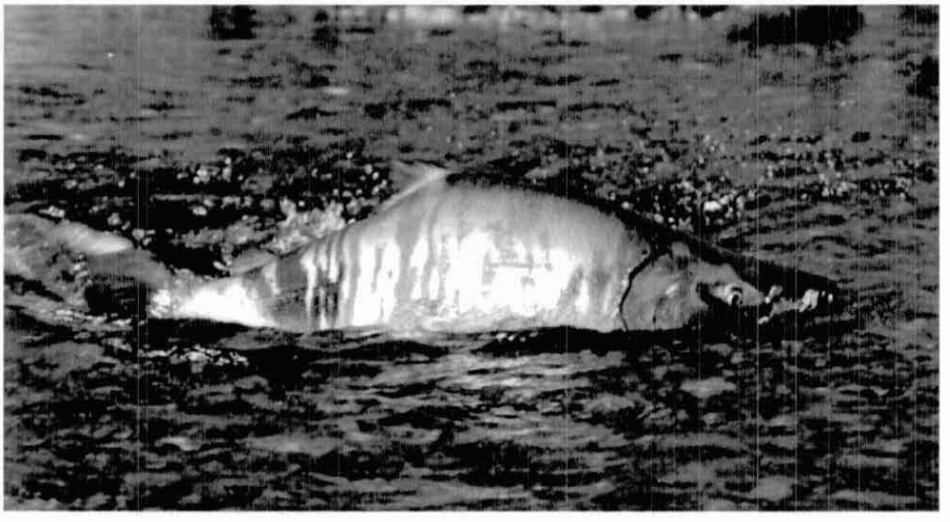
Kobuk River Test Fishing Project, 2000

By

Tom Kohler



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AUTHORS

Tom Kohler is a Fishery Biologist for the Alaska Department of Fish and Game, Commercial Fisheries Division, Nome, Alaska.

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OEO/ADA STATEMENT

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Abstract

This was the eighth consecutive year a drift gillnet test fishing project operated in the lower Kobuk River. Because of the Kobuk River's tannic stain, test fishing is less susceptible to net avoidance by salmon than in clear water systems. Management of the Kotzebue District commercial salmon fishery, particularly during the month of July, is dependent primarily on comparing commercial fishing period and cumulative season catch statistics to those of prior years. The drift test fishing project was initiated because of the need for an inseason index of run timing and abundance for Kobuk River chum salmon stocks, which largely support the first portion of the salmon migration into the Kotzebue District. Fishing was scheduled to sample salmon passage during three different segments of the day at each of the two sites; morning (0800), mid-day (1500), and late evening (2200). A two-person crew conducted drifts, six days per week. During the peak of the run, drifts were conducted every day of the week. Drifting began on 7 July and continued through 14 August. CPUE indices were calculated for each drift and site. There were 1,932 chum salmon caught in a total of 228 drifts (88 drift time periods) producing a cumulative chum salmon CPUE of 1,440.42. This was the second highest CPUE since the project began in 1993. This report presents the results of the 2000 season test fishing project.

INTRODUCTION

The Kobuk River originates on the south side of the Brooks Range in the Arrigetch Mountains inside the Gates of the Arctic National Park. The river flows roughly 500 river miles west where it terminates at Hotham Inlet. The lower two-thirds of the river is stained by tannin primarily from the Pah River, an upper river tributary. Five villages located on the Kobuk River depend on chum salmon for subsistence use. Residents of Kotzebue also depend on Kobuk River chum salmon as a subsistence resource. The Kobuk River is also thought to support up to 60% of the commercial catch of chum salmon in the Kotzebue District.

This was the eighth consecutive year a drift gillnet test fishing project operated in the lower Kobuk River (Lingnau, 1993; Lingnau, 1994; Lingnau, 1995; Lingnau, 1996; Lingnau, 1997; Kohler; 2000; Kohler 2000). Because of the Kobuk River's tannic stain, test fishing is less susceptible to net avoidance by salmon than in clear water systems. The only previous salmon project in the Kobuk River drainage was a counting tower site on the Squirrel River, which was too distant to provide timely information for fisheries management. This report presents the results of the eighth year of the Kobuk River drift test-fishing project in 2000.

Management of the Kotzebue District commercial salmon fishery, particularly during the month of July, is dependent primarily on comparing commercial fishing period and cumulative season catch statistics to those of prior years. Because of the change in market demand in recent years, these comparisons are no longer reliable. The drift test fishing project was initiated because of the need for an inseason index of run timing and abundance for Kobuk River chum salmon stocks, which largely support the first portion of the salmon migration into the Kotzebue District. While test fishing is a relatively low cost approach, it can also be susceptible to inter-annual variability in catch rates which typically requires the data be interpreted in a somewhat qualitative way as an abundance index if calibration is not possible between years. The objectives of the test fishing project for 2000 were:

1. Evaluate chum salmon abundance migrating into the Kobuk River drainage using a comparison of systematic drift gillnet catches.
2. Assess, in a qualitative way, the impact of the Kotzebue District commercial salmon fishery on chum salmon abundance in the lower Kobuk River for fisheries management purposes.
3. Describe the migratory timing for chum salmon in the lower Kobuk River.
4. Sample for age, sex and length.

METHODS

Site Description

The site is approximately 70 river miles from the eastern boundary of the commercial salmon

fishing district (Figure 1). This is the furthest downstream site where the river runs through a single channel and is below all tributaries that support spawning chum salmon. The test fishing site was also selected because of its desirable stream characteristics. The site consists of roughly a 1-mile river section located approximately 3 miles downstream from Kiana. The width of the river was approximately 300 meters and was divided into two sites (Figure 2). Site N is the north side of the river (right bank), which is the cut bank side of the river with the swiftest current. Site S is located on the south side of the river (left bank). Site S is located downstream from a major sandbar has a gradual gradient and has the slowest current. A bottom profile at the test fish site in 1997 revealed a near uniform bottom with a maximum depth of 6 meters. The deepest portion of the river was in the first quartile from the right bank.

Test Fishing

Fishing was scheduled to sample salmon passage during three different segments of the day at each of the two sites; morning (0800), mid-day (1500), and late evening (2200). A two-person crew conducted drifts, six days per week. During the peak of the run, drifts were conducted every day of the week.

All test fishing drifts were made from a 20-foot boat with an 85 hp outboard for approximately 20 minutes with a 50-fathom gillnet. If catch rates were high, fishing time was reduced in order to control mortality. The net was composed of 6-inch (15.2 cm) stretched mesh multifilament webbing, 40 meshes deep, and hung at a ratio of 2:1. Age-sex-length data were collected from up to 80 chum salmon per day. Mortalities were primarily given to village elders but some were given to other individuals for subsistence purposes. The availability of chum salmon was announced over the CB radio.

Standardized Catches

Actual catches were converted to catch per unit of effort (CPUE) by considering fishing time and the length of net used. Each CPUE index was the number of fish, which would have been caught if 100 fathoms of net had been fished for 60 minutes. The index (I) was calculated as follows:

$$I = \frac{6{,}000\,(c)}{(l)\,(t)}$$

Where: c = number of chum salmon caught
l = length of net in fathoms
t = mean fishing time in minutes

Mean fishing time (t) was defined as the amount of time the entire net was fishing plus half the time it took to deploy and retrieve the net. Mean daily drift CPUE indices were calculated using the sum of the total time fished and total fish caught for each day. The mean daily indices were summed to produce total seasonal CPUE indices for the period of data collection. Cumulative proportions of

seasonal total test fish CPUE indices were also calculated.

Catch rate for each time period and site was determined by using the fishing time and number of fish caught for those specific time periods and sites. Seasonal abundance by site and time period was indexed by summing CPUE indices for each of the daily sites and time periods. Temporal distribution was depicted as a percent calculated by dividing each time period total by the total CPUE indices. Spatial distribution was described as a percent by dividing each site's CPUE seasonal total by the total of both site's CPUE indices. Temporal and spatial distribution are described as a percent since the number of drifts made at each site and the amount of time fished varied (Lingnau 1998).

RESULTS

Drifting began on 7 July and continued through 14 August. CPUE indices were calculated for each drift and site (Table 1). There were 1,932 chum salmon caught in a total of 228 drifts (88 drift time periods) producing a cumulative chum salmon CPUE of 1,440.42 (Table 1and 2). The peak catch and CPUE occurred on 10 August with a catch of 158 salmon, which was a mean daily CPUE of 113.87 (7.7% of the seasonal CPUE index, Table 3). Totals of 39.0, 31.8, and 29.1 percent of the seasonal CPUE indices were caught at 0800, 1500, and 2200 hours (Table 4). Totals of 35.7 and 64.3 percent of the total seasonal CPUE indices were caught at sites N and S. The CPUE was highest for period 1 at 43.2 followed by period 2 at 35.2 and period 3 at 32.3 in 2000 (Table 5).

The test fishing methods for the Kobuk River project were the same as they had been in the prior seven years. The test fishing gear was intended to match the gear typically used in the commercial fishery. In most years one day of test fishing is missed due to a regular day off. In 2000 it was decided that since the test fishery was the only indication of escapement it would be conducted seven days a week. No drifts were missed due to mechanical problems or weather. Seasonal test fishing data for 1993-2000 is presented in Tables 2, 3, 5 and 6. Figure 3 shows test fishing cumulative CPUE by day for 1993-2000.

There were 635 aged chum salmon scales from test net samples. Enough scale samples were taken to stratify age and sex composition into three periods (Table 7). The age composition was 1.1% age-0.2, 60.9% age-0.3, 37.6% age-0.4, and 0.3% age-0.5 (Table 7). The age composition of the 2000 Kotzebue commercial and Kobuk River drift test fish catch is shown for comparison in Table 8. Length by age comparison (nsc) indicates that both males and females from the Kotzebue commercial catch were larger than those from the Kobuk River test gillnet fishery. Chum salmon samples were caught with similar mesh size gear. Samples from the Kobuk River were from 6-inch mesh drift gillnet catches while Kotzebue District commercial gear is typically 5-7/8 or 6 inch mesh set gillnet.

The test fishing CPUE indices generated (number of salmon caught) can be influenced considerably by normal commercial fishing activity in Kotzebue Sound, and by the number of drifts conducted and their timing compared to commercial periods. In addition, local salmon migration patterns can be influenced by weather conditions. For these reasons the accuracy of such estimates may not be reliable, therefore no interpolations were made for missing data points.

CONCLUSIONS

The Kobuk River test fishing project was once again successful in 2000. The Kobuk test fishery was the only indication of escapement in the Kotzebue district during the commercial season because lack of personnel in Kotzebue precluded additional studies. During periods of low water at the beginning of the season, tannic staining of the river concealed the gillnets, inhibiting net avoidance by migrating salmon. Concealment contributed to stable catch efficiency throughout the season. The ability to catch fish throughout the run remained relatively constant which allows comparability within and between years.

This year's chum salmon passage by time of day was higher during the first drift period. When looking at the historical catch information, in most years, there has been very little difference in salmon passage during different times of the day. Just as consistent is the catch rate by site. In all but one year, roughly seventy percent of the salmon CPUE occurred on the south side of the channel. The one anomalous year (1994), was a 50-year flood event.

This year's peak catches occurred between 29 July and 11 August. Fluctuations in the test fishery data caused by commercial openings indicated the migration timing was 5 days at the beginning of the run and 4 days at the end. Previous information from local residents and the department indicate the migration time is 5 to 6 days. The test fishing crew interviewed local subsistence fishers throughout the season. Catch rates from the test fishery seemed to track with subsistence catches. The test fishery is most likely catching mixed stocks of fish. Kiana residents are thought to harvest predominantly Squirrel River stocks. With the Kobuk River test fishing project providing fish to the community, pressure of subsistence harvests on Squirrel River stocks was probably reduced.

The project operated as long as the budget allowed. Its six-week duration was thought to cover most of the migration. However, catches at the end of test fishing indicated the latest portion of the run was missed. Test fishing on the Kobuk River at the current drift gillnet site near Kiana is feasible and provides management with usable escapement indexing information in a cost effective manner. This project was used this year, and will be used in the future, as a management tool, to index escapements into the Kobuk River.

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Table 1. Kobuk River chum salmon drift test fish CPUE by day, drift and site, 2000. [a]

Date	CPUE by Drift [b] #1	#2	#3	CPUE by Site [c] N	S	Daily CPUE	Cum.. CPUE
7-Jul		0.00	2.58	0.00	2.53	1.28	1.28
8-Jul	0.00	0.00	2.55	0.00	1.63	0.83	2.11
9-Jul	0.00	0.00	0.00	0.00	0.00	0.00	2.11
10-Jul	0.00	5.11	0.00	1.69	3.29	2.50	4.61
11-Jul	0.00	0.00	7.66	3.45	3.43	3.44	8.05
12-Jul	0.00	2.61	2.58	3.48	3.43	3.45	11.50
13-Jul	0.00	2.55	2.53	0.00	4.93	2.54	14.04
14-Jul	0.00	2.61	12.63	6.86	10.29	8.57	22.61
15-Jul	0.00	0.00	2.58	0.00	1.73	0.87	23.48
16-Jul	0.00	2.58	7.66	0.00	6.81	3.38	26.86
17-Jul	0.00	7.74	7.58	3.43	21.97	12.77	39.63
18-Jul	0.00	7.74	2.58	1.88	5.14	3.58	43.21
19-Jul	0.00	39.18	13.04	8.63	30.00	19.51	62.72
20-Jul	0.00	32.84	10.32	15.32	13.81	14.57	77.29
21-Jul	20.43	42.06	20.21	5.14	49.32	27.69	104.98
22-Jul	25.12	51.96	44.08	39.70	42.16	41.00	145.98
23-Jul	45.00	2.61	0.00	20.43	12.09	16.29	162.27
24-Jul	30.32	7.83	5.22	5.22	23.83	14.62	176.89
25-Jul	40.00	2.61	25.53	10.36	35.24	22.98	199.87
26-Jul	30.00	41.21	48.48	38.26	42.16	40.28	240.15
27-Jul	47.50	27.79	48.98	29.14	53.15	41.52	281.67
28-Jul	48.46	93.33	42.50	25.17	94.55	62.34	344.01
29-Jul	144.39	78.46	55.92	43.33	136.77	96.00	440.01
30-Jul	153.10	71.58	45.71	35.25	142.12	88.89	528.90
31-Jul	125.04	77.84	47.01	81.99	89.64	85.87	614.77
1-Aug	95.14	108.00	99.82	75.47	123.24	101.16	715.93
2-Aug	83.88	52.80	55.76	64.31	64.43	64.37	780.30
3-Aug	63.53	31.30	36.13	49.32	39.15	44.32	824.62
4-Aug	106.19	58.78	61.86	86.71	67.45	77.14	901.76
5-Aug	121.21	54.34	55.05	96.00	59.31	75.67	977.43
6-Aug	27.22	44.27	45.00	8.63	65.73	38.92	1,016.35
7-Aug	55.20	37.50	18.26	24.17	49.93	37.50	1,053.85
8-Aug	128.57	89.20	60.00	65.88	117.27	93.37	1,147.22
9-Aug	56.33	96.43	88.65	40.00	115.25	81.50	1,228.72
10-Aug	87.48	96.00	155.17	61.62	155.68	113.87	1,342.59
11-Aug	66.29	23.48	58.82	25.90	72.00	50.57	1,393.16
12-Aug	25.53	15.65	33.19	15.65	33.80	24.86	1,418.02
13-Aug	7.83	30.00	5.22	1.74	27.04	14.57	1,432.59
14-Aug	7.83			15.65	0.00	7.83	1,440.42

[a] Catch per unit effort is calculated in catch/100fm/hour

[b] Drift 1 begins at 0800, Drift 2 at 1500, Drift 3 at 2200.

[c] Site N is the North Bank (right bank), Site S is the South Bank (left bank).

Table 2. Kobuk River chum salmon drift test fish mean daily and cumulative CPUE, 1993-2000.

Date	1993 Daily	1993 Cum.	1994 Daily	1994 Cum.	1995 Daily	1995 Cum.	1996 Daily	1996 Cum.	1997 Daily	1997 Cum.	1998 Daily	1998 Cum.	1999 Daily	1999 Cum.	2000 Daily	2000 Cum.	Cumulative CPUE 1993-2000
07-Jul															1.28	1.28	0.18
08-Jul															0.83	2.11	0.30
09-Jul							12.77	12.77	5.85	5.85					0	2.11	1.14
10-Jul							15.00	27.77	0.00	5.85	5.22	5.22			2.5	4.61	2.24
11-Jul							98.38	126.15	5.31	11.16	0.85	6.07	0.00	0.00	3.44	8.05	3.61
12-Jul	11.18	11.18			0.00	0.00	45.54	171.69	7.19	18.35		6.07	0.00	0.00	3.45	11.50	6.73
13-Jul	14.22	25.40	0.00	0.00	0.93	0.93	74.29	245.98	a	18.35	15.89	21.96	0.00	0.00	2.54	14.04	11.53
14-Jul	20.57	45.97	2.68	2.68	2.80	3.73	a	245.98	6.25	24.60	7.53	29.49	0.00	0.00	8.57	22.61	18.44
15-Jul	35.08	81.05	2.58	5.26	2.77	6.50	83.75	329.73	3.65	28.25	14.07	43.56	0.00	0.00	0.87	23.48	26.87
16-Jul	13.19	94.24	11.35	16.61	a	6.50	71.35	401.08	14.28	42.53	17.33	60.89	0.00	0.00	3.38	26.86	35.38
17-Jul	17.27	111.51	a	16.61	0.00	6.50	55.49	456.57	15.17	57.70	5.07	65.96	4.26	4.26	12.77	39.63	43.17
18-Jul	a	111.51	7.16	23.77	1.81	8.31	89.86	546.43	16.12	73.82	9.02	74.98	8.48	12.74	3.58	43.21	49.76
19-Jul	10.71	122.22	12.40	36.17	9.89	18.20	54.74	601.17	17.98	91.80		74.98	5.89	18.63	19.51	62.72	60.67
20-Jul	2.76	124.98	3.65	39.82	16.30	34.50	63.70	664.87	a	91.80	18.66	93.64	5.11	23.74	14.57	77.29	69.40
21-Jul	3.20	128.18	7.30	47.12	38.54	73.04	52.12	716.99	18.53	110.33	11.87	105.51	23.75	47.49	27.69	104.98	88.09
22-Jul	5.52	133.70	3.56	50.68	21.18	94.22	50.97	767.96	13.28	123.61	0.00	105.51	11.91	59.40	41.00	145.98	101.87
23-Jul	27.15	160.85	16.49	67.17	50.58	144.80	91.36	859.32	10.79	134.40	29.58	135.09	6.09	65.49	16.29	162.27	124.30
24-Jul	9.06	169.91	a	67.17	28.46	173.26	91.89	951.21	22.86	157.26	27.33	162.42	24.95	90.44	14.62	176.89	142.48
25-Jul	a	169.91	14.38	81.55	40.16	213.42	76.80	1,028.01	21.57	178.83	24.68	187.10	28.73	119.17	22.98	199.87	164.26
26-Jul	15.22	185.13	47.65	129.20	35.15	248.57	55.68	1,083.69	14.66	193.49		187.10	39.72	158.89	40.28	240.15	191.79
27-Jul	8.06	193.19	40.66	169.86	63.94	312.51	29.79	1,113.48	18.46	211.95	23.91	211.01	80.39	239.28	41.52	281.67	231.35
28-Jul	16.36	209.55	57.83	227.69	62.49	375.00	49.06	1,162.54	30.53	242.48	51.91	262.92		239.28	62.34	344.01	271.56
29-Jul	0.93	210.48	33.62	261.31	46.11	421.11	70.13	1,232.67	28.13	270.61	34.16	297.08	55.00	294.28	96.00	440.01	313.55
30-Jul	0.92	211.40	69.21	330.52	57.86	478.97	35.29	1,267.96	22.33	292.94	24.59	321.67	49.66	343.94	88.89	528.90	358.33
31-Jul	12.58	223.98	a	330.52	29.89	508.86	82.27	1,350.23	32.57	325.51	15.69	337.36	160.53	504.47	85.87	614.77	406.50
01-Aug	a	223.98	82.16	412.68	72.91	581.77	167.7	1,517.90	41.41	366.92	25.44	362.80	145.02	649.49	101.16	715.93	473.37
02-Aug	6.74	230.72	65.12	477.80	48.71	630.48	62.02	1,579.92	22.41	389.33		362.80	41.67	691.16	64.37	780.30	508.94
03-Aug	54.49	285.21	71.79	549.59	48.40	678.88	48.7	1,628.62	35.21	424.54	26.67	389.47	33.19	724.35	44.32	824.62	553.81
04-Aug	44.23	329.44	108.98	658.57	53.00	731.88	65.93	1,694.55	26.67	451.21	42.35	431.82	74.23	798.58	77.14	901.76	614.75
05-Aug	89.30	418.74	59.74	718.31	49.95	781.83	60.33	1,754.88	24.47	475.68	8.57	440.39	108.04	906.62	75.67	977.43	674.14

(continued)

Table 2. (Page 2 of 2)

Date	1993 Daily	1993 Cum.	1994 Daily	1994 Cum.	1995 Daily	1995 Cum.	1996 Daily	1996 Cum.	1997 Daily	1997 Cum.	1998 Daily	1998 Cum.	1999 Daily	1999 Cum.	2000 Daily	2000 Cum.	Cumulative CPUE 1993-2000
06-Aug	18.60	437.34	102.56	820.87	a	781.83	80.47	1,835.35	42.25	517.93	6.00	446.39	82.79	989.41	38.92	1,016.35	715.73
07-Aug	20.52	457.86	a	820.87	46.39	828.22	90.99	1,926.34	36.00	553.93	5.11	451.50	82.73	1,072.14	37.50	1,053.85	748.34
08-Aug	a	457.86	62.75	883.62	44.02	872.24	146.9	2,073.28	45.07	599.00	16.40	467.90		1,072.14	93.37	1,147.22	785.71
09-Aug	1.84	459.70	96.86	980.48	68.22	940.46	106.1	2,179.39	55.14	654.14	17.20	485.10	55.58	1,127.72	81.50	1,228.72	839.47
10-Aug	12.63	472.33	45.83	1,026.31	56.33	996.79	56.95	2,236.34	a	654.14	9.46	494.56	44.73	1,172.45	113.87	1,342.59	879.88
11-Aug	18.11	490.44	57.02	1,083.33	37.95	1,034.74	a	2,236.34	43.45	697.59	10.29	504.85	58.13	1,230.58	50.57	1,393.16	919.24
12-Aug	3.74	494.18	90.54	1,173.87	63.92	1,098.66	72.29	2,308.63	37.36	734.95	19.44	524.29	48.5	1,279.08	24.86	1,418.02	960.44
13-Aug			11.36	1,185.23	a	1,098.66	114.6	2,423.26	45.93	780.88	10.21	534.50	78.37	1,357.45	14.57	1,432.59	912.76
14-Aug			a	1,185.23	29.35	1,128.01	158.1	2,581.39	16.01	796.89	3.85	538.35			7.83	1,440.42	919.79
15-Aug			5.13	1,190.36	25.26	1,153.27					0	538.35					
16-Aug			16.23	1,206.59	35.04	1,188.31											
17-Aug			0.00	1,206.59													
18-Aug			0.00	1,206.59													
19-Aug			3.12	1,209.71													
20-Aug			0.00	1,209.71													
21-Aug			a	1,209.71													
22-Aug			0.00	1,209.71													
23-Aug			0.00	1,209.71													
24-Aug			0.00	1,209.71													
25-Aug			0.91	1,210.62													
26-Aug			5.56	1,216.18													
27-Aug			1.86	1,218.04													
28-Aug			0.93	1,218.97													
29-Aug			0.00	1,218.97													
30-Aug			0.00	1,218.97													
31-Aug																	

a Regular day off.

Table 3. Kobuk River chum salmon drift test fish mean daily and cumulative CPUE proportions, 1993-2000.

Date	1993 Daily	1993 Cum.	1994 Daily	1994 Cum.	1995 Daily	1995 Cum.	1996 Daily	1996 Cum.	1997 Daily	1997 Cum.	1998 Daily	1998 Cum.	1999 Daily	1999 Cum.	2000 Daily	2000 Cum.
05-Jul																
06-Jul																
07-Jul															0.001	0.00
08-Jul															0.001	0.00
09-Jul							0.005	0.005	0.007	0.007					0.000	0.00
10-Jul							0.006	0.011	0.000	0.007	0.010	0.01			0.002	0.00
11-Jul							0.038	0.049	0.007	0.014	0.002	0.011	0.000	0.00	0.002	0.01
12-Jul	0.023	0.023			0.000	0.000	0.018	0.067	0.009	0.023	0.000	0.011	0.000	0.00	0.002	0.01
13-Jul	0.029	0.051	0.000	0.000	0.001	0.001	0.029	0.095	0.000	0.023	0.030	0.041	0.000	0.00	0.002	0.01
14-Jul	0.042	0.093	0.002	0.002	0.002	0.003		0.095	0.008	0.031	0.014	0.055	0.000	0.00	0.006	0.02
15-Jul	0.071	0.164	0.002	0.004	0.002	0.005	0.032	0.128	0.005	0.035	0.026	0.081	0.000	0.00	0.001	0.02
16-Jul	0.027	0.191	0.009	0.014	a	0.005	0.028	0.155	0.018	0.053	0.032	0.113	0.000	0.00	0.002	0.02
17-Jul	0.035	0.226	a	0.014	0.000	0.005	0.021	0.177	0.019	0.072	0.009	0.123	0.003	0.00	0.009	0.03
18-Jul	a	0.226	0.006	0.020	0.002	0.007	0.035	0.212	0.020	0.093	0.017	0.139	0.006	0.01	0.002	0.03
19-Jul	0.022	0.247	0.010	0.030	0.008	0.015	0.021	0.233	0.023	0.115	0.000	0.139	0.004	0.01	0.013	0.04
20-Jul	0.006	0.253	0.003	0.033	0.014	0.029	0.025	0.258	0.000	0.115	0.035	0.174	0.004	0.02	0.010	0.05
21-Jul	0.006	0.259	0.006	0.039	0.032	0.061	0.020	0.278	0.023	0.138	0.022	0.196	0.017	0.03	0.019	0.07
22-Jul	0.011	0.271	0.003	0.042	0.018	0.079	0.020	0.297	0.017	0.155	0.000	0.196	0.009	0.04	0.028	0.10
23-Jul	0.055	0.325	0.014	0.055	0.043	0.122	0.035	0.333	0.014	0.169	0.055	0.251	0.004	0.05	0.011	0.11
24-Jul	0.018	0.344	a	0.055	0.024	0.146	0.036	0.368	0.029	0.197	0.051	0.302	0.018	0.07	0.010	0.12
25-Jul	a	0.344	0.012	0.067	0.034	0.180	0.030	0.398	0.027	0.224	0.046	0.348	0.021	0.09	0.016	0.13
26-Jul	0.031	0.375	0.039	0.106	0.030	0.209	0.022	0.420	0.018	0.243	0.000	0.348	0.029	0.12	0.027	0.16
27-Jul	0.016	0.391	0.033	0.139	0.054	0.263	0.012	0.431	0.023	0.266	0.044	0.392	0.059	0.18	0.028	0.19
28-Jul	0.033	0.424	0.047	0.187	0.053	0.316	0.019	0.450	0.038	0.304	0.096	0.488	0.000	0.18	0.042	0.23
29-Jul	0.002	0.426	0.028	0.214	0.039	0.354	0.027	0.478	0.035	0.340	0.063	0.552	0.041	0.22	0.065	0.30
30-Jul	0.002	0.428	0.057	0.271	0.049	0.403	0.014	0.491	0.028	0.368	0.046	0.598	0.037	0.25	0.093	0.39
31-Jul	0.025	0.453	a	0.271	0.025	0.428	0.032	0.523	0.041	0.408	0.029	0.627	0.118	0.37	0.058	0.45
01-Aug	a	0.453	0.067	0.339	0.061	0.490	0.065	0.588	0.052	0.460	0.047	0.674	0.107	0.48	0.068	0.52
02-Aug	0.014	0.467	0.053	0.392	0.041	0.531	0.024	0.612	0.028	0.489	0.000	0.674	0.031	0.51	0.043	0.56
03-Aug	0.110	0.577	0.059	0.451	0.041	0.571	0.019	0.631	0.044	0.533	0.050	0.723	0.024	0.53	0.030	0.59
04-Aug	0.090	0.667	0.089	0.540	0.045	0.616	0.026	0.656	0.033	0.566	0.079	0.802	0.055	0.59	0.052	0.64
05-Aug	0.181	0.847	0.049	0.589	0.042	0.658	0.023	0.680	0.031	0.597	0.016	0.818	0.080	0.67	0.045	0.69
06-Aug	0.038	0.885	0.084	0.673	a	0.658	0.031	0.711	0.053	0.650	0.011	0.829	0.061	0.73	0.026	0.71
07-Aug	0.042	0.927	a	0.673	0.039	0.697	0.035	0.746	0.045	0.695	0.009	0.839	0.061	0.79	0.025	0.74
08-Aug	a	0.927	0.051	0.725	0.037	0.734	0.057	0.803	0.057	0.752	0.030	0.869	0.000	0.79	0.063	0.80
09-Aug	0.004	0.930	0.079	0.804	0.057	0.791	0.041	0.844	0.069	0.821	0.032	0.901	0.041	0.83	0.055	0.86
10-Aug	0.026	0.956	0.038	0.842	0.047	0.839	0.022	0.866	0.000	0.821	0.018	0.919	0.033	0.86	0.077	0.93
11-Aug	0.037	0.992	0.047	0.889	0.032	0.871	0.000	0.866	0.055	0.875	0.019	0.938	0.043	0.91	0.034	0.97
12-Aug	0.008	1.000	0.074	0.963	0.054	0.925	0.028	0.894	0.047	0.922	0.036	0.974	0.036	0.94	0.017	0.98
13-Aug			0.009	0.972	a	0.925	0.044	0.939	0.058	0.980	0.019	0.993	0.058	1.00	0.010	0.99
14-Aug			a	0.972	0.025	0.949	0.061	1.000	0.020	1.000	0.007	1.000			0.005	1.00
15-Aug			0.004	0.977	0.021	0.971					0.000	1.000				
16-Aug			0.013	0.990	0.029	1.000										
17-Aug			0.000	0.990												
18-Aug			0.000	0.990												
19-Aug			0.003	0.992												
20-Aug			0.000	0.992												
21-Aug			a	0.992												
22-Aug			0.000	0.992												
23-Aug			0.000	0.992												
24-Aug			0.000	0.992												
25-Aug			0.001	0.993												
26-Aug			0.005	0.998												
27-Aug			0.002	0.999												
28-Aug			0.001	1.000												
29-Aug			0.000	1.000												
30-Aug			0.000	1.000												
31-Aug																

a Regular day off.

Table 4. Kobuk River chum salmon drift test fish CPUE indices, mean CPUE and percent by drift and site, 2000.

Drift Period	Season CPUE Indices	No. of Period Drifts	Season Mean CPUE	Percent	Station	Season CPUE Indices	No. of Site Drifts	Season Mean CPUE	Percent
1 0800 hr.	1,641.6	38	43.2	39.0	N North Bank	1,009.8	38	26.6	35.7
2 1500 hr.	1,338.0	38	35.2	31.8	S South Bank	1,816.1	38	47.8	64.3
3 2200 hr.	1,225.7	38	32.3	29.1					
Total	4,205.3	114	36.9	100.0		2,825.9	76	37.2	100.0

Table 5. Kobuk River chum salmon drift test fish diurnal and spatial distribution expressed as mean CPUE by drift period and by site, 1993-2000. [a]

Year	Mean CPUE by Drift Period			Yearly Mean CPUE	Percent Mean CPUE by Drift Period			Mean CPUE by Site		Yearly Mean CPUE	Percent Mean CPUE by Site	
	1	2	3		1	2	3	N	S		N	S
1993	13.0	21.3	15.9	16.8	25.4	43.4	31.1	10.0	24.9	17.4	28.7	71.3
1994	25.8	33.2	23.7	27.5	31.7	39.8	28.5	4.9	53.5	29.2	8.4	91.6
1995	29.4	37.6	38.7	35.0	29.6	34.7	35.7	25.2	48.2	36.7	34.3	65.7
1996	73.2	81.7	66.5	73.8	32.4	37.2	30.3	40.7	108.1	74.4	27.3	72.7
1997	23.9	23.3	23.6	23.6	33.1	33.2	33.7	12.7	33.8	23.3	27.3	72.7
1998	18.6	20.1	14.0	17.6	35.9	38.9	25.9	7.4	22.9	15.1	24.4	75.6
1999	49.7	38.6	25.4	38.2	44.4	34.5	21.2	14.3	70.2	42.3	17.0	83.0
2000	43.2	35.2	32.3	36.9	39	31.8	29.1	26.6	47.8	37.2	35.7	64.3

[a] Drift 1 begins at 0800, Drift 2 at 1500, Drift 3 at 2200. Site N is the North Bank (right bank), Site S is the South Bank (left bank).

Table 6. Kobuk River chum salmon drift test fish CPUE and cumulative CPUE by drift, 1993-2000.

	1993			1994			1995			1996			1997			1998			1999			2000		
Date	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.
7-Jul																						1		
																						2	0.00	0.00
																						3	2.58	2.6
8-Jul																						1	0.00	2.6
																						2	0.00	2.6
																						3	2.55	5.1
9-Jul										1			1									1	0.00	5.1
										2	7.7	7.7	2	0.0	0.0							2	0.00	5.1
										3	17.9	25.5	3	10.7	10.7							3	0.00	5.1
10-Jul										1	5.2	30.7	1	0.0	10.7	1						1	0.00	5.1
										2	21.1	51.8	2	0.0	10.7	2						2	5.11	10.2
										3	19.1	70.9	3	0.0	10.7	3	5.2	5.2				3	0.00	10.2
11-Jul										1	78.1	149.0	1	0.0	10.7	1	0.0	5.2	1	0.0	0.0	1	0.00	10.2
										2	103.3	252.3	2	5.3	15.9	2	2.5	7.8	2	0.0	0.0	2	0.00	10.2
										3	122.1	374.4	3	10.8	26.7	3	0.0	7.8	3	0.0	0.0	3	7.66	17.9
12-Jul	1	15.5	15.5				1	0.0	0.0	1	88.4	462.8	1	0.0	26.7	1 [a]		7.8	1	0.0	0.0	1	0.00	17.9
	2	2.5	18.0				2	0.0	0.0	2	32.2	495.0	2	16.0	42.7	2		7.8	2	0.0	0.0	2	2.61	20.5
	3	16.0	34.0				3	0.0	0.0	3	38.4	533.4	3	5.3	48.1	3		7.8	3	0.0	0.0	3	2.58	23.1
13-Jul	1	5.4	39.4	1	0.0	0.0	1	0.0	0.0	1	61.9	595.4	1 [a]		48.1	1	25.0	32.8	1	0.0	0.0	1	0.00	23.1
	2	15.5	54.9	2	0.0	0.0	2	2.9	2.9	2	97.2	692.6	2		48.1	2	12.8	45.5	2	0.0	0.0	2	2.55	25.6
	3	25.4	80.3	3	0.0	0.0	3	0.0	2.9	3	66.0	758.6	3		48.1	3	9.9	55.4	3	0.0	0.0	3	2.53	28.2
14-Jul	1	13.2	93.5	1	0.0	0.0	1	2.8	5.7	1 [a]		758.6	1	0.0	48.1	1	12.6	68.1	1	0.0	0.0	1	0.00	28.2
	2	0.0	93.5	2	5.3	5.3	2	5.5	11.2	2		758.6	2	7.9	56.0	2	9.9	78.0	2	0.0	0.0	2	2.61	30.8
	3	46.1	139.5	3	2.6	7.9	3	0.0	11.2	3		758.6	3	10.8	66.8	3	0.0	78.0	3	0.0	0.0	3	12.63	43.4
15-Jul	1	20.6	160.1	1	5.0	12.8	1	5.6	16.8	1	100.7	859.2	1	2.8	69.5	1	22.3	100.2	1	0.0	0.0	1	0.00	43.4
	2	33.9	194.0	2	2.6	15.4	2	0.0	16.8	2	52.9	912.2	2	8.2	77.7	2	12.4	112.6	2	0.0	0.0	2	0.00	43.4
	3	46.5	240.5	3	0.0	15.4	3	2.8	19.5	3	100.7	1,012.8	3	0.0	77.7	3	7.5	120.1	3	0.0	0.0	3	2.58	46.0
16-Jul	1	2.7	243.2	1	5.1	20.6	1 [a]		19.5	1	50.2	1,063.0	1	10.7	88.4	1	18.1	138.2	1	0.0	0.0	1	0.00	46.0
	2	32.5	275.7	2	10.4	31.0	2		19.5	2	82.3	1,145.3	2	11.3	99.7	2	12.8	150.9	2	0.0	0.0	2	2.58	48.6
	3	2.7	278.5	3	18.9	49.9	3		19.5	3	85.0	1,230.3	3	20.9	120.5	3	21.3	172.3	3	0.0	0.0	3	7.66	56.2
17-Jul	1	23.5	302.0	1 [a]		49.9	1	0.0	19.5	1	93.7	1,323.9	1	21.3	141.9	1	10.0	182.3	1	0.0	0.0	1	0.00	56.2
	2	28.7	330.7	2		49.9	2	0.0	19.5	2	34.3	1,358.2	2	8.3	150.2	2	5.1	187.3	2	10.0	10.0	2	7.74	64.0
	3	0.0	330.7	3		49.9	3	0.0	19.5	3	56.7	1,414.9	3	15.7	165.8	3	0.0	187.3	3	2.6	12.6	3	7.58	71.6
18-Jul	1 [a]		330.7	1	2.6	52.5	1	2.8	22.3	1	59.2	1,474.1	1	16.0	181.8	1	25.5	212.8	1	25.3	37.8	1	0.00	71.6
	2		330.7	2	0.0	52.5	2	2.7	25.0	2	98.3	1,572.4	2	10.9	192.7	2	5.1	217.9	2	0.0	37.8	2	7.74	79.3
	3		330.7	3	18.5	71.0	3	0.0	25.0	3	117.8	1,690.2	3	21.3	214.0	3	25.3	243.2	3	0.0	37.8	3	2.58	81.9
19-Jul	1	5.5	336.1	1	23.7	94.7	1	0.0	25.0	1	69.8	1,760.1	1	8.1	222.1	1	10.2	253.4	1	2.5	40.4	1	0.00	81.9
	2	2.7	338.8	2	10.3	105.0	2	12.9	37.9	2	61.2	1,821.2	2	18.7	240.8	2	17.7	271.1	2	5.2	45.5	2	39.18	121.1
	3	23.5	362.3	3	2.8	107.8	3	16.2	54.1	3	36.9	1,858.2	3	27.3	268.1	3	7.7	278.8	3	9.9	55.4	3	13.04	134.1
20-Jul	1	2.8	365.1	1	2.9	110.6	1	10.8	64.8	1	70.3	1,928.5	1 [a]		268.1	1 [a]		278.8	1	2.6	58.0	1	0.00	134.1
	2	5.4	370.5	2	8.1	118.7	2	16.4	81.2	2	69.8	1,998.3	2		268.1	2		278.8	2	12.8	70.8	2	32.84	166.9
	3	0.0	370.5	3	0.0	118.7	3	21.8	103.0	3	48.7	2,047.0	3		268.1	3		278.8	3	0.0	70.8	3	10.32	177.3

(continued)

Table 6. (Page 2 of 4)

	1993			1994			1995			1996			1997			1998			1999			2000		
Date	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.
21-Jul	1	2.8	373.2	1	10.8	129.5	1	39.1	142.2	1	66.7	2,113.7	1	11.0	279.1	1	40.9	319.7	1	15.2	85.9	1	20.4	197.7
	2	5.5	378.7	2	11.0	140.6	2	27.0	169.1	2	45.7	2,159.4	2	34.3	313.4	2	12.8	332.4	2	48.5	134.4	2	42.1	239.7
	3	1.9	380.6	3	0.0	140.6	3	49.0	218.2	3	47.4	2,206.8	3	8.3	321.7	3	35.0	367.4	3	7.7	142.1	3	20.2	260.0
22-Jul	1	2.8	383.4	1	5.5	146.0	1	20.7	238.8	1	27.6	2,234.4	1	8.1	329.8	1	38.3	405.7	1	12.8	154.9	1	25.1	285.1
	2	0.0	383.4	2	2.6	148.6	2	24.0	262.8	2	72.3	2,306.7	2	0.0	329.8	2	10.3	416.0	2	2.6	157.4	2	52.0	337.0
	3	13.2	396.6	3	2.7	151.3	3	18.9	281.7	3	58.2	2,364.9	3	31.3	361.1	3	33.2	449.2	3	20.4	177.8	3	44.1	381.1
23-Jul	1	2.7	399.3	1	24.8	176.1	1	53.1	334.7	1	53.0	2,417.9	1	18.5	379.5	1	15.3	464.6	1	0.0	177.8	1	45.0	426.1
	2	26.1	425.4	2	13.5	189.6	2	59.2	394.0	2	142.9	2,560.8	2	10.8	390.3	2	38.3	502.9	2	13.0	190.9	2	2.6	428.7
	3	51.6	477.0	3	11.2	200.8	3	37.7	431.7	3	105.3	2,666.0	3	2.8	393.1	3	20.4	523.3	3	5.2	196.1	3	0.0	428.7
24-Jul	1	8.2	485.2	1	[a]	200.8	1	39.1	470.7	1	62.8	2,728.8	1	16.4	409.4	1		523.3	1	33.2	229.3	1	30.3	459.0
	2	8.1	493.3	2		200.8	2	36.5	507.2	2	100.3	2,829.1	2	20.1	429.5	2		523.3	2	33.9	263.2	2	7.8	466.9
	3	10.9	504.2	3		200.8	3	10.9	518.1	3	122.8	2,951.9	3	31.0	460.5	3		523.3	3	7.7	270.9	3	5.2	472.1
25-Jul	1	[a]	504.2	1	24.3	225.0	1	16.2	534.3	1	30.0	2,981.9	1	13.8	474.3	1	15.3	538.6	1	17.9	288.8	1	40.0	512.1
	2		504.2	2	13.5	238.5	2	10.9	545.2	2	157.7	3,139.6	2	24.3	498.6	2	40.4	579.0	2	45.0	333.8	2	2.6	514.7
	3		504.2	3	5.4	243.9	3	109.4	654.6	3	16.8	3,156.4	3	26.4	524.9	3	15.7	594.7	3	23.0	356.8	3	25.5	540.2
26-Jul	1	10.9	515.1	1	32.7	276.6	1	20.6	675.2	1	113.2	3,269.6	1	21.8	546.7	1	37.9	632.5	1	52.5	409.3	1	30.0	570.2
	2	8.1	523.2	2	63.7	340.3	2	35.5	710.6	2	5.2	3,274.9	2	11.0	557.8	2	48.5	681.1	2	7.7	417.0	2	41.2	611.4
	3	26.4	549.6	3	44.7	384.9	3	47.4	758.0	3	27.7	3,302.6	3	11.0	568.8	3	69.7	750.7	3	58.1	475.1	3	48.5	659.9
27-Jul	1	15.5	565.1	1	21.3	406.3	1	50.2	808.3	1	15.2	3,317.8	1	26.4	595.2	1	35.4	786.1	1	107.7	582.8	1	47.5	707.4
	2	8.1	573.1	2	59.4	465.6	2	34.7	842.9	2	19.6	3,337.4	2	15.8	611.0	2	51.7	837.8	2	50.0	632.8	2	27.8	735.2
	3	0.0	573.1	3	[b]	465.6	3	102.9	945.8	3	72.7	3,410.1	3	13.2	624.2	3	15.5	853.3	3	[b]	632.8	3	49.0	784.2
28-Jul	1	11.2	584.3	1	[b]	465.6	1	39.4	985.2	1	52.0	3,462.1	1	29.3	653.5	1	15.0	868.3	1	[b]	632.8	1	48.5	832.7
	2	16.2	600.5	2	[b]	465.6	2	88.2	1,073.4	2	83.8	3,545.9	2	28.1	681.6	2	43.4	911.7	2	[b]	632.8	2	93.3	926.0
	3	21.6	622.1	3	57.8	523.5	3	67.9	1,141.3	3	8.3	3,554.2	3	33.9	715.5	3	15.5	927.1	3	[b]	632.8	3	42.5	968.5
29-Jul	1	2.7	624.8	1	34.3	557.7	1	48.8	1,190.0	1	110.0	3,664.2	1	34.3	749.8	1	20.4	947.6	1	[b]	632.8	1	144.4	1112.9
	2	0.0	624.8	2	52.5	610.2	2	8.4	1,198.4	2	77.3	3,741.5	2	33.6	783.4	2	17.9	965.4	2	[b]	632.8	2	78.5	1191.3
	3	0.0	624.8	3	19.3	629.6	3	85.1	1,283.5	3	20.4	3,761.9	3	16.2	799.6	3	5.7	971.1	3	55.0	687.8	3	55.9	1247.3
30-Jul	1	0.0	624.8	1	83.1	712.6	1	67.1	1,350.5	1	51.1	3,813.0	1	13.3	812.9	1	40.4	1,011.5	1	37.5	725.3	1	153.1	1400.4
	2	0.0	624.8	2	38.5	751.2	2	59.2	1,409.7	2	36.0	3,849.0	2	21.3	834.2	2	25.3	1,036.8	2	80.0	805.3	2	71.6	1471.9
	3	2.8	627.5	3	82.0	833.1	3	48.6	1,458.3	3	22.9	3,871.8	3	33.0	867.2	3	10.3	1,047.1	3	30.3	835.6	3	45.7	1517.6
31-Jul	1	16.2	643.7	1	[a]	833.1	1	49.0	1,507.4	1	71.3	3,943.1	1	24.6	891.8	1	[a]	1,047.1	1	206.6	1042.2	1	125.0	1642.7
	2	16.2	659.9	2		833.1	2	20.9	1,528.2	2	120.0	4,063.1	2	30.0	921.8	2		1,047.1	2	13.3	1055.6	2	77.8	1720.5
	3	5.4	665.3	3		833.1	3	19.1	1,547.3	3	59.1	4,122.2	3	42.5	964.3	3		1,047.1	3	[b]	1055.6	3	47.0	1767.5
1-Aug	1	[a]	665.3	1	51.4	884.5	1	61.5	1,608.8	1	122.2	4,244.4	1	55.6	1,019.9	1	43.9	1,091.0	1	47.5	1103.1	1	95.1	1862.7
	2		665.3	2	124.7	1,009.2	2	81.0	1,689.8	2	252.2	4,496.6	2	32.0	1,051.9	2	20.4	1,111.4	2	224.0	1327.1	2	108.0	1970.7
	3		665.3	3	67.2	1,076.4	3	76.9	1,766.8	3	80.0	4,576.6	3	37.6	1,089.5	3	15.7	1,127.1	3	158.1	1485.1	3	99.8	2070.5

(continued)

Table 6. (Page 3 of 4)

Date	1993			1994			1995			1996			1997			1998			1999			2000		
	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.
2-Aug	1 [b]		665.3	1	27.0	1,103.4	1	45.0	1,811.8	1	120.0	4,696.6	1	20.9	1,110.3	1	43.87	1,170.9	1	50.0	1535.1	1	83.9	2154.4
	2	0.0	665.3	2	74.6	1,178.0	2	66.2	1,878.0	2	30.6	4,727.2	2	28.4	1,138.8	2	40.85	1,211.8	2	42.5	1577.6	2	52.8	2207.2
	3	13.3	678.6	3	92.8	1,270.8	3	35.5	1,913.4	3	28.5	4,755.7	3	18.9	1,157.6	3		1,211.8	3	32.5	1610.1	3	55.8	2262.9
3-Aug	1	42.2	720.8	1	62.3	1,333.1	1	53.7	1,967.1	1	76.7	4,832.3	1	33.9	1,191.5	1	5.11	1,216.9	1	33.2	1643.3	1	63.5	2326.5
	2	71.5	792.3	2	93.9	1,427.0	2	74.4	2,041.4	2	60.9	4,893.2	2	36.3	1,227.8	2	15.32	1,232.2	2 [b]		1643.3	2	31.3	2357.8
	3 [b]		792.3	3	51.7	1,478.7	3	22.1	2,063.5	3	3.8	4,896.9	3	35.5	1,263.3	3	5.22	1,237.4	3 [b]		1643.3	3	36.1	2393.9
4-Aug	1	16.7	809.1	1	124.9	1,603.6	1	45.3	2,108.8	1	52.0	4,948.9	1	29.6	1,292.9	1	0.00	1,237.4	1 [b]		1643.3	1	106.2	2500.1
	2	60.0	869.1	2	120.0	1,723.6	2	60.0	2,168.8	2	26.0	4,974.9	2	31.4	1,324.3	2	15.16	1,252.6	2	52.5	1695.8	2	58.8	2558.9
	3	51.3	920.3	3	82.4	1,806.0	3	53.8	2,222.6	3	145.0	5,119.9	3	19.3	1,343.6	3	2.61	1,255.2	3	95.5	1791.3	3	61.9	2620.7
5-Aug	1	40.9	961.2	1	78.9	1,884.9	1	55.1	2,277.8	1	53.8	5,173.7	1	23.0	1,366.6	1	5.11	1,260.3	1	152.9	1944.2	1	121.2	2741.9
	2	191.6	1,152.8	2	14.1	1,899.0	2	38.8	2,316.6	2	40.8	5,214.4	2	30.6	1,397.3	2	5.00	1,265.3	2	135.0	2079.2	2	54.3	2796.3
	3	2.7	1,155.5	3	78.3	1,977.3	3	56.7	2,373.3	3	80.0	5,294.4	3	19.1	1,416.4	3	5.22	1,270.5	3	31.0	2110.2	3	55.1	2851.3
6-Aug	1	12.8	1,168.3	1	116.1	2,093.5	1 [a]		2,373.3	1	44.1	5,338.5	1	41.9	1,458.2	1	17.87	1,288.4	1	98.0	2208.2	1	27.2	2878.5
	2	13.8	1,182.1	2	93.3	2,186.8	2		2,373.3	2	43.3	5,381.8	2	39.6	1,497.8	2	15.65	1,304.0	2	54.4	2262.6	2	44.3	2922.8
	3	29.3	1,211.4	3	92.9	2,279.7	3		2,373.3	3	148.0	5,529.8	3	45.7	1,543.5	3	15.65	1,319.7	3	96.5	2359.1	3	45.0	2967.8
7-Aug	1	47.5	1,258.9	1 [a]		2,279.7	1	55.8	2,429.1	1	136.3	5,666.1	1	35.1	1,578.6	1	27.79	1,347.5	1	107.2	2466.3	1	55.2	3023.0
	2	2.8	1,261.6	2		2,279.7	2	68.1	2,497.2	2	57.6	5,723.7	2	34.7	1,613.4	2	5.22	1,352.7	2	127.4	2593.7	2	37.5	3060.5
	3	8.4	1,270.0	3		2,279.7	3	19.8	2,516.9	3	51.8	5,775.4	3	38.1	1,651.4	3	18.26	1,371.0	3	7.8	2601.5	3	18.3	3078.8
8-Aug	1 [a]		1,270.0	1	77.7	2,357.3	1	21.6	2,538.5	1	94.6	5,870.0	1	69.0	1,720.5	1	2.52	1,373.5	1 [a]		2601.5	1	128.6	3207.3
	2		1,270.0	2	64.8	2,422.1	2	74.4	2,612.9	2	221.8	6,091.8	2	49.9	1,770.3	2	18.26	1,391.7	2 [a]		2601.5	2	89.2	3296.5
	3		1,270.0	3	49.7	2,471.8	3	41.7	2,654.6	3	98.8	6,190.6	3	11.4	1,781.8	3	7.83	1,399.6	3 [a]		2601.5	3	60.0	3356.5
9-Aug	1	5.5	1,275.5	1	85.2	2,556.9	1	38.9	2,693.5	1	120.0	6,310.6	1	45.5	1,827.2	1	15.32	1,414.9	1	58.1	2659.6	1	56.3	3412.9
	2	0.0	1,275.5	2	125.7	2,682.6	2	58.1	2,751.6	2	133.3	6,443.9	2	37.2	1,864.4	2	10.21	1,425.1	2	86.6	2746.2	2	96.4	3509.3
	3	0.0	1,275.5	3	74.8	2,757.4	3	114.1	2,865.7	3	66.5	6,510.4	3	94.3	1,958.7	3	5.22	1,430.3	3	20.7	2766.8	3	88.7	3598.0
10-Aug	1	0.0	1,275.5	1	9.5	2,766.9	1	73.2	2,938.9	1	32.5	6,542.9	1 [a]		1,958.7	1	0.00	1,430.3	1	60.0	2826.8	1	87.5	3685.4
	2	8.1	1,283.6	2	54.9	2,821.8	2	29.6	2,968.5	2	98.6	6,641.5	2		1,958.7	2	50.00	1,480.3	2	59.4	2886.2	2	96.0	3781.4
	3	29.3	1,313.0	3	86.0	2,907.8	3	71.3	3,039.8	3	42.6	6,684.1	3		1,958.7	3	7.66	1,488.0	3	15.3	2901.5	3	155.2	3936.6
11-Aug	1	11.3	1,324.2	1	105.8	3,013.6	1	56.8	3,096.6	1 [a]		6,684.1	1	43.6	2,002.4	1	2.55	1,490.5	1	125.8	3027.3	1	66.3	4002.9
	2	40.4	1,364.7	2	50.7	3,064.3	2	20.9	3,117.5	2		6,684.1	2	32.7	2,035.1	2	17.68	1,508.2	2	20.7	3048.0	2	23.5	4026.4
	3	0.0	1,364.7	3	9.4	3,073.7	3	34.3	3,151.8	3		6,684.1	3	56.0	2,091.1	3	10.32	1,518.5	3	20.7	3068.6	3	58.8	4085.2
12-Aug	1	11.3	1,376.0	1	17.9	3,091.6	1	31.3	3,183.1	1	123.3	6,807.4	1	36.7	2,127.8	1	7.58	1,526.1	1	99.8	3168.4	1	25.5	4110.7
	2	0.0	1,376.0	2	183.2	3,274.8	2	105.5	3,288.5	2	39.1	6,846.5	2	54.0	2,181.8	2	0.00	1,526.1	2	28.4	3196.8	2	15.7	4126.4
	3	0.0	1,376.0	3	0.0	3,274.8	3	56.3	3,344.8	3	28.2	6,874.7	3	16.0	2,197.8	3 [b]		1,526.1	3	12.9	3209.7	3	33.19	4159.6

(continued)

Table 6. (Page 4 of 4)

	1993			1994			1995			1996			1997			1998			1999			2000		
Date	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.	Drift	Daily	Cum.
13-Aug				1	23.5	3,298.3	1 [a]		3,344.8	1	105.2	6,979.9	1	41.1	2,238.9	1 [b]		1,526.1	1	144.5	3354.2	1	7.8	4167.4
				2	10.0	3,308.3	2		3,344.8	2	136.6	7,116.5	2	55.4	2,294.3	2	0.00	1,526.1	2	5.2	3359.4	2	30.0	4197.4
				3	3.4	3,311.7	3		3,344.8	3	102.9	7,219.4	3	39.3	2,333.6	3	0.00	1,526.1	3		3359.4	3	5.22	4202.6
14-Aug				1 [a]		3,311.7	1	8.1	3,352.9	1	77.3	7,296.7	1	35.2	2,368.8							1	7.83	4210.4
				2		3,311.7	2	54.4	3,407.3	2	197.3	7,493.9	2	13.0	2,381.8									
				3		3,311.7	3	23.5	3,430.8	3	181.5	7,675.4	3											
15-Aug				1	7.0	3,318.7	1	25.5	3,456.2															
				2	8.1	3,326.8	2	18.5	3,474.7															
				3	0.0	3,326.8	3	32.0	3,506.7															
16-Aug				1	3.3	3,330.1	1	22.9	3,529.5															
				2	33.8	3,363.9	2	45.4	3,574.9															
				3	11.3	3,375.1																		
17-Aug				1	0.0	3,375.1																		
				2	0.0	3,375.1																		
				3	0.0	3,375.1																		
18-Aug				1	0.0	3,375.1																		
				2	0.0	3,375.1																		
				3	0.0	3,375.1																		
19-Aug				1	8.3	3,383.4																		
				2	0.0	3,383.4																		
				3	3.0	3,386.4																		
20-Aug				1	0.0	3,386.4																		
				2	0.0	3,386.4																		
				3	0.0	3,386.4																		
21-Aug				1 [a]		3,386.4																		
				2		3,386.4																		
				3		3,386.4																		
22-Aug				1	0.0	3,386.4																		
				2	0.0	3,386.4																		
				3	0.0	3,386.4																		
23-Aug				1	0.0	3,386.4																		
				2	0.0	3,386.4																		
				3	0.0	3,386.4																		
24-Aug				1	0.0	3,386.4																		
				2	0.0	3,386.4																		
				3	0.0	3,386.4																		

[a] Regular day off.

Table 7. Kobuk River chum salmon drift test fish catch age and sex composition, 2000.

		Brood Year and (Age Group)					
		1997 (0.2)	1996 (0.3)	1995 (0.4)	1994 (0.5)	1993 (0.6)	Total
Stratum Dates:	7/7-7/26						
Sampling Dates:	7/7-7/26						
Sample Size:	211						
Male	Percent of Catch	0.5	22.3	27.0	0.0	0.0	49.8
	Number in Catch	1	47	57	0	0	105
Female	Percent of Catch	0.0	18.9	30.8	0.5	0.0	50.2
	Number in Catch	0	40	65	1	0	106
Total	Percent of Catch	0.5	41.2	57.8	0.5	0.0	100.0
	Number in Catch	1	87	122	1	0	211
Stratum Dates:	7/28-8/05						
Sampling Dates:	7/28-8/05						
Sample Size:	232						
Male	Percent of Catch	0.0	33.6	20.3	0.0	0.0	53.9
	Number in Catch	0	78	47	0	0	125
Female	Percent of Catch	0.0	30.6	15.5	0.0	0.0	46.1
	Number in Catch	0	71	36	0	0	107
Total	Percent of Catch	0.0	64.2	35.8	0.0	0.0	100.0
	Number in Catch	0	149	83	0	0	232
Stratum Dates:	8/6-8/14						
Sampling Dates:	8/6-8/14						
Sample Size:	192						
Male	Percent of Catch	0.5	26.0	8.9	0.5	0.0	35.9
	Number in Catch	1	50	17	1	0	69
Female	Percent of Catch	2.6	52.6	8.8	0.0	0.0	64.0
	Number in Catch	5	101	17	0	0	123
Total	Percent of Catch	3.1	78.6	17.7	0.5	0.0	100.0
	Number in Catch	6	151	34	1	0	356
Stratum Dates:	7/7-8/14						
Sampling Dates:	7/7-8/14		Season Total				
Sample Size:	635						
Male	Percent of Catch	0.3	27.5	19.0	0.2	0.0	47.1
	Number in Catch	2	175	121	1	0	299
Female	Percent of Catch	0.8	33.4	18.6	0.1	0.0	52.9
	Number in Catch	5	212	118	1	0	336
Total	Percent of Catch	1.1	60.9	37.6	0.3	0.0	100.0
	Number in Catch	7	387	239	2	0	635

Table 8. Comparison of chum salmon age and sex composition and mean length from the Kobuk River test fish catch and the Kotzebue District commercial catch, 2000.

		Brood Year and (Age Group)				
		1997 (0.2)	1996 (0.3)	1995 (0.4)	1994 (0.5)	Total
Stratum Dates:	7/7-8/14					
Sample Size:	913		Kobuk River			
Male	Percent of Catch	0.3	27.5	19.0	0.2	47.1
	Number in Catch	2	175	121	1	299
	Mean Length (mm) [a]	570	596	616	570	
Female	Percent of Catch	0.8	33.4	18.6	0.1	52.9
	Number in Catch	5	212	118	1	336
	Mean Length (mm) [a]	566	581	591	580	
Total	Percent of Catch	1.1	60.9	37.6	0.3	100.0
	Number in Catch	7	387	239	2	635
Stratum Dates:	7/11-824					
			Kotzebue Commercial Catch			
Sample Size:	3,179					
Male	Percent of Sample	0.8	24.6	13.3	0.5	39.2 [b]
	Number in Catch	1192	38,116	20,613	831	60,752 [b]
	Mean Length (mm)	576	618	638	637	
Female	Percent of Sample	1.3	37.0	21.9	0.5	60.7 [b]
	Number in Catch	2058	57,328	33,874	800	94,060 [b]
	Mean Length (mm)	554	589	606	613	
Total	Percent of Sample	2.3	62.0	37.4	1	100.0
	Number in Catch	3,663	98,998	55,456	1,666	159,802

[a] Length was from mid-eye to fork-of-tail.

[b] Does not include period 11 samples.

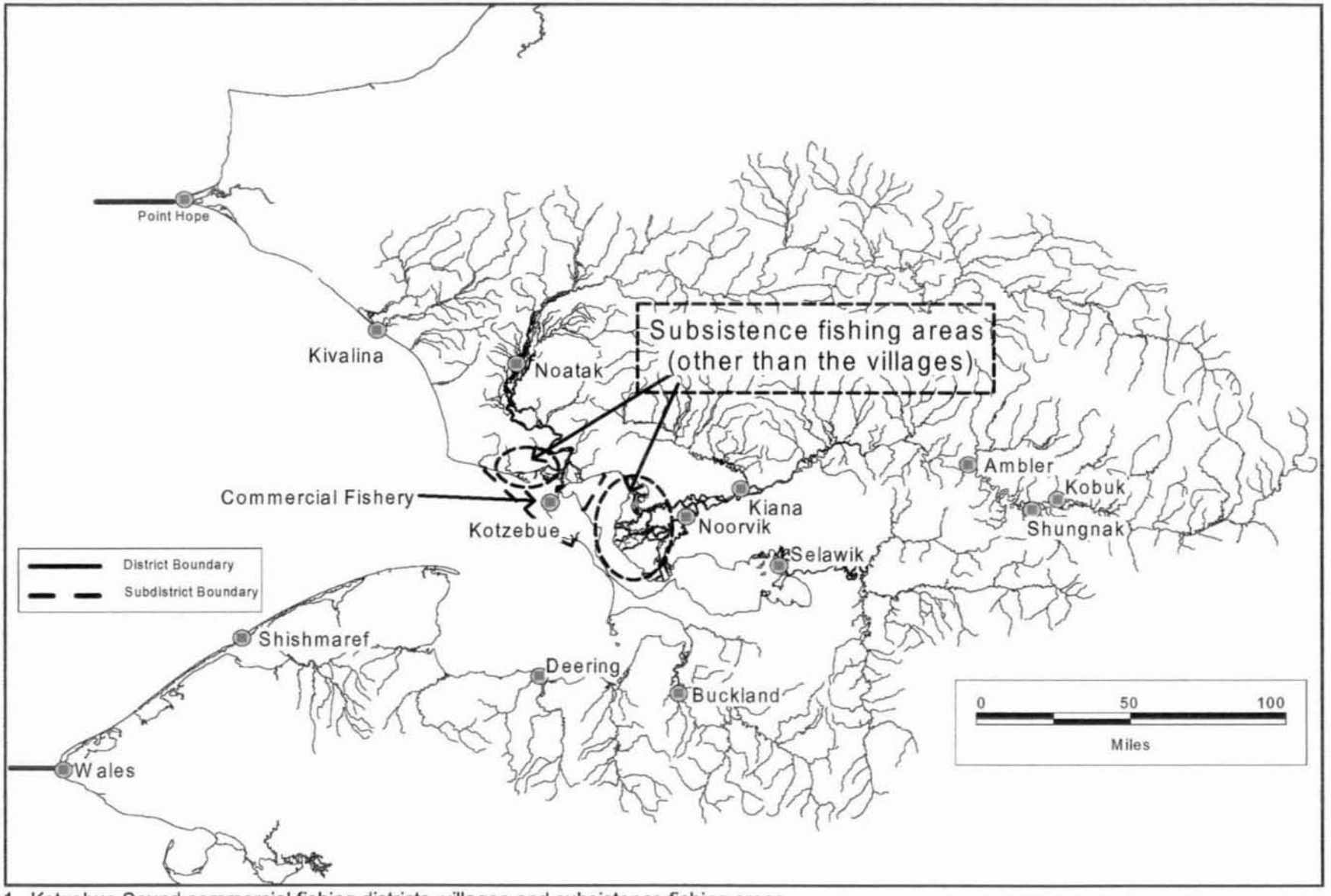

Figure 1. Kotzebue Sound commercial fishing districts, villages and subsistence fishing areas.

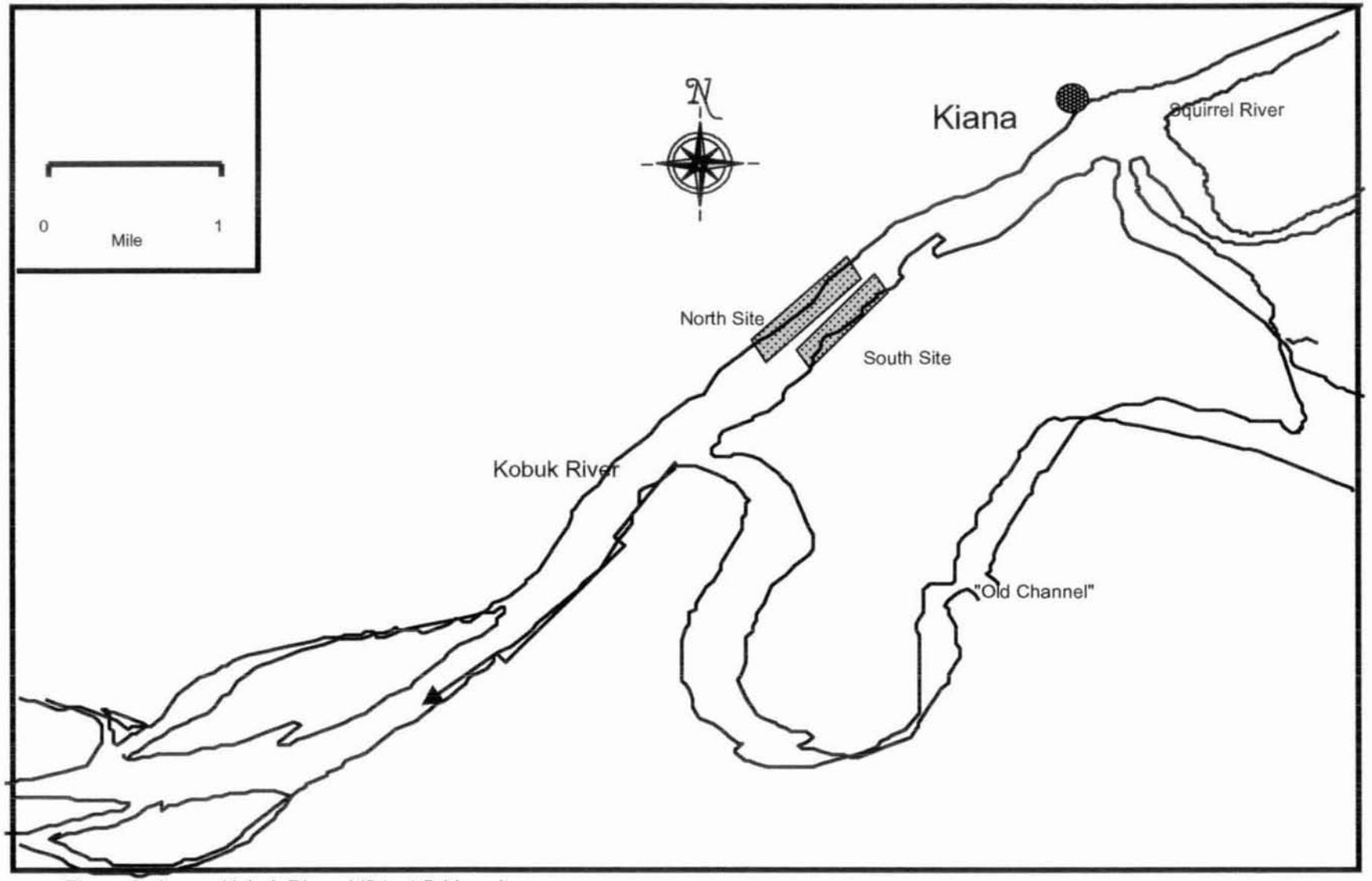

Figure 2. Lower Kobuk River drift test fishing sites.

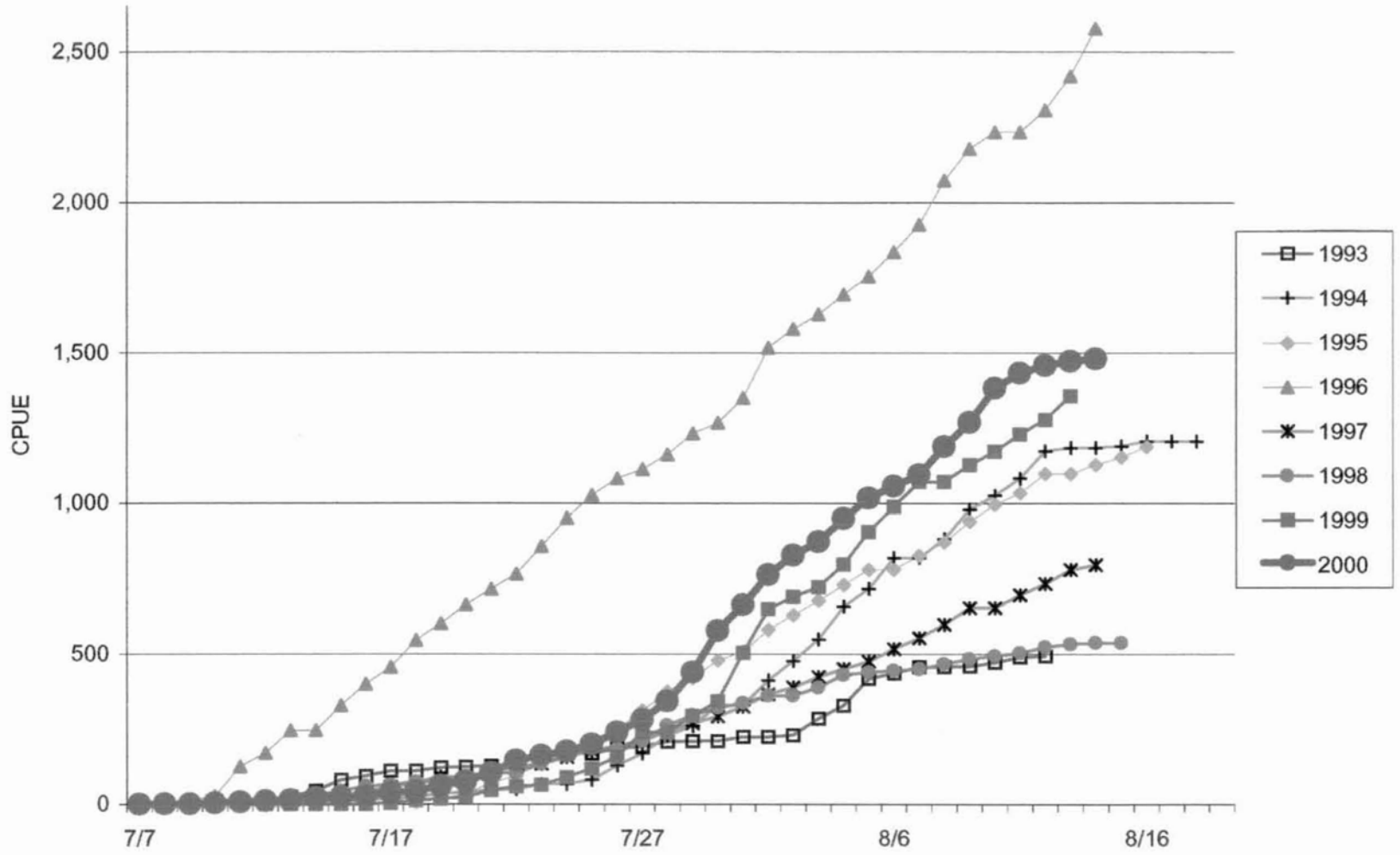

Figure 3. Kobuk River chum salmon test fish cumulative CPUE, 1993-2000.