2043c	c	2624	2485	1645	2766c	2765	3158
09/01	3225		c	2063		c				c	

Date	Percent Passage (through 28 August) 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Mean 85-93
07/09	0	0	0	0	0	0	0	0	0	0	0	0
07/10	0	0	0	0	0	0	0	0	0	0	0	0
07/11	0	0	0	0	0	0	0	0	0	0	0	0
07/12	0	0	0	0	0	0	0	0	0	0	0	0
07/13	0	0	0	0	0	0	0	0	0	0	0	0
07/14	0	0	0	0	0	0	0	0	0	0	0	0
07/15	0	0	0	0	0	0	0	0	0	0	0	0
07/16	0	0	0	0	0	0	0	0	0	0	0	0
07/17	0	0	0	0	0	0	0	0	0	0	0	0
07/18	0	0	0	0	0	0	0	0	1	0	0	0
07/19	0	0	0	0	0	0	0	0	1	1	1	0
07/20	1	0	0	0	0	1	1	0	1	1	1	1
07/21	1	1	1	0	0	1	1	1	1	1	1	1
07/22	1	2	1	0	0	2	1	1	1	2	1	1
07/23	1	2	1	0	0	2	2	2	2	3	2	1
07/24	2	2	2	0	1	2	2	2	2	3	3	2
07/25	2	3	3	0	1	2	2	2	2	3	4	2
07/26	3	4	4	0	2	2	2	2	2	3	5	3
07/27	3	5	5	1	3	2	2	4	3	4	5	3
07/28	4	6	6	1	5	3	4	6	3	7	6	4
07/29	6	8	7	1	6	3	6	8	4	9	7	6
07/30	12	9	8	2	7	4	6	13	5	12	9	8
07/31	17	10	9	2	9	18	6	17	5	14	12	11
08/01	23	13	16	2	10	26	7	19	7	17	15	14
08/02	26	15	19	4	11	43	8	21	7	22	16	18
08/03	36	19	28	9	14	46	9	28	9	33	16	23
08/04	38	23	37	13	15	47	11	36	9	53	17	28
08/05	40	25	43	14	16	53	14	36	10	58	17	31
08/06	46	30	48	16	25	66	17	38	12	69	18	37
08/07	47	41	53	21	36	74	19	40	14	73	23	42
08/08	51	46	55	24	41	76	22	44	18	76	31	45
08/09	53	52	59	26	42	83	27	46	27	77	36	49
08/10	55	59	65	28	45	84	29	49	52	77	42	54
08/11	58	71	67	30	53	89	32	51	67	78	54	60
08/12	61	77	75	40	60	91	40	66	70	81	58	66
08/13	62	81	77	47	62	92	48	72	75	82	60	70
08/14	63	82	78	65	67	93	54	74	79	82	63	74
08/15	66	87	82	75	73	93	65	77	81	82	65	78
08/16	67	91	84	81	74	93	69	78	84	86	68	81
08/17	76	92	85	87	79	94	73	79	86	87	77	84
08/18	85	93	87	89	82	94	76	85	88	88	83	87
08/19	92	94	89	90	83	94	79	87	89	93	84	89
08/20	92	95	90	91	84	95	82	89	94	97	86	91
08/21	93	95	92	92	84	96	84	91	95	98	88	92
08/22	97	95	93	92	87	97	87	92	96	98	89	93
08/23	97	96	96	93	89	97	92	93	98	98	89	95
08/24	97	97	98	94	92	97	94	94	98	98	94	96
08/25	98	98	99	95	95	98	96	95	99	99	96	97
08/26	99	98	100	96	98	99	98	98	100	99	98	98
08/27	100	98	100	97	100	99	100	99	100	100	99	99
08/28	100	100	100	100	100	100	100	100	100	100	100	100

"c" indicates days when commercial fishing periods occurred in District 1

Appendix B.9 Historic daily CPUE for chum salmon catches in the Bethel test fishery.

Date	Daily 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Cumulative CPUE 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Percent Passage (through August) 1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Mean 85-93
05/30	0										0																				
05/31	0				3	0		0	0	0	0				3	0		0	0	0	0	0	0	0	0	0	0	0	0	0
06/01	0			0	0	0	0	0	0	18	0			0	3	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0
06/02	0	0		0	0	0	0	0	0	3	0	0		0	3	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0
06/03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/04	0	6	3	0	0	0	0	0	0	0	0	6	3	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06/05	0	10	12	0	0	0	0	2	0	2	0	16	15	0	6	0	0	2	0	28	0	0	0	0	0	0	0	0	0	0	0
06/06	0	0	8	3	0	0	0	3	0	0	0	16	22	12	11	0	0	2	0	31	0	0	0	0	0	0	0	0	0	0	0
06/07	0	8	9	11	10	0	0	3	0	0	0	24	30	23	22	0	0	3	0	31	0	0	0	0	0	0	0	0	0	0	0
06/08	0	28	15	38	9	0	0	3	0	10	0	53	45	61	30	0	0	3	0	41	0	0	0	0	0	0	0	0	0	0	0
06/09	0	8	6	29	12	0	0	6	0	0	0	58	52	90	42	0	0	2	0	41	0	0	0	0	0	0	0	0	0	0	0
06/10	0	8	21	63	3	0	0	12	0	0	0	68	72	153	45	0	0	2	0	44	0	0	0	0	0	0	0	0	0	0	0
06/11	0	0	13	81	17	0	0	6	0	13	0	77	86	262	62	0	0	2	0	57	0	0	0	0	0	0	0	0	0	0	0
06/12	0	0	19	87	20	0	0	47	0	28	0	77	105	331	82	0	0	2	0	86	0	0	0	0	0	0	0	0	0	0	0
06/13	0	8	3	19	7	13	0	21	2	56	0	86	108	350	90	18	0	108	33	142	0	0	0	0	0	0	0	0	0	0	0
06/14	0	38	10	45	36	0	0	105	13	143	0	124	117	395	128	18	0	212	27	285	0	0	0	0	0	0	0	0	0	0	0
06/15	0	26	42	26c	24	0	0	112	13	59	0	170	159	221c	158	18	0	328	28	323	0	0	0	0	0	0	0	0	0	0	0
06/16	0	131	122	56	4	0	0	55	10	52	0	294	281	277	154	33	0	383	59	305	0	0	0	0	0	0	0	0	0	0	0
06/17	0	108	41c	195	49	20	0	23c	35	20	0	398	322c	271	203	33	0	259c	93	318	0	0	0	0	0	0	0	0	0	0	0
06/18	65	151	6	120	68c	28	0	0	0	263	60	549	328	832	593c	81	0	426	93	678	7	14	7	16	10	3	1	14	4	14	6
06/19	115c	84	60	170c	42	9c	25c	31	17	27	205c	913	388	891c	715	100c	34c	499	105	705	15	15	8	16	12	4	3	13	4	15	10
06/20	3	87	200	353	29	30	0	28	35	278	237	800	415	1025	791	130	37	518	127	983	16	17	8	20	15	5	3	16	6	21	12
06/21	25	184	237	57	38	55	0	53c	32	160	270	804	615	1276	936	156	48	397c	244	1107	17	20	13	25	17	8	4	20	9	23	14
06/22	28	203	109	246	73c	33	12	58	62	120	298	1007	715	1526	1036	205	60	620	310	1227	20	25	15	25	20	8	5	20	12	27	17
06/23	3c	116	48c	86c	167	17	8c	58	126	112c	295c	1119	763c	1608c	892	282	66c	649	436	1209c	20	28	15	31	27	10	5	21	17	30	19
06/24	52	490	66	19	208	36c	3	33c	107c	10	313	1572	829	1624	900	314c	74	688c	543c	1219	24	39	16	31	34	12	6	23	21	30	23
06/25	68	176c	100	63	117c	28	3	43	0	17	380	1756c	929	1687	1011c	363	106	732	543	1235	29	43	16	31	39	13	8	24	21	30	25
06/26	38c	109	82	308	134	168	58	212	2	16	418c	1865	1015	1995	1145	531	163	943	550	1252	33	46	21	38	44	20	13	31	21	31	30
06/27	64	35	105	108c	78	72	20	107	13	7	463	1901	1120	2101c	1223	603	213	1050	563	1258	35	47	23	40	47	22	17	34	22	31	32
06/28	180	6	268	108	122	87c	64	130c	30	57	643	1907	1382	2210	1345	690c	277	1180c	594	1315	48	47	28	43	52	25	22	39	23	32	36
06/30	122	105c	246c	88	106c	32	8	136	153	7	820	2012c	1635c	2298	1452c	722	285	1316	746	1322	69	46	33	44	56	27	23	43	29	32	41
07/01	77c	3	136	386	115	67	30c	124	120	10	896c	2015	1787	2681	1567	786	315c	1449	866	1532	68	50	36	52	60	26	25	47	33	32	47
07/02	31	70	120	188c	68	28	91	43	19	19	928	2085	1906	2868c	1633	812	406	1483	885	1551	70	51	38	55	63	30	32	48	34	33	47
07/03	24	193c	34c	437	78c	200	22	267	125	192	952	2277c	1943c	3306	1731c	1017	427	1750	1010	1743	72	56	40	64	65	32	34	57	39	37	52
07/04	5c	123	62	269	57	214	33	322	82	141	957c	2401	2003	3775	1768	1231	461	2072	1092	1883	72	59	41	73	68	35	36	68	42	40	56
07/05	40	309	177	192c	182c	188c	6	385	78	88	997	2709	2180	3966c	1950c	1419c	265	2261	1170	1971	75	67	41	76	75	35	39	74	45	40	59
07/06	25	140	389	120	59	26	12c	105c	39	383	1022	2850	2569	4086	2004	1445	278c	2366c	1209	2355	77	70	52	78	77	53	38	77	47	50	63
07/07	93	62c	463c	27	117	173	12	13	27	245	1115	2912c	3032c	4114	2126	1618	260	2378	1233	2600	82	72	62	79	81	59	38	78	48	50	67
07/08	3	68	38	34c	65c	136	9	139	21	232	1118	2979	3070	4148c	2160c	1754	269	2518	1304	2332	82	75	63	80	84	64	40	79	50	70	69
07/09	5	246	272	62	57	81c	60	28	31	384	1123	3225	3342	4210	2217	1815c	259	2567	1335	2335	82	78	68	82	84	64	40	82	50	70	72
07/10	0	34c	208	148	66	81	49	28	28	253	1123	3260c	3550	4388	2317	1892	305	2613	1363	2678	82	80	72	82	86	70	40	84	53	69	72
07/11	0	87	63c	83c	3c	28	29	28	37	69	1123	3347	3612c	4471c	2317c	1976	331	2693	1400	2707	82	82	74	82	86	70	50	87	53	69	74
07/12	3	163	53	65	7	74	43	50	62	33	1126	3510	3665	4546	2317	2048	374	2769	1491	2740	82	86	74	86	86	75	50	86	54	69	75
07/13	10	134	87	63	55	23	31c	51	270	108	1137	3672	3753	4598	2329	2049	394	2828	1540	2848	82	88	74	86	91	77	52	87	59	68	77
07/14	0	25	255	38c	35c	53c	28	29	67	36c	1137	3698	4007	4637c	2347	2071	633c	2870	1588	4188	82	90	82	88	92	78	55	91	67	68	80
07/15	0	10	23c	20	31	27	20	37	140	39	1137	3708	4068c	4737c	2373c	2104c	423	2892	1638	4223c	82	90	82	87	92	78	57	93	69	69	83
07/16	6	16	33	82	20	37	12	21	88	32	1142	3696	4101	4788	2445	2165	753	2867	2026	4315	88	91	84	92	94	80	60	94	78	91	84

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Appendix B.9 (Page 2 of 2)

Date	Daily 1985	Daily 1986	Daily 1987	Daily 1988	Daily 1989	Daily 1990	Daily 1991	Daily 1992	Daily 1993	Daily 1994	Cumulative CPUE 1985	Cumulative CPUE 1986	Cumulative CPUE 1987	Cumulative CPUE 1988	Cumulative CPUE 1989	Cumulative CPUE 1990	Cumulative CPUE 1991	Cumulative CPUE 1992	Cumulative CPUE 1993	Cumulative CPUE 1994	Percent Passage (through August) 1985	Percent Passage 1986	Percent Passage 1987	Percent Passage 1988	Percent Passage 1989	Percent Passage 1990	Percent Passage 1991	Percent Passage 1992	Percent Passage 1993	Percent Passage 1994	Mean 85-93
07/15	10	136	87	43	33	23	21c	11	270	108	1137	3664	2732	2399	2379	2071	693c	2770	1731	2188	86	91	77	89	91	76	55	81	67	88	80
07/16	8	25	255	38c	33c	33c	28	53	136	36c	1117	3668	2707	2437c	2317c	2104c	223	2820	1738	2188c	86	91	83	81	93	78	56	83	75	80	83
07/17	0	10	61c	89	31	24	20	21	88	39	1117	3667	2706c	2408	2228	2158	255	2829	1739	2243	86	91	82	82	92	80	50	82	78	81	82
07/18	6	26	33	82	20	37	12	21	88	36	1117	3678	2704	2389	2223	2189	231	2836	1739	2310	86	92	82	82	92	80	51	82	81	81	82
07/19	36	43	102	64	12	53	16	23	43	28	1183	3733	2705	2426c	2186c	2170	230	2850	1741	2370	88	93	88	85	92	81	51	85	83	82	84
07/20	18	43	125	37c	23c	22	11c	23	93	30	1183	3785	2733	2462c	2207c	2172	227c	2872	1774	2376	88	93	89	85	92	81	51	85	83	82	84
07/21	19	50	102	18	18	69	16	29	25	28c	1202	3831	2735	2422	2207	2188	227	2874	1798	2403c	91	94	93	85	92	81	58	88	86	83	87
07/22	7	36	170c	29	29	23	16	3	27	0	1207	3867	2708c	2434	2230	2208	227	2884	1799	2415	91	95	89	85	92	81	58	89	86	83	87
07/23	13	52	23	36c	13	57	20	3	31	0	1216	3919	2729	2400c	2243	2242	227	2922	1750	2412	92	97	87	86	92	81	71	87	81	83	85
07/24	12	34	12	10	7	40	37c	0	134	82	1225	3953	2720	2399	2257	2283	231c	2932	1789	2494	92	97	87	86	92	81	75	87	86	83	85
07/25	6	28	8	6	13	35	33	23	28	44c	1231	3979	2748	2005	2264	2320	283	2975	1812	2538	93	98	87	86	88	83	78	87	87	86	84
07/26	2	29	28	24	0	24	12	6	0	35	1233	4008	2719	2030	2264	2345	285	2981	1821	2593	93	99	87	86	88	83	79	87	87	86	84
07/27	9	11	43	15c	4	8	56c	10	0	26	1233	4019	2817	2043c	2268	2352	1051c	2991	1821	2619	93	99	88	87	88	83	83	88	87	87	85
07/28	6	2	20	13	0	2	8	2	2	0c	1240	4021	2837	2058	2268	2354	1050	2999	1823	2628c	94	99	88	87	88	83	83	88	88	87	86
07/29	2	3	4	18	0c	18	48	8	7	0	1241	4023	2841	2075	2268c	2372	1108	3006	1830	2636	94	99	88	88	88	83	88	88	88	88	86
07/30	4	7	6	10c	0	35	18	9	4	18	1255	4031	2847	2085c	2268	2607	1126	3015	1834	2654	95	99	88	88	88	86	89	88	88	88	87
07/31	10	11	5	13	1	36	36c	2	5	11c	1265	4042	2852	2098	2270	2643	1162c	3019	1839	2665c	95	99	88	88	88	87	92	88	88	88	87
08/01	2	5	2	23	0	8	12	2	2	6	1269	4047	2854	5120	2570	2651	1175	3025	1871	2671	96	100	88	88	88	87	93	88	88	88	88
08/02	1	0c	1	7	14	2	27	0	5c	12	1270	4047c	2856	5120	2584	2653	1169	3025	2577c	2685	96	100	88	88	88	87	95	88	88	88	88
08/03	0	5	4	5c	6	6c	8c	0	2	16	1270	4050	2860	5131c	2588	2652c	1207c	3025	2552	2701	96	100	88	88	88	88	95	88	88	88	88
08/04	1c	0	4	7	8	6	9	15	2	10	1271c	4051	2863	5132	2588	2662	1213	3030	2558	2711	96	100	88	88	100	88	95	88	88	88	88
08/05	4	4	6	9	4c	9	19	1c	2	2	1272	4055	2867	5122	2602c	2671	1227	3042c	2561	2715	96	100	88	88	100	88	97	88	88	88	88
08/06	6	1c	11	3c	0	1	10	0	11c	2c	1281	4055c	2867	5125c	2603	2672	1237	3042	2571c	2715c	96	100	100	88	100	88	98	88	88	88	88
08/07	6	0	2	7	3	23c	5	2c	2c	0	1281c	4055	2869	5123	2603	2673	1234c	3042	2580	2717	96	100	100	88	100	88	98	100	88	88	88
08/08	4	1c	0	10	3c	8	2	0	0	0	1285	4056c	2869c	5122	2603	2673c	1238	3042c	2583c	2717	97	100	100	88	100	88	98	100	88	88	88
08/09	0c	0	0	3c	0	5c	5c	0	0	3	1286c	4056	2869	5122	2608c	2673	1238	3042	2583	2722	97	100	100	88	100	88	98	100	88	88	88
08/10	0	0	2	3c	0c	4	2	0	0c	2c	1286	4056	2869	5120	2608	2673	1232c	3042	2583	2722	97	100	100	88	100	88	98	100	88	88	88
08/11	36	0	2	4c	0	2c	2	0	0	2	1289	4062	2869	5124c	2610	2678c	1228	3050	2583	2723	100	100	100	88	100	88	98	100	88	88	100
08/12	1	0c	1	3	0	2	4	2c	0	5	1322	4062c	2869	5126c	2610	2710	1225	3052c	2583	2723	100	100	100	88	100	88	98	100	88	88	100
08/13	0c	1c	0	2c	0c	4	3c	0	0	2c	1322c	4062	2869	5126c	2610c	2712	1225c	3052	2583	2722c	100	100	100	88	100	88	98	100	88	88	100
08/14	0	1c	0c	0	0	0c	0	0	0	0	1322	4062c	2869c	5126	2610	2712c	1226	3052	2583	2722	100	100	100	88	100	88	100	100	88	88	100
08/15	0	0	0	0	0	0c	0c	0c	0	0	1322	4063	2869	5126	2610	2712	1226c	3052c	2583c	2722	100	100	100	88	100	88	100	100	88	88	100
08/16	0c	2c	4	1c	0c	2	0	0	0	0c	1322c	4066c	2869	5126c	2610c	2712	1228	3052	2583	2722c	100	100	100	88	100	88	100	100	88	88	100
08/17	0	0	1	1	0	2c	0	0	0	0	1322	4066	2869	5126	2610	2712c	1228	3052	2583	2722	100	100	100	88	100	88	100	100	88	88	100
08/18	0	0c	0c	0	0	0	2	0c	0c	0	1322	4066	2869c	5126	2610	2712	1264	3052c	2583c	2722	100	100	100	88	100	88	100	100	88	88	100
08/19	0c	0	0c	0c	0c	0	0	0	2c	0	1322	4066	2869c	5126c	2610c	2712	1264	3052	2583	2722c	100	100	100	88	100	88	100	100	88	88	100
08/20	0	0	0c	0c	0	0c	0	0c	0	0	1322	4066	2869	5126c	2610	2712	1262c	3052	2585	2722	100	100	100	88	100	88	100	100	88	88	100
08/21	0	0c	0c	0	0	0	0	0	0c	0	1322	4066	2869	5126	2610	2712	1262	3052c	2585c	2722	100	100	100	88	100	88	100	100	88	88	100
08/22	0c	0	0	0	0	2	0	0	0	0c	1322c	4066	2869	5126	2610	2712c	1262	3052	2585	2722c	100	100	100	88	100	88	100	100	88	88	100
08/23	0	0	0	0	0c	0	0	0	0	0	1322	4066	2869	5126	2610	2720	1262	3052	2585	2722	100	100	100	88	100	88	100	100	88	88	100
08/24	0	0	0c	0	0	0	0	0c	0	0	1322	4066	2869c	5126	2610	2720	1262	3052c	2585	2722	100	100	100	88	100	88	100	100	88	88	100
08/25	0	0c	0	0	0	0	0	0	0c	0c	1322	4066	2869	5126	2610	2720	1262	3052	2585c	2722c	100	100	100	88	100	88	100	100	88	88	100
08/26	0c	0	0	0	0c	0	0c	0	0	0	1322c	4066	2869	5126	2610c	2720	1262c	3052	2585	2722	100	100	100	88	100	88	100	100	88	88	100
08/27	0	0	0c	0c	0	2c	0	0c	0	0c	1322	4066	2869c	5126c	2610	2722c	1262	3052c	2585	2722c	100	100	100	88	100	88	100	100	88	88	100
08/28	0	0c	0	0	0	0	0	0	0c	0	1322	4066c	2869	5126	2610	2722	1262	3052c	2585c	2722	100	100	100	88	100	88	100	100	88	88	100
08/29	0c	0	0	0	0c	0	0	0	0	0	1322c	4066	2869	5126	2610c	2722	1262	3052	2585	2722	100	100	100	88	100	88	100	100	88	88	100
08/30	0	0	0	0	0	0	0	0	0	0c	1322	4066	2869	5126	2610	2722	1262	3052	2587	2722	100	100	100	88	100	88	100	100	88	88	100
08/31			0c	c	0	0	0	0c	0				4900c	c	2610	2722	1262	3052c	2587	2749c	100	100	100	88	100	88	100	100	88	88	100
09/01		c	0		c				c			c	4900		c		c			c											

"c" indicates days when commercial fishing periods occurred in District 1

Appendix B.10. Historic mean daily CPUE for chinook salmon caught in the Aniak test fishery, by station (south shore and north).

Date	South Shore (Aniak) Daily 1992	Daily 1993	Daily 1994	Cumulative 1992	Cumulative 1993	Cumulative 1994	Percent Passage 1992	Percent Passage 1993	Percent Passage 1994	North Shore Daily 1992	Daily 1993	Daily 1994	Cumulative 1992	Cumulative 1993	Cumulative 1994	Percent Passage 1992	Percent Passage 1993	Percent Passage 1994
05/31											0							
06/01		0									3							
06/02		0									2							
06/03		0									4							
06/04		1									5							
06/05		2									3							
06/06		9									7							
06/07		2									7							
06/08		4									33							
06/09		4									10							
06/10		3									11							
06/11		3									18							
06/12		3									6							
06/13		4	3								5	54						
06/14		7	7								18	91						
06/15		8	9*								62	77*						
06/16	3	16	11	3	16	11	0	2	2	42	68	64	42	68	64	6	6	5
06/17	3	24	13	6	41	24	1	4	5	22	83	104	64	151	168	9	13	13
06/18	6c	23	15	12c	63	39	1	7	9	40c	125	134	104c	276	302	14	23	23
06/19	14	15	59	25	78	98	3	9	22	31	16	112	135	292	414	19	25	32
06/20	13	23	17	38	102	115	5	11	26	46	22	161	181	313	575	25	26	45
06/21	35	58	35	73	160	150	9	18	34	5	54	97	186	367	672	26	31	52
06/22	13c	38	24	86c	198	174	11	22	39	22c	73	48	207c	440	720	29	37	56
06/23	27	32	7	112	230	181	14	25	41	85	155	50	292	595	770	41	50	60
06/24	63	56	20c	175	285	201c	22	32	45	36	136	30c	328	732	801c	46	62	62
06/25	13c	70c	6	188c	355c	207	24	39	47	16c	56c	21	344c	787c	822	48	66	64
06/26	27	70	0	214	425	207	27	47	47	24	38	25	368	826	847	51	70	66
06/27	14	54	17	228	479	224	29	53	50	17	37	18	384	863	865	54	73	67
06/28	31	46	8	259	525	232	33	58	52	13	34	8	397	897	873	55	76	68
06/29	23c	59	11	282c	584	243	35	65	55	40c	50	5	436c	947	878	61	80	68
06/30	27	46	21	308	630	264	39	70	59	37	31	17	474	978	895	66	83	69
07/01	3	72	7	312	703	272	39	78	61	28	38	15	502	1016	910	70	86	70
07/02	38	52	0	350	755	272	44	84	61	19	13	11	520	1029	920	73	87	71
07/03	22	23	27	371	779	299	47	86	67	8	13	16	528	1043	936	74	88	73
07/04	14	23	10	385	802	309	48	89	70	12	13	30	540	1056	966	75	89	75
07/05	9	14	11	394	816	320	50	90	72	12	29	55	551	1085	1021	77	92	79
07/06	28c*	14	29	422c*	829	349	53	92	78	20c*	13	59	571c*	1099	1080	80	93	84
07/07	28*	7	3	450*	836	352	57	93	79	20*	4	29	591*	1102	1109	82	93	86
07/08	46	14	10	497	850	363	62	94	82	28	11	21	619	1113	1129	86	94	87
07/09	89	0	10*	586	850	372*	74	94	84	21	10	19*	641	1123	1148*	89	95	89
07/10	62*	0*	9*	648*	850*	381*	81	94	86	18*	5*	18*	659*	1128*	1166*	92	95	90
07/11	35	0*	8*	683	850*	390*	86	94	88	15	5*	17*	674	1133*	1183*	94	96	92
07/12	13	0	8*	697	850	397*	88	94	89	8	0	15*	681	1133	1199*	95	96	93
07/13	12	0	7*	709	850	404*	89	94	91	5	0	14*	687	1133	1213*	96	96	9[illegible]
07/14	33	10	6c*	741	860	411*c	93	95	92	2	10	13*c	689	1144	1226*c	96	97	9[illegible]
07/15	7	14	6*	748	874	417*	94	97	94	0	3	12*	689	1147	1237*	96	97	96
07/16	12	7	5*	760	881	422*	96	98	95	2	5	10*	690	1152	1247*	96	97	97
07/17	6	3*	5*	767	883*	426*	96	98	96	2	2*	9*	692	1155*	1256*	96	97	97
07/18	0	0*	4*	767	883*	430*	96	98	97	3	4*	8*	695	1159*	1264*	97	98	98
07/19	1	1*	3*c	768	884*	433*c	97	98	97	0	0*	6*c	695	1159*	1271*c	97	98	98
07/20	7	3*	3*	775	887*	436*	97	98	98	0	0*	5*	695	1159*	1276*	97	98	99
07/21	0	0*	2*	775	887*	438*	97	98	98	4	4*	4*	699	1163*	1280*	97	98	99
07/22	4	2*	1*	779	889*	439*	98	98	99	4	5*	3*	703	1168*	1282*	98	99	99
07/23	0	0*	1*c	779	889*	440*c	98	98	99	0	0*	1*c	704	1168*	1283*c	98	99	99
07/24	3	2*	0*	782	890*	440*	98	99	99	0	0*	0*	704	1168*	1283*	98	99	99
07/25	0	0*	0	782	890*	440	98	99	99	0	0*	0	704	1168*	1283	98	99	99
07/26	0	0*	0c	782	890*	440c	98	99	99	2	2*	0c	705	1170*	1283c	98	99	99
07/27	0	0*	0	782	890*	440	98	99	99	2	2*	0	707	1172*	1283	99	99	99
07/28	2	1*	3	784	891*	443	98	99	100	2	2*	3	709	1174*	1287	99	99	100
07/29	0	0*	0c	784	891*	443c	98	99	100	0	0*	1c	709	1174*	1288c	99	99	100
07/30	5	3*	0	789	894*	443	99	99	100	4	5*	0	713	1179*	1288	99	100	100
07/31	0	0c*	1	789	894c*	445	99	99	100	0	0c*	0	713	1179c*	1288	99	100	100
08/01	2	1*	0	791	895*	445	99	99	100	3	4*	0	716	1183*	1288	100	100	100
08/02	1	0	0	792	895	445	100	99	100	1	0	2	717	1183	1290	100	100	100
08/03	0c	2	0	792c	896	445	100	99	100	0c	0	0	717c	1183	1290	100	100	100

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Date	South Shore (Aniak)									North Shore								
	Daily			Cumulative			Percent Passage			Daily			Cumulative			Percent Passage		
	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994
07/04	0	3c	0c	792	900c	445c	100	100	100	0	0c	0c	717	1183c	1290c	100	100	100
07/05	0	0	0	792	900	445	100	100	100	0	0	0	717	1183	1290	100	100	100
08/06	0c	0c	0	792c	900c	445	100	100	100	0c	0c	0	717c	1183c	1290	100	100	100
08/07	0	0	0	792	900	445	100	100	100	0	2	0	717	1184	1290	100	100	100
08/08	0	0	0	792	900	445	100	100	100	0	0	0	717	1184	1290	100	100	100
08/09	2	0c	0c	794	900c	445c	100	100	100	0	0c	0c	717	1184c	1290c	100	100	100
08/10	0	0	0	794	900	445	100	100	100	0	0	0	717	1184	1290	100	100	100
08/11	0c	0	0	794c	900	445	100	100	100	0c	0	0	717c	1184	1290	100	100	100
08/12	0	0	0c	794	900	445c	100	100	100	0	0	2c	717	1184	1291c	100	100	100
08/13	0	3	0	794	903	445	100	100	100	0	0	0	717	1184	1291	100	100	100
08/14	0c	0c	0	794c	903c	445	100	100	100	0c	0c	0	717c	1184c	1291	100	100	100
08/15	0	0	0c	794	903	445c	100	100	100	0	0	0c	717	1184	1291c	100	100	100
08/16	0	0	0	794	903	445	100	100	100	0	0	0	717	1184	1291	100	100	100
08/17	0c	0c	0	794c	903c	445	100	100	100	0c	0c	0	717c	1184c	1291	100	100	100
08/18	0	0	0c	794	903	445c	100	100	100	0	0	0c	717	1184	1291c	100	100	100
08/19	2	0	0	796	903	445	100	100	100	0	0	0	717	1184	1291	100	100	100
08/20	0c	0	0	796c	903	445	100	100	100	0c	0	0	717c	1184	1291	100	100	100
08/21	0	0c	0	796	903c	445	100	100	100	0	0c	0	717	1184c	1291	100	100	100
08/22	0	0	0c	796	903	445c	100	100	100	0	0	0c	717	1184	1291c	100	100	100
08/23	0	0	0	796	903	445	100	100	100	0	0	0	717	1184	1291	100	100	100
08/24	0c	0	0	796c	903	445	100	100	100	0c	0	0	717c	1184	1291	100	100	100
08/25	0	0c	0*c	796	903c	445*c	100	100	100	0	0c	0c*	717	1184c	1291*c	100	100	100
08/26	0	0	0*	796	903	445*	100	100	100	0	0	0*	717	1184	1291*	100	100	100
08/27	0c	0	0c	796c	903	445c	100	100	100	0c	0	0c	717c	1184	1291c	100	100	100
08/28	0	0c	0	796	903c	445	100	100	100	0	0c	0	717	1184c	1291	100	100	100
08/29	0	0		796	903		100	100		0	0		717	1184		100	100	
08/30	0	0	c	796	903	c	100	100		0	0	c	717	1184	c	100	100	
08/31	0c	0		796c	903		100	100		0c	0		717c	1184		100	100	
09/01	0	0c		796	903c		100	100		0	0c		717	1184c		100	100	
09/02	0	0	c	796	903	c	100	100		0	0	c	717	1184	c	100	100	
09/03	0	0		796	903		100	100		0	0		717	1184		100	100	
09/04	0			796	903		100	100		0			717					
09/05	0			796						0			717					
09/06	0			796						0			717					
09/07	0			796						0			717					
09/08	0			796						0			717					
09/09	0			796						0			717					
09/10	0			796						0			717					

"c" = commercial fishing period in W-1
"*" = daily CPUE estimated

Date	Both Shores Daily 1992	Daily 1993	Daily 1994	Cumulative 1992	Cumulative 1993	Cumulative 1994	Percent Passage 1992	Percent Passage 1993	Percent Passage 1994
05/31		0							
06/01		2							
06/02		1							
06/03		2							
06/04		3							
06/05		3							
06/06		8							
06/07		5							
06/08		23							
06/09		7							
06/10		9							
06/11		13							
06/12		5							
06/13		5	37						
06/14		12	49						
06/15		44	56*						
06/16	23	42	64	23	42	64	3	4	7
06/17	13	54	59	35	96	122	5	9	14
06/18	23c	74	74	58c	169	197	8	16	22
06/19	22	16	77	80	185	273	11	18	30
06/20	30	22	89	109	208	363	14	20	40
06/21	20	56	66	129	264	428	17	26	47
06/22	17c	55	36	146c	319	464	19	31	51
06/23	56	93	29	202	413	493	27	40	55
06/24	49	96	25c	251	509	518c	33	49	57
06/25	15c	58c	14	266c	567c	532	35	55	59
06/26	25	54	12	291	621	544	39	60	60
06/27	15	46	18	306	666	562	41	65	62
06/28	22	40	8	328	706	570	43	68	63
06/29	31c	55	7	359c	761	577	48	74	64
06/30	32	39	19	391	800	596	52	77	66
07/01	16	55	11	407	855	607	54	83	67
07/02	28	33	5	435	888	612	58	86	68
07/03	15	18	22	449	906	634	60	88	70
07/04	13	18	23	462	924	657	61	90	73
07/05	11	21	40	473	946	697	63	92	77
07/06	24c*	14	49	497c*	959	746	66	93	83
07/07	24*	5	20	521*	965	767	69	93	85
07/08	37	12	15	558	977	782	74	95	86
07/09	55	5	14*	613	982	796*	81	95	88
07/10	40*	3*	14*	653*	985*	810*	87	95	90
07/11	25	3*	13*	679	987*	822*	90	96	91
07/12	10	0	12*	689	987	834*	91	96	92
07/13	9	0	11*	698	987	845*	93	96	93
07/14	17	10	10*c	715	997	854*c	95	97	94
07/15	3	9	9*	718	1006	863*	95	97	95
07/16	7	6	8*	725	1012	871*	96	98	96
07/17	4	2*	7*	729	1014*	877*	97	98	97
07/18	2	1*	6*	731	1015*	883*	97	98	98
07/19	1	0*	5*c	732	1016*	888*c	97	98	98
07/20	3	2*	4*	735	1018*	892*	98	99	99
07/21	2	1*	3*	737	1019*	895*	98	99	99
07/22	4	2*	2*	741	1021*	897*	98	99	99
07/23	0	0*	1*c	741	1021*	898*c	98	99	99
07/24	2	1*	0*	743	1022*	898*	99	99	99
07/25	0	0*	0	743	1022*	898	99	99	99

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Appendix B.10. (page 4 of 4)

Date	Both Shores Daily 1992	Daily 1993	Daily 1994	Cumulative 1992	Cumulative 1993	Cumulative 1994	Percent Passage 1992	Percent Passage 1993	Percent Passage 1994
07/26	1	0*	0c	744	1023*	898c	99	99	99
07/27	1	0*	0	744	1023*	898	99	99	99
07/28	2	1*	3	746	1024*	901	99	99	100
07/29	0	0*	1c	746	1024*	902c	99	99	100
07/30	2	1*	0	748	1025*	902	99	99	100
07/31	0	0c*	1	748	1025c*	902	99	99	100
08/01	3	2*	0	751	1027*	902	100	99	100
08/02	1	0	1	752	1027	903	100	99	100
08/03	0c	1	0	752c	1028	903	100	100	100
08/04	0	2c	0c	752	1029c	903c	100	100	100
08/05	0	0	0	752	1029	903	100	100	100
08/06	0c	0c	0	752c	1029c	903	100	100	100
08/07	0	1	0	752	1030	903	100	100	100
08/08	0	0	0	752	1030	903	100	100	100
08/09	1	0c	0c	753	1030c	903c	100	100	100
08/10	0	0	0	753	1030	903	100	100	100
08/11	0c	0	0	753c	1030	903	100	100	100
08/12	0	0	1c	753	1030	904c	100	100	100
08/13	0	2	0	753	1033	904	100	100	100
08/14	0c	0c	0	753c	1033c	904	100	100	100
08/15	0	0	0c	753	1033	904c	100	100	100
08/16	0	0	0	753	1033	904	100	100	100
08/17	0c	0c	0	753c	1033c	904	100	100	100
08/18	0	0	0c	753	1033	904c	100	100	100
08/19	1	0	0	754	1033	904	100	100	100
08/20	0c	0	0	754c	1033	904	100	100	100
08/21	0	0c	0	754	1033c	904	100	100	100
08/22	0	0	0c	754	1033	904c	100	100	100
08/23	0	0	0	754	1033	904	100	100	100
08/24	0c	0	0	754c	1033	904	100	100	100
08/25	0	0c	0*c	754	1033c	904*c	100	100	100
08/26	0	0	0*	754	1033	904*	100	100	100
08/27	0c	0	0c	754c	1033	904c	100	100	100
08/28	0	0c	0	754	1033c	904	100	100	100
08/29	0	0		754	1033		100	100	
08/30	0	0	c	754	1033	c	100	100	
08/31	0c	0		754c	1033		100	100	
09/01	0	0c		754	1033c		100	100	
09/02	0	0	c	754	1033	c	100	100	
09/03	0	0		754	1033		100	100	
09/04	0	0		754	1033		100	100	
09/05	0			754					
09/06	0			754					
09/07	0			754					
09/08	0			754					
09/09	0			754					
09/10	0			754					

(Year) escapement objectives not achieved. * = daily CPUE

Appendix B.11. Historic mean daily CPUE for sockeye salmon caught in the Aniak test fishery, by station (south shore and north shore) the Aniak test fishery, all stations combined.

Date	South Shore (Aniak)									North Shore								
	Daily			Cumulative			Percent Passage			Daily			Cumulative			Percent		
	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994
05/31		0			0						0			0				
06/01		0			0						0			0				
06/02		0			0						0			0				
06/03		0			0						0			0				
06/04		0			0						0			0				
06/05		0			0						0			0				
06/06		0			0						0			0				
06/07		0			0						0			0				
06/08		0			0						0			0				
06/09		0			0						0			0				
06/10		0			0						0			0				
06/11		0			0						0			0				
06/12		0			0						2			2				
06/13		0	0		0	0					0	2		2	2			
06/14		0	0		0	0					3	2		5	3			
06/15	4	0	0*	4	0	0*	0	0	0		6	1*		11	4*	0	0	
06/16	0	2	0	4	2	0	0	0	0	0	8	0	0	20	4	0	0	0
06/17	2	4	0	6	5	0	1	0	0	3	33	0	3	52	4	0	1	0
06/18	7c	12	2	12c	17	2	1	1	0	8c	30	7	11c	82	11	1	2	
06/19	2	21	0	14	39	2	2	2	0	18	4	0	29	86	11	2	2	
06/20	3	23	2	17	62	4	2	3	0	26	21	5	55	107	16	4	3	
06/21	0	45	2	17	107	6	2	5	0	12	81	5	66	188	21	5	5	
06/22	6c	78	0	23c	185	6	3	8	0	24c	78	12	90c	266	34	7	7	2
06/23	7	158	2	29	342	7	3	16	0	28	57	18	118	323	52	9	8	2
06/24	16	133	0c	45	476	7c	5	22	0	20	168	22c	138	490	73c	11	12	
06/25	28c	41c	8	73c	517c	15	8	24	1	0c	135c	97	138c	625c	170	11	16	
06/26	4	167	0	77	684	15	9	31	1	28	157	3	165	782	173	13	20	
06/27	11	158	25	87	842	40	10	39	2	32	125	63	197	908	235	15	23	11
06/28	7	55	23	94	897	63	11	41	3	2	198	110	199	1106	345	16	28	16
06/29	9c	59	34	102c	956	97	12	44	5	6c	202	163	205c	1308	508	16	33	24
06/30	7	70	99	109	1027	196	12	47	10	20	233	65	225	1541	573	18	39	2
07/01	2	71	84	111	1097	279	13	50	15	39	116	149	263	1658	722	21	42	3
07/02	39	73	56	150	1170	336	17	54	18	39	235	201	302	1893	923	24	48	4
07/03	23	183	11	174	1354	347	20	62	18	24	403	49	326	2296	972	25	58	45
07/04	11	23	113	185	1377	460	21	63	24	30	403	183	356	2699	1155	28	68	54
07/05	78	79	78	263	1456	537	30	67	28	7	208	151	362	2907	1306	28	74	61
07/06	85c*	69	65	348c*	1525	603	40	70	32	72c*	257	128	435c*	3163	1434	34	80	67
07/07	85*	55	82	433*	1579	685	49	72	36	72*	205	74	507*	3368	1508	40	85	7
07/08	92	69	127	526	1648	812	60	76	43	138	134	75	645	3502	1584	50	89	74
07/09	50	82	120*	576	1730	932*	66	79	49	84	93	71*	729	3595	1654*	57	91	77
07/10	37*	55*	113*	613*	1785*	1045*	70	82	55	54*	59*	66*	783*	3653*	1720*	61	[illegible]	80
07/11	23	55*	106*	635	1841*	1151*	72	84	60	24	59*	61*	807	3712*	1782*	63	[illegible]	[illegible]
07/12	13	28	99*	648	1869	1249*	74	86	65	15	25	57*	822	3737	1838*	64	[illegible]	[illegible]
07/13	18	14	92*	666	1883	1341*	76	86	70	32	21	52*	854	3757	1890*	67	[illegible]	[illegible]
07/14	3	34	85c*	669	1917	1426c*	76	88	75	4	3	47c*	859	3761	1937c*	67	95	90
07/15	21	7	78*	690	1924	1504*	79	88	79	30	0	42*	888	3761	1980*	69	95	92
07/16	18	23	71*	708	1947	1574*	81	89	82	38	5	38*	926	3766	2017*	72	96	94
07/17	9	13*	64*	717	1960*	1638*	82	90	86	39	19*	33*	965	3785*	2050*	75	96	95
07/18	15	22*	57*	732	1983*	1695*	83	91	89	48	24*	28*	1013	3809*	2079*	79	97	97
07/19	8	11*	50c*	740	1994*	1744c*	84	91	91	62	30*	24c*	1074	3839*	2102c*	84	97	98
07/20	32	47*	43*	771	2041*	1787*	88	94	94	43	21*	19*	1118	3861*	2121*	87	98	99
07/21	14	20*	36*	785	2061*	1822*	89	94	95	15	8*	14*	1133	3868*	2135*	89	98	99
07/22	21	31*	29*	806	2092*	1851*	92	96	97	48	24*	9*	1181	3892*	2145*	92	99	100
07/23	10	15*	22c*	816	2107*	1873c*	93	97	98	14	7*	5c*	1195	3899*	2149c*	93	99	100
07/24	7	10*	15*	823	2117*	1887*	94	97	99	5	3*	0*	1201	3901*	2149*	94	99	100
07/25	5	8*	15	828	2124*	1902	94	97	100	12	6*	0	1212	3907*	2149	95	99	100
07/26	5	8*	7c	833	2132*	1909c	95	98	100	10	5*	0c	1223	3912*	2149c	96	99	100
07/27	12	17*	0	844	2149*	1909	96	98	100	13	7*	0	1236	3919*	2149	97	99	100
07/28	0	0*	0	844	2149*	1909	96	98	100	5	3*	3	1241	3921*	2153	97	99	100
07/29	6	9*	0c	851	2158*	1909c	97	99	100	6	3*	0c	1247	3924*	2153c	97	100	100
07/30	15	22*	0	866	2181*	1909	99	100	100	21	10*	0	1268	3935*	2153	99	100	100
07/31	0	0c*	0	866	2181c*	1909	99	100	100	5	2c*	0	1273	3937c*	2153	99	100	100

-continued-

Appendix B.11. (page 2 of 4)

Date	South Shore (Aniak)									North Shore								
	Daily			Cumulative			Percent Passage			Daily			Cumulative			Percent Passage		
	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994
/01	0	0*	0	866	2181*	1909	99	100	100	0	0*	0	1273	3937*	2153	99	100	100
8/02	2	0	0	868	2181	1909	99	100	100	3	0	0	1276	3937	2153	100	100	100
08/03	0c	0	0	868c	2181	1909	99	100	100	0c	2	0	1276c	3939	2153	100	100	100
08/04	0	0c	0c	868	2181c	1909c	99	100	100	0	0c	0c	1276	3939c	2153c	100	100	100
08/05	0	0	0	868	2181	1909	99	100	100	0	0	0	1276	3939	2153	100	100	100
08/06	5c	1c	0	873c	2182c	1909	99	100	100	2c	2c	0	1278c	3941c	2153	100	100	100
08/07	0	0	0	873	2182	1909	99	100	100	0	0	0	1278	3941	2153	100	100	100
08/08	1	0	0	874	2182	1909	100	100	100	1	0	0	1278	3941	2153	100	100	100
08/09	3	0c	0c	877	2182c	1909c	100	100	100	2	0c	0c	1280	3941c	2153c	100	100	100
08/10	0	0	0	877	2182	1909	100	100	100	0	0	0	1280	3941	2153	100	100	100
08/11	0c	0	0	877c	2182	1909	100	100	100	0c	0	0	1280c	3941	2153	100	100	100
08/12	0	0	0c	877	2182	1909c	100	100	100	0	0	0c	1280	3941	2153c	100	100	100
08/13	0	0	0	877	2182	1909	100	100	100	0	0	0	1280	3941	2153	100	100	100
08/14	0c	0c	0	877c	2182c	1909	100	100	100	0c	0c	0	1280c	3941c	2153	100	100	100
08/15	0	0	0c	877	2182	1909c	100	100	100	0	0	0c	1280	3941	2153c	100	100	100
08/16	0	0	0	877	2182	1909	100	100	100	0	0	0	1280	3941	2153	100	100	100
08/17	0c	0c	0	877c	2182c	1909	100	100	100	0c	1c	0	1280c	3942c	2153	100	100	100
08/18	0	0	0c	877	2182	1909c	100	100	100	0	0	0c	1280	3942	2153c	100	100	100
08/19	0	0	0	877	2182	1909	100	100	100	0	0	0	1280	3942	2153	100	100	100
08/20	0c	0	0	877c	2182	1909	100	100	100	0c	0	0	1280c	3942	2153	100	100	100
08/21	0	0c	0	877	2182c	1909	100	100	100	0	0c	0	1280	3942c	2153	100	100	100
08/22	0	0	0c	877	2182	1909c	100	100	100	0	0	0c	1280	3942	2153c	100	100	100
08/23	0	0	0	877	2182	1909	100	100	100	0	0	0	1280	3942	2153	100	100	100
08/24	0c	0	0	877c	2182	1909	100	100	100	0c	0	0	1280c	3942	2153	100	100	100
08/25	0	0c	0c*	877	2182c	1909c*	100	100	100	0	0c	0c*	1280	3942c	2153c*	100	100	100
08/26	0	0	0*	877	2182	1909*	100	100	100	0	0	0*	1280	3942	2153*	100	100	100
08/27	0c	0	0c	877c	2182	1909c	100	100	100	0c	0	0c	1280c	3942	2153c	100	100	100
08/28	0	0c	0	877	2182c	1909	100	100	100	0	0c	0	1280	3942c	2153	100	100	100
08/29	0	0		877	2182	1909	100	100		0	0		1280	3942				
08/30	0	0	c	877	2182	1909c	100	100		0	0	c	1280	3942	c			
08/31	0c	0		877c	2182	1909	100	100		0c	0		1280c	3942				
09/01	0	0c		877	2182c	1909	100	100		0	0c		1280	3942c				
09/02	0	0	c	877	2182	1909c	100	100		0	0	c	1280	3942	c			
09/03	0	0		877	2182	1909	100	100		0	0		1280	3942				
09/04	0	0		877	2182	1909	100	100		0			1280					
09/05	0			877						0			1280					
09/06	0			877						0			1280					
09/07	0			877						0			1280					
09/08	0			877						0			1280					
09/09	0			877						0			1280					
09/10	0			877						0			1280					

= commercial fishing period in W-1
= daily CPUE estimated

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Date	Both Shores Daily 1992	Daily 1993	Daily 1994	Cumulative 1992	Cumulative 1993	Cumulative 1994	Percent Passage 1992	Percent Passage 1993	Percent Passage 1994
05/31		0			0				
06/01		0			0				
06/02		0			0				
06/03		0			0				
06/04		0			0				
06/05		0			0				
06/06		0			0				
06/07		0			0				
06/08		0			0				
06/09		0			0				
06/10		0			0				
06/11		0			0				
06/12		1			1				
06/13		0	1		1	1			
06/14		2	1		3	2			
06/15	4	4	0*	4	7	2*	0	0	0
06/16	0	5	0	4	12	2	0	0	0
06/17	2	18	0	6	30	2	0	1	0
06/18	7c	21	4	14c	51	7	1	2	0
06/19	10	13	0	23	64	7	2	2	0
06/20	15	22	4	38	86	10	3	3	0
06/21	6	63	4	43	149	14	3	5	1
06/22	15c	78	6	58c	227	20	4	7	1
06/23	17	107	10	76	334	30	6	11	1
06/24	18	151	11c	93	484	41c	7	16	2
06/25	14c	110c	52	107c	594c	93	8	19	4
06/26	16	162	1	123	757	94	9	25	5
06/27	21	142	44	143	898	138	11	29	7
06/28	4	126	66	148	1025	204	11	33	10
06/29	8c	131	120	155c	1155	324	12	37	16
06/30	13	152	82	168	1307	406	13	42	19
07/01	20	94	116	189	1401	522	15	45	25
07/02	39	154	129	228	1555	651	18	50	31
07/03	23	293	30	251	1848	681	19	60	33
07/04	20	213	160	272	2061	841	21	67	40
07/05	43	143	126	314	2205	967	24	71	46
07/06	98c*	163	107	412c*	2367	1075	32	77	52
07/07	98*	130	77	510*	2497	1151	39	81	55
07/08	154	101	101	664	2598	1252	51	84	60
07/09	90	87	95*	754	2686	1348*	58	87	65
07/10	60*	57*	89*	814*	2743*	1437*	63	89	69
07/11	31	57*	84*	845	2800*	1521*	65	91	73
07/12	19	26	78*	864	2826	1598*	67	92	77
07/13	33	17	72*	897	2843	1670*	69	92	80
07/14	5	19	66c*	902	2862	1736c*	70	93	83
07/15	33	3	60*	935	2866	1796*	72	93	86
07/16	37	14	54*	973	2880	1850*	75	93	89
07/17	32	21*	48*	1005	2901*	1899*	77	94	91
07/18	42	27*	42*	1047	2928*	1941*	81	95	93
07/19	46	30*	37c*	1093	2958*	1978c*	84	96	95
07/20	50	32*	31*	1143	2990*	2009*	88	97	96
07/21	19	13*	25*	1162	3003*	2033*	90	97	98
07/22	46	30*	19*	1208	3033*	2052*	93	98	98
07/23	16	10*	13c*	1224	3043*	2066c*	94	99	99
07/24	8	5*	7*	1232	3048*	2073*	95	99	99

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Date	Both Shores								
	Daily			Cumulative			Percent Passage		
	1992	1993	1994	1992	1993	1994	1992	1993	1994
07/25	11	7*	7	1244	3056*	2080	96	99	100
07/26	10	7*	4c	1254	3062*	2084c	97	99	100
07/27	17	11*	0	1271	3073*	2084	98	100	100
07/28	3	2*	2	1274	3075*	2085	98	100	100
07/29	8	5*	0c	1282	3081*	2085c	99	100	100
07/30	2	1*	0	1284	3082*	2085	99	100	100
07/31	3	2c*	0	1287	3084c*	2085	99	100	100
08/01	0	0*	0	1287	3084*	2085	99	100	100
08/02	4	0	0	1291	3084	2085	100	100	100
08/03	0c	1	0	1291c	3085	2085	100	100	100
08/04	0	0c	0c	1291	3085c	2085c	100	100	100
08/05	0	0	0	1291	3085	2085	100	100	100
08/06	2c	2c	0	1292c	3086c	2085	100	100	100
08/07	0	0	0	1292	3086	2085	100	100	100
08/08	1	0	0	1293	3086	2085	100	100	100
08/09	3	0c	0c	1297	3086c	2085c	100	100	100
08/10	0	0	0	1297	3086	2085	100	100	100
08/11	0c	0	0	1297c	3086	2085	100	100	100
08/12	0	0	0c	1297	3086	2085c	100	100	100
08/13	0	0	0	1297	3086	2085	100	100	100
08/14	0c	0c	0	1297c	3086c	2085	100	100	100
08/15	0	0	0c	1297	3086	2085c	100	100	100
08/16	0	0	0	1297	3086	2085	100	100	100
08/17	0c	1c	0	1297c	3087c	2085	100	100	100
08/18	0	0	0c	1297	3087	2085c	100	100	100
08/19	0	0	0	1297	3087	2085	100	100	100
08/20	0c	0	0	1297c	3087	2085	100	100	100
08/21	0	0c	0	1297	3087c	2085	100	100	100
08/22	0	0	0c	1297	3087	2085c	100	100	100
08/23	0	0	0	1297	3087	2085	100	100	100
08/24	0c	0	0	1297c	3087	2085	100	100	100
08/25	0	0c	0c*	1297	3087c	2085c*	100	100	100
08/26	0	0	0*	1297	3087	2085*	100	100	100
08/27	0c	0	0c	1297c	3087	2085c	100	100	100
08/28	0	0c	0	1297	3087c	2085	100	100	100
08/29	0	0		1297	3087	2085			
08/30	0	0	c	1297	3087	2085c			
08/31	0c	0		1297c	3087	2085			
09/01	0	0c		1297	3087c	2085			
09/02	0	0	c	1297	3087	2085c			
09/03	0	0		1297	3087	2085			
09/04	0	0		1297	3087	2085			
09/05	0			1297					
09/06	0			1297					
09/07	0			1297					
09/08	0			1297					
09/09	0			1297					
09/10	0			1297					

"c" indicates days when commercial fishing periods occurred in District W-1
* daily CPUE estimated

Appendix B.12. Historic mean daily CPUE for coho salmon caught in the Aniak test fishery, by station (south shore and north shore) combined.

Date	South Shore (Aniak)									North Shore								
	Daily			Cumulative			Percent Passage			Daily			Cumulative			Percent Passage		
	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	1994	1992	1993	19
07/10	0*	0*	2*	0*	0*	2*	0	0	0	0*	0*	1*	0*	0*	1*	0	0	0
07/11	0	0*	4*	0	0*	6*	0	0	0	0	0*	2*	0	0*	3*	0	0	0
07/12	0	0	6*	0	0	12*	0	0	0	0	0	3*	0	0	5*	0	0	0
07/13	0	0	8*	0	0	19*	0	0	1	0	0	4*	0	0	9*	0	0	0
07/14	0	0	10*c	0	0	29*c	0	0	1	0	0	5*c	0	0	14*c	0	0	0
07/15	0	3	12*	0	3	41*	0	0	1	0	0	5*	0	0	19*	0	0	0
07/16	0	0	14*	0	3	54*	0	0	2	0	0	6*	0	0	26*	0	0	1
07/17	0	0*	16*	0	3*	70*	0	0	2	0	0*	7*	0	0*	33*	0	0	1
07/18	7	8*	17*	7	11*	87*	0	0	3	0	0*	8*	0	0*	41*	0	0	1
07/19	0	0*	19*c	7	11*	107*c	0	0	3	0	0*	9*c	0	0*	50*c	0	0	1
07/20	0	0*	21*	7	11*	128*	0	0	4	0	0*	10*	0	0*	60*	0	0	1
07/21	10	12*	23*	17	23*	151*	1	1	5	5	9*	11*	5	9*	71*	0	0	1
07/22	11	12*	25*	28	34*	176*	1	1	6	0	0*	12*	5	9*	83*	0	0	2
07/23	8	9*	27*c	36	44*	204*c	2	2	6	7	11*	13*c	12	20*	96*c	0	0	2
07/24	8	9*	29*	45	53*	233*	2	2	7	6	9*	14*	18	29*	110*	1	1	2
07/25	9	10*	29	9	10*	262	0	0	8	7	12*	14	7	12*	123	0	0	2
07/26	15	17*	18c	24	27*	280c	1	1	9	12	19*	21c	20	31*	144c	1	1	3
07/27	51	57*	46	75	83*	326	4	3	10	10	16*	48	30	47*	192	1	1	4
07/28	39	44*	41	114	127*	367	5	5	12	10	16*	40	40	63*	232	1	1	5
07/29	35	39*	40c	149	166*	407c	7	7	13	62	97*	11c	102	160*	243c	3	4	5
07/30	40	45*	48	189	210*	455	9	8	14	15	24*	33	117	184*	276	4	4	5
07/31	101	112c*	70	290	322c*	525	14	13	17	88	138c*	30	205	321c*	306	6	7	6
08/01	163	181*	55	452	503*	580	21	20	18	67	105*	31	271	426*	337	8	10	7
08/02	149	230	91	602	733	671	29	30	21	135	163	83	406	589	419	12	13	8
08/03	112c	224	134	714c	957	804	34	39	26	127c	314	69	534c	903	488	16	20	10
08/04	203	129c	156c	917	1086c	960c	44	44	30	124	97c	170c	657	1000c	658c	20	22	13
08/05	122	55	69	1039	1141	1029	49	46	33	108	180	88	766	1180	746	23	26	15
08/06	113c	139c	273	1152c	1280c	1301	55	52	41	140c	242c	434	906c	1423c	1180	27	32	23
08/07	122	99	117	1274	1380	1419	61	56	45	68	233	195	973	1656	1375	29	37	27
08/08	44	60	291	1318	1440	1710	63	58	54	21	217	567	994	1873	1942	30	42	38
08/09	35	197c	105c	1354	1637c	1815c	64	66	58	30	51c	425c	1025	1924c	2367c	31	43	47
08/10	24	138	103	1377	1775	1918	65	72	61	55	161	309	1080	2085	2675	33	47	53
08/11	21c	38	128	1398c	1813	2046	66	73	65	100c	154	354	1180c	2239	3029	36	50	60
08/12	51	70	108c	1449	1883	2154c	69	76	68	70	175	435c	1251	2414	3464c	38	54	68
08/13	66	61	137	1515	1945	2291	72	78	73	240	254	350	1491	2667	3814	45	60	75
08/14	59c	12c	143	1574c	1956c	2434	75	79	77	371c	104c	218	1862c	2771c	4032	56	62	80
08/15	103	19	166c	1677	1975	2600c	80	80	82	222	77	353c	2084	2848	4385c	63	64	86
08/16	49	39	70	1726	2014	2669	82	81	85	308	137	134	2392	2985	4518	72	67	89
08/17	50c	55c	109	1776c	2068c	2779	84	83	88	88c	106c	115	2480c	3091c	4633	75	69	91
08/18	29	93	66c	1805	2161	2845c	86	87	90	123	204	130c	2603	3295	4763c	79	74	9
08/19	27	52	33	1832	2213	2878	87	89	91	45	130	34	2648	3425	4797	80	77	
08/20	35c	18	35	1866c	2231	2913	89	90	92	100c	102	40	2748c	3528	4837	83	79	
08/21	26	5c	58	1892	2236c	2971	90	90	94	49	126c	77	2797	3654c	4915	84	82	9
08/22	31	3	40c	1923	2239	3011c	91	90	95	20	51	20c	2818	3704	4935c	85	83	97
08/23	80	33	23	2003	2272	3034	95	92	96	45	152	23	2863	3856	4957	86	86	98
08/24	36c	43	40	2039c	2315	3073	97	93	97	31c	210	37	2894c	4066	4994	87	91	99
08/25	8	46c	31*c	2046	2361c	3104*c	97	95	98	19	122c	29*c	2913	4188c	5024*c	88	94	99
08/26	19	65	22*	2065	2426	3126*	98	98	99	142	179	22*	3055	4368	5046*	92	98	100
08/27	28c	27	13c	2093c	2454	3139c	99	99	100	65c	65	15c	3120c	4433	5061c	94	99	100
08/28	12	27c	15	2105	2481c	3154	100	100	100	195	30c	9	3315	4463c	5070	100	100	100
08/29	13	20		2119	2501					188	66		3504	4530				
08/30	35	25	c	2153	2525	c				33	40	c	3537	4569	c			
08/31	9c	6		2163c	2531					61c	9		3598c	4578				
09/01	27	21c		2190	2553c					123	37c		3721	4615c				
09/02	53	15	c	2242	2567	c				183	35	c	3904	4650	c			
09/03	35	12		2277	2579					46	16		3950	4666				
09/04	26	25		2303	2604					41			3991					

* - daily CPUE estimated
c - commercial fishing period in W-1

Appendix B.12. (page 2 of 2)

Date	Both Shores								
	Daily			Cumulative			Percent Passage		
	1992	1993	1994	1992	1993	1994	1992	1993	1994
07/10	0*	0*	1*	0*	0*	1*	0	0	0
07/11	0	0*	3*	0	0*	4*	0	0	0
07/12	0	0	4*	0	0	9*	0	0	0
07/13	0	0	6*	0	0	14*	0	0	0
07/14	0	0	7*c	0	0	21*c	0	0	1
07/15	0	2	9*	0	2	30*	0	0	1
07/16	0	0	10*	0	2	40*	0	0	1
07/17	0	0*	11*	0	2*	51*	0	0	1
07/18	4	5*	13*	4	6*	64*	0	0	2
07/19	0	0*	14*c	4	6*	78*c	0	0	2
07/20	0	0*	16*	4	6*	94*	0	0	2
07/21	8	10*	17*	11	17*	111*	0	0	3
07/22	5	7*	19*	17	23*	130*	1	1	3
07/23	8	10*	20*c	24	34*	150*c	1	1	4
07/24	7	9*	21*	32	43*	171*	1	1	4
07/25	8	11*	21	40	53*	193	1	1	5
07/26	14	18*	19c	53	71*	212c	2	2	5
07/27	31	40*	47	84	111*	259	3	3	6
07/28	25	32*	41	109	143*	300	4	4	7
07/29	48	63*	26c	157	206*	325c	6	6	8
07/30	48	62*	40	205	269*	365	7	8	9
07/31	94	123*c	50	299	391c*	415	11	11	10
08/01	115	150*	43	414	541*	458	15	15	11
08/02	142	197	87	556	738	545	20	21	13
08/03	120c	269	90	676c	1007	635	24	28	16
08/04	163	113c	161c	839	1119c	796c	30	31	20
08/05	115	118	82	954	1237	878	35	35	22
08/06	127c	174c	353	1081c	1411c	1231	39	39	30
08/07	95	189	156	1176	1599	1387	43	45	34
08/08	33	139	429	1208	1738	1816	44	49	45
08/09	33	148c	265c	1241	1886c	2081c	45	53	51
08/10	40	149	206	1281	2036	2287	46	57	56
08/11	60c	96	241	1341c	2132	2527	49	60	62
08/12	61	105	271c	1402	2237	2799c	51	62	69
08/13	153	126	243	1555	2363	3042	56	66	75
08/14	215c	58c	181	1770c	2420c	3223	64	68	80
08/15	162	48	259c	1932	2468	3482c	70	69	86
08/16	179	88	102	2111	2556	3584	76	71	89
08/17	69c	89c	112	2180c	2645c	3696	79	74	91
08/18	76	148	98c	2256	2793	3794c	82	78	94
08/19	36	91	34	2291	2884	3828	83	81	95
08/20	67c	74	37	2359c	2958	3865	85	83	95
08/21	37	86c	68	2396	3044c	3933	87	85	97
08/22	26	35	27c	2422	3079	3960c	88	86	98
08/23	63	92	23	2485	3171	3982	90	89	98
08/24	33c	127	38	2518c	3298	4021	91	92	99
08/25	13	84c	1*c	2532	3382c	4022*c	92	94	99
08/26	80	122	0*	2612	3504	4022*	95	98	99
08/27	47c	46	14c	2659c	3551	4035c	96	99	100
08/28	104	29c	12	2762	3579c	4047	100	100	100
08/29	101	43		2863	3622				
08/30	34	32	c	2897	3655	c			
08/31	35c	7		2932c	3662				
09/01	75	29c		3007	3691c				
09/02	118	25	c	3125	3716	c			
09/03	40	14		3165	3730				
09/04	34	25		3199	3755				

c = commercial fishing period in District W1.
* = estimated CPUE

Appendix B.13. Historic mean daily CPUE for chum salmon caught in the Aniak test fishery, by station (south shore and north shore).

Date	South Shore (Aniak)									North Shore								
	Daily			Cumulative			Percent Passage			Daily			Cumulative			Percent Passage		
	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994
05/31		0									0							
06/01		0									0							
06/02		0									0							
06/03		1									1							
06/04		1									1							
06/05		0									3							
06/06		0									1							
06/07		1									1							
06/08		0									3							
06/09		1									1							
06/10		0									0							
06/11		2									2							
06/12		0									11							
06/13		3	14								9	54						
06/14		0	10								10	71						
06/15	11	4	9	11	4	9	0	0	0		28	58						
06/16	33	7	8	44	11	18	0	0	0	86	29	45	86	29	45	1	0	0
06/17	23	10	7	67	21	25	1	0	0	162	44	49	248	73	94	2	1	1
06/18	35c	12	9	102c	34	35	1	0	0	60c	47	77	308c	119	171	3	1	1
06/19	56	7	52	158	40	86	2	1	1	124	18	36	432	138	206	4	1	1
06/20	21	12	107	179	52	194	2	1	2	156	25	173	588	163	380	6	1	3
06/21	25	72	49	203	124	243	2	2	2	56	117	108	644	279	487	6	2	3
06/22	102c	89	57	305c	214	300	3	3	3	150c	143	89	794c	422	576	8	3	4
06/23	59	113	42	364	326	342	4	5	3	247	162	170	1041	585	747	10	5	5
06/24	146	149	45c	510	475	387c	5	7	4	134	204	168c	1174	789	914c	11	6	6
06/25	85c	105c	58	595c	580c	445	6	9	4	39c	105c	229	1213c	893c	1143	12	7	8
06/26	35	140	8	629	719	453	6	11	5	88	169	136	1301	1063	1279	12	8	9
06/27	74	182	134	703	902	587	7	13	6	155	116	264	1455	1179	1544	14	9	10
06/28	44	110	107	746	1011	693	7	15	7	14	269	207	1469	1448	1750	14	11	12
06/29	58c	120	143	804c	1132	836	8	17	8	100c	347	302	1569c	1794	2052	15	14	14
06/30	83	129	208	887	1260	1044	9	18	10	42	243	199	1611	2038	2251	15	16	15
07/01	59	161	353	946	1421	1397	9	21	14	402	172	444	2013	2210	2695	19	17	18
07/02	182	106	229	1128	1527	1626	11	22	16	336	220	484	2349	2430	3178	23	19	21
07/03	156	77	76	1284	1604	1703	13	24	17	149	233	142	2498	2663	3320	24	21	22
07/04	151	77	223	1435	1680	1926	14	25	19	253	233	405	2751	2896	3725	26	23	25
07/05	258	86	236	1693	1766	2162	17	26	22	178	480	459	2930	3376	4184	28	27	28
07/06	447c*	185	236	2140c*	1951	2398	21	29	24	255c*	547	451	3185c*	3923	4635	31	31	31
07/07	447*	230	237	2587*	2181	2635	25	32	26	255*	508	696	3440*	4431	5331	33	35	36
07/08	637	161	250	3224	2342	2885	32	34	29	332	392	453	3772	4823	5784	36	38	39
07/09	698	223	256*	3922	2565	3142*	39	38	32	355	483	452*	4127	5306	6236*	40	42	42
07/10	461*	210*	263*	4383*	2775*	3404*	43	41	34	242*	393*	451*	4369*	5700*	6687*	42	45	45
07/11	224	210*	269*	4607	2985*	3673*	45	44	37	128	393*	451*	4497	6093*	7138*	43	48	48
07/12	164	198	275*	4771	3183	3948*	47	47	40	94	304	450*	4592	6397	7588*	44	51	51
07/13	254	226	281*	5025	3409	4229*	50	50	43	370	261	449*	4962	6658	8037*	48	53	54
07/14	703	261	287*c	5728	3670	4517*c	56	54	45	206	141	449*c	5168	6798	8486*c	50	54	57
07/15	601	261	294*	6329	3930	4810*	62	58	48	218	261	448*	5386	7059	8934*	52	56	60
07/16	468	267	300*	6797	4197	5110*	67	62	51	296	278	447*	5682	7337	9381*	55	58	63
07/17	380	276*	306*	7177	4474*	5416*	71	66	54	400	461*	447*	6082	7797*	9828*	58	62	66
07/18	283	206*	312*	7460	4679*	5728*	73	69	58	350	403*	446*	6432	8201*	10274*	62	65	69
07/19	171	124*	318*c	7631	4804*	6046*c	75	70	61	248	286*	446*c	6680	8486*	10720*c	64	67	72
07/20	245	178*	324*	7876	4982*	6370*	78	73	64	397	457*	445*	7077	8943*	11165*	68	71	75
07/21	198	144*	331*	8074	5126*	6701*	80	75	67	383	441*	444*	7460	9384*	11609*	72	74	78
07/22	277	201*	337*	8350	5327*	7038*	82	78	71	488	562*	444*	7948	9946*	12052*	76	79	80
07/23	156	114*	343*c	8507	5441*	7381*c	84	80	74	185	213*	443*c	8132	10159*	12495*c	78	80	83
07/24	193	141*	349*	8700	5582*	7730*	86	82	78	191	220*	442*	8323	10378*	12938*	80	82	86
07/25	104	76*	349	8804	5582*	8079	87	82	81	216	248*	442	8539	10627*	13380	82	84	89
07/26	108	79*	287c	8913	5660*	8366c	88	83	84	250	288*	93c	8789	10915*	13473c	84	86	90
07/27	185	135*	251	9098	5795*	8617	90	85	87	200	230*	271	8989	11145*	13743	86	88	92
07/28	93	68*	206	9191	5863*	8822	91	86	89	210	241*	250	9198	11386*	13993	88	90	93
07/29	92	67*	97c	9283	5930*	8919c	91	87	90	205	236*	76c	9403	11622*	14069c	90	92	94
07/30	268	195*	197	9551	6125*	9116	94	90	92	397	458*	107	9800	12079*	14176	94	96	95
07/31	104	76c*	135	9655	6201c*	9250	95	91	93	142	164c*	83	9943	12243c*	14259	95	97	95

-continued-

Date	South Shore (Aniak)									North Shore								
	Daily			Cumulative			Percent Passage			Daily			Cumulative			Percent Passage		
	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994
08/01	118	86*	124	9773	6286*	9574	96	92	94	149	172*	102	10092	12415*	14361	97	98	96
08/02	78	67	97	9851	6353	9471	97	93	95	65	31	106	10157	12446	14468	98	98	97
08/03	85c	90	134	9936c	6443	9605	98	94	97	58c	49	86	10215c	12496	14553	98	99	97
08/04	69	142c	51c	10005	6585c	9656c	99	97	97	48	6c	80c	10263	12502c	14633c	99	99	98
08/05	22	44	41	10027	6629	9697	99	97	97	6	14	55	10269	12516	14688	99	99	98
08/06	39c	38c	46	10066c	6668c	9743	99	98	98	46c	19c	39	10316c	12535c	14728	99	99	98
08/07	10	72	42	10076	6740	9785	99	99	98	24	22	36	10340	12557	14763	99	99	99
08/08	15	36	23	10091	6776	9808	99	99	99	7	6	32	10346	12563	14795	99	99	99
08/09	15	17c	18c	10106	6793c	9826c	100	100	99	4	13c	15c	10351	12576c	14810c	99	100	99
08/10	7	5	10	10113	6798	9836	100	100	99	5	14	27	10356	12590	14837	99	100	99
08/11	12c	2	15	10125c	6800	9851	100	100	99	16c	7	24	10372c	12597	14861	100	100	99
08/12	5	0	12c	10130	6800	9863c	100	100	99	5	7	12c	10377	12604	14874c	100	100	99
08/13	2	8	8	10132	6808	9871	100	100	99	9	14	12	10386	12617	14886	100	100	99
08/14	7c	1c	14	10139c	6809c	9885	100	100	99	6c	5c	21	10392c	12623c	14907	100	100	100
08/15	2	0	14c	10142	6809	9899c	100	100	99	0	3	11c	10392	12625	14918c	100	100	100
08/16	3	0	6	10144	6809	9905	100	100	100	5	5	5	10397	12630	14922	100	100	100
08/17	2c	0c	11	10147c	6809c	9916	100	100	100	2c	0c	12	10400c	12630c	14934	100	100	100
08/18	0	0	13c	10147	6809	9928c	100	100	100	4	0	7c	10404	12630	14941c	100	100	100
08/19	2	3	3	10149	6812	9932	100	100	100	2	2	6	10405	12632	14946	100	100	100
08/20	1c	0	7	10151c	6812	9939	100	100	100	2c	0	5	10407c	12632	14951	100	100	100
08/21	1	0c	3	10152	6812c	9942	100	100	100	0	1c	5	10407	12633c	14956	100	100	100
08/22	0	3	0c	10152	6815	9942c	100	100	100	0	0	5c	10407	12633	14961c	100	100	100
08/23	0	0	6	10152	6815	9948	100	100	100	0	0	10	10407	12633	14971	100	100	100
08/24	0c	2	0	10152c	6817	9948	100	100	100	0c	0	2	10407c	12633	14972	100	100	100
08/25	0	0c	0*c	10152	6817c	9948*c	100	100	100	0	0c	1*c	10407	12633c	14973*c	100	100	100
08/26	0	0	0*	10152	6817	9948*	100	100	100	2	3	0*	10409	12637	14973*	100	100	100
08/27	0c	0	0c	10152c	6817	9948c	100	100	100	1c	0	0c	10410c	12637	14973c	100	100	100
08/28	0	0c	1	10152	6817c	9949	100	100	100	2	0c	0	10412	12637c	14973	100	100	100
08/29	0	0		10152	6817		100	100		2	0		10414	12637		100	100	
08/30	0	1	c	10152	6818	c	100	100		0	0	c	10414	12637	c	100	100	
08/31	0c	0		10152c	6818		100	100		0c	0		10414c	12637		100	100	
09/01	0	1c		10152	6820c		100	100		0	1c		10414	12638c		100	100	
09/02	0	0	c	10152	6820	c	100	100		0	0	c	10414	12638	c	100	100	
09/03	0	0		10152	6820		100	100		0	0		10414	12638		100	100	
09/04	0	0		10152	6820		100	100		0			10414					
09/05	0			10152						0			10414					
09/06	0			10152						0			10414					
09/07	0			10152						0			10414					
09/08	0			10152						0			10414					
09/09	0			10152						0			10414					
09/10	0			10152						0			10414					

c = commercial fishing in District W-1.
* = daily CPUE estimated

Appendix B.13. (page 3 of 4)

Date	Both Shores Daily (1992)	Daily (1993)	Daily 1994	Cumulative (1992)	Cumulative (1993)	Cumulative 1994	Percent Passage (1992)	Percent Passage (1993)	Percent Passage 1994
05/31		0							
06/01		0							
06/02		0							
06/03		1							
06/04		1							
06/05		1							
06/06		1							
06/07		1							
06/08		2							
06/09		1							
06/10		0							
06/11		2							
06/12		8							
06/13		6	41						
06/14		5	45						
06/15	11	21	45	11	21	21	0	0	0
06/16	60	18	45	71	39	66	1	0	1
06/17	92	27	28	163	66	94	2	1	1
06/18	48c	29	43	210c	95	137	2	1	1
06/19	90	13	46	300	108	184	3	1	1
06/20	89	18	140	389	126	324	4	1	3
06/21	40	94	78	429	221	402	4	2	3
06/22	126c	116	73	555c	337	475	6	4	4
06/23	153	137	106	708	474	582	7	5	5
06/24	140	176	106c	847	651	688c	8	7	5
06/25	62c	108c	143	909c	758c	831	9	8	7
06/26	61	155	72	970	913	904	10	10	7
06/27	114	149	199	1084	1062	1103	11	12	9
06/28	29	189	157	1113	1251	1259	11	14	10
06/29	79c	234	249	1192c	1485	1508	12	16	12
06/30	63	186	204	1254	1671	1711	12	18	13
07/01	230	166	398	1485	1837	2110	15	20	17
07/02	259	163	356	1744	2000	2466	17	22	19
07/03	153	155	109	1897	2155	2575	19	23	20
07/04	202	155	344	2099	2310	2919	21	25	23
07/05	218	283	385	2317	2593	3304	23	28	26
07/06	351c*	366	379	2668c*	2959	3684	26	32	29
07/07	351*	369	543	3019*	3328	4227	30	36	33
07/08	484	276	351	3504	3604	4578	35	39	36
07/09	527	353	354*	4030	3958	4932*	40	43	39
07/10	351*	302*	357*	4382*	4259*	5289*	43	46	42
07/11	176	302*	360*	4558	4561*	5649*	45	49	44
07/12	129	251	362*	4687	4812	6012*	47	52	47
07/13	312	243	365*	4999	5055	6377*	50	55	50
07/14	455	201	368c	5454	5256	6745c	54	57	53
07/15	409	261	371*	5863	5516	7116*	58	60	56
07/16	382	272	374*	6245	5789	7489*	62	63	59
07/17	390	343*	376*	6635	6131*	7866*	66	67	62
07/18	317	278*	379*	6951	6409*	8245*	69	70	65
07/19	210	184*	382c*	7161	6593*	8627*c	71	72	68
07/20	321	282*	385*	7482	6875*	9011*	74	75	71
07/21	290	255*	387*	7772	7130*	9399*	77	77	74
07/22	382	336*	390*	8155	7466*	9789*	81	81	77
07/23	170	150*	393*c	8325	7616*	10182*c	83	83	80
07/24	192	169*	396*	8517	7784*	10577*	85	84	83
07/25	160	140*	396	8677	7925*	10973	86	86	86
07/26	179	157*	190c	8856	8082*	11163c	88	88	88
07/27	193	169*	261	9049	8251*	11424	90	90	90
07/28	152	133*	228	9200	8384*	11652	91	91	92
07/29	148	130*	86c	9349	8515*	11738c	93	92	92
07/30	121	106*	152	9469	8621*	11890	94	94	94
07/31	123	108c*	109	9593	8729c*	11998	95	95	95
08/01	134	117*	113	9726	8846*	12111	97	96	95
08/02	71	49	102	9798	8895	12213	97	97	96
08/03	72c	70	102	9869c	8965	12315	98	97	97
08/04	59	74c	60c	9928	9039c	12375c	99	98	97
08/05	14	29	50	9942	9068	12426	99	98	98
08/06	42c	32c	43	9985c	9100c	12468	99	99	98
08/07	17	39	39	10002	9139	12507	99	99	99
08/08	11	21	27	10012	9160	12534	99	99	99
08/09	10	16c	16c	10022	9176c	12551c	99	100	99
08/10	6	10	19	10028	9185	12570	100	100	99
08/11	14c	4	19	10042c	9190	12589	100	100	99
08/12	5	2	12c	10048	9192	12601c	100	100	99
08/13	5	10	10	10053	9202	12612	100	100	99
08/14	7c	3c	17	10060c	9205c	12629	100	100	99
08/15	1	1	12c	10061	9206	12641c	100	100	100
08/16	4	3	5	10065	9209	12647	100	100	100
08/17	2c	0c	11	10067c	9209c	12658	100	100	100
08/18	2	0	10c	10069	9209	12668c	100	100	100
08/19	2	2	5	10071	9211	12672	100	100	100
08/20	1c	0	6	10073c	9211	12678	100	100	100
08/21	1	1c	4	10073	9212c	12682	100	100	100
08/22	0	1	3c	10073	9213	12685c	100	100	100
08/23	0	0	8	10073	9213	12693	100	100	100
08/24	0c	1	1	10073c	9214	12694	100	100	100
08/25	0	0c	0c*	10073	9214c	12694c*	100	100	100

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Date	Both Shores								
	Daily			Cumulative			Percent Passage		
	(1992)	(1993)	1994	(1992)	(1993)	1994	(1992)	(1993)	1994
08/26	1	2	0*	10074	9216	12694*	100	100	100
08/27	1c	0	0c	10075c	9216	12694c	100	100	100
08/28	1	0c	1	10076	9216c	12695	100	100	100
08/29	1	0		10077	9216		100	100	
08/30	0	1	c	10077	9217	c	100	100	
08/31	0c	0		10077c	9217		100	100	
09/01	0	1c		10077	9218c		100	100	
09/02	0	0	c	10077	9218	c	100	100	
09/03	0	0		10077	9218		100	100	
09/04	0	0		10077	9218		100	100	
09/05	0			10077					
09/06	0			10077					
09/07	0			10077					
09/08	0			10077					
09/09	0			10077					
09/10	0			10077					

"c" indicates days when commercial fishing periods occurred in District
* CPUE estimated; no test fishing.

Appendix B.14. Lower Kuskokwim River, District 1, and the middle Kuskokwim River, District 2, combined commercial salmon harvest, 1960-1994.

Year	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	48,530
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	338,040
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	535,497
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	742,267
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	566,225
1984	31,742	48,575	623,447	2,942	423,718	1,130,424
1985	37,889	106,647	335,606	75	199,478	679,695
1986	19,414	95,433	659,988	3,422	309,213	1,087,470
1987	36,179	136,602	399,467	43	574,336	1,146,627
1988	55,716	92,025	524,296	10,825	1,381,674	2,064,536
1989	43,217	42,747	479,856	464	749,182	1,315,466
1990	53,759	84,870	410,332	3,397	461,624	1,013,982
1991	37,778	108,946	500,935	378	431,802	1,079,839
1992	46,872	92,218	666,170	7,451	344,603	1,157,314
1993	8,735	27,008	610,739	64	43,337	689,883
1994	16,211	49,365	724,689	30,949	271,115	1,092,329
Ten Year Average (1984-1993)	37,130	83,707	521,084	5,607[a]	491,897	1,136,524

a Even years only.

Appendix B.15. Comparative chinook salmon catches by fishing period by year in District 1, Lower Kuskokwim River, 1974 - 1994[a].

YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1974	June 10-11	4,384	422	5,064	0.90
	June 13-14	5,790	488	5,957	1.00
	June 17-18	5,857	506	6,072	1.00
Subtotal[b]		16,031	606	16,992	0.94
	June 27	558	267	1,602	0.40
	July 01-02	561	380	4,560	0.08
	July 04-05	196	282	3,384	0.06
	July 08-09	286	376	4,512	0.06
	July 18	31	190	1,140	0.03
	Total	17,663	666	32,190	0.55
1975	June 16	359	12	72	5.00
	June 19-20	1,031	46	552	1.90
	June 23-24	17,235	483	5,796	2.90
Subtotal[b]		18,625	541	6,420	2.90
	June 30	691	279	1,674	0.40
	July 03	636	360	2,160	0.30
	July 07	421	369	2,214	0.20
	July 10	195	304	1,824	0.10
	July 14	179	326	1,956	0.10
	Total	20,747	539	16,248	1.28
1976	June 17	6,962	459	2,754	2.50
	June 21	13,048	495	2,970	4.40
Subtotal[b]		20,010	561	5,724	3.50
	June 28	4,143	348	2,088	2.00
	July 01	1,550	415	2,490	0.60
	July 08	894	381	2,286	0.40
	July 12	377	344	2,262	0.20
	July 15	236	265	1,590	0.10
	Total	27,177	517	16,440	1.65
1977	June 15	12,458	467	2,802	4.50
	June 20	16,227	484	2,904	5.60
Subtotal[b]		28,685	563	5,706	5.03
	June 27	1,337	378	2,268	0.60
	June 30	504	409	2,454	0.20
	July 04	266	331	1,986	0.10
	July 07	407	368	2,208	0.20
	July 14	153	385	2,310	0.06
	Total	31,352	653	16,932	1.85
1978	June 09	7,590	509	3,054	2.50
	June 14	6,142	266	1,596	3.90
	June 16	12,341	396	2,376	5.20
	June 22	1,724	72	288	6.00
	June 23	8,342	429	1,716	4.90
Subtotal[b]		36,139	615	9,030	4.00
	June 26	1,964	499	2,694	0.70
	June 29	1,759	422	2,652	0.70
	July 03	894	476	2,856	0.30
	July 06	1,460	485	5,820	0.30
	July 10	694	428	5,136	0.10
	July 10	293	422	2,532	0.10
	Total	43,203	617	30,720	1.41
1979	June 11	12,270	523	3,138	3.90
	June 15	12,363	549	3,294	3.80
Subtotal[b]		24,633	591	6,432	3.83
	June 22	5,651	502	3,012	1.90
	June 26	2,277	531	3,186	0.70
	June 29	1,583	542	3,252	0.30
1979	July 03	1,233	542	3,252	0.40
	July 10	470	520	3,120	0.20
	Total	35,847	617	22,254	1.61

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YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1980	June 12	9,891	469	2,814	3.50
	June 18	16,921	468	2,808	6.00
Subtotal[b]		26,812	553	5,622	4.77
	June 23	4,777	426	2,616	1.80
	June 26	1,460	408	2,448	0.60
	July 02	498	383	2,298	0.20
	July 09	445	431	2,586	0.20
	Total	33,992	597	15,570	2.18
1981	June 10	11,897	489	2,934	4.10
	June 16	17,985	541	3,246	5.50
Subtotal[a]		29,882	589	6,180	4.84
	June 22	3,830	511	3,066	1.25
	June 25	2,000	508	3,048	0.66
	June 30	2,563	484	2,904	0.88
	July 02	1,707	459	2,754	0.62
	July 06	1,088	461	2,766	0.39
	July 09	491	440	2,640	0.37
	Total	42,011	613	23,358	1.80
1982	June 14	4,912	464	2,784	1.80
	June 17	11,285	496	2,892	3.80
	June 21	13,343	499	2,994	4.50
	June 24	8,548	459	1,836	4.70
Subtotal[b]		38,088	610	10,506	3.63
1982	June 28	1,943	352	1,408	1.38
	June 30	2,064	483	1,932	1.07
	July 02	1,095	434	1,736	0.63
	July 05	875	372	2,232	0.39
	July 08	748	435	2,610	0.29
	July 12	307	354	2,124	0.14
	Total	45,120	610	22,548	2.00
1983	June 13	7,445	489	2,934	2.54
	June 16	5,961	450	2,700	2.21
Subtotal[b]		13,406	544	5,634	2.38
	June 20	4,776	474	2,844	1.68
	June 23	3,287	450	2,700	1.22
	June 27	2,566	446	2,676	0.96
	June 30	2,359	547	3,282	0.72
	July 04	1,213	443	2,658	0.46
	July 07	1,202	496	2,976	0.40
	July 11	633	466	2,796	0.23
	Total	16,036	619	25,566	0.63
1984	June 18	10,845	484	2,904	3.73
	June 21	6,336	443	2,658	2.38
Subtotal		17,181	520	5,562	3.09
	June 25	3,018	466	2,796	1.08
	June 28	2,625	470	2,820	0.93
	July 02	1,988	483	2,898	0.69
	July 05	1,218	426	2,556	0.48
	July 09	1,211	496	2,976	0.41
	July 12	858	436	2,616	0.33
	July 16	744	373	2,238	0.33
	Total	28,843	587	24,462	1.18
1985	June 20	6,519	423	2,538	2.07
	June 24	10,413	488	2,928	3.56
	June 27	8,791	492	2,952	2.98
	July 01	6,168	514	3,084	2.00
	July 04	3,774	460	2,760	1.37
	Total	35,665	598	14,262	2.50
1986	June 26	7,786	514	3,084	2.52
	June 30	4,200	576	3,456	1.22
	July 03	3,224	556	3,336	0.97
	July 07	1,805	586	3,516	0.51
	July 10	1,156	532	3,192	0.36
	Total	18,171	631	16,584	1.10

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YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1987	June 18	18,336	526	4,208	4.36
	June 24				
	June 30				
	July 03	5,970	580	3,480	1.72
	July 07	3,636	578	3,468	1.05
	July 11	1,910	597	3,582	0.53
	July 15	1,415	569	3,414	0.41
	July 20	1,227	551	3,306	0.37
	Total	32,494	677	21,458	1.51
1988	June 16	12,640	602	4,816	2.62
	June 20	11,708	612	3,672	3.18
	June 24	9,710	644	3,864	2.51
	June 28	5,350	609	3,654	1.46
	July 02	3,531	580	3,480	1.01
	July 05	2,340	579	3,474	0.67
	July 08	1,891	604	3,624	0.52
	July 11	1,628	598	3,588	0.45
	July 14	1,751	597	3,582	0.49
	July 18	1,107	575	3,450	0.32
	Total	51,656	746	37,204	1.39
1989	June 19	9,204	374	2,988	3.08
	June 23	6,011	277	2,218	2.71
	June 26	1,862	126	1,006	1.85
	June 30	9,232	642	5,129	1.80
	July 03	4,600	629	3,770	1.22
	July 05	3,311	553	3,311	1.00
	July 08	3,136	621	3,733	0.84
	July 11	1,691	616	3,676	0.46
	July 14	1,216	590	3,576	0.34
	July 18	868	437	2,630	0.33
	Total	41,131	745	32,037	1.28
1990	June 20	16,690	630	3,780	4.42
	June 25	16,031	611	3,666	4.37
	June 29	9,428	645	3,870	2.44
	July 05	4,071	591	3,546	1.15
	July 09	2,804	589	3,534	0.79
	July 14	2,127	625	5,000	0.43
	Total	51,151	743	23,396	2.19
1991	June 20	13,813	601	3,606	3.83
	June 24	12,612	616	3,696	3.41
	July 01	5,966	629	3,774	1.58
	July 06	2,102	589	3,534	0.59
	July 13	904	571	3,426	0.26
	July 18	452	568	3,408	0.13
	Total	35,849	749	21,444	1.67
1992	June 18	9,756	567	4,536	2.15
	June 22	14,578	619	4,952	2.94
	June 25	8,984	627	5,016	1.79
	June 29	7,323	602	3,612	2.03
	July 06	3,250	587	4,696	0.69
	Total	43,891	741	22,812	1.92
1993	June 25	8,184	622	4,976	1.64
	Total	8,184	622	4,976	1.64
1994	June 24	14,221	576	4,608	3.09
	July 14	578	496	2,312	0.29
	July 19	441	500	3,000	0.15
	Total	15,240		9,920	1.59

a The catch totals exclude small numbers of chinook salmon taken after 20 July.
b Unrestricted mesh size.

Appendix B.16. Comparative chinook salmon catches by fishing period by year in District 2, Middle Kuskokwim River, 1985-1994[a].

YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1985	June 20	136	8	48	2.83
	June 24	263	11	66	3.98
	June 27	548	12	72	7.61
	July 01	779	15	90	8.66
	July 04	0	0	0	0
	Total	1,726	17	276	6.25
1986	June 26	186	3	18	10.33
	June 30	386	13	78	4.95
	July 03	168	8	48	3.50
	July 07	117	2	12	9.75
	July 10	45	6	36	1.25
	Total	4,354	13	744	5.85
1987	July 03	1,325	15	90	14.72
	July 07	935	22	132	7.08
	Total	2,260	22	222	10.18
1988	June 24	669	13	78	8.58
	June 28	746	17	102	7.31
	July 02	468	19	114	4.11
	Total	1,883	19	294	6.40
1989	June 30	610	15	120	1.80
	July 03	371	18	108	1.22
	July 05	264	14	84	1.00
	July 11	3	14	84	0.46
	Total	1,248	18	396	3.15
1990	June 29	641	14	84	7.63
	July 05	467	15	90	5.19
	July 09	255	17	102	2.50
	July 14	209	17	136	1.54
	Total	1,572	17	412	3.82
1991	July 01	483	17	102	4.74
	July 06	341	16	96	3.55
	July 13	112	18	108	1.04
	July 18	49	17	102	0.48
	Total	985	18	408	2.41
1992	June 25	1,021	16	128	7.98
	June 29	815	15	90	9.06
	July 06	310	9	72	4.31
	Total	2,146	16	290	7.40
1993	FISHERY DID NOT OPEN UNTIL 6 AUGUST.				
1994	FISHERY DID NOT OPEN UNTIL 4 AUGUST.				

a Excluding small numbers of chinook salmon caught after 20 July.

Appendix B.17. Comparative sockeye salmon catches by fishing period by year in District 1, Lower Kuskokwim River, 1981 - 1994[b].

YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1981	June 10[b]	48	489	2,934	0.02
	June 16[b]	316	541	3,246	0.10
	June 22	3,852	511	3,066	1.26
	June 25	6,037	508	3,048	1.98
	June 30	12,262	484	2,904	4.22
	July 02	9,769	459	2,754	3.55
	July 06	5,510	461	2,766	1.99
	Total	37,794	613	20,718	1.82
1982	June 14[b]	321	464	2,784	0.12
	June 17[b]	1,061	496	2,892	0.37
	June 21[b]	2,432	499	2,994	0.81
	June 24[b]	3,157	459	1,836	1.72
	June 28	9,938	352	1,408	7.06
	June 30	5,824	483	1,932	3.01
	July 02	3,110	434	1,736	1.79
	July 05	2,769	372	2,232	1.24
	Total	28,612	610	17,814	1.61
1983	June 13[b]	114	489	2,934	0.04
	June 16[b]	156	450	2,700	0.06
	June 20	3,289	474	2,844	1.16
	June 23	4,807	450	2,700	1.78
	June 27	10,465	446	2,676	3.91
	June 30	12,490	547	3,282	3.81
	July 04	24,540	443	2,658	9.23
	July 07	7,286	496	2,976	2.45
	Total	63,147	619	22,770	2.77
1984	June 18[b]	409	484	2,904	0.14
	June 21[b]	2,618	443	2,658	0.98
	June 25	10,743	466	2,796	3.84
	June 28	10,942	470	2,820	3.88
	July 02	8,145	483	2,898	2.81
	July 05	6,798	426	2,556	2.66
	Total	39,655	587	16,632	2.38
1985	June 20	5,246	423	2,538	2.07
	June 24	25,536	488	2,928	8.72
	June 27	26,155	492	2,952	8.86
	July 01	31,082	514	3,084	10.08
	July 04	16,114	460	2,760	5.84
	Total	104,133	598	14,262	7.30
1986	June 26	40,468	514	3,084	13.12
	June 30	22,633	576	3,456	6.55
	July 03	15,766	556	3,336	4.73
	July 07	8,347	586	3,516	2.37
	July 10	5,488	532	3,192	1.72
	Total	92,702	631	16,584	5.59

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YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1987	June 18	9,102	526	4,208	2.16
	June 24	24,355	607	4,856	5.02
	June 30	39,112	564	4,512	8.67
	July 03	44,030	580	3,480	12.65
	July 07	9,196	578	3,468	2.65
	Total	125,795	677	20,524	6.13
1988	June 16	7,408	602	4,816	1.53
	June 20	14,502	612	3,672	3.95
	June 24	19,894	644	3,864	5.15
	June 28	17,628	609	3,654	4.82
	July 02	15,102	580	3,480	4.34
	July 05	7,284	579	3,474	2.10
	Total	81,818	746	22,960	3.56
1989	June 19	5,495	374	2,988	1.84
	June 23	7,011	277	2,218	3.16
	June 26	3,746	126	1,006	3.72
	June 30	10,214	642	5,129	1.99
	July 03	5,808	629	3,770	1.54
	July 05	2,917	553	3,311	0.88
	Total	35,191	688	18,422	1.91
1990	June 20	10,318	630	3,780	2.73
	June 25	27,024	611	3,666	7.37
	June 29	18,774	645	3,870	4.85
	July 05	10,759	591	3,546	3.03
	Total	66,875	722	14,862	4.50
1991	June 20	19,732	601	3,606	5.47
	June 24	19,262	616	3,696	5.21
	July 01	24,428	629	3,774	6.47
	July 06	24,219	589	3,534	6.85
	Total	87,641	705	14,610	6.00
1992	June 18	8,508	567	4,536	1.88
	June 22	25,017	619	4,952	5.05
	June 25	21,922	627	5,016	4.37
	June 29	26,082	602	3,612	7.22
	July 06	7,962	587	4,696	1.70
	Total	89,491	669	22,812	3.92
1993	June 25	26,363	622	4,976	5.30
1994	June 24	38,958	576	4,608	8.45

a Excludes small numbers of sockeye salmon caught after 7 July.
b Unrestricted mesh size.

Appendix B.18. Comparative sockeye salmon catches by fishing period by year in District 2, Middle Kuskokwim River, 1985-1993[a].

YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR(CPUE)
1985	June 20	115	8	48	2.40
	June 24	340	11	66	5.15
	June 27	739	12	72	10.26
	July 01	1,100	15	90	12.22
	July 04	0	0	0	0.00
	Total	2,294	23	276	8.31
1986	June 26	616	3	18	34.22
	June 30	1,171	13	78	15.01
	July 03	265	8	48	5.52
	July 07	26	2	12	2.17
	Total	2,078	43	156	13.32
1987	July 03	511	15	90	5.68
	July 07	1,459	22	132	11.05
	Total	1,970	29	222	8.87
1988	June 24	1,041	13	78	13.35
	June 28	639	17	102	6.26
	July 02	579	19	114	5.08
	Total	2,259	29	294	7.68
1989	June 30	587	15	120	4.89
	July 03	238	18	108	2.20
	July 05	176	14	84	2.10
	Total	1,001	30	312	3.21
1990	June 29	735	14	84	8.75
	July 05	561	15	90	6.23
	Total	1,296	22	174	7.45
1991	July 01	1,200	17	102	11.76
	July 06	613	16	96	6.39
	Total	1,813	23	198	9.16
1992	June 25	930	16	128	7.27
	June 29	525	15	90	5.83
	July 06	486	9	72	6.75
	Total	1,941	22	290	6.69
1993	No periods during the sockeye run.				
1994	No periods during the sockeye run.				

a Excludes small numbers of sockeye salmon caught after 7 July.

Appendix B.19. Commercial coho salmon catches by period, lower Kuskokwim River (District 1), 1974-1994*.

YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1974	Aug 01-02	9,576		267	3,444	2.8
	Aug 05-08	59,090		444	31,968	1.8
	Aug 12-15	58,066		396	28,512	2.0
	Aug 19-22	12,301		263	18,936	0.6
	Aug 26-29	5,360		107	7,704	0.7
	Sept 2-05	430		25	1,815	0.2
	TOTALS	144,823		516	92,379	1.6
1975	Aug 10	2,357		142	852	2.8
	Aug 04-06	12,500		292	14,016	0.9
	Aug 11-13	18,551		373	17,904	1.0
	Aug 18-20	34,435		388	18,624	1.9
	Aug 25-27	16,277		270	12,960	1.3
	TOTALS	84,120		533	64,356	1.3
1976	Aug 02-03	10,534		286	6,864	1.5
	Aug 09-11	29,728		400	19,200	1.5
	Aug 16-18	28,664		387	18,576	1.5
	Aug 23-25	14,543		300	14,400	1.0
	Aug 30-31	4,420		174	7,308	0.6
	TOTALS	87,889		516	66,348	1.3
1977	Aug 01-02	23,987		360	8,640	2.8
	Aug 03-10	91,474		487	23,376	3.9
	Aug 15-16	60,935		438	10,512	5.8
	Aug 18	25,589		378	4,536	5.6
	Aug 22	16,980		361	4,332	3.9
	Aug 25	11,874		264	3,168	3.7
	Aug 29	6,819		204	2,448	2.8
	TOTALS	237,658		572	57,012	4.2
1978	Aug 01	6,311		297	3,564	1.8
	Aug 04	9,455		364	4,368	2.2
	Aug 08	20,501		433	5,196	3.9
	Aug 11	42,428		485	5,820	7.3
	Aug 15	48,950		476	5,712	8.6
	Aug 18	29,485		434	5,208	5.7
	Aug 22	22,287		396	4,752	4.7
	Aug 25	11,168		293	3,516	3.2
	Aug 29	12,215		250	3,000	4.1
	TOTALS	202,800		597	41,136	4.9
1979	Aug 02	52,276		478	5,736	9.1
	Aug 06	53,797		480	2,880	18.7
	Aug 09	26,422		497	2,982	8.9
	Aug 13	27,915		463	2,778	10.0
	Aug 16	21,675		467	2,802	7.7
	Aug 20	19,445		390	2,340	8.3
	Aug 23	5,376		328	1,968	2.7
	Aug 27	6,342		310	3,720	1.7
	Aug 30	2,182		179	2,148	1.0
	TOTALS	215,430		613	27,354	7.9
1980	Aug 02	9,889		375	2,250	4.4
	Aug 07	36,126		455	2,730	13.2
	Aug 11	35,178		482	2,892	12.2
	Aug 14	28,211		439	2,634	10.7
	Aug 18	43,748		441	2,646	16.5
	Aug 21	33,274		419	2,514	13.2
	Aug 25	19,264		370	2,220	8.7
	Aug 28	13,484		319	1,914	7.0
	TOTALS	219,174		586	19,800	11.1

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YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR	(CPUE)
1981	Aug 03	16,184		430	2,580	6.3
	Aug 06	13,885		441	2,646	5.2
	Aug 10	26,972		445	2,670	10.1
	Aug 13	46,252		473	2,838	16.3
	Aug 17	34,739		458	2,748	12.6
	Aug 20	24,184		380	2,280	10.6
	Aug 24	23,771		372	2,232	10.7
	Aug 27	13,785		346	2,076	6.6
	Aug 31	8,096		278	1,668	4.9
	TOTALS	207,868		586	21,738	9.6
1982	July 29	19,561		416	2,496	7.8
	Aug 02	31,944		388	2,328	13.7
	Aug 05	35,766		455	2,670	13.4
	Aug 09	61,231		442	2,652	23.1
	Aug 12	80,685		449	2,694	29.9
	Aug 16	77,785		420	2,520	30.9
	Aug 19	49,566		403	2,418	20.5
	Aug 23	25,218		349	2,094	12.0
	Aug 26	26,761		314	1,884	14.2
	Aug 30	26,815		302	1,812	14.8
	TOTALS	435,332		596	23,568	18.5
1983	Aug 01	9,767		377	2,262	4.3
	Aug 04	15,389		430	2,580	6.0
	Aug 08	34,541		383	2,298	15.0
	Aug 11	35,268		485	2,910	12.1
	Aug 15	24,072		462	2,772	8.7
	Aug 18	22,822		408	2,448	9.3
	Aug 22	34,918		388	2,328	15.0
	Aug 26	19,039		323	1,938	9.8
	TOTALS	195,816		577	19,536	10.0
1984	July 30	56,609		459	2,754	20.6
	Aug 02	79,240		401	2,406	32.9
	Aug 06	84,406		542	4,878	17.3
	Aug 09	80,990		523	4,707	17.2
	Aug 13	80,268		504	4,536	17.7
	Aug 16	78,342		502	4,518	17.3
	Aug 20	63,829		491	4,419	14.4
	Aug 23	49,372		481	4,329	11.4
	Aug 27	16,472		350	3,150	5.2
	Aug 30	11,222		210	1,890	5.9
	Sept 03	1,603		69	360	4.5
	Sept 06	1,877		39	234	8.0
	TOTALS	604,230		619	38,181	15.8
1985	Aug 01	34,052		487	2,922	11.7
	Aug 05	54,819		527	3,162	17.3
	Aug 08	78,149		525	3,150	24.8
	Aug 12	77,809		530	3,180	24.5
	Aug 15	28,013		441	2,646	10.6
	Aug 19	19,316		406	2,436	7.9
	Aug 22	17,534		390	2,340	7.5
	Aug 26	10,688		297	1,782	6.0
	Aug 29	9,568		262	1,572	6.1
	TOTALS	329,948		627	23,190	14.2

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YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)	
1986	July 31	27,553		352	2,112	13.0
	Aug 04	96,127		530	3,180	30.2
	Aug 07	127,024		600	5,400	23.5
	Aug 11	82,215		553	3,318	24.8
	Aug 13	92,918		526	3,156	29.4
	Aug 15	55,633		519	3,114	17.9
	Aug 18	51,328		477	2,862	17.9
	Aug 21	50,640		465	2,790	18.2
	Aug 25	37,365		458	2,748	13.6
	Aug 28	16,436		346	2,076	7.9
	Sept 01	5,949		234	1,404	4.2
	TOTALS	643,188		663	32,160	20.0
1987	Aug 06	46,182		590	3,540	13.0
	Aug 13	104,968		604	3,624	29.0
	Aug 17	73,867		595	3,570	20.7
	Aug 19	45,277		585	3,510	12.9
	Aug 21	33,601		540	3,240	10.4
	Aug 24	27,607		500	3,000	9.2
	Aug 27	21,772		479	2,874	7.6
	Aug 31	12,873		364	2,184	5.9
	Sept 03	11,352		278	1,668	6.8
	Sept 07	4,311		132	792	5.4
	TOTALS	381,810		694	28,002	13.6
1988	July 28	20,970		552	3,312	6.33
	Aug 01	33,954		594	3,564	9.53
	Aug 04	76,576		639	3,834	19.97
	Aug 08	76,345		640	3,840	19.88
	Aug 10	53,874		596	3,576	15.06
	Aug 12	84,700		624	3,744	22.62
	Aug 15	59,724		613	3,678	16.23
	Aug 18	37,415		620	3,720	10.06
	Aug 20	24,046		577	3,462	6.95
	Aug 27	22,683		532	3,192	7.10
	Aug 31	12,264		412	2,472	4.96
	TOTALS	502,551		746	38,394	13.09
1989	July 27	5,651		562	3,364	1.68
	Aug 03	99,022		679	5,432	18.23
	Aug 07	73,514		642	3,853	19.08
	Aug 09	103,158		644	3,864	26.70
	Aug 12	81,970		650	3,900	21.02
	Aug 15	23,071		616	3,697	6.24
	Aug 18	5,938		381	2,284	2.60
	Aug 23	30,940		528	3,167	9.77
	Aug 26	20,881		508	4,063	5.14
	Aug 29	11,080		423	3,388	3.27
	Sept 01	3,225		194	1,421	2.77
	TOTALS	458,450		745	38,433	11.93
1990	Aug 01	23,549		611	3,666	6.42
	Aug 06	61,450		631	3,786	16.23
	Aug 10	58,251		653	3,918	14.87
	Aug 13	115,444		642	3,852	29.97
	Aug 16	68,605		650	5,850	11.73
	Aug 20	51,838		594	3,564	14.54
	Aug 27	16,030		534	3,204	5.00
TOTALS		395,167		743	27,840	14.19

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YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1991	July 29	37,141	534	3,204	8.69
	Aug 01	38,284	602	3,612	10.60
	Aug 05	56,262	643	3,858	10.94
	Aug 08	72,037	634	3,804	14.20
	Aug 12	114,581	662	5,296	21.64
	Aug 14	58,393	601	4,808	12.14
	Aug 19	57,364	590	3,540	16.20
	Aug 26	43,664	512	4,096	10.66
	TOTALS	477,726	749	32,218	14.83
1992	Aug 03	78,233	619	4,952	15.80
	Aug 06	57,506	590	3,540	16.24
	Aug 11	181,905	653	3,918	46.43
	Aug 14	87,959	632	3,792	23.20
	Aug 17	79,357	596	3,576	22.19
	Aug 20	73,363	578	3,468	21.15
	Aug 24	28,069	550	3,300	8.51
	Aug 27	28,238	481	2,886	9.78
	Aug 31	16,962	374	2,284	7.56
	TOTALS	631,592	741	31,716	19.91
1993	July 31	56,107	625	3,750	14.96
	Aug 04	137,649	656	3,936	34.97
	Aug 06	91,400	632	5,056	18.08
	Aug 09	54,817	628	3,768	14.55
	Aug 14	80,226	640	3,840	20.89
	Aug 17	82,696	620	3,720	22.23
	Aug 21	47,097	592	3,552	13.26
	Aug 25	10,556	441	2,646	3.99
	Aug 28	13,592	387	2,322	5.85
	Sept 01	12,190	274	1,644	7.41
	TOTALS	586,330	741	34,234	17.13
1994	July 26	39,901	552	3,312	12.05
	July 29	52,090	577	3,462	15.05
	Aug 04	75,514	606	3,636	20.77
	Aug 09	129,570	530	3,180	40.75
	Aug 12	117,753	606	4,848	24.29
	Aug 15	47,902	595	4,760	10.06
	Aug 18	82,750	598	4,784	17.30
	Aug 22	44,054	554	4,432	9.94
	Aug 25	37,595	447	3,576	10.51
	Aug 27	20,526	445	2,670	7.69
	Aug 30	8,192	263	1,578	5.19
	Sept 02	2,489	157	942	2.64
	TOTALS	658,336	706	41,180	15.99

a Does not include small numbers of coho salmon caught before 26 July.

Appendix B.20 Comparative coho salmon catches by fishing period by year in District 2, Middle Kuskokwim River, 1985-1994*.

YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1985	Aug. 08	739	6	48	20.53
	Aug. 12	2,914	14	84	34.69
	Aug. 15	2,005	11	66	30.38
	Total	5,658	23	198	28.58
1986	Aug. 07	2,445	8	48	50.94
	Aug. 11	2,677	10	60	44.62
	Aug. 13	2,787	10	60	46.45
	Aug. 15	5,761	27	162	35.56
	Aug. 18	1,804	8	48	37.58
	Aug. 21	1,325	6	36	36.81
	Total	16,799	43	414	40.58
1987	Aug. 13	2,273	14	84	27.06
	Aug. 17	3,374	14	84	40.17
	Aug. 19	3,928	13	78	50.36
	Aug. 21	4,571	18	108	42.32
	Total	14,146	29	354	40.00
1988	Aug 08	1,465	14	84	17.44
	Aug 10	3,823	16	96	39.82
	Aug 12	5,216	20	120	43.47
	Aug 15	2,317	21	126	18.39
	Aug 18	1,485	15	90	16.50
	Aug 20	1,573	17	102	15.42
	Total	15,879	29	618	25.69
1989	Aug 07	6,607	22	132	50.05
	Aug 09	5,714	18	108	52.91
	Aug 15	1,867	15	90	20.74
	Aug 18	2,733	20	120	22.78
	Total	16,921	30	450	37.60
1990	Aug 06	1,111	15	90	12.34
	Aug 10	1,946	15	90	21.62
	Aug 13	4,192	16	96	43.67
	Aug 16	2,239	17	153	14.63
	Aug 20	2,548	18	108	23.59
	Aug 27	1,780	17	102	17.45
	Total	13,816	22	639	21.62
1991	July 29	177	16	128	1.38
	Aug 05	1,596	17	136	11.74
	Aug 08	2,381	17	136	17.51
	Aug 12	1,829	16	128	14.29
	Aug 14	2,461	15	120	20.51
	Aug 19	1,689	19	114	14.82
	Aug 26	4,425	16	128	34.57
	Total	14,558	23	890	16.36

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YEAR	DATE	CATCH	PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1992	Aug 03	5,106	17	136	37.54
	Aug 06	3,832	17	102	37.57
	Aug 11	3,837	19	114	33.66
	Aug 14	8,216	21	126	65.21
	Aug 17	5,685	16	96	59.22
	Aug 20	2,682	14	84	31.93
	Aug 24	2,827	24	84	33.65
	Aug 27	1,238	11	66	18.76
	Aug 31	1,153	11	66	17.47
	Total	34,576	22	874	39.56
1993	Aug 06	6,828	15	120	56.90
	Aug 09	3,839	17	102	37.64
	Aug 14	2,681	17	102	26.28
	Aug 17	2,349	16	96	24.47
	Aug 21	3,115	17	102	30.54
	Aug 25	3,008	15	90	33.42
	Aug 28	1,798	14	84	21.40
	Sept 01	791	13	78	10.14
	Total	24,409	20	774	31.54
1994	Aug 04	4,040	14	84	48.10
	Aug 09	5,790	17	102	56.76
	Aug 12	10,539	17	136	77.49
	Aug 15	7,190	16	128	56.17
	Aug 18	2,710	15	120	22.58
	Aug 22	1,855	12	96	19.32
	Aug 25	1,492	7	56	26.64
	Aug 27	677	6	36	18.81
	Sept 01	791	13	78	10.14
	Total	34,293	20	836	29.56

a Excludes small numbers of coho salmon caught before 26 July.

Appendix B.21. Comparative chum salmon catches by fishing period by year in District 1, Lower Kuskokwim River, 1971 - 1994[a].

YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1971	June 28-29	11,386	150	180	6.30
	July 01-02	8,949	111	1,332	6.70
	July 05-06	17,672	104	1,248	14.20
	July 08-09	12,603	93	1,116	11.30
	July 12-13	2,550	18	216	11.80
	July 15-16	8,000	69	828	9.70
	July 19-20	5,989	71	852	7.00
	Totals	67,149	216	5,772	11.63
1972	June 29-30	9,863	87	1,044	9.40
	July 03-04	19,084	115	1,380	13.80
	July 06-07	19,839	101	1,212	16.40
	July 10-11	13,972	113	1,356	10.30
	July 13-14	6,290	80	960	6.60
	Totals	69,048	176	5,952	10.09
1973	June 25-26	19,073	202	2,424	7.90
	June 28-29	47,258	250	6,000	7.90
	July 02-03	21,410	242	2,904	7.40
	July 05-06	31,056	212	2,544	12.20
	July 09-10	24,593	217	2,604	9.40
	Totals	143,390	341	16,476	8.70
1974	June 27	27,017	267	1,602	16.90
	July 01-02	55,356	380	4,560	12.10
	July 04-05	27,211	282	3,384	8.00
	July 08-09	50,672	376	4,512	11.20
	July 18	6,661	190	1,140	5.84
	Totals	166,917	467	15,198	10.98
1975	June 30	31,216	279	1,674	18.60
	July 03	35,525	360	2,160	16.00
	July 07	39,369	396	2,214	17.80
	July 10	39,910	304	1,824	21.90
	July 14	21,092	326	1,956	10.80
	Totals	167,112	539	25,026	6.68
1976	June 28	42,464	348	2,088	20.30
	July 01	44,024	415	2,490	17.70
	July 08	48,669	381	2,286	21.30
	July 12	21,153	377	2,262	9.40
	July 15	14,176	265	1,590	8.90
	Totals	170,486	517	10,716	15.91
1977	June 27	40,321	378	2,268	17.80
	June 30	58,884	409	2,454	24.00
	July 04	37,500	331	1,986	18.90
	July 07	56,943	368	2,208	25.80
	July 14	24,765	385	2,310	10.70
	Totals	218,413	522	11,226	19.46
1978	June 26	44,296	449	2,694	16.40
	June 29	36,793	442	2,652	13.90
	July 03	26,629	476	2,856	9.30
	July 06	48,031	485	5,820	8.30
	July 10	48,931	428	5,136	9.50
	July 13	14,935	422	2,532	5.90
	Totals	219,615	617	21,690	10.13

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YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1979	June 22	32,295	502	3,012	10.70
	June 26	53,648	531	3,186	16.80
	June 29	48,643	542	3,252	14.90
	July 03	83,164	542	3,252	25.60
	July 10	32,434	520	3,120	10.40
	Totals	250,184	617	15,822	15.81
1980	June 23	105,825	436	2,616	40.50
	June 26	131,945	408	2,448	53.90
	July 02	122,613	383	2,298	53.40
	July 09	90,233	431	2,586	34.90
	Totals	450,616	579	9,948	45.30
1981	June 22	78,168	511	3,066	25.50
	June 25	81,431	508	3,048	26.70
	June 30	51,942	484	2,904	17.90
	July 02	58,594	459	2,754	21.30
	July 06	55,799	461	2,766	20.20
	July 09	66,138	440	2,640	25.00
	Totals	392,072	613	17,178	22.82
1982	June 28	58,528	352	1,408	41.60
	June 30	47,773	483	1,932	24.70
	July 02	38,918	434	1,736	22.40
	July 05	29,315	372	2,232	13.10
	July 08	28,942	435	2,610	11.90
	July 12	20,709	354	2,124	9.80
	Totals	224,185	576	12,042	18.62
1983	June 20	28,915	474	2,844	10.20
	June 23	24,625	450	2,700	9.10
	June 27	44,802	446	2,676	16.70
	June 30	55,209	547	3,282	16.80
	July 04	46,176	443	2,658	17.40
	July 07	36,965	496	2,976	12.40
	July 11	20,560	466	2,769	7.40
	Totals	257,252	619	19,905	12.93
1984	June 25	91,773	466	2,796	32.80
	June 28	67,120	470	2,820	23.80
	July 02	69,897	483	2,898	24.10
	July 05	54,981	426	2,556	21.50
	July 09	36,440	496	2,976	12.10
	July 12	24,269	436	2,616	9.30
	July 16	18,613	373	2,238	8.30
	Totals	363,093	587	18,900	19.21
1985	June 20	19,762	423	2,538	7.79
	June 24	42,778	488	2,928	14.61
	June 27	47,443	492	2,952	16.07
	July 01	47,471	514	3,084	15.39
	July 04	28,581	460	2,760	10.36
	Total	186,035	598	14,262	13.04
1986	June 26	68,947	514	3,084	22.36
	June 30	60,780	576	3,456	17.59
	July 03	65,839	556	3,336	19.74
	July 07	55,983	586	3,516	15.92
	July 10	48,990	532	3,192	15.35
	Total	300,539	631	16,584	18.12

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YEAR	DATE	CATCH	NUMBER OF PERMITS	PERMIT HOURS	CATCH PER HOUR (CPUE)
1987	June 18	13,472	526	4,208	3.20
	June 24	54,454	607	4,856	11.21
	June 30	112,963	564	4,512	25.04
	July 03	66,783	580	3,480	19.19
	July 07	103,059	578	3,468	29.72
	July 11	72,118	597	3,582	20.13
	July 15	71,923	569	3,414	21.07
	July 20	62,044	551	3,306	18.77
	Total	556,816	677	30,826	18.06
1988	June 16	72,219	602	4,816	15.00
	June 20	113,628	612	3,672	30.94
	June 24	119,808	644	3,864	31.00
	June 28	154,027	609	3,654	42.15
	July 02	187,916	580	3,480	54.00
	July 05	163,971	579	3,474	47.20
	July 08	138,772	604	3,624	38.20
	July 11	137,450	598	3,588	38.31
	July 14	116,930	597	3,582	32.64
	July 18	57,749	575	3,450	16.73
	July 21	39,643	539	3,234	12.25
	July 25	24,893	494	2,964	8.40
	Total	1,327,006	746	43,402	30.57
1989	June 19	41,789	374	2,988	13.97
	June 23	65,650	277	2,218	29.63
	June 26	32,373	126	1,006	32.12
	June 30	131,629	642	5,129	26.63
	July 03	91,345	629	3,770	24.20
	July 05	85,727	553	3,311	25.84
	July 08	119,066	621	3,733	31.96
	July 11	78,053	616	3,676	21.12
	July 14	44,401	590	3,576	12.54
	July 18	26,407	437	2,630	10.07
	Total	716,440	745	32,037	23.36
1990	June 20	30,306	630	3,780	8.02
	June 25	58,944	611	3,666	16.08
	June 29	74,911	645	3,870	19.36
	July 05	86,835	591	3,546	24.49
	July 09	91,411	589	3,534	25.87
	July 14	79,803	625	5,000	15.96
	Total	422,210	743	23,396	18.05
1991	June 20	13,266	601	3,606	3.68
	June 24	30,632	616	3,696	8.29
	July 01	50,121	629	3,774	13.28
	July 06	40,060	589	3,534	11.34
	July 13	52,552	571	3,426	15.34
	July 18	78,797	568	3,408	23.12
	July 22	49,788	543	3,258	15.28
	July 25	30,083	533	3,198	7.06
	Total	345,299	749	27,900	12.38
1992	June 18	32,695	567	4,536	7.21
	June 22	74,429	619	4,952	15.03
	June 25	55,114	627	5,016	10.99
	June 29	80,213	602	3,612	22.21
	July 06	84,196	587	4,696	17.93
	Total	326,647	741	22,812	14.32

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YEAR	DATE	NUMBER OF CATCH	PERMIT PERMITS	CATCH PER HOURS	HOUR (CPUE)
1993	June 25	34,123	622	4,976	6.86
	Total	34,123	622	4,976	6.86
1994	June 24	87,214	576	4,608	18.93
	July 14	43,585	496	1,984	21.97
	July 19	60,104	500	3,000	20.03
	July 23	38,149	506	3,036	12.57
	July 26	22,460	552	3,312	6.78
	Total	251,512	622	15,940	15.78

a Excludes small numbers of chum salmon caught after 26 July.

Appendix B.22. Comparative chum salmon catches by fishing period by year in District 2, Middle Kuskokwim River, 1985 - 1994[a].

YEAR	DATE	CATCH	NUMBER OF FISHERS	FISHER HOURS	CATCH PER HOUR (CPUE)
1985	June 20	647	8	48	13.48
	June 24	2,411	11	66	36.53
	June 27	2,263	12	72	31.43
	July 01	2,854	15	90	31.71
	July 04	0	0	0	0
	Total	8,175	23	276	29.61
1986	June 26	439	3	18	24.39
	June 30	1,619	13	78	20.76
	July 03	1,249	8	48	26.02
	July 07	387	2	12	32.25
	July 10	1,282	6	36	35.61
	Total	4,976	43	192	25.92
1987	July 03	3,200	15	90	35.56
	July 07	4,152	22	132	31.45
	Total	7,352	29	222	33.12
1988	June 24	4,232	13	78	54.26
	June 28	6,087	17	102	59.68
	July 02	8,155	19	114	71.54
	Total	18,474	29	294	62.84
1989	June 30	7,353	15	120	61.28
	July 03	5,101	18	108	47.23
	July 05	3,542	14	84	42.17
	July 11	4,580	14	84	54.52
	Total	20,576	30	396	51.96
1990	June 29	3,838	14	84	45.69
	July 05	4,397	15	90	48.86
	July 09	5,163	17	102	50.46
	July 14	6,999	17	136	51.46
	Total	20,397	22	412	49.51
1991	July 01	3,043	17	102	29.83
	July 06	2,381	16	96	24.80
	July 13	4,384	18	108	40.59
	July 18	6,534	17	102	64.06
	July 22	7,154	19	114	62.75
	July 25	7,686	17	136	56.51
	Total	31,182	23	658	47.39
1992	June 25	3,916	16	128	30.59
	June 29	2,439	15	120	27.10
	July 07	2,840	9	72	39.44
	Total	9,195	22	320	28.73
1993	No commercial periods during the chum salmon run.				
1994	No commercial periods during the chum salmon run.				

a Excludes small numbers of chum salmon caught after 25 July.

Appendix [illegible] Historic commercial salmon catches by statistical area in Distric[illegible] of the Kuskokwim River.

	Statistical Area 335-11				Statistical Area 335-12				Statistical Area 335-13				Statistical Area 335-14			
Year	Chinook	Sockeye	Chum	Coho	Chinook	Sockeye	Chum	Coho	Chinook	Sockeye	Chum	Coho	Chinook	Sockeye	Chum	Coho
1984	20,229	45,276	385,178	332,679	9,717	1,295	10,853	272,419								

- Gillnet mesh size was unrestricted in both statistical areas 335-11 and 335-12 through 25 June; after that date mesh size was restricted to less than or equal to 6 inches and only statistical area 335-11 was open to commercial fishing in District 1; both statistical areas 335-11 and 335-12 were open for coho season.

1985	18,146	53,395	116,832	168,192	17,885	50,655	73,843	161,233								
1986	9,329	46,505	169,958	301,093	9,181	46,670	134,243	342,096								
1987	32,182	82,130	329,748	226,229	13,415	52,046	232,995	159,053								

- Through 1987 statistical area 335-11 was located downstream of Bethel and statistical area 335-12 was located upstream of Bethel to Mishevik Slough.

1988	40,355	60,168	861,433	290,872	12,540	27,127	453,012	199,036	915	2,469	47,537	18,509				
1989	29,702	28,319	498,490	233,182	10,856	11,499	203,120	192,796	1,187	1,570	25,782	35,056				

- The upriver boundary of District 1 was moved upstream to Bogus Creek; the area from the old boundary to Bogus Creek was designated statistical area 335-13.

1990	6,195	8,992	54,434	64,169	29,195	38,113	224,148	196,827	12,017	20,959	103,220	94,842	4,731	14,349	57,737	40,678
1991	4,218	15,961	63,636	98,565	23,104	50,760	165,651	217,820	5,840	19,884	92,063	117,335	3,544	17,815	72,984	52,525
1992	7,754	18,253	76,215	124,583	23,177	36,938	178,693	271,900	9,064	22,829	43,979	159,189	4,682	11,936	34,249	75,922
1993	2,198	10,054	12,272	113,956	6,302	16,821	26,712	226,119	148	116	1,912	171,208	66	12	1,822	75,047
1994	1,589	8,071	27,283	87,428	13,678	34,512	163,087	283,129	9,969	4,863	55,284	226,100	300	1,916	23,232	93,739

- From 1990 through present the upstream boundary of District 1 was moved downstream to Nelson Island and the district was split into four statistical areas of approximately equal length; the former statistical area 335-11 was split in to two statistical areas, 335-11 and 335-12, and the areas upstream of Bethel were renumbered as 335-13 and 335-14 to account for the change.

- From 1987 to present statistical areas upstream of Bethel were typically closed to commercial fishing during the first 1 or 2 periods as a chinook salmon conservation measure.

- From 1985 through present the entire length of District 1 was open to commercial fishing except as noted above; gillnet mesh was restricted throughout the season to sizes less than or equal to 6 inches.

Appendix B.24. Lower Kuskokwim River, District 1, commercial effort, 1970 - 1994.

Year	Unrestricted Mesh Season	Restricted Mesh Season	Coho Salmon Season	Total
1970	361	a	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	617	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	587	619	654
1985	b	598	627	654
1986	b	631	663	688
1987	b	680	694	703
1988	b	c	c	746

	Number of Permits Landing Each Species						
	Chinook	Sockeye	Coho	Pink	Chum	Roe	Total
1989	695	688	732	261	719	22	745
1990	724	722	714	526	736	1	744
1991	687	705	731	159	733	1	749
1992	711	706	706	520	722	0	741
1993	669	654	717	54	715	0	740
1994	651	666	682	664	700	0	706
Ten Year Average (1984-1993)							716

a No commercial salmon season.

b No unrestricted mesh season.

c Fishery continued without interruption.

ɔendix B.25. Middle Kuskokwim River, District 2, commercial effort 1970-1994.

YEAR	UNRESTRICTED MESH SEASON	RESTRICTED MESH SEASON	COHO SALMON SEASON	TOTAL
1970	10	a	11	18
1971	22	a	a	22
1972	12	a	a	12
1973	28	a	a	28
1974	36	a	16	37
1975	38	a	a	38
1976	55	a	11	57
1977	83	54	24	105
1978	28	a	16	43
1979	41	a	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	58
1985	b	17	16	23
1986	b	21	35	43
1987	b	24	20	29
1988	b	19	21	29

	Number of Permits Landing Each Species						
	Chinook	Sockeye	Coho	Pink	Chum	Roe	Total
1989	20	19	29	8	26	2	30
1990	19	19	21	13	20	0	22
1991	20	20	22	9	22	0	23
1992	18	18	22	3	21	0	22
1993	10	4	20	0	19	0	20
1994	5	3	20	7	20	0	20
Ten Year Average (1984-1993)							30

a No commercial salmon season.
b No unrestricted mesh season.

Appendix B 26 Age distribution of historic commercial chinook salmon catches from the lower Kuskokwim River, by sample trip.

Year	Sample Date	Sample Size	Sex	Age Composition (%)																									
				0 2		1 1		1 2		0 4		1 3		2 2		1 4		2 3		1 5		2 4		1 6		2 5		Total	
				Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%	Catch	%
1985	6/20	387	M	0	0.0	0	0.0	1,121	17.2	0	0.0	1,675	25.7	20	0.3	928	14.2	0	0.0	143	2.2	0	0.0	0	0.0	0	0.0	3,885	59.6
			F	0	0.0	0	0.0	248	3.8	0	0.0	893	13.7	0	0.0	1,193	18.3	0	0.0	300	4.6	0	0.0	0	0.0	0	0.0	2,634	40.4
			Subtotal	0	0.0	0	0.0	1,369	21.0	0	0.0	2,568	39.4	20	0.3	2,119	32.5	0	0.0	443	6.8	0	0.0	0	0.0	0	0.0	6,519	100.0
	6/24	91	M	0	0.0	0	0.0	2,968	28.5	0	0.0	1,031	9.9	0	0.0	1,375	13.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5,373	51.6
			F	0	0.0	0	0.0	802	7.7	0	0.0	916	8.8	0	0.0	2,864	27.5	0	0.0	458	4.4	0	0.0	0	0.0	0	0.0	5,040	48.4
			Subtotal	0	0.0	0	0.0	3,770	36.2	0	0.0	1,947	18.7	0	0.0	4,238	40.7	0	0.0	458	4.4	0	0.0	0	0.0	0	0.0	10,413	100.0
	6/27	88	M	0	0.0	0	0.0	2,892	32.9	0	0.0	2,497	28.4	0	0.0	1,002	11.4	0	0.0	97	1.1	0	0.0	0	0.0	0	0.0	6,488	73.8
			F	0	0.0	0	0.0	501	5.7	0	0.0	703	8.0	0	0.0	897	10.2	0	0.0	202	2.3	0	0.0	0	0.0	0	0.0	2,303	26.2
			Subtotal	0	0.0	0	0.0	3,393	38.6	0	0.0	3,200	36.4	0	0.0	1,899	21.6	0	0.0	299	3.4	0	0.0	0	0.0	0	0.0	8,791	100.0
	7/1	74	M	0	0.0	0	0.0	1,912	31.0	0	0.0	1,332	21.6	86	1.4	752	12.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4,083	66.2
			F	0	0.0	0	0.0	167	2.7	0	0.0	419	6.8	0	0.0	1,412	22.9	0	0.0	86	1.4	0	0.0	0	0.0	0	0.0	2,085	33.8
			Subtotal	0	0.0	0	0.0	2,079	33.7	0	0.0	1,752	28.4	86	1.4	2,165	35.1	0	0.0	86	1.4	0	0.0	0	0.0	0	0.0	6,168	100.0
	7/4	17	M	0	0.0	0	0.0	1,883	49.9	0	0.0	944	25.0	0	0.0	472	12.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3,298	87.4
			F	0	0.0	0	0.0	238	6.3	0	0.0	238	6.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	476	12.6
			Subtotal	0	0.0	0	0.0	2,121	56.2	0	0.0	1,181	31.3	0	0.0	472	12.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3,774	100.0
	Season	637	M	0	0.0	0	0.0	10,777	30.2	0	0.0	7,479	21.0	108	0.3	4,527	12.7	0	0.0	240	0.7	0	0.0	0	0.0	0	0.0	23,128	64.8
			F	0	0.0	0	0.0	1,955	5.5	0	0.0	3,170	8.9	0	0.0	6,366	17.8	0	0.0	1,047	2.9	0	0.0	0	0.0	0	0.0	12,537	35.2
			Total	0	0.0	0	0.0	12,731	35.7	0	0.0	10,649	29.9	108	0.3	10,892	30.5	0	0.0	1,287	3.6	0	0.0	0	0.0	0	0.0	35,665	100.0
1986	Season	142	M	0	0.0	382	2.1	2,181	12.0	0	0.0	7,668	42.2	0	0.0	1,799	9.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	12,029	66.2
			F	0	0.0	0	0.0	127	0.7	0	0.0	2,308	12.7	0	0.0	2,689	14.8	0	0.0	890	4.9	0	0.0	127	0.7	0	0.0	6,142	33.8
			Total	0	0.0	382	2.1	2,308	12.7	0	0.0	9,976	54.9	0	0.0	4,488	24.7	0	0.0	890	4.9	0	0.0	127	0.7	0	0.0	18,171	100.0
1987	Season	550	M	0	0.0	0	0.0	15,026	45.7	0	0.0	4,242	12.9	0	0.0	6,313	19.2	0	0.0	164	0.5	0	0.0	0	0.0	0	0.0	25,745	78.3
	(6/18)		F	0	0.0	0	0.0	526	1.6	0	0.0	888	2.7	0	0.0	5,425	16.5	0	0.0	296	0.9	0	0.0	0	0.0	0	0.0	7,135	21.7
			Total	0	0.0	0	0.0	15,552	47.3	0	0.0	5,129	15.6	0	0.0	11,738	35.7	0	0.0	460	1.4	0	0.0	0	0.0	0	0.0	32,880	100.0
1988	Season	646	M	0	0.0	0	0.0	13,465	25.0	0	0.0	14,758	27.4	0	0.0	3,339	6.2	0	0.0	754	1.4	0	0.0	0	0.0	0	0.0	32,316	60.0
			F	0	0.0	0	0.0	1,777	3.3	0	0.0	10,987	20.4	0	0.0	5,925	11.0	0	0.0	2,855	5.3	0	0.0	0	0.0	0	0.0	21,544	40.0
			Total	0	0.0	0	0.0	15,242	28.3	0	0.0	25,745	47.8	0	0.0	9,264	17.2	0	0.0	3,609	6.7	0	0.0	0	0.0	0	0.0	53,860	100.0
1989	6/19	147	M	0	0.0	0	0.0	2,375	25.8	0	0.0	1,187	12.9	129	1.4	2,062	22.4	377	4.1	0	0.0	249	2.7	0	0.0	0	0.0	6,378	69.3
			F	0	0.0	0	0.0	129	1.4	0	0.0	377	4.1	64	0.7	1,813	19.7	0	0.0	129	1.4	249	2.7	0	0.0	64	0.7	2,826	30.7
			Subtotal	0	0.0	0	0.0	2,503	27.2	0	0.0	1,565	17.0	193	2.1	3,875	42.1	377	4.1	129	1.4	497	5.4	0	0.0	64	0.7	9,204	100.0
	6/23,26,30,	211	M	0	0.0	0	0.0	7,875	24.2	0	0.0	5,076	15.6	781	2.4	3,384	10.4	456	1.4	781	2.4	163	0.5	0	0.0	0	0.0	18,516	56.9
	7/3,5		F	0	0.0	0	0.0	3,710	11.4	0	0.0	3,384	10.4	616	1.9	4,458	13.7	163	0.5	1,399	4.3	293	0.9	0	0.0	0	0.0	14,025	43.1
			Subtotal	0	0.0	0	0.0	11,585	35.6	0	0.0	8,461	26.0	1,399	4.3	7,842	24.1	618	1.9	2,180	6.7	456	1.4	0	0.0	0	0.0	32,541	100.0
	Season	358	M	0	0.0	0	0.0	10,250	24.6	0	0.0	6,264	15.0	910	2.2	5,446	13.0	833	2.0	781	1.9	411	1.0	0	0.0	0	0.0	24,894	59.6
			F	0	0.0	0	0.0	3,839	9.2	0	0.0	3,762	9.0	883	1.6	6,271	15.0	163	0.4	1,528	3.7	541	1.3	0	0.0	64	0.2	16,851	40.4
			Total	0	0.0	0	0.0	14,088	33.7	0	0.0	10,025	24.0	1,593	3.8	11,717	28.1	996	2.4	2,309	5.5	953	2.3	0	0.0	64	0.2	41,745	100.0
1990	6/20,25	256	M	0	0.0	0	0.0	15,412	47.1	0	0.0	9,466	28.9	0	0.0	2,552	7.8	0	0.0	524	1.6	0	0.0	0	0.0	0	0.0	27,944	85.4
			F	0	0.0	0	0.0	262	0.8	0	0.0	2,061	6.3	0	0.0	2,061	6.3	0	0.0	393	1.2	0	0.0	0	0.0	0	0.0	4,777	14.6
			Subtotal	0	0.0	0	0.0	15,673	47.9	0	0.0	11,518	35.2	0	0.0	4,614	14.1	0	0.0	918	2.8	0	0.0	0	0.0	0	0.0	32,721	100.0

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Year	Sample Date	Sample Size	Sex	Age Composition (%) 0 2 Catch	%	1 1 Catch	%	1 2 Catch	%	0 4 Catch	%	1 3 Catch	%	2 2 Catch	%	1 4 Catch	%	2 3 Catch	%	1 5 Catch	%	2 4 Catch	%	1 6 Catch	%	2 5 Catch	%	Total Catch	%
	6/29,7/5,9	152	M	0	0.0	0	0.0	5,672	29.6	0	0.0	6,304	32.9	0	0.0	2,148	11.2	0	0.0	498	2.6	0	0.0	0	0.0	0	0.0	14,621	76.3
			F	0	0.0	0	0.0	134	0.7	0	0.0	1,783	9.2	0	0.0	2,261	11.8	0	0.0	383	2.0	0	0.0	0	0.0	0	0.0	4,541	23.7
			Subtotal	0	0.0	0	0.0	5,806	30.3	0	0.0	8,087	42.1	0	0.0	4,407	23.0	0	0.0	881	4.6	0	0.0	0	0.0	0	0.0	19,162	100.0
	Season	408	M	0	0.0	0	0.0	21,084	40.6	0	0.0	15,761	30.4	0	0.0	4,698	9.1	0	0.0	1,022	2.0	0	0.0	0	0.0	0	0.0	42,564	82.0
			F	0	0.0	0	0.0	396	0.8	0	0.0	3,824	7.4	0	0.0	4,923	8.3	0	0.0	776	1.5	0	0.0	0	0.0	0	0.0	9,319	18.0
			Total	0	0.0	0	0.0	21,479	41.4	0	0.0	19,585	37.7	0	0.0	9,021	17.4	0	0.0	1,798	3.5	0	0.0	0	0.0	0	0.0	51,883	100.0
1991	6/20	155	M	0	0.0	0	0.0	4,020	29.1	0	0.0	2,942	21.3	539	3.9	981	7.1	539	3.9	0	0.0	0	0.0	0	0.0	83	0.6	9,103	65.9
			F	0	0.0	0	0.0	262	1.9	0	0.0	1,899	13.3	83	0.6	1,961	14.2	0	0.0	359	2.6	262	1.9	0	0.0	83	0.6	4,710	34.1
			Subtotal	0	0.0	0	0.0	4,282	31.0	0	0.0	4,841	33.6	622	4.5	2,942	21.3	539	3.9	359	2.6	262	1.9	0	0.0	166	1.2	13,813	100.0
	6/24	129	M	0	0.0	0	0.0	4,477	35.5	0	0.0	2,157	17.1	0	0.0	1,173	9.3	0	0.0	101	0.8	101	0.8	0	0.0	0	0.0	8,009	63.5
			F	0	0.0	0	0.0	202	1.6	0	0.0	1,665	13.2	0	0.0	2,535	20.1	0	0.0	202	1.6	0	0.0	0	0.0	0	0.0	4,603	36.5
			Subtotal	0	0.0	0	0.0	4,679	37.1	0	0.0	3,821	30.3	0	0.0	3,708	29.4	0	0.0	303	2.4	101	0.8	0	0.0	0	0.0	12,612	100.0
	7/6	71	M	0	0.0	0	0.0	2,275	28.2	0	0.0	1,702	21.1	0	0.0	912	11.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4,889	60.6
			F	0	0.0	0	0.0	0	0.0	0	0.0	565	7.0	0	0.0	2,275	28.2	0	0.0	339	4.2	0	0.0	0	0.0	0	0.0	3,179	39.4
			Subtotal	0	0.0	0	0.0	2,275	28.2	0	0.0	2,267	28.1	0	0.0	3,187	39.5	0	0.0	339	4.2	0	0.0	0	0.0	0	0.0	8,068	100.0
	7/13	44	M	0	0.0	0	0.0	249	27.5	0	0.0	203	22.5	0	0.0	103	11.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	555	61.4
			F	0	0.0	0	0.0	81	9.0	0	0.0	61	6.8	0	0.0	186	20.6	0	0.0	20	2.2	0	0.0	0	0.0	0	0.0	349	38.6
			Subtotal	0	0.0	0	0.0	330	36.5	0	0.0	265	29.3	0	0.0	289	32.0	0	0.0	20	2.2	0	0.0	0	0.0	0	0.0	904	100.0
	7/18	21	M	63	4.8	0	0.0	496	37.9	0	0.0	124	9.5	63	4.8	124	9.5	0	0.0	0	0.0	63	4.8	0	0.0	0	0.0	933	71.3
			F	0	0.0	0	0.0	63	4.8	0	0.0	63	4.8	0	0.0	187	14.3	0	0.0	0	0.0	63	4.8	0	0.0	0	0.0	376	28.7
			Subtotal	63	4.8	0	0.0	559	42.7	0	0.0	187	14.3	63	4.8	312	23.8	0	0.0	0	0.0	126	9.6	0	0.0	0	0.0	1,309	100.0
	Season	420	M	63	0.2	0	0.0	11,517	31.4	0	0.0	7,129	19.4	602	1.6	3,293	9.0	539	1.5	101	0.3	164	0.4	0	0.0	83	0.2	23,489	64.0
			F	0	0.0	0	0.0	608	1.7	0	0.0	4,053	11.0	83	0.2	7,145	19.5	0	0.0	920	2.5	325	0.9	0	0.0	83	0.2	13,217	36.0
			Total	63	0.2	0	0.0	12,125	33.0	0	0.0	11,182	30.5	684	1.9	10,438	28.4	539	1.5	1,021	2.8	489	1.3	0	0.0	166	0.5	36,706	100.0
1992	6/18	194	M	0	0.0	98	1.0	3,649	37.4	0	0.0	3,015	30.9	49	0.5	751	7.7	0	0.0	49	0.5	0	0.0	0	0.0	0	0.0	7,610	78.0
			F	0	0.0	0	0.0	98	1.0	0	0.0	449	4.6	0	0.0	1,454	14.9	0	0.0	146	1.5	0	0.0	0	0.0	0	0.0	2,146	22.0
			Subtotal	0	0.0	98	1.0	3,746	38.4	0	0.0	3,463	35.5	49	0.5	2,205	22.6	0	0.0	195	2.0	0	0.0	0	0.0	0	0.0	9,756	100.0
	6/22	191	M	0	0.0	308	2.1	6,575	45.1	0	0.0	2,901	19.9	0	0.0	1,064	7.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	10,848	74.4
			F	0	0.0	0	0.0	379	2.6	0	0.0	1,297	8.9	0	0.0	1,983	13.6	0	0.0	73	0.5	0	0.0	0	0.0	0	0.0	3,732	25.6
			Subtotal	0	0.0	308	2.1	6,954	47.7	0	0.0	4,198	28.8	0	0.0	3,047	20.9	0	0.0	73	0.5	0	0.0	0	0.0	0	0.0	14,578	100.0
	6/25	137	M	0	0.0	63	0.7	3,953	44.0	0	0.0	1,770	19.7	0	0.0	918	10.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6,702	74.6
			F	0	0.0	0	0.0	0	0.0	0	0.0	323	3.6	0	0.0	1,833	20.4	0	0.0	63	0.7	63	0.7	0	0.0	0	0.0	2,282	25.4
			Subtotal	0	0.0	63	0.7	3,953	44.0	0	0.0	2,093	23.3	0	0.0	2,749	30.6	0	0.0	63	0.7	63	0.7	0	0.0	0	0.0	8,984	100.0
	6/29	195	M	0	0.0	57	0.5	5,770	50.8	0	0.0	2,385	21.0	57	0.5	1,102	9.7	0	0.0	57	0.5	0	0.0	0	0.0	0	0.0	9,428	83.0
			F	0	0.0	0	0.0	0	0.0	0	0.0	239	2.1	0	0.0	1,636	14.4	0	0.0	57	0.5	0	0.0	0	0.0	0	0.0	1,931	17.0
			Subtotal	0	0.0	57	0.5	5,770	50.8	0	0.0	2,624	23.1	57	0.5	2,738	24.1	0	0.0	114	1.0	0	0.0	0	0.0	0	0.0	11,359	100.0
	Season	717	M	0	0.0	523	1.2	19,947	44.6	0	0.0	10,071	22.5	106	0.2	3,834	8.6	0	0.0	106	0.2	0	0.0	0	0.0	0	0.0	34,666	77.4
			F	0	0.0	0	0.0	477	1.1	0	0.0	2,308	5.2	0	0.0	6,905	15.5	0	0.0	339	0.8	63	0.1	0	0.0	0	0.0	10,091	22.6
			Total	0	0.0	523	1.2	20,423	45.7	0	0.0	12,379	27.7	106	0.2	10,738	24.0	0	0.0	444	1.0	63	0.1	0	0.0	0	0.0	44,877	100.0

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Year	Sample Date	Sample Size	Sex	Age Composition (%) 0.2 Catch	0.2 %	1.1 Catch	1.1 %	1.2 Catch	1.2 %	0.4 Catch	0.4 %	1.3 Catch	1.3 %	2.2 Catch	2.2 %	1.4 Catch	1.4 %	2.3 Catch	2.3 %	1.5 Catch	1.5 %	2.4 Catch	2.4 %	1.6 Catch	1.6 %	2.5 Catch	2.5 %	Total Catch	Total %
1993	Season	102	M	0	0.0	0	0.0	5,368	61.6	0	0.0	1,874	21.5	0	0.0	418	4.8	418	4.8	0	0.0	87	1.0	0	0.0	0	0.0	8,185	93.7
	6/25		F	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	418	4.8	0	0.0	44	0.5	0	0.0	0	0.0	87	1.0	549	6.3
			Total	0	0.0	0	0.0	5,368	61.6	0	0.0	1,874	21.5	0	0.0	837	9.6	418	4.8	44	0.5	87	1.0	0	0.0	87	1.0	8,714	100.0
1994	Season	208	M	0	0.0	81	0.5	2,722	16.8	0	0.0	6,594	40.7	308	1.9	2,414	14.9	81	0.5	162	1.0	0	0.0	0	0.0	0	0.0	12,381	76.3
	6/24		F	0	0.0	0	0.0	81	0.5	0	0.0	1,555	9.6	0	0.0	1,798	11.1	81	0.5	162	1.0	162	1.0	0	0.0	0	0.0	3,840	23.7
			Total	0	0.0	81	0.5	2,803	17.3	0	0.0	8,149	50.3	308	1.9	4,212	26.0	162	1.0	324	2.0	162	1.0	0	0.0	0	0.0	16,201	100.0
All Years (Unrestricted Mesh Size)		3,790	M	0	0.0	194	0.2	8,633	3.2	12	0.0	76,334	28.3	0	0.0	62,884	23.3	247	0.1	5,520	2.0	271	0.1	0	0.0	0	0.0	154,117	57.2
			F	0	0.0	0	0.0	503	0.2	0	0.0	21,137	7.8	0	0.0	85,033	31.6	226	0.1	8,214	3.0	247	0.1	0	0.0	0	0.0	115,374	42.8
			Grand Total	0	0.0	194	0.1	9,136	3.4	12	0.0	97,471	36.2	0	0.0	147,918	54.9	473	0.2	13,733	5.1	518	0.2	0	0.0	0	0.0	269,492	100.0
[c] All Years (Restricted Mesh Size)		4,954	M	63	0.1	986	0.2	112,334	27.4	0	0.0	114,693	28.0	2,031	0.5	36,081	8.8	1,871	0.5	3,330	0.8	862	0.8	0	0.0	83	0.0	290,662	71.0
			F	0	0.0	0	0.0	9,786	2.4	0	0.0	32,855	8.0	766	0.2	47,265	11.5	244	0.1	8,856	2.2	1,092	0.3	127	0.0	234	0.1	118,942	29.0
			Grand Total	63	0.0	986	0.2	122,120	29.8	0	0.0	114,693	28.0	2,796	0.7	83,346	20.3	2,115	0.5	12,185	3.0	1,754	0.4	127	0.0	317	0.1	409,604	100.0
[c] All Years (Restricted & Unrestricted Mesh Size)		8,142	M	63	0.0	986	0.2	112,334	18.6	0	0.0	81,838	13.5	2,031	0.3	36,081	6.0	1,871	0.3	3,330	0.6	862	0.1	0	0.0	83	0.0	404,930	67.0
			F	0	0.0	0	0.0	9,786	1.6	0	0.0	32,855	5.4	766	0.1	47,265	7.8	244	0.0	8,856	1.5	1,092	0.2	127	0.0	234	0.0	199,392	33.0
			Grand Total	63	0.0	986	0.2	122,120	20.2	0	0.0	114,693	19.0	2,796	0.5	83,346	13.8	2,115	0.3	12,185	2.0	1,754	0.3	127	0.0	317	0.1	604,322	100.0

[a] Percentages by sample date are based on commercial catch samples collected in Bethel, catch numbers, by age class and sex, are derived from those percentages; discrepancies in sums are attributed to rounding errors.

[b] For season summaries the catch estimates, by age class and sex, are tallied and the percentages are derived from the sums.

Appendix B.27. Age distribution of historic commercial sockeye salmon catches from the lower Kuskokwim River, by sample trip.[ab]

Year	Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	1.1 Catch	1.1 %	0.3 Catch	0.3 %	1.2 Catch	1.2 %	0.4 Catch	0.4 %	1.3 Catch	1.3 %	2.2 Catch	2.2 %	1.4 Catch	1.4 %	2.3 Catch	2.3 %	2.4 Catch	2.4 %	3.3 Catch	3.3 %	Total Catch	Total %
1984	Season	296	M	0	0.0	0	0.0	1,238	2.7	1,374	3.0	0	0.0	12,499	27.3	1,557	3.4	137	0.3	4,899	10.7	0	0.0	0	0.0	21,702	47.4
			F	137	0.3	137	0.3	1,877	4.1	2,930	6.4	137	0.3	13,552	29.6	1,557	3.4	137	0.3	3,617	7.9	0	0.0	0	0.0	24,083	52.6
			Total	137	0.3	137	0.3	3,113	6.8	4,304	9.4	137	0.3	26,052	56.9	3,113	6.8	275	0.6	8,516	18.6	0	0.0	0	0.0	45,785	100.0
1985	6/20-27	544	M	0	0.0	0	0.0	740	1.3	1,879	3.3	114	0.2	15,942	28.0	1,993	3.5	399	0.7	2,277	4.0	0	0.0	0	0.0	23,344	41.0
			F	0	0.0	0	0.0	1,139	2.0	2,391	4.2	342	0.6	22,490	39.5	3,644	6.4	0	0.0	3,587	6.3	0	0.0	0	0.0	33,593	59.0
			Subtotal	0	0.0	0	0.0	1,879	3.3	4,270	7.5	465	0.8	38,432	67.5	5,637	9.9	399	0.7	5,865	10.3	0	0.0	0	0.0	56,937	100.0
	7/1-4	349	M	0	0.0	0	0.0	519	1.1	425	0.9	283	0.6	14,725	31.2	3,115	6.6	425	0.9	3,115	6.6	0	0.0	0	0.0	22,607	47.9
			F	0	0.0	0	0.0	425	0.9	1,227	2.6	425	0.9	15,103	32.0	2,643	5.6	283	0.6	4,484	9.5	0	0.0	0	0.0	24,589	52.1
			Subtotal	0	0.0	0	0.0	944	2.0	1,652	3.5	708	1.5	29,828	63.2	5,758	12.2	708	1.5	7,599	16.1	0	0.0	0	0.0	47,196	100.0
	Season	893	M	0	0.0	0	0.0	1,259	1.2	2,304	2.1	397	0.4	30,668	29.6	5,108	5.1	823	0.8	5,392	5.3	0	0.0	0	0.0	45,951	44.5
			F	0	0.0	0	0.0	1,564	1.5	3,618	3.4	766	0.8	37,593	35.8	6,287	6.0	283	0.3	8,071	7.9	0	0.0	0	0.0	58,182	55.6
			Total	0	0.0	0	0.0	2,823	2.7	5,922	5.5	1,163	1.2	68,260	65.4	11,395	11.1	1,106	1.1	13,463	13.2	0	0.0	0	0.0	104,133	100.0
1986	Season	535	M	0	0.0	0	0.0	2,966	3.2	2,696	2.8	0	0.0	36,061	38.9	834	0.9	371	0.4	3,337	3.6	0	0.0	0	0.0	46,166	49.8
			F	0	0.0	0	0.0	3,615	3.9	3,152	3.4	185	0.2	33,929	36.6	1,781	1.9	185	0.2	3,801	4.1	0	0.0	0	0.0	46,629	50.3
			Total	0	0.0	0	0.0	2,155	2.3	4,172	4.5	1,228	1.3	69,584	64.3	10,777	11.6	1,206	1.3	13,581	14.7	0	0.0	0	0.0	92,702	100.0
1987	6/18	68	M	0	0.0	0	0.0	0	0.0	137	1.5	0	0.0	2,276	25.0	0	0.0	137	1.5	674	7.4	0	0.0	0	0.0	3,222	35.4
			F	0	0.0	0	0.0	137	1.5	537	5.9	0	0.0	4,533	49.8	0	0.0	0	0.0	674	7.4	0	0.0	0	0.0	5,880	64.6
			Subtotal	0	0.0	0	0.0	137	1.5	674	7.4	0	0.0	6,808	74.8	0	0.0	137	1.5	1,347	14.8	0	0.0	0	0.0	9,102	100.0
	6/24	331	M	0	0.0	0	0.0	365	1.5	365	1.5	0	0.0	8,622	35.4	146	0.6	365	1.5	804	3.3	0	0.0	0	0.0	10,667	43.8
			F	0	0.0	0	0.0	731	3.0	1,242	5.1	0	0.0	10,034	41.2	438	1.8	73	0.3	1,169	4.8	0	0.0	0	0.0	13,688	56.2
			Subtotal	0	0.0	0	0.0	1,096	4.5	1,607	6.6	0	0.0	18,656	76.6	585	2.4	438	1.8	1,973	8.1	0	0.0	0	0.0	24,355	100.0
	6/30	168	M	0	0.0	0	0.0	0	0.0	3,601	3.6	600	0.6	39,810	39.8	0	0.0	600	0.6	4,201	4.2	0	0.0	0	0.0	48,812	48.8
			F	0	0.0	0	0.0	600	0.6	3,001	3.0	0	0.0	35,709	35.7	1,200	1.2	600	0.6	10,102	10.1	0	0.0	0	0.0	51,212	51.2
			Subtotal	0	0.0	0	0.0	600	0.6	6,602	6.6	600	0.6	75,518	75.5	1,200	1.2	1,200	1.2	14,303	14.3	0	0.0	0	0.0	100,024	100.0
	Season	567	M	0	0.0	0	0.0	365	0.5	4,103	2.2	600	0.2	60,707	33.4	146	0.2	1,102	1.2	5,678	6.0	0	0.0	0	0.0	62,701	42.7
			F	0	0.0	0	0.0	1,467	1.7	4,780	4.7	0	0.0	60,276	42.2	1,639	1.0	673	0.3	11,945	7.4	0	0.0	0	0.0	70,780	57.3
			Total	0	0.0	0	0.0	1,833	2.2	8,883	6.9	600	0.2	100,982	75.6	1,785	1.2	1,775	1.5	17,623	12.4	0	0.0	0	0.0	133,481	100.0
1988	Season	453	M	0	0.0	0	0.0	180	0.2	628	0.7	0	0.0	26,570	29.6	628	0.7	359	0.4	10,323	11.5	180	0.2	180	0.2	39,047	43.5
			F	0	0.0	0	0.0	0	0.0	628	0.7	0	0.0	38,957	43.4	628	0.7	1,616	1.8	8,527	9.5	180	0.2	180	0.2	50,716	56.5
			Total	0	0.0	0	0.0	180	0.2	1,257	1.4	0	0.0	65,527	73.0	1,257	1.4	1,975	2.2	18,850	21.0	359	0.4	359	0.4	89,763	100.0
1989	Season	175	M	0	0.0	0	0.0	0	0.0	453	1.1	0	0.0	12,025	29.2	1,647	4.0	453	1.1	3,294	8.0	453	1.1	0	0.0	18,325	44.5
	(6/19,23,		F	0	0.0	0	0.0	0	0.0	947	2.3	0	0.0	12,272	29.8	2,594	6.3	1,400	3.4	5,395	13.1	0	0.0	247	0.6	22,855	55.5
	26,30,7/3)		Total	0	0.0	0	0.0	0	0.0	1,400	3.4	0	0.0	24,296	59.0	4,242	10.3	1,853	4.5	8,689	21.1	453	1.1	247	0.6	41,180	100.0
1990	Season	250	M	0	0.0	328	0.4	0	0.0	983	1.2	0	0.0	30,154	36.8	2,294	2.8	328	0.4	5,900	7.2	0	0.0	0	0.0	39,987	48.8
	(6/25,29,		F	0	0.0	0	0.0	328	0.4	1,967	2.4	656	0.8	33,104	40.4	1,639	2.0	1,967	2.4	2,294	2.8	0	0.0	0	0.0	41,953	51.2
	7/9)		Total	0	0.0	328	0.4	328	0.4	2,950	3.6	656	0.8	63,258	77.2	3,933	4.8	2,294	2.8	8,194	10.0	0	0.0	0	0.0	81,940	100.0
1991	6/20	147	M	0	0.0	0	0.0	273	0.7	273	0.7	0	0.0	17,469	44.8	0	0.0	546	1.4	780	2.0	0	0.0	0	0.0	19,341	49.6
			F	273	0.7	0	0.0	0	0.0	1,872	4.8	0	0.0	16,962	43.5	273	0.7	0	0.0	273	0.7	0	0.0	0	0.0	19,653	50.4
			Subtotal	273	0.7	0	0.0	273	0.7	2,145	5.5	0	0.0	34,432	88.3	273	0.7	546	1.4	1,053	2.7	0	0.0	0	0.0	38,994	100.0

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Year	Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	1.1 Catch	1.1 %	0.3 Catch	0.3 %	1.2 Catch	1.2 %	0.4 Catch	0.4 %	1.3 Catch	1.3 %	2.2 Catch	2.2 %	1.4 Catch	1.4 %	2.3 Catch	2.3 %	2.4 Catch	2.4 %	3.3 Catch	3.3 %	Total Catch	Total %
1991	7/1	98	M est.	0	0.0	0	0.0	366	1.5	977	4.0	0	0.0	9,771	40.0	0	0.0	244	1.0	733	3.0	0	0.0	0	0.0	12,092	49.5
			F est	0	0.0	0	0.0	122	0.5	2,443	10.0	244	1.0	9,283	38.0	244	1.0	0	0.0	0	0.0	0	0.0	0	0.0	12,336	50.5
			Subtotal	0	0.0	0	0.0	489	2.0	3,420	14.0	244	1.0	19,054	78.0	244	1.0	244	1.0	733	3.0	0	0.0	0	0.0	24,428	100.0
	7/8	148	M	0	0.0	0	0.0	484	2.0	993	4.1	170	0.7	8,162	33.7	170	0.7	654	2.7	1,308	5.4	0	0.0	0	0.0	11,940	49.3
			F	0	0.0	0	0.0	170	0.7	1,962	8.1	339	1.4	9,639	39.8	170	0.7	0	0.0	0	0.0	0	0.0	0	0.0	12,279	50.7
			Subtotal	0	0.0	0	0.0	654	2.7	2,955	12.2	509	2.1	17,801	73.5	339	1.4	654	2.7	1,308	5.4	0	0.0	0	0.0	24,219	100.0
	7/13	99	M	0	0.0	0	0.0	194	3.0	387	6.0	0	0.0	2,131	33.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2,712	42.0
			F	0	0.0	0	0.0	65	1.0	517	8.0	65	1.0	2,971	46.0	0	0.0	65	1.0	65	1.0	0	0.0	0	0.0	3,746	58.0
			Subtotal	0	0.0	0	0.0	258	4.0	904	14.0	65	1.0	5,102	79.0	0	0.0	65	1.0	65	1.0	0	0.0	0	0.0	6,458	100.0
	7/18	21	M	0	0.0	0	0.0	0	0.0	566	5.0	0	0.0	5,661	50.0	0	0.0	566	5.0	0	0.0	0	0.0	0	0.0	6,793	60.0
			F	0	0.0	0	0.0	0	0.0	566	5.0	0	0.0	3,396	30.0	0	0.0	0	0.0	566	5.0	0	0.0	0	0.0	4,528	40.0
			Subtotal	0	0.0	0	0.0	0	0.0	1,132	10.0	0	0.0	9,057	80.0	0	0.0	566	5.0	566	5.0	0	0.0	0	0.0	11,321	100.0
	Season	513	M	0	0.0	0	0.0	1,317	1.2	3,197	3.0	170	0.2	43,194	41.0	170	0.2	2,010	1.9	2,821	2.7	0	0.0	0	0.0	52,878	50.2
			F	273	0.3	0	0.0	356	0.3	7,359	7.0	648	0.6	42,251	40.1	687	0.7	65	0.1	904	0.9	0	0.0	0	0.0	52,542	49.8
			Total	273	0.3	0	0.0	1,674	1.6	10,556	10.0	817	0.8	85,445	81.1	856	0.8	2,075	2.0	3,724	3.5	0	0.0	0	0.0	105,420	100.0
1992	6/18	175	M	0	0.0	0	0.0	94	1.1	146	1.7	196	2.3	3,352	39.4	51	0.6	340	4.0	289	3.4	0	0.0	0	0.0	4,467	52.5
			F	0	0.0	0	0.0	247	2.9	145	1.7	51	0.6	2,723	32.0	51	0.6	196	2.3	630	7.4	0	0.0	0	0.0	4,041	47.5
			Subtotal	0	0.0	0	0.0	340	4.0	289	3.4	247	2.9	6,075	71.4	102	1.2	536	6.3	919	10.8	0	0.0	0	0.0	8,508	100.0
	6/22	162	M	0	0.0	0	0.0	0	0.0	1,455	3.1	282	0.6	16,523	35.2	563	1.2	563	1.2	3,192	6.8	0	0.0	0	0.0	22,578	48.1
			F	0	0.0	0	0.0	563	1.2	1,455	3.1	0	0.0	16,523	35.2	1,173	2.5	1,455	3.1	3,192	6.8	0	0.0	0	0.0	24,361	51.9
			Subtotal	0	0.0	0	0.0	563	1.2	2,910	6.2	282	0.6	33,045	70.4	1,737	3.7	2,018	4.3	6,384	13.6	0	0.0	0	0.0	46,939	100.0
	6/29	167	M	0	0.0	0	0.0	414	1.2	1,656	4.8	207	0.6	10,525	30.5	207	0.6	2,278	6.6	1,656	4.8	0	0.0	0	0.0	16,944	49.1
			F	0	0.0	0	0.0	828	2.4	621	1.8	0	0.0	12,596	36.5	828	2.4	828	2.4	1,863	5.4	0	0.0	0	0.0	17,565	50.9
			Subtotal	0	0.0	0	0.0	1,242	3.6	2,278	6.6	207	0.6	23,121	67.0	1,035	3.0	3,106	9.0	3,520	10.2	0	0.0	0	0.0	34,509	100.0
	Season	504	M	0	0.0	0	0.0	506	0.6	3,258	3.6	684	0.8	30,400	33.8	621	0.9	3,181	3.5	5,138	5.7	0	0.0	0	0.0	43,988	48.9
			F	0	0.0	0	0.0	1,638	1.8	2,221	2.5	51	0.1	31,841	35.4	2,053	2.3	2,479	2.8	5,685	6.3	0	0.0	0	0.0	45,968	51.1
			Total	0	0.0	0	0.0	2,146	2.4	5,477	6.1	735	0.8	62,241	69.2	2,874	3.2	5,660	6.3	10,822	12.0	0	0.0	0	0.0	89,956	100.0
1993	Season	186	M	0	0.0	0	0.0	432	1.6	3,051	11.3	0	0.0	7,399	27.4	1,161	4.3	0	0.0	1,458	5.4	0	0.0	0	0.0	13,502	50.0
	6/26		F	0	0.0	0	0.0	0	0.0	2,916	10.8	297	1.1	7,534	27.9	1,296	4.8	594	2.2	864	3.2	0	0.0	0	0.0	13,502	50.0
			Total	0	0.0	0	0.0	432	1.6	5,968	22.1	297	1.1	14,933	55.3	2,457	9.1	594	2.2	2,322	8.6	0	0.0	0	0.0	27,003	100.0
1994	Season	173	M	0	0.0	0	0.0	0	0.0	592	1.2	0	0.0	17,622	35.7	296	0.6	592	1.2	5,134	10.4	592	1.2	0	0.0	24,829	50.3
	6/24		F	0	0.0	0	0.0	296	0.6	296	0.6	0	0.0	17,918	36.3	0	0.0	296	0.8	5,726	11.6	0	0.0	0	0.0	24,533	49.7
			Total	0	0.0	0	0.0	296	0.6	889	1.8	0	0.0	35,541	72.0	296	0.6	889	1.8	10,860	22.0	592	1.2	0	0.0	49,362	100.0
All Years		4545	M	0	0.0	328	0.0	8,264	1.0	22,537	2.6	1,651	0.2	297,298	34.5	14,663	1.7	9,357	1.1	53,374	6.2	1,225	0.1	180	0.0	409,075	47.5
			F	410	0.0	137	0.0	11,142	1.3	30,815	3.6	2,741	0.3	319,227	37.1	20,141	2.3	9,695	1.1	56,828	6.6	180	0.0	427	0.0	451,742	52.5
			Grand Total	410	0.0	465	0.1	14,979	1.7	51,776	6.0	5,635	0.7	606,119	70.4	42,985	5.0	19,701	2.3	118,645	13.6	1,404	0.2	606	0.1	860,725	100.0

a Percentages by sample date are based on commercial catch samples collected in Bethel; catch numbers, by age class and sex, are derived from those percentages, discrepencies in sums are attributed to rounding errors.

b For season summaries the catch estimates, by age class and sex, are tallied and the percentages are derived from the sums.

Appendix B.28. Age distribution of historic commercial coho salmon catches from the lower Kuskokwim River, by sample trip.[ab]

Year	Sample Date	Sampl Size	Sex	Age Class 1.1 Catch	1.1 %	2.1 Catch	2.1 %	3.1 Catch	3.1 %	Total Catch	Total %
1984	7/12-8/2	271	M	3,532	2.6	65,615	48.3	2,038	1.5	71,185	52.4
			F	2,038	1.5	60,181	44.3	2,445	1.8	64,664	47.6
			Subtotal	5,570	4.1	125,796	92.6	4,483	3.3	135,849	100.0
	8/3-9	243	M	1,323	0.8	85,179	51.5	662	0.4	87,164	52.7
			F	3,473	2.1	73,436	44.4	1,323	0.8	78,232	47.3
			Subtotal	4,796	2.9	158,615	95.9	1,985	1.2	165,396	100.0
	8/10-16	252	M	3,807	2.4	74,864	47.2	1,903	1.2	80,574	50.8
			F	5,076	3.2	70,423	44.4	2,538	1.6	78,036	49.2
			Subtotal	8,882	5.6	145,287	91.6	4,441	2.8	158,610	100.0
	8/17-27	328	M	1,945	1.5	60,428	46.6	4,409	3.4	66,782	51.5
			F	3,890	3.0	56,667	43.7	2,334	1.8	62,891	48.5
			Subtotal	5,835	4.5	117,095	90.3	6,743	5.2	129,673	100.0
	8/28-9/3	239	M	559	3.8	6,145	41.8	426	2.9	7,130	48.5
			F	676	4.6	6,101	41.5	794	5.4	7,572	51.5
			Subtotal	1,235	8.4	12,247	83.3	1,220	8.3	14,702	100.0
	Season	1,333	M	11,166	1.8	292,231	48.4	9,438	1.6	312,835	51.8
			F	15,153	2.5	266,808	44.2	9,434	1.6	291,395	48.2
			Total	26,319	4.4	559,039	92.5	18,872	3.1	604,230	100.0
1985	8/1-5	255	M	3,466	3.9	39,459	44.4	3,110	3.5	46,035	51.8
			F	3,821	4.3	35,193	39.6	3,821	4.3	42,836	48.2
			Subtotal	7,287	8.2	74,652	84.0	6,932	7.8	88,871	100.0
	8/8-12	239	M	5,147	3.3	79,695	51.1	2,651	1.7	87,492	56.1
			F	4,523	2.9	61,915	39.7	2,027	1.3	68,466	43.9
			Subtotal	9,669	6.2	141,610	90.8	4,679	3.0	155,958	100.0
	8/15-19	249	M	3,976	8.4	21,487	45.4	757	1.6	26,220	55.4
			F	2,082	4.4	17,701	37.4	1,325	2.8	21,109	44.6
			Subtotal	6,058	12.8	39,188	82.8	2,082	4.4	47,329	100.0
	8/22-29	376	M	2,608	6.9	15,381	40.7	1,096	2.9	19,084	50.5
			F	2,419	6.4	15,683	41.5	605	1.6	18,706	49.5
			Subtotal	5,026	13.3	31,063	82.2	1,701	4.5	37,790	100.0
	Season	1119	M	15,196	4.6	156,021	47.3	7,615	2.3	178,832	54.2
			F	12,845	3.9	130,492	39.5	7,779	2.4	151,116	45.8
			Total	28,041	8.5	286,513	86.8	15,394	4.7	329,948	100.0
1986	6/31-8/4	250	M	4,947	4.0	62,829	50.8	495	0.4	68,271	55.2
			F	2,968	2.4	52,440	42.4	0	0.0	55,409	44.8
			Subtotal	7,916	6.4	115,270	93.2	495	0.4	123,680	100.0
	8/7-15	336	M	9,660	2.7	180,684	50.5	4,293	1.2	194,638	54.4
			F	6,440	1.8	148,125	41.4	8,587	2.4	163,152	45.6
			Subtotal	16,101	4.5	328,809	91.9	12,880	3.6	357,790	100.0
	8/17-9/01	255	M	3,234	2.0	76,493	47.3	3,881	2.4	83,608	51.7
			F	3,881	2.4	70,994	43.9	3,234	2.0	78,110	48.3
			Subtotal	7,116	4.4	147,487	91.2	7,116	4.4	161,718	100.0

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Year	Sample Date	Sampl Size	Sex	Age Class 1.1 Catch	1.1 %	2.1 Catch	2.1 %	3.1 Catch	3.1 %	Total Catch	Total %
	Season	841	M	17,842	2.8	320,006	49.8	8,669	1.3	346,517	53.9
			F	13,290	2.1	271,560	42.2	11,821	1.8	296,671	46.1
			Total	31,132	4.8	591,566	92.0	20,491	3.2	643,188	100.0
1987	8/6	126	M	369	0.8	16,856	36.5	2,909	6.3	20,135	43.8
			F	4,387	9.5	17,272	37.4	4,387	9.5	26,047	56.4
			Subtotal	4,757	10.3	34,128	73.9	7,297	15.8	46,182	100.0
	8/13	111	M	7,558	7.2	33,065	31.5	4,724	4.5	45,346	43.2
			F	1,889	1.8	49,230	46.9	8,502	8.1	59,622	56.8
			Subtotal	9,447	9.0	82,295	78.4	13,226	12.6	104,968	100.0
	8/17,19	158	M	2,264	1.9	43,011	36.1	10,604	8.9	55,879	46.9
			F	2,979	2.5	50,517	42.4	9,770	8.2	63,265	53.1
			Subtotal	5,242	4.4	93,528	78.5	20,374	17.1	119,144	100.0
	8/21,24	147	M	2,081	3.4	24,177	39.5	4,162	6.8	30,420	49.7
			F	1,653	2.7	21,668	35.4	7,467	12.2	30,788	50.3
			Subtotal	3,734	6.1	45,845	74.9	11,630	19.0	61,208	100.0
	8/27,31,9/3,7	278	M	2,918	5.8	20,023	39.8	4,176	8.3	27,116	53.9
			F	1,459	2.9	17,759	35.3	3,974	7.9	23,192	46.1
			Subtotal	4,377	8.7	37,781	75.1	8,150	16.2	50,308	100.0
	Season	820	M	15,190	4.0	137,132	35.9	26,575	7.0	178,896	46.9
			F	12,367	3.2	156,445	41.0	34,101	8.9	202,914	53.1
			Total	27,557	7.2	293,578	76.9	60,676	15.9	381,810	100.0
1988	7/25,28	221	M	1,053	3.6	14,273	48.8	0	0.0	15,326	52.4
			F	263	0.9	13,513	46.2	146	0.5	13,922	47.6
			Subtotal	1,316	4.5	27,786	95.0	146	0.5	29,248	100.0
	8/1,4	244	M	2,211	2.0	53,607	48.5	1,326	1.2	57,144	51.7
			F	1,768	1.6	50,733	45.9	884	0.8	53,386	48.3
			Subtotal	3,979	3.6	104,340	94.4	2,211	2.0	110,530	100.0
	8/8,10	238	M	3,654	1.7	103,161	48.0	1,719	0.8	108,534	50.5
				5,373	2.5	99,293	46.2	1,719	0.8	106,385	49.5
			Subtotal	9,027	4.2	202,454	94.2	3,439	1.6	214,919	100.0
	8/15,18	240	M	2,060	1.7	55,018	45.4	969	0.8	58,048	47.9
			F	4,605	3.8	58,532	48.3	0	0.0	63,137	52.1
			Subtotal	6,665	5.5	113,550	93.7	969	0.8	121,185	100.0
	8/27,31	484	M	594	1.7	14,922	42.7	349	1.0	15,866	45.4
			F	944	2.7	17,648	50.5	489	1.4	19,081	54.6
			Subtotal	1,538	4.4	32,571	93.2	839	2.4	34,947	100.0
	Season	1427		9,571	1.9	240,982	47.2	4,365	0.9	254,918	49.9
				12,953	2.5	239,719	46.9	3,239	0.6	255,911	50.1
				22,525	4.4	480,701	94.1	7,604	1.5	510,829	100.0
1989	7/18,27,8/3	229	M	4,719	4.4	55,666	51.9	1,394	1.3	61,780	57.6
			F	5,148	4.8	40,329	37.6	0	0.0	45,477	42.4
			Subtotal	9,868	9.2	95,995	89.5	1,394	1.3	107,257	100.0

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Year	Sample Date	Sampl Size	Sex	Age Class 1.1 Catch	1.1 %	2.1 Catch	2.1 %	3.1 Catch	3.1 %	Total Catch	Total %
	8/7,9,12	127	M	18,364	7.1	120,010	46.4	2,069	0.8	140,443	54.3
			F	4,138	1.6	107,854	41.7	6,207	2.4	118,199	45.7
			Subtotal	22,502	8.7	227,864	88.1	8,277	3.2	258,642	100.0
	8/15,18	132	M	870	3.0	15,172	52.3	232	0.8	16,274	56.1
			F	1,305	4.5	10,762	37.1	667	2.3	12,735	43.9
			Subtotal	2,176	7.5	25,934	89.4	899	3.1	29,009	100.0
	8/23,26	127	M	2,021	3.9	23,682	45.7	829	1.6	26,532	51.2
			F	2,850	5.5	22,024	42.5	415	0.8	25,289	48.8
			Subtotal	4,871	9.4	45,706	88.2	1,244	2.4	51,821	100.0
	8/29	128	M	901	6.3	4,921	34.4	329	2.3	6,151	43.0
			F	787	5.5	6,823	47.7	558	3.9	8,168	57.1
			Subtotal	1,688	11.8	11,744	82.1	887	6.2	14,305	100.1
	Season	743	M	26,875	5.8	219,451	47.6	4,854	1.1	251,180	54.5
			F	14,229	3.1	187,792	40.7	7,847	1.7	209,868	45.5
			Subtotal	41,104	8.9	407,243	88.3	12,701	2.8	461,034	100.0
1990	8/1,6,10	222	M	2,006	1.4	77,249	53.9	5,160	3.6	84,415	58.9
			F	2,006	1.4	53,602	37.4	3,296	2.3	58,905	41.1
			Subtotal	4,013	2.8	130,851	91.3	8,456	5.9	143,320	100.0
	8/13,16, 20,27	167	M	7,558	3.0	128,226	50.9	4,535	1.8	140,318	55.7
			F	7,558	3.0	96,484	38.3	7,558	3.0	111,599	44.3
			Subtotal	15,115	6.0	224,710	89.2	12,092	4.8	251,917	100.0
	Season	389	M	9,564	2.4	205,475	52.0	9,694	2.5	224,733	56.9
			F	9,564	2.4	150,086	38.0	10,854	2.7	170,504	43.1
			Total	19,128	4.8	355,561	90.0	20,548	5.2	395,237	100.0
1991	7/25	89	M	94	1.1	5,844	68.6	94	1.1	6,031	70.8
			F	0	0.0	2,488	29.2	0	0.0	2,488	29.2
			Subtotal	94	1.1	8,332	97.8	94	1.1	8,519	100.0
	8/1	94	M	4,827	6.4	38,467	51.0	4,827	6.4	48,121	63.8
			F	2,414	3.2	23,306	30.9	1,584	2.1	27,304	36.2
			Subtotal	7,241	9.6	61,773	81.9	6,411	8.5	75,425	100.0
	8/8	98	M	4,858	2.0	173,659	71.5	14,816	6.1	193,332	79.6
			F	2,429	1.0	44,690	18.4	2,429	1.0	49,548	20.4
			Subtotal	7,286	3.0	218,349	89.9	17,244	7.1	242,880	100.0
	8/14	95	M	642	1.1	29,488	50.5	4,321	7.4	34,452	59.0
			F	1,226	2.1	20,262	34.7	2,453	4.2	23,941	41.0
			Subtotal	1,869	3.2	49,751	85.2	6,774	11.6	58,393	100.0
	8/19	98	M	1,147	2.0	17,553	30.6	1,778	3.1	20,479	35.7
			F	2,352	4.1	31,034	54.1	3,499	6.1	36,885	64.3
			Subtotal	3,499	6.1	48,587	84.7	5,277	9.2	57,364	100.0
	8/26	99	M	437	1.0	17,640	40.4	1,310	3.0	19,387	44.4
			F	2,664	6.1	20,304	46.5	1,310	3.0	24,277	55.6
			Subtotal	3,100	7.1	37,944	86.9	2,620	6.0	43,664	100.0

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Year	Sample Date	Sampl Size	Sex	Age Class 1.1 Catch	1.1 %	2.1 Catch	2.1 %	3.1 Catch	3.1 %	Total Catch	Total %
	Season	573	M	12,005	2.5	282,652	58.1	27,146	5.6	321,803	66.2
			F	11,084	2.3	142,084	29.2	11,274	2.3	164,442	33.8
			Total	23,089	4.7	424,736	87.4	38,420	7.9	486,245	100.0
1992	8/03	151	M	12,624	9.3	56,604	41.7	950	0.7	70,178	51.7
			F	5,430	4.0	56,604	41.7	3,529	2.6	65,563	48.3
			Subtotal	18,054	13.3	113,208	83.4	4,479	3.3	135,741	100.0
	8/11	191	M	19,700	7.3	111,724	41.4	12,684	4.7	144,107	53.4
			F	11,334	4.2	113,073	41.9	1,349	0.5	125,757	46.6
			Subtotal	31,034	11.5	224,797	83.3	14,033	5.2	269,864	100.0
	8/17		M	9,774	6.4	49,329	32.3	3,971	2.6	63,073	41.3
		155	F	13,745	9.0	71,015	46.5	4,887	3.2	89,647	58.7
			Subtotal	23,519	15.4	120,343	78.8	8,858	5.8	152,720	100.0
	8/24	155	M	3,998	7.1	22,523	40.0	1,070	1.9	27,590	49.0
			F	5,462	9.7	21,791	38.7	1,464	2.6	28,717	51.0
			Subtotal	9,460	16.8	44,314	78.7	2,534	4.5	56,307	100.0
	8/31	152	M	1,900	11.2	6,361	37.5	441	2.6	8,702	51.3
			F	1,119	6.6	6,242	36.8	899	5.3	8,260	48.7
			Subtotal	3,019	17.8	12,603	74.3	1,340	7.9	16,962	100.0
	Season	804	M	47,996	7.6	246,540	39.0	19,115	3.0	313,651	49.7
			F	37,090	5.9	268,725	42.5	12,129	1.9	317,943	50.3
			Total	85,086	13.5	515,264	81.6	31,244	4.9	631,594	100.0
1993	7/31	153	M	6,394	3.3	92,422	47.7	2,519	1.3	101,334	52.3
			F	2,519	1.3	87,384	45.1	2,519	1.3	92,422	47.7
			Subtotal	8,913	4.6	179,806	92.8	5,038	2.6	193,756	100.0
	8/06		M	7,246	3.2	109,598	48.4	5,888	2.6	122,732	54.2
		155	F	4,302	1.9	96,465	42.6	2,944	1.3	103,711	45.8
			Subtotal	11,549	5.1	206,063	91.0	8,831	3.9	226,443	100.0
	8/21	120	M	2,386	1.7	62,034	44.2	3,509	2.5	67,929	48.4
			F	9,403	6.7	63,017	44.9	0	0.0	72,420	51.6
			Subtotal	11,789	8.4	125,051	89.1	3,509	2.5	140,349	100.0
	8/28	112	M	1,392	5.4	11,060	42.9	0	0.0	12,453	48.3
			F	464	1.8	12,865	49.9	0	0.0	13,329	51.7
			Subtotal	1,856	7.2	23,926	92.8	0	0.0	25,782	100.0
	Season	540	M	17,418	3.0	275,115	46.9	11,915	2.0	304,448	51.9
			F	16,689	2.8	259,731	44.3	5,463	0.9	281,882	48.1
			Total	34,107	5.8	534,845	91.2	17,378	3.0	586,330	100.0
1994	7/24	141	M	3,597	2.9	61,157	49.3	7,939	6.4	72,694	58.6
			F	1,737	1.4	45,155	36.4	4,466	3.6	51,357	41.4
			Subtotal	5,334	4.3	106,312	85.7	12,405	10.0	124,051	100.0
	8/04	144	M	7,178	3.5	145,199	70.8	14,151	6.9	166,528	81.2
			F	2,871	1.4	28,507	13.9	7,178	3.5	38,556	18.8
			Subtotal	10,049	4.9	173,706	84.7	21,329	10.4	205,084	100.0

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Year	Sample Date	Sampl Size	Sex	Age Class 1.1 Catch	1.1 %	2.1 Catch	2.1 %	3.1 Catch	3.1 %	Total Catch	Total %
	8/12	132	M	6,295	3.8	55,163	33.3	7,454	4.5	68,912	41.6
			F	2,485	1.5	87,963	53.1	6,295	3.8	96,743	58.4
			Subtotal	8,780	5.3	143,126	86.4	13,749	8.3	165,655	100.0
	8/18	137	M	10,144	8.0	54,653	43.1	6,467	5.1	71,264	56.2
			F	6,467	5.1	42,606	33.6	6,467	5.1	55,540	43.8
			Subtotal	16,611	13.1	97,259	76.7	12,934	10.2	126,804	100.0
	8/25	134	M	1,744	3.0	28,828	49.6	2,209	3.8	32,780	56.4
			F	2,615	4.5	19,645	33.8	3,080	5.3	25,341	43.6
			Subtotal	4,359	7.5	48,473	83.4	5,289	9.1	58,121	100.0
	8/30	138	M	310	2.9	4,646	43.5	459	4.3	5,415	50.7
			F	619	5.8	4,411	41.3	235	2.2	5,266	49.3
			Subtotal	929	8.7	9,057	84.8	694	6.5	10,681	100.0
	Season	826	M	29,268	4.2	349,647	50.6	38,679	5.6	417,594	60.5
			F	16,795	2.4	228,286	33.1	27,721	4.0	272,802	39.5
			Total	46,063	6.7	577,933	83.7	66,400	9.6	690,396	100.0
All Years		9,415	M	212,091	3.7	2,725,251	47.6	168,065	2.9	3,105,407	54.3
			F	172,059	3.0	2,301,728	40.2	141,662	2.5	2,615,449	45.7
			Grand Total	384,149	6.7	5,026,979	87.9	309,727	5.4	5,720,841	100.0

[a] Percentages by sample date are based on commercial catch samples collected in Bethel; catch numbers, by age class and sex, ar derived from those percentages; discrepencies in sums are attributed to, are rounding errors.

[b] For season summaries the catch estimates, by age class and sex, are tallied and the percentages are derived from sums.

Appendix B.29. Age distribution of historic commercial chum salmon catches from the lower Kuskokwim River, by sample trip.[a,b]

Year	Sample Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	0.3 Catch	0.3 %	0.4 Catch	0.4 %	0.5 Catch	0.5 %	Total Catch	Total %
1984	6/18-21	261	M		0.0		31.3		22.6		2.3		56.2
			F		0.0		34.2		8.8		0.5		43.5
			Subtotal		0.0		65.5		31.4		2.8		99.7
	6/22-28	419	M	477	0.3	78,016	49.1	6,674	4.2	1,271	0.8	86,438	54.4
			F	0	0.0	65,305	41.1	6,674	4.2	477	0.3	72,455	45.6
			Subtotal	477	0.3	143,321	90.2	13,347	8.4	1,748	1.1	158,893	100.0
	6/29-7/5	884	M	624	0.5	38,088	30.5	3,497	2.8	250	0.2	42,459	34.0
			F	250	0.2	76,300	61.1	5,869	4.7	0	0.0	82,419	66.0
			Subtotal	874	0.7	114,388	91.6	9,366	7.5	250	0.2	124,878	100.0
	7/6-16	624	M	238	0.3	21,972	27.7	2,300	2.9	635	0.8	25,145	31.7
			F	1,428	1.8	48,624	61.3	3,966	5.0	159	0.2	54,177	68.3
			Subtotal	1,666	2.1	70,597	89.0	6,266	7.9	793	1.0	79,322	100.0
	Season	2,188	M	1,339	0.4	138,076	38.0	12,470	3.4	2,155	0.6	154,041	42.4
			F	1,678	0.5	190,230	52.4	16,509	4.5	635	0.2	209,052	57.6
			Total	3,017	0.8	328,306	90.4	28,979	8.0	2,791	0.8	363,093	100.0
1985	6/20-27	606	M	220	0.2	12,868	11.7	34,975	31.8	330	0.3	48,393	44.0
			F	0	0.0	17,597	16.0	43,773	39.8	220	0.2	61,590	56.0
			Subtotal	220	0.2	30,465	27.7	78,748	71.6	550	0.5	109,983	100.0
	7/1-4	424	M	380	0.5	17,264	22.7	19,697	25.9	152	0.2	37,494	49.3
			F	684	0.9	16,503	21.7	21,371	28.1	0	0.0	38,558	50.7
			Subtotal	1,065	1.4	33,767	44.4	41,068	54.0	152	0.2	76,052	100.0
	Season	1,030	M	600	0.3	30,132	16.2	54,672	29.4	482	0.3	85,886	46.2
			F	684	0.4	34,101	18.3	65,144	35.0	220	0.1	100,149	53.8
			Total	1,285	0.7	64,232	34.6	119,816	64.4	702	0.4	186,035	100.0
1986	6/26-7/3	636	M	0	0.0	73,142	37.4	24,641	12.6	391	0.2	98,174	50.2
			F	391	0.2	71,577	36.6	24,641	12.6	978	0.5	97,587	49.9
			Subtotal	391	0.2	144,719	74.0	49,283	25.2	1,369	0.7	195,566	100.1
	7/4-10	428	M	525	0.5	35,271	33.6	7,558	7.2	210	0.2	43,564	41.5
			F	525	0.5	49,757	47.4	11,022	10.5	0	0.0	61,304	58.4
			Subtotal	1,050	1.0	85,028	81.0	18,580	17.7	210	0.2	104,973	99.9
	Season	1,064	M	525	0.2	108,413	36.1	32,199	10.7	601	0.2	141,738	47.2
			F	916	0.3	121,334	40.4	35,663	11.9	978	0.3	158,892	52.9
			Total	1,441	0.5	229,747	76.4	67,863	22.6	1,579	0.5	300,539	100.0
1987	6/18,24	256	M	0	0.0	7,132	10.5	23,095	34.0	543	0.8	30,770	45.3
			F	0	0.0	11,683	17.2	24,657	36.3	815	1.2	37,156	54.7
			Subtotal	0	0.0	18,816	27.7	47,752	70.3	1,359	2.0	67,926	100.0
	6/30	528	M	0	0.0	29,031	25.7	22,141	19.6	1,017	0.9	52,189	46.2
			F	565	0.5	28,467	25.2	31,630	28.0	0	0.0	60,661	53.7
			Subtotal	565	0.5	57,498	50.9	53,770	47.6	1,017	0.9	112,963	99.9
	7/3,7	214	M	1,529	0.9	35,667	21.0	31,760	18.7	0	0.0	68,956	40.6
			F	849	0.5	55,538	32.7	44,499	26.2	0	0.0	100,886	59.4
			Subtotal	2,378	1.4	91,205	53.7	76,259	44.9	0	0.0	169,842	100.0
	7/11	212	M	1,010	1.4	15,650	21.7	12,909	17.9	649	0.9	30,217	41.9
			F	649	0.9	24,160	33.5	16,659	23.1	361	0.5	41,828	58.0
			Subtotal	1,659	2.3	39,809	55.2	29,568	41.0	1,010	1.4	72,118	99.9

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Year	Sample Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	0.3 Catch	0.3 %	0.4 Catch	0.4 %	0.5 Catch	0.5 %	Total Catch	Total %
	7/15	198	M	1,079	1.5	17,046	23.7	11,292	15.7	360	0.5	29,776	41.4
			F	360	0.5	27,618	38.4	14,169	19.7	0	0.0	42,147	58.6
			Subtotal	1,438	2.0	44,664	62.1	25,461	35.4	360	0.5	71,923	100.0
	7/20	218	M	869	1.4	15,635	25.2	7,942	12.8	0	0.0	24,445	39.4
			F	1,737	2.8	27,051	43.6	8,562	13.8	310	0.5	37,661	60.7
			Subtotal	2,606	4.2	42,686	68.8	16,504	26.6	310	0.5	62,044	100.1
	Season	1,626	M	4,486	0.8	120,161	21.6	109,139	19.6	2,569	0.5	236,354	42.4
			F	4,160	0.7	174,517	31.3	140,176	25.2	1,486	0.3	320,339	57.5
			Total	8,646	1.6	294,678	52.9	249,314	44.8	4,055	0.7	556,816	100.0
1988	6/16,20	387	M	0	0.0	50,922	27.4	40,329	21.7	2,416	1.3	93,667	50.4
			F	0	0.0	52,781	28.4	36,426	19.6	2,974	1.6	92,180	49.6
			Subtotal	0	0.0	103,703	55.8	76,755	41.3	5,390	2.9	185,847	100.0
	6/24,28	416	M	1,369	0.5	105,426	38.5	43,540	15.9	1,917	0.7	152,252	55.6
			F	0	0.0	89,544	32.7	30,396	11.1	1,917	0.7	121,857	44.5
			Subtotal	1,369	0.5	194,971	71.2	73,935	27.0	3,834	1.4	273,835	100.1
	7/2,5	370	M	1,759	0.5	160,812	45.7	30,262	8.6	1,056	0.3	193,890	55.1
			F	1,056	0.3	134,069	38.1	22,873	6.5	0	0.0	157,997	44.9
			Subtotal	2,815	0.8	294,881	83.8	53,135	15.1	1,056	0.3	351,887	100.0
	7/8,11	372	M	1,381	0.5	122,643	44.4	15,468	5.6	0	0.0	139,492	50.5
			F	829	0.3	127,062	46.0	8,839	3.2	0	0.0	136,730	49.5
			Subtotal	2,210	0.8	249,705	90.4	24,308	8.8	0	0.0	276,222	100.0
	7/14,18	409	M	1,223	0.7	52,928	30.3	11,529	6.6	0	0.0	65,679	37.6
			F	2,620	1.5	96,947	55.5	8,559	4.9	873	0.5	109,000	62.4
			Subtotal	3,843	2.2	149,875	85.8	20,088	11.5	873	0.5	174,679	100.0
	7/21,25,28	450	M	204	0.2	41,580	40.7	5,415	5.3	409	0.4	47,608	46.6
			F	715	0.7	49,243	48.2	4,495	4.4	0	0.0	54,453	53.3
			Subtotal	919	0.9	90,823	88.9	9,910	9.7	409	0.4	102,163	99.9
	Season	2,404	M	5,937	0.4	534,312	39.2	146,543	10.7	5,797	0.4	692,588	50.8
			F	5,220	0.4	549,645	40.3	111,588	8.2	5,764	0.4	672,216	49.3
			Total	11,156	0.8	1,083,957	79.4	258,131	18.9	11,561	0.8	1,364,633	100.0
1989	6/19	147	M	0	0.0	16,116	15.0	29,223	27.2	752	0.7	46,091	42.9
			F	0	0.0	14,612	13.6	43,835	40.8	2,579	2.4	61,025	56.8
			Subtotal	0	0.0	30,728	28.6	73,059	68.0	3,331	3.1	107,439	99.7
	6/26,30	149	M	0	0.0	27,552	16.8	53,957	32.9	1,148	0.7	82,657	50.4
			F	0	0.0	27,552	16.8	53,957	32.9	0	0.0	81,509	49.7
			Subtotal	0	0.0	55,105	33.6	107,913	65.8	1,148	0.7	164,002	100.1
	7/3,5	143	M	0	0.0	53,897	18.2	93,283	31.5	0	0.0	147,181	49.7
			F	0	0.0	41,459	14.0	105,721	35.7	2,073	0.7	149,254	50.4
			Subtotal	0	0.0	95,356	32.2	199,005	67.2	2,073	0.7	296,138	100.1
	7/11,14,18	201	M	799	0.5	24,611	15.4	38,195	23.9	799	0.5	64,405	40.3
			F	799	0.5	54,816	34.3	38,195	23.9	1,598	1.0	95,408	59.7
			Subtotal	1,598	1.0	79,427	49.7	76,391	47.8	2,397	1.5	159,813	100.0
	Season	640	M	799	0.1	122,177	16.8	214,659	29.5	2,699	0.4	340,334	46.8
			F	799	0.1	138,439	19.0	241,708	33.2	6,250	0.9	387,196	53.2
			Total	1,598	0.2	260,616	35.8	456,367	62.7	8,949	1.2	727,392	100.0

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Year	Sample Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	0.3 Catch	0.3 %	0.4 Catch	0.4 %	0.5 Catch	0.5 %	Total Catch	Total %
1990	6/20,25,29	206	M	821	0.5	46,950	28.6	46,950	28.6	4,761	2.9	99,482	60.6
			F	821	0.5	49,412	30.1	14,282	8.7	0	0.0	64,515	39.3
			Subtotal	1,642	1.0	96,363	58.7	61,232	37.3	4,761	2.9	164,161	99.9
	7/5,9	154	M	0	0.0	57,930	32.5	23,172	13.0	0	0.0	81,102	45.5
			F	0	0.0	72,903	40.9	23,172	13.0	1,069	0.6	97,144	54.5
			Subtotal	0	0.0	130,833	73.4	46,344	26.0	1,069	0.6	178,246	100.0
	7/14,8/1,6	198	M	1,434	1.5	29,164	30.5	1,912	2.0	0	0.0	32,511	34.0
			F	956	1.0	52,973	55.4	8,701	9.1	0	0.0	62,631	65.5
			Subtotal	2,391	2.5	82,138	85.9	10,614	11.1	0	0.0	95,620	99.5
	Season	558	M	2,255	0.5	134,044	30.6	72,034	16.4	4,761	1.1	213,094	48.6
			F	1,777	0.4	175,289	40.0	46,155	10.5	1,069	0.2	224,290	51.2
			Total	4,032	0.9	309,333	70.6	118,190	27.0	5,830	1.3	438,027	100.0
1991	6/20	154	M	0	0.0	1,981	14.9	3,360	25.3	0	0.0	5,341	40.3
			F	0	0.0	2,498	18.8	5,427	40.9	0	0.0	7,925	59.7
			Subtotal	0	0.0	4,479	33.8	8,787	66.2	0	0.0	13,266	100.0
	6/24	145	M	211	0.7	8,028	26.2	7,394	24.1	0	0.0	15,633	51.0
			F	0	0.0	7,394	24.1	7,605	24.8	0	0.0	14,999	49.0
			Subtotal	211	0.7	15,422	50.3	14,999	49.0	0	0.0	30,632	100.0
	7/1	172	M (est.)	0	0.0	16,388	32.7	11,392	22.7	0	0.0	27,322	54.5
			F (est.)	0	0.0	13,219	26.4	9,336	18.6	0	0.0	22,799	45.5
			Subtotal	0	0.0	29,070	58.0	21,051	42.0	0	0.0	50,121	100.0
	7/6	169	M	237	0.6	14,697	36.7	8,059	20.1	237	0.6	23,230	58.0
			F	711	1.8	11,141	27.8	4,978	12.4	0	0.0	16,830	42.0
			Subtotal	948	2.4	25,838	64.5	13,037	32.5	237	0.6	40,060	100.0
	7/13	136	M	386	0.7	14,684	27.9	6,569	12.5	0	0.0	21,639	41.2
			F	1,159	2.2	19,321	36.8	10,433	19.9	0	0.0	30,913	58.8
			Subtotal	1,546	2.9	34,004	64.7	17,002	32.4	0	0.0	52,552	100.0
	7/18	153	M	1,545	2.0	23,176	29.4	10,300	13.1	0	0.0	35,021	44.4
			F	2,060	2.6	31,416	39.9	10,300	13.1	0	0.0	43,776	55.6
			Subtotal	3,605	4.6	54,591	69.3	20,601	26.1	0	0.0	78,797	100.0
	7/22	158	M	0	0.0	17,233	26.6	8,206	12.7	0	0.0	25,439	39.2
			F	821	1.3	26,670	41.1	11,899	18.4	0	0.0	39,390	60.8
			Subtotal	821	1.3	43,904	67.7	20,105	31.0	0	0.0	64,830	100.0
	7/29	146	M	535	1.4	9,365	24.0	3,479	8.9	0	0.0	13,379	34.2
			F	535	1.4	20,069	51.4	5,084	13.0	0	0.0	25,688	65.8
			Subtotal	1,070	2.7	29,434	75.3	8,563	21.9	0	0.0	39,067	100.0
	8/1	146	M	90	0.7	2,781	21.2	718	5.5	0	0.0	3,588	27.4
			F	90	0.7	7,267	55.5	2,153	16.4	0	0.0	9,510	72.6
			Subtotal	179	1.4	10,048	76.7	2,871	21.9	0	0.0	13,098	100.0
	8/5	140	M	131	2.1	1,566	25.7	522	8.6	0	0.0	2,219	36.4
			F	87	1.4	3,133	51.4	653	10.7	0	0.0	3,872	63.6
			Subtotal	218	3.6	4,699	77.1	1,175	19.3	0	0.0	6,091	100.0
	8/8	109	M	107	1.8	3,738	64.2	320	5.5	427	7.3	4,592	78.9
			F	53	0.9	961	16.5	53	0.9	160	2.8	1,228	21.1
			Subtotal	160	2.8	4,699	80.7	374	6.4	587	###	5,820	100.0

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Year	Sample Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	0.3 Catch	0.3 %	0.4 Catch	0.4 %	0.5 Catch	0.5 %	Total Catch	Total %
	Season	1,628	M	3,242	0.8	113,636	28.8	60,319	15.3	664	0.2	177,403	45.0
			F	5,516	1.4	143,088	36.3	67,922	17.2	160	0.0	216,930	55.0
			Total	8,758	2.2	256,187	65.0	128,564	32.6	824	0.2	394,334	100.0
1992	6/18	182	M	163	0.5	6,997	21.4	14,386	44.0	883	2.7	22,429	68.6
			F	0	0.0	4,708	14.4	5,199	15.9	360	1.1	10,266	31.4
			Subtotal	163	0.5	11,705	35.8	19,584	59.9	1,242	3.8	32,695	100.0
	6/22	188	M	0	0.0	14,067	18.9	26,943	36.2	1,191	1.6	42,201	56.7
			F	0	0.0	11,090	14.9	20,989	28.2	372	0.5	32,451	43.6
			Subtotal	0	0.0	25,157	33.8	47,932	64.4	1,563	2.1	74,429	100.3
	6/25	183	M	0	0.0	11,739	21.3	14,440	26.2	606	1.1	26,785	48.6
			F	0	0.0	9,921	18.0	18,353	33.3	0	0.0	28,273	51.3
			Subtotal	0	0.0	21,660	39.3	32,793	59.5	606	1.1	55,114	99.9
	6/29	191	M	0	0.0	14,278	17.8	19,732	24.6	802	1.0	34,812	43.4
			F	0	0.0	20,133	25.1	24,385	30.4	802	1.0	45,320	56.5
			Subtotal	0	0.0	34,411	42.9	44,117	55.0	1,604	2.0	80,213	99.9
	7/06	191	M	0	0.0	26,859	31.9	14,566	17.3	421	0.5	41,845	49.7
			F	0	0.0	23,322	27.7	17,597	20.9	1,347	1.6	42,266	50.2
			Subtotal	0	0.0	50,181	59.6	32,163	38.2	1,768	2.1	84,196	99.9
	8/03	154	M	0	0.0	1,856	28.6	461	7.1	0	0.0	2,317	35.7
			F	39	0.6	3,368	51.9	714	11.0	39	0.6	4,159	64.1
			Subtotal	39	0.6	5,224	80.5	1,175	18.1	39	0.6	6,489	99.8
	Season	1,089	M	163	0.0	75,795	22.8	90,528	27.2	3,903	1.2	170,390	51.1
			F	39	0.0	72,542	21.8	87,236	26.2	2,920	0.9	162,737	48.9
			Total	202	0.1	148,337	44.5	177,764	53.4	6,823	2.0	333,136	100.0
1993	6/25	194	M	0	0.0	4,914	14.4	13,547	39.7	1,399	4.1	19,860	58.2
			F	171	0.5	4,402	12.9	8,633	25.3	1,058	3.1	14,263	41.8
			Subtotal	171	0.5	9,316	27.3	22,180	65.0	2,457	7.2	34,123	100.0
	7/31	124	M	275	3.2	1,667	19.4	1,315	15.3	206	2.4	3,464	40.3
			F	138	1.6	2,776	32.3	2,218	25.8	0	0.0	5,131	59.7
			Subtotal	413	4.8	4,444	51.7	3,533	41.1	206	2.4	8,595	100.0
	Season	318	M	275	0.6	6,581	15.4	14,862	34.8	1,605	3.8	23,323	54.6
			F	308	0.7	7,178	16.8	10,851	25.4	1,058	2.5	19,395	45.4
			Total	583	1.4	13,759	32.2	25,712	60.2	2,663	6.2	42,718	100.0
1994	6/24	173	M	0	0.0	21,193	24.3	22,676	26.0	3,489	4.0	47,357	54.3
			F	0	0.0	22,152	25.4	16,658	19.1	1,047	1.2	39,857	45.7
			Subtotal	0	0.0	43,345	49.7	39,334	45.1	4,535	5.2	87,214	100.0
	7/14	195	M	218	0.5	11,855	27.2	3,138	7.2	0	0.0	15,211	34.9
			F	218	0.5	22,359	51.3	5,143	11.8	654	1.5	28,374	65.1
			Subtotal	436	1.0	34,214	78.5	8,281	19.0	654	1.5	43,585	100.0
	7/19	190	M	301	0.5	18,993	31.6	3,186	5.3	0	0.0	22,479	37.4
			F	301	0.5	31,014	51.6	6,010	10.0	301	0.5	37,625	62.6
			Subtotal	601	1.0	50,007	83.2	9,196	15.3	301	0.5	60,104	100.0
	7/23	188	M	191	0.5	17,434	45.7	1,640	4.3	0	0.0	19,265	50.5
			F	420	1.1	16,633	43.6	1,831	4.8	0	0.0	18,884	49.5
			Subtotal	610	1.6	34,067	89.3	3,472	9.1	0	0.0	38,149	100.0

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Year	Sample Date	Sample Size	Sex	Age Class 0.2 Catch	0.2 %	0.3 Catch	0.3 %	0.4 Catch	0.4 %	0.5 Catch	0.5 %	Total Catch	Total %
1994	7/26	193	M	112	0.5	4,762	21.2	1,393	6.2	0	0.0	6,266	27.9
			F	112	0.5	14,105	62.8	1,976	8.8	0	0.0	16,194	72.1
			Subtotal	225	1.0	18,866	84.0	3,369	15.0	0	0.0	22,460	100.0
	7/29	190	M	0	0.0	2,971	26.4	709	6.3	0	0.0	3,679	32.7
			F	56	0.5	6,515	57.9	1,001	8.9	0	0.0	7,573	67.3
			Subtotal	56	0.5	9,485	84.3	1,710	15.2	0	0.0	11,252	100.0
	8/04	128	M	0	0.0	1,059	26.6	311	7.8	0	0.0	1,370	34.4
			F	0	0.0	2,051	51.5	562	14.1	0	0.0	2,613	65.6
			Subtotal	0	0.0	3,111	78.1	872	21.9	0	0.0	3,983	100.0
	8/09	133	M	0	0.0	887	33.1	121	4.5	0	0.0	1,007	37.6
			F	0	0.0	1,431	53.4	241	9.0	0	0.0	1,672	62.4
			Subtotal	0	0.0	2,317	86.5	362	13.5	0	0.0	2,679	100.0
	Season	1,390	M	821	0.3	79,153	29.4	33,172	12.3	3,489	1.3	116,636	43.3
			F	1,107	0.4	116,260	43.2	33,423	12.4	2,001	0.7	152,790	56.7
			Total	1,928	0.7	195,413	72.5	66,595	24.7	5,489	2.0	269,426	100.0
All Years		13,935	M	20,443	0.4	1,462,480	29.4	840,597	16.9	28,725	0.6	2,351,788	47.3
			F	22,204	0.4	1,722,623	34.6	856,375	17.2	22,541	0.5	2,623,986	52.7
			Grand Total	42,646	0.9	3,184,566	64.0	1,697,295	34.1	51,266	1.0	4,976,149	100.0

[a] Percentages by sample date are based on commercial catch samples collected in Bethel; catch numbers, by age class and sex, are derived from those percentages; discrepencies in sums are attributed to rounding errors.

[b] For season summaries the catch estimates, by age class and sex, are tallied and the percentages are derived from the sums.

endix B.30. Utilizations of Kuskokwim River chinook salmon, 1960-1994.

Year	Commercial Harvest[a]	Estimated Subsistence Harvest[b]	Total Utilization	Running 10 Year Average
1960	5,969	20,361	26,330	
1961	18,918	30,910	49,828	
1962	15,341	14,642	29,983	
1963	12,016	37,246	49,262	
1964	17,149	29,017	46,166	
1965	21,989	27,143	49,132	
1966	25,545	49,606	75,151	
1967	29,986	57,875	87,861	
1968	34,278	30,230	64,508	
1969	43,997	40,138	84,135	56,236
1970	39,290	69,204	108,494	64,452
1971	40,274	42,926	83,200	67,789
1972	39,454	40,145	79,599	72,751
1973	32,838	38,526	71,364	74,961
1974	18,664	26,665	45,329	74,877
1975	21,720	47,784	69,504	76,915
1976	30,735	58,185	88,920	78,291
1977	35,830	55,577	91,407	78,646
1978	45,641	35,881	81,522	80,347
1979	38,966	55,524	94,490	81,383
1980	35,881	59,900	95,781	80,112
1981	47,663	59,669	107,332	82,525
1982	48,234	53,310	101,544	84,719
1983	33,174	52,000	85,174	86,100
1984	31,742	57,000	88,742	90,442
1985	37,889	42,277	80,166	91,508
1986	19,414	51,019	70,433	89,659
1987	36,179	67,352	103,504	90,869
1988	55,716	53,877	109,593	93,676
1989	43,217	73,035	116,252	95,852
1990	53,504	71,281	124,785	98,753
1991	37,778	80,865	118,643	99,884
1992	46,872	58,239	105,111	100,240
1993	8,735	72,119	80,854	99,808
1994	16,211	79,667	95,878	100,522
Ten Year Average (1984-1993)	37,130	62,706	99,808	

a District 1, 2 and 3.

b Estimated subsistence harvest expanded from villages surveyed.

c Previous 3 year average, subsistence catch not available at this time.

Appendix B.31. Utilizations of Kuskokwim River chum salmon, 1960-1994.

Year	Commercial Harvest[a]	Estimated Subsistence Harvest[b]	Total Utilization	Running 10 Year Average
1960	0	301,753[c]	301,753	
1961	0	179,529[c]	179,529	
1962	0	161,849[c]	161,849	
1963	0	137,649[c]	137,649	
1964	0	190,191[c]	190.191	
1965	0	250,878[c]	250,878	
1966	0	175,735[c]	175,735	
1967	148	208,445[c]	208,593	
1968	187	275,008[c]	275,195	
1969	7,165	204,105[c]	211,270	209,264
1970	1,664	246,810[c]	248,474	203,936
1971	68,914	116,391[c]	185,305	204,514
1972	78,619	120,316[c]	198,935	208,223
1973	148,746	179,259[c]	328,005	227,258
1974	171,887	277,170[c]	449,057	253,145
1975	181,840	176,389[c]	358,229	263,880
1976	177,864	223,792[c]	401,656	286,472
1977	248,721	198,355[c]	447,076	310,320
1978	248,656	118,809[c]	367,465	319,547
1979	261,874	161,239[c]	423,113	340,732
1980	483,211	165,172[c]	648,383	380,722
1981	418,677	157,306[c]	575,983	419,790
1982	278,306	190,011[c]	468,317	446,728
1983	267,698	146,876[c]	414,574	455,385
1984	423,718	142,542[c]	566,260	467,106
1985	199,478	95,542	295,020	460,785
1986	309,213	141,931[c]	451,144	465,734
1987	574,336	69,047	643,383	485,364
1988	1,381,674	117,008	1,498,682	598,486
1989	749,182	122,086	871,268	643,301
1990	461,624	96,273	557,897	634,253
1991	431,802	81,652	513,454	628,000
1992	344,603	85,203	444,607	625,629
1993	43,337	46,295	89,632	593,135
1994	271,115	59,262	330,377	569,546
Ten Year Average (1984-1993)	491,896	99,758	593,135	

a District 1 and 2.
b Estimated subsistence harvest expanded from villages surveyed.
c Includes small numbers of small chinook, sockeye and coho salmon.
d The 1990 - 1992 average, 1993 was excluded due to emergency closures which made this year unlike any other.

x 8.32. Historic daily salmon escapement at the Tuluksak weir.

Date	Chinook				Sockeye				Chum				Pink				Coho			
	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994
6/11																				
6/12	0				0				0				0				0			
6/13	0				0				0				0				0			
6/14	0				0				0				0				0			
6/15	0				0				0				0				0			
6/16	0				0				0				0				0			
6/17	0		0		0				0				0				0			
6/18	0		0		0		0		0		1		0		0		0		0	
6/19	0		0		0		0		1		1		0		0		0		0	
6/20	0		0		0		0		0		0		0		0		0		0	
6/21	0		0		0		0		0		10		0		0		0		0	
6/22	0		1		0		0		0		2		0		0		0		0	
6/23	1		0		0		0		1		1		0		0		0		0	
6/24	3	0	0		0	0	0		0	1	7		0	0	0		0	0	0	
6/25	0	0	1		0	0	0		0	39	18		0	0	0		0	0	0	
6/26	3	1	0		0	0	0		3	80	17		0	0	0		0	0	0	
6/27	3	0	2		0	0	0		6	75	22		0	0	0		0	0	0	
6/28	4	2	1		0	0	0		2	71	42		0	0	0		0	0	0	
6/29	1	4	0	0	0	0	0	0	11	93	26	8	0	0	0	1	0	0	0	0
6/30	6	10	14	5	0	0	0	0	20	170	37	4	0	0	0	0	0	0	0	0
7/01	8	15	40	4	0	0	0	0	23	242	101	8	0	0	0	0	0	0	0	0
7/02	6	12	35	5	0	0	0	0	50	96	146	34	0	0	0	0	0	0	0	0
7/03	6	22	102	3	0	0	1	0	64	155	119	35	0	1	0	0	0	0	0	0
7/04	28	85	84	26	0	0	0	0	113	140	154	96	0	0	0	0	0	0	0	0
7/05	13	40	120	69	0	0	0	0	97	150	149	121	0	1	0	0	0	0	0	0
	24	13	187	29	0	0	0	0	59	107	205	70	1	1	0	0	0	0	0	0
	15	28	157	391	0	0	0	0	115	158	313	321	0	1	0	3	0	0	0	0
7/08	23	55	37	109	0	0	0	0	279	229	312	294	0	2	0	9	0	0	0	0
7/09	37	71	93	184	0	0	0	0	161	228	242	288	1	2	0	6	0	0	0	0
7/10	254	117	171	70	0	2	4	2	326	280	255	211	3	3	0	0	0	0	0	0
7/11	8	53	100	144	1	1	4	0	296	241	379	495	1	2	0	12	0	0	0	0
7/12	38	25	215	254	2	0	2	0	276	202	215	401	5	3	0	18	0	0	0	0
7/13	12	32	107	176	0	0	2	0	169	254	341	553	1	3	3	12	0	0	0	0
7/14	4	47	80	160	0	2	4	0	120	307	467	476	2	4	1	48	0	0	0	0
7/15	5	38	43	142	0	0	1	0	169	418	413	754	2	5	0	30	0	0	0	0
7/16	11	32	58	83	0	4	1	0	210	387	402	615	2	9	1	19	0	0	0	0
7/17	32	8	63	85	1	1	4	2	158	174	816	625	5	3	5	20	0	0	0	0
7/18	43	24	60	150	5	1	3	3	390	510	1010	587	54	33	3	28	0	0	0	0
7/19	27	27	64	191	1	2	5	0	298	318	745	942	65	21	2	50	0	0	0	0
7/20	15	12	61	165	3	2	7	1	234	265	534	808	59	10	3	54	0	0	0	0
7/21	14	16	47	96	2	2	8	1	219	260	563	690	28	19	4	80	0	0	0	0
7/22	10	40	54	77	1	5	0	1	232	483	377	1006	39	17	3	68	0	0	0	0
7/23	3	46	18	18	0	20	2	0	154	559	250	952	11	21	1	71	0	1	3	0
7/24	12	67	23	32	0	22	7	6	124	664	243	589	7	67	3	24	0	1	1	0
7/25	5	44	10	60	2	8	0	11	155	430	255	747	8	60	3	57	0	0	1	3
7/26	1	12	15	23	0	3	3	2	107	230	324	525	9	46	9	35	0	1	0	7
7/27	4	9	24	36	0	1	2	1	94	263	451	799	7	57	9	76	0	0	1	7
7/28	2	8	24	36	0	6	1	3	142	330	387	487	1	43	4	52	0	1	1	7
7/29	4	7	14	9	3	4	6	3	260	313	301	374	6	83	5	78	0	1	7	7
7/30	1	9	21	12	1	4	2	2	250	200	322	194	12	101	8	94	0	4	3	14
7/31	0	5	10	2	0	1	4	2	158	238	387	191	2	126	18	95	0	1	2	7
8/01	0	6	10	8	0	4	5	1	131	196	334	173	3	50	6	114	0	3	4	8
8/02	2	3	2	5	0	3	0	2	139	211	248	188	4	79	7	102	0	3	4	10
8/03	1	4	1	5	0	1	0	2	190	143	184	170	3	43	4	192	0	2	7	20
8/04	0	2	7	4	1	0	0	3	168	119	234	175	1	49	3	201	0	3	25	27

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Appendix 8.32 (page 2 of 2)

Date	Chinook				Sockeye				Chum				Pink				Coho			
	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	19[illegible]
8/05	0	7	4	6	3	1	2	3	159	137	213	202	5	94	1	186	1	20	22	33
8/06	1	4	9	8	0	2	1	3	208	135	194	130	7	104	7	206	2	28	21	30
8/07	0	3	13	2	0	2	1	1	153	70	193	89	1	82	10	193	4	21	66	[illegible]
8/08	0	2	3	5	1	0	1	1	92	117	148	54	6	100	4	181	0	11	50	[illegible]
8/09	0	1	5	2	0	0	0	2	107	103	83	53	5	145	4	92	3	16	111	2
8/10	0	0	1	1	0	2	1	2	118	80	63	63	3	98	1	115	4	17	83	32
8/11	0	2	5	2	0	1	1	6	99	97	54	37	3	92	3	108	4	42	129	[illegible]
8/12	1	0	1	0	1	0	0	0	73	82	48	7	3	201	5	27	16	81	42	[illegible]
8/13	3	0	0	2	1	0	0	1	78	32	53	23	0	65	6	150	19	44	42	42
8/14	1	1	0	1	1	0	0	0	61	33	50	22	1	86	4	105	20	121	149	29
8/15	1	1	0	2	0	0	0	2	38	28	31	33	0	46	4	84	2	186	117	[illegible]
8/16	0	0	0	1	0	1	1	5	53	16	23	22	1	28	2	80	25	43	46	1[illegible]
8/17	0	0	0	0	0	2	0	0	55	30	15	19	2	39	4	51	26	80	67	429
8/18	0	1	1	1	0	1	0	0	31	22	30	18	3	47	5	16	55	93	105	122
8/19	0	0	0	0	0	1	0	3	29	20	27	7	0	64	5	12	66	154	137	1[illegible]
8/20	0	0	0	1	1	6	0	0	27	22	55	9	0	16	3	11	70	64	166	1[illegible]
8/21	1	2	0	1	0	1	0	0	16	25	26	2	1	36	8	8	89	367	358	124
8/22	0	1	0	0	0	2	0	1	9	13	9	3	0	15	2	9	42	529	342	225
8/23	0	0	0	0	0	0	0	1	17	18	16	6	0	7	8	12	59	318	199	6[illegible]
8/24	0	0	0	0	0	0	0	1	11	4	9	5	0	6	1	11	52	101	143	3[illegible]
8/25	0	1	0	0	1	1	0	0	13	9	22	1	1	8	4	0	380	420	211	807
8/26	0	0	0	0*	0	0	0	0*	7	8	24	0	0	3	3	1*	139	246	396	292*
8/27	0	0	0	0*	0	0	1	0*	6	15	19	0	0	21	2	0*	79	647	504	29[illegible]
8/28	0	1	0	0*	0	0	1	0*	2	9	8	0	0	26	2	0*	0	902	221	29[illegible]
8/29	0	0	0	0*	0	1	0	0*	7	6	6	0	0	10	1	0*	1	448	227	292*
8/30	0	2	0	0*	0	0	0	0*	11	1	3	0	0	10	2	0*	135	557	4[illegible]	[illegible]92*
8/31	0	0	0	0*	0	0	0	0*	6	1	2	0	0	4	1	0*	150	161	[illegible]	[illegible]
9/01	0	2	0	0*	0	3	0	0*	0	2	6	3	2	4	0	6*	149	174	5[illegible]	[illegible]
9/02	0	1	0	0	0	0	0	0	6	8	2	3	0	14	2	9	165	922	620	107
9/03	0	0	0	0	0	1	0	0	1	2	2	1	0	8	1	8	193	199	1274	101
9/04	0	0	0	1	0	1	0	0	4	0	1	8	0	5	0	13	356	105	247	1[illegible]
9/05	0	0	0	0	0	0	0	0	2	3	2	3	0	7	0	5	389	236	134	2[illegible]
9/06	0	0	0	0	0	1	0	0	1	2	0	2	0	7	0	7	898	84	70	212
9/07	0	0	0	0	0	0	0	0	0	1	2	4	0	1	0	8	312	18	171	109
9/08	0	0	0	0	0	0	0	0	0	1	1	5	0	3	0	16	180	1	70	2[illegible]
9/09	0	0	0	0*	0	0	0	0*	0	2	1	0	0	2	0	0*	157	8	90	18[illegible]
9/10	0	0	0	0*	1	0	0	0*	0	0	1	2	3	1	0	0*	98	16	71	188*

* = estimated passage

Appendix B.33. Historic percent passage of salmon escapement at the Tuluksak weir.

Date	Chinook				Sockeye				Chum				Pink				Coho			
	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994
6/11																				
6/12																				
6/13	0				0				0				0				0			
6/14	0				0				0				0				0			
6/15	0				0				0				0				0			
6/16	0				0				0				0				0			
6/17	0				0				0				0				0			
6/18	0		0		0		0		0		0		0		0		0		0	
6/19	0		0		0		0		0		0		0		0		0		0	
6/20	0		0		0		0		0		0		0		0		0		0	
6/21	0		0		0		0		0		0		0		0		0		0	
6/22	0		0		0		0		0		0		0		0		0		0	
6/23	0		0		0		0		0		0		0		0		0		0	
6/24	1	0	0		0	0	0		0	0	0		0	0	0		0	0	0	
6/25	1	0	0		0	0	0		0	0	0		0	0	0		0	0	0	
6/26	1	0	0		0	0	0		0	1	0		0	0	0		0	0	0	
6/27	1	0	0		0	0	0		0	2	1		0	0	0		0	0	0	
6/28	2	0	0		0	0	0		0	2	1		0	0	0		0	0	0	
6/29	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
6/30	1	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
7/01	2	3	2	0	0	0	0	0	1	5	1	0	0	0	0	0	0	0	0	0
7/02	3	4	4	0	0	0	0	0	1	6	2	0	0	0	0	0	0	0	0	0
7/03	4	6	9	1	0	0	1	0	2	7	3	1	0	0	0	0	0	0	0	0
7/04	8	14	12	1	0	0	1	0	4	8	4	1	0	0	0	0	0	0	0	0
7/05	10	17	18	4	0	0	1	0	5	10	5	2	0	0	0	0	0	0	0	0
7/06	13	19	26	5	0	0	1	0	6	11	7	2	0	0	0	0	0	0	0	0
7/07	16	21	33	18	0	0	1	0	7	12	9	4	0	0	0	0	0	0	0	0
7/08	19	26	35	22	0	0	1	0	11	14	11	6	0	0	0	0	0	0	0	0
7/09	24	33	39	28	0	0	1	0	13	16	13	8	1	0	0	1	0	0	0	0
7/10	62	44	47	31	0	2	6	3	17	19	15	9	1	0	0	1	0	0	0	0
7/11	63	49	52	36	3	2	10	3	21	21	18	13	2	1	0	1	0	0	0	0
7/12	68	51	61	45	9	2	13	3	25	23	19	15	3	1	0	1	0	0	0	0
7/13	70	54	66	51	9	2	15	3	27	25	22	19	3	1	1	2	0	0	0	0
7/14	71	58	70	56	9	4	19	3	28	28	25	22	4	1	2	3	0	0	0	0
7/15	71	62	72	61	9	4	20	3	31	32	28	26	4	1	2	4	0	0	0	0
7/16	73	65	74	64	9	7	22	3	33	35	31	30	5	1	2	5	0	0	0	0
7/17	78	65	77	67	12	8	26	5	35	37	37	34	6	2	5	5	0	0	0	0
7/18	84	68	80	72	27	9	30	9	41	42	45	38	20	3	6	6	0	0	0	0
7/19	88	70	83	79	30	10	35	9	44	45	50	44	37	4	7	8	0	0	0	0
7/20	90	71	85	84	39	12	43	10	47	47	54	49	52	4	9	9	0	0	0	0
7/21	92	73	88	88	45	13	52	11	50	49	58	53	59	5	10	12	0	0	0	0
7/22	94	76	90	90	48	17	52	13	53	54	61	60	69	6	12	14	0	0	0	0
7/23	94	81	91	91	48	33	55	13	55	59	63	66	72	7	12	16	0	0	0	0
7/24	96	87	92	92	48	50	63	20	57	65	64	69	74	9	14	16	0	0	0	0
7/25	97	91	92	94	55	56	63	34	59	69	66	74	76	12	15	18	0	0	0	0
7/26	97	92	93	95	55	58	66	36	60	71	69	77	78	14	20	19	0	0	0	0
7/27	97	93	94	96	55	59	68	38	62	73	72	82	80	16	24	21	0	0	0	0
7/28	98	94	95	97	55	64	69	41	64	76	75	85	80	18	26	23	0	0	0	0
7/29	98	94	96	98	64	67	76	45	67	79	77	88	81	21	28	25	0	0	0	0
7/30	98	95	97	98	67	70	78	48	70	81	79	89	85	25	32	28	0	0	0	1
7/31	98	96	97	98	67	71	83	50	72	83	82	90	85	30	40	31	0	0	0	1
8/01	98	96	98	98	67	74	89	51	74	85	85	91	86	32	43	34	0	0	0	1
8/02	99	96	98	98	67	76	89	54	76	87	86	93	87	35	47	37	0	0	0	1
8/03	99	97	98	99	67	77	89	56	78	88	88	94	88	37	49	43	0	0	0	1
8/04	99	97	98	99	70	77	89	60	80	89	89	95	88	39	50	49	0	0	1	2
8/05	99	98	98	99	79	78	91	64	82	91	91	96	89	43	50	54	0	1	1	2
8/06	99	98	99	99	79	79	92	68	85	92	92	97	91	47	54	60	0	1	1	3
8/07	99	98	99	99	79	81	93	69	87	93	94	97	91	50	59	66	0	1	2	3
8/08	99	99	99	99	82	81	94	70	88	94	95	98	93	54	60	71	0	1	3	3
8/09	99	99	100	100	82	81	94	73	90	95	96	98	94	60	62	74	0	2	4	3
8/10	99	99	100	100	82	82	95	75	91	95	96	98	95	64	63	78	0	2	5	4
8/11	99	99	100	100	82	83	97	83	93	96	96	99	96	68	64	81	0	2	6	4

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Appendix B.33. (page 2 of 2)

Date	Chinook				Sockeye				Chum				Pink				Coho			
	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994	1991	1992	1993	1994
8/12	99	99	100	100	85	83	97	83	94	97	97	99	96	76	67	82	1	3	7	4
8/13	100	99	100	100	88	83	97	84	95	97	97	99	96	79	70	86	1	4	8	5
8/14	100	99	100	100	91	83	97	84	95	98	97	99	97	82	71	89	2	6	9	5
8/15	100	99	100	100	91	83	97	86	96	98	98	99	97	84	73	92	2	8	11	6
8/16	100	99	100	100	91	84	98	93	97	98	98	99	97	85	74	94	2	9	11	8
8/17	100	99	100	100	91	85	98	93	97	98	98	99	97	87	76	96	3	10	12	14
8/18	100	99	100	100	91	86	98	93	98	98	98	100	98	89	79	96	4	11	13	16
8/19	100	99	100	100	91	87	98	96	98	99	98	100	98	91	81	96	6	13	15	17
8/20	100	99	100	100	94	91	98	96	98	99	99	100	98	92	82	97	7	14	17	19
8/21	100	99	100	100	94	92	98	96	99	99	99	100	98	93	86	97	9	19	21	20
8/22	100	99	100	100	94	94	98	98	99	99	99	100	98	94	87	97	10	26	25	24
8/23	100	99	100	100	94	94	98	99	99	99	99	100	98	94	91	98	12	30	28	32
8/24	100	99	100	100	94	94	98	100	99	99	99	100	98	95	91	98	13	31	29	37
8/25	100	99	100	100	97	95	98	100	99	99	99	100	99	95	93	98	22	37	32	48
8/26	100	99	100	100	97	95	98	100	99	100	100	100	99	95	95	98	25	40	37	53
8/27	100	99	100	100	97	95	99	100	99	100	100	100	99	96	96	98	27	49	43	57
8/28	100	100	100	100	97	95	100	100	100	100	100	100	99	97	97	98	27	61	45	61
8/29	100	100	100	100	97	95	100	100	100	100	100	100	99	97	97	98	27	67	48	65
8/30	100	100	100	100	97	95	100	100	100	100	100	100	99	98	98	98	30	74	53	69
8/31	100	100	100	100	97	95	100	100	100	100	100	100	99	98	99	98	33	76	60	73
9/01	100	100	100	100	97	98	100	100	100	100	100	100	99	98	99	98	37	79	67	77
9/02	100	100	100	100	97	98	100	100	100	100	100	100	99	99	100	98	40	91	74	79
9/03	100	100	100	100	97	98	100	100	100	100	100	100	99	99	100	99	45	94	90	80
9/04	100	100	100	100	97	99	100	100	100	100	100	100	99	99	100	99	53	95	93	83
9/05	100	100	100	100	97	99	100	100	100	100	100	100	99	99	100	99	62	98	94	86
9/06	100	100	100	100	97	100	100	100	100	100	100	100	99	100	100	99	83	99	95	89
9/07	100	100	100	100	97	100	100	100	100	100	100	100	99	100	100	100	90	100	97	91
9/08	100	100	100	100	97	100	100	100	100	100	100	100	99	100	100	100	94	100	98	95
9/09	100	100	100	100	97	100	100	100	100	100	100	100	99	100	100	100	98	100	99	97
9/10	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Append. .. Historic daily estimates of chum salmon escapement at the Ani. er sonar site.

Date	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
15-Jun		609							84	34			12	2	0
16-Jun		282	81		1,894				606	251			86	14	0
17-Jun		284	648		1,863				602	283			97	16	126
18-Jun		596	932		1,565				550	281			96	16	205
19-Jun		962	1,377	420	1,947				980	480			165	27	744
20-Jun		1,479	1,944	262	1,230				739	417			143	23	1085
21-Jun		2,035	2,631	544	640			1,016	1,313	665			228	37	1510
22-Jun	509	2,119	1,711	1,055	1,319	535	145	1,728	1,710	323		157	791	56	1589
23-Jun	382	5,553	358	1,273	2,234	784	106	2,430	1,379	1,245	225	126	1,301	74	2131
24-Jun	293	9,226	606	1,191	1,175	1,354	85	6,702	2,422	1,084	481	94	2,906	26	2576
25-Jun	280	11,228	2,686	912	1,340	822	1,137	625	3,779	2,449	2,454	94	1,785	19	3198
26-Jun	698	7,713	8,072	928	5,547	680	711	1,548	7,770	1,727	2,685	220	2,906	44	3771
27-Jun	1,798	8,949	5,706	1,221	9,049	993	4,508	3,162	6,663	2,925	1,924	534	6,073	15	4691
28-Jun	1,351	10,622	6,595	1,515	7,933	1,762	6,478	3,136	6,076	3,414	1,671	408	8,157	71	4359
29-Jun	2,210	21,050	5,976	2,112	3,794	1,638	1,775	2,409	4,356	3,080	1,813	1,809	3,110	284	6012
30-Jun	7,245	10,639	8,800	2,430	2,581	1,653	2,680	915	6,568	2,055	3,173	3,809	3,878	144	12783
01-Jul	12,048	13,874	13,981	2,882	4,032	2,078	2,045	1,351	15,552	4,712	3,566	4,299	1,605	604	7595
02-Jul	15,941	12,621	20,765	2,427	10,060	1,702	2,398	441	9,574	6,555	2,469	3,800	3,253	1,798	2300
03-Jul	31,684	10,156	18,776	2,817	17,284	4,215	4,048	3,613	13,388	8,321	2,061	5,578	1,991	527	1252
04-Jul	44,416	13,201	20,687	7,646	18,714	3,481	5,162	4,364	15,066	7,427	2,248	6,397	3,352	288	3786
05-Jul	22,675	30,396	14,795	5,869	3,734	3,182	3,495	10,041	18,045	12,648	2,966	9,082	2,534	663	7337
06-Jul	41,538	22,426	14,805	7,661	3,080	5,721	2,740	5,489	9,868	12,709	4,334	8,659	2,858	55	6627
07-Jul	22,230	16,062	12,803	6,313	5,417	4,671	3,846	6,111	7,164	5,104	5,133	8,998	2,095	31	4244
08-Jul	15,030	12,892	16,804	4,886	8,364	7,255	5,401	3,820	12,471	8,645	6,828	17,919	1,609	7	18444
09-Jul	33,874	13,976	32,351	4,844	5,463	5,729	3,478	4,406	16,524	7,617	5,224	10,381	1,217	136	14013
10-Jul	34,932	9,957	15,422	8,784	6,608	5,955	6,971	6,026	14,797	6,642	7,805	9,306	2,833	915	13715
11-Jul	38,235	19,817	16,103	6,078	8,947	5,955	4,959	10,873	12,073	7,414	5,345	12,773	4,533	400	22084
12-Jul	40,477	19,284	15,649	4,350	10,349	7,839	6,805	12,271	12,517	7,260	7,363	11,614	6,853	439	16858
13-Jul	48,709	11,460	12,811	6,161	12,519	4,849	4,887	4,534	11,526	6,385	4,983	10,814	4,319	238	15050
14-Jul	27,396	15,575	24,107	5,231	10,282	4,635	6,489	7,984	12,507	8,565	6,001	11,641	875	539	21339
15-Jul	26,458	11,381	15,413	3,854	19,072	7,412	5,570	5,620	16,077	12,238	5,406	5,952	630	237	26748
16-Jul	37,743	14,013	10,259	4,372	11,664	14,707	7,658	5,906	13,064	11,163	7,180	6,234	1,670	648	16519
17-Jul	46,687	13,072	13,065	3,916	7,761	12,338	4,926	7,169	17,454	10,018	7,194	15,273	881	358	13101
18-Jul	76,746	10,195	14,578	2,598	8,157	7,563	4,465	5,756	14,936	8,374	8,480	14,676	183	264	19359
19-Jul	68,443	13,112	8,563	4,042	2,827	5,966	3,958	4,303	10,917	6,295	6,536	20,248	139	176	14528
20-Jul	52,585	11,986	7,723	3,156	5,372	7,021	5,531	6,279	10,543	5,163	5,175	19,295	32	411	11316
21-Jul	35,859	13,903	4,909	2,477	6,556	7,078	8,769	4,535	8,067	3,075	6,759	18,902	311	206	5863
22-Jul	39,003	17,002	7,256	3,256	6,290	18,515	11,025	2,788	11,307	2,397	7,551	8,017	130	258	6765
23-Jul	43,999	18,450	3,878	2,176	4,150	20,274	4,375	3,404	9,775	7,886	4,989	6,299	136	489	7026
24-Jul	41,678	19,487	4,617	2,586	4,325	5,238	9,729	5,292	11,475	3,355	4,031	4,525	96	758	3561
25-Jul	43,413	13,286	4,147	2,033	4,771	5,818	4,654	1,811	8,775	4,854	6,747	4,186	107	107	2777
26-Jul	29,466	14,209	5,811	1,826	2,997	4,712	7,375	3,926	5,206	4,742	8,092	4,333	408	329	1610
27-Jul	16,430	12,936	4,915	1,790	3,865	7,059	6,715	3,179	8,278	4,676	11,293	4,428	279	194	7379
28-Jul	25,411	11,829	3,912	1,473	3,689	4,301	6,141	2,696	6,624	4,138	7,575	6,791	240	527	8029
29-Jul	24,336	9,202	4,572		2,195	6,173	4,773	3,731	4,640	3,607	8,655	2,199	44	203	6704
30-Jul	17,956	6,979	4,771		2,440	3,646	3,624	2,796	6,414	2,963	9,203	3,769	1,013	167	6564
31-Jul	17,010	8,638	4,998		1,881	5,564	4,483	2,867	4,039	3,141	6,481	4,648	1,089	177	5190
01-Aug	16,038	8,361	3,255			5,592	4,338	2,774	1,775	2,626	9,417	4,491	909	149	5116
02-Aug	15,066	8,119	4,560			5,436	4,217	2,697	1,120	2,585	8,184	4,366	894	146	4988
03-Aug	14,256	11,086	3,848			7,418	5,754	3,680	1,530	3,236	5,998	5,967	1,123	183	5143
04-Aug	13,284	9,526	3,499			6,411	4,973	3,181	1,309	2,826	6,562	5,151	979	160	4192
05-Aug	12,312	11,003	3,143			7,324	5,681	3,633	1,518	3,117		5,905	1,066	176	4627
06-Aug	11,340	6,470	2,786							731			251	41	2035
Total	1,169,470	589,286	442,461	129,367	266,976	253,051	209,080	193,013	401,511	243,922	232,260	314,166	84,269	13,870	388,563

Appendix B.35. Historical cumulative estimated escapement of chinook salmon at the Kogrukluk weir for years with adequate data.

	Cumulative Counts													
Date	1976	1978	1979	1981	1982	1984	1985	1986	1988	1990	1991	1992	1993	1994
17-Jun				0										
18-Jun		0		1	0									1
19-Jun		1		3	1	1				1			1	3
20-Jun		3	0	8	3	1				1	1	1	2	7
21-Jun		6	1	18	8	1				3	2	2	4	16
22-Jun		11	3	38	23	1				6	5	4	8	35
23-Jun		19	7	78	53	3				13	11	9	17	73
24-Jun		29	15	158	98	4	0		0	25	20	17	31	144
25-Jun		49	30	318	163	6	1		3	47	37	31	57	290
26-Jun		99	60	418	253	7	3		8	72	56	47	87	381
27-Jun		179	105	738	373	11	6		18	121	93	79	146	672
28-Jun		279	130	1072	523	68	11		48	127	145	123	227	976
29-Jun	0	391	205	1605	708	155	21	0	98	150	223	190	349	1461
30-Jun	5	456	290	2167	938	200	41	3	178	269	303	259	474	1973
01-Jul	21	798	420	2784	1228	515	61	28	228	318	462	331	724	2535
02-Jul	23	916	576	3688	1583	819	111	125	338	781	649	586	1017	2958
03-Jul	41	1401	683	4567	2003	1073	231	192	553	1142	872	973	1623	3226
04-Jul	56	2205	941	5307	2523	1212	276	283	828	1321	1102	1136	1985	3684
05-Jul	126	2834	1312	6308	3173	1309	311	344	1177	1748	1252	1371	2642	4814
06-Jul	169	3179	1694	7388	3953	1547	333	395	1642	2201	1420	1445	3350	5924
07-Jul	235	3432	2003	8603	4793	1721	393	455	2338	2456	1606	1590	4226	6861
08-Jul	392	4051	2393	9376	5668	1865	499	585	2921	3298	1810	1728	4941	7553
09-Jul	704	4935	2736	10423	6628	2030	618	662	3492	3449	2432	2545	5821	8798
10-Jul	1165	5606	3355	11406	7237	2053	1034	1144	4176	4677	2949	2870	6825	9573
11-Jul	1512	6307	3817	12155	7702	2157	1200	1426	4880	5205	3230	3301	7508	10255
12-Jul	1786	6939	4577	12681	8082	2442	1445	1535	5538	6206	3671	3786	8161	10734
13-Jul	2502	7536	5509	13172	8431	2704	1750	1992	6030	6317	4359	3924	8849	11181
14-Jul	2814	8149	6491	13630	8802	3028	2019	2273	6625	6704	4876	4229	9275	11598
15-Jul	3065	8822	7039	14190	8961	3359	2165	2577	7075	7759	5196	4637	9642	12108
16-Jul	3312	9549	7739	14642	9385	3635	2493	2712	7386	8406	5613	4802	10051	12520
17-Jul	3599	10201	8409	15021	9719	3860	2668	2906	7536	8624	6128	5128	10385	12865
18-Jul	4023	10689	8873	15343	9950	3965	2967	3205	7639	9032	6506	5408	10796	13463
19-Jul	4306	11250	9228	15641	10115	4064	3226	3464	7763	9092	6834	5603	10958	13734
20-Jul	4400	11725	9562	15884	10307	4201	3403	3661	7810	9189	7125	5747	11230	13955
21-Jul	4792	11996	9907	16071	10409	4325	3554	3812	7917	9386	7283	5914	11430	14126
22-Jul	4982	12298	10085	16254	10456	4436	3626	3904	8025	9487	7452	6079	11489	14292
23-Jul	5153	12501	10216	16372	10537	4525	3730	4008	8109	9615	7498	6238	11590	14400
24-Jul	5235	12800	10524	16450	10591	4594	3900	4223	8165	9672	7544	6341	11678	14471
25-Jul	5322	12980	10640	16492	10652	4630	4016	4339	8211	9709	7589	6425	11730	14509
26-Jul	5378	13094	10780	16533	10691	4674	4146	4479	8249	9764	7628	6458	11806	14546
27-Jul	5428	13186	10846	16564	10743	4704	4212	4545	8276	9799	7658	6484	11883	14575
28-Jul	5448	13258	10944	16600	10777	4741	4290	4643	8292	9843	7696	6511	12004	14622
29-Jul	5476	13322	10999	16631	10797	4773	4345	4698	8319	9913	7730	6541	12080	14763
30-Jul	5500	13381	11037	16655	10829	4799	4373	4736	8350	9960	7742	6561	12110	14871
31-Jul	5518	13433	11070		10853	4821	4406	4769	8373	10016	7760	6582	12129	14957
01-Aug	5533	13467	11112		10869	4837	4441	4811	8390	10061	7771	6599	12143	15015
02-Aug	5545	13487	11147		10887	4859	4476	4846	8400	10103	7796	6624	12150	15042
03-Aug	5554	13519	11173		10914	4877	4500	4872	8404	10132	7812	6634	12166	15067
04-Aug	5560	13543	11180		10934	4889	4507	4879	8416	10143	7820	6643	12191	15089
05-Aug	5563	13559	11195		10945	4893	4521	4894	8422	10157	7823	6653	12214	15110
06-Aug	5566	13577	11209		10953	4896	4535	4908	8429	10168	7828	6661	12234	15128
07-Aug	5567	13604	11212		10963	4900	4537	4911	8435	10174	7833	6674	12263	15144
08-Aug	5568	13624	11230		10968	4908	4555	4929	8445	10183	7833	6687	12284	15163
09-Aug	5570	13635	11239		10972	4911	4563	4938	8448	10190	7833	6702	12295	15165
10-Aug	5575	13643	11258		10975	4912	4582	4957	8449	10192	7834	6709	12310	15171
11-Aug	5577	13653	11272		10980	4915	4595	4971	8454	10202	7837	6716	12315	15177
12-Aug	5578	13658	11284		10986	4916	4607	4983	8464	10206	7838	6723	12326	15183
13-Aug	5579	13662	11290		10991	4921	4612	4989	8466	10208	7840	6731	12332	15188
14-Aug	5579	13665	11296		10992	4922	4618	4995	8469	10209	7842	6732		15197
15-Aug		13666	11298		10992	4923	4619	4997	8471	10212	7842	6737		15204
16-Aug		13666	11298		10993	4924	4619	4997	8474	10214	7843	6746		15208
17-Aug		13667	11304		10993	4925	4619	5003	8479	10214	7845	6748		15211
18-Aug		13667	11307			4925	4619	5006	8483	10215	7845	6752		15211
19-Aug			11316			4927	4619	5015	8486	10216	7846	6754		15216
20-Aug			11323			4927	4619	5022	8489	10216	7847	6755		15217
21-Aug			11327			4928	4619	5024	8492	10217	7847	6755		15220
22-Aug			11332				4619	5031	8495	10217	7848			15221
23-Aug			11335				4619	5035	8497	10218	7848			15221
24-Aug			11337				4619	5036	8497	10218	7848			15221
25-Aug			11338				4619	5036	8498	10218	7849			15221
26-Aug			11338				4619	5036	8499	10218	7850			15221
27-Aug							4619	5037	8500	10218	7850			15221
28-Aug							4619	5038	8504	10218	7850			15221
29-Aug							4619	5038	8505	10218	7850			15227

Appendix B.36. Historical cumulative estimated escapement of sockeye salmon at the Kogrukluk Weir for years with adequate data.

	Cumulative Counts														
Date	1976	1978	1979	1981	1982	1984	1985	1986	1988	1989	1990	1991	1992	1993	1994
19-Jun						0									
20-Jun						0									
21-Jun				1		1								1	
22-Jun				10		1					1	1		3	1
23-Jun				29		1				1	2	3	1	6	3
24-Jun				79		4				3	5	10	4	17	8
25-Jun				155		6			2	7	10	19	8	34	16
26-Jun				246	1	7			3	11	15	29	13	52	25
27-Jun				375	10	9			11	17	24	47	21	85	41
28-Jun		0		597	29	12			15	27	24	75	34	134	63
29-Jun	1	0		1137	79	22		2	25	52	24	145	66	260	119
30-Jun	1	1		1842	155	34		3	57	87	29	245	112	437	200
01-Jul	2	12	0	2816	246	41		11	74	135	35	381	145	679	305
02-Jul	6	48	1	4068	375	126	2	15	86	216	112	610	233	1089	312
03-Jul	13	103	9	5008	597	250	3	25	104	307	267	868	414	1209	320
04-Jul	15	175	28	5632	1137	307	11	57	150	406	374	1148	545	1707	330
05-Jul	32	233	42	6430	1842	358	15	74	225	515	645	1202	650	2231	354
06-Jul	59	299	51	7271	2816	639	24	86	375	686	1105	1282	727	2879	406
07-Jul	125	330	126	7866	4068	817	43	104	658	759	1406	1388	860	4005	526
08-Jul	258	431	250	8502	5568	1031	93	150	1134	855	2040	1520	921	5376	666
09-Jul	462	536	311	9204	7593	1190	169	223	1639	1006	2244	2277	1066	7533	871
10-Jul	669	679	376	9639	9343	1214	260	403	2058	1408	3071	3036	1191	10050	997
11-Jul	789	795	460	10286	10091	1276	389	767	2565	2106	3508	3408	1546	11949	1792
12-Jul	927	850	644	10778	10921	1571	610	973	2930	2550	4125	3997	1812	13745	2576
13-Jul	1157	922	959	11199	11742	1744	844	1373	3169	3077	4241	5033	2037	15563	3424
14-Jul	1269	1048	1228	11583	12317	2083	989	1873	3442	3283	4763	6020	2431	17065	4272
15-Jul	1370	1115	1448	12052	12619	2521	1167	2371	3718	3653	5500	6762	2847	18887	5136
16-Jul	1513	1178	1687	12647	13305	2740	1375	2685	3897	3976	5963	7540	3253	20915	5906
17-Jul	1615	1252	1861	13068	14086	2932	1560	3065	4006	4269	6372	8354	3492	22955	6591
18-Jul	1762	1300	2007	13498	14457	3016	1733	3240	4089	4479	6801	9282	3958	24666	7714
19-Jul	1841	1345	2089	13884	14900	3079	1992	3345	4135	4624	6891	10230	4376	25498	8146
20-Jul	1893	1396	2179	14270	15530	3200	2168	3450	4172	4768	7048	11159	4648	26443	8568
21-Jul	2059	1420	2262	14865	15845	3369	2375	3575	4212	4940	7231	11913	4893	27222	9026
22-Jul	2154	1469	2310	15391	15985	3557	2502	3672	4241	5074	7424	12672	5031	27442	9378
23-Jul	2197	1509	2357	15756	16134	3646	2617	3740	4274	5167	7561	13289	5349	27728	9664
24-Jul	2230	1550	2432	16101	16321	3729	2844	3823	4302	5280	7634	13891	5610	27930	9970
25-Jul	2264	1582	2464	16398	16506	3767	3086	3889	4311	5370	7691	14477	5852	28121	10226
26-Jul	2269	1597	2482	16655	16647	3827	3246	3933	4320	5431	7774	14972	6004	28335	10410
27-Jul	2276	1605	2496	16942	16770	3877	3410	3974	4324	5487	7795	15394	6249	28565	10587
28-Jul	2285	1620	2528	17184	16859	3934	3604	4023	4334	5554	7868	15650	6485	28747	11037
29-Jul	2288	1631	2553	17373	16945	3966	3761	4060	4340	5604	7985	15831	6767	28909	11702
30-Jul	2296	1639	2576	17514	17022	3984	3892	4091	4349	5647	8066	15959	6979	29051	12392
31-Jul	2302	1646	2596	17624	17089	3998	3985	4115	4361	5680	8126	16095	7128	29138	12944
01-Aug	2304	1648	2604	17704	17145	4030	4093	4137	4369	5710	8185	16199	7228	29189	13371
02-Aug	2307	1651	2606	17771	17171	4055	4150	4151	4373	5729	8249	16282	7380	29218	13597
03-Aug	2310	1654	2609	17836	17200	4078	4193	4163	4374	5745	8294	16330	7442	29237	13832
04-Aug	2313	1657	2612	17877	17223	4098	4234	4174	4377	5760	8311	16366	7461	29253	13868
05-Aug	2314	1658	2615	17895	17240	4106	4261	4180	4380	5768	8339	16390	7472	29269	13891
06-Aug	2320	1664	2616	17922	17252	4108	4288	4188	4382	5778	8351	16404	7485	29289	13915
07-Aug	2323	1667	2622	17935	17260	4111	4299	4196	4383	5785	8365	16414	7499	29313	13990
08-Aug	2323	1667	2625	17950	17269	4114	4326	4198	4383	5791	8378	16417	7502	29330	14052
09-Aug	2324	1668	2625	17973	17275	4117	4334	4201	4384	5795	8383	16420	7508	29344	14082
10-Aug	2325	1669	2626	17993	17280	4118	4341	4204	4387	5798	8384	16424	7514	29346	14114
11-Aug	2325	1669	2627	18001	17285	4124	4342	4207	4388	5800	8388	16430	7518	29348	14137
12-Aug	2325	1669	2627	18013	17288	4127	4355	4210	4389	5803	8394	16439	7525	29354	14150
13-Aug	2325	1669	2627	18023	17288	4127	4357	4212	4390	5804	8398	16443	7531	29358	14154
14-Aug	2326	1670	2627	18033	17292	4128	4358	4212	4391	5806	8401	16443	7535		14163
15-Aug	2326	1670	2628	18038	17296	4129	4359	4212	4391	5807	8403	16444	7535		14164
16-Aug			2628	18044	17297	4129	4359	4212	4391	5807	8403	16445	7535		14171
17-Aug				18051	17297	4129	4359	4212	4391	5807	8406	16446	7539		14175
18-Aug				18052		4129	4359	4212	4393	5808	8406	16450	7539		14177
19-Aug				18054		4130	4359	4212	4394	5808	8406	16450	7539		14178
20-Aug				18056		4130	4359	4212	4394	5808	8406	16451	7539		14179
21-Aug				18056		4131	4359	4213	4395	5808	8406	16451	7540		14180
22-Aug				18058		4131	4359	4215	4396	5809	8406	16451			14181
23-Aug				18058		4131	4359	4217	4396	5810	8406	16451			14182
24-Aug				18061		4131	4359	4220	4396	5811	8406	16452			14183
25-Aug				18061		4132	4359	4220	4396		8406	16452			14185
26-Aug				18062		4133	4359	4221	4396		8406	16454			14186
27-Aug				18063		4133	4359	4223	4397		8406	16454			14188
28-Aug				18064		4133	4359	4224	4397		8406	16454			14188
29-Aug				18066		4133	4359	4224	4397		8406	16455			14192

Appendix B.37. Historical cumulative estimated escapement of coho salmon at the Kogrukluk weir for years with adequate data.

	Cumulative Counts										
Date	1981	1982	1983	1984	1985	1986	1987	1988	1990	1991	1994
20-Jul								1			
21-Jul								1			
22-Jul								1			
23-Jul								1			
24-Jul				1				2			
25-Jul				5				2			
26-Jul				7				2			
27-Jul				8				2			
28-Jul				9				2			12
29-Jul				13				2			34
30-Jul				15		1		2			63
31-Jul				18		1		2			86
01-Aug				29	6	2		2			137
02-Aug		5		43	10	2		2	1		167
03-Aug		11		62	17	4	1	2	3	1	217
04-Aug	2	26		94	24	9	1	2	4	2	276
05-Aug	7	43		112	38	12	2	2	11	11	344
06-Aug	12	59		165	46	20	2	6	19	14	421
07-Aug	14	101	2	264	64	38	4	12	26	19	507
08-Aug	24	137	7	308	113	67	9	23	35	21	630
09-Aug	50	192	12	427	126	102	12	38	44	22	733
10-Aug	70	234	18	479	220	141	20	63	56	27	841
11-Aug	92	340	33	701	279	202	38	101	98	40	1003
12-Aug	154	431	50	816	397	288	67	181	185	74	1218
13-Aug	216	489	68	1040	465	428	102	267	211	99	1427
14-Aug	349	567	103	1187	547	671	141	313	270	114	1723
15-Aug	503	762	159	1366	631	870	202	338	300	122	2162
16-Aug	644	818	177	1510	855	1168	288	443	316	174	2578
17-Aug	753	1329	203	1596	1002	1580	428	600	548	359	3159
18-Aug	863	1794	249	2854	1181	1866	671	858	620	560	3996
19-Aug	1159	2165	273	3849	1325	2184	870	1060	633	723	4757
20-Aug	1473	2448	284	4386	1411	2711	1168	1350	646	829	5586
21-Aug	1660	2857	287	4707	1911	3340	1580	1702	689	903	6183
22-Aug	1845	2999	354	6119	2361	4107	1866	2085	746	952	6652
23-Aug	2042	3227	506	7849	2661	5583	2184	2408	887	1063	7091
24-Aug	2297	3874	606	9039	2982	7470	2711	2797	1042	1079	7932
25-Aug	2713	4742	641	11070	3213	8834	3369	3055	1139	1514	10028
26-Aug	3031	5546	647	13106	3413	10057	4145	3953	1547	1642	12971
27-Aug	3400	6492	674	13837	3886	11148	4907	4331	1609	1760	15684
28-Aug	3667	7312	944	14421	4776	12403	5721	4949	1619	1794	17571
29-Aug	3811	7944	993	14791	5593	13226	6872	5502	1638	1818	18578
30-Aug	4113	9432	1021	15479	6087	13882	8013	6272	1649	1823	18974
31-Aug	4435	11112	1182	16386	6946	14496	9837	6766	1670	1834	19816
01-Sep	4731	12649	1762	16999	8326	14916	10845	7096	1693	1838	21763
02-Sep	5059	14554	1789	17820	9597	15445	12618	7465	1762	2097	23163
03-Sep	5355	16534	2258	18533	10163	16079	13778	7703	1809	3044	24318
04-Sep	5967	17819	2621	19386	10720	16418	16728	7940	1937	3507	24961
05-Sep	6502	19600	2721	20173	11351	16741	17781	8111	2327	3819	25591
06-Sep	7157	24613	3277	20915	11881	16975	18743	8281	2508	4178	26016
07-Sep	7663	27832	3482	21258	12734	17428	19299	8434	2513	4648	26400
08-Sep	8184	29997	3593	22365	13552	17873	19504	8879	2531	5120	26927
09-Sep	8751	31457	3744	23446	14141	18052	19615	9058	2736	5593	27363
10-Sep	9086	32683	4602	23493	14480	18486	19766	9492	3115	6137	27719
11-Sep	9369	33604	4962	24323	14635	19452	20624	10458	3325	6379	28233
12-Sep	9615	34326	4977	24686	14943	19888	20984	10894	3504	6516	28800
13-Sep	9854	35074	5152	24910	15176	20145	20999	11151	3710	6583	29882
14-Sep	10048	35582	6039	25267	15435	20297	21174	11303	4115	6808	30950
15-Sep	10205	36006	6173	25304	15676	20409	21195	11415	4323	7034	31687
16-Sep	10373	36411	6324	25479	15816	20530	21256	11536	4394	7149	32288
17-Sep	10505	36680	6748	26366	15929	20716	21379	11722	4522	7357	32703
18-Sep	10654	36869	7153	26500	16013	21121	21454	12127	4900	7972	33410
19-Sep	10772	36994	7422	26651	16151	21390	21605	12396	4991	8120	33764
20-Sep	10910	37251	7611	27075	16241	21579	21858	12585	5091	8283	34112
21-Sep	11013	37365	7736	27213	16301	21704	21968	12710	5282	8593	34255
22-Sep	11127	37500	7993	27303	16339	21961	22021	12967	5471	8899	34392
23-Sep	11205	37547	8107	27363	16348	22075	22196	13081	5601	9111	34411
24-Sep	11249	37592	8242	27401	16362	22210	22309	13216	5707	9283	34414
25-Sep	11279	37635	8289	27410	16382	22257	22393	13263	5780	9402	34427
26-Sep	11308	37664	8334	27424	16401	22302	22531	13308	5905	9604	34695
27-Sep	11334	37690	8377	27444	16419	22345	22621	13351	5968	9705	
28-Sep	11347	37703	8406	27463	16434	22374	22681	13380	6029	9804	
29-Sep	11361	37717	8432	27481	16441	22400	22719	13406	6054	9845	
30-Sep	11381	37737	8445	27496		22413	22728	13419	6078	9884	
01-Oct	11400	37756	8459	27503		22427	22742	13433	6081	9889	
02-Oct	11418	37774	8479	27529		22447	22762	13453	6082	9890	
03-Oct	11433	37789	8498	27542		22466	22781	13472	6085	9894	
04-Oct	11440	37796	8516	27556		22484	22799	13490	6105	9964	
05-Oct	11450		8531	27576		22499	22814	13505	6122		
06-Oct	11455		8538	27595		22506	22821	13512	6132		

Appendix B.38. Historical cumulative estimated escapement of chum salmon at the Kogrukluk Weir for years with adequate data.

	Cumulative Counts														
Date	1976	1978	1979	1981	1982	1984	1985	1986	1988	1989	1990	1991	1992	1993	1994
15-Jun				2											
16-Jun		2		2											
17-Jun		2	2	2	2				2	1			1	1	1
18-Jun		2	2	11	2				2	2	1		2	1	2
19-Jun		11	2	14	2	2			2	3	2		3	3	4
20-Jun		14	11	27	11	2			11	8	5		8	7	10
21-Jun		27	14	66	14	2			14	13	9		13	11	17
22-Jun		66	27	108	27	11			27	26	18		24	22	33
23-Jun	2	108	66	151	66	14	2	2	66	52	35	3	46	42	66
24-Jun	2	151	108	189	108	27	2	2	108	78	53	3	68	63	98
25-Jun	2	189	151	411	151	66	2	2	151	121	82	3	104	97	151
26-Jun	11	411	189	686	189	108	11	11	189	193	131	18	165	155	243
27-Jun	14	686	239	1103	411	151	14	14	411	310	210	23	265	249	440
28-Jun	27	994	304	2306	686	189	27	27	686	514	228	44	440	414	689
29-Jun	53	1612	384	4570	1103	411	66	57	1103	896	297	94	769	722	991
30-Jun	102	2241	484	6825	2306	686	108	126	2042	1425	428	174	1225	1149	1345
01-Jul	220	2889	579	9475	4570	1103	151	310	4042	2263	607	243	2279	1824	1751
02-Jul	301	3921	706	12991	6825	2042	189	462	6542	3289	1353	304	4695	2652	2210
03-Jul	431	5616	823	16598	9475	3196	411	753	9042	4552	2390	662	7310	3496	2721
04-Jul	620	7295	1136	18705	12991	4567	686	1225	11042	5873	3829	1105	9225	4562	3268
05-Jul	802	9249	1434	20641	16598	5408	1103	1531	12887	7124	5612	1462	10920	5562	3861
06-Jul	1141	11400	1644	23514	18705	7024	1364	1874	14267	8422	7204	1782	11931	6876	4996
07-Jul	1664	12803	1903	25760	20641	8920	2049	2240	15961	9415	8005	2064	13138	8294	6626
08-Jul	2277	14959	2118	27660	23514	10870	2430	2749	17920	10252	9746	2309	14052	9538	9065
09-Jul	2956	17255	2355	30552	27983	12834	3048	3674	20671	11758	10835	3089	15221	10955	12382
10-Jul	3466	20057	2922	34065	31379	13926	3590	5073	22822	13484	12822	3638	15940	12391	14803
11-Jul	3831	23026	3787	36953	34378	15227	3972	6694	25460	16295	14236	4155	17201	13642	17437
12-Jul	4252	25376	5014	38984	36959	17993	4471	7861	28095	19376	15229	5314	18451	14724	20911
13-Jul	4588	27548	6310	40853	39920	20070	5010	8800	30055	21711	15957	6750	19395	16114	23505
14-Jul	4910	30899	7475	43140	42362	22393	5717	9654	32133	23963	16829	7768	20738	17120	26255
15-Jul	5233	33401	8285	45596	44307	24905	6274	10545	33905	25772	18382	8769	22204	18525	28601
16-Jul	5574	35981	9252	47526	46728	27176	7110	11021	34902	27473	19605	9749	23458	20036	29920
17-Jul	5839	37862	10201	48706	49746	29083	7834	11621	35629	28984	20269	10708	24365	22066	30882
18-Jul	6172	39384	10854	50006	52309	30419	8480	11983	36039	30218	21386	11748	25627	23851	33666
19-Jul	6454	40765	11448	50934	54228	31388	9108	12327	36498	31280	21589	12490	26698	24375	34274
20-Jul	6694	42076	11999	51363	55938	32808	9619	12557	36833	32216	21992	12957	27510	25392	34717
21-Jul	7285	42721	12572	52087	57352	34496	10091	12750	37177	33296	22599	13419	27994	26634	35173
22-Jul	7538	43696	12986	52773	58256	36148	10564	12978	37407	34142	23040	14207	28512	27134	35477
23-Jul	7704	44462	13441	53304	59172	37353	11013	13073	37600	34822	23356	15020	29422	27621	35732
24-Jul	7877	45341	14538	53805	59919	38065	11538	13197	37828	35636	23432	15878	29975	27957	36753
25-Jul	7951	46156	15039	54070	60557	38455	12113	13300	37923	36184	23531	16781	30655	28447	37230
26-Jul	7983	46719	15304	54418	61104	38872	12572	13419	38047	36608	23626	17721	31053	28713	37436
27-Jul	8016	47109	15652	54796	61580	39329	12888	13516	38150	36987	23721	18488	31520	29090	37649
28-Jul	8028	47348	16030	55288	61973	39654	13229	13663	38269	37361	23883	19136	31894	29579	38330
29-Jul	8052	47563	16522	55671	62357	39974	13471	13797	38366	37721	24245	19632	32193	30030	39748
30-Jul	8066	47673	16905	56033	62797	40242	13688	13910	38513	38029	24569	20244	32470	30444	41102
31-Jul	8073	47785	17267	56317	63070	40560	13947	14002	38647	38321	24850	21096	32724	30751	42374
01-Aug	8085	47885	17551	56526	63300	40840	14096	14073	38760	38543	25198	21850	32888	30956	43167
02-Aug	8097	47959	17760	56709	63487	41057	14245	14145	38852	38731	25621	22444	33128	31083	43809
03-Aug	8102	47991	17943	56855	63659	41216	14336	14206	38923	38873	25919	22931	33311	31192	44464
04-Aug	8111	48024	18089	56933	63750	41349	14423	14268	38995	38994	26154	23250	33415	31319	45001
05-Aug	8112	48036	18167	56968	63854	41399	14481	14323	39056	39069	26311	23533	33480	31423	45421
06-Aug	8112	48060	18202	57023	63886	41419	14533	14376	39118	39126	26389	23746	33529	31573	45724
07-Aug	8112	48074	18257	57066	63923	41432	14585	14421	39173	39182	26464	23838	33625	31687	45909
08-Aug	8113	48081	18300	57109	63945	41440	14662	14468	39226	39242	26505	23896	33684	31766	46092
09-Aug	8113	48093	18343	57150	63983	41449	14707	14503	39271	39289	26554	23932	33714	31809	46210
10-Aug	8114	48105	18384	57197	64002	41460	14789	14540	39318	39347	26600	23981	33774	31824	46310
11-Aug	8116	48110	18431	57226	64018	41471	14843	14558	39353	39389	26642	23996	33843	31834	46385
12-Aug	8117	48119	18460	57251	64034	41480	14873	14574	39390	39419	26681	24033	33913	31849	46436
13-Aug		48120	18485	57278	64049	41480	14911	14581	39408	39443	26699	24061	33995	31875	46472
14-Aug		48120	18512	57302	64055	41481	14930	14594	39424	39463	26722	24081	34020	31879	46511
15-Aug		48120	18536	57325	64057	41482	14946	14614	39431	39482	26734	24089	34045	31879	46537
16-Aug		48121	18559	57331	64059	41482	14961	14634	39444	39500	26740	24096	34062	31883	46557
17-Aug		48121	18565	57336	64063	41483	14973	14649	39464	39512	26751	24130	34078	31887	46576
18-Aug		48122	18570	57340	64066	41484	14985	14661	39484	39523	26752	24165	34087	31891	46591
19-Aug		48124	18574	57342	64067	41484	14990	14673	39499	39531	26756	24177	34088	31895	46596
20-Aug		48125	18576	57351	64072	41484	14999	14678	39511	39538	26759	24177	34092	31899	46603
21-Aug			18585	57356	64073		15000	14687	39523	39545	26761	24182	34105		46606
22-Aug			18590	57356	64077		15000	14688	39528	39547	26761	24182			46607
23-Aug			18590	57357			15000	14688	39537	39548	26761	24182			46609
24-Aug			18591	57360			15001	14688	39538		26762	24183			46613
25-Aug			18594	57362			15001	14689	39538		26763	24186			46615
26-Aug			18596	57363			15002	14689	39538		26763	24187			46620
27-Aug			18597	57365			15004	14690	39539		26764	24187			46625
28-Aug			18599	57365			15005	14692	39539		26764	24187			46630
29-Aug			18599	57365				14693	39540		26765	24188			46635

10/05-8

Appendix B.39. Factor table for historical escapement estimates, Kogrukluk River, 1976-1994.

	Chinook				Sockeye				Cohoa				Chum			
Year	Tb	Count	Prop. Missed	Est'd Total	Tb	Count	Prop. Missed	Est'd Total	Tb	Count	Prop. Missed	Est'd Total	Tb	Count	Prop. Missed	Est'd Total
1976	L	5,500	0.0142	5,579	N	2,302	0.0103	2,326					N	8,046	0.0087	8,117
1977	(N)	763	0.6077	1,945	(N)	732	0.5527	1,637					(N)	7,404	0.6192	19,444
1978	N	13,102	0.0413	13,667	N	1,646	0.0144	1,670					N	47,099	0.0213	48,125
1979	N	10,104	0.1088	11,338	N	2,432	0.0746	2,628					L	13,959	0.2495	18,599
1980		676	c	6,572		403	c	3,200						5,638	c	41,777
1981	E	16,052	0.0362	16,655	E	17,691	0.0208	18,066	N	11,450	0.0004	11,455	E	56,262	0.0192	57,365
1982	E	5,325	0.5156	10,993	E	11,729	0.3219	17,297	N	35,582	0.0586	37,796	N	40,549	0.3672	64,077
1983	(N)	1,032	0.6551	2,992	(N)	375	0.6812	1,176	L	8,327	0.0247	8,538	(N)	3,248	0.6547	9,407
1984	N	4,928	0.0000	4,928	N	4,133	0.0000	4,133	E	25,304	0.0830	27,595	N	41,484	0.0000	41,484
1985	L	4,304	0.0682	4,619	L	4,344	0.0034	4,359	E	14,318	0.1291	16,441	L	13,851	0.0769	15,005
1986	L	2,922	0.4200	5,038	N	3,252	0.2301	4,224	E	14,717	0.3461	22,506	N	11,980	0.1846	14,693
1987		d		4,063		d		973	N	19,756	0.1343	22,821		d		17,422
1988	N	7,677	0.0974	8,505	E	4,235	0.0368	4,397	N	11,722	0.1325	13,512	E	28,498	0.2793	39,540
1989	N	4,908	0.5889	11,940	N	2,599	0.5527	5,811				f	N	15,543	0.6070	39,548
1990	N	10,097	0.0118	10,218	N	8,382	0.0029	8,406	L	2,736	0.5538	6,132	N	26,555	0.0078	26,765
1991	N	5,781	0.2636	7,850	N	13,687	0.1682	16,455	L	7,034	0.2919	9,933	L	22,481	0.0706	24,188
1992	N	6,359	0.0586	6,755	L	7,395	0.0192	7,540	(N)	2,715	0.8958	26,057	N	31,423	0.0786	34,105
1993	N	10,516	0.1473	12,332	N	27,219	0.0729	29,358	(N)	4,437	0.7837	20,517	N	26,926	0.1559	31,899
1994	(N)	8,310	0.4543	15,227	(L)	5,657	0.6014	14,192	(N)	27,461	0.2085	34,695	(N)	23,756	0.4906	46,635

a Coho migrations were not monitored prior to 1981.
b The timing model used for estimating missed counts depends on the distribution of mean date of migration from appendices C - F (E=early, N=normal, L=late). The use of parentheses () indicates assumed timing.
c From Baxter (1980); insufficient data to estimate escapements using time series techniques.
d Except for coho, escapements were estimated from a ratio of unknown 1987 escapement and known 1987 aerial assessment to known 1988 escapement and known 1988 aerial assessment. Coho escapements estimated using time series techniques.
e Aerial sockeye counts in riverine spawning habitat are subject to a wide range of error when surveys are not targeting the species.
f Heavy rain and high river levels allowed only two days of counts during the coho migration.

Appendix B.40. Chinook salmon sex ratios and proportion of females with gill net marks, Kogrukluk weir, 1979-1994.

Year	Actual Count	Number Females	Sex Ratio (% female)	% of females with gill net marks
1979	10,125	1,786	17.6	11.03
1980	676	136	20.1	a
1981	16,075	7,584	47.2	12.47
1982	5,325	2,431	45.7	12.99
1983	1,049	285	27.2	16.49
1984	4,928	1,146	23.3	11.08
1985	4,306	1,485	34.5	18.99
1986	2,968	705	23.8	19.43
1987 b	770			
1988	7,677	2,631	34.3	13.34
1989	4,911	1,884	38.4	16.46
1990	10,093	2,271	22.5	14.35
1991	6,132	2,860	46.6	19.26
1992	6,397	2,138	33.4	30.03
1993	10,516	2,961	28.2	11.25
1994	8,310	2,042	24.6	9.53
1979-84 Average			30.2	10.68
1985-93 Average			32.7	17.89

a Gill net mark data was not reported
b Sample size to small to assess sex ratio and percentage of gill net marks

Appendix B.41 Historic commercial salmon cumulative CPUE by statistical area in District 1 of the Kuskokwim River.

	Statistical Area 335-11				Statistical Area 335-12				Statistical Area 335-13				Statistical Area 335-14			
Year	Chinook	Sockeye	Chum	Coho	Chinook	Sockeye	Chum	Coho	Chinook	Sockeye	Chum	Coho	Chinook	Sockeye	Chum	Coho
1990	0.80	1.16	7.05	13.28	4.21	5.50	32.36	31.63	4.75	8.28	41.06	10.57	1.07	3.24	13.04	13.27
1991	0.37	1.43	5.71	8.84	0.73	1.60	5.21	6.85	0.39	1.33	6.14	7.83	0.51	2.54	10.42	7.50
1992	0.30	0.72	2.99	4.89	0.44	0.69	3.36	5.11	0.38	0.96	1.85	6.71	0.47	1.20	3.43	7.61
1993	0.11	0.52	0.63	5.86	0.16	0.42	0.67	5.71	0.01	0.01	0.10	9.02	0.01	0.00	0.29	12.10
1994	0.06	0.33	1.14	3.57	0.22	0.56	2.64	4.58	0.02	0.17	1.97	8.04	0.03	0.19	2.25	9.08
Average	0.33	0.83	3.50	7.29	1.15	1.75	8.85	10.78	1.11	2.15	10.22	8.43	0.42	1.43	9.99	9.91

- From 1990 through present the upstream boundary of District 1 was moved downstream to Nelson Island and the district was split into four statistical areas of approximately equal length; the former statistical area 335-11 was split in to two statistical areas, 335-11 and 335-12, and the areas upstream of Bethel were renumbered as 335-13 and 335-14 to account for the change.

- From 1987 to present statistical areas upstream of Bethel were typically closed to commercial fishing during the first 1 or 2 periods as a chinook salmon conservation measure.

APPENDIX C

Appendix C.1. Quinhagak District commercial salmon harvest, 1960-1994.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	5,649	3,000	0	0	8,649
1961	4,328	2,308	46	90	18,864	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	102,263
1971	4,185	3,118	2,982	13	30,208	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	15,298	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	9,028	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	24,524	17,292	47,557	160	53,334	142,867
1982	22,106	25,685	73,652	11,838	33,346	166,627
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
1986	22,835	21,484	57,544	8,700	29,700	140,263
1987	26,022	6,489	50,070	66	8,557	91,204
1988	13,872	21,534	68,591	21,258	29,183	154,438
1989	20,820	20,582	44,607	273	39,395	125,677
1990	27,644	83,681	26,926	12,056	47,717	198,024
1991	9,480	53,657	42,571	115	54,493	160,316
1992	17,197	60,929	86,404	64,217	73,383	302,130
1993	15,784	80,934	55,817	7	40,943	193,485
1994	8,564	72,314	83,912	35,904	61,301	261,995
Ten Year Average (1984-1993)	21,771	37,442	59,786	12,248[a]	39,421	170,718

a Even years only.

Appendix C.2. Summary of historical commercial harvest by period Quinhagak District, chinook salmon, 1981-1994.

Date	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
6/12	1	0	0	0	0.00000
6/13	3	33	7720	1716	0.02097
6/14	2	0	5080	2540	0.03409
6/15	4	1165	3914	3181	0.08037
6/16	4	0	7835	1179	0.09850
6/17	1	3527	3527	3527	0.10990
6/18	5	1942	11997	6694	0.19603
6/19	2	3525	5801	4663	0.22627
6/20	4	746	6617	1917	0.27501
6/21	4	4268	6194	4975	0.34003
6/22	2	4002	10586	7294	0.38074
6/23	3	2039	11652	6276	0.42531
6/24	5	1403	6698	2798	0.49166
6/25	4	2732	4539	2915	0.53073
6/26	2	1703	1741	1722	0.54203
6/27	3	1849	9711	3795	0.57984
6/28	4	1438	4089	2527	0.62051
6/29	2	0	1696	848	0.62755
6/30	4	690	4496	1228	0.65333
7/1	4	657	3752	2211	0.69607
7/2	6	1105	3602	1872	0.73344
7/3	4	1479	2771	2168	0.76176
7/4	4	508	4068	1781	0.78632
7/5	6	611	2710	940	0.81115
7/6	4	273	1008	844	0.82607
7/7	6	620	1566	1362	0.84736
7/8	5	465	2407	756	0.87027
7/9	5	441	1259	796	0.88203
7/10	3	334	736	646	0.88794
7/11	7	393	1545	973	0.90811
7/12	3	306	687	450	0.91325
7/13	6	205	1011	494	0.92504
7/14	6	220	1351	501	0.93589
7/15	5	230	1306	352	0.94808
7/16	4	220	533	422	0.95277
7/17	4	130	290	211	0.95612
7/18	5	187	845	260	0.96185
7/19	4	97	792	247	0.96637
7/20	4	89	490	285	0.97036
7/21	5	90	248	162	0.97352
7/22	5	35	629	131	0.97673
7/23	4	66	324	164	0.97862
7/24	4	33	187	67	0.97991

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Appendix C.2. (page 2 of 2)

Date	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
7/25	5	0	379	116	0.98257
7/26	3	0	42	27	0.98296
7/27	8	0	194	85	0.98522
7/28	2	31	56	44	0.98554
7/29	6	21	116	73	0.98721
7/30	4	49	111	89	0.98821
7/31	5	0	46	35	0.98874
8/1	6	51	153	69	0.99023
8/2	4	14	53	34	0.99077
8/3	8	16	160	62	0.99220
8/4	3	0	30	27	0.99239
8/5	7	6	141	40	0.99342
8/6	6	19	78	32	0.99408
8/7	3	27	43	35	0.99441
8/8	7	0	71	20	0.99509
8/9	4	6	22	9	0.99528
8/10	7	0	125	28	0.99600
8/11	4	6	17	12	0.99617
8/12	6	12	74	34	0.99687
8/13	5	0	36	16	0.99705
8/14	5	6	29	14	0.99731
8/15	5	2	43	28	0.99766
8/16	6	1	12	6	0.99781
8/17	7	1	66	15	0.99821
8/18	5	7	12	9	0.99838
8/19	8	3	51	11	0.99879
8/20	5	6	16	8	0.99893
8/21	6	4	13	7	0.99908
8/22	5	3	33	8	0.99924
8/23	6	1	5	4	0.99931
8/24	6	1	14	4	0.99942
8/25	6	0	16	4	0.99950
8/26	7	1	17	5	0.99970
8/27	4	3	4	3	0.99974
8/28	6	2	8	3	0.99982
8/29	6	0	7	3	0.99987
8/30	2	0	1	1	0.99987
8/31	7	0	3	2	0.99991
9/1	5	0	10	1	0.99993
9/2	7	0	4	1	0.99995
9/3	4	0	2	1	0.99996
9/4	4	0	2	1	0.99998
9/5	7	0	2	1	1.00000
9/6	3	0	1	1	1.00000
9/7	7	0	0	0	1.00000
9/8	3	0	0	0	1.00000

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Appendix C.3. Summary of historical commercial harvest by period, Quinhagak District, sockeye salmon, 1981-1994.

DATE	No. Years w/ fishing period on this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
6/12	1	0	0	0	0.00000
6/13	3	4	151	14	0.00060
6/14	1	384	384	384	0.00093
6/15	4	62	440	134	0.00234
6/16	3	0	277	112	0.00430
6/17	1	1119	1119	1119	0.00741
6/18	5	355	574	462	0.01690
6/19	2	171	741	456	0.02004
6/20	4	111	411	277	0.02300
6/21	4	1039	2322	1738	0.03742
6/22	2	379	746	563	0.04719
6/23	3	343	1741	1371	0.06019
6/24	5	638	3271	1643	0.07782
6/25	4	732	1667	1466	0.10328
6/26	2	1717	2300	2009	0.11690
6/27	3	461	4923	543	0.13141
6/28	4	1908	10941	2190	0.16251
6/29	2	0	3940	1970	0.16713
6/30	4	1360	7574	2348	0.20472
7/1	4	975	8625	5005	0.23476
7/2	6	1242	5654	2649	0.27226
7/3	4	2244	3604	3373	0.32421
7/4	4	627	5743	3378	0.35259
7/5	6	1157	15375	2614	0.39851
7/6	4	1126	8381	5350	0.42492
7/7	6	1211	8326	3320	0.47327
7/8	5	1289	9304	4001	0.51792
7/9	5	1532	9824	3048	0.55798
7/10	3	2229	7583	2786	0.58388
7/11	7	1901	7672	3369	0.66063
7/12	3	1468	6696	1601	0.67609
7/13	6	1842	13450	5554	0.72928
7/14	6	878	7490	2369	0.77600
7/15	5	1240	6687	4505	0.81823
7/16	4	564	8537	2251	0.83428
7/17	4	937	3725	2402	0.85198
7/18	5	657	5842	1321	0.87689
7/19	4	866	12850	1908	0.89471
7/20	4	477	4611	1487	0.90982
7/21	5	477	1331	769	0.92050
7/22	5	799	3537	1298	0.93790
7/23	4	328	4361	538	0.94466
7/24	4	215	1138	747	0.95127

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Appendix C.3. (page 2 of 2)

DATE	No. Years w/ fishing period on this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
7/25	5	0	2681	393	0.95770
7/26	3	0	529	394	0.95875
7/27	8	0	2096	227	0.96569
7/28	2	102	363	232	0.96630
7/29	6	126	997	392	0.97173
7/30	4	19	1516	245	0.97375
7/31	4	97	429	196	0.97563
8/1	6	42	757	143	0.97876
8/2	4	38	138	91	0.97945
8/3	8	30	408	132	0.98350
8/4	3	3	93	69	0.98403
8/5	7	6	333	121	0.98718
8/6	6	16	254	91	0.98950
8/7	3	30	240	122	0.99074
8/8	7	0	198	30	0.99143
8/9	4	6	113	50	0.99176
8/10	7	10	77	29	0.99310
8/11	4	6	93	26	0.99337
8/12	6	1	116	56	0.99454
8/13	5	0	89	19	0.99497
8/14	5	1	145	34	0.99543
8/15	5	12	42	31	0.99601
8/16	6	0	39	14	0.99617
8/17	7	1	71	18	0.99709
8/18	5	6	36	11	0.99723
8/19	8	2	26	10	0.99756
8/20	5	3	42	27	0.99776
8/21	6	0	28	7	0.99799
8/22	5	1	32	6	0.99827
8/23	6	1	51	10	0.99838
8/24	6	0	18	4	0.99850
8/25	6	0	28	4	0.99874
8/26	7	0	27	9	0.99889
8/27	4	0	30	4	0.99895
8/28	6	0	13	7	0.99907
8/29	6	0	7	5	0.99916
8/30	2	0	0	0	0.99916
8/31	7	0	20	4	0.99944

Appendix C.4. Summary of historical commercial harvest by period, Quinhagak District, coho salmon, 1979-1994.

DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
6/30	5	0	2	1	0.00000
7/1	4	0	0	0	0.00000
7/2	8	0	1	0	0.00000
7/3	4	0	0	0	0.00000
7/4	6	0	0	0	0.00000
7/5	6	0	0	0	0.00000
7/6	5	0	0	0	0.00000
7/7	7	0	0	0	0.00000
7/8	5	0	0	0	0.00000
7/9	7	0	39	4	0.00010
7/10	3	0	5	2	0.00010
7/11	9	0	9	4	0.00011
7/12	3	0	2	1	0.00011
7/13	7	0	17	3	0.00012
7/14	7	0	2	1	0.00013
7/15	5	0	24	4	0.00019
7/16	6	0	39	8	0.00023
7/17	4	4	14	8	0.00026
7/18	7	0	234	31	0.00048
7/19	4	3	88	30	0.00066
7/20	5	3	787	27	0.00113
7/21	6	0	366	71	0.00179
7/22	5	1	250	9	0.00210
7/23	6	0	1386	96	0.00321
7/24	4	21	400	55	0.00368
7/25	7	0	3482	145	0.00670
7/26	3	0	122	82	0.00695
7/27	9	0	5512	249	0.01161
7/28	3	294	1214	352	0.01332
7/29	6	152	1336	410	0.01670
7/30	6	0	3079	770	0.02366
7/31	5	146	1281	410	0.02692
8/1	8	0	5680	910	0.03869
8/2	4	390	2806	1375	0.04499
8/3	9	592	5390	1226	0.06023
8/4	3	190	1755	864	0.06376
8/5	8	387	4517	2987	0.08425
8/6	8	2068	8436	4202	0.11878
8/7	3	693	8188	5243	0.13495
8/8	8	0	19215	3768	0.17826

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Appendix C.4. (page 2 of 2)

DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
8/9	4	1831	5676	4434	0.19718
8/10	8	1237	9428	5430	0.23904
8/11	5	3863	10076	6800	0.27441
8/12	6	2710	10458	3362	0.30480
8/13	7	1561	10961	5284	0.34955
8/14	5	1671	7883	3138	0.37345
8/15	7	1603	15733	7005	0.42661
8/16	6	1403	6926	3923	0.46316
8/17	8	2008	9897	4203	0.50449
8/18	6	1008	9776	9170	0.55133
8/19	8	2532	9959	4679	0.59858
8/20	7	3958	8728	5529	0.64429
8/21	6	2110	7631	3427	0.67339
8/22	7	1972	8437	4582	0.70394
8/23	6	2400	11957	3764	0.74833
8/24	7	1708	8673	3488	0.77663
8/25	7	115	6095	3414	0.80453
8/26	7	1419	6505	4634	0.83661
8/27	6	1431	5975	3605	0.85772
8/28	6	1514	4684	3245	0.88138
8/29	8	0	3623	2720	0.90220
8/30	2	1054	9431	5242	0.91240
8/31	8	1427	7145	2198	0.93416
9/1	5	1407	2365	1916	0.94670
9/2	7	535	4065	1453	0.96230
9/3	5	600	2777	2017	0.97070
9/4	4	1126	2058	1484	0.97891
9/5	9	0	3799	956	0.98785
9/6	3	950	1769	1158	0.99319
9/7	7	0	1798	485	0.99757
9/8	2	0	1262	631	1.00000

Appendix C.5. Summary of historical commercial harvest by Quinhagak District, chum salmon, 1981-1994.

Date	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
6/12	1	0	0	0	0.00000
6/13	3	14	1092	84	0.00295
6/14	2	0	2125	1063	0.00613
6/15	4	252	2821	1065	0.01255
6/16	4	0	847	787	0.01706
6/17	1	1556	1556	1556	0.02039
6/18	5	1162	2611	1629	0.04016
6/19	2	1198	1913	1556	0.04651
6/20	4	287	968	654	0.05279
6/21	4	868	4471	2214	0.06873
6/22	2	1051	2177	1614	0.08042
6/23	3	1103	3226	1774	0.09481
6/24	5	732	5332	1403	0.11742
6/25	4	1711	5417	2941	0.14761
6/26	2	1529	4329	2929	0.16079
6/27	3	1855	2722	1874	0.17666
6/28	4	2458	5449	3951	0.20748
6/29	2	0	4666	2333	0.21203
6/30	4	2066	4903	3180	0.25181
7/1	4	1836	13544	6426	0.28789
7/2	6	1972	6034	3918	0.32854
7/3	4	1788	5724	2851	0.36271
7/4	4	2333	3155	2866	0.38802
7/5	6	1820	6778	3735	0.43025
7/6	4	2192	8484	3523	0.45011
7/7	6	2939	4827	3544	0.49557
7/8	5	3050	8296	3672	0.53570
7/9	5	3518	7408	3846	0.57374
7/10	3	4022	5221	4774	0.59716
7/11	7	2313	9329	2966	0.65081
7/12	3	3211	3864	4997	0.67139
7/13	6	4270	9794	5791	0.71739
7/14	6	732	5131	3022	0.75066
7/15	5	2796	10756	5791	0.79643
7/16	4	1784	3369	2158	0.81240
7/17	4	2326	5988	3530	0.83390
7/18	5	1310	4343	2716	0.86126
7/19	4	1577	4960	3202	0.88160
7/20	4	2127	4684	3095	0.89760
7/21	5	1143	1941	1812	0.91426
7/22	5	990	2696	1053	0.92956
7/23	4	791	1690	1026	0.93785
7/24	4	499	2254	1343	0.94479

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Appendix C.5. (page 2 of 2)

Date	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
7/25	5	0	1397	933	0.95162
7/26	3	0	1446	603	0.95456
7/27	8	0	1085	571	0.96177
7/28	2	333	428	381	0.96323
7/29	6	190	1412	832	0.96955
7/30	4	173	802	391	0.97246
7/31	5	5	665	191	0.97439
8/1	6	246	479	334	0.97868
8/2	4	153	288	215	0.98015
8/3	8	110	580	233	0.98485
8/4	3	4	134	116	0.98536
8/5	7	98	357	254	0.98846
8/6	6	52	285	146	0.99203
8/7	3	101	185	114	0.99254
8/8	7	0	234	119	0.99358
8/9	4	11	265	70	0.99419
8/10	7	9	108	53	0.99564
8/11	4	4	51	32	0.99588
8/12	6	15	109	49	0.99644
8/13	5	2	95	28	0.99684
8/14	5	13	166	37	0.99729
8/15	5	6	53	49	0.99759
8/16	6	2	96	30	0.99792
8/17	7	0	50	15	0.99840
8/18	5	7	23	9	0.99850
8/19	8	5	54	11	0.99881
8/20	5	3	27	11	0.99891
8/21	6	2	21	8	0.99905
8/22	5	1	18	8	0.99917
8/23	6	3	22	10	0.99929
8/24	6	0	8	4	0.99937
8/25	6	0	5	5	0.99940
8/26	7	0	10	6	0.99952
8/27	4	0	6	2	0.99954
8/28	6	1	5	3	0.99960
8/29	6	0	3	2	0.99962
8/30	2	0	1	1	0.99962
8/31	7	0	10	3	0.99972
9/1	5	0	2	1	0.99973
9/2	7	0	7	3	0.99980
9/3	4	0	43	22	0.99987
9/4	4	0	13	7	0.99998
9/5	7	0	5	3	0.99999
9/6	3	0	0	0	0.99999
9/7	7	0	2	1	1.00000
9/8	3	0	0	0	1.00000

Appendix C.6. Quinhagak District commercial effort 1970-1994.

YEAR	EFFORT[a]
1970	88
1971	61
1972	107
1973	109
1974	196
1975	127
1976	181
1977	258
1978	200
1979	206
1980	169
1981	186
1982	117
1983	226
1984	263
1985	300
1986	324
1987	310
1988	288
1989	227
1990	390
1991	346
1992	349
1993	409
1994	308
TEN YEAR AVERAGE (1984-1993)	321

a Permits that made at least one delivery during that year.

Appendix C.7. Historical age composition percentage, chinook salmon, Quinhagak commercial harvest and escapement, 1982 - 1994.

	Sample Size	Total years of life at maturity 3	4	5	6	7+	Total
1982							
Commercial							
Male		0.0	3.6	33.3	9.4	1.3	47.6
Female		0.0	1.3	31.1	18.4	1.6	52.4
Combined	309	0.0	4.9	64.4	27.8	2.9	100.0
Commercial Catch[b]		0	1,083	14,236	6,145	641	22,106
1983							
Commercial							
Male		0.4	25.9	6.1	27.3	1.5	61.2
Female		0.0	0.1	0.8	37.0	0.9	38.8
Combined	758	0.4	26.0	6.9	64.3	2.4	100.0
Commercial Catch[b]		186	12,060	3,201	29,826	1,113	46,385
Escapement							
Male		0.3	6.7	10.9	29.7	1.0	48.6
Female		0.0	0.2	2.4	45.8	3.0	51.4
Combined	580	0.3	6.9	13.3	75.5	4.0	100.0
Escapement[c]		148	3,403	6,558	37,231	1,972	49,312
1984							
Commercial							
Male		0.0	12.0	52.7	14.8	3.9	83.4
Female		0.0	0.0	1.5	10.1	5.0	16.6
Combined	583	0.0	12.0	54.2	24.9	8.9	100.0
Commercial Catch[b]		0	4,038	18,239	8,379	2,995	33,652
Escapement							
Male		1.5	5.0	34.0	20.0	2.6	63.1
Female		0.0	0.0	4.3	28.5	4.1	36.9
Combined	545	1.5	5.0	38.3	48.5	6.7	100.0
Escapement[c]		574	1,912	35,973	14,648	18,549	38,245

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	Sample Size	Total years of life at maturity 3	4	5	6	7+	Total
1985							
Commercial							
Male		0.0	19.3	20.9	26.7	1.6	59.1
Female		0.0	0.0	2.5	28.3	0.7	40.9
Combined	569	0.0	19.3	23.4	55.0	2.3	100.0
Commercial Catch[b]		0	5,867	7,114	16,721	699	30,401
Escapement							
Male		0.6	5.3	11.0	30.6	0.9	48.4
Female		0.0	0.0	3.7	45.5	2.4	51.6
Combined	661	0.6	5.3	14.7	76.1	3.3	100.0
Escapement[c]		215	1,895	5,256	27,210	1,180	35,755
1986							
Commercial							
Male		2.0	6.0	43.0	16.0	4.0	71.0
Female		0.0	0.0	2.0	19.0	8.0	29.0
Combined	502	2.0	6.0	45.0	35.0	12.0	100.0
Commercial Harvest		457	1,370	10,276	7,992	2,740	22,835
Escapement							
Male		1.5	6.0	21.2	18.1	6.0	52.8
Female		0.0	0.0	6.5	26.6	14.1	47.2
Combined	199	1.5	6.0	27.7	44.7	20.1	100.0
Escapement[c]		343	1,375	6,349	10,246	4,607	22,922
1987							
Commercial							
Male		0.4	26.7	17.9	36.4	1.3	82.7
Female		0.0	0.0	0.0	16.4	1.0	17.3
Combined	525	0.4	26.7	17.9	52.8	2.3	100.0
Commercial Catch		99	6,939	4,659	13,730	595	26,022
Escapement							
Male		0.5	2.9	10.8	34.6	3.1	52.0
Female		0.0	0.8	3.7	39.4	3.9	48.0
Combined		0.5	3.7	14.4	74.0	7.1	100.0
Escapement[c]	381	44	2,944	1,974	5,823	253	11,029

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Appendix C.7 (page 3 of 3)

	Sample Size	Total years of life at maturity 3	4	5	6	7+	Total
1988							
Commercial							
Male		0.0	19.8	24.2	12.8	3.0	59.8
Female		0.0	2.7	9.5	18.1	9.8	40.2
Combined	592	0.0	22.5	33.6	30.9	12.8	100.0
Commercial Catch		0	3,119	4,666	4,292	1,782	13,883
		Escapement samples not collected					
1990							
Commercial							
Male		0.0	15.5	26.1	15.5	4.9	61.9
Female		0.0	4.0	10.0	15.5	8.6	38.1
Combined	349	0.0	19.5	36.1	31.0	13.5	100.0
Commercial Catch		0	5,390	9,979	8,569	3,731	27,644
		Escapement samples not collected					
1991							
Commercial							
Male		0.4	17.5	20.3	20.9	3.2	62.2
Female		0.0	2.2	5.2	25.4	5.0	37.8
Combined	503	0.4	19.7	25.4	46.3	8.2	100.0
Commercial Catch		38	1,867	2,407	4,389	777	9,480
		Escapement samples not collected					

a) Total represents number of freshwater and marine annuli, plus one.
b) Based on commercial catch samples.
c) Escapement numbers based on Kanektok River Sonar estimates.

endix C.8. Historical age composition percentage, sockeye salmon, Quinhagak commercial catch and escapement, 1982 - 1988.

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1982						
Commercial						
Male		0.0	17.2	38.0	0.0	55.2
Female		0.0	13.3	31.5	0.0	44.8
Combined	203	0.0	30.5	69.5	0.0	100.0
Commercial Catch[b]		0	7,834	17,851	0	25,685
Escapement sockeye salmon samples were not collected.						
1983						
Commercial						
Male		0.0	23.0	20.9	4.0	47.9
Female		0.0	31.0	18.5	2.6	52.1
Combined	470	0.0	54.0	39.4	6.6	100.0
Commercial Catch[b]		0	5,542	4,044	677	10,263
Escapement sockeye salmon samples were not collected.						
1984						
Commercial						
Male		0.0	17.1	34.5	4.9	56.5
Female		0.0	10.0	30.1	3.4	43.5
Combined	531	0.0	27.1	64.6	8.3	100.0
Commercial Catch[b]		0	4,677	11,149	1,432	17,258
Escapement						
Male		0.3	22.8	36.7	1.5	61.3
Female		0.0	8.9	29.0	0.8	38.7
Combined	382	0.3	31.7	65.7	2.3	100.0
Escapement[c]		164	17,357	35,973	1,259	54,754
1985						
Commercial						
Male		0.0	9.3	40.4	1.6	59.1
Female		0.0	11.9	35.3	1.6	40.9
Combined	569	0.0	21.2	75.6	3.2	100.0
Commercial Catch[b]		0	1,666	5,957	252	7,876

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Appendix C.8 (page 2 of 2)

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1986						
Commercial						
Male		0.0	11.7	39.2	0.2	51.1
Female		0.0	9.8	39.2	0.0	48.9
Combined	314	0.0	21.4	78.3	0.2	100.0
Commercial Catch[b]		0	4,607	16,827	50	21,484
Escapement						
Male		0.0	10.1	26.6	0.0	36.7
Female		0.0	10.1	50.6	2.6	63.3
Combined		0.0	20.2	77.2	2.6	100.0
Escapement Estimate[c]		0	1,565	5,983	202	7,751
1987						
Commercial						
Male		0	20.3	38.6	0	58.9
Female		0	10.5	30.7	0	41.1
Combined	153	0	30.7	69.3	0	100.0
Commercial Catch[b]		0	1,993	4,496	0	6,489
Escapement						
Male		0	34.6	12.2	0	46.8
Female		0	46.8	6.5	0	53.3
Combined	295	0	81.4	18.7	0	100.0
Escapement[c]		0	8,563	1,967	0	10,520
1988						
Commercial						
Male		0.1	6.4	50.4	3.3	60.4
Female		0	3.8	32.8	3.0	39.6
Combined	748	0.1	10.1	83.3	6.3	100.0
Commercial Catch[b]		29	2,190	17,954	1,384	21,557
Escapement samples not collected.						

[a] Age classes are a total of fresh water and marine growth.
[b] Age classes based on commercial catch samples.
[c] Age classes based on escapement samples. Escapement estimate based on the Kanektok River Sonar/aerial surveys.
[d] Preliminary data.

ɔendix C.9. Historical age composition percentage, chum salmon, Quinhagak commercial harvest and escapement, 1982 - 1994.

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1982						
Commercial						
Male		1.0	24.6	13.7	1.0	40.3
Female		0.0	38.7	19.6	1.4	59.7
Combined	414	1.0	63.3	33.3	2.4	100.0
Commercial Catch[b]		333	21,108	11,104	800	33,346
Escapement samples were not collected.						
1983						
Commercial						
Male		0.0	24.7	16.0	0.6	41.3
Female		0.6	34.9	22.8	0.4	58.7
Combined	482	0.6	59.6	38.8	1.0	100.0
Commercial Catch[b]		139	13,762	8,959	231	23,090
Escapement						
Male		0.0	15.5	37.6	1.0	54.1
Female		0.2	21.9	23.8	0.0	45.9
Combined	401	0.2	37.4	61.4	1.0	100.0
Escapement[c]		108	20,157	33,092	539	53,895
1984						
mmercial						
Male		0.2	33.8	13.4	0.0	47.4
Female		0.0	39.9	12.1	0.6	52.6
Combined	464	0.2	73.7	25.5	0.6	100.0
Commercial Catch[b]		101	37,162	12,858	303	50,424
Escapement						
Male		0.1	38.1	17.1	1.2	56.5
Female		0.1	32.0	11.1	0.3	43.5
Combined	772	0.2	70.1	28.2	1.5	100.0
Escapement[c]		400	140,298	56,439	3,002	200,140
1985						
Commercial						
Male		0.0	25.5	21.4	0.2	59.1
Female		0.0	27.5	25.3	0.0	40.9
Combined	458	0.0	53.0	46.7	0.2	100.0
Commercial Catch[b]		0	1,666	5,957	252	7,876
Escapement						
Male		0.2	24.1	27.1	0.0	51.4
Female		0.2	25.7	22.7	0.0	48.6
Combined	440	0.4	49.8	49.8	0.0	100.0
Escapement[c]		61	7,632	7,632	0	15,325

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Appendix C.9 (page 2 of 3)

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1986						
Commercial						
Male		0.0	22.6	17.1	0.0	39.7
Female		0.0	41.7	18.6	0.0	60.3
Combined	314	0.0	64.3	35.7	0.0	100.0
Commercial Catch[b]		0	19,100	10,600	0	29,700
Escapement						
Male		0.2	27.1	28.8	0.9	57.0
Female		0.0	23.0	19.3	0.7	43.0
Combined	431	0.2	50.1	48.1	1.6	100.0
Escapement[c]		38	9,422	9,046	302	18,808
1987						
Commercial						
Male		0	20.7	35.3	0	56.0
Female		0	17.4	26.6	0	44.0
Combined	241	0	38.1	61.9	0	100.0
Commercial Catch[b]		0	3,267	5,290	0	8,557
Escapement						
Male		0	14.0	32.0	2.0	48.0
Female		0	22.0	30.0	0	52.0
Combined	150	0	37.0	62.0	2.0	100.0
Escapement[c]		0	4,118	6,901	223	11,132
1988						
Commercial						
Male		0.7	34.1	14.8	0.8	50.4
Female		.5	31.0	16.9	1.2	49.6
Combined	593	1.2	65.1	31.7	2.0	100.0
Commercial Catch[b]		345	19,020	9,264	591	29,220
Escapement samples not collected.						
1989[d]						
Commercial						
Male		0	23.4	24.2	0.4	48.0
Female		0	26.1	24.4	0.6	51.1
Combined	641	0	49.5	48.6	1.0	100.0
Commercial Catch[b]		0	19,698	19,308	389	39,395
Escapement samples not collected.						

Age Composition		Total years of life at maturity[a] 3	4	5	6	Total
1990						
Commercial						
Male		2.1	33.0	7.6	0.3	43.0
Female		2.4	47.9	6.8	0.0	57.0
Combined	633	4.4	80.9	14.4	0.3	100.0
Commercial Catch[b]		2,099	38,603	6,871	143	47,717
Escapement samples not collected.						
1991						
Commercial						
Male		0.3	31.3	10.5	0.0	43.0
Female		1.1	45.6	11.3	0.0	57.0
Combined	656	1.4	76.8	21.8	0.0	100.0
Commercial Catch[b]		763	41,850	11,879	143	47,717
Escapement samples not collected.						

[a] Age classes are a total of fresh water and marine growth.
[b] Age classes based on commercial catch samples.
Age classes based on escapement samples. Escapement estimate based on the Kanektok River Sonar/aerial surveys.
Preliminary data.

Appendix C.10. Kanektok River peak aerial surveys by species, 1962 - 1994[a].

Year	SPECIES Chinook	Sockeye	Coho	Chum
1962	935	43,108		
1963				
1964				
1965				
1966	3,718			28,800
1967				
1968	4,170	8,000		14,000
1969				
1970	4,112	3,028		80,100
1971				
1972				
1973	814			
1974				
1975		6,018		
1976		2,936		8,697
1977	5,787	6,304		32,157
1978[b]	19,180	44,215		229,290
1979				
1980	6,172	113,931	69,325	25,950
1981[c]	15,900	49,175		71,840
1982[d]	8,142	55,940		
1983	8,890	2,340		9,360
1984[e]	12,182	30,840	46,830	48,360
1985	13,465	16,270		14,385
1986	3,643	14,949		16,790
1987	4,223	51,753	20,056	9,420
1988	11,140	30,440		20,063
1989	7,914	14,735		6,270
1990	2,563	32,082		2,475
1991[d]	2,100	43,500	4,330	18,000
1992[f]	3,856	14,955		25,675
1993	4,670	23,128		1,285
1994[g]	7,386	30,090		10,000
10 YR. AVG:	6,575	27,265	23,738	16,272
OBJECTIVE:	5,800	15,000		30,500

a Peak aerial surveys are those rated fair or good surveys obtained between 20 July and 5 August for chinook and sockeye salmon, 20-31 July for chum salmon, and 20 August and 5 September for coho salmon. Some surveys which do not meet these criteria may be referenced in this table; test are footnoted.
b Chum salmon count excluded from escapement objective calculation due to exceptional magnitude.
c Poor survey for chinook, sockeye, chum salmon.
d Late Survey for chinook, sockeye salmon (after 5 August).
e Poor coho survey.
f Some chum may have been sockeye.
g Chum count not at peak, estimate made during chinook survey.

APPENDIX D

Appendix D.1. Goodnews Bay District commercial salmon harvest, 1968-1994.

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1968			5,458			5,458
1969	3,978	6,256	11,631	298	5,006	27,169
1970	7,163	7,144	6,794	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
1986	2,723	25,112	19,378	4,447	10,355	62,015
1987	3,357	27,758	29,057	54	20,381	80,607
1988	4,964	36,368	30,832	5,509	33,059	110,732
1989	2,966	19,299	31,849	82	13,622	67,818
1990	3,303	35,823	7,804	629	13,194	60,753
1991	912	39,838	13,312	29	15,892	69,983
1992	3,528	39,194	19,875	14,310	18,520	95,427
1993	2,117	59,293	20,014	0	10,657	92,081
1994	2,570	69,490	47,499	18,017[a]	28,477	166,053
Ten year Average (1984-1993)	3,828	30,486	25,980	5,921[a]	15,480	78,751

a Even years only.

ɔendix D.2. Summary of historical commercial harvest by period Goodnews Bay District, chinook salmon, 1981-1994.

DATE	No. Years w/ fishing period this date	Minimum Harvest	Maximum harvest	Median harvest	Cumulative Proportion harvest
6/12	0	0	0	0	0.00000
6/13	1	1252	1252	1252	0.00633
6/14	0	0	0	0	0.00633
6/15	1	197	197	197	0.00829
6/16	2	251	1096	674	0.01745
6/17	1	362	362	362	0.02018
6/18	3	387	1706	1084	0.05407
6/19	2	296	390	343	0.07122
6/20	5	139	2642	838	0.11702
6/21	2	1298	1535	1417	0.13936
6/22	2	792	1591	1192	0.17120
6/23	3	583	1639	1003	0.22949
6/24	3	476	988	695	0.25648
6/25	4	340	1896	1136	0.30957
6/26	2	352	416	384	0.32882
6/27	4	173	3944	1107	0.39317
6/28	4	567	1307	910	0.44503
29	3	330	921	569	0.47535
0	5	242	1551	460	0.53571
/1	2	77	1156	617	0.55600
7/2	6	166	710	389	0.59482
7/3	2	156	391	274	0.60690
7/4	2	637	2301	1469	0.63624
7/5	7	95	1809	501	0.68599
7/6	3	235	272	243	0.70021
7/7	7	132	1119	568	0.76247
7/8	5	93	495	147	0.78372
7/9	5	99	351	215	0.79840
7/10	3	156	203	186	0.80936
7/11	7	53	408	208	0.83637
7/12	3	145	737	403	0.84953
7/13	4	66	139	103	0.86083
7/14	7	54	514	138	0.88214
7/15	4	0	354	153	0.88996
7/16	6	54	294	123	0.90298
7/17	2	65	210	138	0.91016
7/18	5	0	217	59	0.91497
7/19	4	33	71	63	0.92209
7/20	5	38	192	107	0.92930
7/21	5	35	68	53	0.93536
7/22	3	19	228	109	0.93879
7/23	7	17	97	80	0.94435
7/24	3	20	77	23	0.94724

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Appendix D.2. (page 2 of 2)

DATE	No. Years w/ fishing period this date	Minimum Harvest	Maximum harvest	Median harvest	Cumulative Proportion harvest
7/25	6	0	82	38	0.95030
7/26	3	0	32	10	0.95216
7/27	7	19	122	32	0.95641
7/28	3	5	22	21	0.95774
7/29	5	15	157	31	0.96120
7/30	6	16	73	26	0.96438
7/31	3	7	34	20	0.96575
8/1	7	0	78	26	0.96799
8/2	5	6	27	19	0.97050
8/3	8	9	102	24	0.97386
8/4	4	6	23	18	0.97529
8/5	6	6	54	11	0.97720
8/6	6	6	79	6	0.97889
8/7	2	15	43	29	0.97968
8/8	7	0	60	9	0.98133
8/9	4	7	21	12	0.98310
8/10	8	5	78	14	0.98509
8/11	3	5	15	9	0.98573
8/12	5	7	47	23	0.98729
8/13	6	0	36	5	0.98830
8/14	5	4	41	10	0.98958
8/15	5	5	26	14	0.99055
8/16	6	0	16	4	0.99164
8/17	7	2	22	10	0.99256
8/18	4	0	8	4	0.99310
8/19	6	4	14	8	0.99412
8/20	5	1	12	6	0.99462
8/21	6	0	7	3	0.99509
8/22	5	3	17	9	0.99564
8/23	4	0	9	6	0.99619
8/24	6	2	17	8	0.99675
8/25	4	0	13	2	0.99694
8/26	7	0	8	4	0.99737
8/27	5	0	13	4	0.99764
8/28	7	0	8	3	0.99811
8/29	6	2	9	3	0.99862
8/30	3	1	4	2	0.99874
8/31	7	0	6	2	0.99892
9/1	5	0	7	1	0.99919

Appendix D.3. Summary of historical commercial harvest
Goodnews Bay District, sockeye salmon, 1981-1994

DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
6/12	0	0	0	0	0.00000
6/13	1	27	27	27	0.00016
6/14	0	0	0	0	0.00016
6/15	1	70	70	70	0.00029
6/16	2	125	696	411	0.00242
6/17	1	744	744	744	0.00380
6/18	3	281	596	408	0.00744
6/19	2	478	551	515	0.01084
6/20	5	102	1989	706	0.02080
6/21	2	967	1280	1124	0.02765
6/22	2	569	1074	822	0.03061
6/23	3	1029	2701	1732	0.04427
6/24	3	596	2120	1536	0.05945
6/25	4	852	2087	1409	0.07578
6/26	2	1719	1909	1814	0.08773
6/27	4	685	3040	1873	0.10917
6/28	4	2097	4163	3141	0.13590
6/29	3	1422	3323	2283	0.14888
6/30	5	2037	8143	4872	0.19682
7/1	2	1143	3376	2260	0.21506
7/2	6	1818	8198	3748	0.26073
7/3	2	2589	5510	4050	0.28449
7/4	2	1598	7674	4636	0.30212
7/5	6	1254	5195	3018	0.34100
7/6	4	2346	7886	4722	0.37030
7/7	7	2057	6283	3853	0.43668
7/8	5	1231	6261	3600	0.47769
7/9	5	2167	4518	3578	0.51425
7/10	3	1759	4494	3157	0.53925
7/11	7	1397	16753	2851	0.61019
7/12	3	1444	5009	2924	0.62721
7/13	4	2046	5275	3780	0.65484
7/14	7	1039	8860	3036	0.70177
7/15	4	0	4818	2207	0.73058
7/16	6	902	4969	2620	0.76280
7/17	2	2978	3936	3457	0.77512
7/18	5	0	3049	1292	0.79220
7/19	4	1683	2830	2422	0.80537
7/20	5	395	3852	1939	0.82546
7/21	5	507	2559	1318	0.83898
7/22	3	614	2207	1626	0.85032
7/23	7	162	3966	874	0.86711
7/24	3	588	2458	1516	0.87634
7/25	6	0	1534	460	0.88350
7/26	3	0	1804	922	0.88740

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DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
7/27	6	166	2903	479	0.90148
7/28	3	278	893	810	0.90465
7/29	4	605	1312	911	0.91510
7/30	6	84	1982	383	0.92307
7/31	3	300	803	344	0.92622
8/1	6	45	811	271	0.93389
8/2	4	204	872	335	0.93787
8/3	7	36	975	604	0.94815
8/4	4	188	739	199	0.95070
8/5	5	94	932	417	0.95708
8/6	6	34	498	281	0.96026
8/7	2	178	686	432	0.96214
8/8	6	0	926	260	0.96633
8/9	4	46	485	172	0.96787
8/10	7	18	659	338	0.97344
8/11	3	0	174	80	0.97423
8/12	4	17	564	238	0.97704
8/13	6	0	347	158	0.97876
8/14	5	4	382	164	0.98081
8/15	4	5	398	109	0.98257
8/16	6	0	322	66	0.98366
8/17	6	4	498	151	0.98606
8/18	4	0	120	64	0.98680
8/19	5	5	360	108	0.98843
8/20	5	0	139	98	0.98928
8/21	6	1	239	89	0.99088
8/22	4	7	353	104	0.99214
8/23	4	0	193	46	0.99274
8/24	5	1	244	66	0.99388
8/25	4	0	90	57	0.99445
8/26	6	0	204	78	0.99527
8/27	5	0	148	73	0.99586
8/28	7	1	79	51	0.99669
8/29	5	1	155	53	0.99737
8/30	3	0	68	4	0.99766
8/31	6	0	88	51	0.99831
9/1	5	0	57	39	0.99874
9/2	5	2	69	40	0.99918
9/3	5	0	72	37	0.99943
9/4	4	0	61	27	0.99969
9/5	5	0	61	30	0.99985
9/6	3	0	0	0	0.99985
9/7	6	0	63	4	1.00000
9/8	4	0	0	0	1.00000
9/9	1	0	0	0	1.00000

Appendix D.4. Summary of historical commercial harvest Goodnews Bay, coho salmon, 1979-1994.

DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
7/14	4	0	1	0	0.00000
7/15	2	0	3	2	0.00001
7/16	5	0	18	4	0.00004
7/17	1	0	0	0	0.00004
7/18	3	0	5	2	0.00006
7/19	4	0	11	4	0.00008
7/20	4	1	111	30	0.00021
7/21	6	1	18	6	0.00028
7/22	1	1	1	1	0.00028
7/23	7	1	195	39	0.00066
7/24	3	5	33	17	0.00077
7/25	5	2	383	135	0.00167
7/26	3	4	40	18	0.00179
7/27	6	6	1059	218	0.00328
7/28	4	4	153	65	0.00377
7/29	6	5	343	85	0.00465
7/30	6	28	1306	329	0.00771
7/31	5	24	364	102	0.00878
8/1	8	0	2811	461	0.01416
8/2	6	96	1491	656	0.02049
[illegible]	8	66	3943	723	0.02770
[illegible]	6	92	949	521	0.03405
8/5	6	126	1146	490	0.04100
8/6	8	314	4275	1195	0.05747
8/7	2	231	812	522	0.05980
8/8	8	357	3090	1500	0.08171
8/9	4	516	2240	1453	0.09415
8/10	9	463	4198	1543	0.12113
8/11	4	663	6065	2618	0.13906
8/12	5	1255	2699	1884	0.16268
8/13	8	673	4852	2194	0.19791
8/14	5	1325	2374	1947	0.22917
8/15	7	1225	5999	3296	0.26547
8/16	6	462	5456	2551	0.30743
8/17	8	1390	6880	3505	0.35824
8/18	5	1033	3864	2324	0.38322
8/19	6	1394	4522	3001	0.42751
8/20	7	68	9590	3165	0.47243

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DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
8/21	6	968	3459	2305	0.51064
8/22	7	1723	6731	2734	0.55512
8/23	5	1308	5306	2223	0.58933
8/24	7	1597	5520	1832	0.63459
8/25	5	1739	3709	1481	0.66507
8/26	7	15	3249	1725	0.70055
8/27	7	1101	6625	1314	0.75304
8/28	7	1016	3529	1212	0.79434
8/29	8	725	4972	717	0.83082
8/30	4	1483	3926	726	0.85121
8/31	8	1084	3479	281	0.88785
9/1	6	604	2778	1832	0.91159
9/2	6	576	3233	1481	0.93285
9/3	7	377	3822	1725	0.95351
9/4	4	374	2685	1314	0.96870
9/5	8	0	2695	1212	0.98473
9/6	4	0	1715	717	0.98869
9/7	7	0	2310	726	0.99732
9/8	3	0	843	281	1.00000

Appendix D.5. Summary of historical commercial harvest by period, Goodnews Bay District, chum salmon, 1981-1994.

DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
6/12	0	0	0	0	0.00000
6/13	1	10	10	10	0.00011
6/14	1	0	0	0	0.00011
6/15	1	102	102	102	0.00064
6/16	2	89	1091	590	0.00394
6/17	1	167	167	167	0.00480
6/18	3	194	501	316	0.00920
6/19	2	249	557	403	0.01384
6/20	5	137	3501	915	0.03042
6/21	2	591	698	645	0.03697
6/22	2	708	2124	1416	0.04887
6/23	3	886	7833	3202	0.07655
6/24	3	594	1188	868	0.09604
6/25	4	724	2351	1559	0.12581
6/26	2	866	1241	1054	0.13830
6/27	4	691	2364	743	0.16563
6/28	4	649	8369	3713	0.20092
6/29	3	425	2983	1548	0.22133
6/30	5	1349	7613	2048	0.25916
7/1	2	710	850	780	0.27358
[illegible]	6	713	3952	2416	0.31909
[illegible]	2	1309	3074	2192	0.33673
7/4	2	1626	4075	2851	0.36410
7/5	6	976	6332	1848	0.40695
7/6	4	963	4076	1776	0.43666
7/7	7	1357	6743	2858	0.51626
7/8	5	949	2669	1837	0.55644
7/9	5	1191	6706	2625	0.59336
7/10	3	1346	2085	1677	0.62196
7/11	7	562	5830	1525	0.68867
7/12	3	1057	9887	4109	0.71132
7/13	4	896	2288	1541	0.73952
7/14	7	601	8502	1963	0.79325
7/15	4	0	2495	1302	0.82458
7/16	6	476	6565	1889	0.85686
7/17	2	1532	2019	1776	0.87395
7/18	5	0	1191	558	0.89174
7/19	4	506	2782	1466	0.90750
7/20	5	479	1265	657	0.92494
7/21	5	233	2020	745	0.93518
7/22	3	307	1177	615	0.94589
7/23	7	35	1330	301	0.95497
7/24	3	244	874	478	0.96182

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DATE	No. Years w/ fishing period this date	Minimum harvest	Maximum harvest	Median harvest	Cumulative proportion harvest
7/25	6	0	281	220	0.96613
7/26	3	0	680	429	0.96957
7/27	7	58	177	138	0.97613
7/28	3	89	499	93	0.97962
7/29	5	32	223	166	0.98246
7/30	6	42	325	111	0.98352
7/31	3	8	121	92	0.98570
8/1	7	0	61	57	0.98570
8/2	5	47	527	110	0.98785
8/3	8	22	105	52	0.98985
8/4	4	23	370	32	0.99073
8/5	6	21	165	23	0.99248
8/6	6	18	125	43	0.99335
8/7	2	16	21	19	0.99354
8/8	7	0	26	18	0.99412
8/9	4	19	67	54	0.99481
8/10	8	2	36	17	0.99552
8/11	3	10	25	13	0.99579
8/12	5	0	16	8	0.99607
8/13	6	2	48	18	0.99636
8/14	5	3	62	10	0.99708
8/15	5	0	10	5	0.99725
8/16	6	0	36	14	0.99750
8/17	7	0	22	7	0.99777
8/18	4	0	7	5	0.99783
8/19	6	2	16	5	0.99801
8/20	5	0	11	5	0.99815
8/21	6	0	127	5	0.99887
8/22	5	2	6	5	0.99897
8/23	4	0	19	6	0.99902
8/24	6	0	8	3	0.99907
8/25	4	0	4	2	0.99914
8/26	7	0	42	7	0.99938
8/27	5	0	5	3	0.99944
8/28	7	0	11	2	0.99953
8/29	6	0	6	3	0.99963
8/30	3	0	2	1	0.99965
8/31	7	0	9	3	0.99971
9/1	5	0	17	2	0.99976
9/2	6	0	10	3	0.99986
9/3	5	0	4	2	0.99990
9/4	4	0	9	3	0.99996
9/5	6	0	3	2	0.99998
9/6	3	0	0	0	0.99998
9/7	7	0	2	1	1.00000

Appendix D.6. Goodnews Bay, District 5 commercial effort 1970-1994.

YEAR	EFFORT[a]
1970	35
1971	16
1972	14
1973	21
1974	49
1975	50
1976	40
1977	34
1978	35
1979	30
1980	48
1981	48
1982	48
1983	79
1984	77
1985	69
1986	86
1987	69
1988	125
1989	88
1990	82
1991	72
1992	111
1993	114
1994	116
TEN YEAR AVERAGE (1984-1993)	90

a Permits that made at least one delivery during that year.

Appendix D.7. Historical age composition percentage, chinook salmon, Goodnews Bay commercial catch and escapement 1982 - 1994.

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	7+	Total
1982							
Commercial							
Male		0.0	5.6	37.4	11.2	0.0	54.2
Female		0.0	2.8	29.9	13.1	0.0	45.8
Combined	107	0.0	8.4	67.3	24.3	0.0	100.0
Commercial Catch[b]		0	796	6,377	2,303	0	9,476
Escapement samples were not collected.							
1983							
Commercial							
Male		0.0	14.4	7.6	25.3	1.1	48.4
Female		0.0	0.2	0.6	48.8	2.0	51.6
Combined	655	0.0	14.6	8.2	74.1	3.1	100.0
Commercial Catch[b]		0	2,061	1,158	10,461	438	14,117
Escapement							
Male		0.0	0.0	9.4	39.5	2.9	51.8
Female		0.0	0.0	2.2	44.6	1.4	48.2
Combined	139	0.0	0.0	11.6	84.1	4.3	100.0
Escapement[c]		0	0	1,670	12,109	619	14,398
1984							
Commercial							
Male		0.2	7.6	32.4	22.4	5.4	68.0
Female		0.0	0.0	2.8	22.0	7.2	32.0
Combined	500	0.2	7.6	35.2	44.4	12.6	100.0
Commercial Catch[b]		17	655	3,031	3,824	1,085	8,612
Escapement							
Male		0.0	4.5	22.6	20.7	3.6	51.4
Female		0.0	0.0	4.5	39.6	4.5	48.6
Combined	111	0.0	4.5	27.1	60.3	8.1	100.0
Escapement[c]		0	393	2,369	5,272	709	8,743
1985							
Commercial							
Male		0.2	18.2	7.5	30.8	2.4	59.1
Female		0.0	10.0	4.5	25.2	1.1	40.9
Combined	532	0.2	28.2	12.0	56.0	3.6	100.0
Commercial Catch[b]		12	1,634	695	3,244	208	5,793
Escapement							
Male		0.0	0.0	0.0	21.0	5.3	59.1
Female		0.0	0.0	0.0	73.7	0.0	40.9
Combined	19	0.0	0.0	0.0	94.7	5.3	100.0
Escapement[c]		0	0	0	7,556	423	7,979

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Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	7+	Total
1986							
Commercial							
Male		0.0	17.0	49.0	16.0	4.0	86.0
Female		0.0	0.0	2.0	19.0	8.0	29.0
Combined	363	0.0	17.0	51.0	35.0	12.0	115.0
Commercial Catch[b]		0	463	1,389	953	327	2,723
1987							
Commercial							
Male		0	12.9	19.2	15.5	0	47.6
Female		0	3.0	12.5	34.3	2.6	52.4
Combined	271	0	15.9	31.7	49.8	2.6	100.0
Commercial Catch[b]		0	533	1,065	1,672	87	3,357
Escapement							
Male		0	12.8	7.7	25.6	0	46.2
Female		0	5.1	17.9	23.1	7.7	53.8
Combined	39	0	17.9	25.6	48.7	7.7	100.0
Escapement[c]		0	406	581	1,106	175	2,272
1988							
Commercial							
Male		0	18.7	16.2	15.2	2.5	52.6
Female		0	8.0	8.4	27.6	3.4	47.4
Combined	475	0	26.7	24.6	42.7	5.9	100.0
Commercial Catch[b]		1,327	1,223	2,121	293	0	4,964
Escapement							
Male		0	2.1	12.8	35.1	8.5	58.5
Female		0	0	10.6	22.3	8.5	41.5
Combined	94	0	2.1	23.4	57.4	17.0	100.0
Escapement[c]		0	114	1,268	3,110	921	5,419
1989							
Commercial							
Male		0	7.2	24.4	24.4	2.0	58.0
Female		0	2.4	15.2	22.0	2.4	42.0
Combined	250	0	9.6	39.6	46.4	4.4	100.0
Commercial Catch[b]		0	285	1,175	1,376	131	2,966
Escapement							
Male		6.3	0	15.6	28.1	3.1	53.1
Female		0	0	6.3	34.4	6.3	46.9
Combined		6.3	0	21.9	62.5	9.4	100.0
Escapement[c]		182	0	633	1,806	271	2,891
1990	Sample Size						
Commercial							
Male		0.0	36.2	14.1	22.2	1.3	73.8
Female		0.0	3.4	5.4	14.8	2.0	25.5
Combined	149	0.0	39.6	20.1	36.9	3.4	100.0
Escapement							
Male		0	4.3	13.0	17.4	4.3	39.1
Female		0	34.8	4.3	21.7	0	60.9
Combined	23	0	39.1	17.4	39.1	4.3	100.0
Escapement[c]		0	2,994	1,333	2,994	330	7,656

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Age Composition		Total years of life at maturity[a] 3	4	5	6	7+	Total
1991							
Commercial							
Male		0	29.0	26.7	9.7	.8	66.0
Female		0	2.7	13.1	15.4	2.4	33.6
Combined	259	0	31.7	39.8	25.1	3.2	100.0
Commercial Catch[b]		0	291	363	229	29	912
Escapement							
Male		0	15.3	34.2	15.3	1.1	65.8
Female		0	0.7	9.3	17.1	6.5	33.5
Combined	281	0	16.0	43.4	33.1	7.6	100.0
Escapement[c]		0	723	1,962	1,496	343	4,521
1992							
Commercial							
Male		0.7	22.1	23.6	15.0	0.7	62.1
Female		0	9.3	10.7	15.7	2.1	37.9
Combined	140	0.7	31.4	34.3	30.7	2.8	100.0
Commercial Catch[b]		24.6	1,107	1,210	1,083	99	3,528
Escapement							
Male		1.4	7.1	22.8	12.9	1.4	45.7
Female		0	0	5.7	45.7	2.9	54.3
Combined	70	1.4	7.1	28.5	58.6	4.3	100.0
Escapement[c]		50	253	1,015	2,086	153	3,560
1993							
Commercial							
Male		0	8.5	13.9	12.7	1.2	36.4
Female		0	21.2	11.5	20.6	2.4	55.8
Combined	165	0	32.7	27.9	35.2	4.2	100.0
Commercial Catch[b]		0	692	591	745	88.9	2,117
Escapement							
Male		0	3.2	6.5	19.4	3.2	32.3
Female		0	9.7	16.1	35.5	6.5	67.7
Combined		0	12.9	22.6	54.8	9.7	100.0
Escapement[c]		0	606	1,062	2,576	456	4,700
1994							
Commercial							
Male		0	9.3	18.7	19.3	0.7	48.0
Female		0	9.3	18.7	22.0	2.0	52.0
Combined	150	0	18.7	37.3	41.3	2.7	100.0
Commercial Catch[b]		0	721	1,438	1,593	104	3,856
Escapement							
Male		0	3.8	26.0	20.2	3.4	53.4
Female		.5	0.0	7.2	29.8	9.1	46.6
Combined		.5	3.8	33.2	50.0	12.5	100.0
Escapement[c]		36	276	2,415	3,638	909	7,275

[a] Total years of life is total number of years spent in fresh water and marine.
[b] Allocations by age class based on commercial catch samples.
[c] Age class is based on escapement samples. Escapement estimate based on the Goodnews River Project.
[d] Preliminary data.

Appendix D.8. Historical age composition percentage, sockeye salmon, Goodnews Bay commercial catch and escapement, 1982 - 1989.

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1982						
Commercial						
Male		0.0	3.9	43.1	10.8	57.8
Female		0.0	1.0	36.3	4.9	42.2
Combined	102	0.0	4.9	79.4	15.7	100.0
Commercial Catch[b]		0	1,905	30,868	6,104	38,877
Escapement samples were not collected.						
1983						
Commercial						
Male		0.0	19.0	31.3	4.2	54.5
Female		0.0	20.0	22.3	3.2	45.5
Combined	404	0.0	39.0	53.6	7.4	100.0
Commercial Catch[b]		0	4,569	6,280	867	11,716
Escapement						
Male		0.0	72.2	11.1	0.0	83.3
Female		0.0	5.6	11.1	0.0	16.7
Combined		0.0	77.8	22.2	0.0	100.0
Escapement[c]	18	0	54,425	15,530	0	69,955
1984						
Commercial						
Male		0.0	14.8	45.1	2.2	62.1
Female		0.0	6.2	31.0	0.7	37.9
Combined	549	0	21.0	76.1	2.9	100.0
Commercial Catch[b]		3,250	15,025	12,224	449	15,474
Escapement						
Male		0.0	23.4	27.7	0.0	51.1
Female		0.0	21.3	27.6	0.0	48.9
Combined	47	0.0	44.7	55.3	0.0	100.0
Escapement[c]		0	30,044	37,169	0	67,213
1985						
Commercial						
Male		0.0	10.7	43.6	0.0	59.1
Female		0.0	13.5	32.2	0.0	40.9
Combined	488	0.0	24.2	75.8	0.0	100.0
Commercial Catch[b]		0	1,621	5,077	0	6,698
Escapement						
Male		0.0	17.7	47.0	0.0	64.7
Female		0.0	29.4	5.9	0.0	35.3
Combined	17	0.0	47.1	52.9	0.0	100.0
Escapement[c]		0	23,777	26,704	0	50,481

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Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1986						
Commercial						
Male		0.0	5.1	49.8	0.0	54.9
Female		0.0	3.5	41.6	0.0	45.1
Combined	488	0.0	8.5	91.5	0.0	100.0
Commercial Catch[b]		0	2,146	22,966	0	25,112
Escapement						
Male		0.0	5.5	54.9	0.0	60.4
Female		1.1	2.2	36.3	0.0	39.6
Combined	91	1.1	7.7	91.2	0.0	100.0
Escapement[c]		1,026	7,179	85,024	0	93,228
1987						
Commercial						
Male		0.0	4.0	45.5	0.0	49.5
Female		0.0	2.9	47.6	0.0	50.5
Combined	546	0.0	6.9	93.0	0.0	100.0
Commercial Catch[b]		0	1,932	25,826	0	27,758
Escapement						
Male		0.0	4.0	46.6	2.4	53.0
Female		0.0	6.1	39.3	1.6	47.0
Combined	578	0.0	10.1	85.9	4.0	100.0
Escapement[c]		0	2,915	24,800	1,154	28,871
1988						
Commercial						
Male		3.5	51.8	3.0	0.1	58.5
Female		0.7	37.9	2.9	0.0	41.5
Combined	738	4.2	89.7	5.9	0.1	100.0
Commercial Catch[b]		1,527	32,623	2,146	36	36,368
Escapement						
Male		5.1	36.0	1.0	0.0	42.1
Female		8.0	48.0	1.9	0.0	57.9
Combined	315	13.1	84.0	2.9	0.0	100.0
Escapement[c]		5,019	32,188	1,112	0	38,319
1989[d]						
Commercial						
Male		6.6	46.8	1.8	0	55.3
Female		3.8	38.5	2.1	0	44.6
Combined	579	10.4	85.7	3.9	0	100.0
Commercial Catch		2,000	16,532	734	0	19,299
Escapement						
Male		0	53.9	10.3	0	64.1
Female		0	30.8	5.1	0	35.9
Combined		0	84.7	15.4	0	100.0
Escapement	39	0	30,048	5,463	0	35,476

[a] Age classes are a total of fresh water and marine growth.
[b] Age classes based on commercial catch samples.
[c] Age classes based on escapement samples. Escapement estimate based on the Goodnews River counting tower.
[d] Preliminary data.

Appendix D.9. Historical age composition percentage, chum salmon, Goodnews Bay commercial catch and escapement, 1982 - 1994.

Age Composition	Sample Size	Total years of life at maturity[a] 3	4	5	6	Total
1982						
Commercial						
Male		0.0	16.3	20.0	0.0	36.3
Female		0.7	29.6	32.7	0.7	63.7
Combined	135	0.7	45.9	52.7	0.7	100.0
Commercial Catch[b]		97	6,348	7,288	97	13,829
Escapement samples were not collected.						
1983						
Commercial						
Male		0.9	15.3	22.7	0.5	39.4
Female		2.8	27.3	30.5	0.0	60.6
Combined	216	3.7	42.6	53.2	0.5	100.0
Commercial Catch[b]		250	2,882	3,600	34	6,766
Escapement						
Male		0.6	19.0	37.3	0.0	56.9
Female		0.6	15.5	27.0	0.0	43.1
Combined	174	1.2	34.5	64.3	0.0	100.0
Escapement[c]		186	5,364	9,997	0	15,548
1984						
Commercial						
Male		0.0	30.6	15.3	2.0	47.9
Female		0.4	38.5	12.5	0.7	52.1
Combined	457	69.5	96.9	30.5	2.7	100.0
Commercial Catch[b]		9,966	13,895	4,374	387	14,340
Escapement						
Male		0.0	32.3	4.4	0.0	36.7
Female		0.0	56.6	6.7	0.0	63.3
Combined	90	0.0	88.9	11.1	0.0	100.0
Escapement[c]		0	104,670	13,069	0	117,739
1985						
Commercial						
Male		0.0	27.8	14.4	0.0	59.1
Female		0.0	30.0	27.5	0.0	40.9
Combined	270	0.0	57.8	41.9	0.0	100.0
Commercial Catch[b]		0	2,765	2.004	0	4,784
Escapement						
Male		0.0	30.4	19.6	0.0	50.0
Female		0.0	28.3	21.7	0.0	50.0
Combined	46	0.0	58.7	41.3	0.0	100.0
Escapement[c]		0	14,690	10,335	0	25,025
1986	Sample Size					
Commercial						
Male		0.2	37.7	12.2	0.2	50.3
Female		0.5	36.0	12.5	0.7	49.7
Combined	353	0.7	73.7	24.7	0.9	100.0
Commercial Catch[b]		72	7,632	2,558	93	10,355
Escapement						
Male		0.0	38.0	19.0	0.0	57.0
Female		0.0	33.0	10.0	0.0	43.0
Combined	21	0.0	71.0	29.0	0.0	100.0
Escapement[c]		0	36,856	15,054	0	51,910

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Age Composition		Total years of life at maturity[a] 3	4	5	6	Total
1987						
Commercial						
Male		0	37.2	17.9	0	55.1
Female		0	28.6	16.3	0	44.9
Combined	430	0	65.8	34.2	0	10.0
Commercial Catch[b]		0	13,414	6,967	0	20,381
Escapement						
Male		0.0	37.3	30.2	0.0	67.5
Female		0.2	22.3	10.1	0.0	32.5
Combined	467	0.2	59.5	40.3	0.0	100.0
Escapement[c]		81	22,503	15,218	0	37,802
1988						
Commercial						
Male		.6	9.4	33.9	1.1	45.0
Female		.2	13.6	40.7	0.4	55.0
Combined	469	.9	23.0	74.6	1.5	100.0
Commercial Catch[b]		282	7,613	24,671	493	33,059
Escapement						
Male		0.7	12.5	35.1	1.2	49.5
Female		0.0	16.4	32.1	0.9	49.5
Combined	422	0.7	28.9	67.2	2.1	100.0
Escapement[c]		276	11,416	26,544	830	39,501
1989	Sample Size					
Commercial						
Male		0.2	27.0	27.2	1.3	55.7
Female		0.2	20.9	22.6	0.6	44.3
Combined	540	0.4	48.0	49.8	1.9	100.0
Commercial Catch[b]		50	6,534	6,786	252	13,622
Escapement						
Male		1.0	50.0	22.5	0	73.5
Female		0.0	19.6	6.9	0	26.5
Combined		1.0	69.6	29.4	0	100.0
Escapement[c]		150	10,681	4,664	0	15,495
1990[d]	Sample Size					
Commercial						
Male		0.3	37.3	15.5	0.3	53.4
Female		0.0	36.8	7.6	0.0	44.4
Combined	367	0.3	76.3	23.2	0.3	100.0
Commercial Catch[b]		40	10,067	3,061	40	13,194
Escapement						
Male		0.0	35.3	28.1	2.2	65.5
Female		0.0	24.5	9.4	0	33.8
Combined		0.0	60.4	37.4	2.2	100.0
Escapement[c]	139	0	9,542	5,908	34	15,799

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e Composition		Total years of life at maturity[a] 3	4	5	6	Total
1991[d]	Sample					
Commercial	Size					
Male		0.9	37.5	13.1	0.0	51.5
Female		0.9	36.1	11.5	0.0	48.5
Combined	565	1.8	73.6	24.6	0.0	100.0
Commercial Catch[b]		286	11,696	3,909	0	15,892
Escapement						
Male		0.0	38.5	21.0	0	59.5
Female		0.0	27.1	13.4	0	40.5
Combined		0.0	65.6	34.4	0	100.0
Escapement[c]	291		44,505	23,338	0	67,844
1992	Sample					
Commercial	Size					
Male		0.0	9.8	32.1	0.2	42.1
Female		0.0	12.9	44.0	1.0	57.9
Combined	418	0.0	22.7	76.1	1.2	100.0
Commercial Catch[b]			4,204	14,093	222	18,520
Escapement						
Male		0.0	8.9	28.3	.4	37.6
Female		0.0	19.2	42.8	.4	62.4
Combined	495	0.0	28.1	71.1	.8	100.0
Escapement[c]		0	17,681	44,737	503	62,922
1993	Sample					
Commercial	Size					
Male		0.5	17.3	22.0	6.3	46.1
Female		0.0	23.6	26.7	3.7	53.9
Combined	191	0.5	40.8	48.7	9.9	100.0
mmercial Catch[b]		53	4,348	5,189	1,055	10,657
capement						
Male		1.7	21.2	22.5	3.8	49.2
Female		0.0	21.2	27.5	2.1	50.8
Combined	236	1.7	42.4	50.0	5.9	100.0
Escapement[c]		694	17,308	20,410	2,408	40,820
1994	Sample					
Commercial	Size					
Male		0.4	18.9	7.4	0.6	27.3
Female		0.4	50.3	19.7	2.1	72.5
Combined	513	0.8	69.4	27.1	2.7	100.0
Commercial Catch[b]		228	19,763	7,717	769	28,477
Escapement						
Male		0.0	30.8	24.5	3.9	59.1
Female		0.0	19.2	20.2	1.4	40.9
Combined		0.0	50.0	44.7	5.3	100.0
Escapement[c]	208		65,168	58,259	6,908	130,335

[a] Age classes are a total of fresh water and marine growth.
[b] Age classes based on commercial catch samples.
[c] Age classes based on escapement samples. Escapement estimate based on the Goodnews River counting project.
[d] Preliminary data.

Appendix D.10 Summary of historical commercial harvest by period, Goodnews Bay District, chum salmon, 1981-1992.

DATE	No. Years w/ fishing period on this date	Minimum harvest	Maximum harvest	Average harvest	Cumulative proportion harvest
6/12	0	0	0	0	0.00000
6/13	1	10	10	10	0.00012
6/14	1	0	0	0	0.00012
6/15	1	102	102	102	0.00075
6/16	2	89	1091	590	0.00459
6/17	1	167	167	167	0.00560
6/18	3	194	501	254	0.01073
6/19	2	249	557	403	0.01614
6/20	5	137	3501	341	0.03549
6/21	2	591	698	645	0.04313
6/22	2	708	2124	1416	0.05702
6/23	3	886	7833	4360	0.08931
6/24	3	594	1188	821	0.11205
6/25	4	724	2351	1580	0.14678
6/26	2	866	1241	1054	0.16135
6/27	3	691	758	728	0.18631
6/28	3	649	8369	1981	0.22283
6/29	3	425	2983	1235	0.24665
6/30	3	1349	2048	1627	0.27308
7/1	2	710	850	780	0.28991
7/2	5	713	3434	2232	0.33824
7/3	2	1309	3074	2192	0.35881
7/4	1	1626	1626	1626	0.37882
7/5	5	976	3193	1720	0.42117
7/6	3	963	2390	1162	0.44390
7/7	6	1357	4478	1850	0.52863
7/8	4	949	1894	1585	0.56770
7/9	4	1191	2503	1364	0.60267
7/10	3	1346	2085	1601	0.63604
7/11	6	562	5830	1143	0.69778
7/12	2	1057	1384	1221	0.71227
7/13	4	896	2288	1490	0.74517
7/14	5	601	2123	1019	0.78795
7/15	4	0	2495	1356	0.82450
7/16	5	476	1360	1095	0.85423
7/17	2	1532	2019	1776	0.87418
7/18	4	488	1191	604	0.89493
7/19	2	506	1465	986	0.90566
7/20	5	479	1265	657	0.92601
7/21	3	233	467	440	0.93386
7/22	3	307	1177	362	0.94636
7/23	5	35	545	253	0.95404
7/24	3	244	874	315	0.96204
7/25	5	0	236	205	0.96624
7/26	2	0	608	304	0.96943

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Date	No. Years w/fishing period on this date	Minimum harvest	Maximum harvest	Average harvest	Cumulative proportion harvest
7/27	6	58	177	144	0.97480
7/28	2	89	93	91	0.97607
7/29	4	32	223	119	0.97966
7/30	5	42	124	102	0.98258
7/31	3	8	121	92	0.98383
8/1	6	22	61	56	0.98636
8/2	3	47	110	92	0.98779
8/3	7	22	105	51	0.98983
8/4	3	23	36	29	0.99041
8/5	5	21	165	23	0.99222
8/6	5	18	41	29	0.99309
8/7	2	16	21	19	0.99332
8/8	6	0	26	18	0.99382
8/9	3	19	63	45	0.99454
8/10	7	8	36	17	0.99524
8/11	3	10	25	13	0.99555
8/12	4	0	16	8	0.99579
8/13	5	2	22	12	0.99607
8/14	5	3	62	10	0.99691
8/15	4	0	10	6	0.99703
8/16	5	0	16	10	0.99729
8/17	6	0	22	7	0.99758
8/18	3	0	6	3	0.99764
8/19	5	2	16	5	0.99781
8/20	5	0	11	5	0.99797
8/21	6	0	127	6	0.99881
8/22	4	3	6	5	0.99893
8/23	3	0	6	3	0.99897
8/24	5	0	8	3	0.99902
8/25	4	0	4	3	0.99910
8/26	5	0	42	6	0.99936
8/27	5	0	5	3	0.99942
8/28	6	0	11	2	0.99952
8/29	5	0	6	4	0.99962
8/30	3	0	2	1	0.99965
8/31	6	0	9	3	0.99970
9/1	4	0	4	2	0.99975
9/2	5	0	10	4	0.99985
9/3	4	0	4	2	0.99989
9/4	4	0	9	3	0.99996
9/5	5	0	3	2	0.99999
9/6	2	0	0	0	0.99999
9/7	5	0	2	1	1.00000
9/8	4	0	0	0	1.00000
9/9	1	0	0	0	1.00000

Appendix D.11. Average cumulative estimated escapement and proportion by day for chinook, sockeye and chum salmon, Goodnews River weir, 1981-1994a

	Chinook		Sockeye		Chum	
Date	Avg. Number	Cum. Percent	Avg. Number	Cum. Percent	Avg. Number	Cum. Percent
6/11	0	0.0001	0	0.0000	0	0.0000
6/12	0	0.0001	0	0.0000	0	0.0000
6/13	0	0.0001	0	0.0000	0	0.0000
6/14	0	0.0000	0	0.0000	0	0.0000
6/15	0	0.0000	7	0.0003	0	0.0000
6/16	0	0.0000	8	0.0003	0	0.0000
6/17	1	0.0002	10	0.0004	0	0.0000
6/18	1	0.0002	16	0.0006	0	0.0000
6/19	2	0.0006	38	0.0015	0	0.0000
6/20	4	0.0013	53	0.0021	0	0.0000
6/21	9	0.0035	122	0.0045	0	0.0000
6/22	15	0.0057	248	0.0077	13	0.0009
6/23	26	0.0096	520	0.0159	24	0.0016
6/24	50	0.0187	1004	0.0305	38	0.0026
6/25	68	0.0251	1645	0.0528	96	0.0066
6/26	95	0.0352	2285	0.0733	146	0.0099
6/27	141	0.0523	3422	0.1112	255	0.0173
6/28	176	0.0654	4613	0.1389	327	0.0223
6/29	226	0.0838	5498	0.1666	401	0.0273
6/30	289	0.1073	6445	0.1958	517	0.0352
7/1	386	0.1433	7639	0.2349	717	0.0488
7/2	409	0.1518	8786	0.2740	872	0.0593
7/3	467	0.1731	9797	0.3105	1059	0.0721
7/4	534	0.1980	11062	0.3558	1297	0.0882
7/5	629	0.2331	12811	0.4134	1576	0.1072
7/6	693	0.2568	14269	0.4619	1830	0.1245
7/7	787	0.2919	15824	0.5090	2133	0.1451
7/8	865	0.3208	17491	0.5625	2461	0.1675
7/9	933	0.3461	19070	0.6184	2924	0.1990
7/10	1047	0.3883	20635	0.6668	3541	0.2410
7/11	1146	0.4251	22082	0.7151	4085	0.2780
7/12	1265	0.4689	23491	0.7563	4779	0.3252
7/13	1339	0.4965	24539	0.7896	5321	0.3621
7/14	1412	0.5237	25569	0.8207	5896	0.4012
7/15	1498	0.5555	26492	0.8503	6586	0.4481
7/16	1584	0.5873	27344	0.8769	7406	0.5039
7/17	1692	0.6275	28029	0.8984	8193	0.5575
7/18	1766	0.6547	28648	0.9174	8768	0.5966
7/19	1817	0.6736	29196	0.9339	9238	0.6286
7/20	1887	0.6996	29649	0.9492	9746	0.6631
7/21	1935	0.7173	30047	0.9613	10218	0.6953
7/22	1998	0.7406	30386	0.9709	10854	0.7385

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	Chinook		Sockeye		Chum	
Date	Avg. Number	Cum. Percent	Avg. Number	Cum. Percent	Avg. Number	Cum. Percent
7/23	2058	0.7629	30606	0.9776	11430	0.7777
7/24	2117	0.7849	30800	0.9833	11933	0.8120
7/25	2153	0.7981	30935	0.9875	12386	0.8428
7/26	2191	0.8125	31056	0.9900	12863	0.8753
7/27	2213	0.8203	31157	0.9924	13188	0.8973
7/28	2243	0.8316	31254	0.9942	13563	0.9229
7/29	2255	0.8360	31325	0.9956	13828	0.9409
7/30	2272	0.8425	31382	0.9969	14043	0.9555
7/31	2285	0.8470	31421	0.9976	14185	0.9652
8/1	2684	0.9950	31447	0.9981	14275	0.9714
8/2	2687	0.9961	31467	0.9986	14356	0.9768
8/3	2691	0.9976	31478	0.9989	14425	0.9816
8/4	2693	0.9983	31493	0.9991	14486	0.9857
8/5	2694	0.9990	31501	0.9993	14518	0.9879
8/6	2696	0.9994	31506	0.9994	14550	0.9900
8/7	2696	0.9996	31514	0.9994	14575	0.9918
8/8	2697	0.9999	31523	0.9995	14599	0.9934
8/9	2697	1.0000	31526	0.9996	14616	0.9945
8/10	2697	1.0000	31531	0.9996	14636	0.9959
8/11	2697	1.0000	31533	0.9997	14644	0.9964
8/12	2697	1.0000	31533	0.9997	14657	0.9973
8/13	2697	1.0000	31533	0.9997	14662	0.9977
8/14	2697	1.0000	31533	0.9997	14664	0.9978
8/15	2697	1.0000	31534	0.9998	14670	0.9982
8/16	2697	1.0000	31535	1.0000	14675	0.9985
8/17	2697	1.0000	31536	1.0000	14681	0.9989
8/18	2697	1.0000	31536	1.0000	14683	0.9991
8/19	2697	1.0000	31537	1.0000	14685	0.9992
8/20	2697	1.0000	31537	1.0000	14688	0.9994
8/21	2697	1.0000	31537	1.0000	14689	0.9995
8/22	2697	1.0000	31538	1.0000	14692	0.9997
8/23	2697	1.0000	31538	1.0000	14692	0.9997
8/24	2697	1.0000	31539	1.0000	14694	0.9999
8/25	2697	1.0000	31540	1.0000	14696	1.0000

a Average for the years 1981-1994 excluding 1986 and 1992. Early termination date of the project in 1986 and high water during the peak in 1992 precluded assessment of the entire chinook, sockeye and chum salmon migration In 1993, this project began to assess coho salmon strength. This project changed from a tower to a weir in 1991.

Appendix D.12. Estimated daily escapement of chinook salmon at the Middle Fork, Goodnews River, 1981-1994

weir

Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
6/11			5											
6/12			0											
6/13	0		0											
6/14	0		-5											
6/15	0		0	0										
6/16	0		0	0		0								
6/17	2		0	0		6								
6/18	0		0	0		0								
6/19	4		0	4		6								
6/20	9		5	4		0				20				
6/21	11		16	12		0				60		7		
6/22	10		64	9		0	0			-10		1	12	50
6/23	16	0	186	6		0	0	50		16		0	27	5
6/24	21	22	118	26		0	0	22		30		1	158	20
6/25	41	28	106	46		26	0	109		43		1	66	30
6/26	30	4	55	15		0	4	155		178		0	95	15
6/27	82	2	21	11	4	79	0	200	142	64		34	26	73
6/28	92	0	171	51	0	45	8	56	70	135		31	10	18
6/29	166	0	341	11	11	50	16	49	24	128	1	36	36	101
6/30	54	0	520	8	10	55	36	176	67	27	12	46	68	211
7/1	86	0	273	57	8	129	56	251	110	30	60	63	32	683
7/2	186	3	263	105	38	41	67	102	57	32	4	47	5	54
7/3	90	2	113	57	32	90	59	93	57	138	78	49	9	3
7/4	134	23	172	58	60	65	51	89	56	201	53	55	4	18
7/5	252	44	231	59	87	40	91	84	55	263	80	73	15	131
7/6	237	11	61	105	132	53	130	68	-7	94	28	53	64	41
7/7	192	24	656	145	99	67	43	95	82	135	15	75	91	81
7/8	206	44	147	158	66	57	37	70	26	137	49	57	69	291
7/9	102	50	102	170	126	38	71	126	33	138	174	6	88	1
7/10	133	26	198	135	132	87	141	120	39	235	256	16	144	72
7/11	110	66	205	188	192	78	61	114	101	243	94	20	153	35
7/12	78	106	282	105	186	64	58	81	114	67	189	87	84	400
7/13	92	104	263	159	45	86	55	59	131	97	23	86	99	140.8
7/14	61	49	67	202	45	109	213	24	81	178	3	59	14	135.4
7/15	142	85	157	124	45	139	132	48	87	163	2	54	19	144.7
7/16	67	117	130	46	108	79	107	65	105	148	4	64	92	133.5
7/17	68	96	116	223	141	26	114	49	123	101	150	151	93	165.8
7/18	69	59	92	70	189	84	120	33	57	114	28	66	169	42
7/19	76	22	106	40	183	76	85	30	34	138	46	41	31	74

-continued-

Appendix F.1. Commercial freshwater fin fishery catch data, Kuskokwim Area, 1977-1994.

Year	Number of Fishers[b]	Number Caught[a]		Total Weight (lbs)		Total Value ($)		
		Whitefish[c]	Burbot	Whitefish	Burbot	Whitefish	Burbot	Total
1977	3	718	0	d	0	952	0	952
1978	b	1,735	0	6,017	0	d	0	d
1979	b	3,219	0	11,211	0	d	0	d
1980	4	603	0	2,173	0	830	0	830
1981	4	1,197	0	4,620	0	2,310	0	2,310
1982	5	1,512	0	6,219	0	2,856	0	2,856
1983	0	0	0	0	0	0	0	0
1984	2	0	651	0	d	0	d	d
1985	5	555	1,829	2,275	2,016	1,137	455	1,593
1986	3	0	0	0	3,428	0	857	857
1987	4	417	0	1,260	0	1,008	0	1,008
1988	3	d	d	2,588	7	1,991	3	1,994
1989	7	178	282	583	270	501	597	1,098
1990	11	1,664	d	5,502	10	5,166	5	5,171
1991	5	1,413	41	2,442	256	2,412	197	2,609
1992	6	2,124	18	6,309	86	6,285	43	6,328
1993	5	2,509	0	5,208	0	4,898	0	4,898
1994	3	2,393	0	4,905	0	4,345	0	4,345

a Does not include catches incidental to the commercial salmon fishery.
b Does not include fisherman who delivered catches incidental to the commercial salmon fishery.
c Includes cisco and pike.
d Data not available.

APPENDIX F

Appendix D.17 Historical estimated salmon run size and commercial exploitation rate, Goodnews River, 1981-1994.

Year	Species	Middle Fork Tower Estimate	Middle Fork Aerial Survey Count as a Percentage of Tower Est.	Goodnews River Escapement Estimate	Goodnews Bay Subsistence Harvest Estimate	Goodnews Bay Commercial Harvest	Total Run Size Estimate	Exploitation[a] Rate (% of Run)
1981	Chinook	3,688	-[b]	7,766[c]	1,409	7,190	16,365	53%
	Sockeye	49,108	-[b]	100,029[c]	3,511[d]	40,273	143,813	30%
	Chum	21,827	-[b]	53,799[c]	-	13,642	67,441	20%
1982	Chinook	1,395	-[b]	2,937[c]	1,236	9,476	13,649	78%
	Sockeye	56,255	-[b]	114,587[c]	2,754[d]	38,877	156,218	27%
	Chum	6,767	-[b]	16,679[c]	-	13,829	30,508	45%
1983	Chinook	6,027	36%	14,398	1,066	14,117	29,581	51%
	Sockeye	25,816	22%	69,955	1,518[d]	11,716	83,189	16%
	Chum	15,548	-[b]	38,323[c]	-	6,766	45,089	15%
1984	Chinook	3,260	35%	8,743	629	8,612	17,984	51%
	Sockeye	32,053	27%	67,213	964	15,474	83,651	20%
	Chum	19,003	35%	117,739	189	14,340	132,268	11%
1985	Chinook	2,831	70%	7,979	426	5,793	14,198	44%
	Sockeye	24,131	11%	50,481	704	6,698	57,883	13%
	Chum	10,367	32%	25,025	348	4,784	30,157	17%
1986	Chinook	2,083	57%	4,094	555	2,723	7,372	44%
	Sockeye	51,069	28%	93,228	942	22,608	116,778	20%
	Chum	14,765	38%	51,910	191	10,355	62,456	17%
1987	Chinook	2,274	100%	4,490	816	3,357	8,663	48%
	Sockeye	28,871	85%	51,989	955	27,758	80,702	36%
	Chum	17,519	58%	37,802	578	20,381	58,761	36%
1988	Chinook	2,712	39%	5,419	310	4,964	10,693	49%
	Sockeye	15,799	30%	38,319	1065	36,368	75,752	49%
	Chum	20,799	21%	39,501	448	33,059	73,008	46%
1989	Chinook	1,915	67%	2,891	467	2,966	6,324	54%
	Sockeye	21,186	60%	35,476	869	19,299	55,644	36%
	Chum	10,380	28%	15,495	760	13,622	29,877	48%
1990	Chinook	3,636	-[b]	7,656[c]	682	3,303	11,641	34%
	Sockeye	31,679	-[b]	64,528[c]	905	35,823	101,256	36%
	Chum	6,410	-[b]	15,799[c]	342	13,194	29,335	46%
1991[e]	Chinook	2,147	-[b]	4,521[c]	682	912	6,115	26%
	Sockeye	47,397	-[b]	96,544[c]	900	39,838	137,228	30%
	Chum	27,525	-[b]	67,844[c]	106	15,892	83,842	19%
1992	Chinook	1,899	53%	3,560[c]	252	3,528	7,340	51%
	Sockeye	27,267	26%	67,681[c]	905	25,696	94,282	37%
	Chum	22,023	35%	62,922[c]	662	18,520	81,442	24%
1993	Chinook	2,491	53%	4,700[c]	478[f]	2,117	7,295	36%
	Sockeye	26,044	26%	100,169[c]	928	59,293	160,390	28%
	Chum	14,287	35%	40,820[c]	464	10,657	51,941	21%
1994	Chinook	3,856	-[b]	7,275[c]	478[f]	2,570	10,323	29%
	Sockeye	55,751	-[b]	214,426[c]	928	69,490	284,844	25%
	Chum	34,849	-[b]	130,335[c]	464	28,477	159,276	18%

a Commercial and subsistence exploitation
b Incomplete aerial survey results
c Average Middle Fork/Goodnews River escapement estimate ratio for 1983-1989 used to estimate Goodnews River escapement in years with no aerial survey data.
d Subsistence caught chum salmon is included in subsistence sockeye salmon harvest
e Goodnews Tower Project changed to weir project in 1991.
f Estimate based on recent 5 year average.

Appendix D.16. Peak aerial survey results, Goodnews River 1980-1994.

	Goodnews River and Lake			Middle Fork Goodnews River and Lakes			Total		
Year	Chinook	Sockeye	Chum	Chinook	Sockeye	Chum	Chinook	Sockeye	Chum
1980	1,228	41,576	1,975	1,164	18,596	3,782	2,392	60,172	5,757
1981	a	a	a	a	a	a	a	a	a
1982	1,990	19,160	9,700	1,546	2,327	6,300	3,536	21,487	16,000
1983	2,600	9,650		2,500	5,900	a	5,241	15,600	a
1984	3,235	9,240	17,250	2,020	12,897	9,172	5,261	22,137	27,347
1985	3,535	2,843	4,415	2,050	2,710	3,593	5,585	5,553	8,008
1986	1,068	8,960	11,850	1,249	16,990	4,400	2,317	25,950	16,250
1987	2,234	19,786	12,103	1,598	9,033	2,805	3,870	28,819	15,588
1988	637	5,880	3,846	1,024	5,831	5,814	1,661	11,711	9,660
1989	8	30,764	a	1,277	1,145	2,922	1,285	31,909	2,922
1990	0	22,100	a	38	1,092	311	38	23,192	311
1991	127	1,285	365	a	a	a	127	1,285	365
1992	875	10,397	1,950	1,012	7,200	3,270	1,887	17,597	5,220
1993	a	a	a	a	a	a			
1994	a	a	a	a	a	a			
Escapement Objective	1,600	15,000	17,000	800	5,000	4,000	2,400	20,000	21,000

a/ Information not available.

b/ Escapement objectives are preliminary and are subject to change as additional data becomes available. Escapement objectives are based on aerial index counts which do not represent total escapement, but do reflect annual spawner abundance trends when made using standard survey methods under acceptable survey conditions.

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Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
7/21	711	175	1034	964	358	592	722	300	224	197	1053	410	175	808
7/22	1179	197	671	630	85	1181	1071	834	318	220	1132	974	838	1693
7/23	1168	219	215	284	444	981	1479	267	429	242	1496	1019	281	1006
7/24	628	242	447	201	440	324	1130	236	540	120	1774	1114	472	580
7/25	605	264	433	256	323		1717	205	361		924	1191	549	860
7/26	545	286	409	441	404		1069	154	363		890	607	1141	1977
7/27	326	204	381	514	261		422	232	378		1411	681	263	539
7/28	717	116	594	300	230		1552	328	163		586	599	155	1827
7/29	406	132		211	198		508	343	170		1014	821	328	890
7/30	270	83		121	113		315	216	160		915	606	641	494
7/31	177	74		154	223				150		903	161	171	732
8/01	135	104									1124	230	74	278
8/02	104	134									754	312	59	219
8/03	103	161									526	163	16	365
8/04	107										656	104	164	437
8/05	119										303	11.0	77	309
8/06	75										540	6.9	74	63
8/07	34										159	4.4	208	84
8/08	37										172	2.2	98	285
8/09	43										237	4.4	63	7
8/10	20										293	2.2	107	3.5
8/11	30										178	2.2		3.5
8/12	25										290	2.2		7
8/13	18										113	1.3		3.5
8/14	10										42	1.1		0
8/15	38										97	4.2		7
8/16											124	0.0		
8/17											152			
8/18											62			
8/19											60			
8/20											59			
8/21											30			
8/22											76			
8/24											23			
8/25											48			
8/26											54			
Total	21,827	6,767	15,548	19,003	10,367	14,764	17,517	20,799	10,380	6,410	27,525	22,023	14,472	35,134

Appendix D.15. Estimated daily escapement of chum salmon at the Middle Fork, Goodnews River, 1981-1994.

WCIF

Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
6/11			0											
6/12			0											
6/13	0		0											
6/14	0		0											
6/15	0		0	0										
6/16	1		0	0		0								
6/17	0		0	0		0								
6/18	0		0	0		0								
6/19	0		0	0		0				0				
6/20	4		0	0		0				0				
6/21	5		0	0		0				0		0		
6/22	35		0	0		0	0			0		0	130.2	37.7
6/23	16	0	0	0		0	0	0		0		0	142	0
6/24	16	42	3	23		0	0	18		0		2	59	3
6/25	217	141	0	45		0	0	178		0		0	190	31
6/26	147	163	30	15		0	7	225		0		28	7	17
6/27	411	82	17	37	0	0	0	271	322	0		66	290	98
6/28	372	0	0	107	0	0	9	223	39	0	539	173	24	77
6/29	293	4	148	55	0	15	17	317	31	57	1	110.4	20	293
6/30	166	8	82	55	0	30	61	961	71	71	75	178.8	58	326
7/01	339	12	560	145	0	125	105	1281	111	64	149	329.0	56	288
7/02	556	6	613	234	11	68	58	291	171	57	87	260.5	11	207
7/03	189	30	445	491	4	326	89	246	249	171	108	324.5	7	54
7/04	387	65	545	404	78	404	121	224	154	301	192	410.7	5	80
7/05	353	100	646	316	152	482	141	201	58	431	168	468.1	15	369
7/06	552	47	409	264	88	447	162	654	270	75	211	397.8	258	323
7/07	443	27	682	232	55	411	168	1149	139	88	183	423.9	275.4	1326
7/08	653	126	459	433	21	268	91	935	161	111	595	454.8	295.5	1627
7/09	659	326	892	633	81	422	183	1785	306	133	938	395	504.9	69
7/10	960	224	572	680	228	1478	343	1353	450	184	755	409	1062	1410
7/11	803	308	642	1507	570	699	281	921	435	198	447	677	273	484
7/12	1058	391	1079	906	708	412	330	1536	503	187	751	920	216	3071
7/13	658	339	588	1108	288	570	379	634	765	367	257	342	354	1438
7/14	439	490	157	1295	450	729	408	912	592	289	117	1071	277	1512.5
7/15	643	371	433	1310	612	1457	289	984	388	531	56	1177	429	1716.1
7/16	727	380	407	1325	972	934	1216	805	404	772	368	685	1054	1909.5
7/17	664	212	372	2286	777	709	990	573	420	442	957	1777	887	1768.7
7/18	455	167	398	396	690	755	1011	341	435	602	484	672	716	1098
7/19	790	122	401	159	873	433	695	384	221	156	749	880	535	1316
7/20	1186	193	784	466	630	512	378	282	429	344	1068	356	367	707

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Appendix D.14. Estimated cumulative passage of coho salmon at Goodnews River project 1981-94.[a]

DATE	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
7/17	0	2	0	0		3	0			0	0	0		
7/18	0	3	0	0		3	0			0	0	0		
7/19	2	4	0	0		3	0			0	0	0		
7/20	6	5	0	0		5	0		108	0	0	0		
7/21	12	5	0	3		9	0	0	204	0	0	0		
7/22	15	5	0	7		143	0	0	330	0	0	0		
7/23	16	5	0	11		160	0	0	483	0	0	0	2	
7/24	18	5	0	36	0	163	0	0	663	0	0	0	2	
7/25	20	6	0	43	7		0	0	762		0	1	2	
7/26	21	9	0	78	85		0	0	960		0	1	2	2
7/27	22	14	0	99	136		0	3	1164		0	1	2	2
7/28	23	23	0	138	181		0	3	1179		0	26	2	4
7/29	32	33	0	168	219		0	6	1182		0	46	2	4
7/30	36	39	0	189	248		62	6	1212		0	92	2	6
7/31	40	43	0	249	282						0	107	2	25
8/01	64	48	0								0	112	2	54
8/02	78	54	0								0	141	2	78
8/03	100	91	0								0	145	2	142
8/04	115										11	150	12	168
8/05	165										12		18	202
8/06	187										23		27	222
8/07	200										33		39	239
8/08	222										40		41	309
8/09	255										43		64	309
8/10	271										53		102	309
8/11	300										76		132	309
8/12	325										113		180	309
8/13	353										116		196	309
8/14	356										127		280	309
8/15	356										137		353	309
8/16											140		364	309
8/17											168		1374	
8/18											173			
8/19											180			
8/20											217			
8/21											253			
8/22											344			
8/23											372			
8/24											1184			
8/25											1978			

a This project changed from a tower to a weir in 1991. In 1993 this project began to assess coho salmon strength.

Appendix D.13. (page 2 of 2)

Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
7/19	758	282	549	117	1038	660	449	157	505	352	784	371	427	1937
7/20	753	385	439	124	1074	486	450	111	502	245	702	367	208	787
7/21	351	238	607	124	771	311	284	101	278	212	818	382	650	438
7/22	447	202	336	97	468	331	478	137	225	123	447	484	358	836
7/23	386	187	87	70	121	307	391	123	216	34	535	414	163	257
7/24	212	172	129	22	221	151	239	80	207	114	411	284	257	295
7/25	183	157	91	19	102		382	36	198		271	227	84	179
7/26	144	142	65	37	37		235	31	87		105	182	300	481
7/27	116	120	91	34	18		87	24	168		158	275	64	363
7/28	197	90	66	26	11		107	17	62		121	94	105	893
7/29	228	73		17	4		48	13	55		142	133	191	256
7/30	127	83		7	0		59	23	59		136	127	135	129
7/31	44	92		-4	10				62		77	129	65	144
8/1	57	109									110	49	50	115
8/2	47	126									69	95	-18	86
8/3	39	92									48	4	23	33
8/4	53										59	36	60	33
8/5	39										36	6	42	22
8/6	7										34	2.7	17	27
8/7	1										37	0	62	18
8/8	7										27	5.5	48	68
8/9	2										21	0	20	0
8/10	0										34	2.7	37	5.5
8/11	11										23	0		0
8/12	-6										10	0		0
8/13	0										2	0		0
8/14	-2										9	0		0
8/15	0										6	0		5.5
8/16											12	2.7		11.1
8/17											13	5.5		
8/18											8			
8/19											8			
8/20											7			
8/21											4			
8/22											12			
8/23											8			
8/24											16			
8/25											17			
TOTAL	49,108	56,255	25,816	32,053	24,131	51,069	28,871	15,799	21,186	31,679	47,397	27,267	26,244	55,751

Appendix D.13. Estimated daily escapement of sockeye salmon at the Middle Fork, Goodnews River Weir, 1981-1994.

Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
6/11			3											
6/12			0											
6/13	0		0											
6/14	1		0											
6/15	0		0	92										
6/16	0		3	8		0								
6/17	32		0	11		0								
6/18	107		0	13		0								
6/19	259		0	143		0								
6/20	104		3	100		0				48				
6/21	291		0	452		292				11		123.2		
6/22	571		0	289		276	222			48		6	202.0	703.2
6/23	669	1822	0	203		261	193	358		107		108	692	10
6/24	633	4201	799	379		59	121	269		233		278	1044	276
6/25	868	6010	527	554		697	427	695		359		5	692	673
6/26	690	5019	404	630		431	697	783		158		367	939	513
6/27	3108	2559	410	1005	125	1299	818	870	2811	443		799	935	1292
6/28	2039	98	262	1461	235	1657	794	703	1107	1227	7230.0	1354	221	767
6/29	1877	268	462	1141	616	1505	771	746	480	1731	75	758.6	700	1906
6/30	1511	438	315	1236	825	1353	805	818	605	788	1539	799.6	1072	1922
7/1	1798	608	481	1546	1033	2514	840	983	730	1260	2347	1070.7	780	2203
7/2	1861	675	1053	1855	883	2487	1104	556	524	1731	1754	1070.7	31	2525
7/3	1438	966	647	1484	565	2442	1333	609	654	1053	2553	999.5	121	876
7/4	1865	2328	1177	1733	1044	2587	1562	635	534	1822	1918	1240.5	230	934
7/5	2970	3690	1708	1981	1523	2732	1595	661	414	2591	2622	1577.4	405	4376
7/6	2487	2755	1150	1474	1016	3192	1627	959	722	1348	1797	1328.2	1272.8	1323
7/7	1511	1578	1483	1931	1087	3651	1761	609	814	1700	1326	1289.8	1236.0	4631
7/8	2176	2912	1131	2419	1158	3158	1436	698	837	1863	2858	1465.1	1404.0	3071
7/9	2195	4382	1166	2907	1680	2700	1044	652	968	2026	1910	610	1467.0	794
7/10	2169	2364	1179	1417	1212	3075	1292	586	1098	1615	2440	952	1239	5029
7/11	2778	2194	1961	1018	1362	1896	873	519	1465	1803	1822	782	1459	1869
7/12	1476	2023	1617	992	777	2098	1012	537	1161	1238	2292	1772	1445	3410
7/13	1889	1319	1091	862	780	1953	1151	365	744	1468	810	753	1080	1862.7
7/14	1223	1567	701	774	774	1809	1125	459	828	1018	1279	1307	1056	1739.7
7/15	1450	1097	992	549	768	1553	1412	246	429	1009	1698	890	736	1655.8
7/16	1439	1513	1002	323	753	1243	762	269	482	1000	1370	582	1124	1487.9
7/17	946	785	763	260	963	799	438	210	534	436	1735	640	752	1202.7
7/18	476	534	866	121	1077	1104	447	151	621	465	685	661	561	1280

-continued-

Appendix D.12. (page 2 of 2)

Date	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
7/20	81	39	160	100	162	79	49	21	0	74	64	60	179	11
7/21	26	55	187	113	96	83	48	11	40	37	75	52	39	13
7/22	48	34	67	136	30	147	69	67	48	40	17	82	60	25
7/23	68	33	58	159	96	64	45	45	41	43	96	69	32	39
7/24	85	32	89	43	97	44	73	41	33	99	116	45	49	26
7/25	50	31	79	62	101		58	37	13	0	44	46	11	46
7/26	43	31	96	54	115		47	14	45	0	17	54	31	43
7/27	23	19	38	59	20		35	3	37	0	8	50	5	56
7/28	23	36	16	59	40		22	17	3	0	8	33	7	256
7/29	39	16		39	60		26	17	10	0	31	30	23	43
7/30	18	13		19	57		45	21	4	0	22	48	1	21
7/31	34	29		8	18				-3	0	15	17	21	21
8/1	33	17									20	16	5	19
8/2	46	5									5	10	0	5
8/3	28	18									14	1	0	23
8/4	36										17	5	17	13
8/5	36										5	2	6	3
8/6	20										14	1	20	3
8/7	13										1	1	24	4
8/8	12										1	1	8	12
8/9	7										0	1	4	5
8/10											0		2	
8/11											2			
8/12											3			
8/13											0			
8/14											0			
8/15											0			
8/16											0			
8/17											0			
8/18											0			
8/19											0			
8/20											1			
8/21											0			
8/22											2			
8/23											2			
8/24											2			
8/25											1			
Total	3,688	1,395	6,027	3,260	2,831	2,092	2,272	2,712	1,915	3,636	1,952	1,899	2,317	3,856

APPENDIX G

Appendix G.1. Commercial miscellaneous saltwater finfish fishery catch data, Kuskokwim Area, 1988-1994.

Year	Number of Fishers	Species	Number Caught	Total Weight (lbs)	Total Value ($)
1988	4	Tom Cod[a]	b	439	878
1989	2	Tom Cod	b	591	1,180
1990	1	Tom Cod	300	221	442
1991	2	Tom Cod	b	1,356	2,690
1992	1	Tom Cod	b	303	303
1993	0	-- --	-	--	--
1994	1	Tom Cod	b	100	160

a Tom Cod is the local name for Saffron Cod (Eleginus gracilis).
b Data not available

APPENDIX H

Appendix H.1. Estimated biomass and commercial harvest of Pacific herring in Kuskokwim Area fishing districts, Alaska, 1981-1994.

District	Estimated Biomass (st)	Harvest Sac-roe	Bait	Waste	Total	Roe%*	Estimated Value ($ X 1000)	Exploitation Rate (%)
1994								
Security Cove	7638	-	-	-	-	-	-	-
Goodnews Bay	5679	1061	0	1	1062	12.3	391	18.7
Cape Avinof	2827	427	0	0	427	12.2	156	15.1
Nelson Is.	5564	713	4	0	717	11.0	235	12.9
Nunivak Is.	4921	14	0	0	14	8.6	4	0.3
Total	26629	2215	4	1	2220	11.8	787	8.3
1993								
Security Cove	6995	5	0	0	5	12.8	2	0.1
Goodnews Bay	6221	945	9	0	954	10.3	293	15.4
Cape Avinof	2837	206	9	0	215	12.0	75	7.6
Nelson Is.	4944	613	52	74	739	10.6	198	14.9
Nunivak Is.	5176	-	-	-	-	-	-	-
Total	26163	1769	70	74	1913	10.6	568	7.3
1992								
Security Cove	7773	697	127	10	834	9.2	285	10.7
Goodnews Bay	5572	711	29	0	740	9.5	286	13.3
Cape Avinof	3446	443	9	0	452	9.9	178	13.1
Nelson Is.	5275	188	52	6	246	8.3	78	4.7
Nunivak Is.	5703	7	20	0	27	8.5	4	0.5
Total	27769	2046	237	16	2299	9.4	830	8.3
1991								
Security Cove	4434	561	9	0	570	9.3	208	12.9
Goodnews Bay	4387	259	4	0	263	8.9	93	6.0
Cape Avinof	2083	240	27	0	267	9.5	94	12.8
Nelson Is.	2385	-	-	-	-	-	-	-
Nunivak Is.	3903	17	42	0	59	7.5	9	-
Total	17192	1077	82	0	1159	9.2	404	6.7
1990								
Security Cove	2650	174	60	0	234	8.7	94	8.8
Goodnews Bay	2577	427	28	0	455	12.2	314	17.7
Cape Avinof	2020	49	1	0	50	12.0	35	2.5
Nelson Is.	2705	-	-	-	-	-	-	-
Nunivak Is.	422	-	-	-	-	-	-	-
Total	10374	650	89	0	739	11.2	443	7.1
1989								
Security Cove	2830	544	10	0	554	9.4	256	19.6
Goodnews Bay	4044	453	162	0	616	8.4	335	15.2
Cape Avinof	2780	90	39	0	129	8.0	54	4.6
Nelson Is.	3316	122	100	11	233	8.5	57	7.0
Nunivak Is.	617	79	37	0	116	9.4	42	18.8
Total	13587	1289	347	11	1647	8.9	744	12.1
1988								
Security Cove	4906	324	0	0	324	9.3	362	6.6
Goodnews Bay	4479	473	10	0	483	8.0	463	10.8
Cape Avinof	4108	348	0	0	348	8.6	264	8.5
Nelson Is.	7152	760	15	0	775	9.2	713	10.8
Nunivak Is.	2800	-	-	-	-	-	-	-
Total	23445	1905	25	0	1930	8.8	1802	8.2
1987								
Security Cove	2300	312	1	0	313	9.7	242	13.6
Goodnews Bay	2000	179	142	0	321	7.3	133	16.1
Nelson Is.	8100	915	8	0	923	9.2	661	11.4
Nunivak Is.	4400	254	160	0	414	7.8	231	9.4
Total	16800	1660	311	0	1971	8.9	1267	11.7

- Continued -

Appendix H.1. (page 2 of 2)

District	Estimated Biomass (st)	Harvest Sac-roe	Harvest Bait	Harvest Waste	Harvest Total	Roe%[a]	Estimated Value ($ X 1000)	Exploitation Rate (%)
1986								
Security Cove	3700	747	4	0	751	11.2	535	20.3
Goodnews Bay	3000	554	3	0	557	10.4	325	18.6
Nelson Is.	7300	852	34	0	886	10.3	428	12.1
Nunivak Is.	6000	469	42	0	511	10.1	213	8.5
Total	20000	2622	83	0	2705	10.5	1501	13.5
1985								
Security Cove	4900	703	0	30	733	10.1	355	15.0
Goodnews Bay	4300	711	0	13	724	8.7	309	16.8
Nelson Is.	9500	967	10	0	977	10.6	527	10.3
Nunivak Is.	5700	349	9	0	358	8.9	146	6.3
Total	24400	2730	19	43	2792	9.8	1337	11.4
1984								
Security Cove	5100	325	0	10	335	11.8	110	6.6
Goodnews Bay	4100	667	0	50	717	10.1	168	17.5
Total	9200	992	0	60	1052	10.7	278	11.4
1983								
Security Cove	6400	966	107	0	1073	9.4	443	16.8
Goodnews Bay	3200	426	9	0	435	9.4	185	13.6
Total	9600	1392	116	0	1508	9.4	628	15.7
1982								
Security Cove	5100	707	106	0	813	9.3	271	15.9
Goodnews Bay	2600	437	49	0	486	9.5	188	18.7
Total	7700	1144	155	0	1299	9.4	459	16.9
1981								
Security Cove	8300	1150	23	0	1173	8.1	347	14.1
Goodnews Bay	4300	558	99	0	657	7.7	196	15.3
Total	12600	1708	122	0	1830	8.0	543	14.5

Appendix H.2. Number of buyers and fishers participating in Kuskokwim Area Pacific herring fisheries, Alaska, 1981-1994.

Year	District	Number of Buyers	Number of Fishers	Number of Deliveries
1994	Security Cove	No commercial opening		
	Goodnews Bay	2	103	683
	Cape Avinof	1	85	502
	Nelson Island	3	104	409
	Nunivak Island	1	12	14
1993	Security Cove	1	9	9
	Goodnews Bay	3	63	705
	Cape Avinof	1	97	478
	Nelson Island	1	73	487
	Nunivak Island	No commercial opening		
1992	Security Cove	6	58	178
	Goodnews Bay	3	78	375
	Cape Avinof	2	121	335
	Nelson Island	3	85	222
	Nunivak Island	1	14	23
1991	Security Cove	6	52	100
	Goodnews Bay	2	103	137
	Cape Avinof	1	137	463
	Nelson Island	No commercial opening		
	Nunivak Island	2	17	31
1990	Security Cove	9	52	77
	Goodnews Bay	3	126	530
	Cape Avinof	1	101	109
	Nelson Island	No commercial opening		
	Nunivak Island	No commercial opening		
1989	Security Cove	8	104	108
	Goodnews Bay	6	138	533
	Cape Avinof	3	147	335
	Nelson Island	4	162	438
	Nunivak Island	3	45	210
1988	Security Cove	4	31	51
	Goodnews Bay	6	60	309
	Cape Avinof	1	98	485
	Nelson Island	7	174	547
	Nunivak Island	No commercial opening		

-continued-

Appendix H.2. (page 2 of 2)

Year	District	Number of Buyers	Number of Fishers	Number of Deliveries
1987	Security Cove	8	65	67
	Goodnews Bay	4	117	191
	Nelson Island	9	235	633
	Nunivak Island	4	61	341
1986	Security Cove	11	88	199
	Goodnews Bay	5	104	319
	Nelson Island	4	163	1,099
	Nunivak Island	5	36	284
1985	Security Cove	6	107	268
	Goodnews Bay	5	83	420
	Nelson Island	6	143	776
	Nunivak Island	5	37	273
1984	Security Cove	4	38	86
	Goodnews Bay	4	130	390
1983	Security Cove	6	94	312
	Goodnews Bay	4	84	225
1982	Security Cove	3	107	250
	Goodnews Bay	3	84	297
1981	Security Cove	7	113	311
	Goodnews Bay	5	175	479

Appendix H.3. Pacific herring subsistence harvest (st) and effort data from selected Kuskokwim Area villages, Alaska, 1975-1994[a].

Village	Year																			
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Nelson Island																				
Tununak	22	15	57	38	34	65	40	48	94	e	43	63	48	49	47	54	21	32	45	42
Umkumiut	33	9	3	11	8	3	10	0	e	e	e	e	d	d	d	d	d	d	d	d
Toksook Bay	34	35	21	37	51	29	14	35	-	-	46	70	51	59	52	46	40	43	23	53
Nightmute	-	-	-	-	-	-	-	-	-	-	3[b]	21	15	16	15	18	8	10	9	13
Newtok	-	-	-	-	-	-	-	-	-	-	7[b]	13	10	12	10	8	1	7	6	9
Total	89	59	81	86	93	97	64	83	94	-	99	167	124	136	124	126	70	92	82	117
No. of Fishing Families	109	42	90	83	54	70	93	65	43	-	65[b]	72[b]	96	104	-[b]	100	85	97	89	-
Nunivak Island																				
Mekoryuk	-	-	-	-	-	-	-	-	-	-	<1	<1	-	e	e	5	4	4	2	e
No. of Fishing Families	-	-	-	-	-	-	-	-	-	-	11	6[b]	-	e	e	19	20	17	16	e
Other Kuskokwim Delta																				
Chefornak	-	-	-	-	-	-	-	-	-	-	13[b]	c	14	e	e	e	e	e	e	e
Kipnuk	-	-	-	-	-	-	-	-	-	-	9	c	14	c	e	e	e	e	e	e
Kongiganak	-	-	-	-	-	-	-	-	-	-	3	2	c	e	e	e	e	e	e	e
Kwigillingok	-	11	1	-	8	13	-	13	-	-	5	c	c	e	e	e	e	e	e	e
Total	-	11	1	-	8	13	-	13	-	-	30	2	28	e	e	e	e	e	e	e
No. of Fishing Families	-	8	9	-	22	19	-	21	-	-	55[b]	12[b]	49	e	e	e	e	e	e	e
All Areas Combined																				
Total Catch	92	75	85	91	112	121	78	107	103	11	138	177	155	136	124	145	74	95	84	117
No. of Fishing Families	143	91	129	112	160	150	139	89	80	47	175[b]	131	184	104	-[b]	119	95	114	105	-

a Subsistence survey results are believed to accurately reflect harvest trends, however, reported catches reflect minimum figures since all fishers cannot be contacted.
b Fishing families were not interviewed or only a portion of fishing families were interviewed as catch was enumerated while on drying racks.
c Survey not allowed by village council.
d Umkumiut effort included with Toksook Bay and Nightmute.
e Not surveyed.

›endix H.4. Commercial harvest, effort and value of Pacific herring in Kuskokwim Area fishing districts, Alaska, 1981-1994.

Year	District	Estimated Harvest (st)	Number of permits	Hours fished	CPUE[a] (st)	Estimated Value	Income per permit
1994	Security Cove	--	--	--	--	--	--
	Goodnews Bay	1062	103	38.0	0.27	$391,000	$3,796
	Cape Avinof	427	85	62.0	0.08	$156,000	$1,835
	Nelson Island	717	104	26.0	0.27	$235,000	$2,260
	Nunivak Island	14	12	6.0	0.19	$4,000	$333
1993	Security Cove	5	9	24.5	0.02	$2,000	$222
	Goodnews Bay	954	63	123.0	0.12	$293,000	$4,651
	Cape Avinof	215	106	106.0	0.02	$75,000	$708
	Nelson Island	739	73	63.5	0.16	$198,000	$2,712
	Nunivak Island	--	--	--	--	--	--
1992	Security Cove	834	58	34.0	0.42	$285,000	$4,914
	Goodnews Bay	740	78	29.0	0.33	$286,000	$3,667
	Cape Avinof	452	121	12.0	0.31	$178,000	$1,471
	Nelson Is.	246	85	10.0	0.29	$78,000	$918
	Nunivak Is.	27	14	6.0	0.32	$4,000	$286
1991	Security Cove	570	52	12.0	0.91	$208,000	$4,000
	Goodnews Bay	263	103	4.0	0.64	$93,000	$903
	Cape Avinof	267	137	28.0	0.07	$94,000	$686
	Nelson Is.	--	--	--	--	--	--
	Nunivak Is.	59	17	12.0	0.29	$9,000	$529
›0	Security Cove	234	52	7.0	0.64	$94,000	$1,808
	Goodnews Bay	455	126	32.0	0.11	$314,000	$2,492
	Cape Avinof	50	101	3.0	0.17	$35,000	$347
	Nelson Is.	--	--	--	--	--	--
	Nunivak Is.	--	--	--	--	--	--
1989	Security Cove	554	104	4.0	1.33	$256,000	$2,462
	Goodnews Bay	616	138	50.0	0.09	$335,000	$2,428
	Cape Avinof	129	147	194.0	0.00	$54,000	$367
	Nelson Is.	233	162	15.0	0.10	$57,000	$352
	Nunivak Is.	116	45	186.0	0.01	$42,000	$933
1988	Security Cove	324	31	23.5	0.44	$362,000	$11,677
	Goodnews Bay	483	60	40.0	0.20	$463,000	$7,717
	Cape Avinof	348	98	88.5	0.04	$264,000	$2,694
	Nelson Is.	775	174	7.5	0.59	$713,000	$4,098
	Nunivak Is.	--	--	--	--	--	--
1987	Security Cove	313	65	13.0	0.37	$242,000	$3,723
	Goodnews Bay	321	117	11.0	0.25	$133,000	$1,137
	Nelson Is.	923	235	6.0	0.65	$661,000	$2,813
	Nunivak Is.	414	61	39.0	0.17	$231,000	$3,787
1986	Security Cove	751	88	73.0	0.12	$535,000	$6,080
	Goodnews Bay	557	104	53.0	0.10	$325,000	$3,125
	Nelson Is.	886	163	40.0	0.14	$428,000	$2,626
	Nunivak Is.	511	36	156.0	0.09	$213,000	$5,917

-continued-

Appendix H.4. (page 2 of 2)

Year	District	Estimated Harvest (st)	Number of permits	Hours fished	CPUE[a] (st)	Estimated Value	Income per permit
1985	Security Cove	733	107	125.0	0.05	$335,000	$3,131
	Goodnews Bay	724	83	130.0	0.07	$309,000	$3,723
	Nelson Is.	977	143	44.0	0.16	$527,000	$3,685
	Nunivak Is.	358	37	228.0	0.04	$146,000	$3,946
1984	Security Cove	335	38	345.0	0.03	$110,000	$2,895
	Goodnews Bay	717	130	139.0	0.04	$168,000	$1,292
1983	Security Cove	1073	94	87.0	0.13	$443,000	$4,713
	Goodnews Bay	435	84	278.0	0.02	$185,000	$2,202
1982	Security Cove	813	107	302.0	0.03	$271,000	$2,533
	Goodnews Bay	486	84	314.0	0.02	$188,000	$2,238
1981	Security Cove	1173	113	90.0	0.12	$347,000	$3,071
	Goodnews Bay	657	175	133.0	0.03	$196,000	$1,120

a CPUE = catch per permit per hour fished

APPENDIX S

Division of Subsistence
Alaska Department of Fish and Game
Box 1788
Bethel, Alaska 99559

PLEASE WRITE THE NUMBER OF ALL SALMON CAUGHT EACH DAY BY PEOPLE LIVING IN YOUR HOUSE. PLEASE INCLUDE SALMON THAT WERE GIVEN TO PEOPLE WHO LIVE IN OTHER HOUSES AND SALMON THAT WERE CAUGHT FOR DOGFOOD. DO NOT INCLUDE SALMON THAT WERE SOLD WHEN COMMERCIAL FISHING.

WHEN DONE SALMON FISHING FOR THE YEAR, FOLD THIS CALENDAR SO THAT THE ADDRESS ON THE BACK IS VISIBLE AND DROP IN THE MAIL. WE HAVE PAID THE POSTAGE.

This calendar is sent to you by the Subsistence Division of the Alaska Department of Fish and Game in Bethel.

NAME

Bulk Rate
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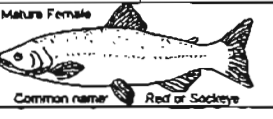
Fairbanks, AK
Permit No. 59

MAY 1994 SUBSISTENCE SALMON CALENDAR

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	15	16	17	18	19	20	21
TARYAQVAK =	King	King	King	King	King	King	King
IQALLUK =	Chum	Chum	Chum	Chum	Chum	Chum	Chum
SAYAK =	Red	Red	Red	Red	Red	Red	Red
	22	23	24	25	26	27	28
CHINOOK =	King	King	King	King	King	King	King
	Chum	Chum	Chum	Chum	Chum	Chum	Chum
SOCKEYE =	Red	Red	Red	Red	Red	Red	Red
	29	30	31				
	King	King	King				
	Chum	Chum	Chum				
	Red	Red	Red				

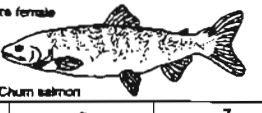
JUNE 1994 SUBSISTENCE SALMON CALENDAR

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Breeding male			1	2	3	4
				King	King	King	King
				Chum	Chum	Chum	Chum
				Red	Red	Red	Red
	5	6	7	8	9	10	11
TARYAQVAK =	King	King	King	King	King	King	King
IQALLUK =	Chum	Chum	Chum	Chum	Chum	Chum	Chum
SAYAK =	Red	Red	Red	Red	Red	Red	Red
	12	13	14	15	16	17	18
CHINOOK =	King	King	King	King	King	King	King
	Chum	Chum	Chum	Chum	Chum	Chum	Chum
SOCKEYE =	Red	Red	Red	Red	Red	Red	Red
	19	20	21	22	23	24	25
	King	King	King	King	King	King	King
	Chum	Chum	Chum	Chum	Chum	Chum	Chum
	Red	Red	Red	Red	Red	Red	Red
	26	27	28	29	30		
	King	King	King	King	King		
	Chum	Chum	Chum	Chum	Chum		
	Red	Red	Red	Red	Red		



JULY 1994 SUBSISTENCE SALMON CALENDAR

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Breeding male					1	2
						King	King
						Chum	Chum
						Red	Red
	3	4	5	6	7	8	9
TARYAQVAK =	King	King	King	King	King	King	King
IQALLUK =	Chum	Chum	Chum	Chum	Chum	Chum	Chum
SAYAK =	Red	Red	Red	Red	Red	Red	Red
	10	11	12	13	14	15	16
CHINOOK =	King	King	King	King	King	King	King
	Chum	Chum	Chum	Chum	Chum	Chum	Chum
SOCKEYE =	Red	Red	Red	Red	Red	Red	Red
	17	18	19	20	21	22	23
	King	King	King	King	King	King	King
	Chum	Chum	Chum	Chum	Chum	Chum	Chum
	Red	Red	Red	Red	Red	Red	Red
QAKSIYAK =	Coho	Coho	Coho	Coho	Coho	Coho	Coho
	24	25	26	27	28	29	30
	King	King	King	King	King	King	King
	Chum	Chum	Chum	Chum	Chum	Chum	Chum
	Red	Red	Red	Red	Red	Red	Red
SILVER =	Coho	Coho	Coho	Coho	Coho	Coho	Coho
	31						
	King						
	Chum						
	Red						
	Coho						



Division of Sub
Alaska Depart
Box 1786
Bethel, Alaska 9
sh and Game

PLEASE WRITE THE NUMBER OF ALL SALMON CAUGHT EACH DAY BY PEOPLE LIVING IN YOUR HOUSE. PLEASE INCLUDE SALMON THAT WERE GIVEN TO PEOPLE WHO LIVE IN OTHER HOUSES AND SALMON THAT WERE CAUGHT FOR DOGFOOD. DO NOT INCLUDE SALMON THAT WERE SOLD WHEN COMMERCIAL FISHING.

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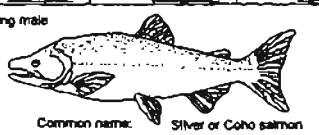
NAME

AUGUST 1994 SUBSISTENCE SALMON CALENDAR

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 King ____ Chum ____ Red ____ Coho ____	2 King ____ Chum ____ Red ____ Coho ____	3 King ____ Chum ____ Red ____ Coho ____	4 King ____ Chum ____ Red ____ Coho ____	5 King ____ Chum ____ Red ____ Coho ____	6 King ____ Chum ____ Red ____ Coho ____
TAQYAQVAK =	7 King ____	8 King ____	9 King ____	10 King ____	11 King ____	12 King ____	13 King ____
IQALLUK =	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____
SAYAK =	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____
QAKIYAK =	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____
	14 King ____	15 King ____	16 King ____	17 King ____	18 King ____	19 King ____	20 King ____
CHINOOK =	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____
SOCKEYE =	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____
SILVER =	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____
	21 Chum ____	22 Chum ____	23 Chum ____	24 Chum ____	25 Chum ____	26 Chum ____	27 Chum ____
	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____
	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____
	28 Chum ____	29 Chum ____	30 Chum ____	31 Chum ____	Breeding male  Common name: Silver or Coho salmon		
	Red ____	Red ____	Red ____	Red ____			
	Coho ____	Coho ____	Coho ____	Coho ____			

SEPTEMBER 1994 SUBSISTENCE SALMON CALENDAR

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 Chum ____	2 Chum ____	3 Chum ____
					Red ____	Red ____	Red ____
					Coho ____	Coho ____	Coho ____
	4	5	6	7	8	9	10
IQALLUK =	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____
SAYAK =	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____
QAKIYAK =	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____
	11	12	13	14	15	16	17
	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____
SOCKEYE =	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____
SILVER =	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____
	18	19	20	21	22	23	24
	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____
	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____
	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____
	25	26	27	28	29	30	
	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	Chum ____	
	Red ____	Red ____	Red ____	Red ____	Red ____	Red ____	
	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	Coho ____	

Were your household's subsistence salmon needs met this year? ____Yes ____No

If not, why?_____

Division of Subsistence, Bethel

COMM. ID# _____

Chinook= *"taryaqvak,"* Chum= *"kangimeq,"* Sockeye= *"sayak,"* Coho= *"qakiiyaq"*

HHID# _____

KUSKOKWIM AREA 1994
POST-SEASON SUBSISTENCE SALMON HOUSEHOLD HARVEST SURVEY

* (Questions marked with an asterisk are asked of all households interviewed) kb

Community: _____ Household Head Name: _____

Survey Date: _____, 1994 Name of Person Interviewed: HH, _____

Interviewer: LO SM _____. Household P.O. Box: _____

Was this household in community last year?: No ___ Yes___

***1. Did this household catch salmon for subsistence use this year?** No___ (go to # 3) Yes___

2. May I have your salmon calendar? (If household fished and we don't already have or don't collect the calendar, go to # 7)

Picked up by interviewer ____ (go to # 10) Mailed it to ADFG____ Didn't get one_____

Didn't use____ Lost or unavailable_____

***3. Does this household usually subsistence fish for salmon?** No___ Yes___

HOUSEHOLD DIDN'T FISH (Household did not help harvest/catch salmon)

4. Did this household help another household process ("put up") salmon?

No ____ (go to # 17) Yes ____: (Names, HHIDs) _____

5. Please estimate how many salmon all of you processed ("put up").

CHINOOK_____ ("kings") CHUM_____ ("dogs") SOCKEYE_____ ("reds") COHO_____ ("silvers") Could not estimate_____

6. Please estimate how many salmon were for your household only.

CHINOOK_____ ("kings") CHUM_____ ("dogs") SOCKEYE_____ ("reds") COHO_____ ("silvers") Could not estimate_____

(Go to Question 17)

HOUSEHOLD FISHED, ADF&G *DOES NOT HAVE* CALENDAR

7. Did other households fish with you? No ____ Yes ____: (Names, HHIDs) _____

8. Please estimate how many salmon your household (or all households together) caught. (Ask about salmon already eaten, frozen, given to other households, and dog food)

CHINOOK_____ ("kings") CHUM_____ ("dogs") SOCKEYE_____ ("reds") COHO_____ ("silvers") Could not estimate_____

Salmon are included with Household _____ (HHID)

9. Please estimate how many salmon were for your household only.

CHINOOK_____ ("kings") CHUM_____ ("dogs") SOCKEYE_____ ("reds") COHO_____ ("silvers") All____ Could not estimate____

(Go to Question 15)

HOUSEHOLD FISHED, ADF&G *DOES HAVE* CALENDAR

10. Are all of the salmon this household caught written on the calendar? (Ask about and include salmon already eaten, frozen, given to other households, and dog food)

No ____ Yes ____ (go to # 12)

11. How many additional salmon, not written on the calendar, were caught?

CHINOOK_____ ("kings") CHUM_____ ("dogs") SOCKEYE_____ ("reds") COHO_____ ("silvers") Could not estimate_____

12. Did other households fish with you? No ____ (go to # 15) Yes ____: (Names, HHIDs)

_____

(This Block is continued on back side)

KB

13. Are the salmon they caught written on your calendar? No ____ Yes ____

14. Please estimate how many salmon were for your household only. All _____
CHINOOK_____ CHUM_____ SOCKEYE_____ COHO_____ Could not estimate_____
(Go to Question 15) .....

FISHING GEAR (For subsistence fishing households only)

15. What type(s) of fishing gear was used for catching subsistence salmon this year?
Drift net ____, Fish wheel ____, Sein _____, Spear ____, Set net ____, Rod-and-reel _____,
Other (Identify)_____

16. What mesh size (gill net) did you use for catching King salmon? _____ (inches)

COMMERCIAL FISHING

*17. Does this household commercial fish? No ____ (go to # 21), Yes ____
If yes, where ? ____Kuskokwim River or Bay ____Yukon Area ____Bristol Bay

18. Were all of the salmon caught when commercial fishing sold or were some brought home to eat or processed for subsistence? All were sold _____ Some were used for subsistence _____

19. How many commercially caught salmon were used for subsistence?
CHINOOK_____ CHUM_____ SOCKEYE_____ COHO_____

20. Are those salmon listed on the calendar or included in the catch numbers you gave me?
Yes____, No ____

HOUSEHOLD SIZE

*21. How many people live in this household? _____

DOG FOOD (For subsistence fishing households only)

22. Did this household catch salmon for dog food?
No ____ (go to # 26) Only backbones/heads/guts/scraps _____ (go to # 26)
Yes ____

23. How many salmon? CHUM_____ ("dogs") SOCKEYE_____ ("reds") COHO_____ ("silvers")

24. Are the salmon caught for the dogs included on your calendar or in the estimates you gave me ?
Yes____, No ____

25. How many dogs does this household have? _____

26. (For subsistence fishing households only)
Were your household's subsistence salmon needs met this year? Yes_____ No_____
If no, why not, _____
_____
How do you plan to meet those needs? (other fish, game, food stamps, etc) _____
_____

*27. Do you have any suggestions or comments? _____
_____
_____

A summary of the subsistence fishing survey will be sent out next spring (April).

Dear Kuskokwim Area Resident,

Each year the Subsistence Division of the Department of Fish and Game gathers information from Kuskokwim Area households about subsistence salmon fishing. This information is used to help ensure that there can be enough salmon for subsistence use. We would appreciate your help.

Please take a moment to answer the questions on the back side and drop it in the mail to us. No stamp is necessary, postage is already paid. We will mail you a subsistence salmon harvest summary after the survey data is compiled.

Thank you,
Subsistence Division
Room 214, BNC Complex
Bethel (543-3100)

Division of Subsistence
Alaska Dept. of Fish and Game
P.O. Box 1788
Bethel, AK 99559

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Alaska Dept. of Fish and Game
P. O. Box 1788
Bethel, AK 99559

ADDRESS CORRECTION REQUESTED
DO NOT FORWARD

(correct your address if necessary)
NAME:_____
P.O. BOX:_____
CITY, STATE:_____
ZIPCODE:_____

1. **Did your household harvest salmon for subsistence use this year?**
(include any salmon kept for subsistence when commercial fishing) Yes__ No____

2. **How many subsistence salmon did your household harvest?**
(include salmon eaten, given away, frozen, dried, smoked, canned, or for dogfood)

Chinook_____ (King salmon) Chum_____ (Dog salmon) Sockeye_____ (Red salmon) Coho_____ (Silver salmon)

3. **What type(s) of gear did your household use to catch subsistence salmon ?**
Set net___ Drift net___ Fishwheel___ Rod and reel_____

4. **Were your household's subsistence salmon needs met this year?** Yes__ No___
If No, Why?_____