

Mountain Village Fall Season Salmon Drift Gillnet Test Fishery

R&M# 10-06

Project Proponent: Eric Barnhill, Bering Sea Fishermen's Association, 705 Christensen Drive, Anchorage, AK 99501, eric@cdqdb.org

1. Introduction:

Summary:

The Yukon River supports substantial populations of fall chum salmon. Fall chum salmon are extremely important for subsistence use, and also are harvested commercially throughout the Yukon in years of good abundance. The Alaska Department of Fish and Game (ADF&G) monitors postseason escapement in several spawning streams, which is an important management tool, but does not address in season information. Assessing the strength and migration of the return within the season enables managers to make immediate decisions. Collecting data on all components of the return enables managers to spread the harvest out and minimize potential over-harvest on any single component.

ADF&G is currently implementing a conservative management strategy wherein they look for assurances not only that overall run strength is healthy but also that each of the main run components, the upper Yukon and Canadian mainstem and Tanana River stocks, are healthy.

The Pilot Station sonar and some test-netting near the mouth of the first three quarters of the run are usually the main gauges of run strength between the time when the fish enter the river and the time they reach their spawning grounds or terminal fisheries.

The best way to assess in river run strength is to have as many different management devices as practical. When combined, the assessments made by each device provide a more complete and reliable picture of run strength for managers to use. The Mountain Village Test Fishery has proven itself in this role and has made valuable contributions to the difficult task of in season, in river run strength assessment and migration timing. The test fishery has the added benefit of monitoring run passage after the ADF&G's test nets and main river sonar have ceased operation in late August. Analysis shows the Mountain Village Test Fishery catch results directly correlate with passage at the Pilot Station sonar. This enables the test fishery results to be used as a crosscheck of the sonar's passage estimates and vice-versa thus further increasing managers' confidence in run assessments, and adds an alternative counting method should the sonar become unavailable.

This project began operating in 1995 with 60 days of operation (July 28 through September 14 and September 22 through October 2). Catches of both fall chum and coho dwindled to less than a few fish per day by the middle of September. The test fishery shows evidence of great success to providing a management device that is tested and reliable.

This test fishery examines stocks after they enter the Yukon River mainstem before reaching the Pilot Station sonar. This information is forwarded daily to ADF&G management staff in Emmonak and Fairbanks. Daily catch results (time, length of drift, number of fish caught) are analyzed by ADF&G to compute a daily Catch-Per-Unit-Effort (CPUE). Fishing effort and timing is determined by ADF&G staff pre-season and modified in season as necessary and prudent. The objectives of this project is to provide the Alaska Department of Fish and Game (ADF&G) with fall chum and coho salmon migration timing, run composition and relative abundance at sites on the lower Yukon River.

2. Study Area:

TEST FISHING

The Mountain Village drift gillnet salmon test fishery is located on the Yukon River near Mountain Village, at approximately river mile 87. The three test drift sites are located approximately three to four miles upstream of Mountain Village. The test sites are on the main stem of the river, single channel, and vary slightly from year to year based on water depth, debris in the sites (snags, boulders) and the educated decisions of our hired captains. At this time precise locations aren't available, in the future GPS coordinates of the sites would be helpful.

Three, 20 minute drifts were conducted, at three specific locations, each day with a 23 fathom gillnet provided by BSFA. The information was forwarded to the ADF&G management staff in Emmonak. Daily catch results (time, length of drift, number of fish caught) were analyzed and calculated to compute a daily CPUE.

3. Methods:

AGE-SEX-LENGTH SAMPLING

Test fishermen were instructed to collect sample scales, and collect sex and length information. The sampling design was for the captain and crew to sample 40 of each species when available. When less than 40 fish were netted, fishermen were instructed to sample all of the fish. When more than 40 fish were available, fishermen were instructed to randomly select 40. Sex was determined by visually examining external morphology by keying on the kype development, roundness of the belly and the presence/absence of an ovipositor. Mid-eye to fork length was measured to the nearest millimeter.

Salmon retained by this project were donated to the local residents.

4. Results:

In cooperation with ADF&G and the Asa'carsarmiut Tribal Council (ATC), BSFA managed the continuation of the test fishery, which began monitoring fall chum and coho entry into the Yukon River in 1995.

BSFA contracted with the ATC to manage hiring and payment of local residents who worked with ADF&G and BSFA staff in these studies. Residents were hired as professional fishermen

and their expertise was essential in assessing and analyzing the various parameters of the test fishery. Data from the test fishery was faxed daily to ADF&G offices. These data and a summary are reported by ADF&G in the Annual Management Report, Yukon Area.

The purpose of this test-fishing project was to provide daily and cumulative fall salmon counts to ADF&G from July 17 to September 10, 2006. (This year due to high winds, the project was one day delayed, ending on September 11, 2006.)

Bering Sea Fishermen's Association staff biologist did not make it to Mountain village in the 2006 season due to scheduling and time conflicts. There were, however, contact and progress reports from the Tribal Administrator Ms. Tammy T. Aguchak.

The names of the fishermen and the number of days they fished were Paul Beans (15 days), Larry George (15 days), Derrick Alexie (15 days), and Richard Landlord (11 days). If they caught any fish, it was distributed to the community for subsistence use.

Approximately 692 fall chum and 213 coho salmon were caught in the Mountain Village test nets this fall. ASL testing was performed as stated above, and as of the writing of this report the Alaska department of fish and game had not published the results.

Acknowledgements:

Bering Sea Fishermen's Association wishes to thank the ATC for locally managing the test fishery. Special recognition goes out to Mr. Paul Beans, Mr. Larry George, Mr. Derrick Alexie, and Mr. Richard Landlord and their crewmembers for participating in the test fish project and contributing to the data collection.

The Bering Sea Fishermen's Association would like to thank the Yukon River Panel for providing the funding to continue monitoring project.

Appendices:

Fall Chum Salmon								
Date	1997 to 2005 Average a				2006			
	Daily Catch	Daily CPUE	Percent	Cumulative CPUE b	Daily Catch	Daily CPUE	Percent	Cumulative CPUE b
17-Jul	9	42.47	0.03	42.47	26	111.59	0.04	111.59
18-Jul	7	28.02	0.04	61.06	34	125.70	0.09	237.29
19-Jul	13	51.72	0.06	112.78	27	101.41	0.13	338.70
20-Jul	15	67.38	0.09	180.15	11	48.18	0.14	386.88
21-Jul	12	71.79	0.11	251.94	5	21.86	0.15	408.74
22-Jul	9	32.69	0.13	284.64	2	9.14	0.16	417.88
23-Jul	10	31.96	0.14	316.60	11	46.68	0.17	464.56
24-Jul	10	34.64	0.16	351.24	3	13.33	0.18	477.89
25-Jul	5	19.90	0.17	371.14	7	28.72	0.19	506.61
26-Jul	20	60.11	0.19	431.25	5	22.35	0.20	528.96
27-Jul	13	40.35	0.21	471.60	6	26.43	0.21	555.39
28-Jul	12	41.85	0.24	513.45	3	13.46	0.21	568.85
29-Jul	12	40.24	0.26	553.69	45	150.86	0.27	719.71
30-Jul	11	41.05	0.29	594.74	17	70.83	0.29	790.54
31-Jul	6	29.27	0.30	624.01	41	157.49	0.35	948.03
1-Aug	13	45.41	0.32	669.42	37	133.80	0.40	1081.83
2-Aug	16	59.80	0.34	729.22	29	114.43	0.45	1196.26
3-Aug	10	51.64	0.37	780.86	10	43.29	0.46	1239.55
4-Aug	12	45.72	0.39	826.58	4	17.20	0.47	1256.75
5-Aug	24	73.42	0.42	900.00	3	13.33	0.47	1270.08
6-Aug	19	64.82	0.45	964.82	2	9.14	0.48	1279.22
7-Aug	22	91.00	0.48	1,055.81	8	35.56	0.49	1314.78
8-Aug	25	94.09	0.51	1,149.90	10	44.44	0.51	1359.22
9-Aug	11	50.15	0.54	1,200.06	14	60.78	0.53	1420.00
10-Aug	10	45.50	0.57	1,245.56	4	17.42	0.54	1437.42
11-Aug	7	27.93	0.59	1,273.49	5	21.05	0.54	1458.47
12-Aug	6	22.69	0.61	1,296.18	2	8.89	0.55	1467.36
13-Aug	6	22.39	0.62	1,318.57	9	37.81 c	0.56	1505.17
14-Aug	15	50.45	0.65	1,369.02	43	165.35	0.62	1670.52
15-Aug	12	40.89	0.66	1,409.92	8	33.26	0.64	1703.78
16-Aug	17	64.97	0.70	1,474.89	8	29.54	0.65	1733.32
17-Aug	15	53.64	0.73	1,528.53	23	71.79	0.67	1805.11
18-Aug	8	25.62	0.75	1,554.15	2	9.70	0.68	1814.81
19-Aug	7	27.12	0.77	1,578.26	10	42.35	0.69	1857.16
20-Aug	10	38.51	0.79	1,616.77	20	66.46	0.72	1923.62
21-Aug	12	39.77	0.80	1,656.54	27	95.63	0.75	2019.25
22-Aug	14	55.88	0.83	1,712.42	20	92.25	0.79	2111.50
23-Aug	10	38.89	0.85	1,751.30	3	12.00	0.79	2123.50
24-Aug	7	31.59	0.86	1,782.89	15	58.18	0.81	2181.68
25-Aug	12	47.78	0.88	1,830.68	5	20.84	0.82	2202.52
26-Aug	7	30.79	0.89	1,861.47	7	26.43	0.83	2228.95
27-Aug	3	13.21	0.89	1,874.68	4	16.00	0.84	2244.95

28-Aug	11	42.28	0.91	1,916.96	12	49.35	0.86	2294.30
29-Aug	5	20.38	0.92	1,937.34	41	167.26	0.92	2461.56
30-Aug	2	5.60	0.93	1,942.94	5	23.82	0.93	2485.38
31-Aug	1	3.41	0.93	1,946.35	1	4.10	0.93	2489.48
1-Sep	2	9.40	0.93	1,955.76	5	20.76	0.94	2510.24
2-Sep	1	4.55	0.94	1,960.31	10	35.67	0.95	2545.91
3-Sep	4	14.53	0.94	1,974.84	11	37.45	0.96	2583.36
4-Sep	10	37.55	0.96	2,012.38	9	30.75	0.97	2614.11
5-Sep	5	20.47	0.97	2,032.85	3	11.43	0.98	2625.54
6-Sep	3	11.09	0.98	2,043.94	1	4.32	0.98	2629.86
7-Sep	2	9.47	0.98	2,053.41		9.83	d 0.98	2639.69
8-Sep	1	5.79	0.98	2,059.20	4	15.34	0.99	2655.03
9-Sep	3	14.62	0.99	2,073.82	8	26.08	1.00	2681.11
10-Sep	2	4.90	0.99	2,078.72	7	0.09	1.00	2681.20
11-Sep	1	4.89	0.99	2,082.52	0	0.00	1.00	2681.20
12-Sep	3	9.28	0.99	2,086.65			-	-
13-Sep	3	11.40	1.00	2,090.45			-	-
14-Sep	3	9.97	1.00	2,092.67			-	-
15-Sep	5	16.96	1.00	2,096.43			-	-
16-Sep	2	5.38	1.00	2,097.63			-	-
17-Sep	1	3.33	1.00	2,098.37			-	-
18-Sep	3	10.14	1.00	2,099.50			-	-
19-Sep							-	-
20-Sep							-	-
21-Sep							-	-
22-Sep							-	-
23-Sep							-	-
24-Sep							-	-
25-Sep							-	-
26-Sep							-	-
27-Sep							-	-
28-Sep							-	-
29-Sep							-	-
30-Sep							-	-
1-Oct							-	-
2-Oct							-	-

567

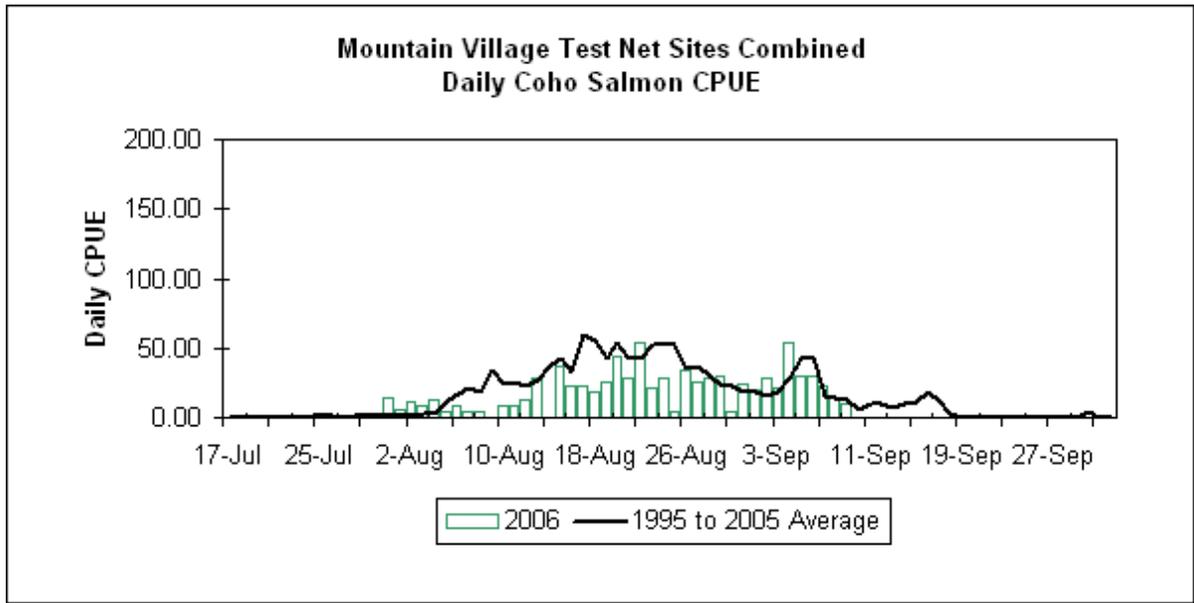
692

Coho Salmon

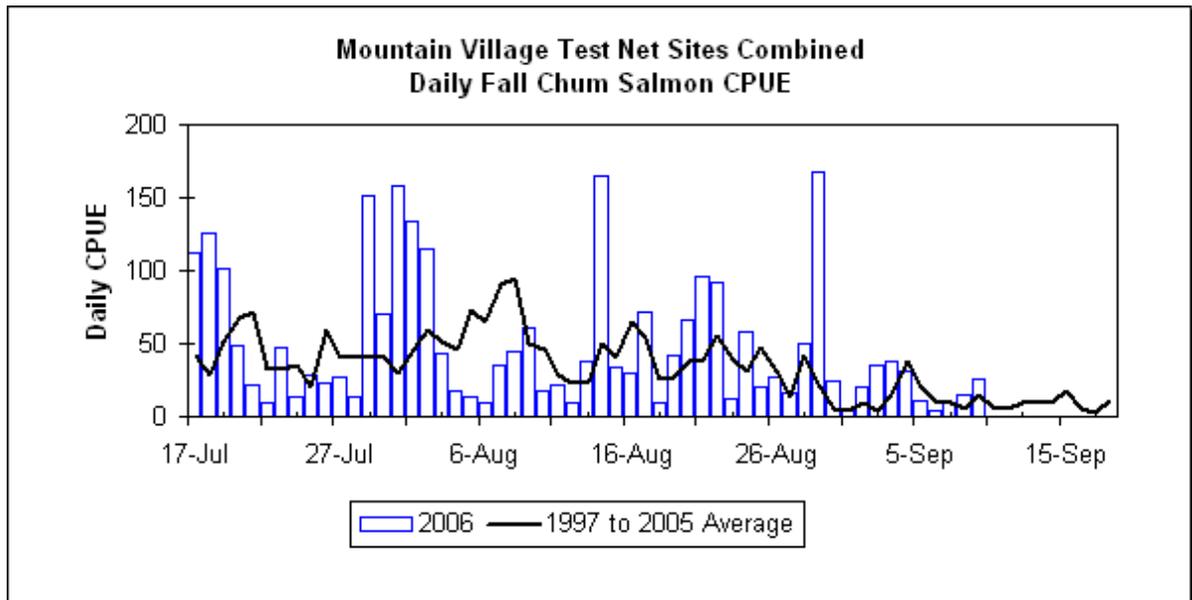
Date	1995 to 2005 Average a				2006			
	Daily Catch	Daily CPUE	Percent	Cumulative CPUE b	Daily Catch	Daily CPUE	Percent	Cumulative CPUE b
17-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
18-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
19-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
20-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
21-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
22-Jul	0	0.00	0.00	0.00	0	0.00	0.00	0.00
23-Jul	0	0.99	0.00	0.99	0	0.00	0.00	0.00
24-Jul	0	0.44	0.00	1.44	0	0.00	0.00	0.00
25-Jul	1	3.34	0.00	4.78	0	0.00	0.00	0.00
26-Jul	0	1.39	0.01	6.17	0	0.00	0.00	0.00
27-Jul	0	0.00	0.01	6.17	0	0.00	0.00	0.00
28-Jul	0	1.56	0.01	7.11	0	0.00	0.00	0.00
29-Jul	0	1.02	0.01	8.12	0	0.00	0.00	0.00
30-Jul	1	3.11	0.01	11.23	0	0.00	0.00	0.00
31-Jul	0	1.87	0.01	13.10	4	14.55	0.02	14.55
1-Aug	1	2.57	0.01	15.67	2	6.15	0.03	20.70
2-Aug	0	1.32	0.01	15.56	3	11.94	0.04	32.64
3-Aug	1	2.93	0.02	18.50	2	8.65	0.05	41.29
4-Aug	1	3.21	0.02	21.71	3	12.99	0.07	54.28
5-Aug	3	10.81	0.03	32.51	1	4.44	0.07	58.72
6-Aug	4	16.91	0.04	49.42	2	9.14	0.08	67.86
7-Aug	6	21.01	0.06	70.43	1	4.44	0.09	72.30
8-Aug	5	18.11	0.08	88.54	1	4.44	0.09	76.74
9-Aug	6	33.86	0.11	122.40	0	0.00	0.09	76.74
10-Aug	6	24.61	0.13	147.01	2	8.65	0.10	85.39
11-Aug	6	25.34	0.15	172.35	2	8.42	0.11	93.81
12-Aug	6	22.46	0.17	194.81	3	13.33	0.13	107.14
13-Aug	7	27.42	0.19	222.22	7	29.06 c	0.17	136.20
14-Aug	11	37.04	0.22	259.26	0	0.00	0.17	136.20
15-Aug	12	42.05	0.26	301.32	9	37.14	0.21	173.34
16-Aug	9	32.91	0.28	334.22	6	22.77	0.24	196.11
17-Aug	16	59.41	0.33	393.63	6	22.56	0.27	218.67
18-Aug	14	55.40	0.37	449.03	4	17.98	0.29	236.65
19-Aug	11	42.83	0.41	491.85	6	24.92	0.32	261.57
20-Aug	14	54.11	0.45	545.97	13	43.47	0.37	305.04
21-Aug	12	43.00	0.49	588.97	7	27.76	0.41	332.80
22-Aug	12	42.35	0.53	631.32	12	54.03	0.47	386.83
23-Aug	16	52.93	0.57	684.25	5	21.35	0.50	408.18
24-Aug	14	52.50	0.61	736.75	7	27.81	0.53	435.99
25-Aug	14	52.26	0.65	789.01	1	4.21	0.54	440.20
26-Aug	9	34.85	0.68	823.86	9	33.49	0.58	473.69

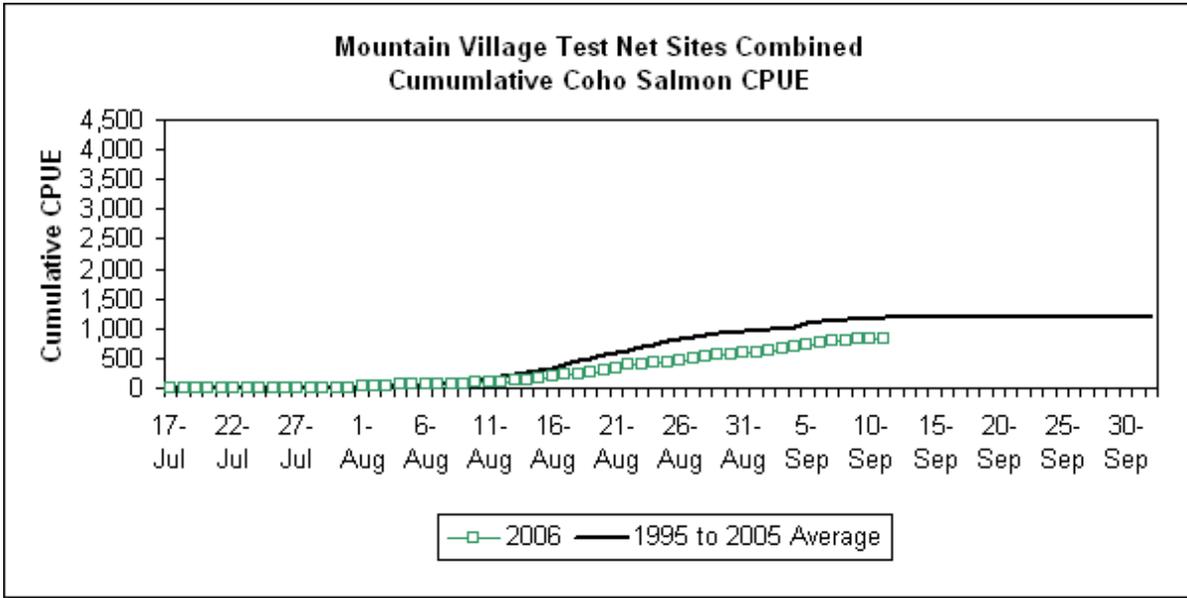
27-Aug	10	36.99	0.71	860.85	6	24.86	0.61	498.55
28-Aug	7	30.02	0.75	890.86	7	28.94	0.65	527.49
29-Aug	6	22.91	0.77	913.78	7	29.16	0.68	556.65
30-Aug	6	23.22	0.79	937.00	1	4.71	0.69	561.36
31-Aug	4	18.27	0.80	955.27	7	24.53	0.72	585.89
1-Sep	4	19.02	0.82	974.29	5	20.18	0.74	606.07
2-Sep	4	15.82	0.83	990.11	9	28.24	0.78	634.31
3-Sep	5	18.30	0.85	1008.41	6	21.12	0.80	655.43
4-Sep	8	28.70	0.87	1037.11	18	54.18	0.87	709.61
5-Sep	10	42.24	0.90	1079.35	8	29.67	0.91	739.28
6-Sep	11	44.24	0.94	1123.58	7	29.76	0.94	769.04
7-Sep	4	15.92	0.95	1139.51		22.16 d	0.97	791.20
8-Sep	4	13.65	0.96	1153.16	3	14.55	0.99	805.75
9-Sep	2	12.31	0.97	1165.47	3	10.61	1.00	816.36
10-Sep	2	6.12	0.97	1171.59	5	0.06	1.00	816.42
11-Sep	3	10.30	0.98	1178.14	3	0.04	1.00	816.46
12-Sep	3	10.39	0.99	1183.81			-	
13-Sep	2	7.54	0.99	1187.24			-	
14-Sep	3	9.59	0.99	1190.73			-	
15-Sep	3	10.91	0.99	1193.70			-	
16-Sep	5	18.86	1.00	1198.85			-	
17-Sep	4	13.46	1.00	1202.52			-	
18-Sep	1	3.33	1.00	1203.12			-	
19-Sep	0	0.00	1.00	1203.12			-	
20-Sep	0	0.00	1.00	1203.12			-	
21-Sep	0	0.00	1.00	1203.12			-	
22-Sep	0	0.00	1.00	1203.12			-	
23-Sep	0	0.00	1.00	1203.12			-	
24-Sep	0	0.00	1.00	1203.12			-	
25-Sep	0	0.00	1.00	1203.12			-	
26-Sep	0	0.00	1.00	1203.12			-	
27-Sep	0	0.00	1.00	1203.12			-	
28-Sep	0	0.00	1.00	1203.12			-	
29-Sep	0	0.00	1.00	1203.12			-	
30-Sep	1	4.57	1.00	1203.54			-	
1-Oct	0	0.00	1.00	1203.54			-	
2-Oct	0	0.00	1.00	1203.54			-	
	329				213			

- a. Differences in the termination dates of the project confounds computation of the historical daily cumulative percent and average. The historical daily cumulative percentage 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. Drift site 2 location was changed due to low water/snag issues. Site 2 has been relocated to prior year's location.
- d. Did not fish due to unsafe weather conditions, data is interpolated

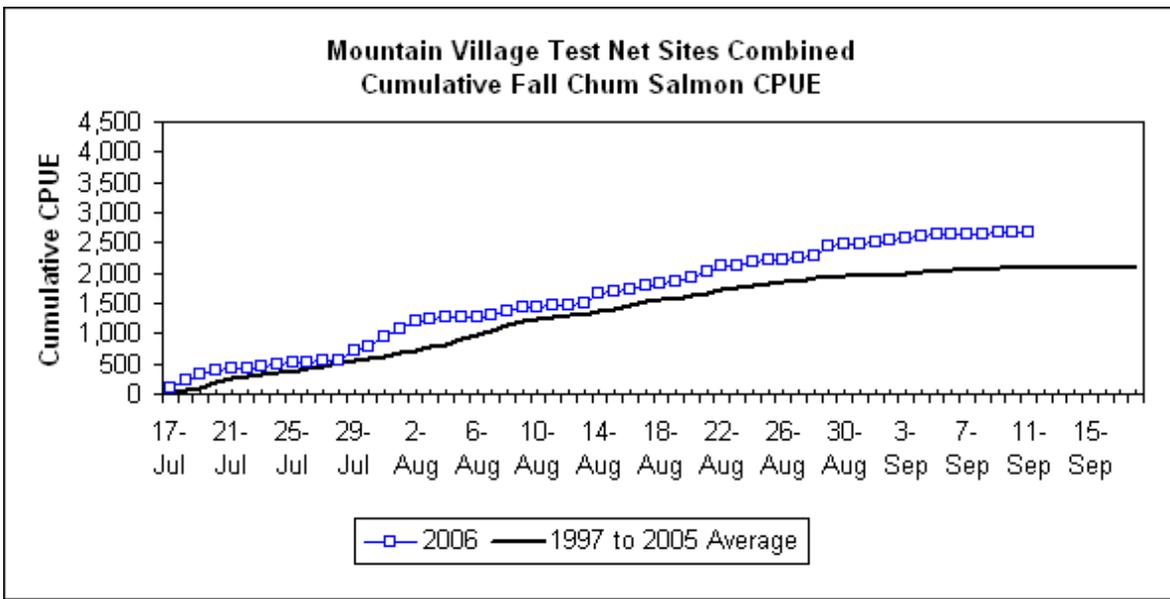


(Chart courtesy ADF&G)





Historical coho salmon daily and cumulative catch-per-unit effort (CPUE), drift net fishery, located near the village of Mountain Village 1995 to 2005 average compared to 2006 (Chart courtesy ADF&G)



Historical fall chum salmon daily and cumulative catch-per-unit-effort (CPUE), drift net test fishery, located near the village of Mountain Village, 1997 to 2005 average compared to 2006 (Chart courtesy ADF&G)