KUSKOKWIM RIVER TEST FISHING PROJECT, 1988

By

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ABSTRACT

Prior to 1984 Alaska Department of Fish and Game (ADF&G) set gill net test fishing catches of chinook, sockeye, coho, and chum salmon were not adequately related to commercial catch statistics, which were the only available measures of abundance in the Kuskokwim River. Drift gill net test fishing was initiated in 1983 near Bethel to provide standardized salmon catch per unit effort (CPUE) data.

Test fishing catches provided CPUE's of 361, 1,501, 3,160, and 5,139 for chinook, sockeye, coho, and chum salmon, respectively, in 1988. These values represented a record CPUE for chum salmon, while chinook and coho salmon CPUE's were well above average historic levels. The cumulative sockeye salmon CPUE was nearly average.

Since 1984, commercial harvest statistics have been used to adjust raw test fishing CPUE data for annual changes in catchability. Cumulative adjusted CPUE's for chinook, sockeye, coho, and chum salmon in 1988 were 2,081, 2,930, 8,062, and 32,511, respectively.

The temporal species compositions of test fishing catches closely resembled those of nearby commercial harvests. The spatial distribution of test catches indicated that 14% of the chinook, 22% of the sockeye, 35% of the coho, and 30% of the chum salmon migrated within the main channel (as opposed to near shore) at the test fishing site in 1988. Most (60%) of the chinook salmon were caught in small (13.6 cm) mesh gill nets during the time that two mesh sizes were fished.

INTRODUCTION

The primary objective of Pacific salmon (Oncorhynchus spp.) management is to ensure adequate spawning escapement by regulating harvest. Successful harvest management requires accurate and timely knowledge of the abundance of the target population. Abundance indicators are especially critical to the management of a population migrating within the confines of a major river because of the concentrating effect of gear in such a fishery. Paulik and Greenough (1966) termed this a "gantlet fishery," and a classic example occurs within the confines of the mainstem Kuskokwim River where stocks of chinook (O. tshawytsha), sockeye (O. nerka), coho (O. kisutch), and chum (O keta) salmon are subjected to intense periodic fishing pressure as they migrate toward upriver spawning areas. Chinook, coho, and chum salmon are target species for the commercial fishery whereas catches of sockeye salmon are largely incidental.

Fishery Description

Distinct commercial and subsistence fisheries occur within the Kuskokwim River each year although many area fishermen participate in both activities.

Commercial Fishery:

Commercial fishing is allowed in two separate districts within the Kuskokwim River. Nearly all of the commercial harvest occurs in District 1 (statistical areas 335-11, 335-12, and 335-13) which extends from the Kuskokwim River mouth approximately 238 km (148 miles) upstream to the mouth of Bogus Creek (Figure 1). Until 1985, the target chum salmon commercial fishery was restricted to the lower 108 km (67 miles) of the district, which is essentially from the river mouth upstream to Bethel. Since that time, however, the entire district has been open for commercial fishing throughout the season, and a new statistical area (335-13) added an additional 26 km (16 mi) of river to District 1 in 1988. District 2 (statistical area 335-20) was shortened in 1988 to include only the 113 km (60 mi) of river between High Bluffs and Chuathbaluk.

Although commercial fishermen are not restricted from fishing in any Kuskokwim Area commercial fishing district, most effort is concentrated in District 1 (especially statistical area 335-11) where as many as 615 units of 50 fathom gear have been utilized during a single 6-hour commercial opening (ADF&G 1983). This amount of active drift gear probably results in a saturated fishing district, and it has been observed that most of the harvest occurs within the first three to four hours of each opening. Within that time, most of the preferred drifting areas are sifted by at least one unit of gear. Additionally, the decreased fishing area historically available during the target chum salmon commercial fishery accentuated both the crowding and the pressure upon fish

present within the subdistrict, although this restriction rarely now occurs and crowding is normally less pronounced.

Subsistence Fishery:

The subsistence salmon fishery is especially significant in the Kuskokwim River. The number of chinook salmon taken for subsistence purposes is typically double the number taken commercially, and the number of subsistence-caught chum salmon usually approaches half that of the commercial catch. Subsistence fishing takes place throughout the Kuskokwim River drainage including many of the major spawning tributaries, although over half of all subsistence fishing occurs downstream of the test fishery (ADF&G 1987). Subsistence fishing is not allowed within the open commercial fishing district from 24 hours before, during, and for 6 hours following a commercial opening. Subsistence fishing gear restrictions are similar to commercial gear restrictions in that gill nets may not be longer than 90 m (50 fathoms), and nets with stretched mesh sizes smaller than 15 cm (6 in) may not be deeper than 45 meshes. In contrast with the commercial fishery however, set gill nets are more widely used during subsistence fishing activities, and no mesh size restrictions apply to subsistence nets.

Project Background

Set gill net test fishing was conducted in the lower reaches of the Kuskokwim River from 1966 through 1983 (Huttunen 1984a). Located on the east bank of the east channel of the Kuskokwim River just upstream from the downstream District 1 boundary, the project was primarily designed to collect timing and abundance information on returns of chinook, sockeye, and chum salmon. That project was reorganized in July, 1983 to test fish with drift gill nets for coho salmon. Netting was conducted in the mainstem Kuskokwim River near the boundary line separating statistical catch reporting areas 335-11 and 335-12, about 5 km (3.5 miles) upstream from Bethel. This location was selected so that commercial harvests both upstream and downstream from the test fishery could be accurately described, and because essentially no spawning occurs below this site. Additionally, the river runs through a single major channel at that location, allowing mobile drift gill nets to collect accurate catch per unit of effort (CPUE) data across the entire width of the river. Because the drift gill net portion of the 1983 test fishing investigations offered a superior means of monitoring abundance and timing over set gill net test fishing methods, the historic set gill net test fishing project was discontinued and replaced in 1984 with a multiple mesh drift gill net test fishery (Huttunen 1985a).

Objectives

Objectives of the 1988 Kuskokwim River drift gill net test fishing project were as follows:

1. Index tidal and daily abundance of chinook, sockeye, coho, and chum salmon migrating within the mainstem Kuskokwim River through use of standardized test fishing CPUE data.

2. Describe the temporal migratory patterns of the chinook, sockeye, coho, and chum salmon runs at the test fishery and at the mouth of the Kuskokwim River.

3. Describe temporal changes in species composition within the river throughout the period of test fishing.

4. Describe the spatial distribution of test fishing CPUE's of chinook, sockeye, coho, and chum salmon across the width of the river.

5. Describe changes in annual test fishing catchability through use of commercial harvest statistics and apply these estimates to adjust raw CPUE's for annual changes in catchability.

This report presents the results of the 1988 Kuskokwim River drift gill net test fishing activities conducted near Bethel. Included is an analysis of entry patterns and of the temporal changes in species composition within the river. Also included is an estimate of relative mean annual test fishing catchability for each species since 1984.

METHODS

1988 Test Fishing

Drifts were conducted by a two-person crew in a 3 km (2 mile) river section located approximately 5 km (3.5 miles) upstream of Bethel and just above the boundary separating statistical areas 335-11 and 335-12. The methods and location used were identical to those used since 1984.

Because the test fishery was located within the commercial fishing district, no drifts were conducted during commercial fishing periods. The first drift of each tide began exactly one hour after the published high slack tide at Bethel, so that all drifts were conducted on downstream flowing water. A series of four drifts were conducted during each tide at three stations across the width of the river (Figure 2). From 2 June through 10 July, the first two drifts of each tide were conducted with 20.3 cm (8 in) and the second two with 13.6 cm (5 3/8 in) stretched mesh gill nets. All nets were hung at a 2:1 hanging ratio and the 13.6 and 20.3 cm mesh

webbing was constructed of 6 strand centercore and 36 strand 0.5 mm monofilament twine, respectively, manufactured by Nagura Net Co. This was done to capture all ages of migrating adult chinook salmon as well as all other salmon species present. A repeating random schedule of six unique permutations was used to determine the mesh size fished at each station such that no station was fished with the same mesh size twice during a single tide (Table 1). From 11 July through 29 August only 13.6 cm (5 3/8 in) mesh gear was fished and the same fishing schedule was maintained.

All test fishing drifts were conducted from a 6.1 m (20 ft) skiff for approximately 30 minutes with 90 m (50 fathoms) of gill net. All fish caught were tallied by species and all healthy chinook salmon were released. All other fish were sold to a local processor. Age, sex, and size data were not collected from test-caught fish.

Standardized Catches

Actual catches were converted to CPUE by considering the amount of effort (in both length of net and soak time) used to capture fish. Each CPUE index (I) was expressed as the number of fish which would have been caught if 180 m (100 fathoms) of net had been fished for exactly 60 minutes, a standard used in many gill net test fisheries statewide (Meacham 1978; Waltemyer 1983). Each CPUE index (I) was computed as follows:

$$I = \frac{(6,000)(C)}{(L)(T)}$$

Where C is the catch of each species in numbers of fish, L is the length of net used in fathoms, and T is the mean fishing time in minutes. Mean fishing time was defined as half the time it took to both set and retrieve the net, as well as the full amount of time that the entire net was fishing.

Catches were reported by species, and specific station catches were combined into an average tidal CPUE index (I_i) which was calculated by weighting the CPUE information from each station equally. However, during the time that both 20.3 cm (8 in) and 13.6 cm (5 3/8 in) nets were used, CPUE data from all drifts received equal weighting in the estimation of tidal chinook salmon abundance as:

$$I_i = (1/n) \left[\sum_{j=1}^{n} (I_{i,j}) \right]$$

where $I_{i,j}$ is the chinook salmon CPUE index from drift j on tide i, and n is the number of drifts actually conducted. In contrast, during the same time period, only catches in the 13.6 cm (5 3/8 in) mesh nets were used to generate mean tidal CPUE's of sockeye, coho,

and chum salmon.

Catch data from missed drifts not affected by commercial openings were linearly interpolated from the preceding and following data. Missing drift information immediately following an opening was estimated directly from test catch data obtained on drifts during only the following tide.

Estimated and actual tidal CPUE's were summed by species throughout the period of data collection to generate total annual CPUE indices (I):

$$I = \sum_{i=1}^{n} (I_i)$$

where n is the total number of tides which occurred throughout the course of the project.

Migratory Timing

The mean date of migration ($\bar{t}$) as defined by Mundy (1979) was calculated for each species as:

$$t = \sum_{i=1}^{n} (t_i p_i)$$

where t_i is the coded date of migration and p_i is the daily proportion of test fishing CPUE indices observed on day i:

$$p_i = \frac{I_i}{I}$$

The variance about the mean date of migration (s_t^2) was calculated as:

$$s_t^2 = \sum_{i=1}^{n} (t_i - t)^2 P_i$$

Species Composition

Species composition in the test fishery was calculated on a daily

basis and expressed as a fraction of the summed mean daily CPUE indices of all species pooled across all stations.

Spatial Distribution

Seasonal abundance by station was calculated by summing specific CPUE indices at each station across all tides fished. This was appropriate because of the regular rotation of stations sampled prior to 11 July when two different mesh sizes were fished. All stations were sampled with 13.6 cm (5 3/8 in) mesh gear on each tide after 10 July.

Catchability

Raw test fishing CPUE's were adjusted to account for changes in mean annual catchability for each species using methodology developed by Huttunen (1987a) and discussed in detail by Brannian (1988). This method relates specific downstream commercial catch statistics to observed declines in test fishing CPUE immediately following a commercial fishing period, and thereby allows direct comparison of 'corrected' annual CPUE data. Unexploited relative abundance within the statistical area during commercial fishing period 'j' was estimated using peak-to-peak interpolation between the mean test fishing CPUE on the two (i^{th}) tides before an opening and that from the first two tides following the recovery of CPUE's to unharvested levels:

$$\hat{I}_j = K \frac{1}{m} \sum_{k=1}^{m} I_{jk}$$

where k is the number of tides used to interpolate within, m is usually four (the two tides of unexploited CPUE before a commercial fishing period and the two tides of unexploited CPUE following a commercial fishing period), and K is the number of tides of depressed or 'exploited' CPUE. Catchability at the test fishery during period j (C_j) was described as a function of the known harvest as:

$$C_j = (.01) \frac{H_j}{\hat{I}_j - \sum_{K=1}^{p} I_r}$$

where H_j is the downstream harvest in statistical area 335-11, p is usually three or four (the number of tides of depressed test fishing CPUE resulting from commercial harvest removal), and I_r is the actual CPUE remaining during each tide of 'exploited' test fishing.

RESULTS AND DISCUSSION

1988 Test Fishing

Data collection began on 2 June and continued through 29 August 1988. During that time some 238 chinook, 583 sockeye, 1,989 coho, and 2,107 chum salmon were caught in a total of 623 drifts in the Kuskokwim River (Table 2, Appendix A). These catches generated 360.97 chinook, 1,500.55 sockeye, 3,159.75 coho, and 5,188.91 chum salmon CPUE indices including values interpolated for missed fishing time.

The cumulative test fishing CPUE patterns of chinook and chum salmon were remarkably similar in both duration and slope at maximum rate of increase in 1988 (Figure 3). The entry of sockeye salmon as monitored by test fishing CPUE was considerably more contracted however, and displayed a greater maximum rate of increase (more intensely spiked entry) than exhibited by any other species. The continuously steep slope of the coho salmon cumulative entry curve indicates that test fishing was discontinued well before the end of the coho salmon migration.

Chinook Salmon:

Drifting began on 2 June and the first chinook salmon was caught on that date. Both 20.3 cm (8 in) and 13.6 cm (5 3/8 in) mesh gill nets captured chinook salmon and most (60%) were taken in the smaller mesh nets (Table 3). Additionally, most (60%) of the chinook salmon were caught at station I adjacent to the sand bar along the east bank of the river (Table 4). The majority of the test fishing and commercial chinook salmon catches occurred between tides 12 and 42 (8 through 24 June) although catches were recorded as late as tide 136 on 11 August (Figure 4, Appendix A). Additionally, test fishing catches generally approximated the pattern of declining catches observed in the commercial fishery.

The portion of total daily test fishing CPUE comprised by chinook salmon was typically small, though variable (Table 5). The test fishing proportion of chinook salmon after the first day of fishing peaked at 48% on 7-8 June and declined thereafter. The peak commercial harvest proportion of chinook salmon (in total numbers of fish caught) was recorded during the first commercial opening on 16 June (14%) and subsequently declined in a pattern similar to that of test catches (Figure 5).

Test fishing catches of chinook salmon declined abruptly following all of the first five commercial fishing periods in 1988 (Figure 4). However, the discontinuous distribution of test fishing catches not following commercial openings prevented conclusive

evidence that all declines in test fishing CPUE were caused solely by commercial fishing.

Regressions of three and four tide cumulative CPUE on upstream statistical area 335-12 commercial harvests are presented in Figure 6. Both regressions were similar (r =0.96) and highly significant at p = .01 (Rohlf and Sokal 1969).

The chinook salmon migration occurred over a 70-day period as monitored by the test fishery with modal and mean ($\bar{t}$) dates of 20 and 22.4 June, respectively, and a mean date variance (s^2_t) of 543.4 (Appendix B). The modal and mean dates are 3 days later and 1 day earlier, respectively, than those calculated for the 1987 migration, and the mean date was one day later than the 1984-1988 average date (Figure 4, Appendix B).

Raw test fishing CPUE's of chinook salmon increased more rapidly than in any other year except 1987, and catchability-adjusted CPUE's nearly mirrored those from that year as well (Figure 7). The adjusted maximum rate of increase was steeper than those recorded from 1984-1986 and continued over a longer time interval, resulting in a cumulative adjusted CPUE more than twice those levels.

Sockeye Salmon:

The first sockeye salmon was caught in the test fishery on 8 June, and catches were recorded during nearly all tides after that time (Table 2). The central 80 percent of the run occurred between 13 June and 4 July, and the last sockeye salmon was caught in the test fishery on 31 July. Test fishing catches of sockeye salmon were closely distributed near shore, although 22% were recorded at station II (Table 4). The test fishing CPUE pattern was normally distributed and somewhat discontinuous in 1988, and most of the declines in test fishing CPUE followed commercial openings (Figure 8).

Sockeye salmon comprised a much larger fraction of test fishing catches than of District 1 commercial catches throughout 1988. However, both sources of proportion data peaked at nearly the same time and displayed similar patterns of declining abundance through time (Figure 9).

Regressions of three and four tide cumulative CPUE on subsequent (statistical area 335-12) commercial harvests using all data were both significant at p = 0.05 (Figure 10) with the correlation based on three tide CPUE (r = 0.84) slightly better than that based on four tide CPUE (r = 0.76). Similar regressions improved significantly (r = 0.90 and 0.96, respectively) when data from the second commercial opening was omitted. The three to four tides required to "fill" the 57 km (35 mi) long upriver (statistical area 335-12) portion of District 1 implies a migration rate of between

28 and 38 km (17 to 23 mi) per day.

The mean date of migration ($\bar{t}$) at the test fishery was 24.9 June and the variance about the mean date (s^2_t) was 244.6. This was 3.8 days later than that observed in 1986 and the latest yet observed (Appendix B).

The maximum rate of increase of the cumulative test fishing CPUE of sockeye salmon was roughly half that of the 1987 record year rate (Figure 11). The duration of the run was similar to that of all of the previous years, and the total raw CPUE was nearly average. However, the cumulative CPUE adjusted for differential catchability was the lowest yet calculated.

Coho Salmon:

Coho salmon were caught in test fishing drifts from 13 July through 29 August although the central 80 percent of the run occurred between 2 and 23 August (Table 2). Figure 12 illustrates the temporal catch patterns recorded in the commercial and test fisheries in 1988. Both catch patterns were similar and were characterized by a unimodal peak. Test fishing CPUE's peaked on tide number 125 (6 August) while the commercial catch in statistical area 335-11 downstream from the test fishery peaked one day earlier on 4 August (Appendix C). Most (49%) of the test fishing CPUE's were recorded at station I along the east bank, and an unusually large portion (35%) of the CPUE's were recorded at station II in the center of the river (Table 4).

The daily fraction of test fishing catches comprised by coho salmon increased rapidly from 21 July through 6 August when it approached 98 percent of the total (Table 5). The target coho salmon commercial fishery began on 25 July and the progression to nearly complete coho salmon predominance by 5 August closely mirrored test fishing catch percentages (Figure 13).

Regression analysis indicated that while three and four tide cumulative CPUE's were both significantly correlated with statistical area 335-12 commercial catches at $p = .01$, that based on four tide summed CPUE ($r = 0.95$) was slightly better (Figure 14).

The mean date of migration ($\bar{t}$) at 11.4 August was similar to the long term average mean date (11.1 August) reported from 1984 through 1988 (Appendix B). The mean date variance (s^2_t) in 1988 was 227.6.

The cumulative raw test fishing CPUE of coho salmon depicted in Figure 15 increased in a pattern similar to that observed during the 1984 and 1986 seasons, and stabilized at a level nearly equal to that of 1984 and exactly twice that of 1985. Catchability-adjusted cumulative CPUE's from 1988 were almost exactly equal to

those calculated for 1984 and 1987, however, and were only 30 percent greater than the 1985 corrected value (Appendix D).

Chum Salmon:

Chum salmon were caught in test fishing drifts from 5 June through 12 August (Table 2) and the central 80 percent of the run which passed the test fishery between 18 June and 15 July was somewhat bimodal (Figure 16). Test fishing CPUE patterns followed commercial chum salmon catch patterns throughout the chum salmon migration in 1988. The two peak CPUE's occurred on tide numbers 39 (22 June) and 61 (3 July). The largest part (51%) of the chum salmon CPUE's were recorded at station I along the east bank of the river, and 30 percent were recorded at station II (Table 4).

Chum salmon comprised the largest fraction of test fishing CPUE's and commercial catches in July (Figure 17). Additionally, the decline of chum salmon predominance in test fishing CPUE's mirrored that of the commercial harvest.

Regressions of three and four tide cumulative CPUE on upriver (statistical area 335-12) commercial harvests were both significant at $p = .01$, with that based on three tide cumulative CPUE somewhat better when all data were included (Figure 18). Regression coefficients (r) increased to 0.92 and 0.91 for summed three and four tide CPUE's, respectively, when cumulative CPUE's which exceeded 300 and 400, respectively, were omitted.

The mean date of the chum salmon migration ($\bar{t}$) at the test fishery was 30.8 June. This was the earliest mean date yet recorded and was 1.9 days earlier than the long term average calculated for the migrations monitored from 1984 through 1988 (Appendix B). The 1988 mean date variance was 435.9.

The pattern of raw cumulative chum salmon test fishing CPUE recorded in 1988 was similar, in terms of slope, initial rate of increase, and total CPUE to patterns recorded in 1987 (Figure 19). The pattern of cumulative CPUE's corrected for catchability is strikingly different from those recorded from 1984 through 1987, however. The maximum rate of increase was actually steeper and was sustained over a much longer period of time than in any other year. The resulting cumulative CPUE was more than double any previously recorded and was more than six times greater than the level reported for test fishing conducted in 1985 (Appendix D).

Hydrologic Data

Hydrologic data were collected during each tide in which test fishing occurred. Observations included both water temperature (at 0.5 m depth) and clarity readings. Water temperatures ranged from 9°C to 19°C with a mean of 13.38°C, and secchi readings varied from 0.10 m to 0.45 m with a mean of 0.26 m (Table 6).

Bottom profile data collected at the test fishing site in 1988 show the U-shaped channel to be 14.3 m (47 ft) deep and 320 m (1,050 ft) wide (Figure 20). It also graphically depicts the portion of the water column sampled by the drift nets.

PROJECT DISCUSSION AND MANAGEMENT CONSIDERATIONS

Test fishing catch patterns accurately depicted the patterns of specific catches observed in the commercial fishery near Bethel in 1988, and the project accurately monitored the daily species composition throughout the duration of the salmon migration in the Kuskokwim River for the fifth consecutive year.

Test fishing CPUE data were not used to estimate total riverine abundance of returning chinook, sockeye, coho, and chum salmon in 1988. Detailed analysis indicates that this abundance estimation procedure is highly sensitive to violations of many of the fundamental assumptions required for the process to function properly (Brannian 1988). The procedure was used to estimate relative annual catchability, however, and to adjust annual historic CPUE data accordingly. It was necessary to develop an apriori estimation procedure to account for catchability since no total abundance information is available by which to empirically estimate catchability. Changes in mean specific fish size, migratory behavior, hydrologic conditions, and total abundance (as it affects net saturation) all influence catchability to various degrees. Without some means of correcting raw CPUE information for ongoing changes in relative catchability, it would be difficult to successfully describe relative run strength or even the direction (greater or less than) the relative magnitude of a specific run from one year to another.

An examination of the specific tidal CPUE data on Figures 4, 8, 12, and 16 reveals the generally discontinuous nature of test fishing CPUE's through time. This phenomenon may well represent the most serious assumption violated as catchability estimates are attempted. Declines in test fishing CPUE following an opening must be caused solely by the commercial harvest removal if the calibrations are to be precise. Yet some unknown degree of diminished test fishing CPUE is certainly caused by a discontinuous entry or sampling error or both since dramatic declines which meet calibration criteria can be observed not following a commercial fishing period, and test fishing CPUE's occasionally increase following commercial openings.

Regressions of cumulative test fishing CPUE on subsequent commercial harvests indicate that the test fishery accurately indexes the tidal passage of at least sockeye, coho and chum salmon during most years, and of chinook salmon less frequently. Typical chinook salmon abundance may be too small to avoid sampling errors

at this sampling intensity since the peak tidal chinook salmon catch was 25 fish, or roughly 6 fish per drift during the record 1987 run of that species.

Regressions also imply that at certain specific population densities, the fleet capacity may be exceeded, and the associated catch (of all species) limited accordingly. An example can be found in Figure 18, where an apparent limit of 65,000 chum salmon was reached in statistical area 335-12 at three and four tide test fishing CPUE's of 200 and 300, respectively. This commercial catch level remained relatively constant as cumulative test fishing CPUE's increased to even triple those levels. The total catch of all species during those four commercial openings also remained constant at 72,000 fish. Similar commercial catch responses to large apparent abundances in statistical area 335-12 were reported for coho salmon in both 1986 and 1987 at levels of 60,000 and 40,000 fish, respectively (Huttunen 1987a, 1988). Total catches of all species were essentially the same since coho salmon normally exhibit complete dominance during the peak of their returns. Instantaneous fleet capacity is clearly a dynamic charactistic, changing with fleet size, typical boat and net characteristics, and with tendering and processing capability. Therefore, upper limits are likely to change (increase) annually, and confound test fish evaluation.

Sockeye salmon typically comprise a much larger fraction of test fishing catches than of commercial catches. Two factors may each contribute to this percieved difference in relative run strength. First, all test fishing is conducted with 5 3/8 in stretched mesh gill nets, while the most commonly used commercial mesh sizes apparently range from 5 1/2 in to 6 in. This larger gear is used to target on the considerably more numerous chum salmon which typically average 15 to 20 mm longer in mid-eye to fork length (Huttunen 1984b, 1985b, 1986, 1987b). In addition to differences in mesh-specific catchability, the migratory behavior of sockeye salmon appears to be more strongly bank-oriented than that of the chinook and chum salmon which migrate at the same time. Since much of the shoreline within the commercial fishing district is characterized by fallen trees and driftwood, most commercial drifting is conducted offshore, inadvertently targetting commercial effort further away from sockeye salmon. In contrast, test fishing at the current location is conducted along both shorelines so that the entire width of the river is sampled on each tide.

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Table 1. Kuskokwim River drift test fishing schedule by mesh size (cm) and station, 1988. a

Schedule Number	Station 1	Station 2	Station 3
1	20.3 13.6	20.3	 13.6
2	20.3	20.3 13.6	 13.6
3	20.3 13.6	 13.6	20.3
4	20.3	 13.6	20.3 13.6
5	 13.6	20.3 13.6	20.3
6	 13.6	20.3	20.3 13.6

a Repeating random schedule used throughout the period of test fishing is: 2,3,5,4,1,6.

Table 2. Kuskokwim River drift test fishing catch and mean tidal CPUE by species, 1988. 1/ 2/

Date	Tide No.	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/02	1	2	2.96	0	0.00	0	0.00	0	0.00
06/03	2	0	0.00	0	0.00	0	0.00	0	0.00
06/03	3	0	0.00	0	0.00	0	0.00	0	0.00
06/04	4	0	0.00	0	0.00	0	0.00	0	0.00
06/04	5	0	0.00	0	0.00	0	0.00	0	0.00
06/05	6	1	1.88	0	0.00	0	0.00	0	0.00
06/05	7	0	0.00	0	0.00	0	0.00	3	8.78
06/06	8	0	0.00	0	0.00	0	0.00	0	0.00
06/06	9	0	0.00	0	0.00	0	0.00	0	0.00
06/07	10	2	2.79	0	0.00	0	0.00	1	3.00
06/08	11	3	5.11	1	4.14	0	0.00	1	3.00
06/08	12	9	16.95	3	8.23	0	0.00	3	8.23
06/09	13	2	3.24	1	3.24	0	0.00	3	9.24
06/09	14	7	11.17	4	11.00	0	0.00	10	28.67
06/10	15	1	1.46	0	0.00	0	0.00	6	6.00
06/10	16	2	3.86	4	11.71	0	0.00	10	23.41
06/11	17	*	8.41	*	18.35	*	0.00	*	28.64
06/11	18	10	12.95	11	25.00	0	0.00	15	33.86
[illegible]/12	19	1	1.82	10	32.82	0	0.00	14	41.
[illegible]/12	20	12	16.41	13	28.78	0	0.00	20	49.
[illegible]/13	21	4	6.00	11	33.85	0	0.00	14	43.08
06/13	22	3	5.00	5	13.64	0	0.00	14	44.24
06/14	23	1	1.43	2	5.78	0	0.00	2	2.86
06/14	24	1	1.54	3	8.00	0	0.00	6	16.33
06/15	25	2	2.26	4	9.06	0	0.00	16	36.23
06/15	26	4	5.75	0	0.00	0	0.00	4	8.93
06/16	27	5	6.67	3	7.35	0	0.00	10	25.59
06/16	28	1	1.50	0	0.00	0	0.00	0	0.00
06/17	29	0	0.00	0	0.00	0	0.00	0	0.00
06/17	30	15	20.67	10	26.28	0	0.00	22	55.61
06/18	31	3	4.62	12	36.92	0	0.00	16	48.09
06/18	32	2	2.58	5	11.54	0	0.00	60	146.59
06/19	33	3	3.96	21	52.93	0	0.00	27	60.13
06/19	34	7	9.42	19	44.98	0	0.00	40	100.29
06/20	35	12	15.17	4	0.00	0	0.00	10	23.28
06/20	36	6	9.64	10	25.88	0	0.00	11	26.40
06/21	37	4	5.21	25	63.50	0	0.00	15	37.50
06/21	38	9	10.70	37	71.20	0	0.00	55	105.98
06/22	39	9	13.15	62	135.35	0	0.00	114	251.07
06/23	40	1	1.46	38	96.74	0	0.00	44	117.84
06/23	41	10	14.82	8	20.37	0	0.00	45	128.51
06/24	42	14	19.25	14	42.76	0	0.00	25	81.65
06/24	43	*	2.00	*	20.00	*	0.00	*	4.00
[illegible]/25	44	1	2.00	5	20.00	0	0.00	2	4.[illegible]
[illegible]/25	45	4	5.79	6	8.85	0	0.00	6	11.
[illegible]/26	46	3	4.25	23	60.07	0	0.00	3	8.3[illegible]

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le 2. Kuskokwim River drift test fishing catch and mean tidal CPUE by species, 1988 (Continued). 1/ 2/

Date	Tide No.	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/26	47	5	5.92	23	54.58	0	0.00	23	54.88
06/27	48	6	8.53	11	24.40	0	0.00	21	50.89
06/27	49	4	5.60	15	44.34	0	0.00	100	254.65
06/28	50	3	3.10	17	36.02	0	0.00	48	99.31
06/28	51	*	1.82	*	6.15	*	0.00	*	9.23
06/29	52	1	1.82	2	6.15	0	0.00	3	9.23
06/29	53	1	1.50	2	3.00	0	0.00	33	99.08
06/30	54	1	1.46	12	33.63	0	0.00	16	43.84
06/30	55	1	1.43	4	11.16	0	0.00	16	44.65
07/01	56	7	9.17	29	66.94	0	0.00	29	70.20
07/01	57	3	2.65	13	24.18	0	0.00	173	312.18
07/02	58	1	1.25	13	16.38	0	0.00	33	73.71
07/02	59	0	0.00	2	11.43	0	0.00	22	114.29
07/03	60	3	3.75	10	23.08	0	0.00	50	121.57
07/03	61	1	1.02	9	9.31	0	0.00	170	315.84
07/04	62	*	2.11	*	21.17	*	0.00	*	261.56
07/04	63	*	3.21	*	33.04	*	0.00	*	207.29
07/05	64	3	4.30	15	44.91	0	0.00	53	153.01
[illegible]/05	65	2	3.29	0	0.00	0	0.00	12	38.71
[illegible]/06	66	0	0.00	2	2.61	0	0.00	17	39.52
[illegible]/06	67	0	0.00	5	13.98	0	0.00	30	80.33
07/07	68	0	0.00	5	11.43	0	0.00	11	27.43
07/08	69	0	0.00	2	6.33	0	0.00	6	15.00
07/08	70	*	0.00	*	6.32	*	0.00	*	19.22
07/09	71	0	0.00	2	6.32	0	0.00	9	19.22
07/09	72	0	0.00	1	3.24	0	0.00	23	73.14
07/10	73	0	0.00	0	0.00	0	0.00	1	3.00
07/10	74	0	0.00	2	5.00	0	0.00	56	144.50
07/11	75	0	0.00	4	4.38	0	0.00	41	56.57
07/11	76	*	0.00	*	0.00	*	0.00	*	26.76
07/12	77	0	0.00	0	0.00	0	0.00	13	26.76
07/12	78	0	0.00	0	0.00	0	0.00	32	38.28
07/13	79	0	0.00	0	0.00	0	0.00	11	22.60
07/13	80	0	0.00	0	0.00	1	1.00	24	40.62
07/14	81	5	5.93	1	1.05	0	0.00	16	17.08
07/14	82	1	1.95	1	1.95	0	0.00	11	20.51
07/15	83	0	0.00	1	1.63	0	0.00	17	25.11
07/15	84	0	0.00	0	0.00	0	0.00	29	43.76
07/16	85	2	4.10	0	0.00	0	0.00	14	26.03
07/16	86	2	3.64	0	0.00	0	0.00	39	55.89
07/17	87	1	1.03	1	1.03	1	1.03	13	15.77
07/17	88	2	4.57	1	2.29	1	1.90	42	48.40
07/18	89	1	1.78	1	1.78	0	0.00	28	50.33
[illegible]/18	90	0	0.00	0	0.00	0	0.00	5	6.95
[illegible]/19	91	0	0.00	0	0.00	0	0.00	5	9.71
[illegible]/19	92	0	0.00	0	0.00	0	0.00	4	6.08

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ble 2. Kuskokwim River drift test fishing catch and mean tidal CPUE by species, 1988 (Continued). 1/ 2/

Date	Tide No.	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/20	93	0	0.00	0	0.00	2	1.78	14	16.58
07/20	94	0	0.00	0	0.00	0	0.00	10	12.62
07/21	95	0	0.00	0	0.00	0	0.00	9	23.93
07/21	96	0	0.00	0	0.00	1	2.22	6	11.75
07/22	97	0	0.00	1	1.14	0	0.00	6	7.34
07/22	98	0	0.00	0	0.00	2	3.25	1	2.22
07/23	99	0	0.00	0	0.00	0	0.00	5	5.96
07/24	100	1	1.08	1	1.08	7	10.92	7	11.81
07/24	101	0	0.00	0	0.00	1	2.16	7	12.39
07/25	102	0	0.00	0	0.00	5	10.00	4	7.00
07/25	103	*	0.00	*	0.00	*	3.16	*	8.50
07/26	104	0	0.00	0	0.00	3	3.16	7	8.50
07/26	105	1	2.16	0	0.00	2	3.16	3	4.16
07/27	106	1	2.00	0	0.00	16	25.33	9	12.67
07/27	107	0	0.00	0	0.00	8	11.93	4	4.86
07/28	108	0	0.00	0	0.00	26	52.50	0	0.00
07/28	109	*	0.00	*	0.00	*	19.46	*	9.65
07/29	110	0	0.00	0	0.00	9	19.46	5	9.65
07/29	111	0	0.00	0	0.00	8	10.05	3	3.
07/30	112	0	0.00	0	0.00	14	29.11	7	9.
07/30	113	2	4.16	0	0.00	7	14.65	9	13.65
07/31	114	0	0.00	1	0.80	26	25.40	2	1.80
07/31	115	0	0.00	0	0.00	15	28.02	2	3.81
08/01	116	0	0.00	0	0.00	29	45.25	2	3.40
08/01	117	0	0.00	0	0.00	2	4.05	1	2.00
08/02	118	0	0.00	0	0.00	10	15.15	1	1.90
08/02	119	0	0.00	0	0.00	7	13.16	1	2.00
08/03	120	0	0.00	0	0.00	24	39.82	1	1.70
08/03	121	0	0.00	0	0.00	29	47.54	3	4.79
08/04	122	0	0.00	0	0.00	15	28.19	0	0.00
08/04	123	0	0.00	0	0.00	9	11.00	2	3.00
08/05	124	0	0.00	0	0.00	29	34.34	2	2.82
08/06	125	0	0.00	0	0.00	222	253.40	6	7.47
08/06	126	0	0.00	0	0.00	56	87.35	0	0.00
08/07	127	0	0.00	0	0.00	169	173.04	9	8.94
08/07	128	0	0.00	0	0.00	86	163.59	6	10.00
08/08	129	0	0.00	0	0.00	86	111.99	1	0.91
08/08	130	*	0.00	*	0.00	*	35.91	*	1.90
08/09	131	0	0.00	0	0.00	19	35.91	1	1.90
08/09	132	0	0.00	0	0.00	5	5.83	1	0.98
08/10	133	0	0.00	0	0.00	44	43.02	1	1.03
08/10	134	*	0.00	*	0.00	*	72.19	*	3.19
08/11	135	0	0.00	0	0.00	64	72.19	2	3.19
08/11	136	1	2.76	0	0.00	110	166.40	0	0.0
08/12	137	0	0.00	0	0.00	141	161.70	1	1.
08/12	138	*	0.00	*	0.00	*	40.52	*	0.00

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le 2. Kuskokwim River drift test fishing catch and mean tidal CPUE by species, 1988 (Continued). 1/ 2/

Date	Tide No.	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
08/13	139	0	0.00	0	0.00	20	40.52	0	0.00
08/13	140	0	0.00	0	0.00	14	24.96	0	0.00
08/14	141	0	0.00	0	0.00	75	126.56	0	0.00
08/14	142	0	0.00	0	0.00	27	43.26	0	0.00
08/15	143	0	0.00	0	0.00	94	159.92	0	0.00
08/15	144	0	0.00	0	0.00	8	13.40	0	0.00
08/16	145	0	0.00	0	0.00	10	21.30	0	0.00
08/16	146	0	0.00	0	0.00	18	33.07	0	0.00
08/17	147	0	0.00	0	0.00	39	46.56	0	0.00
08/17	148	*	0.00	*	0.00	*	70.42	*	0.00
08/18	149	0	0.00	0	0.00	49	94.28	0	0.00
08/18	150	0	0.00	0	0.00	8	16.28	0	0.00
08/19	151	0	0.00	0	0.00	4	4.00	0	0.00
08/19	152	0	0.00	0	0.00	17	30.60	0	0.00
08/20	153	0	0.00	0	0.00	14	31.70	0	0.00
08/20	154	0	0.00	0	0.00	4	4.57	0	0.00
08/21	155	0	0.00	0	0.00	5	8.76	0	0.00
08/22	156	0	0.00	0	0.00	24	43.11	0	0.00
[illegible]/22	157	0	0.00	0	0.00	20	24.54	0	0.00
[illegible]/23	158	0	0.00	0	0.00	18	37.56	0	0.00
[illegible]/23	159	0	0.00	0	0.00	17	32.57	0	0.00
08/24	160	0	0.00	0	0.00	30	56.02	0	0.00
08/24	161	0	0.00	0	0.00	23	38.10	0	0.00
08/25	162	0	0.00	0	0.00	39	67.38	0	0.00
08/25	163	0	0.00	0	0.00	25	37.86	0	0.00
08/26	164	0	0.00	0	0.00	14	27.64	0	0.00
08/26	165	0	0.00	0	0.00	10	21.14	0	0.00
08/27	166	0	0.00	0	0.00	43	40.57	0	0.00
08/27	167	*	0.00	*	0.00	*	6.86	*	0.00
08/28	168	0	0.00	0	0.00	3	6.86	0	0.00
08/28	169	0	0.00	0	0.00	1	2.05	0	0.00
08/29	170	0	0.00	0	0.00	4	4.08	0	0.00
08/29	171	0	0.00	0	0.00	1	2.05	0	0.00
Total		238	360.97	583	1500.55	1989	3159.75	2107	5188.91

1/ Includes chinook salmon caught in 13.6 and 20.3 cm (5 3/8 and 8 in.) mesh gill nets, and sockeye, coho, and chum salmon taken in 13.6 cm (5 3/8 in) gill nets only.

2/ Mean tidal CPUE was calculated by weighting catch information from each station equally.

3/ Starred catch entries indicate missing and interpolated data.

Table 3. Kuskokwim River test fishing cumulative CPUE of chinook salmon by mesh size, 1984-1988.

Year	Cumulative CPUE a	13.6 cm CPUE	13.6 cm %	20.3 cm CPUE	20.3 cm %
1984	485.07	280.13	57.75	204.94	42.25
1985	370.02	194.90	52.67	175.12	47.33
1986	326.68	227.32	69.58	99.36	30.42
1987	2081.51	1390.69	66.81	690.82	33.19
1988	1343.64	809.42	60.24	534.22	39.76
Mean	921.38	580.49	63.00	340.89	37.00

a Cumulative CPUE is an unweighted total and is therefore different from cumulative tidal CPUE data reported elsewhere in this document (Tables 2, 4). Mean tidal CPUE was calculated by weighting mean CPUE data from each station equally, while cumulative CPUE represents the total CPUE recorded only during the time that both mesh sizes were fished (10 July).

Table 6. Daily water temperature and clarity readings taken at the Kuskokwim River test fishing site, 1988 (continued).

17-Jul	17	14	0.20	0.25
18-Jul	16	15	0.20	0.25
19-Jul	17	18	0.25	0.25
20-Jul	17	16	0.25	0.20
21-Jul	18	17	0.20	0.15
22-Jul	18	18	0.20	-
23-Jul	18	18	0.20	0.20
24-Jul	18	18	-	0.20
25-Jul	-	-	-	-
26-Jul	-	17	-	0.20
27-Jul	17	16	0.10	0.15
28-Jul	15	-	0.10	-
29-Jul	15	16	0.15	0.15
30-Jul	15	16	0.10	0.10
31-Jul	15	16	0.15	0.10
01-Aug	15	15	0.15	0.10
02-Aug	15	15	0.10	0.10
03-Aug	14	15	0.10	0.10
04-Aug	15	15	0.15	0.15
05-Aug	16	-	0.15	-
06-Aug	-	16	-	0.20
07-Aug	-	15	-	0.20
08-Aug	-	-	-	-
09-Aug	-	13	-	0.25
10-Aug	-	-	-	-
11-Aug	12	13	0.20	0.25
12-Aug	12	-	0.20	-
13-Aug	12	12	0.20	0.20
14-Aug	12	11	0.20	0.30
15-Aug	11	11	0.20	0.20
16-Aug	11	11	0.20	0.25
17-Aug	11	-	0.25	-
18-Aug	12	11	0.20	0.20
19-Aug	12	12	0.20	0.20
20-Aug	12	-	0.25	-
21-Aug	12	-	0.25	-
22-Aug	-	12	-	0.20
23-Aug	-	11	-	0.25
24-Aug	-	11	-	0.20
25-Aug	-	11	-	0.30
26-Aug	9	11	0.20	0.40
27-Aug	9	-	0.35	-
28-Aug	10	11	0.40	0.45
29-Aug	11	11	0.40	0.35
Season Average		13.38		0.26

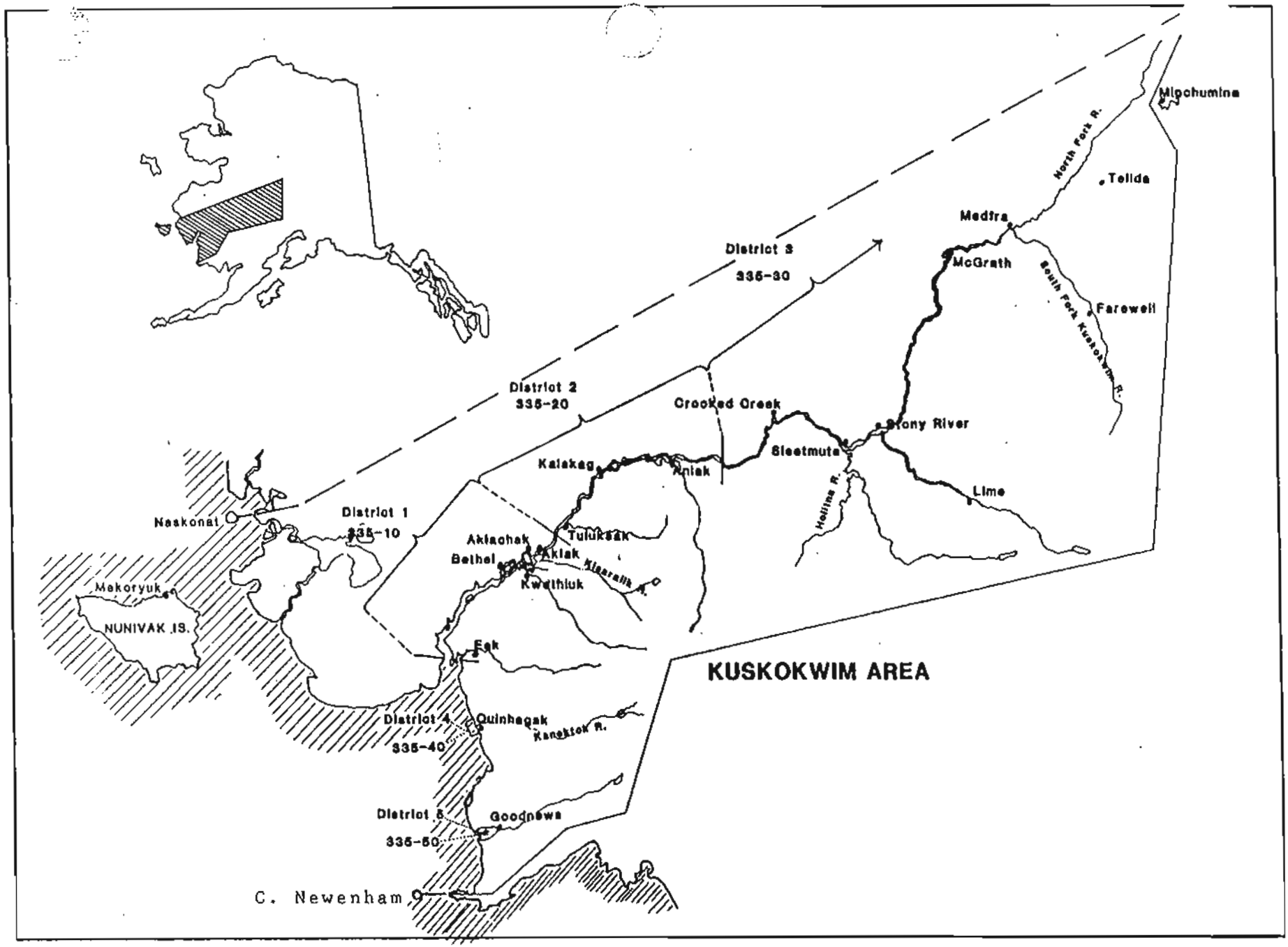

Figure 1. Map of Kuskokwim Area showing commercial fishing district boundaries.

Table 4. Kuskokwim River test fishing cumulative CPUE and percent by station and species, 1984-1988.

Chinook Salmon	Cumulative CPUE a	Station I CPUE	Station I %	Station II CPUE	Station II %	Station III CPUE	Station III %
1984	928.18	380.49	40.99	158.59	17.09	389.10	41.92
1985	398.53	280.47	70.38	47.33	11.88	70.73	17.75
1986	583.70	278.93	47.79	164.62	28.20	140.15	24.01
1987	2,248.75	1,021.89	45.44	552.30	24.56	674.56	30.00
1988	1,343.64	808.23	60.15	185.72	13.82	349.69	26.03
Mean	1,100.56	554.00	52.95	221.71	19.11	1,624.23	27.94

Sockeye Salmon	Cumulative CPUE a	Station I CPUE	Station I %	Station II CPUE	Station II %	Station III CPUE	Station III %
1984	1,260.66	705.61	55.97	308.01	24.43	247.04	19.60
1985	3,210.42	1,977.80	61.61	724.44	22.57	508.18	15.83
1986	11,528.63	6,353.98	55.11	2,417.07	20.97	2,757.58	23.92
1987	5,375.82	2,285.28	42.51	1,391.05	25.88	1,699.49	31.61
1988	3,106.24	1,968.49	63.37	683.14	21.99	454.61	14.64
Mean	4,896.35	2,658.23	55.71	1,104.74	23.17	5,666.90	21.12

Coho Salmon	Cumulative CPUE a	Station I CPUE	Station I %	Station II CPUE	Station II %	Station III CPUE	Station III %
1984	8,928.76	4,791.52	53.66	1,506.68	16.87	2,630.56	29.46
1985	4,334.87	3,211.52	74.09	653.60	15.08	469.75	10.84
1986	11,528.63	6,353.98	55.11	2,417.07	20.97	2,757.58	23.92
1987	7,155.69	5,043.37	70.48	530.59	7.41	1,581.73	22.10
1988	11,200.31	5,489.19	49.01	3,897.51	34.80	1,813.61	16.19
Mean	8,629.65	4,977.92	60.47	1,801.09	19.03	9,253.23	20.50

Chum Salmon	Cumulative CPUE a	Station I CPUE	Station I %	Station II CPUE	Station II %	Station III CPUE	Station III %
1984	5,048.15	2,382.66	47.20	1,167.13	23.12	1,498.36	29.68
1985	2,784.86	2,042.35	73.34	353.10	12.68	389.41	13.98
1986	7,762.30	3,186.86	41.06	2,791.92	35.97	1,783.52	22.98
1987	12,838.91	4,266.46	33.23	4,259.11	33.17	4,313.34	33.60
1988	11,048.54	5,593.88	50.63	3,320.45	30.05	2,134.21	19.32
Mean	7,896.55	3,494.44	49.09	2,378.34	27.00	10,118.84	23.91

a Cumulative CPUE is an unweighted total and is therefore different from the cumulative tidal CPUE data reported elsewhere in this document (Tables 2, 3). Mean tidal CPUE was calculated by weighting CPUE information from each station equally, whereas cumulative CPUE represents the total CPUE recorded throughout the duration of test fishing (as opposed to data presented in Table 3 which only included data collected through 10 July at which time fishing with large mesh gear was suspended).

Table 5. Kuskokwim River test fishing and commercial catch species composition by day, 1988.

	TEST FISHING PERCENT				COMMERCIAL CATCH PERCENT			
Date	Chinook	Sockeye	Coho	Chum	Chinook	Sockeye	Coho	Chum
06/02	1.0000	0.0000	0.0000	0.0000				
06/03	0.0000	0.0000	0.0000	0.0000				
06/04	0.0000	0.0000	0.0000	0.0000				
06/05	0.1760	0.0000	0.0000	0.8240				
06/06	0.0000	0.0000	0.0000	0.0000				
06/07	0.4819	0.0000	0.0000	0.5181				
06/08	0.4832	0.2709	0.0000	0.2459				
06/09	0.2165	0.2140	0.0000	0.5695				
06/10	0.1147	0.2520	0.0000	0.6333				
06/11	0.1679	0.3408	0.0000	0.4913				
06/12	0.1067	0.3606	0.0000	0.5326				
06/13	0.0755	0.3257	0.0000	0.5989				
06/14	0.0826	0.3835	0.0000	0.5339				
06/15	0.1289	0.1455	0.0000	0.7256				
06/16	0.1988	0.1787	0.0000	0.6225	0.1370	0.0803	0.0000	0.7827
06/17	0.2015	0.2562	0.0000	0.5422				
06/18	0.0288	0.1936	0.0000	0.7777				
06/19	0.0492	0.3603	0.0000	0.5904				
06/20	0.2472	0.2579	0.0000	0.4950	0.0837	0.1037	0.0000	0.8126
06/21	0.0541	0.4580	0.0000	0.4879				
06/22	0.0329	0.3387	0.0000	0.6283				
06/23	0.0429	0.3084	0.0000	0.6487				
06/24	0.1307	0.3245	0.0000	0.5448	0.0650	0.1331	0.0000	0.8019
06/25	0.1481	0.5489	0.0000	0.3030				
06/26	0.0541	0.6096	0.0000	0.3363				
06/27	0.0364	0.1770	0.0000	0.7866				
06/28	0.0257	0.2641	0.0000	0.7102	0.0302	0.0996	0.0000	0.8702
06/29	0.0275	0.0758	0.0000	0.8967				
06/30	0.0212	0.3289	0.0000	0.6498				
07/01	0.0243	0.1877	0.0000	0.7879				
07/02	0.0058	0.1281	0.0000	0.8661	0.0171	0.0731	0.0000	0.9098
07/03	0.0100	0.0682	0.0000	0.9217				
07/04	0.0101	0.1026	0.0000	0.8873				
07/05	0.0311	0.1839	0.0000	0.7850	0.0135	0.0420	0.0001	0.9445
07/06	0.0000	0.1216	0.0000	0.8784				
07/07	0.0000	0.2941	0.0000	0.7059				
07/08	0.0000	0.2828	0.0000	0.7172	0.0131	0.0251	0.0000	0.9618
07/09	0.0000	0.0938	0.0000	0.9062				
07/10	0.0000	0.0328	0.0000	0.9672				
07/11	0.0000	0.0627	0.0000	0.9373	0.0115	0.0174	0.0002	0.9709
07/12	0.0000	0.0000	0.0000	1.0000				
07/13	0.0000	0.0000	0.0156	0.9844				
07/14	0.1626	0.0620	0.0000	0.7754	0.0146	0.0069	0.0012	0.9773
07/15	0.0000	0.0232	0.0000	0.9768				
07/16	0.0863	0.0000	0.0000	0.9137				
07/17	0.0736	0.0436	0.0386	0.8442				

— Continued —

Table 5. Kuskokwim River test fishing and commercial catch species composition by day, 1988 (Continued).

	TEST FISHING PERCENT				COMMERCIAL CATCH PERCENT			
Date	Chinook	Sockeye	Coho	Chum	Chinook	Sockeye	Coho	Chum
07/18	0.0292	0.0292	0.0000	0.9416	0.0185	0.0066	0.0084	0.9664
07/19	0.0000	0.0000	0.0000	1.0000				
07/20	0.0000	0.0000	0.0574	0.9426				
07/21	0.0000	0.0000	0.0586	0.9414	0.0149	0.0039	0.0306	0.9505
07/22	0.0000	0.0819	0.2328	0.6853				
07/23	0.0000	0.0000	0.0000	1.0000				
07/24	0.0274	0.0274	0.3317	0.6135				
07/25	0.0000	0.0000	0.5882	0.4118	0.0104	0.0034	0.1998	0.7864
07/26	0.1023	0.0000	0.2990	0.5988				
07/27	0.0352	0.0000	0.6562	0.3086				
07/28	0.0000	0.0000	0.9483	0.0517	0.0089	0.0019	0.5607	0.4285
07/29	0.0000	0.0000	0.7000	0.3000				
07/30	0.0588	0.0000	0.6181	0.3231				
07/31	0.0000	0.0134	0.8929	0.0938				
08/01	0.0000	0.0000	0.9012	0.0988	0.0049	0.0008	0.8250	0.1693
08/02	0.0000	0.0000	0.8788	0.1212				
08/03	0.0000	0.0000	0.9308	0.0692				
08/04	0.0000	0.0000	0.9289	0.0711	0.0025	0.0013	0.9334	0.0628
08/05	0.0000	0.0000	0.9241	0.0759				
08/06	0.0000	0.0000	0.9785	0.0215				
08/07	0.0000	0.0000	0.9467	0.0533				
08/08	0.0000	0.0000	0.9877	0.0123	0.0014	0.0012	0.9610	0.0364
08/09	0.0000	0.0000	0.9355	0.0645				
08/10	0.0000	0.0000	0.9698	0.0302	0.0013	0.0002	0.9736	0.0249
08/11	0.0113	0.0000	0.9757	0.0130				
08/12	0.0000	0.0000	0.9904	0.0096	0.0013	0.0001	0.9821	0.0165
08/13	0.0000	0.0000	1.0000	0.0000				
08/14	0.0000	0.0000	1.0000	0.0000				
08/15	0.0000	0.0000	1.0000	0.0000	0.0013	0.0002	0.9875	0.0110
08/16	0.0000	0.0000	1.0000	0.0000				
08/17	0.0000	0.0000	1.0000	0.0000				
08/18	0.0000	0.0000	1.0000	0.0000	0.0010	0.0002	0.9927	0.0061
08/19	0.0000	0.0000	1.0000	0.0000				
08/20	0.0000	0.0000	1.0000	0.0000	0.0012	0.0002	0.9936	0.0050
08/21	0.0000	0.0000	1.0000	0.0000				
08/22	0.0000	0.0000	1.0000	0.0000				
08/23	0.0000	0.0000	1.0000	0.0000				
08/24	0.0000	0.0000	1.0000	0.0000				
08/25	0.0000	0.0000	1.0000	0.0000				
08/26	0.0000	0.0000	1.0000	0.0000				
08/27	0.0000	0.0000	1.0000	0.0000	0.0006	0.0004	0.9950	0.0041
08/28	0.0000	0.0000	1.0000	0.0000				
08/29	0.0000	0.0000	1.0000	0.0000	0.0006	0.0011	0.9949	0.0034

Table 6. Daily water temperature and clarity readings taken at the Kuskokwim River test fishing site, 1988.

	Water Temp. (c)		Secchi Readings (m)	
Date	am	pm	am	pm
02-Jun	9	-	0.20	-
03-Jun	9	10	0.30	0.25
04-Jun	10	10	0.20	0.20
05-Jun	11	10	0.30	0.25
06-Jun	10	10	0.30	0.25
07-Jun	11	-	0.35	-
08-Jun	10	11	0.25	0.30
09-Jun	10	10	-	0.40
10-Jun	-	11	-	0.40
11-Jun	-	11	-	0.40
12-Jun	11	12	0.35	0.35
13-Jun	12	13	0.35	0.40
14-Jun	-	12	0.35	0.35
15-Jun	12	16	0.30	0.35
16-Jun	13	14	0.30	0.40
17-Jun	13	13	0.35	0.35
18-Jun	13	-	0.40	-
19-Jun	-	13	0.40	0.40
20-Jun	11	12	0.35	0.35
21-Jun	11	11	0.30	0.30
22-Jun	-	-	-	-
23-Jun	11	12	-	0.35
24-Jun	12	-	0.30	-
25-Jun	11	11	-	-
26-Jun	12	12	-	0.25
27-Jun	11	13	0.25	0.30
28-Jun	11	-	0.25	-
29-Jun	12	14	0.25	0.30
30-Jun	13	15	0.35	-
01-Jul	14	-	0.30	-
02-Jul	15	15	-	0.40
03-Jul	15	16	0.30	0.40
04-Jul	-	-	-	-
05-Jul	15	-	0.30	0.25
06-Jul	15	-	0.30	-
07-Jul	16	-	0.40	-
08-Jul	-	-	-	-
09-Jul	15	14	-	0.25
10-Jul	15	16	-	0.30
11-Jul	-	-	-	-
12-Jul	15	14	0.15	0.20
13-Jul	15	14	0.15	0.20
14-Jul	15	17	0.15	0.15
15-Jul	16	16	0.15	0.15
16-Jul	17	17	0.15	0.15

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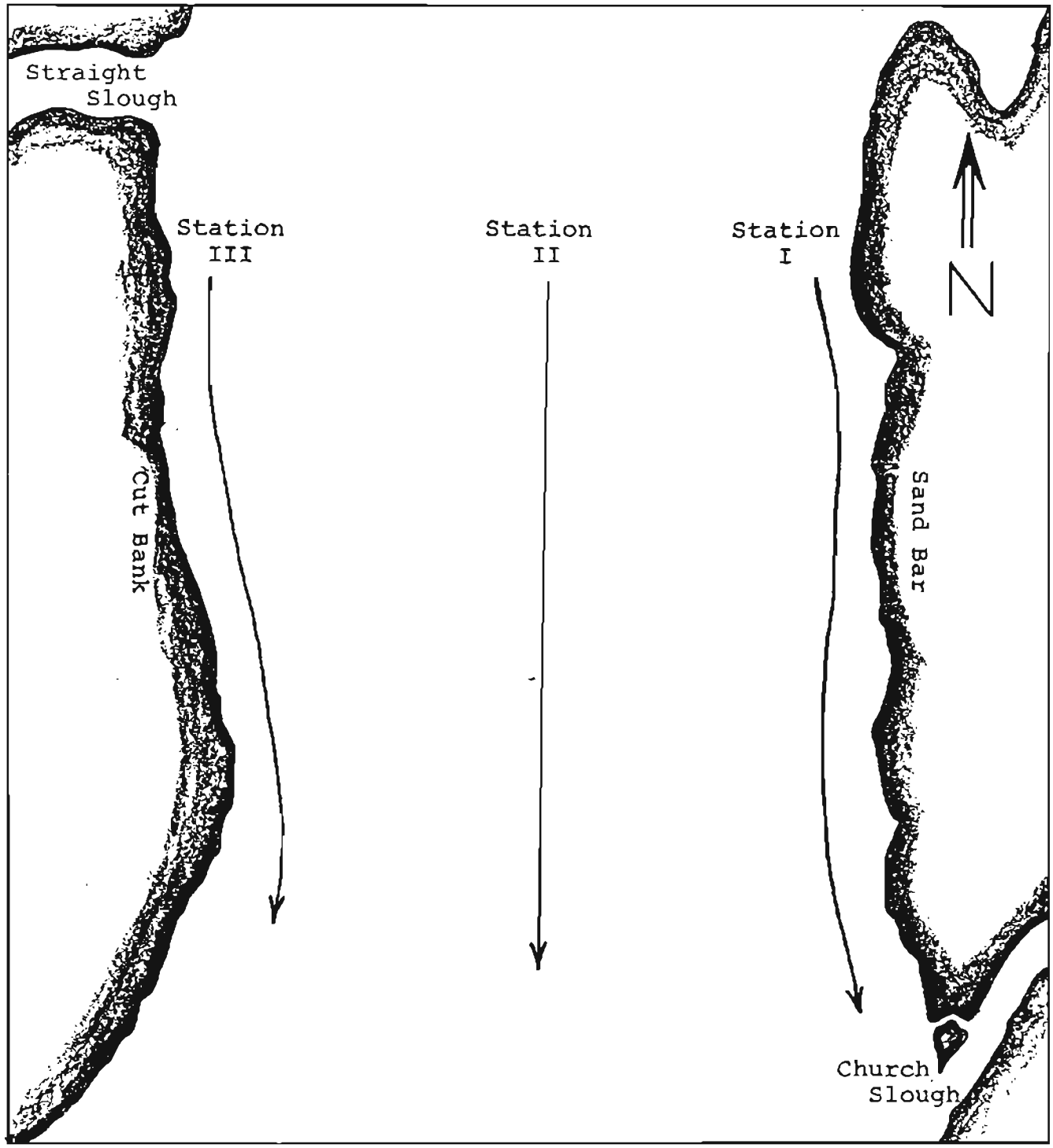


Figure 2. Drifting stations used in the 1988 Kuskokwim River test fishing program, approximately 5 km upstream from Bethel (not drawn to scale).

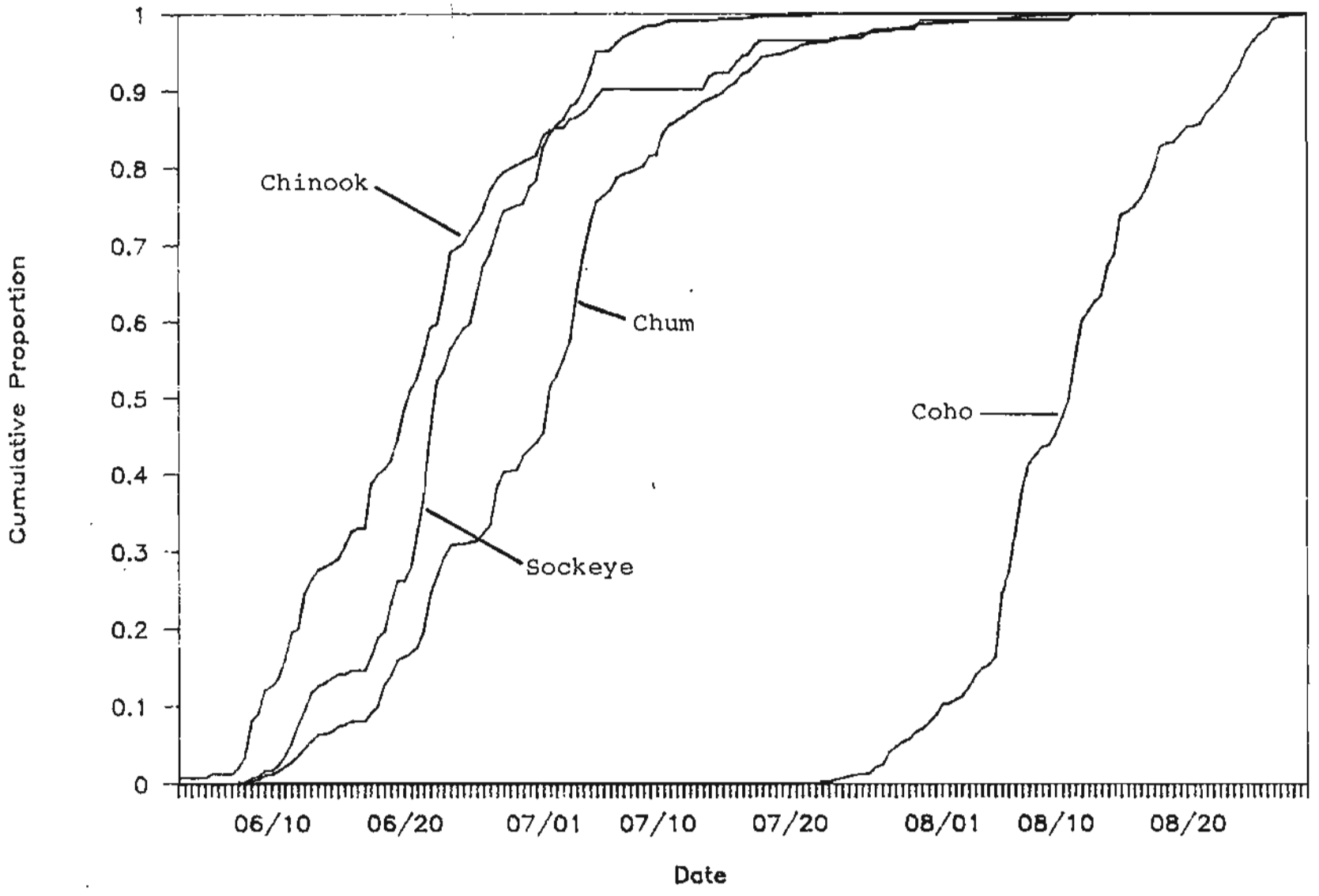


Figure 3. Cumulative proportions of Kuskokwim River test fishing CPUE's of chinook, sockeye, coho, and chum salmon, '88.

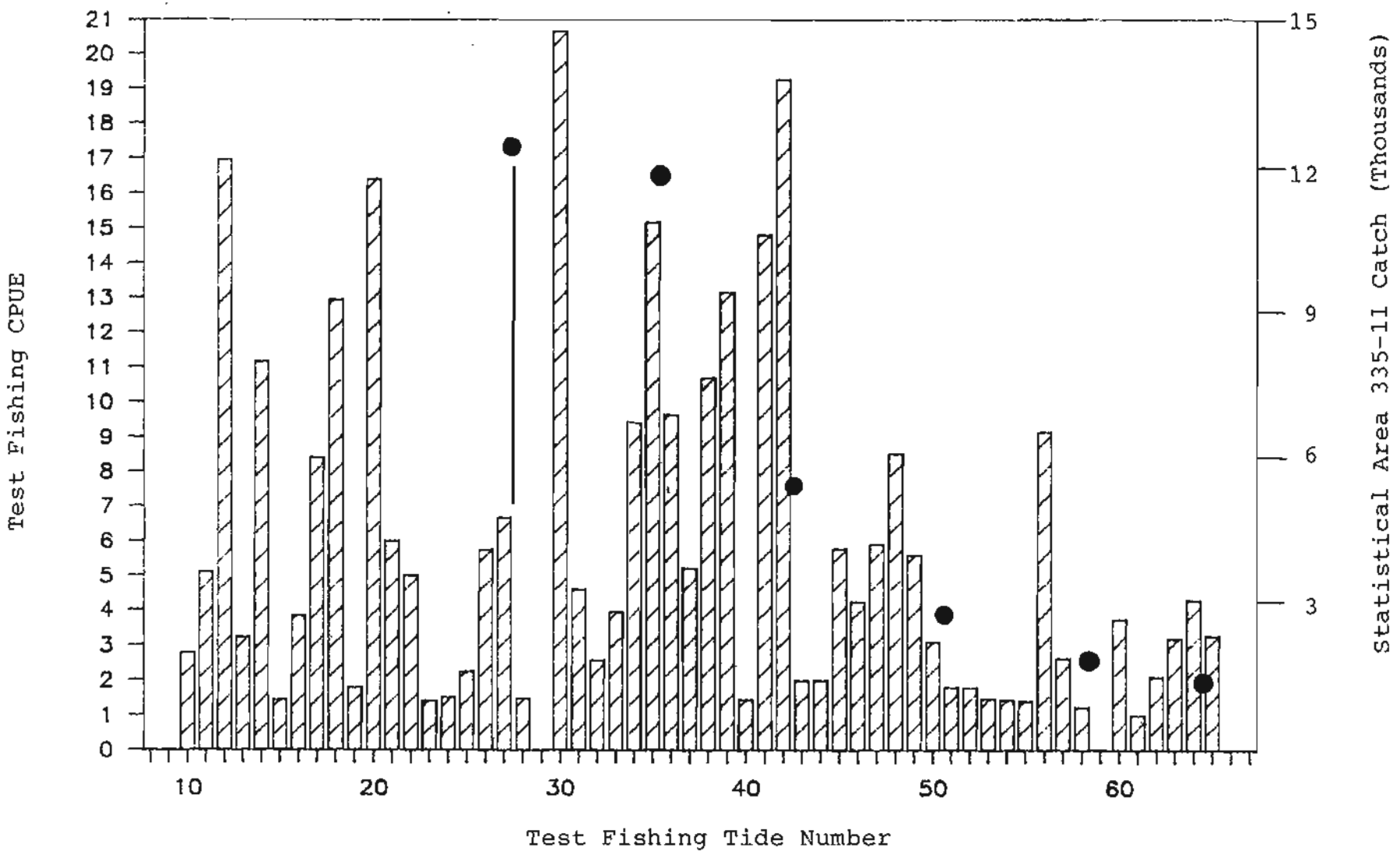


Figure 4. Kuskokwim River test fishing tidal CPUE (histogram) and statistical area 335-11 commercial harvest (dots) of chinook salmon, 1988.

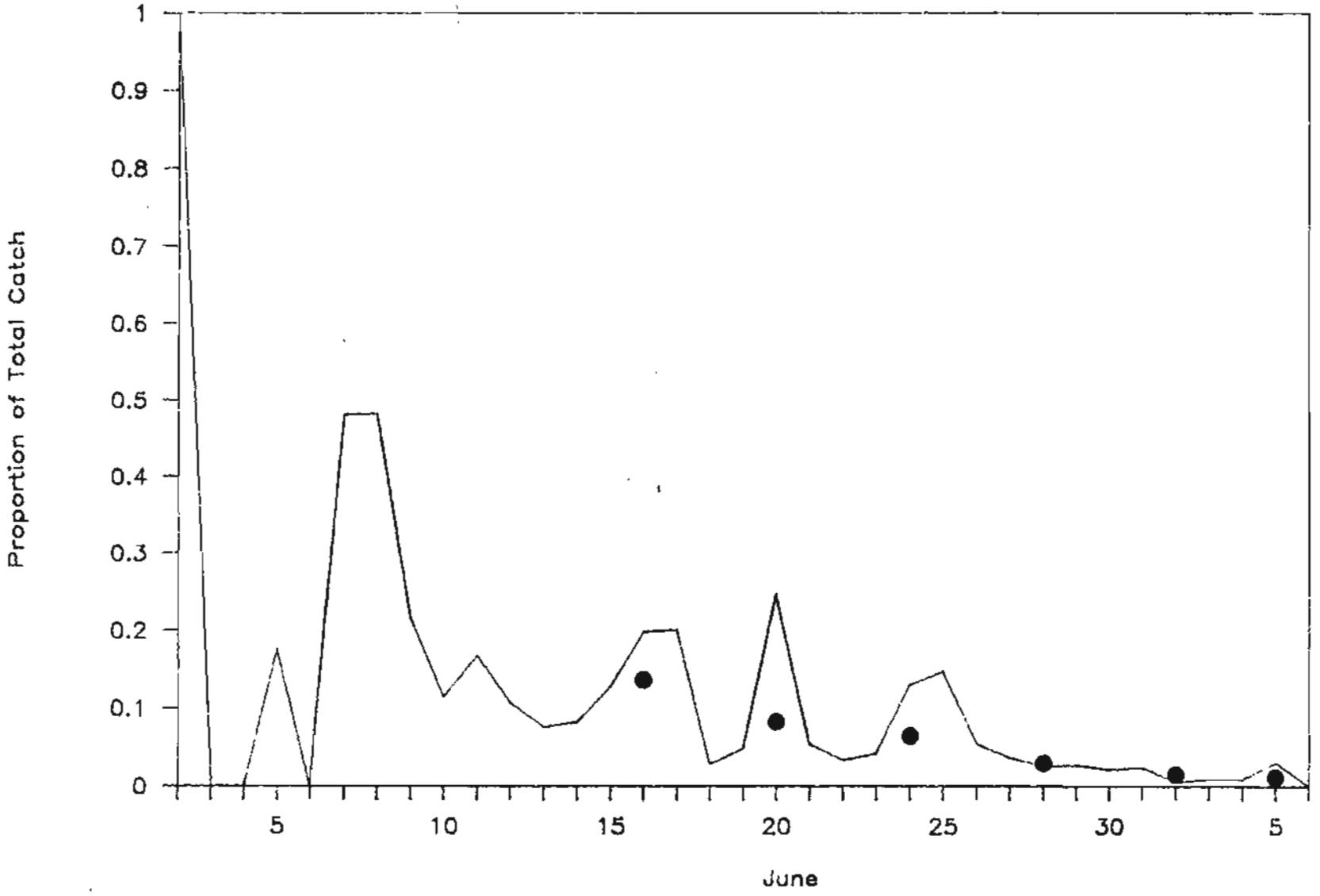
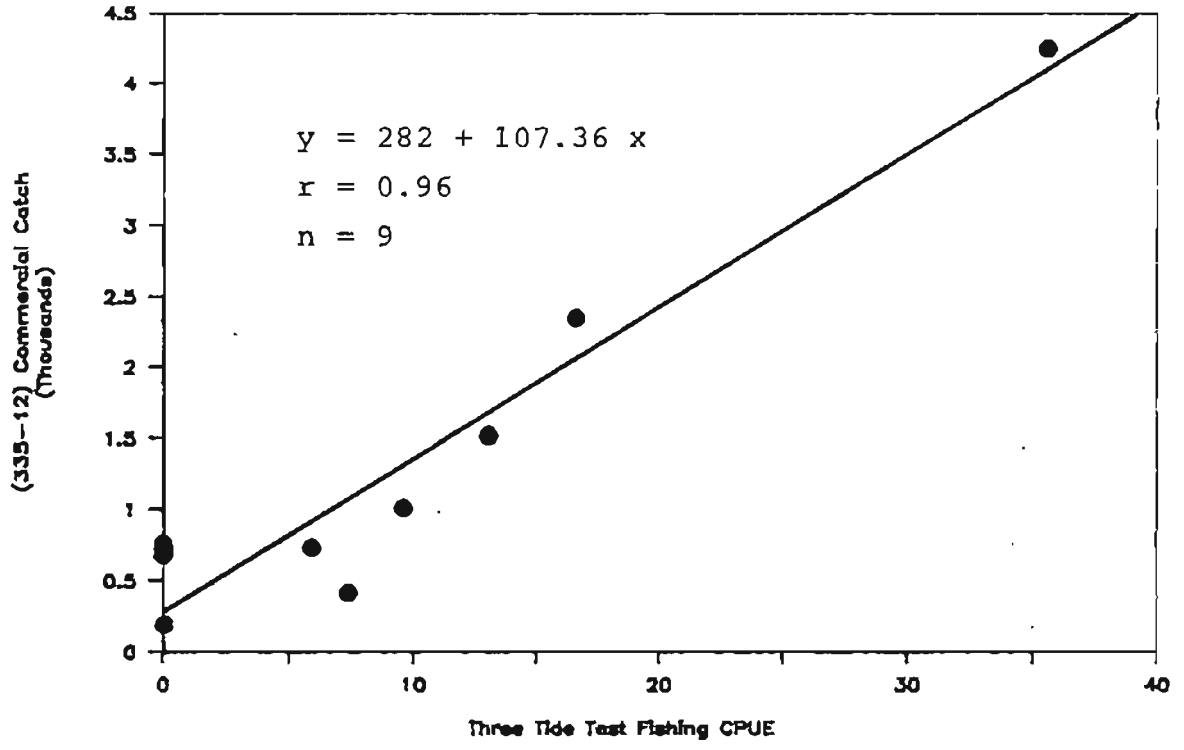


Figure 5. Daily chinook salmon proportion of total daily Kuskokwim River test fishing CPUE (solid line) and District 1 commercial catch (dots), 1988.



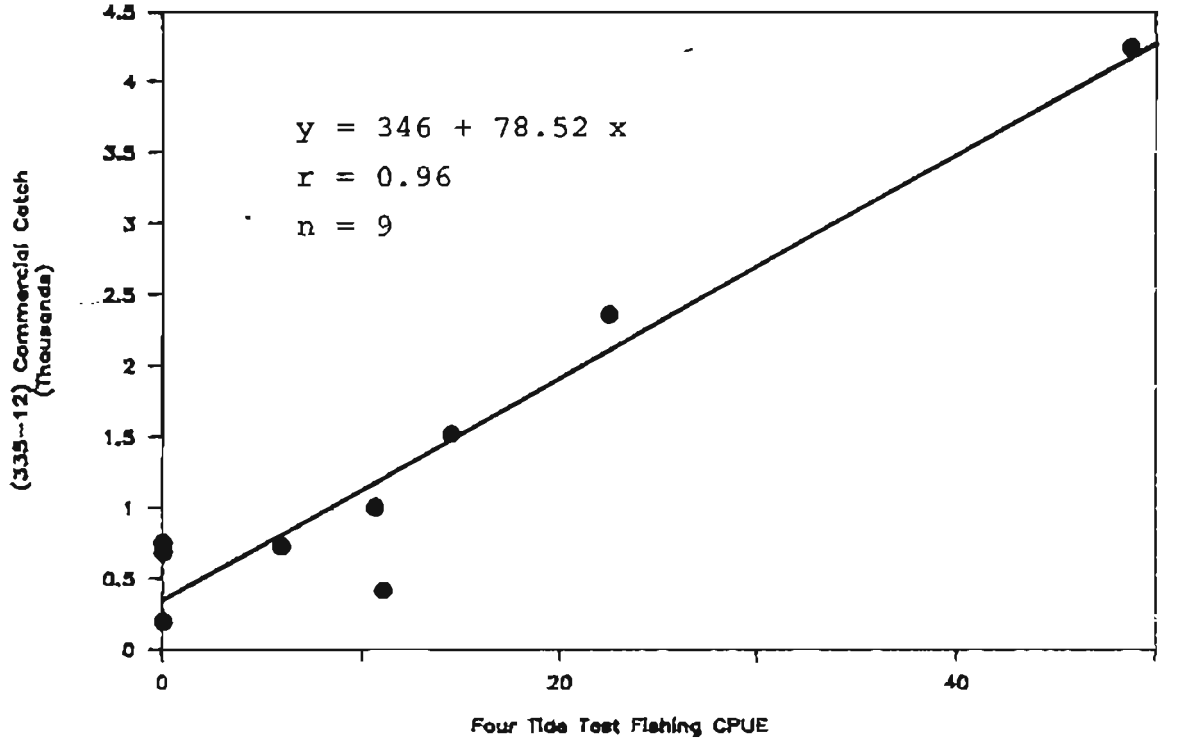
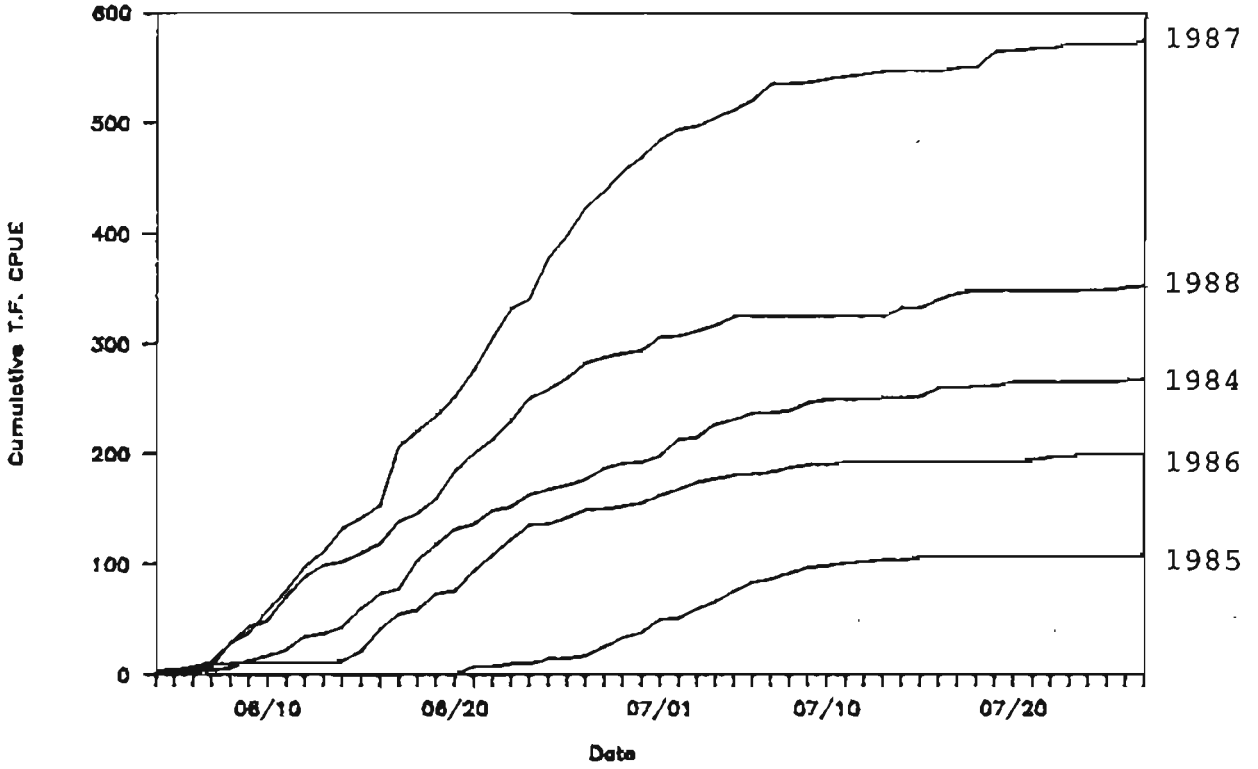


Figure 6 . Regression of statistical area 335-12 commercial catch on preceding three and four tide cumulative test fishing CPUE of Kuskokwim River chinook salmon, 1988.



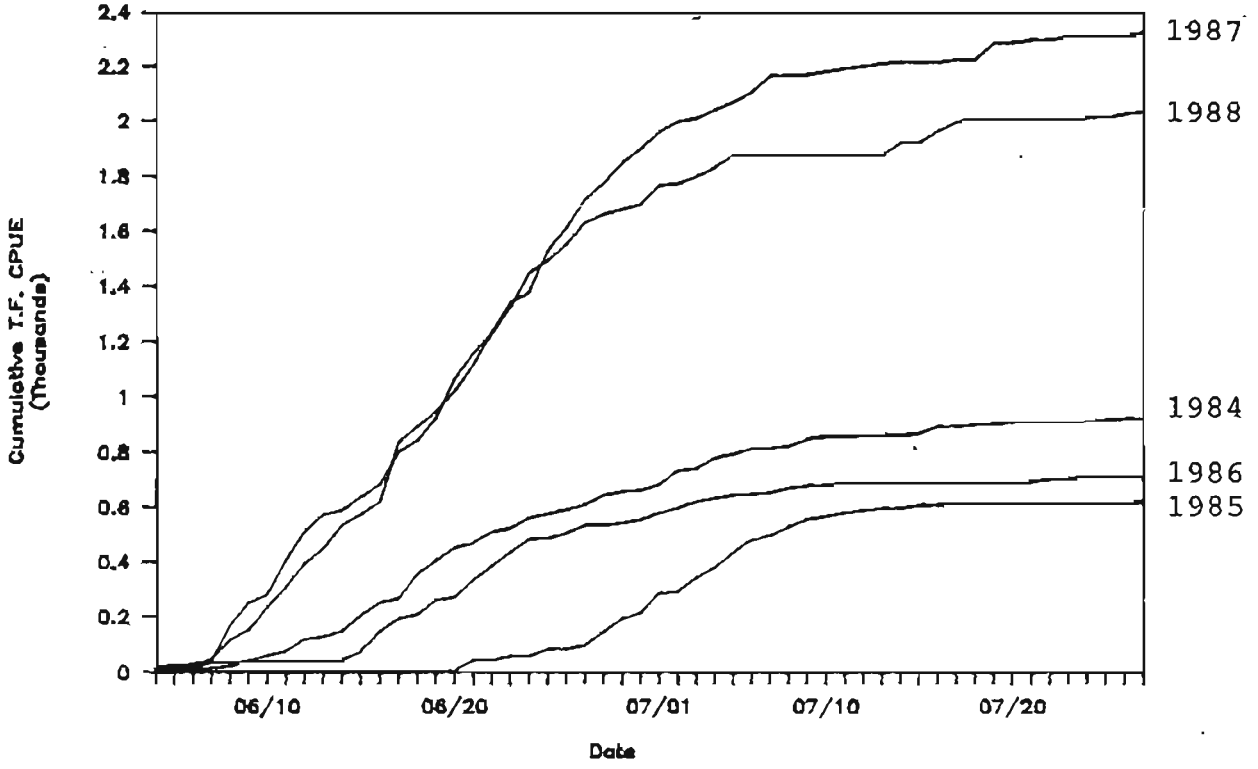


Figure 7. Cumulative raw (top) and adjusted (bottom) Kuskokwim River test fishing CPUE of chinook salmon, 1984-1988.

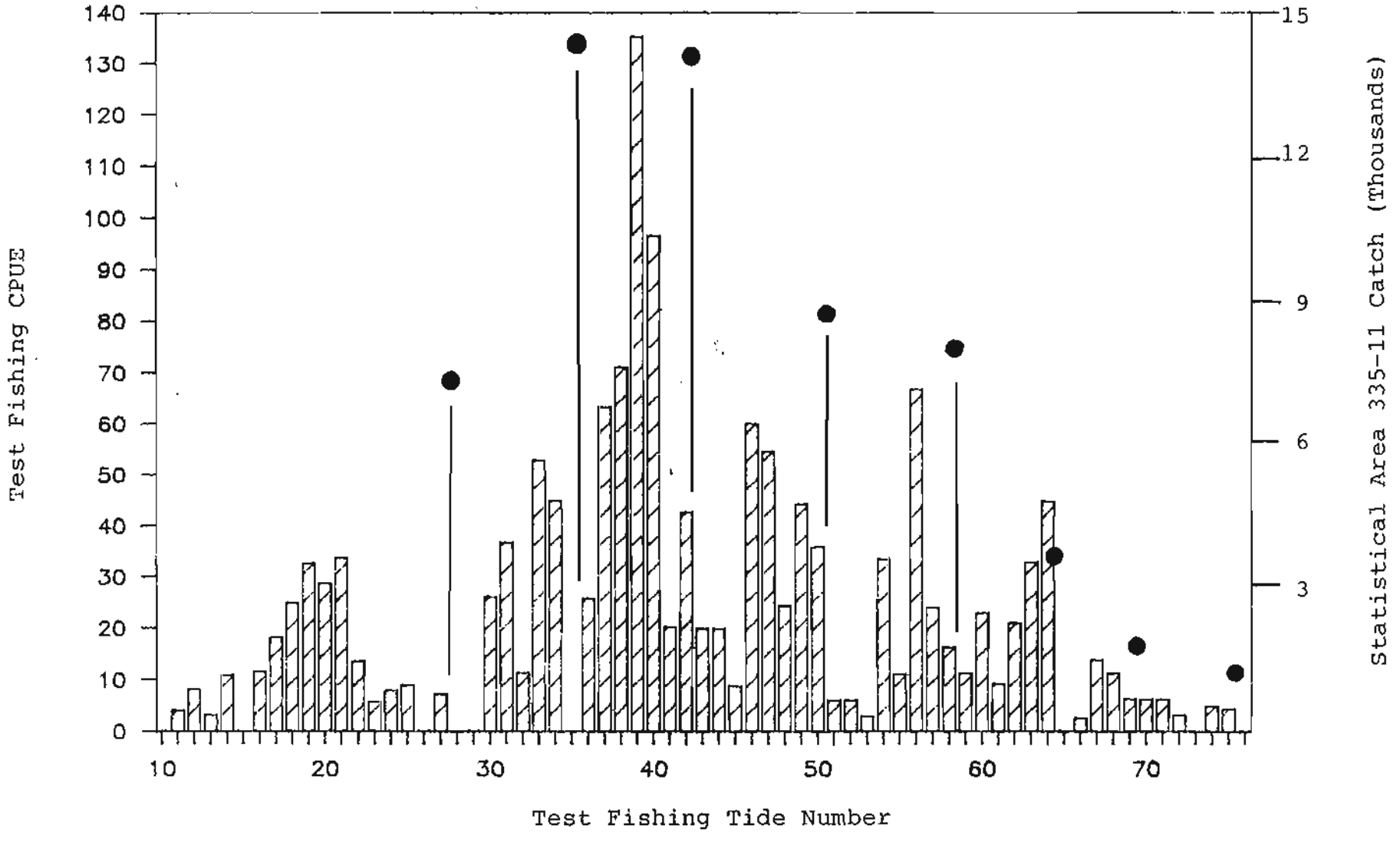


Figure 8. Kuskokwim River test fishing tidal CPUE (histogram) and statistical area 335-11 commercial harvest (dots) of sockeye salmon, 1988.

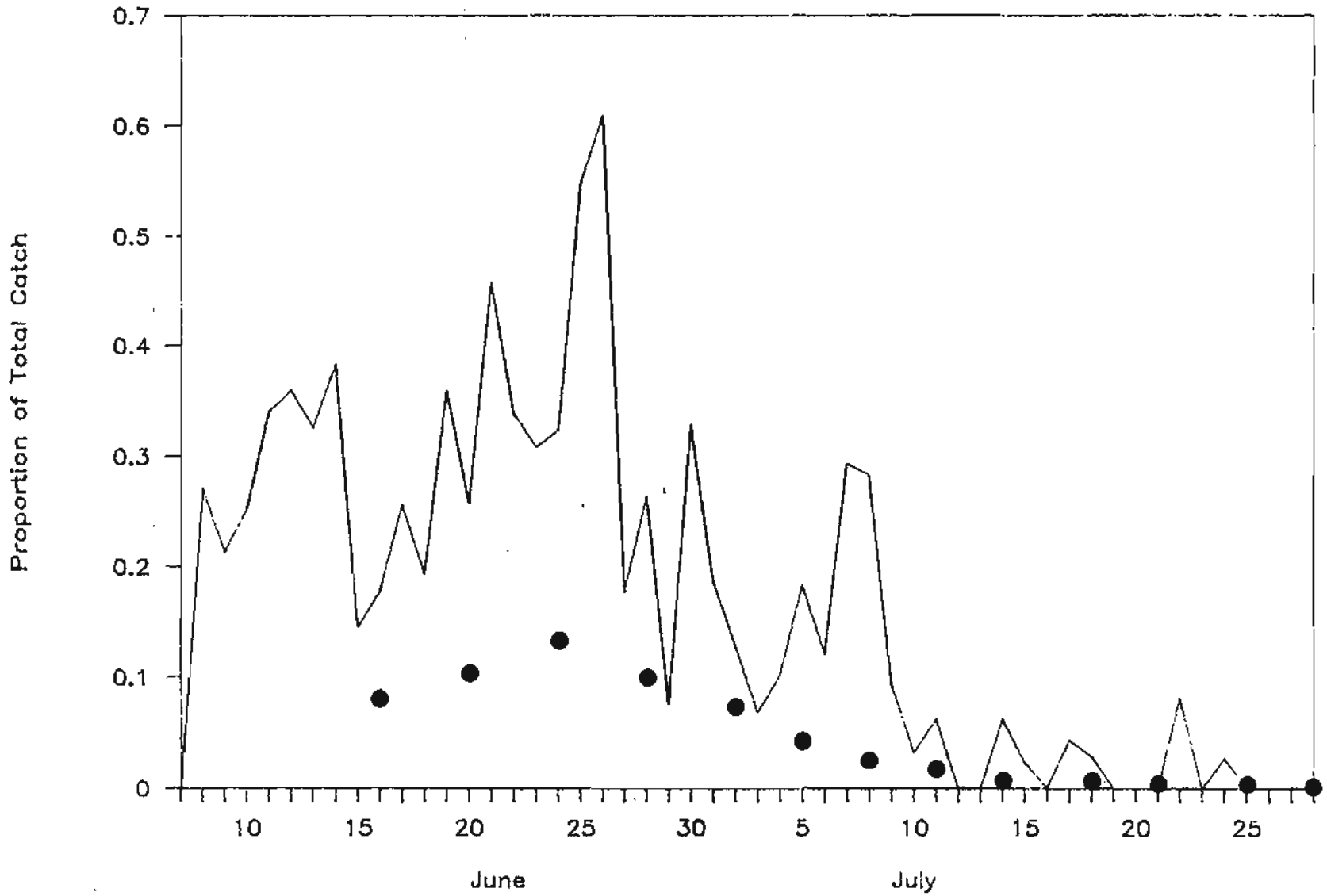
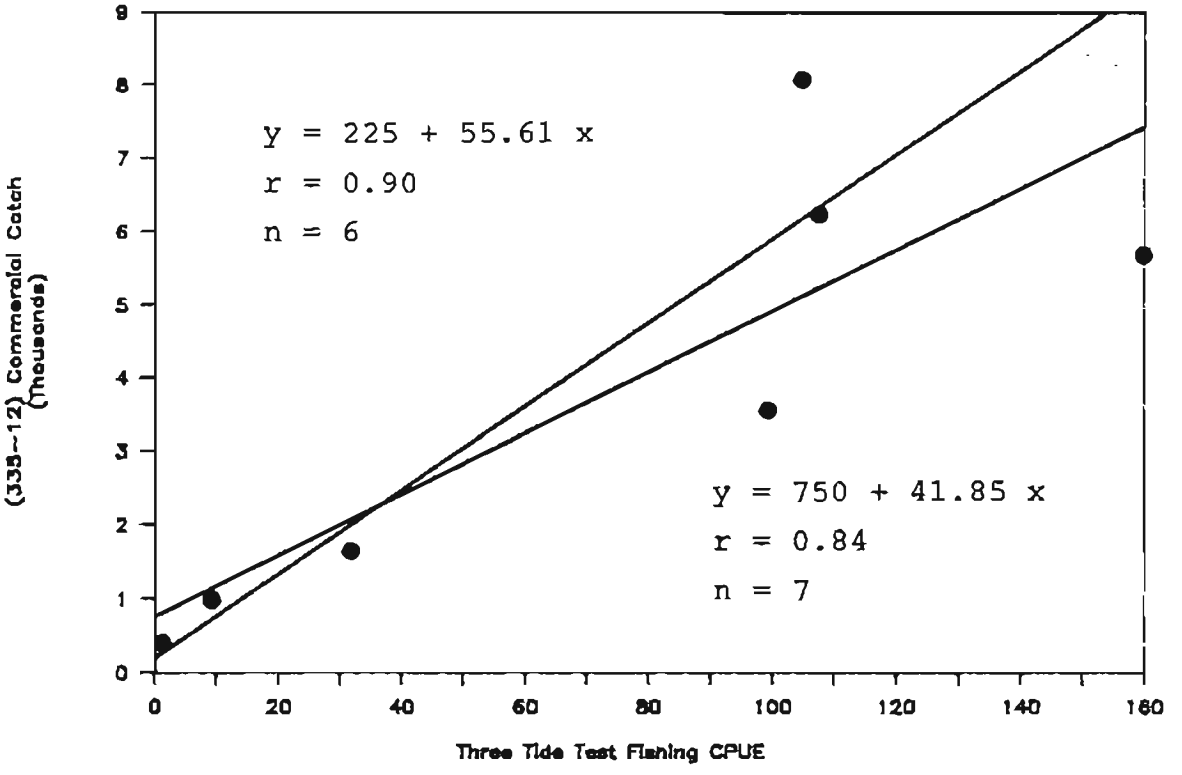


Figure 9. Daily sockeye salmon proportion of total daily Kuskokwim River test fishing CPUE (solid line) and District 1 commercial catch (dots), 1988.



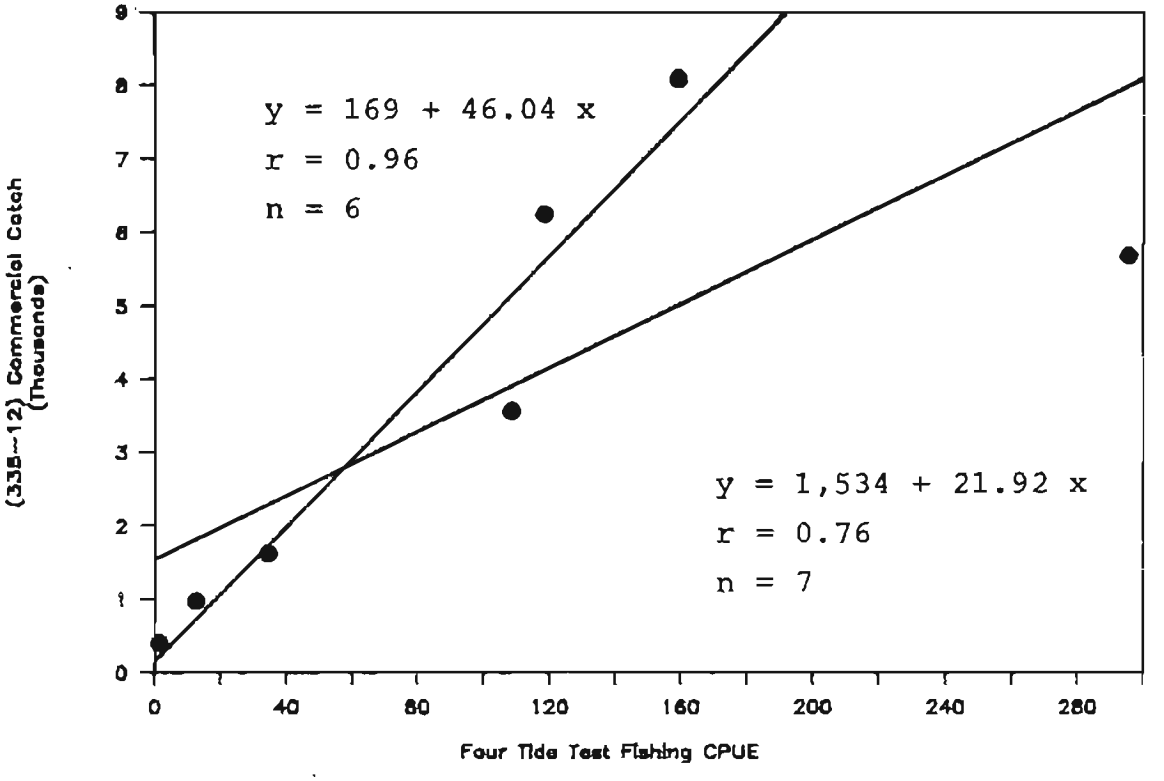


Figure 10. Regression of statistical area 335-12 commercial catch on preceding three and four tide cumulative test fishing CPUE of Kuskokwim River sockeye salmon, 1988.

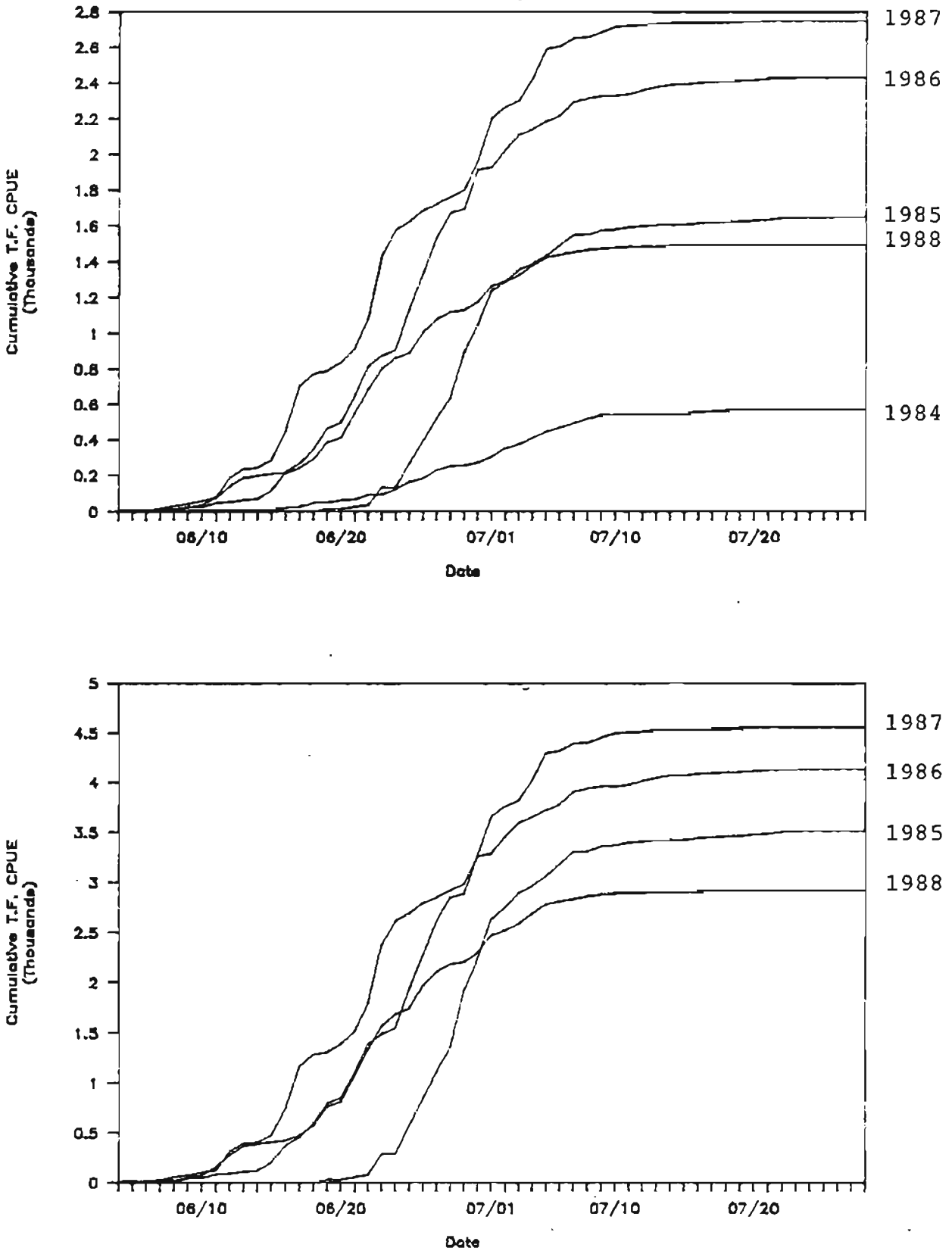


Figure 11. Cumulative raw (top) and adjusted (bottom) Kuskokwim River test fishing CPUE of sockeye salmon, 1984-1988.

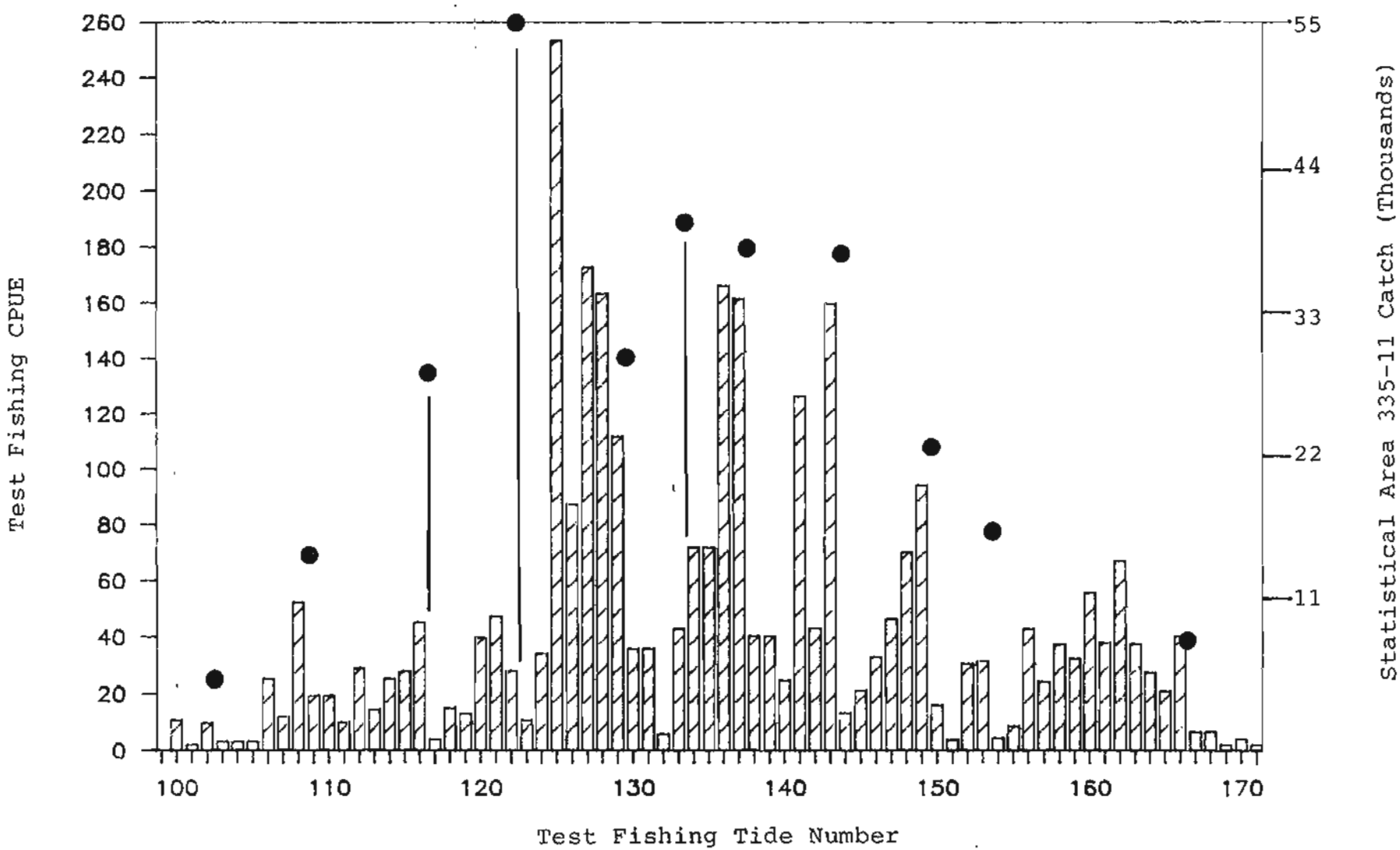


Figure 12. Kuskokwim River test fishing tidal CPUE (histogram) and statistical area 335-11 commercial harvest (dots) of coho salmon, 1988.

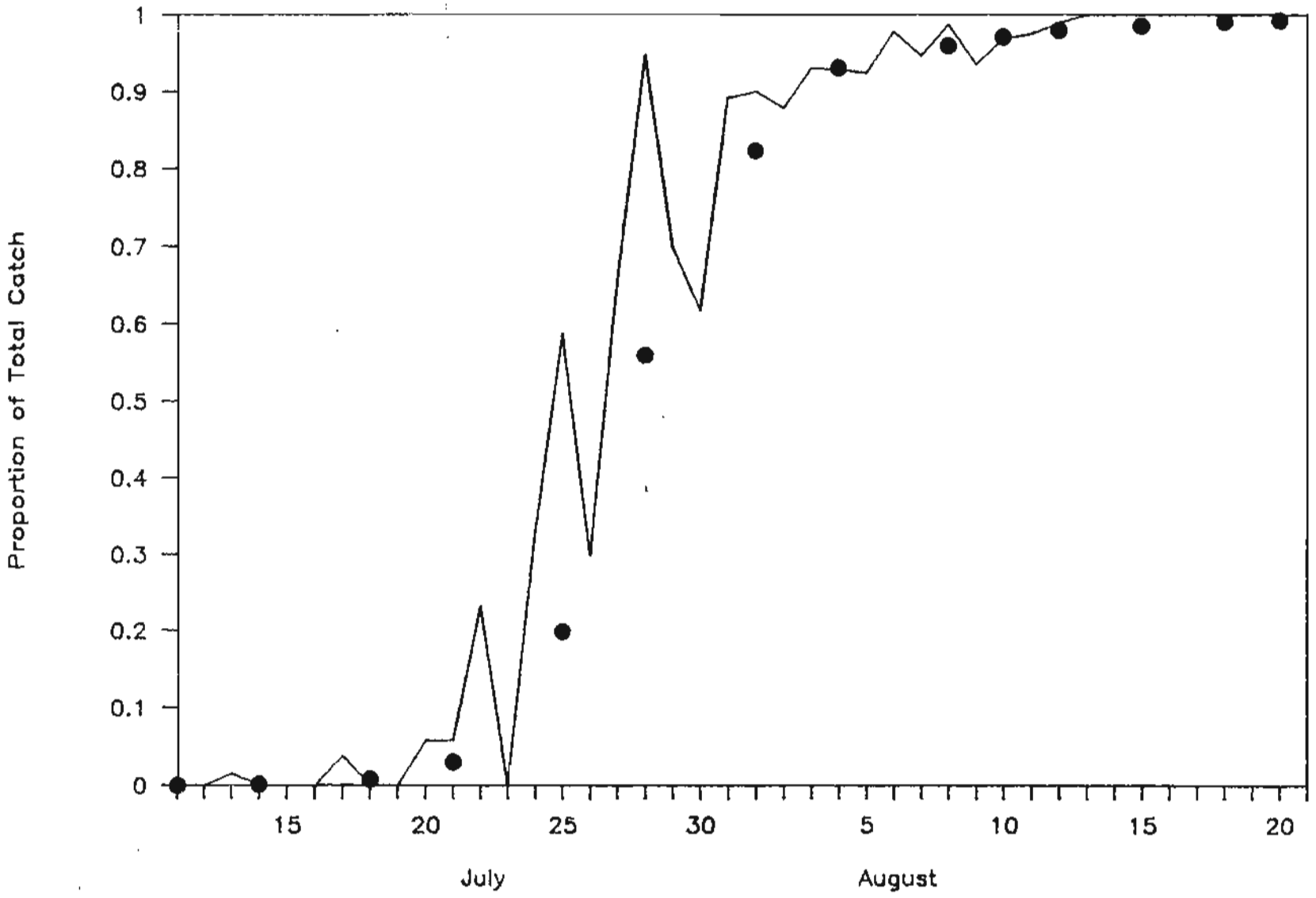
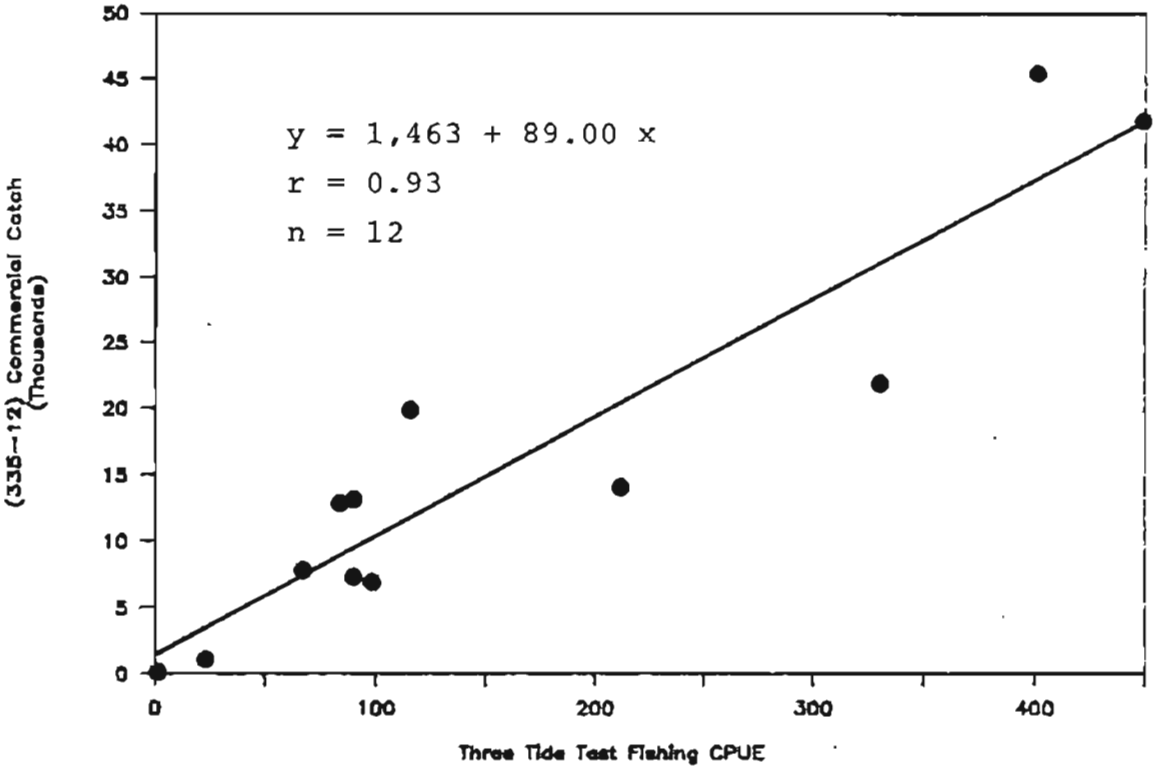


Figure 13. Daily coho salmon proportion of total daily Kuskokwim River test fishing CPUE (solid line) and District 1 commercial catch (dots), 1988.



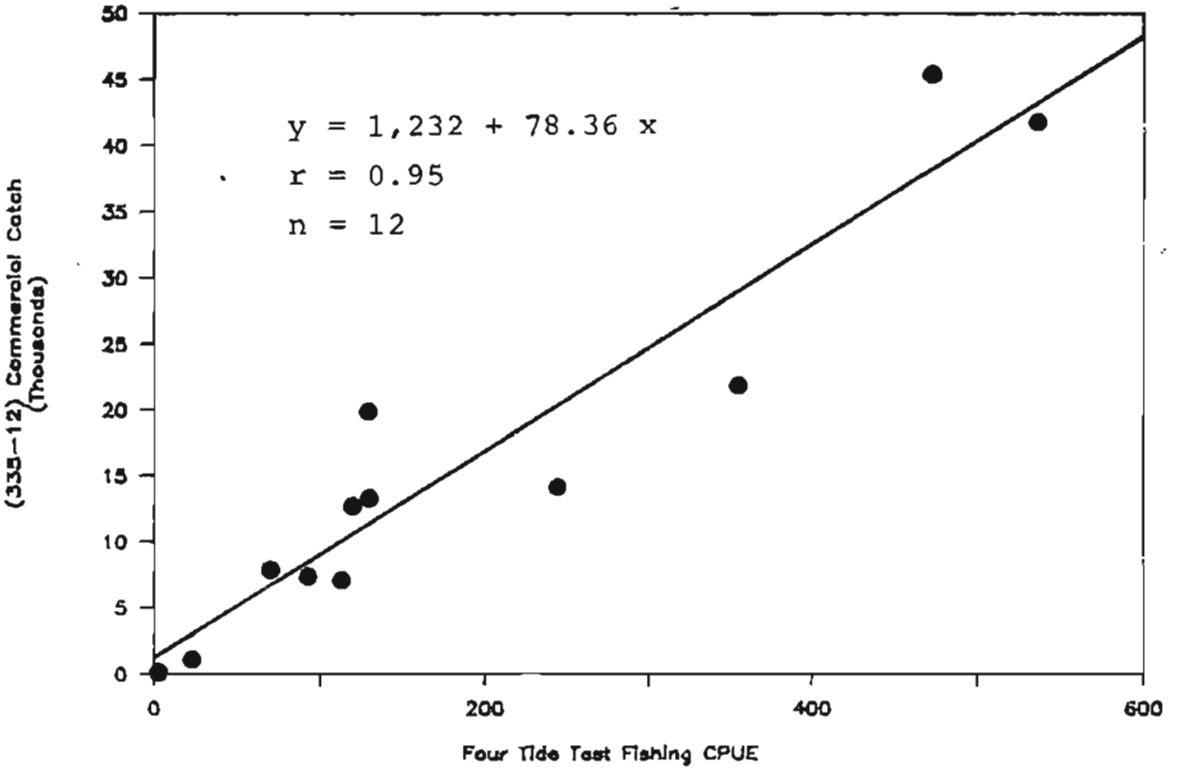
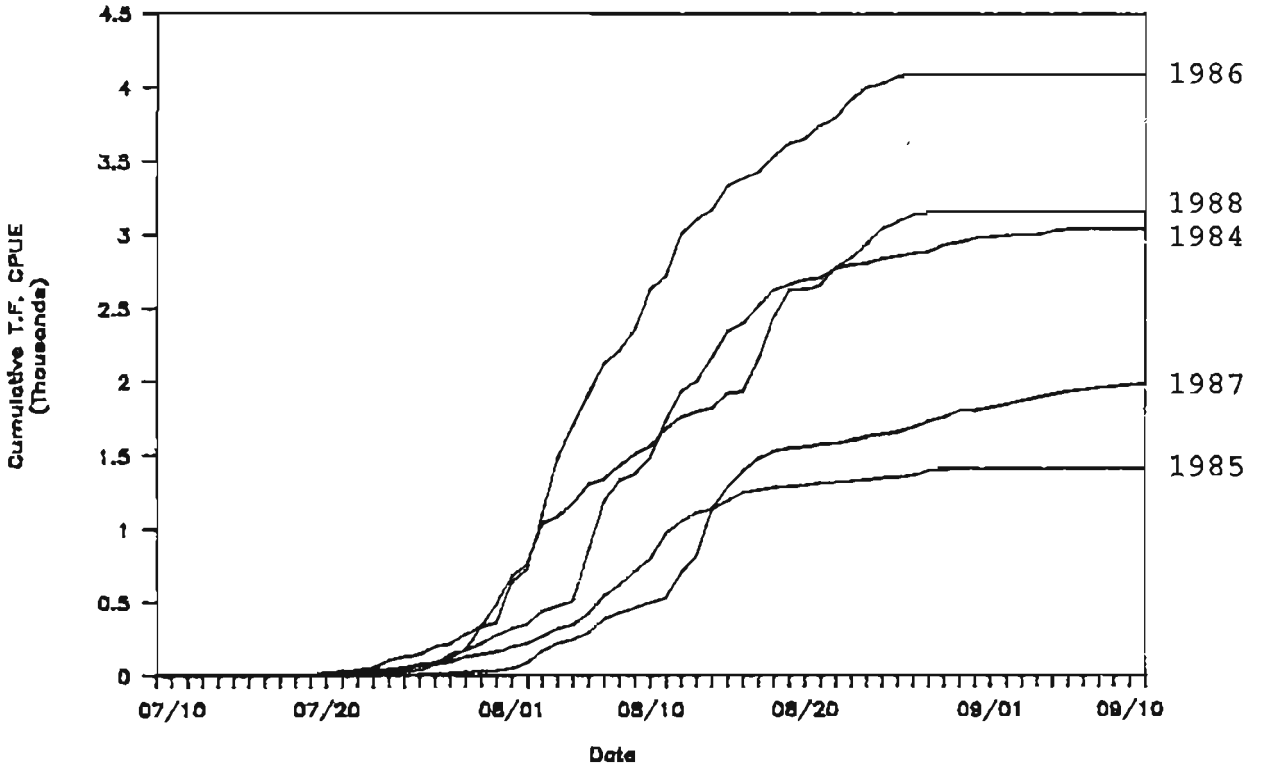


Figure 14. Regression of statistical area 335-12 commercial catch on preceding three and four tide cumulative test fishing CPUE of Kuskokwim River coho salmon, 1988.



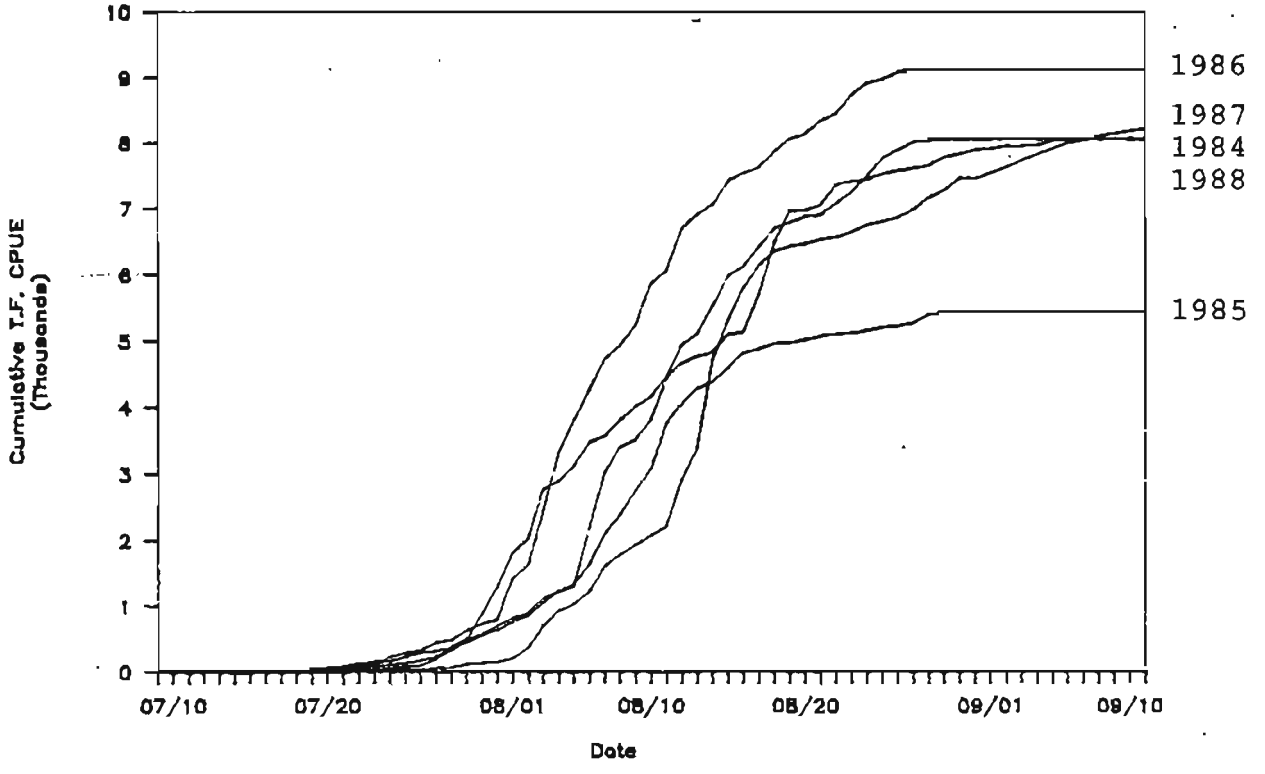


Figure 15. Cumulative raw (top) and adjusted (bottom) Kuskokwim River test fishing CPUE of coho salmon, 1984-1988.

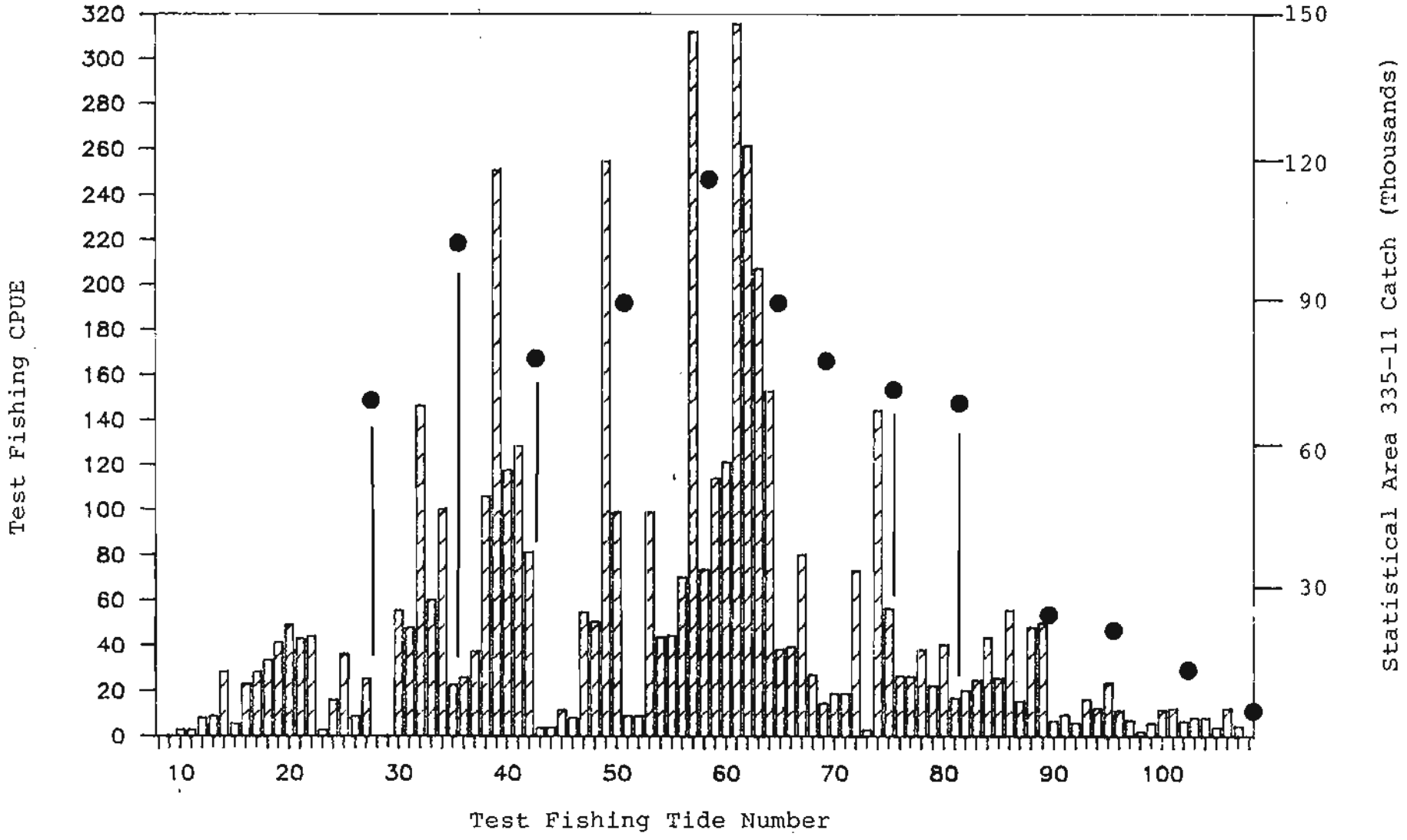


Figure 16. Kuskokwim River test fishing CPUE (histogram)and statistical area 335-11 commercial harvest (dots) of chum salmon, 1988.

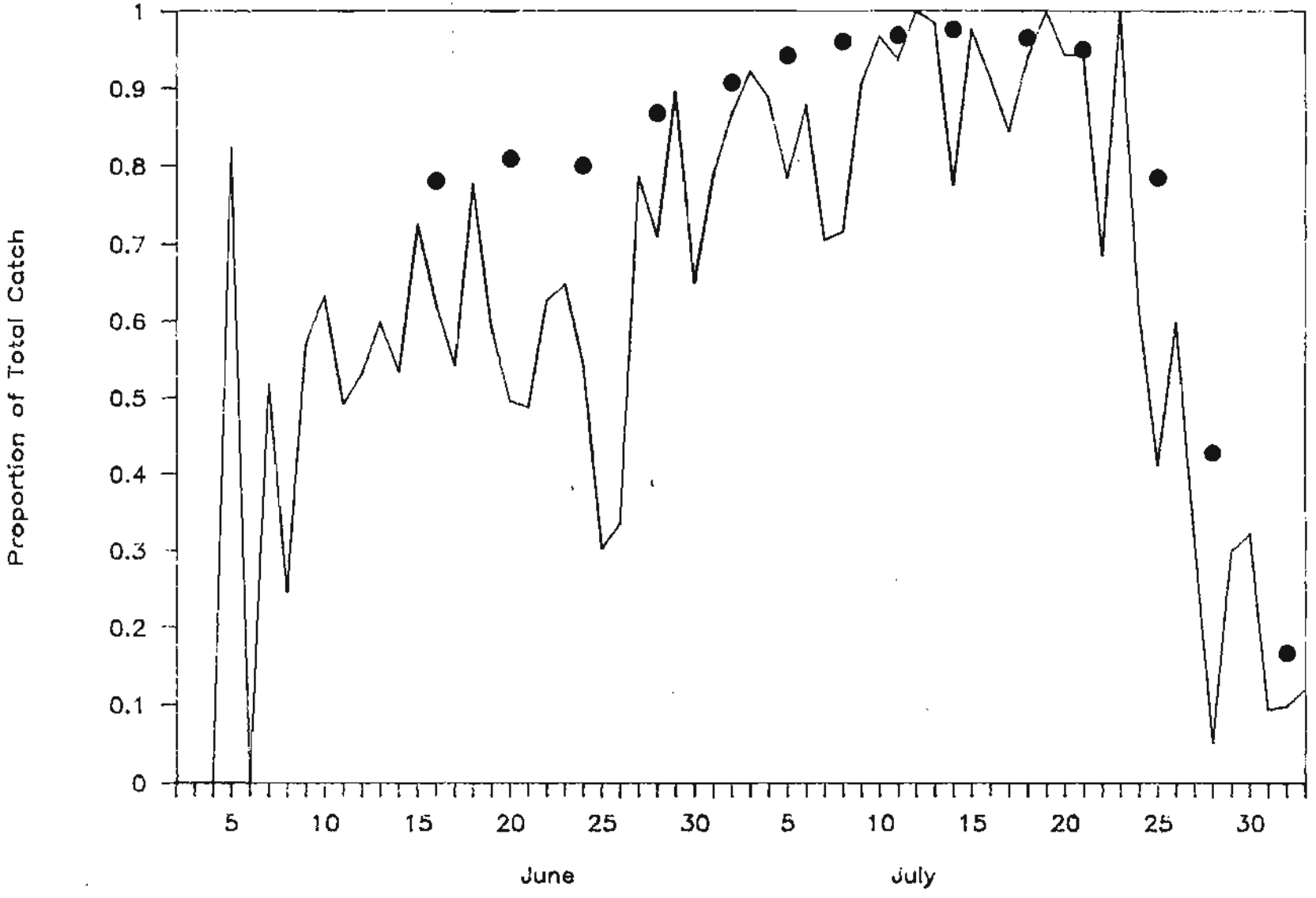
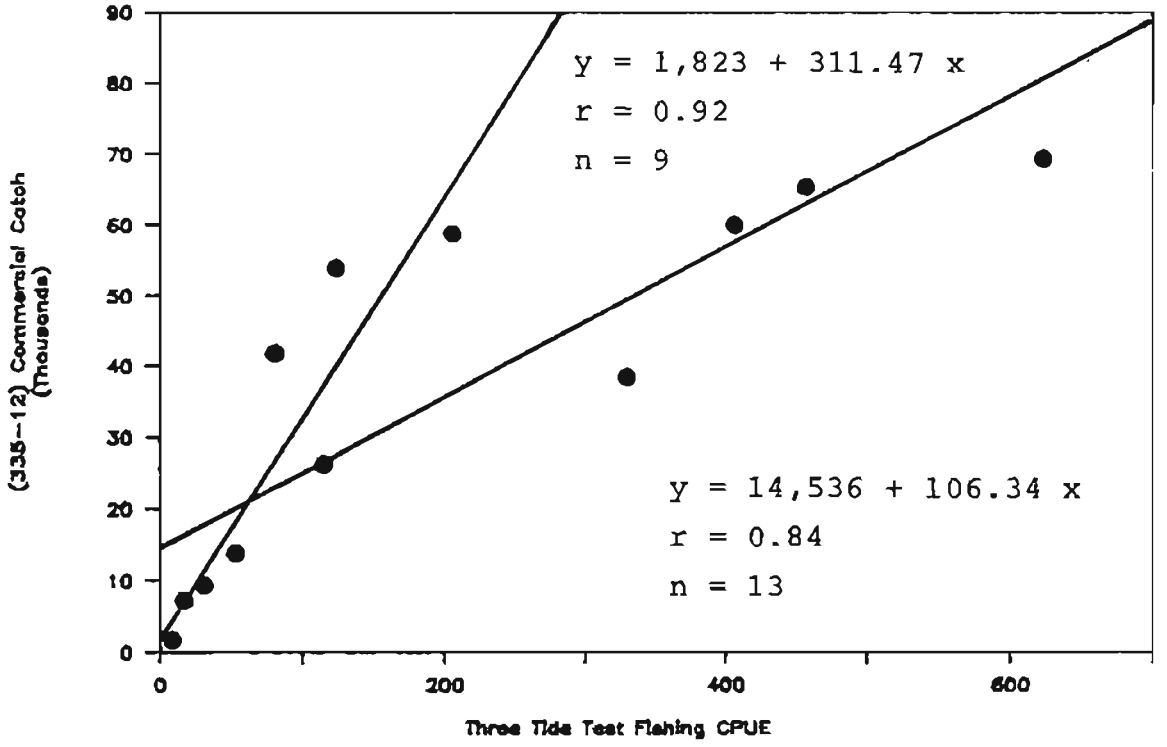


Figure 17. Daily chum salmon proportion of total daily Kuskokwim River test fishing CPUE (solid line) and District 1 commercial catch (dots), 1988.



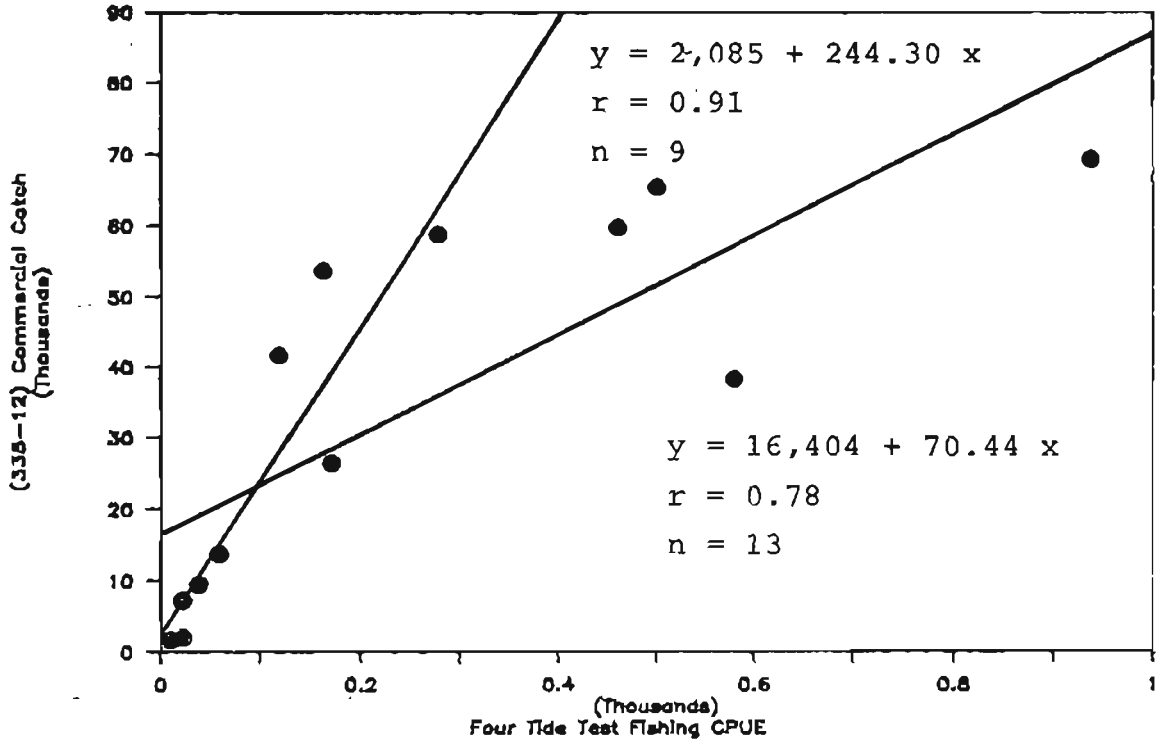
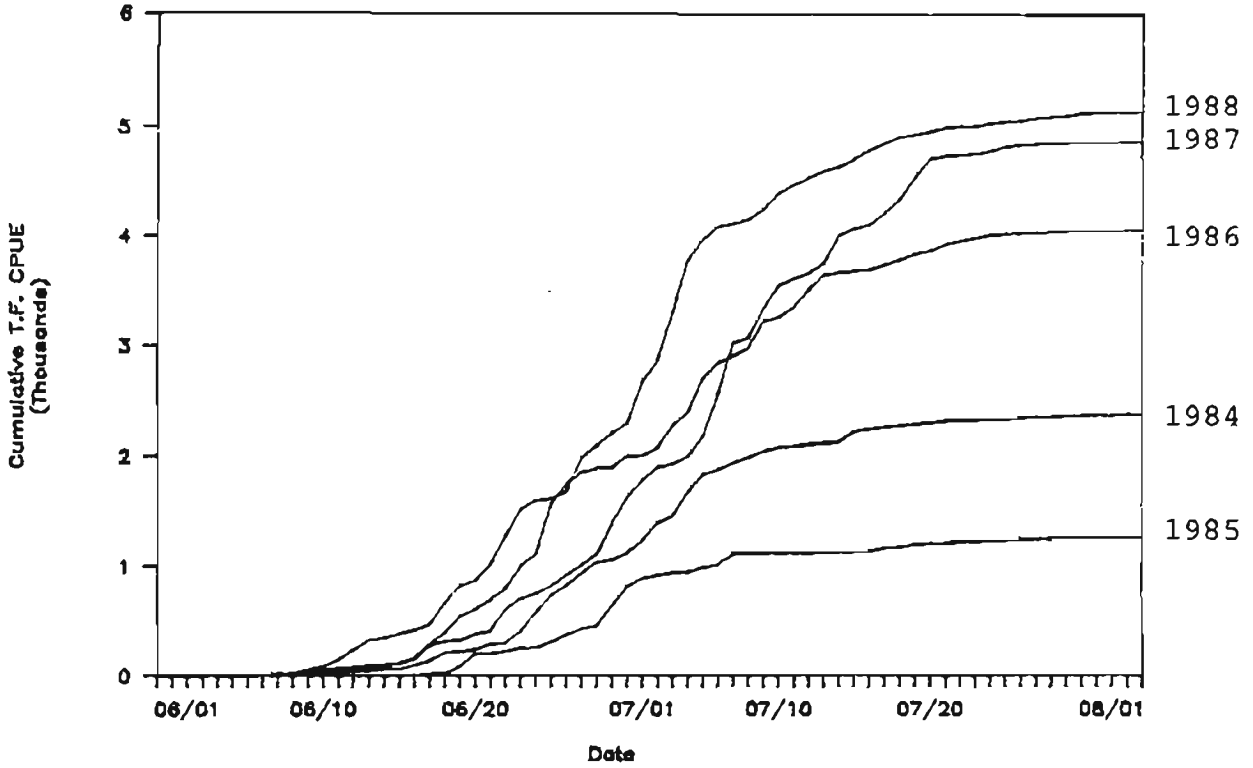


Figure 18. Regression of statistical area 335-12 commercial catch on preceding three and four tide cumulative test fishing CPUE of Kuskokwim River chum salmon, 1988.



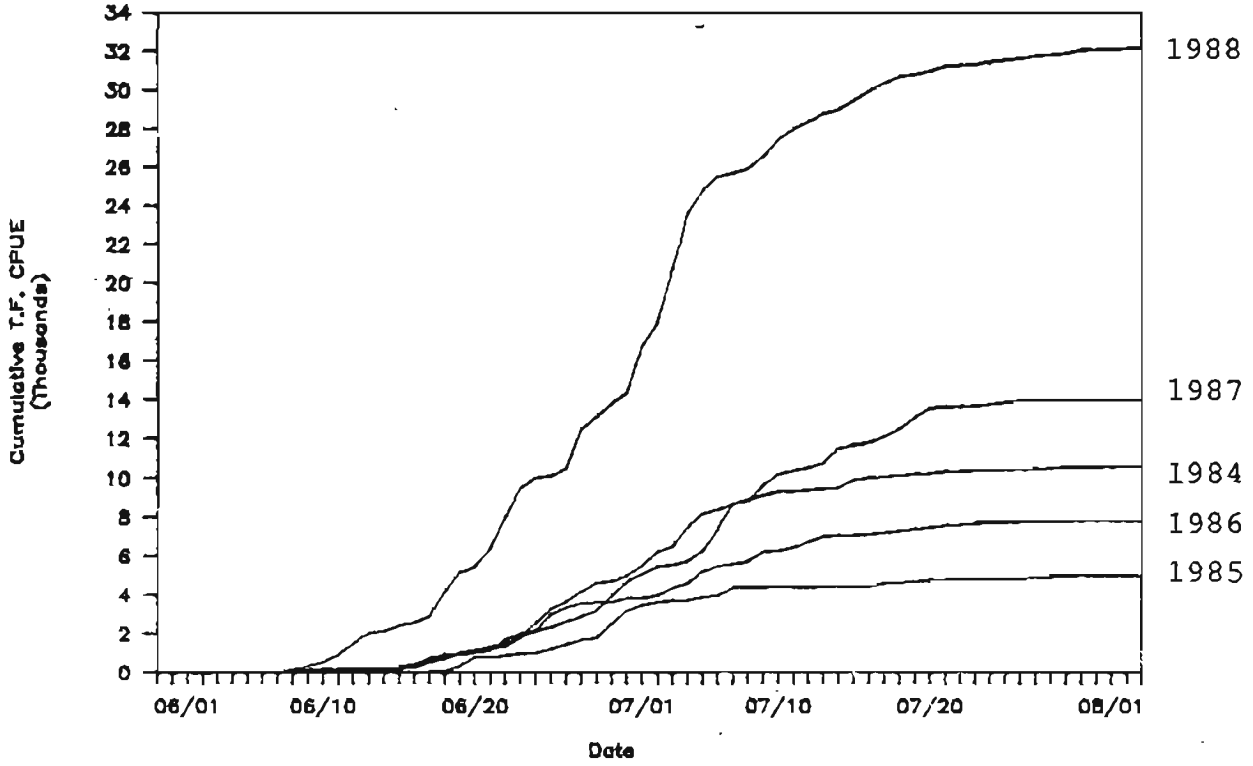


Figure 19. Cumulative raw (top) and adjusted (bottom) Kuskokwim River test fishing CPUE of chum salmon, 1984-1988.

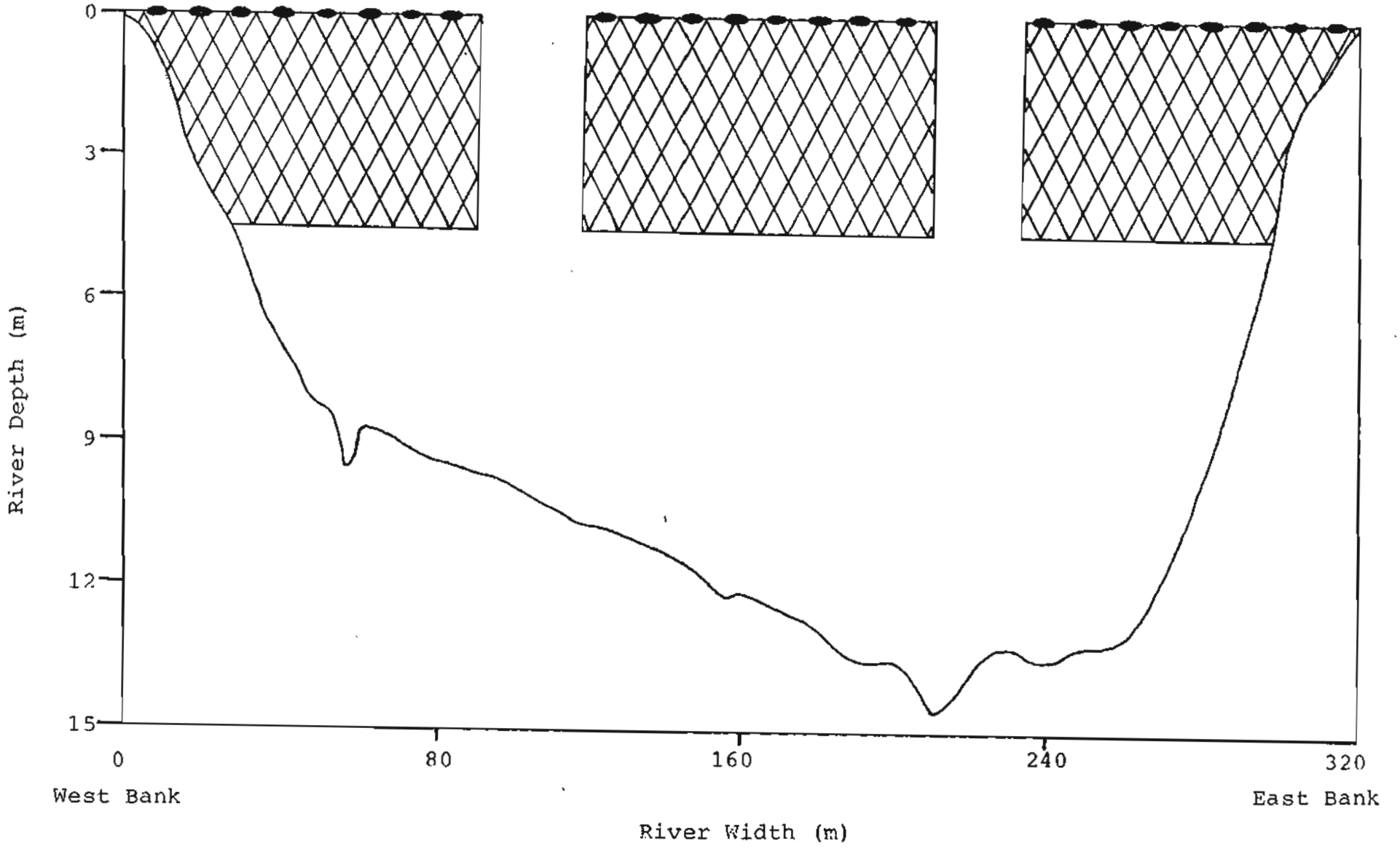


Figure 20. Kuskokwim River bottom profile at the test fishing site roughly four miles upstream from Bethel including actual river coverage by the test gill nets as measured in 1988 (drawn to scale).

APPENDICES

Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/14	23	88	1	50	20.3	20.0	0	0.00	0	0.00	0	0.00	1	6.00
06/14	24	89	3	50	13.6	22.5	0	0.00	3	16.00	0	0.00	5	26.67
06/14	24	90	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/14	24	91	1	50	20.3	19.5	1	6.15	0	0.00	0	0.00	0	0.00
06/14	24	92	1	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
06/15	25	93	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/15	25	94	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/15	25	95	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/15	25	96	1	50	13.6	26.5	2	9.06	4	18.11	0	0.00	16	72.45
06/15	26	97	3	50	13.6	20.5	1	5.85	0	0.00	0	0.00	1	5.85
06/15	26	98	2	50	13.6	20.0	1	6.00	0	0.00	0	0.00	2	12.00
06/15	26	99	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/15	26	100	1	50	20.3	21.5	2	11.16	0	0.00	0	0.00	1	5.58
06/16	27	101	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/16	27	102	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
06/16	27	103	1	50	13.6	24.5	3	14.69	3	14.69	0	0.00	8	39.18
06/16	27	104	1	50	20.3	20.0	2	12.00	0	0.00	0	0.00	0	0.00
06/16	28	105	3	50	20.3	20.0	1	6.00	0	0.00	0	0.00	0	0.00
06/16	28	106	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/16	28	107	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/16	28	108	1	50	13.6	18.0	0	0.00	0	0.00	0	0.00	0	0.00
06/17	29	109	3	50	20.0	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/17	29	110	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/17	29	111	2	50	13.6	18.5	0	0.00	0	0.00	0	0.00	0	0.00
06/17	29	112	1	50	20.3	21.0	0	0.00	0	0.00	0	0.00	0	0.00
06/17	30	113	3	50	13.6	24.0	6	30.00	7	35.00	0	0.00	0	0.00
06/17	30	114	2	50	20.3	20.5	3	17.56	0	0.00	0	0.00	2	11.71
06/17	30	115	1	50	20.3	20.5	3	17.56	0	0.00	0	0.00	1	5.85
06/17	30	116	1	50	13.6	20.5	3	17.56	3	17.56	0	0.00	19	111.22
06/18	31	117	3	50	13.6	21.5	0	0.00	0	0.00	0	0.00	4	22.33
06/18	31	118	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/18	31	119	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/18	31	120	1	50	13.6	19.5	3	18.46	12	73.85	0	0.00	12	73.85
06/18	32	121	3	50	13.6	26.0	1	4.62	5	23.08	0	0.00	40	184.62
06/18	32	122	2	50	13.6	21.0	1	5.71	0	0.00	0	0.00	19	108.57
06/18	32	123	2	50	20.3	21.0	0	0.00	0	0.00	0	0.00	1	5.71
06/18	32	124	1	50	20.3	21.0	0	0.00	0	0.00	0	0.00	0	0.00
06/19	33	125	3	50	20.3	21.5	1	5.58	0	0.00	0	0.00	0	0.00
06/19	33	126	2	50	13.6	18.5	0	0.00	3	19.46	0	0.00	3	19.46
06/19	33	127	1	50	13.6	25.0	1	4.80	18	86.40	0	0.00	21	100.80
06/19	33	128	1	50	20.3	22.0	1	5.45	0	0.00	0	0.00	3	16.36
06/19	34	129	3	50	20.3	21.0	3	17.14	0	0.00	0	0.00	0	0.00
06/19	34	130	2	50	20.3	20.5	0	0.00	2	11.71	0	0.00	1	5.85
06/19	34	131	2	50	13.6	24.5	3	14.69	10	48.98	0	0.00	29	142.04
06/19	34	132	1	50	13.6	20.5	1	5.85	7	40.98	0	0.00	10	58.54

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/20	35	133	3	50	20.3	20.0	1	6.00	0	0.00	0	0.00	0	0.00
06/20	35	134	3	50	13.6	21.0	1	5.71	0	0.00	0	0.00	2	11.43
06/20	35	135	2	50	13.6	20.5	0	0.00	0	0.00	0	0.00	6	35.12
06/20	35	136	1	50	20.3	24.5	10	48.98	4	19.59	0	0.00	2	9.80
06/20	36	137	3	50	13.6	22.0	0	0.00	2	10.91	0	0.00	5	27.27
06/20	36	138	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/20	36	139	1	50	20.3	15.5	3	23.23	0	0.00	0	0.00	1	7.74
06/20	36	140	1	50	13.6	23.5	3	15.32	8	40.85	0	0.00	5	25.53
06/21	37	141	3	50	13.6	20.0	0	0.00	2	12.00	0	0.00	0	0.00
06/21	37	142	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/21	37	143	2	50	20.3	20.5	1	5.85	0	0.00	0	0.00	0	0.00
06/21	37	144	1	50	13.6	24.0	3	15.00	23	115.00	0	0.00	15	75.00
06/21	38	145	3	50	13.6	23.5	1	5.11	4	20.43	0	0.00	13	66.38
06/21	38	146	2	50	13.6	30.5	5	19.67	31	121.97	0	0.00	37	145.57
06/21	38	147	2	50	20.3	21.5	2	11.16	1	5.58	0	0.00	5	27.91
06/21	38	148	1	50	20.3	17.5	1	6.86	1	6.86	0	0.00	0	0.00
06/22	39	149	3	50	20.3	18.5	0	0.00	0	0.00	0	0.00	0	0.00
06/22	39	150	2	50	13.6	27.0	2	8.89	2	8.89	0	0.00	58	257.78
06/22	39	151	1	50	13.6	27.5	7	30.55	60	261.82	0	0.00	56	244.36
06/22	39													
06/23	40	152	3	50	20.3	20.5	1	5.85	0	0.00	0	0.00	0	0.00
06/23	40	153	2	50	20.3	21.5	0	0.00	7	39.07	0	0.00	5	27.91
06/23	40	154	2	50	13.6	20.5	0	0.00	5	29.27	0	0.00	23	134.63
06/23	40	155	1	50	13.6	19.0	0	0.00	26	164.21	0	0.00	16	101.05
06/23	41	156	3	50	20.3	20.5	2	11.71	0	0.00	0	0.00	0	0.00
06/23	41	157	3	50	13.6	20.0	3	18.00	4	24.00	0	0.00	14	84.00
06/23	41	158	2	50	13.6	21.5	1	5.58	3	16.74	0	0.00	31	173.02
06/23	41	159	1	50	20.3	20.0	4	24.00	1	6.00	0	0.00	0	0.00
06/24	42	160	3	50	13.6	21.5	5	27.91	7	39.07	0	0.00	14	78.14
06/24	42	161	2	50	20.3	22.0	3	16.36	0	0.00	0	0.00	0	0.00
06/24	42	162	1	50	20.3	22.0	6	32.73	1	5.45	0	0.00	0	0.00
06/24	42	163	1	50	13.6	15.5	0	0.00	6	46.45	0	0.00	11	85.16
06/24	43													
06/24	43													
06/24	43													
06/24	43													
06/25	44	164	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
06/25	44	165	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	1	6.00
06/25	44	166	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/25	44	167	1	50	13.6	15.0	1	8.00	5	40.00	0	0.00	1	8.00
06/25	45	168	3	50	13.6	20.5	3	17.56	2	11.71	0	0.00	1	5.85
06/25	45	169	2	50	13.6	20.0	0	0.00	1	6.00	0	0.00	3	18.00
06/25	45	170	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/25	45	171	1	50	20.3	21.5	1	5.58	3	16.74	0	0.00	2	11.16
06/26	46	172	3	50	20.3	20.5	1	5.85	0	0.00	0	0.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988.

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/02	1	1	3	50	13.6	20.0	1	6.00	0	0.00	0	0.00	0	0.00
06/02	1	2	2	50	13.6	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/02	1	3	2	50	20.3	21.5	0	0.00	0	0.00	0	0.00	0	0.00
06/02	1	4	1	50	20.3	20.5	1	5.85	0	0.00	0	0.00	0	0.00
06/03	2	5	3	50	20.3	17.5	0	0.00	0	0.00	0	0.00	0	0.00
06/03	2	6	2	50	13.6	19.0	0	0.00	0	0.00	0	0.00	0	0.00
06/03	2	7	1	50	13.6	15.0	0	0.00	0	0.00	0	0.00	0	0.00
06/03	2	8	1	50	20.3	17.5	0	0.00	0	0.00	0	0.00	0	0.00
06/03	3	9	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/03	3	10	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/03	3	11	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/03	3	12	1	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
06/04	4	13	3	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	4	14	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	4	15	2	50	13.6	18.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	4	16	1	50	20.3	13.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	5	17	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	5	18	2	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	5	19	1	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/04	5	20	1	50	13.6	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/05	6	21	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/05	6	22	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/05	6	23	2	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/05	6	24	1	50	13.6	16.0	1	7.50	0	0.00	0	0.00	0	0.00
06/05	7	25	3	50	13.6	20.5	0	0.00	0	0.00	0	0.00	3	17.56
06/05	7	26	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	0	0.00
06/05	7	27	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/05	7	28	1	50	20.3	17.5	0	0.00	0	0.00	0	0.00	0	0.00
06/06	8	29	3	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/06	8	30	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/06	8	31	1	50	13.6	15.5	0	0.00	0	0.00	0	0.00	0	0.00
06/06	8	32	1	50	20.3	17.5	0	0.00	0	0.00	0	0.00	0	0.00
06/06	9	33	3	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
06/06	9	34	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/06	9	35	2	50	13.6	19.0	0	0.00	0	0.00	0	0.00	0	0.00
06/06	9	36	1	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
06/07	10	37	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/07	10	38	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/07	10	39	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
06/07	10	40	1	50	20.3	21.5	2	11.16	0	0.00	0	0.00	0	0.00
06/08	11	41	3	50	13.6	20.0	1	6.00	0	0.00	0	0.00	1	6.00
06/08	11	42	2	50	20.3	21.0	0	0.00	0	0.00	0	0.00	0	0.00
06/08	11	43	1	50	20.3	19.5	1	6.15	0	0.00	0	0.00	0	0.00
06/08	11	44	1	50	13.6	14.5	1	8.28	1	8.28	0	0.00	0	0.00
06/08	12	45	3	50	13.6	17.5	0	0.00	1	6.86	0	0.00	1	6.86
06/08	12	46	3	50	20.3	20.0	1	6.00	0	0.00	0	0.00	0	0.00

—— Continued ——

Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/08	12	47	2	50	20.3	20.5	4	23.41	1	5.85	0	0.00	1	5.85
06/08	12	48	1	50	13.6	12.5	4	38.40	1	9.60	0	0.00	1	9.60
06/09	13	49	3	50	13.6	18.5	2	12.97	1	6.49	0	0.00	1	6.49
06/09	13	50	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
06/09	13	51	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/09	13	52	1	50	20.3	17.5	0	0.00	0	0.00	0	0.00	0	0.00
06/09	14	53	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/09	14	54	2	50	13.6	22.5	1	5.33	3	16.00	0	0.00	4	21.33
06/09	14	55	1	50	13.6	20.0	1	6.00	1	6.00	0	0.00	6	36.00
06/09	14	56	1	50	20.3	18.0	5	33.33	0	0.00	0	0.00	0	0.00
06/10	15	57	3	50	20.3	20.5	1	5.85	0	0.00	0	0.00	4	23.41
06/10	15	58	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/10	15	59	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
06/10	15	60	1	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/10	16	61	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/10	16	62	3	50	13.6	20.5	1	5.85	1	5.85	0	0.00	1	5.85
06/10	16	63	2	50	13.6	20.5	0	0.00	3	17.56	0	0.00	7	40.98
06/10	16	64	1	50	20.3	12.5	1	9.60	0	0.00	0	0.00	2	19.20
06/11	17													
06/11	17													
06/11	17													
06/11	17													
06/11	18	65	3	50	13.6	22.0	4	21.82	0	0.00	0	0.00	6	32.73
06/11	18	66	2	50	20.3	21.0	0	0.00	1	5.71	0	0.00	1	5.71
06/11	18	67	1	50	20.3	20.0	0	0.00	0	0.00	0	0.00	1	6.00
06/11	18	68	1	50	13.6	24.0	6	30.00	10	50.00	0	0.00	7	35.00
06/12	19	69	3	50	13.6	20.5	0	0.00	5	29.27	0	0.00	8	46.83
06/12	19	70	3	50	20.3	21.5	0	0.00	0	0.00	0	0.00	0	0.00
06/12	19	71	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	1	6.00
06/12	19	72	1	50	13.6	16.5	1	7.27	5	36.36	0	0.00	5	36.36
06/12	20	73	3	50	13.6	22.0	4	21.82	4	21.82	0	0.00	5	27.27
06/12	20	74	2	50	13.6	23.5	4	20.43	7	35.74	0	0.00	14	71.49
06/12	20	75	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/12	20	76	1	50	20.3	20.5	4	23.41	2	11.71	0	0.00	1	5.85
06/13	21	77	3	50	20.3	22.0	0	0.00	0	0.00	0	0.00	0	0.00
06/13	21	78	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/13	21	79	1	50	13.6	19.5	2	12.31	11	67.69	0	0.00	14	86.15
06/13	21	80	1	50	20.3	20.5	2	11.71	0	0.00	0	0.00	0	0.00
06/13	22	81	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/13	22	82	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/13	22	83	2	50	13.6	22.0	0	0.00	5	27.27	0	0.00	4	21.82
06/13	22	84	1	50	13.6	18.0	3	20.00	0	0.00	0	0.00	10	66.67
06/14	23	85	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/14	23	86	3	50	13.6	21.0	1	5.71	1	5.71	0	0.00	1	5.71
06/14	23	87	2	50	13.6	20.5	0	0.00	1	5.85	0	0.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
06/26	46	173	2	50	13.6	20.0	0	0.00	7	42.00	0	0.00	0	0.00
06/26	46	174	1	50	13.6	21.5	2	11.16	14	78.14	0	0.00	3	16.74
06/26	46	175	1	50	20.3	20.0	0	0.00	2	12.00	0	0.00	0	0.00
06/26	47	176	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/26	47	177	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/26	47	178	2	50	13.6	23.0	1	5.22	5	26.09	0	0.00	6	31.30
06/26	47	179	1	50	13.6	26.0	4	18.46	18	83.08	0	0.00	17	78.46
06/27	48	180	3	50	20.3	22.5	4	21.33	1	5.33	0	0.00	0	0.00
06/27	48	181	3	50	13.6	18.5	1	6.49	4	25.95	0	0.00	6	38.92
06/27	48	182	2	50	13.6	21.0	0	0.00	4	22.86	0	0.00	11	62.86
06/27	48	183	1	50	20.3	19.0	1	6.32	2	12.63	0	0.00	4	25.26
06/27	49	184	3	50	13.6	25.0	2	9.60	4	19.20	0	0.00	64	307.20
06/27	49	185	2	50	20.3	18.5	0	0.00	0	0.00	0	0.00	0	0.00
06/27	49	186	1	50	20.3	18.5	1	6.49	0	0.00	0	0.00	4	25.95
06/27	49	187	1	50	13.6	19.0	1	6.32	11	69.47	0	0.00	32	202.11
06/28	50	188	3	50	13.6	17.0	0	0.00	2	14.12	0	0.00	0	0.00
06/28	50	189	3	50	20.3	20.5	0	0.00	1	5.85	0	0.00	0	0.00
06/28	50	190	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/28	50	191	1	50	13.6	29.0	3	12.41	14	57.93	0	0.00	48	198.62
06/28	51													
06/28	51													
06/28	51													
06/28	51													
06/29	52	192	3	50	13.6	19.0	0	0.00	0	0.00	0	0.00	0	0.00
06/29	52	193	2	50	13.6	19.5	0	0.00	2	12.31	0	0.00	3	18.46
06/29	52	194	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/29	52	195	1	50	20.3	16.5	1	7.27	0	0.00	0	0.00	0	0.00
06/29	53	196	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
06/29	53	197	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	1	6.15
06/29	53	198	1	50	13.6	20.0	1	6.00	1	6.00	0	0.00	32	192.00
06/29	53	199	1	50	20.3	17.0	0	0.00	1	7.06	0	0.00	0	0.00
06/30	54	200	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
06/30	54	201	2	50	20.3	21.0	0	0.00	0	0.00	0	0.00	0	0.00
06/30	54	202	2	50	13.6	23.5	0	0.00	4	20.43	0	0.00	8	40.85
06/30	54	203	1	50	13.6	20.5	1	5.85	8	46.83	0	0.00	8	46.83
06/30	55	204	3	50	20.3	21.0	1	5.71	0	0.00	0	0.00	0	0.00
06/30	55	205	3	50	13.6	21.5	0	0.00	0	0.00	0	0.00	1	5.58
06/30	55	206	2	50	13.6	21.5	0	0.00	4	22.33	0	0.00	15	83.72
06/30	55	207	1	50	20.3	18.0	0	0.00	0	0.00	0	0.00	0	0.00
07/01	56	208	3	50	13.6	21.0	0	0.00	8	45.71	0	0.00	4	22.86
07/01	56	209	2	50	20.3	23.0	2	10.43	1	5.22	0	0.00	1	5.22
07/01	56	210	1	50	20.3	22.5	4	21.33	2	10.67	0	0.00	0	0.00
07/01	56	211	1	50	13.6	24.5	1	4.90	18	88.16	0	0.00	24	117.55
07/01	57	212	3	50	13.6	20.0	0	0.00	1	6.00	0	0.00	7	42.00
07/01	57	213	3	50	20.3	18.0	0	0.00	0	0.00	0	0.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/01	57	214	2	50	20.3	17.5	0	0.00	0	0.00	0	0.00	1	6.86
07/01	57	215	1	50	13.6	34.0	3	10.59	12	42.35	0	0.00	165	582.35
07/02	58	216	3	50	13.6	21.0	0	0.00	2	11.43	0	0.00	9	51.43
07/02	58	217	2	50	13.6	22.5	0	0.00	4	21.33	0	0.00	18	96.00
07/02	58	218	2	50	20.3	21.5	0	0.00	2	11.16	0	0.00	2	11.16
07/02	58	219	1	50	20.3	24.0	1	5.00	5	25.00	0	0.00	4	20.00
07/02	59	220	3	50	20.3	12.0	0	0.00	0	0.00	0	0.00	0	0.00
07/02	59	221	2	50	13.6	14.0	0	0.00	0	0.00	0	0.00	8	68.57
07/02	59	222	1	50	13.6	10.5	0	0.00	2	22.86	0	0.00	14	160.00
07/02	59	223	1	50	20.3	11.5	0	0.00	0	0.00	0	0.00	0	0.00
07/03	60	224	3	50	20.3	23.5	0	0.00	0	0.00	0	0.00	1	5.11
07/03	60	225	2	50	20.3	21.5	0	0.00	1	5.58	0	0.00	2	11.16
07/03	60	226	2	50	13.6	21.5	0	0.00	2	11.16	0	0.00	14	78.14
07/03	60	227	1	50	13.6	24.0	3	15.00	7	35.00	0	0.00	33	165.00
07/03	61	228	3	50	20.3	18.0	0	0.00	1	6.67	0	0.00	4	26.67
07/03	61	229	3	50	13.6	33.0	0	0.00	4	14.55	0	0.00	101	367.27
07/03	61	230	2	50	13.6	29.5	1	4.07	1	4.07	0	0.00	65	264.41
07/03	61	231	1	50	20.3	21.5	0	0.00	3	16.74	0	0.00	0	0.00
07/04	62													
07/04	62													
07/04	62													
07/04	62													
07/04	63													
07/04	63													
07/04	63													
07/04	63													
07/05	64	232	3	50	13.6	19.5	1	6.15	3	18.46	0	0.00	16	98.46
07/05	64	233	2	50	20.3	22.5	1	5.33	1	5.33	0	0.00	1	5.33
07/05	64	234	1	50	20.3	21.0	1	5.71	0	0.00	0	0.00	4	22.86
07/05	64	235	1	50	13.6	18.5	0	0.00	11	71.35	0	0.00	32	207.57
07/05	65	236	3	50	13.6	17.5	1	6.86	0	0.00	0	0.00	3	20.57
07/05	65	237	3	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/05	65	238	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
07/05	65	239	1	50	13.6	19.0	1	6.32	0	0.00	0	0.00	9	56.84
07/06	66	240	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/06	66	241	2	50	13.6	23.0	0	0.00	1	5.22	0	0.00	14	73.04
07/06	66	242	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
07/06	66	243	1	50	20.3	21.0	0	0.00	1	5.71	0	0.00	2	11.43
07/06	67	244	3	50	20.3	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/06	67	245	2	50	13.6	19.5	0	0.00	2	12.31	0	0.00	10	61.54
07/06	67	246	1	50	13.6	23.0	0	0.00	3	15.65	0	0.00	19	99.13
07/06	67	247	1	50	20.3	19.0	0	0.00	0	0.00	0	0.00	1	6.32
07/07	68	248	3	50	20.3	21.0	0	0.00	0	0.00	0	0.00	0	0.00
07/07	68	249	2	50	20.3	20.5	0	0.00	1	5.85	0	0.00	1	5.85
07/07	68	250	2	50	13.6	17.5	0	0.00	1	6.86	0	0.00	1	6.86

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/07	68	251	1	50	13.6	22.5	0	0.00	3	16.00	0	0.00	9	48.00
07/08	69	252	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
07/08	69	253	3	50	13.6	18.0	0	0.00	1	6.67	0	0.00	0	0.00
07/08	69	254	2	50	13.6	20.0	0	0.00	1	6.00	0	0.00	5	30.00
07/08	69	255	1	50	20.3	16.0	0	0.00	0	0.00	0	0.00	1	7.50
07/08	70													
07/08	70													
07/08	70													
07/08	70													
07/09	71	256	3	50	13.6	17.5	0	0.00	0	0.00	0	0.00	1	6.86
07/09	71	257	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/09	71	258	1	50	20.3	20.5	0	0.00	0	0.00	0	0.00	1	5.85
07/09	71	259	1	50	13.6	19.0	0	0.00	2	12.63	0	0.00	5	31.58
07/09	72	260	3	50	13.6	18.5	0	0.00	1	6.49	0	0.00	6	38.92
07/09	72	261	3	50	20.3	24.5	0	0.00	0	0.00	0	0.00	0	0.00
07/09	72	262	2	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/09	72	263	1	50	13.6	19.0	0	0.00	0	0.00	0	0.00	17	107.37
07/10	73	264	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
7/10	73	265	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/10	73	266	2	50	20.3	20.5	0	0.00	0	0.00	0	0.00	0	0.00
07/10	73	267	1	50	20.3	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/10	74	268	3	50	20.3	20.5	0	0.00	0	0.00	0	0.00	1	5.85
07/10	74	269	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	14	84.00
07/10	74	270	1	50	13.6	24.0	0	0.00	2	10.00	0	0.00	41	205.00
07/10	74	271	1	50	20.3	17.5	0	0.00	0	0.00	0	0.00	0	0.00
07/11	75	272	3	50	13.6	17.5	0	0.00	0	0.00	0	0.00	0	0.00
07/11	75	273	2	50	13.6	18.5	0	0.00	1	6.49	0	0.00	1	6.49
07/11	75	274	2	50	13.6	27.0	0	0.00	2	8.89	0	0.00	16	71.11
07/11	75	275	1	50	13.6	22.0	0	0.00	1	5.45	0	0.00	24	130.91
07/11	76													
07/11	76													
07/11	76													
07/11	76													
07/12	77	276	3	50	13.6	17.5	0	0.00	0	0.00	0	0.00	1	6.86
07/12	77	277	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	1	7.06
07/12	77	278	2	50	13.6	18.0	0	0.00	0	0.00	0	0.00	3	20.00
07/12	77	279	1	50	13.6	18.0	0	0.00	0	0.00	0	0.00	8	53.33
07/12	78	280	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/12	78	281	2	50	13.6	22.5	0	0.00	0	0.00	0	0.00	7	37.33
07/12	78	282	1	50	13.6	20.5	0	0.00	0	0.00	0	0.00	20	117.07
07/12	78	283	1	50	13.6	18.5	0	0.00	0	0.00	0	0.00	4	25.95
07/13	79	284	3	50	13.6	17.5	0	0.00	0	0.00	0	0.00	1	6.86
07/13	79	285	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
/13	79	286	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
/13	79	287	1	50	13.6	18.5	0	0.00	0	0.00	0	0.00	9	58.38

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/13	80	288	3	50	13.6	21.0	0	0.00	0	0.00	0	0.00	4	22.86
07/13	80	289	2	50	13.6	20.0	0	0.00	0	0.00	1	6.00	1	6.00
07/13	80	290	2	50	13.6	22.5	0	0.00	0	0.00	0	0.00	6	32.00
07/13	80	291	1	50	13.6	19.5	0	0.00	0	0.00	0	0.00	13	80.00
07/14	81	292	3	50	13.6	20.5	1	5.85	0	0.00	0	0.00	0	0.00
07/14	81	293	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	1	5.71
07/14	81	294	1	50	13.6	20.5	3	17.56	0	0.00	0	0.00	8	46.83
07/14	81	295	1	50	13.6	19.0	1	6.32	1	6.32	0	0.00	7	44.21
07/14	82	296	3	50	13.6	20.5	1	5.85	0	0.00	0	0.00	3	17.56
07/14	82	297	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/14	82	298	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/14	82	299	1	50	13.6	20.5	0	0.00	1	5.85	0	0.00	7	40.98
07/15	83	300	3	50	13.6	20.5	0	0.00	0	0.00	0	0.00	3	17.56
07/15	83	301	3	50	13.6	20.5	0	0.00	0	0.00	0	0.00	2	11.71
07/15	83	302	2	50	13.6	20.5	0	0.00	0	0.00	0	0.00	2	11.71
07/15	83	303	1	50	13.6	24.5	0	0.00	1	4.90	0	0.00	10	48.98
07/15	84	304	3	50	13.6	22.5	0	0.00	0	0.00	0	0.00	12	64.00
07/15	84	305	2	50	13.6	17.5	0	0.00	0	0.00	0	0.00	4	27.43
07/15	84	306	1	50	13.6	20.0	0	0.00	0	0.00	0	0.00	11	66.00
07/15	84	307	1	50	13.6	17.5	0	0.00	0	0.00	0	0.00	2	13.71
07/16	85	308	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/16	85	309	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/16	85	310	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	4	22.86
07/16	85	311	1	50	13.6	19.5	2	12.31	0	0.00	0	0.00	8	49.23
07/16	86	312	3	50	13.6	22.0	2	10.91	0	0.00	0	0.00	4	21.82
07/16	86	313	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	7	42.00
07/16	86	314	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	9	51.43
07/16	86	315	1	50	13.6	23.0	0	0.00	0	0.00	0	0.00	19	99.13
07/17	87	316	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/17	87	317	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	3	17.14
07/17	87	318	1	50	13.6	19.5	1	6.15	1	6.15	1	6.15	6	36.92
07/17	87	319	1	50	13.6	20.5	0	0.00	0	0.00	0	0.00	4	23.41
07/17	88	320	3	50	13.6	21.0	0	0.00	0	0.00	1	5.71	5	28.57
07/17	88	321	2	50	13.6	24.0	0	0.00	0	0.00	0	0.00	24	120.00
07/17	88	322	2	50	13.6	18.5	0	0.00	0	0.00	0	0.00	9	58.38
07/17	88	323	1	50	13.6	17.5	2	13.71	1	6.86	0	0.00	4	27.43
07/18	89	324	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
07/18	89	325	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/18	89	326	2	50	13.6	18.0	0	0.00	0	0.00	0	0.00	3	20.00
07/18	89	327	1	50	13.6	22.5	1	5.33	1	5.33	0	0.00	24	128.00
07/18	90	328	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/18	90	329	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/18	90	330	1	50	13.6	20.5	0	0.00	0	0.00	0	0.00	2	11.71
7/18	90	331	1	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/19	91	332	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/19	91	333	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/19	91	334	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/19	91	335	1	50	13.6	21.0	0	0.00	0	0.00	0	0.00	3	17.14
07/19	92	336	3	50	13.6	21.0	0	0.00	0	0.00	0	0.00	1	5.71
07/19	92	337	2	50	13.6	20.5	0	0.00	0	0.00	0	0.00	2	11.71
07/19	92	338	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/19	92	339	1	50	13.6	18.0	0	0.00	0	0.00	0	0.00	1	6.67
07/20	93	340	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/20	93	341	2	50	13.6	21.5	0	0.00	0	0.00	0	0.00	4	22.33
07/20	93	342	1	50	13.6	22.5	0	0.00	0	0.00	2	10.67	6	32.00
07/20	93	343	1	50	13.6	21.0	0	0.00	0	0.00	0	0.00	4	22.86
07/20	94	344	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/20	94	345	2	50	13.6	24.0	0	0.00	0	0.00	0	0.00	4	20.00
07/20	94	346	2	50	13.6	24.0	0	0.00	0	0.00	0	0.00	2	10.00
07/20	94	347	1	50	13.6	21.0	0	0.00	0	0.00	0	0.00	4	22.86
07/21	95	348	3	50	13.6	21.0	0	0.00	0	0.00	0	0.00	4	22.86
07/21	95	349	1	50	13.6	24.0	0	0.00	0	0.00	0	0.00	5	25.00
07/21	95													
7/21	95													
7/21	96	350	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/21	96	351	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/21	96	352	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	5	28.57
07/21	96	353	1	50	13.6	18.0	0	0.00	0	0.00	1	6.67	1	6.67
07/22	97	354	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/22	97	355	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	1	6.15
07/22	97	356	1	50	13.6	17.5	0	0.00	1	6.86	0	0.00	2	13.71
07/22	97	357	1	50	13.6	20.0	0	0.00	0	0.00	0	0.00	3	18.00
07/22	98	358	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/22	98	359	3	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
07/22	98	360	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/22	98	361	1	50	13.6	18.0	0	0.00	0	0.00	1	6.67	1	6.67
07/23	99	362	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/23	99	363	2	50	13.6	21.0	0	0.00	0	0.00	0	0.00	2	11.43
07/23	99	364	2	50	13.6	20.5	0	0.00	0	0.00	0	0.00	2	11.71
07/23	99	365	1	50	13.6	19.0	0	0.00	0	0.00	0	0.00	1	6.32
07/24	100	366	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/24	100	367	2	50	13.6	21.0	0	0.00	0	0.00	4	22.86	4	22.86
07/24	100	368	1	50	13.6	18.5	1	6.49	1	6.49	1	6.49	1	6.49
07/24	100	369	1	50	13.6	18.0	0	0.00	0	0.00	2	13.33	1	6.67
07/24	101	370	3	50	13.6	20.5	0	0.00	0	0.00	0	0.00	2	11.71
07/24	101	371	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/24	101	372	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/24	101	373	1	50	13.6	18.5	0	0.00	0	0.00	1	6.49	3	19.46
7/25	102	374	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
/25	102	375	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/25	102	376	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/25	102	377	1	50	13.6	20.0	0	0.00	0	0.00	5	30.00	2	12.00
07/25	103													
07/25	103													
07/25	103													
07/25	103													
07/26	104	378	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/26	104	379	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/26	104	380	1	50	13.6	19.0	0	0.00	0	0.00	3	18.95	4	25.26
07/26	104	381	1	50	13.6	17.5	0	0.00	0	0.00	0	0.00	2	13.71
07/26	105	382	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/26	105	383	3	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00
07/26	105	384	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/26	105	385	1	50	13.6	18.5	1	6.49	0	0.00	1	6.49	1	6.49
07/27	106	386	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/27	106	387	2	50	13.6	22.5	0	0.00	0	0.00	6	32.00	3	16.00
07/27	106	388	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00
07/27	106	389	1	50	13.6	20.0	1	6.00	0	0.00	10	60.00	4	24.00
07/27	107	390	3	50	13.6	20.0	0	0.00	0	0.00	3	18.00	1	6.00
07/27	107	391	2	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
07/27	107	392	1	50	13.6	21.0	0	0.00	0	0.00	3	17.14	3	17.14
07/27	107	393	1	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
07/28	108	394	3	50	13.6	18.5	0	0.00	0	0.00	0	0.00	0	0.00
07/28	108	395	2	50	13.6	20.5	0	0.00	0	0.00	1	5.85	0	0.00
07/28	108	396	2	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00
07/28	108	397	1	50	13.6	19.0	0	0.00	0	0.00	24	151.58	0	0.00
07/28	109													
07/28	109													
07/28	109													
07/28	109													
07/29	110	398	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/29	110	399	3	50	13.6	20.0	0	0.00	0	0.00	0	0.00	1	6.00
07/29	110	400	2	50	13.6	26.5	0	0.00	0	0.00	0	0.00	0	0.00
07/29	110	401	1	50	13.6	18.5	0	0.00	0	0.00	9	58.38	4	25.95
07/29	111	402	3	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
07/29	111	403	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/29	111	404	1	50	13.6	20.0	0	0.00	0	0.00	3	18.00	3	18.00
07/29	111	405	1	50	13.6	16.0	0	0.00	0	0.00	4	30.00	0	0.00
07/30	112	406	3	50	13.6	20.5	0	0.00	0	0.00	0	0.00	4	23.41
07/30	112	407	3	50	13.6	20.0	0	0.00	0	0.00	1	6.00	1	6.00
07/30	112	408	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
07/30	112	409	1	50	13.6	18.5	0	0.00	0	0.00	13	84.32	2	12.97
07/30	113	410	3	50	13.6	20.0	1	6.00	0	0.00	3	18.00	0	0.00
07/30	113	411	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	3	18.00
07/30	113	412	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	2	12.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
07/30	113	413	1	50	13.6	18.5	1	6.49	0	0.00	4	25.95	4	25.95
07/31	114	414	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/31	114	415	2	50	13.6	21.5	0	0.00	0	0.00	0	0.00	0	0.00
07/31	114	416	1	50	13.6	20.0	0	0.00	0	0.00	23	138.00	1	6.00
07/31	114	417	1	50	13.6	25.0	0	0.00	1	4.80	3	14.40	1	4.80
07/31	115	418	3	50	13.6	20.5	0	0.00	0	0.00	7	40.98	0	0.00
07/31	115	419	2	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
07/31	115	420	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
07/31	115	421	1	50	13.6	21.0	0	0.00	0	0.00	7	40.00	2	11.43
08/01	116	422	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/01	116	423	3	50	13.6	20.5	0	0.00	0	0.00	6	35.12	0	0.00
08/01	116	424	2	50	13.6	20.5	0	0.00	0	0.00	1	5.85	0	0.00
08/01	116	425	1	50	13.6	23.5	0	0.00	0	0.00	22	112.34	2	10.21
08/01	117	426	3	50	13.6	20.0	0	0.00	0	0.00	1	6.00	1	6.00
08/01	117	427	2	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
08/01	117	428	1	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/01	117	429	1	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/02	118	430	3	50	13.6	21.5	0	0.00	0	0.00	4	22.33	0	0.00
/02	118	431	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/02	118	432	2	50	13.6	20.5	0	0.00	0	0.00	0	0.00	0	0.00
08/02	118	433	1	50	13.6	21.0	0	0.00	0	0.00	6	34.29	1	5.71
08/02	119	434	3	50	13.6	20.0	0	0.00	0	0.00	1	6.00	1	6.00
08/02	119	435	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/02	119	436	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/02	119	437	1	50	13.6	21.5	0	0.00	0	0.00	6	33.49	0	0.00
08/03	120	438	3	50	13.6	20.0	0	0.00	0	0.00	4	24.00	0	0.00
08/03	120	439	2	50	13.6	23.5	0	0.00	0	0.00	17	86.81	1	5.11
08/03	120	440	1	50	13.6	20.5	0	0.00	0	0.00	1	5.85	0	0.00
08/03	120	441	1	50	13.6	21.0	0	0.00	0	0.00	2	11.43	0	0.00
08/03	121	442	3	50	13.6	20.5	0	0.00	0	0.00	6	35.12	2	11.71
08/03	121	443	2	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00
08/03	121	444	2	50	13.6	22.5	0	0.00	0	0.00	10	53.33	1	5.33
08/03	121	445	1	50	13.6	18.5	0	0.00	0	0.00	12	77.84	0	0.00
08/04	122	446	3	50	13.6	20.0	0	0.00	0	0.00	2	12.00	0	0.00
08/04	122	447	2	50	13.6	21.5	0	0.00	0	0.00	2	11.16	0	0.00
08/04	122	448	1	50	13.6	21.5	0	0.00	0	0.00	11	61.40	0	0.00
08/04	122													
08/04	123	449	3	50	13.6	20.5	0	0.00	0	0.00	0	0.00	0	0.00
08/04	123	450	2	50	13.6	20.0	0	0.00	0	0.00	2	12.00	1	6.00
08/04	123	451	1	50	13.6	20.0	0	0.00	0	0.00	5	30.00	1	6.00
08/04	123	452	1	50	13.6	20.0	0	0.00	0	0.00	2	12.00	0	0.00
08/05	124	453	3	50	13.6	23.0	0	0.00	0	0.00	17	88.70	1	5.22
08/05	124	454	3	50	13.6	20.5	0	0.00	0	0.00	4	23.41	0	0.00
'05	124	455	2	50	13.6	20.5	0	0.00	0	0.00	7	40.98	1	5.85
08/05	124	456	1	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
08/06	125	457	3	50	13.6	26.0	0	0.00	0	0.00	31	143.08	1	4.62
08/06	125	458	2	50	13.6	20.0	0	0.00	0	0.00	15	90.00	1	6.00
08/06	125	459	2	50	13.6	33.0	0	0.00	0	0.00	109	396.36	2	7.27
08/06	125	460	1	50	13.6	21.5	0	0.00	0	0.00	67	373.95	2	11.16
08/06	126	461	3	50	13.6	19.0	0	0.00	0	0.00	13	82.11	0	0.00
08/06	126	462	2	50	13.6	19.0	0	0.00	0	0.00	14	88.42	0	0.00
08/06	126	463	1	50	13.6	19.5	0	0.00	0	0.00	20	123.08	0	0.00
08/06	126	464	1	50	13.6	18.0	0	0.00	0	0.00	9	60.00	0	0.00
08/07	127	465	3	50	13.6	20.0	0	0.00	0	0.00	13	78.00	0	0.00
08/07	127	466	2	50	13.6	31.5	0	0.00	0	0.00	101	384.76	5	19.05
08/07	127	467	2	50	13.6	16.0	0	0.00	0	0.00	18	135.00	2	15.00
08/07	127	468	1	50	13.6	24.5	0	0.00	0	0.00	37	181.22	2	9.80
08/07	128	469	3	50	13.6	17.5	0	0.00	0	0.00	3	20.57	1	6.86
08/07	128	470	3	50	13.6	19.0	0	0.00	0	0.00	11	69.47	1	6.32
08/07	128	471	2	50	13.6	20.5	0	0.00	0	0.00	64	374.63	4	23.41
08/07	128	472	1	50	13.6	13.5	0	0.00	0	0.00	8	71.11	0	0.00
08/08	129	473	3	50	13.6	18.0	0	0.00	0	0.00	6	40.00	0	0.00
08/08	129	474	2	50	13.6	13.5	0	0.00	0	0.00	9	80.00	0	0.00
08/08	129	475	1	50	13.6	22.0	0	0.00	0	0.00	58	316.36	1	5.45
08/08	129	476	1	50	13.6	13.5	0	0.00	0	0.00	13	115.56	0	0.00
08/08	130													
08/08	130													
08/08	130													
08/08	130													
08/09	131	477	3	50	13.6	17.0	0	0.00	0	0.00	1	7.06	0	0.00
08/09	131	478	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/09	131	479	2	50	13.6	17.0	0	0.00	0	0.00	1	7.06	0	0.00
08/09	131	480	1	50	13.6	21.0	0	0.00	0	0.00	17	97.14	1	5.71
08/09	132	481	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/09	132	482	2	50	13.6	20.5	0	0.00	0	0.00	1	5.85	1	5.85
08/09	132	483	2	50	13.6	21.0	0	0.00	0	0.00	3	17.14	0	0.00
08/09	132	484	1	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00
08/10	133	485	3	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/10	133	486	2	50	13.6	17.0	0	0.00	0	0.00	1	7.06	0	0.00
08/10	133	487	1	50	13.6	21.5	0	0.00	0	0.00	36	200.93	0	0.00
08/10	133	488	1	50	13.6	19.5	0	0.00	0	0.00	7	43.08	1	6.15
08/10	134													
08/10	134													
08/10	134													
08/10	134													
08/11	135	489	3	50	13.6	19.0	0	0.00	0	0.00	6	37.89	0	0.00
08/11	135	490	2	50	13.6	22.5	0	0.00	0	0.00	41	218.67	0	0.00
08/11	135	491	2	50	13.6	19.5	0	0.00	0	0.00	12	73.85	1	6.15
08/11	135	492	1	50	13.6	18.5	0	0.00	0	0.00	5	32.43	1	6.49
08/11	136	493	3	50	13.6	18.0	0	0.00	0	0.00	11	73.33	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
08/11	136	494	3	50	13.6	21.5	0	0.00	0	0.00	19	106.05	0	0.00
08/11	136	495	2	50	13.6	26.0	0	0.00	0	0.00	69	318.46	0	0.00
08/11	136	496	1	50	13.6	14.5	1	8.28	0	0.00	11	91.03	0	0.00
08/12	137	497	3	50	13.6	18.5	0	0.00	0	0.00	5	32.43	0	0.00
08/12	137	498	2	50	13.6	23.5	0	0.00	0	0.00	36	183.83	1	5.11
08/12	137	499	1	50	13.6	24.5	0	0.00	0	0.00	88	431.02	0	0.00
08/12	137	500	1	50	13.6	13.5	0	0.00	0	0.00	12	106.67	0	0.00
08/12	138													
08/12	138													
08/12	138													
08/12	138													
08/13	139	501	3	50	13.6	17.0	0	0.00	0	0.00	2	14.12	0	0.00
08/13	139	502	3	50	13.6	17.0	0	0.00	0	0.00	2	14.12	0	0.00
08/13	139	503	2	50	13.6	17.5	0	0.00	0	0.00	4	27.43	0	0.00
08/13	139	504	1	50	13.6	18.0	0	0.00	0	0.00	12	80.00	0	0.00
08/13	140	505	3	50	13.6	18.0	0	0.00	0	0.00	4	26.67	0	0.00
08/13	140	506	2	50	13.6	17.0	0	0.00	0	0.00	4	28.24	0	0.00
08/13	140	507	2	50	13.6	18.0	0	0.00	0	0.00	2	13.33	0	0.00
08/13	140	508	1	50	13.6	17.5	0	0.00	0	0.00	4	27.43	0	0.00
08/14	141	509	3	50	13.6	19.0	0	0.00	0	0.00	14	88.42	0	0.00
08/14	141	510	2	50	13.6	24.0	0	0.00	0	0.00	50	250.00	0	0.00
08/14	141	511	1	50	13.6	14.5	0	0.00	0	0.00	4	33.10	0	0.00
08/14	141	512	1	50	13.6	17.0	0	0.00	0	0.00	7	49.41	0	0.00
08/14	142	513	3	50	13.6	18.0	0	0.00	0	0.00	12	80.00	0	0.00
08/14	142	514	2	50	13.6	18.5	0	0.00	0	0.00	11	71.35	0	0.00
08/14	142	515	2	50	13.6	17.0	0	0.00	0	0.00	4	28.24	0	0.00
08/14	142	516	1	50	13.6	14.5	0	0.00	0	0.00	0	0.00	0	0.00
08/15	143	517	3	50	13.6	19.5	0	0.00	0	0.00	15	92.31	0	0.00
08/15	143	518	3	50	13.6	17.0	0	0.00	0	0.00	3	21.18	0	0.00
08/15	143	519	2	50	13.6	22.5	0	0.00	0	0.00	42	224.00	0	0.00
08/15	143	520	1	50	13.6	20.5	0	0.00	0	0.00	34	199.02	0	0.00
08/15	144	521	3	50	13.6	18.5	0	0.00	0	0.00	2	12.97	0	0.00
08/15	144	522	2	50	13.6	17.5	0	0.00	0	0.00	2	13.71	0	0.00
08/15	144	523	1	50	13.6	17.5	0	0.00	0	0.00	2	13.71	0	0.00
08/15	144	524	1	50	13.6	18.0	0	0.00	0	0.00	2	13.33	0	0.00
08/16	145	525	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/16	145	526	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/16	145	527	2	50	13.6	17.0	0	0.00	0	0.00	1	7.06	0	0.00
08/16	145	528	1	50	13.6	19.0	0	0.00	0	0.00	9	56.84	0	0.00
08/16	146	529	3	50	13.6	17.0	0	0.00	0	0.00	6	42.35	0	0.00
08/16	146	530	2	50	13.6	18.0	0	0.00	0	0.00	4	26.67	0	0.00
08/16	146	531	2	50	13.6	17.0	0	0.00	0	0.00	1	7.06	0	0.00
08/16	146	532	1	50	13.6	21.0	0	0.00	0	0.00	7	40.00	0	0.00
08/17	147	533	3	50	13.6	23.5	0	0.00	0	0.00	14	71.49	0	0.00
08/17	147	534	2	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
08/17	147	535	1	50	13.6	22.0	0	0.00	0	0.00	25	136.36	0	0.00
08/17	147	536	1	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/17	148													
08/17	148													
08/17	148													
08/17	148													
08/18	149	537	3	50	13.6	19.5	0	0.00	0	0.00	11	67.69	0	0.00
08/18	149	538	2	50	13.6	17.5	0	0.00	0	0.00	3	20.57	0	0.00
08/18	149	539	2	50	13.6	17.5	0	0.00	0	0.00	2	13.71	0	0.00
08/18	149	540	1	50	13.6	20.0	0	0.00	0	0.00	33	198.00	0	0.00
08/18	150	541	3	50	13.6	16.5	0	0.00	0	0.00	1	7.27	0	0.00
08/18	150	542	3	50	13.6	16.5	0	0.00	0	0.00	1	7.27	0	0.00
08/18	150	543	2	50	13.6	16.5	0	0.00	0	0.00	1	7.27	0	0.00
08/18	150	544	1	50	13.6	17.5	0	0.00	0	0.00	5	34.29	0	0.00
08/19	151	545	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/19	151	546	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/19	151	547	1	50	13.6	20.0	0	0.00	0	0.00	2	12.00	0	0.00
08/19	151	548	1	50	13.6	20.0	0	0.00	0	0.00	2	12.00	0	0.00
08/19	152	549	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/19	152	550	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/19	152	551	2	50	13.6	21.0	0	0.00	0	0.00	3	17.14	0	0.00
08/19	152	552	1	50	13.6	22.5	0	0.00	0	0.00	14	74.67	0	0.00
08/20	153	553	3	50	13.6	18.5	0	0.00	0	0.00	8	51.89	0	0.00
08/20	153	554	2	50	13.6	17.0	0	0.00	0	0.00	2	14.12	0	0.00
08/20	153	555	1	50	13.6	16.5	0	0.00	0	0.00	4	29.09	0	0.00
08/20	153													
08/20	154	556	3	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/20	154	557	2	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/20	154	558	1	50	13.6	17.5	0	0.00	0	0.00	4	27.43	0	0.00
08/20	154	559	1	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/21	155	560	3	50	13.6	22.0	0	0.00	0	0.00	2	10.91	0	0.00
08/21	155	561	2	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
08/21	155	562	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/21	155	563	1	50	13.6	19.5	0	0.00	0	0.00	2	12.31	0	0.00
08/22	156	564	3	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/22	156	565	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/22	156	566	2	50	13.6	20.0	0	0.00	0	0.00	2	12.00	0	0.00
08/22	156	567	1	50	13.6	22.5	0	0.00	0	0.00	22	117.33	0	0.00
08/22	157	568	3	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00
08/22	157	569	2	50	13.6	20.5	0	0.00	0	0.00	4	23.41	0	0.00
08/22	157	570	1	50	13.6	20.5	0	0.00	0	0.00	11	64.39	0	0.00
08/22	157	571	1	50	13.6	20.0	0	0.00	0	0.00	4	24.00	0	0.00
08/23	158	572	3	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/23	158	573	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/23	158	574	2	50	13.6	20.0	0	0.00	0	0.00	11	66.00	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
08/23	158	575	1	50	13.6	18.0	0	0.00	0	0.00	7	46.67	0	0.00
08/23	159	576	3	50	13.6	19.5	0	0.00	0	0.00	2	12.31	0	0.00
08/23	159	577	2	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
08/23	159	578	2	50	13.6	20.0	0	0.00	0	0.00	3	18.00	0	0.00
08/23	159	579	1	50	13.6	18.0	0	0.00	0	0.00	11	73.33	0	0.00
08/24	160	580	3	50	13.6	17.0	0	0.00	0	0.00	0	0.00	0	0.00
08/24	160	581	2	50	13.6	20.5	0	0.00	0	0.00	27	158.05	0	0.00
08/24	160	582	1	50	13.6	18.0	0	0.00	0	0.00	3	20.00	0	0.00
08/24	160	583	1	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/24	161	584	3	50	13.6	17.5	0	0.00	0	0.00	4	27.43	0	0.00
08/24	161	585	2	50	13.6	18.0	0	0.00	0	0.00	11	73.33	0	0.00
08/24	161	586	2	50	13.6	17.0	0	0.00	0	0.00	1	7.06	0	0.00
08/24	161	587	1	50	13.6	18.0	0	0.00	0	0.00	7	46.67	0	0.00
08/25	162	588	3	50	13.6	17.5	0	0.00	0	0.00	5	34.29	0	0.00
08/25	162	589	3	50	13.6	17.5	0	0.00	0	0.00	4	27.43	0	0.00
08/25	162	590	2	50	13.6	17.5	0	0.00	0	0.00	3	20.57	0	0.00
08/25	162	591	1	50	13.6	21.5	0	0.00	0	0.00	27	150.70	0	0.00
08/25	163	592	3	50	13.6	20.5	0	0.00	0	0.00	6	35.12	0	0.00
08/25	163	593	2	50	13.6	20.5	0	0.00	0	0.00	6	35.12	0	0.00
08/25	163	594	1	50	13.6	18.0	0	0.00	0	0.00	13	86.67	0	0.00
08/25	163	595	1	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/26	164	596	3	50	13.6	20.5	0	0.00	0	0.00	1	5.85	0	0.00
08/26	164	597	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/26	164	598	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/26	164	599	1	50	13.6	19.5	0	0.00	0	0.00	13	80.00	0	0.00
08/26	165	600	3	50	13.6	17.5	0	0.00	0	0.00	1	6.86	0	0.00
08/26	165	601	2	50	13.6	16.5	0	0.00	0	0.00	0	0.00	0	0.00
08/26	165	602	2	50	13.6	18.5	0	0.00	0	0.00	1	6.49	0	0.00
08/26	165	603	1	50	13.6	18.0	0	0.00	0	0.00	8	53.33	0	0.00
08/27	166	604	3	50	13.6	16.0	0	0.00	0	0.00	0	0.00	0	0.00
08/27	166	605	2	50	13.6	17.5	0	0.00	0	0.00	1	6.86	0	0.00
08/27	166	606	1	50	13.6	22.5	0	0.00	0	0.00	31	165.33	0	0.00
08/27	166	607	1	50	13.6	20.5	0	0.00	0	0.00	11	64.39	0	0.00
08/27	167													
08/27	167													
08/27	167													
08/27	167													
08/28	168	608	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/28	168	609	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
08/28	168	610	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/28	168	611	1	50	13.6	17.5	0	0.00	0	0.00	3	20.57	0	0.00
08/28	169	612	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/28	169	613	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/28	169	614	2	50	13.6	20.0	0	0.00	0	0.00	0	0.00	0	0.00
08/28	169	615	1	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00

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Appendix A. Kuskokwim River drift test fishing catch and CPUE by tide, drift, station number and mesh size, 1988 (Continued).

Date	Tide No.	Drift No.	Station No.	Fath. Net Used	Mesh Size (cm)	Mean Fishing Time (min)	Chinook Catch	Chinook CPUE	Sockeye Catch	Sockeye CPUE	Coho Catch	Coho CPUE	Chum Catch	Chum CPUE
08/29	170	616	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/29	170	617	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/29	170	618	1	50	13.6	20.0	0	0.00	0	0.00	1	6.00	0	0.00
08/29	170	619	1	50	13.6	19.5	0	0.00	0	0.00	3	18.46	0	0.00
08/29	171	620	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/29	171	621	3	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/29	171	622	2	50	13.6	19.5	0	0.00	0	0.00	0	0.00	0	0.00
08/29	171	623	1	50	13.6	19.5	0	0.00	0	0.00	1	6.15	0	0.00
							238	1343.64	583	3106.24	1,989	11200.31	2,107	11048.54

Appendix B. Mean date of migration of Kuskokwim River chinook, sockeye, coho, and chum salmon past the test fishery, 1984-1988. a

Chinook Salmon	Mean Date	Variance
1984	21.8 June	99.9
1985	28.4 June	290.6
1986	22.2 June	335.2
1987	23.6 June	464.6
1988	22.4 June	543.4
Mean	23.7 June	

Sockeye Salmon	Mean Date	Variance
1984		
1985	30.4 June	106.8
1986	26.9 June	221.4
1987	24.9 June	244.6
1988	24.3 June	206.1
Mean	26.6 June	

Coho Salmon	Mean Date	Variance
1984	9.2 August	76.7
1985	9.6 August	52.4
1986	9.7 August	248.9
1987	15.5 August	333.0
1988	11.4 August	227.6
Mean	11.1 August	

Chum Salmon	Mean Date	Variance
1984	1.4 July	49.6
1985	4.1 July	476.7
1986	2.2 July	362.7
1987	5.8 July	397.3
1988	30.8 June	435.9
Mean	2.7 July	

a Mean dates presented afor 1984-1986 were calculated as a function of commercial harvest calibrated test fishing CPUE, while those for 1987-1988 were calculated as a function of raw CPUE.

Appendix C. Statistical area 335-11 and 335-12 commercial catch of chinook, sockeye, coho, and chum salmon, 1988.

		Statistical Area 335-11				Statistical Area 335-12				Statistical Area 335-13			
Period No.	Date	Chinook	Sockeye	Coho	Chum	Chinook	Sockeye	Coho	Chum	Chinook	Sockeye	Coho	Chum
1	06/16	12,640	7,408	0	72,219								
2	06/20	11,708	14,502	0	113,628								
3	06/24	5,274	13,773	0	77,635	4,263	5,720	0	38,518	173	401	0	3,655
4	06/28	2,833	8,836	0	89,686	2,362	8,110	0	60,051	155	682	0	4,290
5	07/02	1,921	8,427	0	117,976	1,526	6,265	0	65,598	84	410	0	4,342
6	07/05	1,258	3,422	0	89,560	1,017	3,579	9	69,479	65	283	0	4,932
7	07/08	1,070	1,648	1	78,730	718	1,651	0	53,871	103	324	0	6,171
8	07/11	778	1,307	3	72,069	750	992	20	58,989	100	168	1	6,392
9	07/14	936	330	122	68,575	740	417	19	41,908	75	75	0	6,447
10	07/18	618	178	333	26,463	426	145	157	26,500	63	73	12	4,786
11	07/21	378	69	1,000	23,250	204	80	245	13,915	39	15	33	2,478
12	07/25	191	47	4,968	13,803	126	31	1,225	9,536	12	31	130	1,554
13	07/28	212	40	13,071	7,522	109	29	7,489	7,379	12	1	410	1,127
14	08/01	136	27	25,636	4,250	53	4	7,108	2,142	12	1	1,210	575
15	08/04	136	100	55,104	3,024	65	5	20,029	1,820	5	0	1,443	308
16	08/08	51	8	29,313	1,140	53	81	41,947	1,511	10	3	5,085	239
17	08/10	44	7	38,613	725	26	0	13,004	531	3	2	2,257	120
18	08/12	64	7	36,582	567	48	4	45,552	786	3	0	2,566	69
19	08/15	52	8	36,085	367	24	6	21,962	261	0	0	1,677	35
20	08/18	27	6	22,398	132	10	2	14,153	92	0	0	864	6
21	08/20	15	4	16,023	65	14	1	7,895	55	0	0	128	1
22	08/27	9	4	7,316	33	5	4	13,319	50	0	0	2,048	10
23	08/31	4	10	4,304	14	1	1	4,903	20	1	0	645	0
		40,355	60,168	290,872	861,433	12,540	27,127	199,036	453,012	915	2,469	18,509	47,537

Appendix D. Summary of Kuskokwim River cumulative test fishing catches, CPUE's, correction factors, and corrected CPUE's for chinook, sockeye, coho, and chum salmon, 1984-1988. a

Chinook	Cum. Catch	Cum. CPUE b	Correction Factor	Corrected Cum. CPUE
1984	231	273.13	3.4444	940.77
1985	79	114.11	5.7359	654.52
1986	127	201.08	3.5694	717.73
1987	384	581.98	4.0423	2,352.54
1988	238	360.97	5.7648	2,080.92
Mean	212	306.25	4.5114	1,349.30

Sockeye	Cum. Catch	Cum. CPUE	Correction Factor	Corrected Cum. CPUE
1984	267	579.38	c	0.00
1985	694	1,654.28	2.1318	3,526.59
1986	869	2,445.30	1.7028	4,163.86
1987	943	2,761.03	1.6568	4,574.47
1988	583	1,500.55	1.9524	2,929.67
Mean	671	1,788.11	1.4888	3,038.92

Coho	Cum. Catch	Cum. CPUE	Correction Factor	Corrected Cum. CPUE
1984	2,152	3,057.23	2.6527	8,109.91
1985	1,091	1,575.36	3.8487	6,063.09
1986	2,714	4,099.17	2.2266	9,127.21
1987	1,227	1,990.52	4.1352	8,231.20
1988	1,989	3,159.75	2.5515	8,062.10
Mean	1,835	2,776.41	3.0829	7,918.70

Chum	Cum. Catch	Cum. CPUE	Correction Factor	Corrected Cum. CPUE
1984	1,186	2,386.52	4.4842	10,701.63
1985	616	1,327.37	3.9702	5,269.92
1986	1,688	4,065.91	1.9438	7,903.32
1987	2,302	4,897.60	2.8911	14,159.45
1988	2,107	5,188.91	6.2654	32,510.60
Mean	1,580	3,573.26	3.9109	14,108.98

a Correction factors were calculated based on relationships between declines in test fishing CPUE's and associated downstream catches. For a complete discussion of this procedure see (Huttunen, 1987). Cumulative CPUE is a weighted total and is therefore different from cumulative CPUE presented elsewhere in this report. Tidal CPUE data from each station recieved equal weighting when computing mean tidal CPUE.

c Calibration not possible.