

**Kaltag Fall Season Test Drift Gillnet Salmon Fishery and Scale Sampling**

**Yukon River Panel Project URE 06-03 and URE 15-03**

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**City of Kaltag**

**November 7, 2003**

## **ABSTRACT**

The Kaltag drift gillnet test fishery was established in 1999 to assist fishery managers in tracking fall chum and coho salmon as they migrate upstream through the middle portion of the Yukon River. The Kaltag test fishery utilizes techniques and gillnets to typical subsistence fishers in the middle Yukon River. Three drift sites were established in 1999 and again used for the 2003 season. After fall chum and coho salmon were collected at the drift sites, they were brought back to Kaltag for scale sampling and dispersal to subsistence users. The test fishery began on July 25th and was conducted through September 18th. The midpoint of the C.P.U.E. for fall chum salmon in 2003 was August 17 (10.09). The highest daily fall chum C.P.U.E. in 2003 was observed on August 26 (1.34). The midpoint of the C.P.U.E. for coho salmon in 2003 was August 29 (2.21). The highest daily coho C.P.U.E. in 2003 was observed on September 7 (0.47). A total of 455 fall chum and 21 coho salmon were sampled for age, sex, and length in 2003.

# Kaltag Fall Season Test Drift Gillnet Salmon Fishery

Final Report  
2003

Prepared by  
Richard Burnham  
Project Leader  
November 7, 2003

The following report is a summary of the year 2003 Kaltag Fall Chum and Coho Salmon Test Drift Gillnet fishery.

The test fishery was established in 1999 in response to a need by commercial fishery managers to have additional information on travel times and to build a comparative database for catch-per-unit effort (C.P.U.E.) of fall chum and coho salmon. This test fishery is located approximately half way (Yukon River mile 450) between the Pilot Station sonar and the village of Tanana. Information obtained from this test fishery has proved to be of great value to commercial fisheries managers. The test fishery assists in tracking fall chum and coho salmon as they pass through what used to be an "information void" in the middle Yukon River area.

The Yukon River Panel funded the 2003 test fishery. The City of Kaltag was contracted to implement the test fishery, along with technical support from the Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. The test fishery began on July 25th and was conducted through September 18th.

## Methods and Means

The Kaltag test fishery utilized techniques and gear types of typical subsistence fisher in the middle Yukon River. Gillnets for the test fishery are 25 fathoms long and 29.5 meshes deep with a stretch mesh size of 5 7/8". Three drift sites were established and marked in 1999 and these same sites were again utilized for the 2003 season (Figure 1).

Site #1 is located along the left bank of the Yukon River, across from and downstream a half mile from the village of Kaltag (GPS coordinates 64°19.107' Latitude 158°42.230' Longitude). Site #2 is approximately two miles upstream of Kaltag along the right bank of the Yukon River (GPS coordinates 64°21.040' Latitude 158°42.804' Longitude). Site #3 is located across from and slightly downstream from site #2, across the main channel of the Yukon River along the bank of Four Mile Island (GPS coordinates 64°20.833' Latitude 158°42.089' Longitude). All GPS coordinates are from the upstream start of each drift site.

Drifts made at sites #1 and #3 were done using standard drifting techniques. Site #2 used a modified drifting technique where the crewman walked along the beach holding the end of a 50 foot rope attached to the end of the net allowing the net to be kept a uniform distance from the beach during the drift.

The first drifts of each day were started at approximately 12:00 pm. The project leader accompanied each fisher and crewman on the first day of their fishing period to ensure starting points for each drift were as uniform as possible for the four different fishing periods.

The project leader also gave instruction on taking weather observations and keeping track of the different times for each drift. Instructions for enumeration of fall chum and coho salmon were also given. After fall chum and coho salmon were collected at the drift sites, they were brought back to Kaltag for sampling and dispersal. The project leader then gave instruction to the test fisher on taking scale samples and recording the sex and lengths of each of the samples. This was done in accordance with procedures used by the ADF&G.

Drift times, numbers, and species composition of fish caught were noted on all drifts. This information was logged in field notebooks as the drifts were conducted. Upon completion of all three drifts the information was brought to the project leader who transcribed the information into permanent notebooks. This information was then faxed daily to ADF&G, who converted the daily catches into C.P.U.E. data.

The scale samples, and associated sex and length data for fall chum and coho salmon sampled were recorded daily by the project leader. At the end of the test fish season (September 18th) all samples and recorded data was shipped to ADF&G personnel in Fairbanks and Anchorage for analysis.

#### Test Fishery Periods and Personnel:

Period #1 (7/25-8/7)	Calvin McGinty Derrick Esmailka	(Fisher) (Crew)
Period #2 (8/8-8/21)	Robert Nicholas Lawrence Nicholas Jr.	(Fisher) (Crew)
Period #3 (8/22-9/4)	Kenny Madros, Jr. Stewart Madros	(Fisher) (Crew)
Period #4 (9/5-9/18)	Rudy Edwin Richard Nicholas, Jr.	(Fisher) (Crew)

#### Results

The 2003 Kaltag Drift Gillnet Fishery provided valuable information for fishery managers on the Yukon River. Information on salmon travel time tracked well with observations made at lower river test fisheries near Emmonak, Mountain Village, and

Pilot Station sonar. The midpoint of the C.P.U.E. for fall chum salmon in 2003 was August 17 (10.09). This date is three days prior to the average midpoint for 1999 to 2002 of August 20. The highest daily fall chum C.P.U.E. in 2003 was observed on August 26 (1.34) (Table 1, Figure 2). The midpoint of the C.P.U.E. for coho salmon in 2003 was August 29 (2.21). The average midpoint for 1999 to 2002 is September 5. The highest daily coho C.P.U.E. in 2003 was observed on September 7 (0.47) (Table 1, Figure 3).

Rough water conditions on August 24<sup>th</sup> prevented drifting at all three sites. On August 3, 11 and September 10, 12, 13, and 17 fishers were unable to drift at one or two of the three sites.

A total of 455 fall chum and 21 coho salmon were sampled for age, sex, and length in 2003.

C.P.U.E. information gathered in 2003 continues to contribute to building a database that will enable daily as well as yearly comparisons of C.P.U.E.'s from the Kaltag test fishery.

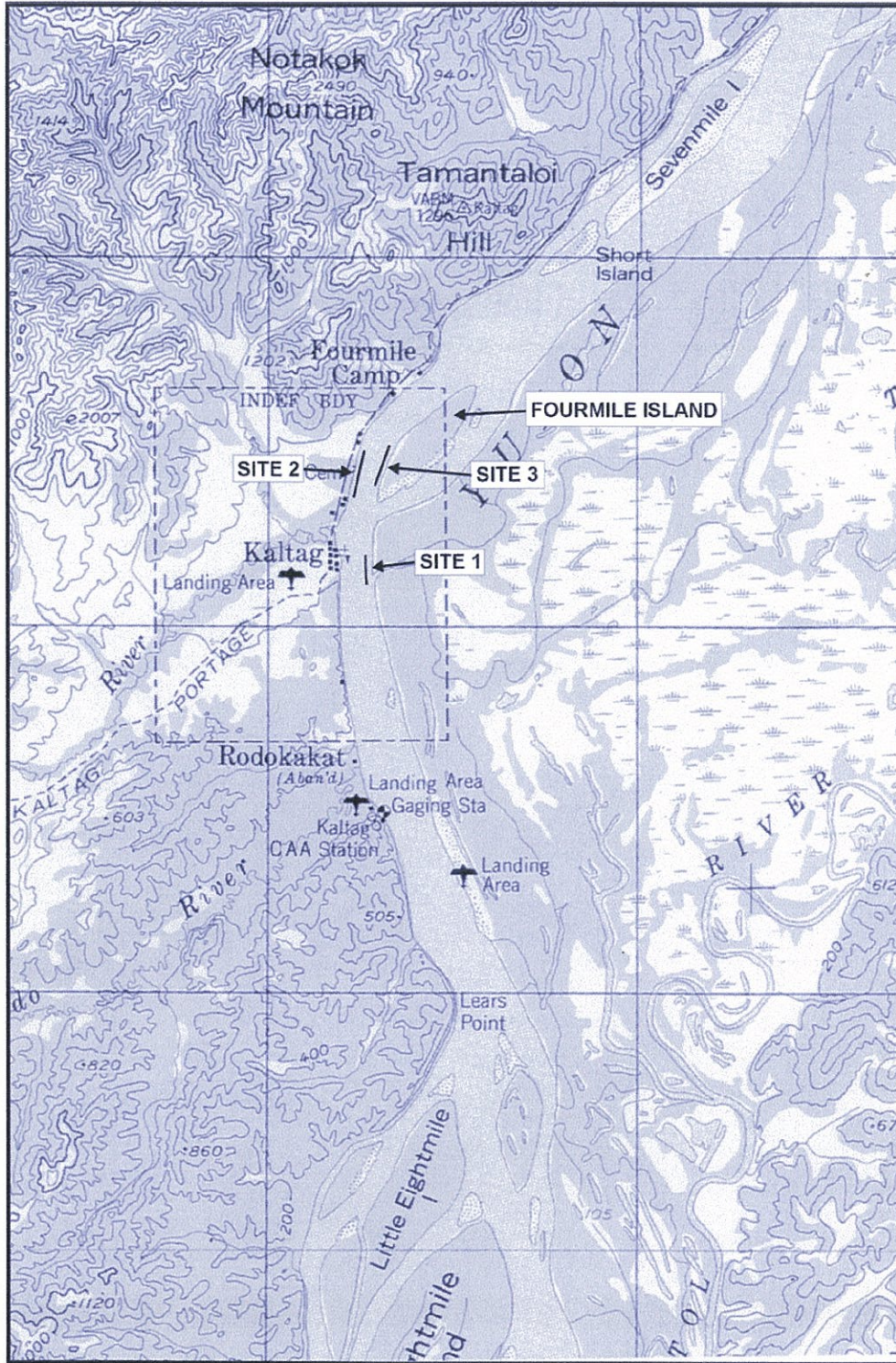


Figure 1. Map showing drift gillnet site locations, Kaltag Drift Gillnet Test Fishery, 2003.

Table 1. Fall chum and coho salmon, daily and cumulative catch-per-unit-effort (CPUE), drift gillnet test fishery, located near the village of Kaltag, Yukon River, 1999 to 2002 average compared to 2003.

Date	Fall Chum Salmon								Coho Salmon								
	1999 to 2002 Average a				2003				1999 to 2002 Average a				2003				
	Daily Catch	Daily CPUE	Cumulative Percent	Cumulative CPUE b	Daily Catch	Daily CPUE	Percent	Cumulative CPUE	Date	Daily Catch	Daily CPUE	Cumulative Percent	Cumulative CPUE b	Daily Catch	Daily CPUE	Percent	Cumulative CPUE
25-Jul	3	0.14	0.02	0.14	14	0.43	0.02	0.43	25-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
26-Jul	2	0.07	0.02	0.21	14	0.44	0.04	0.87	26-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
27-Jul	3	0.10	0.04	0.31	8	0.25	0.06	1.12	27-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
28-Jul	6	0.17	0.06	0.48	9	0.29	0.07	1.41	28-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
29-Jul	3	0.09	0.07	0.56	4	0.12	0.08	1.53	29-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
30-Jul	3	0.23	0.07	0.60	9	0.27	0.09	1.80	30-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
31-Jul	2	0.20	0.08	0.80	3	0.09	0.09	1.89	31-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
1-Aug	6	0.18	0.10	0.98	9	0.27	0.11	2.16	1-Aug	0	0.00	0.00	0.00	0	0.00	0.00	0.00
2-Aug	7	0.19	0.12	1.16	3	0.10	0.11	2.26	2-Aug	0	0.00	0.00	0.00	0	0.00	0.00	0.00
3-Aug	6	0.18	0.13	1.35	0	0.00 d	0.11	2.26	3-Aug	0	0.00	0.00	0.00	0	0.00 d	0.00	0.00
4-Aug	3	0.08	0.14	1.43	3	0.10	0.12	2.36	4-Aug	0	0.00	0.00	0.00	0	0.00	0.00	0.00
5-Aug	8	0.23	0.16	1.66	10	0.52	0.14	2.88	5-Aug	1	0.03	0.01	0.03	0	0.00	0.00	0.00
6-Aug	9	0.27	0.18	1.93	8	0.26	0.16	3.14	6-Aug	0	0.01	0.01	0.04	0	0.00	0.00	0.00
7-Aug	9	0.27	0.21	2.20	10	0.30	0.17	3.44	7-Aug	0	0.00	0.01	0.04	0	0.00	0.00	0.00
8-Aug	10	0.32	0.19	1.97	23	0.72	0.21	4.16	8-Aug	0	0.00	0.01	0.03	0	0.00	0.00	0.00
9-Aug	10	0.30	0.21	2.27	13	0.36	0.22	4.52	9-Aug	0	0.00	0.01	0.03	0	0.00	0.00	0.00
10-Aug	7	0.08	0.22	2.35	13	0.36	0.24	4.88	10-Aug	0	0.00	0.01	0.03	0	0.00	0.00	0.00
11-Aug	10	0.25	0.24	2.60	11	0.82 d	0.28	5.70	11-Aug	0	0.00	0.01	0.03	0	0.00 d	0.00	0.00
12-Aug	12	0.42	0.27	3.01	15	0.42	0.30	6.12	12-Aug	0	0.01	0.01	0.04	0	0.00	0.00	0.00
13-Aug	11	0.46	0.31	3.47	16	0.42	0.32	6.54	13-Aug	1	0.01	0.01	0.05	2	0.05	0.01	0.05
14-Aug	14	0.51	0.34	3.98	37	0.97	0.37	7.51	14-Aug	0	0.00	0.01	0.05	2	0.05	0.02	0.10
15-Aug	16	0.52	0.38	4.49	26	0.85	0.41	8.36	15-Aug	1	0.02	0.01	0.07	4	0.13	0.05	0.23
16-Aug	8	0.24	0.40	4.74	36	1.18	0.47	9.54	16-Aug	1	0.03	0.02	0.10	2	0.07	0.07	0.30
17-Aug	18	0.52	0.43	5.26	14	0.55	0.50	10.09	17-Aug	0	0.01	0.02	0.11	2	0.08	0.09	0.38
18-Aug	8	0.42	0.46	5.67	13	0.46	0.52	10.55	18-Aug	1	0.04	0.02	0.14	12	0.43	0.18	0.81
19-Aug	11	0.36	0.48	6.03	12	0.46	0.54	11.01	19-Aug	2	0.07	0.03	0.21	5	0.19	0.23	1.00
20-Aug	10	0.33	0.51	6.36	3	0.12	0.55	11.13	20-Aug	3	0.08	0.04	0.29	7	0.27	0.29	1.27
21-Aug	8	0.27	0.53	6.63	6	0.18	0.56	11.31	21-Aug	1	0.06	0.05	0.36	6	0.18	0.33	1.45
22-Aug	10	0.28	0.54	6.90	8	0.23	0.57	11.54	22-Aug	2	0.05	0.06	0.40	3	0.09	0.35	1.54
23-Aug	8	0.24	0.56	7.14	12	0.34	0.59	11.88	23-Aug	2	0.06	0.07	0.47	4	0.11	0.38	1.65
24-Aug	12	0.35	0.59	7.49	-	- c	0.59	11.88	24-Aug	5	0.14	0.10	0.60	-	- c	0.38	1.65
25-Aug	11	0.32	0.62	7.81	10	0.34	0.60	12.22	25-Aug	1	0.03	0.10	0.63	5	0.17	0.41	1.82
26-Aug	15	0.47	0.65	8.28	47	1.34	0.67	13.56	26-Aug	2	0.06	0.12	0.69	1	0.03	0.42	1.85
27-Aug	16	0.52	0.70	8.80	43	1.12	0.73	14.68	27-Aug	4	0.12	0.14	0.81	1	0.03	0.43	1.88
28-Aug	8	0.44	0.73	9.23	27	0.82	0.77	15.50	28-Aug	4	0.24	0.18	1.04	7	0.21	0.48	2.09
29-Aug	7	0.24	0.75	9.47	21	0.81	0.81	16.31	29-Aug	5	0.16	0.21	1.21	3	0.12	0.50	2.21
30-Aug	12	0.35	0.78	9.83	19	0.69	0.84	17.00	30-Aug	9	0.28	0.25	1.49	2	0.07	0.52	2.28
31-Aug	9	0.26	0.80	10.08	26	0.98	0.89	17.98	31-Aug	7	0.21	0.29	1.70	0	0.00	0.52	2.28
1-Sep	10	0.36	0.83	10.45	9	0.27	0.90	18.25	1-Sep	6	0.25	0.32	1.95	2	0.06	0.53	2.34
2-Sep	8	0.20	0.85	10.65	10	0.33	0.92	18.58	2-Sep	6	0.19	0.35	2.14	8	0.26	0.59	2.60
3-Sep	7	0.20	0.87	10.85	15	0.33	0.93	18.91	3-Sep	13	0.45	0.42	2.58	2	0.04	0.60	2.64
4-Sep	7	0.21	0.89	11.06	12	0.38	0.95	19.29	4-Sep	5	0.39	0.48	2.97	3	0.09	0.62	2.73
5-Sep	5	0.16	0.90	11.22	4	0.11	0.96	19.40	5-Sep	11	0.59	0.57	3.56	7	0.19	0.67	2.92
6-Sep	3	0.10	0.91	11.31	3	0.10	0.96	19.50	6-Sep	15	0.43	0.64	3.99	5	0.17	0.70	3.09
7-Sep	3	0.07	0.92	11.39	9	0.28	0.98	19.78	7-Sep	12	0.33	0.70	4.32	15	0.47	0.81	3.56
8-Sep	4	0.09	0.93	11.47	1	0.04	0.98	19.82	8-Sep	12	0.37	0.76	4.69	6	0.21	0.86	3.77
9-Sep	3	0.08	0.94	11.55	1	0.03	0.98	19.85	9-Sep	11	0.33	0.82	5.02	9	0.25	0.92	4.02
10-Sep	3	0.09	0.95	11.65	0	0.00 d	0.98	19.85	10-Sep	12	0.38	0.88	5.40	0	0.00 d	0.92	4.02
11-Sep	2	0.05	0.95	11.70	2	0.07	0.98	19.92	11-Sep	5	0.15	0.92	5.55	4	0.13	0.95	4.15
12-Sep	5	0.15	0.97	11.85	1	0.05 d	0.99	19.97	12-Sep	5	0.13	0.94	5.68	0	0.00 d	0.95	4.15
13-Sep	3	0.07	0.97	11.92	1	0.05 d	0.99	20.02	13-Sep	3	0.08	0.95	5.76	0	0.00 d	0.95	4.15
14-Sep	8	0.22	0.99	12.14	1	0.03	0.99	20.05	14-Sep	3	0.10	0.97	5.86	3	0.10	0.97	4.25
15-Sep	1	0.04	0.99	12.17	2	0.07	0.99	20.12	15-Sep	2	0.06	0.98	5.91	1	0.03	0.97	4.28
16-Sep	1	0.02	1.00	12.18	2	0.07	1.00	20.19	16-Sep	1	0.03	0.98	5.93	2	0.07	0.99	4.35
17-Sep	1	0.03	1.00	12.21	1	0.05 d	1.00	20.24	17-Sep	2	0.08	0.99	5.99	0	0.00 d	0.99	4.35
18-Sep	1	0.02	1.00	12.22	0	0.00 e	1.00	20.24	18-Sep	2	0.05	1.00	6.03	1	0.04 e	1.00	4.39
19-Sep	0	0.00	1.00	12.22	-	-	-	-	19-Sep	0	0.05	1.00	6.04	-	-	-	-
20-Sep	0	0.00	1.00	12.22	-	-	-	-	20-Sep	0	0.00	1.00	6.04	-	-	-	-
21-Sep	-	-	-	-	-	-	-	-	21-Sep	-	-	-	-	-	-	-	-
	400				635					172				136			

a Differences in the termination dates of the project confounds computation of the historical daily cumulative percent and average. The historical daily cumulative percent and average was computed by assuming that 100 percent of the run was completed on the date of project termination.

b The box indicates the first to the third quartile of the cumulative catch-per-unit-effort (CPUE). The median date of the cumulative CPUE is also highlighted.

c Did not fish due to inclement weather

d Not able to complete all drifts due to conditions

e Project done for season

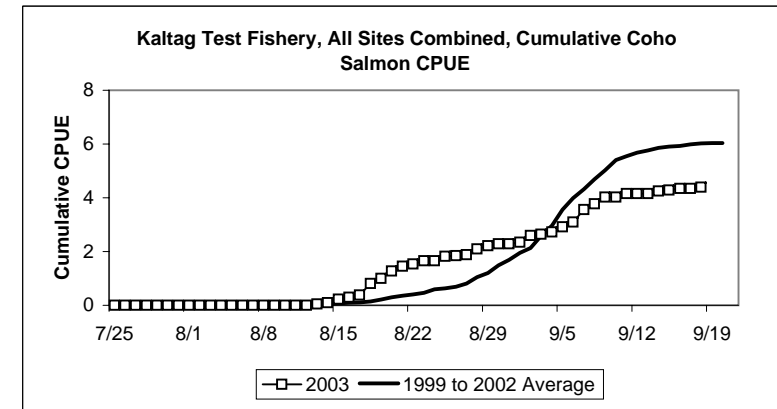
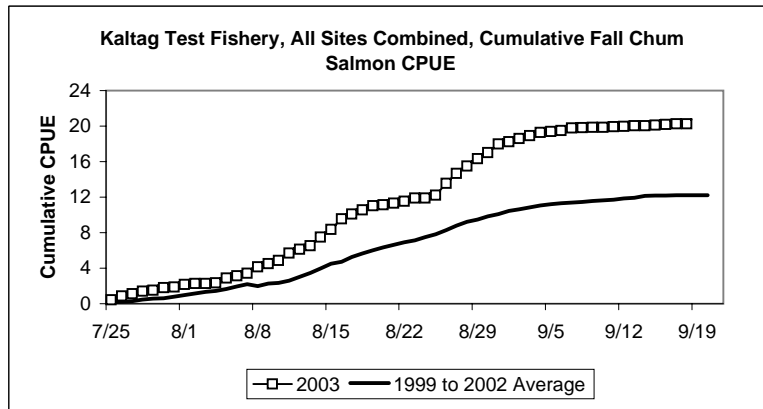
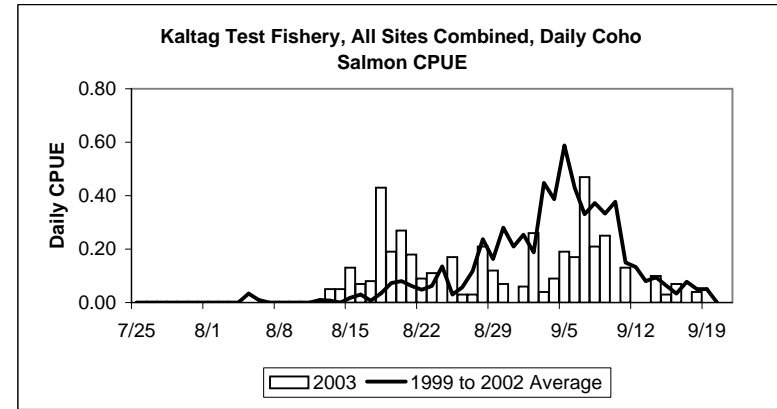
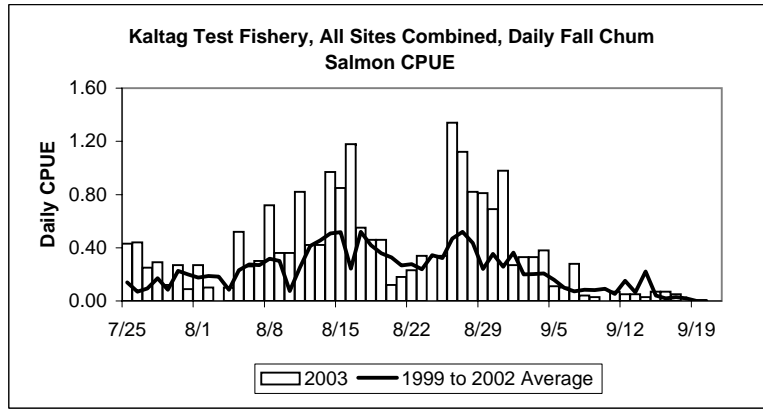


Figure 2. Fall chum salmon daily and cumulative catch-per-unit-effort (CPUE), Kaltag drift gillnet test fishery, 1999 to 2002 average compared to 2003.

Figure 3. Coho salmon daily and cumulative catch-per-unit-effort (CPUE), Kaltag drift gillnet test fishery, 1999 to 2002 average compared to 2003.