Mountain Village Chinook Salmon Drift Test Fishery Project, 2010

Project URE-22N-10

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Submitted By

Yukon Delta Fisheries Development Association

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICIES

ABSTRACT

A Chinook salmon test fishery using 7.5-inch stretch mesh drift gillnets was conducted near Mountain Village, Alaska from June 2 through July 17, 2010. During this period, 179 test fishing drifts were conducted and 476 Chinook salmon were captured and retained for sampling. Additionally, 8 Chinook salmon were observed to have dropped out of the net when the net was being pulled into the boat. These 8 Chinook salmon were included in the catch per effort (CPUE) calculations. Two Chinook salmon were captured that were Canada hatchery releases. Total cumulative CPUE index points totaled 693.78. The mid-50% passage of the run occurred between June 20 and June 30, inclusive. The median date of passage was 26 June. Percent age class composition of the Chinook salmon sampled was 2.2% age-1.2, 68.8% age-1.3, and 26.4% age-1.4, 1.2% age-2.3, 0.2% age 1.5, 1.0% age-2.4, and 0.2% age-2.5. Females comprised 40.1% of the total sample. However, the female component increased steadily through the season, from 28.6%, observed in the first quartile, to 52.3%, observed in the fourth quartile.. Salmon from 700 mm to 850 mm comprised 77.1% of the sampled fish. Only 3.4% of the sampled fish were greater than 900 mm. Local hiring of fishermen was accomplished through Asa'carsarmiut Tribal Council and this employment provided stewardship experiences in test fishing, and an understanding of the intricate processes that test fishing provides to Yukon River Chinook salmon management.

KEY WORDS: Chinook salmon, *Oncorhynchus*, Yukon, Alaska, test fishery, catch per unit effort, run assessment, migratory timing, age, sex, length composition, stewardship

INTRODUCTION

The Yukon River drainage supports widely distributed populations of Chinook salmon, *Oncorhynchus tshawytscha,* important for subsistence, personal use, commercial, and sport fisheries throughout the drainage, as summarized in the most recently published management report (Hayes 2008) and U.S./Canada Joint Technical Committee report (JTC 2010). The vast majority of the commercial salmon harvests has occur near the mouth of the Yukon River in Districts 1 and 2 (Figure 1). The subsistence fishery has priority use of these resources, but the fish pass through the major commercial harvesting area in the lower river before they arrive into the upper regions where over half of the Alaskan subsistence harvest occurs. Fishery managers are challenged to quickly and accurately assess run timing and abundance inseason to ensure passage of sufficient numbers of salmon for subsistence needs and adequate escapements to Alaskan streams, and also to satisfy Treaty obligations to Canada.

ADF&G assesses run strength at the mouth of the Yukon River with set and drift gillnets near Emmonak (river mile (RM) 24; Figure 1) and in the north and middle mouth based out of a remote camp near Akers Camp (RM 26). Salmon run assessment is also conducted with hydroacoustic equipment near the village of Pilot Station (RM 122; Figure 1). Additionally, from 2007-2009 the Yukon River Chinook salmon comparative mesh size study project provided additional run strength and timing information to managers (Steve Hayes, ADF&G/CF, personal communication). In the past, a drift gillnet test fishery also operated near the village of Marshall (RM 163; Figure 1) in 1999, 2000, and 2005-2008 (Waltmeyer 2006, 2008; Dubey 2009). All the above-mentioned projects, in conjunction with inseason subsistence harvest reports, provided information to assess the Chinook salmon run inseason (ADF&G 2009).

With the relatively recent dramatic decrease in harvestable surpluses and continued high demand for Yukon River Chinook salmon, more accurate and precise inseason run assessment is needed. When operational, the Marshall test fishery provided some information regarding relative run size and a retrospective comparative check on the relative magnitude of Pilot Station sonar counts attributed to Chinook salmon. The Mountain Village test fishery improves upon the previous project by providing similar information, but on a timelier basis since this project would be 76 river miles closer to the mouth, which translates into more than 2 days travel time for Chinook salmon. Additionally, because of this project's strategic location between the LYTF and Pilot Station sonar projects, information from this project can be compared against the information from the LYTF and the sonar counts. Comparisons can also be made between the 7.5-inch gillnet test fishery CPUE data collected at Pilot Station and the Mountain Village test fishery CPUE. Further, results from this project can also provide additional insight into the expected Chinook salmon run strength at the Pilot Station sonar site. Genetic samples collected from sampled Chinook salmon provided an independent assessment of the various Chinook salmon stocks that migrate through the lower river

The Mountain Village Cooperative test fishery project is designed to foster research and analyses that directly contribute to the assessment of the Chinook salmon run for inseason management. The information gathered will aid in management of both Canadian and U.S. Chinook salmon stocks, so that Treaty obligations, escapement goals, and subsistence priority are met, and appropriate levels of commercial harvest are allowed.

This project also provides an opportunity to build community capacity and stewardship for local residents by promoting training and education in fisheries research and management. This project has received support in the local area. This project supports resource management in a cost effective manner and facilitates communications between various community and government entities.

STUDY AREA

The study area is located upriver from the village of Mountain Village (Figure 1) on the Yukon River, approximately 87 river miles from the mouth. The test fishery sites are located in association with the south bank (Sites 1 and 4), on both sides of a prominent sand bar, and along the north bank (Site 2) of the river (Figure 2).

OBJECTIVES

The specific objectives of this project are to:

1) estimate the relative abundance (test fish CPUE) and run timing of the Yukon River Chinook salmon run at Mountain Village;
2) describe the ASL composition of the Chinook salmon caught in test drift nets ;
3) provide additional Chinook salmon genetic samples for inseason analysis; and
4) provide a conservation and stewardship experience for rural local residents and/or local students.

METHODS

Test Fishing

Yukon Delta Fisheries Developmental Association (YDFDA), in cooperation with the Asa'carsarmiut Tribal Council (ATC) and ADF&G, conducted a test fishery near Mountain Village (MVTF) to monitor Chinook salmon. Test fishing commenced on June 2 and continued through the morning of July 17, for a total of 46 days of test fishing. This period encompassed most of the Chinook salmon migration. This schedule takes into account: 1) the approximate two day lag time between the Lower Yukon Test Fish project (LYTF) (RM 24), which typically begins operation the first part of June, and the MVTF (RM 87) and 2) the approximate 1 day lag between the Mountain Village Test Fishery and the Pilot Station sonar project site (RM 124).

Although ATC hired the individual fishermen, YDFDA managed the test fish crew and was responsible for supervision and general oversight of the collection and timely reporting of the data. Local residents were hired as professional fishermen and their expertise was employed in identifying drift sites

Gillnet gear consisted of a 50-fathom shackle of 7.50-inch stretch mesh, multi-filament drift gillnet. The net was 45 meshes deep and was constructed of mono-multifilament strands in a light brown color. A total of four drifts were conducted daily with each station being sampled twice. The drift locations were determined preseason and were based on local fishermen's expertise and knowledge. Test drifts were conducted on both sides of the river, twice a day, once in the morning and in the evening (approximately 12 hours later) each day.

Prior to the first set of each set of drifts, wind speed and direction, percent cloud cover and precipitation were subjectively estimated and recorded. Air temperature was taken weather information provided on the Internet for Mountain Village. Water temperature was monitored by a continuous hobo water temperature monitoring device deployed off the Kwik'pak barge at Mountain Village. Observed water condition was noted as calm, choppy, or rough. Vertical and horizontal capture location of Chinook salmon in the net was also recorded.

Drift times were recorded to the nearest minute for each drift. Time was recorded for the beginning of net deployment, when the net was fully deployed, when the net retrieval starts, and when the net was fully

retrieved. This temporal information is needed to calculate the CPUE for each drift. The CPUE index, standardizes catch reporting to the number of fish caught in 100 fathoms of gear, standardized to one hour of fishing time and is calculated as follow:

$$CPUE = \frac{100\,fm \;\; x \;\; 60\min \;\; x \;\; number\ of\ fish}{fm\ of\ gear \;\; x \;\; MFT} \qquad (1)$$

where: *CPUE* = *CPUE* for each set, and
MFT = mean fishing time for each set.

Mean fishing time (MFT) in minutes was calculated as:

$$MFT = (C - B) + \frac{(\mathrm{B} - A) + (\mathrm{D} - \mathrm{C})}{2} \qquad (2)$$

where: A = time net deployment started,
B = time net fully deployed,
C = time net retrieval started, and
D = time net fully retrieved.

During each drift, the net was fished, or soaked, for approximately 20 minutes. The net was capable of capturing fish prior to being fully deployed, and during the time it was being retrieved. Therefore, mean fishing time for each set (MFT) was adjusted by adding half of the summed total time to set and retrieve the net. The distance covered by the drift varied depending on the time the net was in the water, as well as, water and wind conditions.

To calculate daily CPUE for the Mountain Village project, $CPUE_s$ was averaged as follows:

$$CPUE_d = \left(\sum_{s=1}^{n} CPUE_s \right) / n \qquad (3)$$

The average of all daily drifts was used as the daily CPUE statistic ($CPUE_d$) for developing relative abundance and timing information.

CPUE is the primary indication of relative run strength. Run timing statistics, quartile days, were also calculated based on the daily versus the overall total CPUE. Run timing statistics were compared and contrasted among the three lower river projects to determine the actual run timing of the Chinook salmon migration.

Once the catch is sampled, local residents were allowed to take the fish for subsistence use. All fish taken from the test fish catch were marked by cutting off both lobes of the caudal fin.

Salmon Migration Timing

Migration timing of Chinook salmon through the Lower Yukon Area was assessed using the median day of passage along with the period when the mid-50% of the run passed the project. Quartile days were defined based on the day when 25%, 50% and 75% of the run passed the project, based on the cumulative Chinook salmon CPUE. The first and third quartile day defined the mid-50% of the run.

Age, Sex, and Length Composition
Three scale samples were collected from all Chinook salmon captured in the test fishery for subsequent age determination. Scales are taken from the left side of the fish, approximately two rows above the lateral line, on the diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (Koo 1955). This is known as the "preferred area". The three scales taken from the preferred area were mounted on gum cards in the field. At the end of the season, all scale cards were delivered to ADF&G. ADF&G was responsible for processing and reading the scales for age determination.

Sex was determined and recorded based on internal examination of the sex products. Length of each Chinook salmon was measured from mid-eye to fork of tail (MEF), to the nearest 5 mm.

Genetic Sampling
As a part of the salmon sampling procedure, one axillary process tissue sample was collected from each Chinook salmon sampled. Genetic samples were collected by severing the process with a dog toenail clipper. Severed axillary process samples were placed into separate pre-labeled and numbered vials. Each sample vial number was cross referenced with the scale card and specimen number.

Conservation and Stewardship Experience for Rural Local Residents
ATC-contracted fishermen received training in test fishing protocols and sampling techniques from ADF&G staff and from the YDFDA-contract biologist. The YDFDA-contract biologist supervised the fishermen throughout the season and provided the necessary on-site training, information, and quality control assessment so that project objectives were achieved. Additionally, through on-site discussions regarding the management of the Chinook salmon run, this employment provided an opportunity for the test fishing crew to understand the intricate processes that test fishing provides to Yukon River Chinook salmon management.

RESULTS

Test Fishing
The 2010 fishing season was the first year for operation of the Mountain Village Chinook salmon drift test fishery. Test fishing occurred from June 2 through July 17, 2010. During that time, the test fish crew conducted 179 individual drifts on the north and south banks of the mainstem Yukon River (Appendix A1). Although 181 drift numbers are recorded, two drifts that were scheduled on the morning of July 11 were not completed because of heavy fog conditions. Additionally only 2 drifts were completed during the first and last day of project operations, June 2 and July 17, respectively.

During the majority of the test fishing operations, winds were from a westerly direction, and usually at 10 mph or less velocity. Skies were overcast, with an estimated 90%, or more, cloud cover for a majority, 53%, of observations. Few days were calm, but wind speeds in excess of 25mph occurred infrequently. Water conditions were calm for half of the drift sets, but were considered "rough" 21% of the time (Appendix A2). Chinook salmon were observed to be primarily captured horizontally in association with the middle and/or onshore portions of the net (69% of the observations) and vertically in association with the leadline and/or middle portions of the net (61% of the observations). Additionally, salmon were captured horizontally throughout the net in 18% of the observations and vertically throughout the net in 9% of the observations. Relatively few fish were caught in the offshore section of the net, 13%; and/or near the corkline, 16% (Appendix A2).Recorded air temperature ranged from 28^{o} F (-2.2 ^{o} C) to 65^{o} F (-18.3^{o} C) and averaged 49^{o} F (9.5^{o} C) over the course of the project (Appendix A2). Water temperature information is not available at this time. The water temperature monitoring device was inadvertently left

in the Mountain Village Kwik'pak barge. However, these data will be available at a later date after the monitoring device is retrieved and delivered to ADF&G.

Individual drifts that were not extended because of problems associated with snag encounters ranged in mean fishing time (MFT) from 7 to 33 minutes (Appendix A1). Individual drifts generally took an average of 2 minutes to set the net out. Excluding those drifts that were extended by problems associated with snags; net soak time ranged from 4 to 20 minutes and averaged 14 minutes. The time for pulling and picking the fish out of the net as it was retrieved ranged from 1 to 20 minutes and averaged 6 minutes (Appendix A1).

A total of 476 Chinook salmon were captured and retained during the test fishing project (Table 1). Fishermen observed 8 additional Chinook salmon that dropped out of the net as it was being retrieved. These fish were included in the calculation of the daily CPUE but recorded as "released" in Table 1. Daily Chinook salmon catches ranged from 0 caught, on numerous days, to 47 fish captured and retained, on June 30 (Table 1). During the project operation, 2 Chinook salmon with missing adipose fins were caught. The head of each fish was collected and analyzed for a coded wire tag. The missing adipose fin and the presence of a CWT indicated that these fish originated from a hatchery. The specific code on the CWT indicated that both these fish originated from the Whitehorse Fish Hatchery; both these fish were age-0.4 and from the 2005 brood year. One was released in the Yukon River and the other into McClintock River in Yukon, Canada. ASL data from individual fish are presented in Appendix Table 3.

Site number 2, located along the north bank of the mainstem Yukon River (Figure 3), consistently caught Chinook salmon throughout the duration of the project. The vast majority, over 95%, of the total number of Chinook salmon captured, including those observed to drop out, were from test fishing activities at site 2 (Appendix A1). Most, if not all the subsistence Chinook salmon fishing by villagers occurred on the north bank of the river above the village. A productive test fishing site in association with the south bank could not be found. Site 1 was located at two locations in association with the sand bar on the south side of the river (Figure 2). The original site 1 was located on the south side of the sandbar. This test fishing site was relocated to the north side of the sand bar after fishing was repeatedly hampered by snags. However, neither Site 1 location produced Chinook salmon. This site was abandoned on June 26 after prospecting for a more productive site on the south bank was thought to be found, Site 4 (Figure 2). The total number of Chinook salmon caught or observed dropping out of the net at Site 1 comprised a little more than 2% of the total (Appendix A1.).

Site 4 was located farther downstream and on the south side of the same sandbar. Although this site produced a few Chinook salmon early in the run, it also failed to produce adequate numbers of Chinook salmon during the remaining duration of the project. Chinook salmon catches from Site 4 comprised little more than 2% of the total Chinook salmon caught or observed dropping out of the net. Although additional prospecting for a fishing site in association with the south bank of the river continued for most of the season, a consistently productive site was not found.

Catch per Unit Effort (CPUE)

The cumulative total Mountain Village Test Fishery (MVTF) CPUE for Chinook salmon in 2010 was 689.18 (Table 1). Daily CPUE ranged from 0.00, recorded on numerous days, to 61.94, recorded on June 30. An examination of the daily CPUE indicates that 3 or 4 pulses of Chinook, separated by 1 day migrated past Mountain Village. The pulses at MVTF occurred during the periods: June 16-20, June 22-24, June 26-July 2 and July 7-9 (Figure 3). Highest CPUE was observed within the third pulse: 61.94 on June 30, 60.27 on June 26, and 56.93 on June 28.

Salmon Migration Timing
The mid-50% passage for the MVTF occurred between June 20 through June 30, 11days. Median day of passage for the MVTF occurred on June 26. Estimates of Chinook salmon passage through the MVTF correspond well with preliminary assessment of run timing at the LYTF and Pilot Station sonar projects (Figure 3)

Age, Sex and Length Composition
Of the 476 sets of scales taken from Chinook salmon caught in the MVTF, 87.6% were successfully aged. The age composition of fish sampled in the MVTF project was composed of 8 age classes ranging from age-1.2 to age-2.5. These age classes represented five brood years, 2006, 2005, 2004, 2003 and 2002, with Chinook salmon returning as 4, 5, 6, 7, and 8 year old fish, respectively (Table 4). The dominant age classes in the sample were age-1.3, 68.8%, and age –1.4, 26.4%. Other age classes individually accounted for no more than 2.2% of the sample (Table 2). Age-1.3 salmon accounted for 80.1% of the male component of the sample. Age-1.3 and age-1.4 accounted for 50.5% and 44.3% of the female component, respectively. The percentage of female Chinook salmon in the sample increased during the season, from 28.6%, in the first quartile, to 52.3%, in the fourth quartile (Figure 4). Interestingly, this pattern seems to be driven by age-1.3 female salmon (Figure 5).

Overall mean length of males was 757 mm. Mean length of females was 823 mm. Most of the salmon, 77.5%, were between 700 mm and 850 mm in length (Figure 6; Table 3). Most of the male salmon, 77.5%, were evenly distribute between the 700-750 and 75-800mm length bins (Figure 6; Table 3), while female Chinook salmon were most abundant, 42.9%, in the 800-850 length bin (Figure 6; Table 3). Chinook salmon greater than 900 mm comprised 3.4% of the sample (Table 3; Figure 7); female Chinook salmon comprised 62.5% of these large fish.

Average lengths of males, by age, ranged from 592 mm for age-1.2 to 828 mm for age-1.4 (Table 3). Female average length ranged from 760 mm for age-2.3 to 890 mm for age-1.5 salmon. Overall, the weighted mean age of males, 5.13 years, was slightly younger than the weighted mean age of females, 5.52 years, in the sample (Table 4) Females Chinook salmon represented 40.1% of the fish sampled (Table 3) and 40.0%, of the aged female salmon aged (Table 4).

Genetic Sampling
Genetic samples were collected from all 476 Chinook salmon captured and retained and placed in individually numbered vials. Genetic information from this collection will provide an additional estimate of the timing of the various Chinook salmon stocks through the lower Yukon River.

Conservation and Stewardship Experience for Rural Local Residents
This project, through its local hire component and involvement of local tribal government, provided an opportunity to build community capacity and stewardship. This project provided local residents work experience and training, in the areas of test fishing and fish sampling. Additionally, discussions among research biologists and fishermen and helpers regarding the need for these test fish data provided fishermen with insights into the Yukon Area salmon research and management programs. This project supported a resource management project in a cost effective manner and facilitates communications between community and government entities. In addition, the project sought to build community capacity and was supported in the local area.

DISCUSSION

The 2010 MVTF project for Chinook salmon operated successfully during its first season of operation. Information from this project provided valuable inseason and post season insight into the relative abundance and timing of the total Yukon River Chinook salmon run. This information, in conjunction with information from LYTF and the Pilot Station sonar project provided managers and research biologists with a better understanding of the entire Chinook salmon run.

During 2010, the vast majority of Chinook salmon caught during MVTF operations were caught along the north bank. Although there was some concern that a portion of the run moving along the south bank or north of the prominent sand bar in the test fish area would be missed, catches during the season in exploratory fishing operations failed to find substantial numbers of Chinook salmon on the south side of the river. In addition, nearly all of the subsistence fishers from Mountain Village fished along the north bank, upriver from the village, for Chinook salmon, indicating that fishing was good along the north bank, upriver from the village. From this information, we assumed that nearly all the fish migrated through this area along the north bank. Although the 7.5 inch drift gillnets used in this project probably does not adequately sample all Chinook salmon sizes, especially the very small Chinook salmon, we believe that the vast majority of fish moving through the area at the time of fishing operations during 2010 were susceptible to capture

Effective in 2011, the maximum mesh size gillnet allowed within the entire Yukon Area will be limited to 7.5 inch stretch mesh. However, ADF&G mangers decided to maintain the 8.5 inch gillnets in the LYTF operations into the future (Steve Hayes, ADF&G/CF, Anchorage, personal communication). Because the MVTF operations use 7.5 inch stretch mesh nets, the difference in the catches from these two projects may provide insight into the effects that the 7.5 inch maximum mesh restriction may have on the lower Yukon subsistence and commercial fisheries under differing age-class compositions of Chinook salmon runs.

CPUE and timing information from this project was timely and much timelier than the previous test fishing project at Marshall. Additionally, because of the concentrated nature of the river channel at the MVTF site, and the strongly likelihood that the vast majority of the fish migrate along the north bank, a representative sample of the entire run during each day throughout the duration of the project is highly likely. Further, the strategic location of the MVTF project, between two very important Lower Yukon projects, was used to verify that all lower river assessment projects, particularly the LYTF and Pilot Station sonar projects, were operating adequately. In the future, information from this project will be more useful as the database grows and the utility of the data is more fully understood.

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Table 1. Chinook and chum salmon catches and Chinook salmon CPUE, Mountain Village drift test net fishery, June 2-July17, 2010.

	Chinook Salmon					Chum Salmon		
Date	Retained	Released	Total	CPUE	Cumulative	Retained	Released	Total
6/2/2010	0	0	0	0.00	0.00	0	0	0
6/3/2010	0	0	0	0.00	0.00	0	0	0
6/4/2010	0	0	0	0.00	0.00	0	0	0
6/5/2010	0	0	0	0.00	0.00	0	0	0
6/6/2010	0	0	0	0.00	0.00	0	0	0
6/7/2010	0	0	0	0.00	0.00	0	0	0
6/8/2010	0	0	0	0.00	0.00	0	0	0
6/9/2010	0	0	0	0.00	0.00	0	0	0
6/10/2010	0	0	0	0.00	0.00	0	0	0
6/11/2010	0	0	0	0.00	0.00	0	0	0
6/12/2010	0	0	0	0.00	0.00	0	0	0
6/13/2010	0	0	0	0.00	0.00	0	0	0
6/14/2010	6	0	6	8.57	8.57	0	0	0
6/15/2010	3	0	3	4.66	13.23	0	0	0
6/16/2010	21	1	22	32.98	46.21	7	0	7
6/17/2010	23	0	23	28.85	75.05	4	0	4
6/18/2010	19	0	19	26.06	101.11	2	0	2
6/19/2010	37	0	37	49.99	151.09	4	0	4
6/20/2010	26	1	27	34.56	185.65	5	0	5
6/21/2010	3	1	4	6.50	192.15	0	0	0
6/22/2010	14	0	14	19.68	211.84	4	0	4
6/23/2010	25	1	26	37.10	248.93	3	0	3
6/24/2010	10	0	10	19.99	268.93	6	0	6
6/25/2010	8	0	8	12.71	281.64	0	0	0
6/26/2010	38	0	38	60.27	341.91	9	0	9
6/27/2010	26	2	28	47.04	388.95	4	0	4
6/28/2010	35	0	35	56.93	445.88	29	0	29
6/29/2010	13	0	13	20.62	466.50	27	0	27
6/30/2010	47	0	47	61.94	528.44	12	0	12
7/1/2010	16	0	16	24.61	553.04	2	0	2
7/2/2010	10	0	10	16.70	569.74	6	0	6
7/3/2010	4	0	4	7.01	576.75	3	0	3
7/4/2010	5	0	5	8.33	585.08	6	0	6

-continued-

Table 1. page 2 of 2.

	Chinook Salmon					Chum Salmon		
Date	Retained	Released	Total	CPUE	Cumulative	Retained	Released	Total
7/5/2010	0	0	0	0.00	585.08	7	0	7
7/6/2010	5	0	5	8.57	593.66	19	0	19
7/7/2010	11	0	11	17.18	610.83	8	3	11
7/8/2010	23	0	23	25.56	636.39	9	3	12
7/9/2010	11	0	11	11.36	647.75	0	12	12
7/10/2010	7	0	7	8.29	656.04	1	3	4
7/11/2010	0	0	0	0.00	656.04	0	3	3
7/12/2010	7	0	7	8.31	664.34	0	0	0
7/13/2010	8	1	9	10.13	674.47	1	9	10
7/14/2010	3	1	4	4.71	679.18	2	11	13
7/15/2010	10	0	10	10.00	689.18	3	2	5
7/16/2010	0	0	0	0.00	689.18	1	1	2
7/17/2010	2	0	2	0.00	689.18	1	2	3
Totals	476	8	484	689.18		185	49	234

Table 2. Age and sex composition and mean length by age and sex of sampled Chinook salmon captured in the Mountain Village test 7.5 inch gillnet test fishery, 2010.

Sample			Brood Year (Age)															
			2006		2005				2004				2003				2002		Total	
			(1.2)		(1.3)		(0,4)		(1.4)		(2.3)		(1.5)		(2.4)		(2.5)			
Dates	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/14 - 6/20	120	Male	3	2.5	68	56.7	1	0.8	13	10.8	1	0.8	0	0.0	0	0.0	0	0.0	86	71.7
Quartile 1		Female	0	0.0	15	12.5	0	0.0	16	13.3	0	0.0	1	0.8	1	0.8	1	0.8	34	28.3
		Subotal	3	2.5	83	69.2	1	0.8	29	24.2	1	0.8	1	0.8	1	0.8	1	0.8	120	100.0
		Male Mean Length	610		740		830		838		680		-		-		-			
		SE	80		4		-		21		-		-		-		-			
		Range	520	770	660	825	-	-	730	990	-	-	-	-	-	-	-	-		
		n	3		68		1		13		1		0		0		0			
		Female Mean Length	-		789		-		842		-		890		945		850			
		SE	-		14		-		9		-		-		-		-			
		Range	-	-	665	860	-	-	760	905	-	-	-	-	-	-	-	-		
		n	0		15		0		16		0		1		1		1			

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Sample			Brood Year (Age)															
			2006		2005			2004			2003			2002	Total	
			(1.2)		(1.3)		(0.4)	(1.4)		(2.3)	(1.5)		(2.4)	(2.5)		
Dates	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/21 - 6/26	84	Male	3	3.6	41	48.8	0	0.0	7	8.3	2	2.4	0	0.0	0	0.0	0	0.0	53	63.1
Quartile 2		Female	0	0.0	13	15.5	1	1.2	17	20.2	0	0.0	0	0.0	0	0.0	0	0.0	31	36.9
		Subotal	3	2.5	54	45.0	1	1.2	24	20.0	2	1.7	0	0.0	0	0.0	0	0.0	84	70.0
		Male Mean Length	573		749		-		824		763		-		-		-			
		SE	20		8		-		22		13		-		-		-			
		Range	540	610	655	885	-	-	760	930	750	775	-	-	-	-	-	-		
		n	3		41		0		7		2		0		0		0			
		Female Mean Length	-		801		805		836		-		-		-		-			
		SE	-		12		-		10		-		-		-		-			
		Range	-	-	710	880	-	-	740	920	-	-	-	-	-	-	-	-		
		n	0		13		1		17		0		0		0		0			

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Table 2. Page 3 of 5.

Sample			Brood Year (Age) 2006 (1.2)		2005 (1.3)		2005 (0.4)		2004 (1.4)		2004 (2.3)		2003 (1.5)		2003 (2.4)		2002 (2.5)		Total	
Dates	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/27 - 6/30	105	Male	2	1.9	50	47.6	0	0.0	7	6.7	0	0.0	0	0.0	1	1.0	0	0.0	60	57.1
Quartile 3		Female	0	0.0	24	22.9	0	0.0	18	17.1	1	1.0	0	0.0	2	1.9	0	0.0	45	42.9
		Subotal	2	1.7	74	61.7	0	0.0	25	20.8	1	0.8	0	0.0	3	2.5	0	0.0	105	87.5
		Male Mean Length	575		760		-		811		-		-		815		-			
		SE	30		6		-		30		-		-		-		-			
		Range	545	605	650	870	-	-	710	940	-	-	-	-	-	-	-	-		
		n	2		50		0		7		0		0		1		0			
		Female Mean Length	-		779		-		845		760		-		815		-			
		SE	-		14		-		13		-		-		20		-			
		Range	-	-	505	865	-	-	740	935	-	-	-	-	795	815	-	-		
		n	0		24		0		18		1		0		2		0			

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Table 2. Page 4 of 5.

Sample			Brood Year (Age) 2006 (1.2)		2005 (1.3)		2005 (0.4)		2004 (1.4)		2004 (2.3)		2003 (1.5)		2003 (2.4)		2002 (2.5)		Total	
Dates	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/01 - 7/17	109	Male	1	0.9	42	38.5	0	0.0	8	7.3	1	0.9	0	0.0	0	0.0	0	0.0	52	47.7
Quartile 4		Female	0	0.0	34	31.2	0	0.0	23	21.1	0	0.0	0	0.0	0	0.0	0	0.0	57	52.3
		Subotal	1	0.8	76	63.3	0	0.0	31	25.8	1	0.8	0	0.0	0	0.0	0	0.0	109	90.8
		Male Mean Length	630		762		-		828		675		-		-		-			
		SE	-		6		-		19		-		-		-		-			
		Range	-	-	655	850	-	-	745	910	-	-	-	-	-	-	-	-		
		n	1		42		0		8		1		0		0		0			
		Female Mean Length	-		818		-		862		-		-		-		-			
		SE	-		7		-		8		-		-		-		-			
		Range	-	-	735	890	-	-	800	950	-	-	-	-	-	-	-	-		
		n	0		34		0		23		0		0		0		0			

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Table 2. Page 5 of 5.

Sample			Brood Year (Age)															
			2006		2005			2004				2003				2002	Total	
			(1.2)		(1.3)		(0.4)	(1.4)		(2.3)		(1.5)		(2.4)		(2.5)		
Dates	Size		N	%	N	%	N %	N	%	N	%	N	%	N	%	N %	N	%
Season	418	Male	9	2.2	201	48.1	1 0.2	35	8.4	4	1.0	0	0.0	1	0.2	0 0.0	251	60.0
		Female	0	0.0	86	20.6	1 0.2	74	17.7	1	0.2	1	0.2	3	0.7	1 0.2	167	40.0
		Subotal	9	7.5	287	239.2	2 0.5	109	90.8	5	4.2	1	0.8	4	3.3	1 0.8	418	348.3
		Male Mean Length	592		751		830	828		720		-		815		-		
		SE	26		3		-	11		25		-		-		-		
		Range	520	770	650	885	- -	710	990	675	775	-	-	-	-	- -		
		n	9		201		1	35		4		0		1		0		
		Female Mean Length	-		800		805	848		760		890		858		850		
		SE	-		6		-	5		-		-		45		-		
		Range	-	-	505	890	- -	740	950	-	-	-	-	795	945	- -		
		n	0		86		1	74		1		1		3		1		

Table 3. Length frequency distribution of sampled Chinook salmon captured in the Mountain Village test drift 7.5 inch gillnet fishery, 2010.

Length Bins (mm)	Total Caught		Males		Females	
	number	%	number	%	number	%
<650	9	1.9	8	1.7	1	0.2
650-699	28	5.9	33	6.9	2	0.4
700-750	117	24.6	86	18.1	12	2.5
751-799	124	26.1	85	17.9	39	8.2
800-850	128	26.9	46	9.7	82	17.2
851-899	54	11.3	9	1.9	45	9.5
900-999	16	3.4	6	1.3	10	2.1
>1,000	0	0.0	0	0.0	0	0.0
Total	476	100.0	273	57.4	191	40.1
Average length (mm)		784		757		823

Table 4. Length frequency distribution of aged Chinook salmon from the Mountain Village test drift Chinook salmon test fishery, 7.5 in stretch mesh gillnets, 2010.

Length	Total Aged			Males			Females		
Bins (mm)	number	%	mean age	number	%	mean age	number	%	mean age
<650	9	2.2	4.11	8	1.9	4.00	1	0.2	5.00
650-699	26	6.2	5.06	24	5.8	5.07	2	0.5	5.00
700-750	103	24.7	5.08	92	22.1	5.07	11	2.6	5.17
751-799	107	25.7	5.12	73	17.5	5.07	34	8.2	5.24
800-850	110	26.4	5.50	41	9.8	5.41	69	16.5	5.55
851-899	48	11.5	5.71	6	1.4	5.67	42	10.1	5.71
900-999	14	3.4	6.07	6	1.4	6.00	8	1.9	6.13
>1,000	0	0.0		0	0.0		0	0.0	
Total or mean	417	100.0	5.29	250	60.0	5.13	167	40.0	5.52
% aged	87.6			91.6			87.4		
Mean length (mm)		783			756			823	

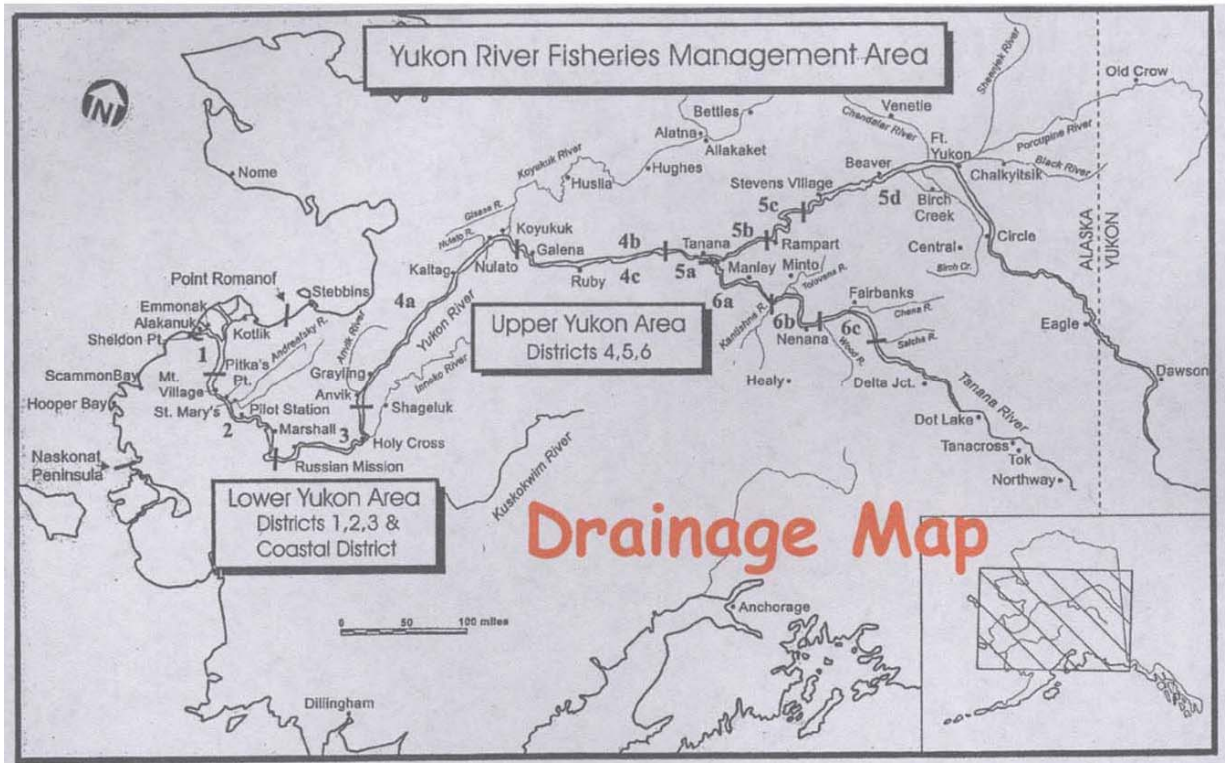

Figure 1. Map of the Alaskan portion of the Yukon River drainage depicting the Alaska Department of Fish and Game commercial fisheries management districts and communities.

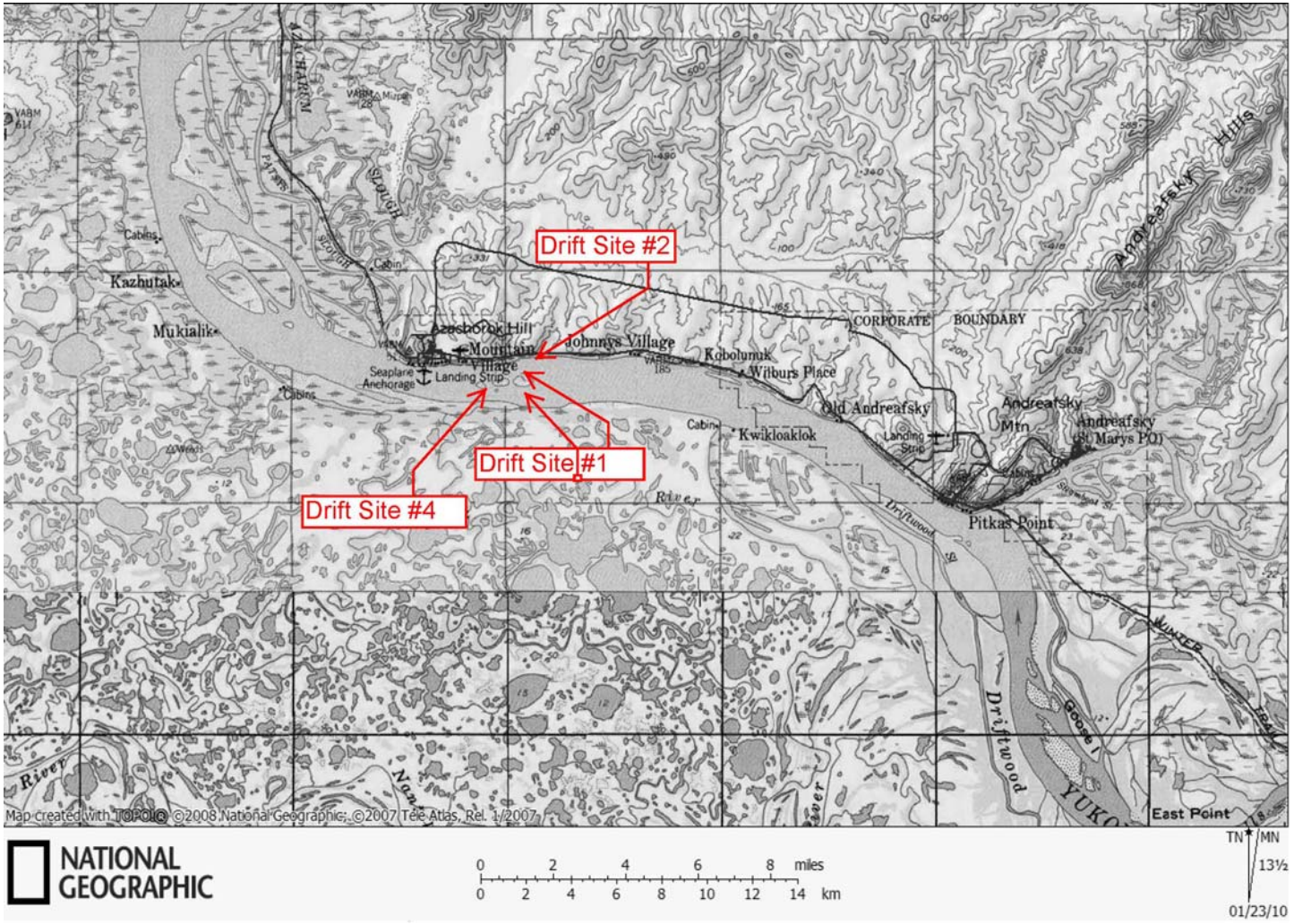

Figure 2. Map of Yukon River in the Mountain Village vicinity, with drift sites.

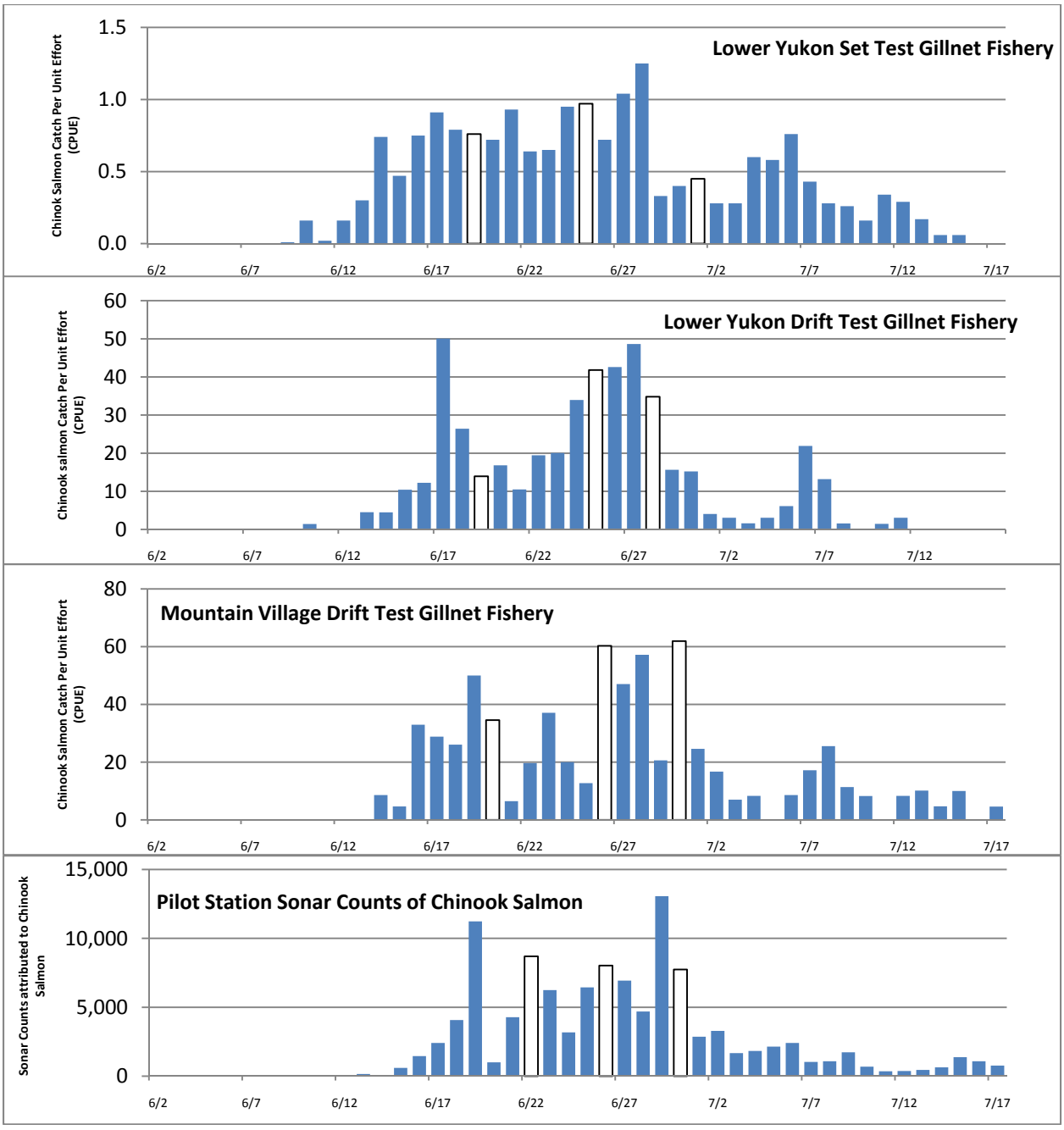

Figure 3. Comparison of Chinook salmon test fish catch per unit effort (CPUE) and sonar counts attributed to Chinook salmon, Lower Yukon Area, 2010. Quartile days are indicated by the white bars in each graph. Note that the LYTF and Pilot Station sonar data are preliminary and subject to change.

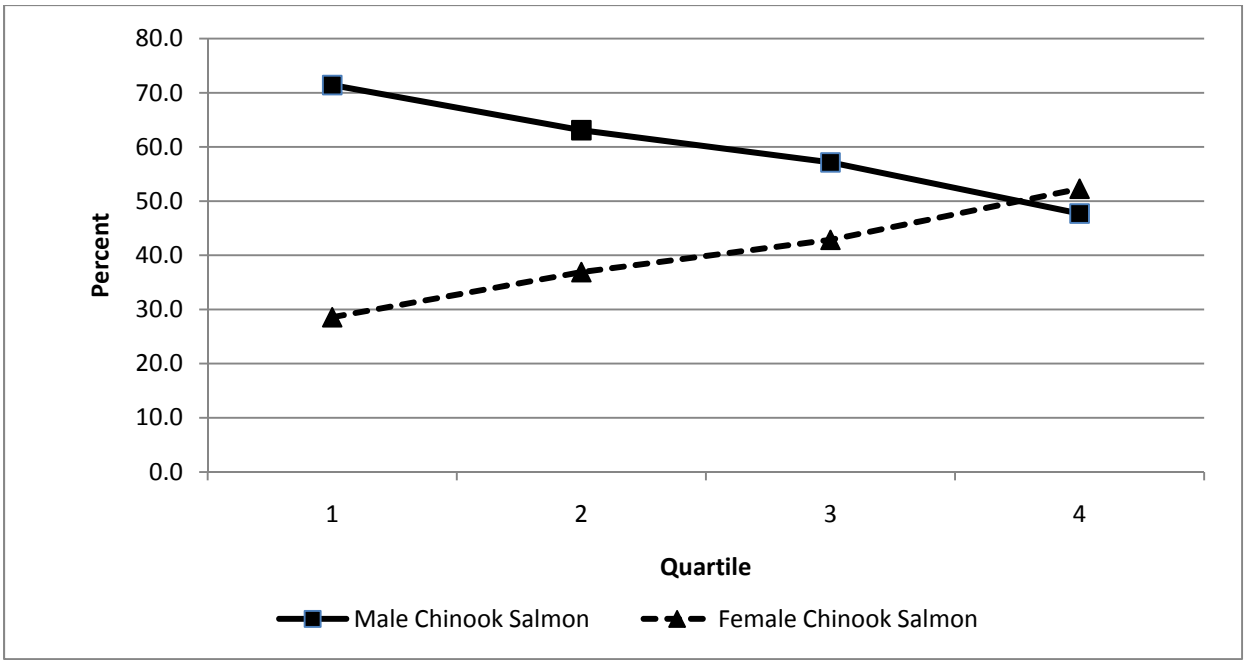

Figure 4. Percent female and male Chinook salmon sampled, by quartile, from the Mountain Village drift test net catch, 2010.

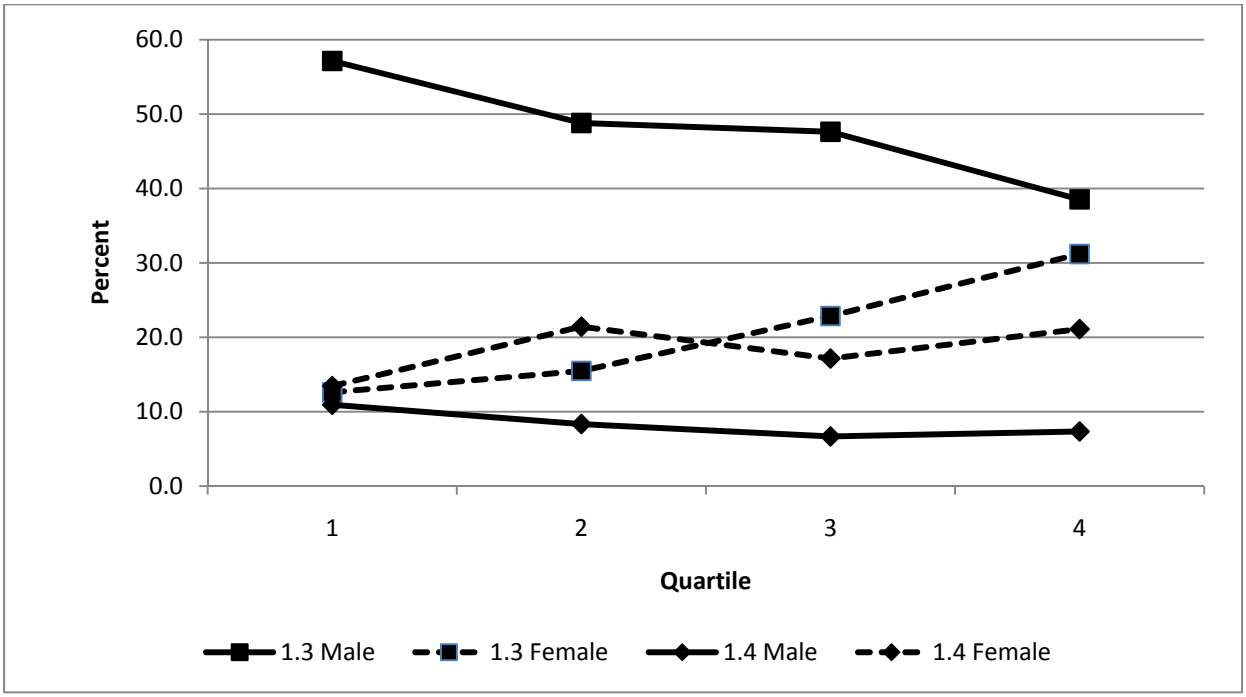

Figure 5. Percent male and female Chinook salmon, by quartile and dominant age classes, age-1.3 and age-1.4, sampled from the Mountain Village drift test fish catch, 2010.

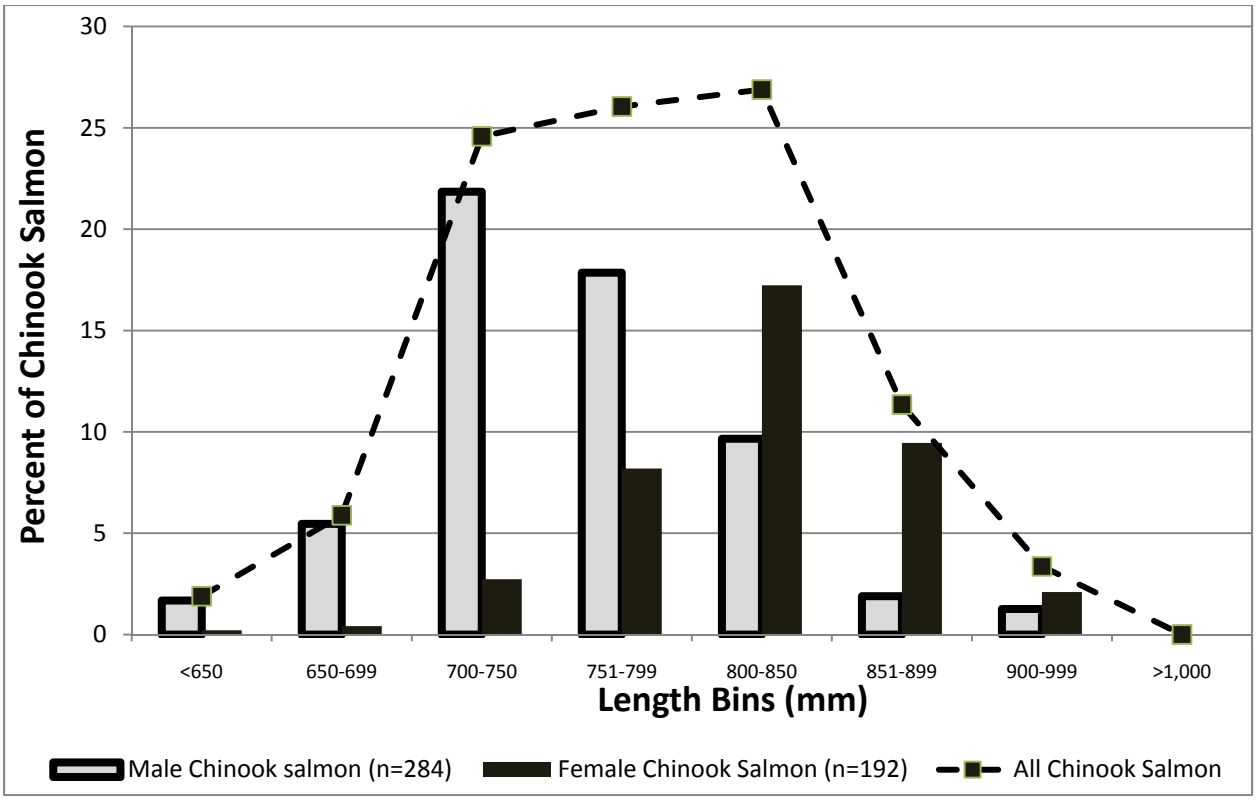

Figure 6. Length frequency distribution of Chinook salmon sampled from the Mountain Village Test Fish project, Yukon River, 2011.

Appendix A 1. Chinook salmon drift test fish log, Mountain Village, Alaska, June 2 - July 17, 2010

			Fishing Time					Catch						
			(A)	(B)	(D)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
2-Jun	1	2	16:58	17:00	17:13	17:16	0:16	0	0	0	0	0	0	0
2-Jun	2	1	17:21	17:23	17:37	17:42	0:18	0	0	0	0	0	0	0
3-Jun	3	2	6:50	6:53	7:06	7:10	0:18	0	0	0	0	0	0	0
3-Jun	4	1	7:15	7:19	7:32	7:36	0:19	0	0	0	0	0	0	0
3-Jun	5	2	18:46	18:49	19:02	19:08	0:19	0	0	0	0	0	0	0
3-Jun	6	1	19:12	19:15	19:28	19:32	0:18	0	0	0	0	0	0	0
4-Jun	7	2	6:48	6:51	7:04	7:08	0:18	0	0	0	0	0	0	0
4-Jun	8	1	7:13	7:16	7:31	7:35	0:20	0	0	0	0	0	0	0
4-Jun	9	2	18:49	18:52	19:05	19:09	0:18	0	0	0	0	0	0	0
4-Jun	10	1	19:13	19:16	19:29	20:44	0:53	0	0	0	0	0	0	0
5-Jun	11	1	6:44	6:47	7:00	7:03	0:17	0	0	0	0	0	0	0
5-Jun	12	2	7:08	7:11	7:24	7:29	0:18	0	0	0	0	0	0	0
5-Jun	13	1	18:49	18:51	19:05	19:08	0:17	0	0	0	0	0	0	0
5-Jun	14	2	19:14	19:16	19:31	19:34	0:18	0	0	0	0	0	0	0
6-Jun	15	1	6:46	6:49	7:02	7:05	0:17	0	0	0	0	0	0	0
6-Jun	16	2	7:11	7:13	7:27	7:30	0:17	0	0	0	0	0	0	0
6-Jun	17	1	18:47	18:50	19:03	19:07	0:18	0	0	0	0	0	0	0
6-Jun	18	2	19:12	19:14	19:28	19:31	0:17	0	0	0	0	0	0	0
7-Jun	19	1	4:47	4:50	5:03	5:07	0:18	0	0	0	0	0	0	0
7-Jun	20	2	5:13	5:16	5:28	5:33	0:17	0	0	0	0	0	0	1[b]
7-Jun	21	1	18:43	18:47	18:59	19:03	0:18	0	0	0	0	0	0	0
7-Jun	22	2	19:09	19:11	19:25	19:29	0:18	0	0	0	0	0	0	0

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			Fishing Time					Catch						
			(A)	(B)	(C)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
8-Jun	23	1	6:44	6:47	7:00	7:04	0:18	0	0	0	0	0	0	1[b]
8-Jun	24	2	7:09	7:12	7:26	7:31	0:19	0	0	0	0	0	0	0
8-Jun	25	1	18:45	18:48	19:01	19:05	0:18	0	0	0	0	0	0	0
8-Jun	26	2	19:09	19:12	19:25	19:29	0:18	0	0	0	0	0	0	0
9-Jun	27	1	5:42	5:45	5:58	6:01	0:17	0	0	0	0	0	0	0
9-Jun	28	2	6:06	6:10	6:21	6:25	0:17	0	0	0	0	0	0	0
9-Jun	29	1	18:45	18:48	19:01	19:04	0:17	0	0	0	0	0	0	0
9-Jun	30	2	19:09	19:12	19:19	19:22	0:11	0	0	0	0	0	0	0
10-Jun	31	1	6:46	6:50	7:02	7:06	0:18	0	0	0	0	0	0	0
10-Jun	32	2	7:09	7:12	7:26	7:29	0:18	0	0	0	0	0	0	0
10-Jun	33	1	18:45	18:48	19:01	19:05	0:18	0	0	0	0	0	0	0
10-Jun	34	2	19:07	19:10	19:23	19:27	0:18	0	0	0	0	0	0	0
11-Jun	35	1	6:45	6:48	7:01	7:05	0:18	0	0	0	0	0	0	0
11-Jun	36	2	7:07	7:09	7:23	7:27	0:18	0	0	0	0	0	0	0
11-Jun	37	1	18:41	18:45	18:57	19:01	0:18	0	0	0	0	0	0	0
11-Jun	38	2	19:03	19:06	19:19	19:22	0:17	0	0	0	0	0	0	0
12-Jun	39	1	6:44	6:47	7:00	7:04	0:18	0	0	0	0	0	0	0
12-Jun	40	2	7:05	7:08	7:21	7:24	0:17	0	0	0	0	0	0	0
12-Jun	41	1	17:39	17:42	17:55	18:00	0:18	0	0	0	0	0	0	0
12-Jun	42	2	18:03	18:05	18:18	18:22	0:17	0	0	0	0	0	0	0
13-Jun	43	1	6:41	6:44	6:57	7:01	0:18	0	0	0	0	0	0	0
13-Jun	44	2	7:03	7:06	7:19	7:24	0:18	0	0	0	0	0	0	0

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			Fishing Time					Catch						
			(A)	(B)	(C)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
13-Jun	46	2	17:41	17:44	17:58	18:03	0:19	0	0	0	0	0	0	0
14-Jun	47	1	7:43	7:45	8:02	8:09	0:22	0	0	0	0	0	0	0
14-Jun	48	2	8:10	8:13	8:27	8:35	0:21	1	0	1	0	0	0	0
14-Jun	49	1	18:21	18:24	18:37	18:42	0:18	0	0	0	0	0	0	0
14-Jun	50	2	18:48	18:51	19:05	19:13	0:21	5	0	5	0	0	0	0
15-Jun	51	1	8:00	8:02	8:16	8:21	0:18	0	0	0	0	0	0	0
15-Jun	52	2	8:23	8:26	8:39	8:45	0:19	1	0	1	0	0	0	0
15-Jun	53	1	19:45	19:48	20:02	20:09	0:20	0	0	0	0	0	0	1[b]
15-Jun	54	2	20:11	20:14	20:27	20:34	0:19	2	0	2	0	0	0	0
16-Jun	55	1	7:54	7:56	8:10	8:18	0:20	1	0	1	0	0	0	0
16-Jun	56	2	8:20	8:22	8:35	8:44	0:19	9	0	9	1	0	1	0
16-Jun	57	1	19:51	19:53	20:08	20:14	0:20	1	1	2	0	0	0	1[b]
16-Jun	58	2	20:16	20:19	20:30	20:43	0:20	10	0	10	6	0	6	0
17-Jun	59	1	7:21	7:24	7:38	7:44	0:20	0	0	0	0	0	0	0
17-Jun	60	2	7:45	7:47	8:00	8:09	0:19	6	0	6	2	0	2	0
17-Jun	61	1	19:00	19:03	19:17	19:23	0:20	0	0	0	0	0	0	0
17-Jun	62	2	19:25	19:27	19:38	20:04	0:26	17	0	17	2	0	2	0
18-Jun	63	1	7:21	7:23	7:38	7:43	0:19	0	0	0	0	0	0	0
18-Jun	64	2	7:46	7:48	8:02	8:16	0:23	11	0	11	2	0	2	0
18-Jun	65	1	18:57	18:59	19:15	19:21	0:21	0	0	0	0	0	0	0
18-Jun	66	2	19:24	19:26	19:40	19:49	0:20	8	0	8	0	0	0	0

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			Fishing Time					Catch						
			(A)	(B)	(C)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
19-Jun	67	1	7:10	7:12	7:26	7:31	0:18	1	0	1	1	0	1	0
19-Jun	68	2	7:35	7:37	7:51	8:03	0:22	11	0	11	0	0	0	0
19-Jun	69	1	19:05	19:07	19:23	19:31	0:22	1	0	1	1	0	1	0
19-Jun	70	2	19:33	19:35	19:48	20:03	0:22	24	0	24	2	0	2	0
20-Jun	71	1	7:12	7:14	7:27	7:34	0:18	0	0	0	0	0	0	0
20-Jun	72	2	7:36	7:38	7:50	8:03	0:20	10	1	11	1	0	1	0
20-Jun	73	1	19:06	19:08	19:22	19:26	0:18	0	0	0	0	0	0	0
20-Jun	74	2	19:28	19:30	19:45	20:03	0:26	16	0	16	4	0	4	0
21-Jun	75	1	7:11	7:13	7:25	7:30	0:16	0	0	0	0	0	0	0
21-Jun	76	2	7:32	7:34	7:46	7:54	0:18	3	0	3	0	0	0	0
21-Jun	77	1	19:17	19:19	19:31	19:37	0:17	0	0	0	0	0	0	0
21-Jun	78	2	19:39	19:41	19:55	20:03	0:20	0	1	1	0	0	0	0
22-Jun	79	1	7:16	7:18	7:29	7:36	0:16	1	0	1	0	0	0	0
22-Jun	80	2	7:39	7:40	7:54	8:08	0:22	12	0	12	2	0	2	0
22-Jun	81	1	19:12	19:14	19:28	19:36	0:20	1	0	1	1	0	1	0
22-Jun	82	2	19:39	19:41	19:54	20:00	0:18	0	0	0	1	0	1	0
23-Jun	83	1	7:25	7:27	7:41	7:46	0:18	1	0	1	0	0	0	0
23-Jun	84	2	7:48	7:50	8:02	8:09	0:17	7	0	7	1	0	1	0
23-Jun	85	1	19:05	19:07	19:19	19:25	0:17	0	0	0	0	0	0	0
23-Jun	86	2	19:27	19:28	19:40	20:00	0:23	17	1	18	2	0	2	0
24-Jun	87	1	7:22	7:24	7:37	7:44	0:18	1	0	1	2	0	2	0
24-Jun	88	2	7:43	7:45	7:54	8:01	0:14	8	0	8	4	0	4	0

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			Fishing Time					Catch						
			(A)	(B)	(C)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
24-Jun	89	1	19:03	19:05	19:18	19:21	0:16	0	0	0	0	0	0	0
24-Jun	90	2	19:24	19:26	19:40	19:40	0:16	1	0	1	0	0	0	0
25-Jun	91	1	7:29	7:31	7:45	7:50	0:18	1	0	1	0	0	0	0
25-Jun	92	2	7:52	7:54	8:05	8:10	0:15	2	0	2	0	0	0	0
25-Jun	93	1	19:17	19:19	19:32	19:36	0:17	1	0	1	0	0	0	0
25-Jun	94	2	19:39	19:41	19:52	20:10	0:22	4	0	4	0	0	0	0
26-Jun	95	1	7:03	7:05	7:19	7:22	0:17	0	0	0	0	0	0	0
26-Jun	95	1	7:03	7:05	7:19	7:22	0:17	0	0	0	0	0	0	0
26-Jun	96	2	7:26	7:28	7:42	7:53	0:21	19	0	19	3	0	3	0
26-Jun	97	4	8:06	8:07	8:15	8:18	0:10	1	0	1	1	0	1	0
26-Jun	98	2	19:05	19:07	19:20	19:29	0:19	16	0	16	3	0	3	0
26-Jun	99	4	19:40	19:42	19:55	20:00	0:17	2	0	2	2	0	2	0
27-Jun	100	2	7:13	7:14	7:28	7:32	0:17	13	2	15	0	0	0	0
27-Jun	101	4	7:44	7:46	8:00	8:06	0:19	1	0	1	2	0	2	0
27-Jun	102	2	19:01	19:03	19:15	19:25	0:19	11	0	11	2	0	2	0
27-Jun	103	4	19:34	19:36	19:50	19:55	0:18	1	0	1	0	0	0	0
28-Jun	104	2	6:38	6:40	6:54	7:00	0:19	16	0	16	2	0	2	0
28-Jun	105	4	7:12	7:15	7:30	7:35	0:20	0	0	0	6	0	6	0
28-Jun	106	2	19:22	19:24	19:35	19:45	0:18	19	0	19	15	0	15	0
28-Jun	107	4	20:00	20:02	20:17	20:20	0:18	0	0	0	6	0	6	0
29-Jun	108	2	6:56	6:57	7:12	7:16	0:18	2	0	2	1	0	1	0

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			Fishing Time					Catch						
			(A)	(B)	(C)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
29-Jun	109	4	7:23	7:25	7:38	7:48	0:20	1	0	1	1	0	1	0
29-Jun	110	2	18:58	19:00	19:14	19:20	0:19	10	0	10	16	0	16	0
29-Jun	111	4	19:35	19:36	19:40	19:45	0:07	0	0	0	9	0	9	0
30-Jun	112	2	6:46	6:48	7:02	7:14	0:22	22	0	22	0	0	0	0
30-Jun	113	4	7:21	7:22	7:34	7:39	0:15	1	0	1	0	0	0	0
30-Jun	114	2	19:05	19:07	19:23	19:35	0:24	24	0	24	2	0	2	0
30-Jun	115	4	19:45	19:46	20:00	20:05	0:17	0	0	0	10	0	10	0
1-Jul	116	2	6:51	6:52	7:09	7:13	0:20	10	0	10	0	0	0	0
1-Jul	117	4	7:23	7:24	7:38	7:43	0:17	1	0	1	2	0	2	0
1-Jul	118	2	19:14	19:16	19:30	19:36	0:19	5	0	5	0	0	0	0
1-Jul	119	4	19:40	19:43	19:55	19:59	0:17	0	0	0	0	0	0	0
2-Jul	120	2	6:54	6:56	7:10	7:14	0:18	2	0	2	1	0	1	0
2-Jul	121	4	7:18	7:20	7:39	7:41	0:22	1	0	1	0	0	0	0
2-Jul	122	2	19:05	19:07	19:20	19:25	0:17	7	0	7	5	0	5	0
2-Jul	123	4	19:35	19:37	19:50	20:00	0:20	0	0	0	0	0	0	0
3-Jul	124	2	7:13	7:15	7:28	7:33	0:17	1	0	1	1	0	1	0
3-Jul	125	4	7:38	7:40	7:55	7:58	0:18	0	0	0	1	0	1	0
3-Jul	126	2	19:04	19:06	19:18	19:24	0:17	3	0	3	0	0	0	0
3-Jul	127	4	19:30	19:32	19:45	19:50	0:17	0	0	0	1	0	1	0
4-Jul	128	2	7:33	7:35	7:48	7:54	0:18	5	0	5	0	0	0	0
4-Jul	129	4	8:00	8:03	8:15	8:20	0:17	0	0	0	6	0	6	0
4-Jul	130	2	19:05	19:07	19:20	19:25	0:17	0	0	0	0	0	0	0

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			Fishing Time					Catch							
			(A)	(B)	(C)	(C)	(E)	Chinook Salmon			Summer Chum Salmon			Other	
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch	
4-Jul	131	4	19:30	19:32	19:45	19:48	0:16	0	0	0	0	0	0	0	
5-Jul	132	2	7:05	7:07	7:20	7:25	0:17	0	0	0	0	0	0	0	
5-Jul	133	4	7:35	7:37	7:50	7:55	0:17	0	0	0	0	0	0	0	
5-Jul	134	2	19:05	19:07	19:20	19:25	0:17	0	0	0	7	0	7	0	
5-Jul	135	4	19:35	19:37	19:50	19:56	0:18	0	0	0	0	0	0	0	
6-Jul	136	2	7:15	7:17	7:30	7:35	0:17	5	0	5	0	0	0	0	
6-Jul	137	4	7:45	7:47	8:00	8:05	0:17	0	0	0	1	0	1	0	
6-Jul	138	2	19:05	19:06	19:20	19:25	0:17	0	0	0	10	0	10	0	
6-Jul	139	4	19:30	19:32	19:45	19:50	0:17	0	0	0	8	0	8	0	
7-Jul	140	2	6:58	7:00	7:15	7:22	0:20	6	0	6	1	1	2	0	
7-Jul	141	4	7:28	7:30	7:45	7:50	0:19	1	0	1	2	2	4	0	
7-Jul	142	2	19:30	19:32	19:45	19:50	0:17	4	0	4	0	0	0	0	
7-Jul	143	4	20:00	20:02	20:15	20:20	0:17	0	0	0	5	0	5	0	
8-Jul	144	2	8:20	8:23	8:38	8:56	0:27	10	0	10	7	0	7	0	
8-Jul	145	4	9:00	9:03	9:18	9:24	0:21	0	0	0	0	0	0	0	
8-Jul	146	2	19:25	19:29	19:46	19:58	0:27	13	0	13	1	3	4	0	
8-Jul	147	4	20:05	20:09	20:24	20:36	0:25	0	0	0	1	0	1	0	
9-Jul	148	2	7:16	7:20	7:40	7:58	0:33	7	0	7	0	7	7	0	
9-Jul	149	4	8:03	8:06	8:22	8:28	0:22	0	0	0	0	1	1	0	
9-Jul	150	2	19:14	19:17	19:33	19:43	0:24	4	0	4	0	4	4	2[b,c]	
9-Jul	151	4	19:52	19:55	20:12	20:20	0:24	0	0	0	0	0	0	0	
10-Jul	152	2	7:34	7:38	7:54	8:06	0:26	6	0	6	1	3	4	0	

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			Fishing Time					Chinook Salmon			Summer Chum Salmon			Other
			(A)	(B)	(C)	(D)	(E)							
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
10-Jul	153	4	8:14	8:17	8:32	8:40	0:22	1	0	1	0	0	0	0
10-Jul	154	2	19:21	19:24	19:39	19:46	0:21	0	0	0	0	0	0	0
10-Jul	155	4	19:51	19:53	20:08	20:14	0:20	0	0	0	0	0	0	0
11-Jul	156	2	no fishing due to dense fog											
11-Jul	157	4	no fishing due to dense fog											
11-Jul	158	2	19:12	19:14	19:33	19:38	0:23	0	0	0	0	2	2	0
11-Jul	159	4	19:44	19:46	20:06	20:11	0:24	0	0	0	0	1	1	0
12-Jul	160	2	7:30	7:33	7:52	7:58	0:25	3	0	3	0	0	0	0
12-Jul	161	4	8:05	8:08	8:28	8:36	0:27	0	0	0	0	0	0	0
12-Jul	162	2	17:16	17:19	17:38	17:45	0:25	4	0	4	0	0	0	0
12-Jul	163	4	17:50	17:53	18:12	18:19	0:25	0	0	0	0	0	0	0
13-Jul	164	2	7:28	7:31	7:50	7:58	0:26	3	0	3	1	1	2	0
13-Jul	165	4	8:03	8:06	8:26	8:33	0:26	0	0	0	0	1	1	0
13-Jul	166	2	19:36	19:38	19:58	20:08	0:27	5	1	6	0	7	7	0
13-Jul	167	4	20:13	20:15	20:35	20:40	0:24	0	0	0	0	0	0	1[c]
14-Jul	168	2	7:23	7:25	7:43	7:54	0:25	3	1	4	0	10	10	0
14-Jul	169	4	8:01	8:04	8:23	8:33	0:27	0	0	0	0	1	1	0
14-Jul	170	2	17:12	17:15	17:34	17:39	0:24	0	0	0	1	0	1	0
14-Jul	171	4	17:44	17:47	18:06	18:11	0:24	0	0	0	1	0	1	0
15-Jul	172	2	7:26	7:29	7:49	7:57	0:27	0	0	0	0	0	0	0
15-Jul	173	4	8:06	8:09	8:29	8:38	0:27	0	0	0	0	0	0	0
15-Jul	174	2	19:30	19:34	19:54	20:06	0:30	10	0	10	0	2	2	0

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			Fishing Time					Catch						
			(A)	(B)	(C)	(D)	(E)	Chinook Salmon			Summer Chum Salmon			Other
Date	Drift No.	Site No.	Start Net Out	Net Full Out	Start Net In	Net Full In	Mean Fishing Time[a]	Total Kept	Total Release	Total Catch	Total Kept	Total Release	Total Catch	Total Catch
15-Jul	175	4	20:12	20:15	20:35	20:42	0:26	0	0	0	3	0	3	0
16-Jul	176	2	7:25	7:27	7:46	7:54	0:25	0	0	0	0	0	0	0
16-Jul	177	4	8:02	8:05	8:25	8:37	0:29	0	0	0	1	1	2	0
16-Jul	178	2	17:20	17:22	17:41	17:45	0:23	0	0	0	0	0	0	2[c]
16-Jul	179	4	17:57	18:00	18:20	18:29	0:27	0	0	0	0	0	0	1[b]
17-Jul	180	2	7:43	7:46	8:05	8:13	0:26	2	0	2	1	0	1	0
17-Jul	181	4	8:23	8:25	8:45	8:59	0:29	0	0	0	0	2	2	0
Totals							0:20	476	8	484	185	49	234	0

[a] Mean Fishing Time (E) = (C-B) + [(B-A) + (D-C)]/2

[b] shee fish

[c] pink salmon

Appendix A 2. Weather, fishing conditions, and location of salmon caught in drift gillnet, Chinook salmon Mountain Village drift test fish log, Mountain Village, Alaska, June 2 - July 17, 2010.

Date	Time of day	Air Temp (^{o}F)	Wind (direction-velocity mph)	sky cover (%)	Precip	Water Cond	Horizontal location of Chinook salmon caught in net (inshore,midnet,offshore)	Vertical location of Chinook salmon caught in net (cork, middle, leadline)
2-Jun	pm	na	N-20	80	none	choppy	none caught	none caught
3-Jun	am	35	N-15	80	none	choppy	none caught	none caught
3-Jun	pm	45	N-20	0	none	choppy	none caught	none caught
4-Jun	am	28	N-15	10	none	calm	none caught	none caught
4-Jun	pm	45	N-15	10	none	choppy	none caught	none caught
5-Jun	am	35	N-15	100	none	choppy	none caught	none caught
5-Jun	pm	40	W-10	100	none	calm	none caught	none caught
6-Jun	am	35	NW-10	40	none	calm	none caught	none caught
6-Jun	pm	60	calm	20	none	calm	none caught	none caught
7-Jun	am	40	N-10	10	none	calm	none caught	none caught
7-Jun	pm	50	NW-15	100	intermittent	calm	none caught	none caught
8-Jun	am	40	N-15	50	drizzle	choppy	none caught	none caught
8-Jun	pm	55	NW-15	100	none	choppy	none caught	none caught
9-Jun	am	40	W-5	100	none	calm	none caught	none caught
9-Jun	pm	55	W-20	40	none	rough	none caught	none caught
10-Jun	am	40	W-10	100	drizzle	choppy	none caught	none caught
10-Jun	pm	60	W-20	5	none	choppy	none caught	none caught
11-Jun	am	40	N-5	100	none	calm w ripples	none caught	none caught
11-Jun	pm	na	W-10	100	none	calm	none caught	none caught

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Date	Time of day	Air Temp (^{o}F)	Wind (direction-velocity mph)	sky cover (%)	Precip	Water Cond	Horizontal location of Chinook salmon caught in net (inshore,midnet,offshore)	Vertical location of Chinook salmon caught in net (cork, middle, leadline)
12-Jun	am	na	W-5	100	none	calm w ripples	none caught	none caught
12-Jun	pm	na	W-10	100	none	choppy	none caught	none caught
13-Jun	am	43	S-5	100	none	calm	none caught	none caught
13-Jun	pm	60	S-30	100	rain	rough	none caught	none caught
14-Jun	am	45	SE-25	100	rain	rough	midnet	middle
14-Jun	pm	45	S-20	100	rain	choppy	inshore, midnet	middle
15-Jun	am	44	S-25	100	rain	rough	offshore	middle
15-Jun	pm	45	S-20	100	rain	choppy	inshore	middle, leadline
16-Jun	am	44	SE-20	100	intermittent	choppy	na	na
16-Jun	pm	43	SE-20	100	intermittent	rough	offshore	middle
17-Jun	am	41	SE-25	100	rain	rough	na	na
17-Jun	pm	44	S-25	100	scattered	rough	inshore, midnet, offshore	middle, leadline
18-Jun	am	43	SE-20	100	scattered	choppy	inshore,midnet	middle, leadline
18-Jun	pm	45	SE-12	95	scattered	na	inshore,midnet	corkline, middle
19-Jun	am	42	SE-10	95	scattered	na	inshore	corkline

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Date	Time of day	Air Temp (^{o}F)	Wind (direction-velocity mph)	sky cover (%)	Precip	Water Cond	Horizontal location of Chinook salmon caught in net (inshore,midnet,offshore)	Vertical location of Chinook salmon caught in net (cork, middle, leadline)
19-Jun	pm	45	S-10	90	scattered	na	inshore, midnet, offshore	corkline, middle, leadline
20-Jun	am	45	SE-10	100	rain	na	inshore, midnet, offshore	middle, leadline
20-Jun	pm	48	S-5	65	none	calm	na	na
21-Jun	am	45	NE-10	30	none	na	inshore, midnet	middle
21-Jun	pm	55	E	25	none	na	na	na
22-Jun	am	na	NE-10	90	none	na	inshore, midnet	corkline, leadline
22-Jun	pm	55	SW-17	20	none	choppy	midnet	middle, leadline
23-Jun	am	50	SW-5	90	none	little wavy	inshore,midnet	middle, leadline
23-Jun	pm	50	SW-12	50	none	rough	inshore,midnet,offshore	middle, leadline
24-Jun	am	45	SW-5	95	rain	na	inshore, midnet	middle, leadline
24-Jun	pm	50	SW-5	90	intermittent	na	na	na
25-Jun	am	45	W-5	90	none	na	inshore,midnet,offshore	corkline,middle,leadline
25-Jun	pm	60	W-20	5	none	rough	midnet	middle
26-Jun	am	50	W-5	85	none	calm	inshore	corkline
26-Jun	pm	55	SW=15	40	none	choppy	inshore	corkline,middle,leadline
27-Jun	am	50	W-5	100	rain	calm	inshore	corkline
27-Jun	pm	55	W-15	95	none	rough	inshore	corkline, middle
28-Jun	am	45	W-3	95	none	calm	inshore,midnet	corkline,middle,leadline

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Date	Time of day	Air Temp (^{o}F)	Wind (direction-velocity mph)	sky cover (%)	Precip	Water Cond	Horizontal location of Chinook salmon caught in net (inshore,midnet,offshore)	Verticle location of Chinook salmon caught in net (cork, middle, leadline)
29-Jun	am	50	NE-5	70	none	calm	inshore	corkline,middle
29-Jun	pm	60	SW-8	95	none	calm w ripples	midnet	corkline,leadline
30-Jun	am	50	SW-5	98	none	calm	midnet	middle,leadline
30-Jun	pm	65	W-20	80	none	calm	midnet	leadline
1-Jul	am	50	SW-5	70	none	calm	midnet	leadline
1-Jul	pm	65	NW-5	80	none	calm	midnet,offshore	middle,leadline
2-Jul	am	50	SE-5	99	none	calm	midnet	leadline
2-Jul	pm	65	SW-5	75	none	calm	midnet	middle,leadline
3-Jul	am	50	SW-5	95	scattered	calm	na	leadline
3-Jul	pm	60	SW-5	95	scattered	calm	na	na
4-Jul	am	50	SW-8	100	rain	calm	midnet	leadline
4-Jul	pm	60	S-15	100	rain	na	na	na
5-Jul	am	50	SW-15	100	rain	rough	none caught	none caught
5-Jul	pm	60	S-10	100	scattered	na	none caught	none caught
6-Jul	am	50	SE-15	90	scattered	na	middle	leadline
6-Jul	pm	55	SE-10	95	intermittent	rough	none caught	none caught
7-Jul	am	50	SW-5	70	none	calm	nidnet	leadline
7-Jul	pm	65	W-5	50	none	calm	midnet	leadline

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Date	Time of day	Air Temp (^{o}F)	Wind (direction-velocity mph)	sky cover (%)	Precip	Water Cond	Horizontal location of Chinook salmon caught in net (inshore,midnet,offshore)	Vertical location of Chinook salmon caught in net (cork, middle, leadline)
8-Jul	am	na	calm	3	none	calm	inshore,midnet,offshore	corkline,leadline
8-Jul	pm	na	NW-2	5	none	calm	inshore,midnet,offshore	leadline
9-Jul	am	na	SE-5	10	none	calm	midnet	leadline
9-Jul	pm	na	E-10	70	none	calm w ripples	midnet	leadline
10-Jul	am	na	NE-5	100	none	calm	inshore,midnet	leadline
10-Jul	pm	na	W-2	50	none	calm	none caught	none caught
11-Jul	am							
11-Jul	pm	na	SW-15	5	none	choppy	none caught	none caught
12-Jul	am	na	S-5	100	na	ripples	midnet,offshore	corkline,leadline
12-Jul	pm	na	calm	100	na	calm	midnet	leadline
13-Jul	am	na	calm	100	na	calm	midnet,offshore	leadline
13-Jul	pm	na	na	na	na	na	na	na
14-Jul	am	na	na	na	na	na	na	na
14-Jul	pm	na	W-10	100	none	choppy	none caught	none caught
15-Jul	am	na	NW-2	100	none	calm	none caught	none caught
15-Jul	pm	na	W-3	50	none	ripples	midnet	leadline
16-Jul	am	na	SW-5	100	none	choppy	none caught	none caught
16-Jul	pm	65	SW-15	5	none	rough	none caught	none caught
17-Jul	am	na	SW-15	100	na	rough	midnet	leadline

Appendix A 3. Ages, sex, length and associated data information of Chinook salmon captured in the Mountain Village test fishery, Yukon River, 2010**.**

Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/14/2010	001	1	M	705	1.3		1
6/14/2010	002	1	M	910	1.4		2
6/14/2010	002	2	M	725	1.3		3
6/14/2010	002	3	F	760	1.4		4
6/14/2010	002	4	M	770	1.3		5
6/14/2010	002	5	M	720	1.3		6
6/15/2010	003	1	M	725	1.3		7
6/15/2010	004	1	M	750	1.3		8
6/15/2010	004	2	M	740		regenerated	9
6/16/2010	005	1	M	750	1.3		10
6/16/2010	005	2	F	850	2.5		11
6/16/2010	005	3	M	685	1.3		12
6/16/2010	005	4	M	775	1.3		13
6/16/2010	005	5	M	740	1.3		14
6/16/2010	005	6	M	750	1.3		15
6/16/2010	005	7	M	755	1.3		16
6/16/2010	005	8	M	700	1.3		17
6/16/2010	005	9	F	760	1.3		18
6/16/2010	005	10	M	725	1.3		19
6/16/2010	006	1	F	860	1.3		20
6/16/2010	006	2	M	710		regenerated	21
6/16/2010	006	3	M	710	1.3		22
6/16/2010	006	4	M	730	1.3		23
6/16/2010	006	5	M	540	1.2		24
6/16/2010	006	6	F	795	1.3		25
6/16/2010	006	7	M	770	1.3		26
6/16/2010	006	8	M	820	1.4		27
6/16/2010	006	9	M	725	1.3		28
6/16/2010	006	10	F	875	1.4		29
6/16/2010	007	1	M	770	1.3		30
6/17/2010	008	1	M	740	1.3		31
6/17/2010	008	2	M	810	1.3		32
6/17/2010	008	3	M	795	1.3		33
6/17/2010	008	4	M	770	1.2		34
6/17/2010	008	5	F	840	1.3		35
6/17/2010	008	6	M	700		regenerated	36

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/17/2010	009	1	M	710	1.3		37
6/17/2010	009	2	F	845	1.4		38
6/17/2010	009	3	M	660	1.3		39
6/17/2010	009	4	F	865	1.4		40
6/17/2010	009	5	M	790	1.3		41
6/17/2010	009	6	M	775	1.3		42
6/17/2010	009	7	M	710	1.3		43
6/17/2010	009	8	M	720	1.3		44
6/17/2010	009	9	M	730	1.3		45
6/17/2010	009	10	F	810	1.4		46
6/17/2010	010	1	M	750	1.4		47
6/17/2010	010	2	M	770	1.3		48
6/17/2010	010	3	M	770	1.3		49
6/17/2010	010	4	M	805	1.3		50
6/17/2010	010	5	M	720	1.3		51
6/17/2010	010	6	M	760		regenerated	52
6/17/2010	010	7	M	735	1.3		53
6/18/2010	011	1	F	740	1.3		54
6/18/2010	011	2	M	760		regenerated	55
6/18/2010	011	3	M	825	1.3		56
6/18/2010	011	4	M	680	1.3		57
6/18/2010	011	5	M	755	1.3		58
6/18/2010	011	6	M	785	1.3		59
6/18/2010	011	7	M	810	1.4		60
6/18/2010	011	8	F	945	2.4		61
6/18/2010	011	9	M	710	1.3		62
6/18/2010	011	10	M	720	1.3		63
6/18/2010	012	1	M	740	1.3		64
6/18/2010	013	1	M	785	1.3		65
6/18/2010	013	2	M	715	1.3		66
6/18/2010	013	3	M	700	1.3		67
6/18/2010	013	4	M	685	1.3		68
6/18/2010	013	5	M	760	1.3		69
6/18/2010	013	6	M	695	1.3		70
6/18/2010	013	7	M	700	1.3		71
6/18/2010	013	8	M	780		regenerated	72

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/19/2010	014	1	M	780	1.3		73
6/19/2010	014	2	F	850	1.4		74
6/19/2010	014	3	M	730		regenerated	75
6/19/2010	014	4	F	845	1.3		76
6/19/2010	014	5	M	700	1.3		77
6/19/2010	014	6	F	860	1.4		78
6/19/2010	014	7	M	830	0.4	regenerated	79 b
6/19/2010	014	8	M	730	1.4		80
6/19/2010	014	9	F	805	1.4		81
6/19/2010	014	10	M	820	1.4		82
6/19/2010	015	1	F	855	1.3		83
6/19/2010	015	2	F	810	1.4		84
6/19/2010	016	1	M	850	1.4		85
6/19/2010	016	2	F	855	1.3		86
6/19/2010	016	3	F	905	1.4		87
6/19/2010	016	4	F	890	1.5		88
6/19/2010	016	5	F	845	1.4		89
6/19/2010	016	6	F	890	1.4		90
6/19/2010	016	7	M	800	1.3		91
6/19/2010	016	8	M	865	1.4		92
6/19/2010	016	9	M	715	1.3		93
6/19/2010	016	10	M	740	1.3		94
6/19/2010	017	1	M	710		regenerated	95
6/19/2010	017	2	M	730	1.3		96
6/19/2010	017	3	F	830		regenerated	97
6/19/2010	017	4	F	805	1.4		98
6/19/2010	017	5	M	775	1.4		99
6/19/2010	017	6	M	890		regenerated	100
6/19/2010	017	7	M	735	1.3		101
6/19/2010	017	8	M	790	1.4		102
6/19/2010	017	9	M	690	1.3		103
6/19/2010	017	10	F	665	1.3		104
6/19/2010	018	1	M	520	1.2		105
6/19/2010	018	2	F	760	1.3		106
6/19/2010	018	3	M	740		regenerated	107
6/19/2010	018	4	M	745	1.3		108
6/19/2010	018	5	M	680	2.3		109

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/20/2010	019	1	M	790	1.3		110
6/20/2010	019	2	M	755	1.3		111
6/20/2010	019	3	F	730	1.3		112
6/20/2010	019	4	F	830		regenerated	113
6/20/2010	019	5	M	755	1.3		114
6/20/2010	019	6	F	870	1.4		115
6/20/2010	019	7	M	990	1.4		116
6/20/2010	019	8	M	695	1.3		117
6/20/2010	019	9	M	830	1.4		118
6/20/2010	019	10	F	760	1.3		119
6/20/2010	020	1	M	755	1.3		120
6/20/2010	020	2	M	700	1.3		121
6/20/2010	020	3	M	785	1.3		122
6/20/2010	020	4	F	730		regenerated	123
6/20/2010	020	5	F	785	1.3		124
6/20/2010	020	6	F	840	1.4		125
6/20/2010	020	7	M	725		regenerated	126
6/20/2010	020	8	F	800	1.3		127
6/20/2010	020	9	M	770	1.3		128
6/20/2010	020	10	M	750	1.3		129
6/20/2010	021	1	M	765		regenerated	130
6/20/2010	021	2	F	780	1.3		131
6/20/2010	021	3	F	840	1.4		132
6/20/2010	021	4	M	960	1.4		133
6/20/2010	021	5	M	770	1.3		134
6/20/2010	021	6	M	695	1.3		135
6/21/2010	022	1	M	890		regenerated	136
6/21/2010	022	2	F	840	1.4		137
6/21/2010	022	3	F	740	1.4		138
6/22/2010	023	1	M	820	1.3		139
6/22/2010	023	2	F	870	1.4		140
6/22/2010	023	3	F	815	1.4		141
6/22/2010	023	4	F	800	1.3		142
6/22/2010	023	5	M	730	1.3		143

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/22/2010	023	6	M	730	1.3		144
6/22/2010	023	7	M	670	1.3		145
6/22/2010	023	8	M	695	1.3		146
6/22/2010	023	9	M	810	1.3		147
6/22/2010	023	10	M	800	1.4		148
6/22/2010	024	1	F	805	0.4		149 c
6/22/2010	024	2	F	785	1.3		150
6/22/2010	024	3	M	805	1.4		151
6/22/2010	025	1	F	810	1.3		152
6/23/2010	026	1	F	890	1.4		153
6/23/2010	026	2	M	790	1.3		154
6/23/2010	026	3	M	745	1.3		155
6/23/2010	026	4	F	710	1.3		156
6/23/2010	026	5	M	700	1.3		157
6/23/2010	026	6	M	570	1.2		158
6/23/2010	026	7	F	825	1.4		159
6/23/2010	026	8	F	765	1.3		160
6/23/2010	027	1	M	770	1.4		161
6/23/2010	027	2	F	845	1.3		162
6/23/2010	027	3	M	655	1.3		163
6/23/2010	027	4	M	720	1.3		164
6/23/2010	027	5	M	730	1.3		165
6/23/2010	027	6	M	770	1.3		166
6/23/2010	027	7	F	820	1.4		167
6/23/2010	027	8	F	880	1.3		168
6/23/2010	027	9	M	765	1.3		169
6/23/2010	027	10	M	695	1.3		170
6/23/2010	028	1	F	830	1.4		171
6/23/2010	028	2	M	760	1.3		172
6/23/2010	028	3	M	680	1.3		173
6/23/2010	028	4	M	720	1.3		174
6/23/2010	028	5	F	845	1.3		175
6/23/2010	028	6	M	720	1.3		176
6/23/2010	028	7	M	770		regenerated	177

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/24/2010	029	1	F	840	1.3		178
6/24/2010	029	2	F	800	1.4		179
6/24/2010	029	3	F	820		regenerated	180
6/24/2010	029	4	M	785	1.3		181
6/24/2010	029	5	M	690	1.3		182
6/24/2010	029	6	M	850	1.4		183
6/24/2010	029	7	M	800		regenerated	184
6/24/2010	029	8	M	675		regenerated	185
6/24/2010	029	9	M	540	1.2		186
6/24/2010	030	1	M	720	1.3		187
6/25/2010	031	1	M	680	1.3		188
6/25/2010	031	2	F	815	1.4		189
6/25/2010	031	3	M	780	1.3		190
6/25/2010	032	1	F	825	1.4		191
6/25/2010	032	2	M	750	1.3		192
6/25/2010	032	3	M	750	1.3		193
6/25/2010	032	4	F	760	1.3		194
6/25/2010	032	5	M	735	1.3		195
6/26/2010	033	1	M	770	1.3		196
6/26/2010	033	2	M	850	1.4		197
6/26/2010	033	3	M	825		regenerated	198
6/26/2010	033	4	M	690	1.3		199
6/26/2010	033	5	F	855	1.4		200
6/26/2010	033	6	M	760	1.4		201
6/26/2010	033	7	M	840	1.3		202
6/26/2010	033	8	F	905		regenerated	203
6/26/2010	033	9	F	780		regenerated	204
6/26/2010	033	10	M	765	1.3		205
6/26/2010	034	1	F	725		regenerated	206
6/26/2010	034	2	F	920	1.4		207
6/26/2010	034	3	F	845		regenerated	208
6/26/2010	034	4	M	780	1.3		209
6/26/2010	034	5	M	750	1.3		210

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/26/2010	034	6	F	835		regenerated	211
6/26/2010	034	7	F	810	1.4		212
6/26/2010	034	8	F	785	1.3		213
6/26/2010	034	9	M	790	1.3		214
6/26/2010	034	10	F	860	1.4		215
6/26/2010	035	1	M	930	1.4		216
6/26/2010	035	2	M	720	1.3		217
6/26/2010	035	3	F	810	1.3		218
6/26/2010	035	4	M	840	1.3		219
6/26/2010	035	5	M	775	2.3		220
6/26/2010	035	6	M	610	1.2		221
6/26/2010	035	7	F	860	1.4		222
6/26/2010	035	8	F	835	1.4		223
6/26/2010	035	9	M	750	2.3		224
6/26/2010	035	10	M	885	1.3		225
6/26/2010	036	1	F	830		regenerated	226
6/26/2010	036	2	M	735	1.3		227
6/26/2010	036	3	F	870		regenerated	228
6/26/2010	036	4	M	710	1.3		229
6/26/2010	036	5	F	780	1.3		230
6/26/2010	036	6	M	805	1.3		231
6/26/2010	036	7	F	885		regenerated	232
6/26/2010	036	8	M	830	1.3		233
6/27/2010	037	1	M	840	1.3		234
6/27/2010	037	2	F	780	1.3		235
6/27/2010	037	3	M	780	1.3		236
6/27/2010	037	4	M	715	1.3		237
6/27/2010	037	5	F	875	1.4		238
6/27/2010	037	6	M	790		regenerated	239
6/27/2010	037	7	M	750		regenerated	240
6/27/2010	037	8	M	750	1.3		241
6/27/2010	037	9	F	805	1.3		242
6/27/2010	037	10	F	825	1.3		243

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/27/2010	038	1	M	725	1.3		244
6/27/2010	038	2	F	730	1.3		245
6/27/2010	038	3	M	735		regenerated	246
6/27/2010	038	4	F	880	1.4		247
6/27/2010	039	1	M	870		regenerated	248
6/27/2010	039	2	M	775	1.3		249
6/27/2010	039	3	M	940	1.4		250
6/27/2010	039	4	M	815	1.4		251
6/27/2010	039	5	F	820	1.3		252
6/27/2010	039	6	F	795	2.4		253
6/27/2010	039	7	F	810		regenerated	254
6/27/2010	039	8	M	760	1.3		255
6/27/2010	039	9	M	750	1.3		256
6/27/2010	039	10	M	745	1.3		257
6/27/2010	040	1	F	790	1.3		258
6/27/2010	040	2	M	685	1.3		259
6/28/2010	041	1	F	780	1.4		260
6/28/2010	041	2	M	755	1.3		261
6/28/2010	041	3	F	860	1.4		262
6/28/2010	041	4	F	820	1.3		263
6/28/2010	041	5	M	770	1.3		264
6/28/2010	041	6	F	835	2.4		265
6/28/2010	041	7	M	815	2.4		266
6/28/2010	041	8	M	675	1.3		267
6/28/2010	041	9	F	835	1.3		268
6/28/2010	041	10	M	789	1.3		269
6/28/2010	042	1	F	860	1.4		270
6/28/2010	042	2	M	780	1.3		271
6/28/2010	042	3	F	780	1.4		272
6/28/2010	042	4	F	850		regenerated	273
6/28/2010	042	5	M	730	1.4		274
6/28/2010	042	6	F	740	1.4		275
6/28/2010	043	1	M	790		regenerated	276
6/28/2010	043	2	F	770	1.3		277
6/28/2010	043	3	F	910	1.4		278
6/28/2010	043	4	M	710	1.3		279
6/28/2010	043	5	F	770	1.3		280

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/28/2010	043	6	F	810	1.3		281
6/28/2010	043	7	F	880	1.4		282
6/28/2010	043	8	M	870	1.3		283
6/28/2010	043	9	M	780	1.3		284
6/28/2010	043	10	M	740	1.3		285
6/28/2010	044	1	M	720		regenerated	286
6/28/2010	044	2	M	710	1.4		287
6/28/2010	044	3	M	750	1.3		288
6/28/2010	044	4	F	690	1.3		289
6/28/2010	044	5	M	730	1.3		290
6/28/2010	044	6	F	770	1.4		291
6/28/2010	044	7	M	740	1.3		292
6/28/2010	044	8	M	650	1.3		293
6/28/2010	044	9	M	680	1.3		294
6/29/2010	045	1	F	850		regenerated	295
6/29/2010	045	2	M	810	1.3		296
6/29/2010	045	3	M	730	1.3		297
6/29/2010	046	1	M	850	1.3		298
6/29/2010	046	2	M	750	1.3		299
6/29/2010	046	3	M	770	1.3		300
6/29/2010	046	4	M	740	1.3		301
6/29/2010	046	5	F	780	1.3		302
6/29/2010	046	6	F	760	2.3		303
6/29/2010	046	7	M	800	1.3		304
6/29/2010	046	8	F	740	1.3		305
6/29/2010	046	9	M	760	1.3		306
6/29/2010	046	10	M	800	1.4		307
6/30/2010	047	1	F	805	1.3		308
6/30/2010	047	2	M	850	1.3		309
6/30/2010	047	3	M	730	1.3		310
6/30/2010	047	4	M	770		regenerated	311
6/30/2010	047	5	F	865	1.4		312
6/30/2010	047	6	F	825	1.4		313
6/30/2010	047	7	F	505	1.3		314
6/30/2010	047	8	F	895	1.4		315
6/30/2010	047	9	M	835	1.3		316
6/30/2010	047	10	M	750	1.3		317

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/30/2010	048	1	F	765	1.4		318
6/30/2010	048	2	M	795	1.3		319
6/30/2010	048	3	M	810	1.4		320
6/30/2010	048	4	M	740	1.3		321
6/30/2010	048	5	F	880	1.4		322
6/30/2010	048	6	F	845	1.3		323
6/30/2010	048	7	M	730		regenerated	324
6/30/2010	048	8	F	780	1.3		325
6/30/2010	048	9	F	745	1.3		326
6/30/2010	048	10	F	825	1.3		327
6/30/2010	049	1	M	795	1.3		328
6/30/2010	049	2	M	770	1.3		329
6/30/2010	049	3	M	545	1.2		330
6/30/2010	050	1	M	775	1.3		331
6/30/2010	050	2	M	705	1.3		332
6/30/2010	050	3	M	795		regenerated	333
6/30/2010	050	4	M	725		regenerated	334
6/30/2010	050	5	M	605	1.2		335
6/30/2010	050	6	M	765	1.3		336
6/30/2010	050	7	M	775	1.3		337
6/30/2010	050	8	F	815	1.4		338
6/30/2010	050	9	F	895	1.4		339
6/30/2010	050	10	M	745	1.3		340
6/30/2010	051	1	F	865	1.3		341
6/30/2010	051	2	M	745	1.3		342
6/30/2010	051	3	F	935	1.4		343
6/30/2010	051	4	F	765	1.3		344
6/30/2010	051	5	F	805	1.3		345
6/30/2010	051	6	F	795		regenerated	346
6/30/2010	051	7	M	765	1.3		347
6/30/2010	051	8	M	745	1.3		348
6/30/2010	051	9	M	765	1.3		349
6/30/2010	051	10	F	785	1.3		350

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
6/30/2010	052	1	F	795		regenerated	351
6/30/2010	052	2	M	875	1.4		352
6/30/2010	052	3	M	795	1.3		353
6/30/2010	052	4	F	805		regenerated	354
7/1/2010	053	1	F	795	1.3		355
7/1/2010	053	2	F	895	1.4		356
7/1/2010	053	3	F	845	1.3		357
7/1/2010	053	4	M	705	1.3		358
7/1/2010	053	5	M	745	1.3		359
7/1/2010	053	6	F	745	1.3		360
7/1/2010	053	7	M	775		regenerated	361
7/1/2010	053	8	F	875		regenerated	362
7/1/2010	053	9	F	775	1.3		363
7/1/2010	053	10	M	685	1.3		364
7/1/2010	054	1	M	675	2.3		365
7/1/2010	055	1	F	775	1.3		366
7/1/2010	055	2	F	905	1.4		367
7/1/2010	055	3	M	715	1.3		368
7/1/2010	055	4	F	945		regenerated	369
7/1/2010	055	5	F	735	1.3		370
7/2/2010	056	1	M	745	1.3		371
7/2/2010	056	2	F	875	1.4		372
7/2/2010	056	3	M	775	1.3		373
7/2/2010	057	1	M	785	1.3		374
7/2/2010	057	2	F	855	1.4		375
7/2/2010	057	3	M	735	1.3		376
7/2/2010	057	4	F	875	1.4		377
7/2/2010	057	5	M	765	1.3		378
7/2/2010	057	6	F	875	1.3		379
7/2/2010	057	7	F	765	1.3		380
7/3/2010	058	1	M	765	1.3		381
7/3/2010	059	1	F	895	1.4		382
7/3/2010	059	2	F	895	1.4		383
7/3/2010	059	3	F	775		regenerated	384

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
7/4/2010	060	1	F	895	1.4		385
7/4/2010	060	2	M	805	1.3		386
7/4/2010	060	3	M	715	1.3		387
7/4/2010	060	4	F	805	1.3		388
7/4/2010	060	5	M	715	1.3		389
7/6/2010	063	1	F	855	1.3		390
7/6/2010	063	2	M	735	1.3		391
7/6/2010	063	3	F	815		regenerated	392
7/6/2010	063	4	F	835	1.3		393
7/6/2010	063	5	M	815		regenerated	394
7/7/2010	065	1	F	895	1.4		395
7/7/2010	065	2	M	725	1.3		396
7/7/2010	065	3	F	835	1.3		397
7/7/2010	065	4	M	865	1.4		398
7/7/2010	065	5	F	845	1.3		399
7/7/2010	065	6	F	845	1.4		400
7/7/2010	065	7	M	655	1.3		401
7/7/2010	066	1	F	845	1.3		402
7/7/2010	066	2	M	755	1.3		403
7/7/2010	066	3	F	815	1.3		404
7/7/2010	066	4	M	795		regenerated	405
7/8/2010	067	1	M	800	1.4		406
7/8/2010	067	2	F	805	1.3		407
7/8/2010	067	3	M	865	1.4		408
7/8/2010	067	4	F	815	1.3		409
7/8/2010	067	5	F	810	1.3		410
7/8/2010	067	6	M	810	1.3		411
7/8/2010	067	7	M	830	1.3		412
7/8/2010	067	8	M	770	1.3		413
7/8/2010	067	9	M	850	1.3		414
7/8/2010	067	10	M	765	1.3		415
7/8/2010	068	1	F	770	1.3		416
7/8/2010	068	2	M	770	1.3		417
7/8/2010	068	3	M	815	1.3		418
7/8/2010	068	4	M	805		regenerated	419
7/8/2010	068	5	F	810	1.4		420

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
7/8/2010	068	6	F	780	1.3		421
7/8/2010	068	7	F	815	1.3		422
7/8/2010	068	8	M	720	1.3		423
7/8/2010	068	9	M	765		regenerated	424
7/8/2010	068	10	F	800	1.4		425
7/8/2010	069	1	M	780	1.4		426
7/8/2010	069	2	F	775		regenerated	427
7/8/2010	069	3	F	815	1.4		428
7/9/2010	070	1	M	815	1.3		429
7/9/2010	070	2	F	890	1.3		430
7/9/2010	070	3	M	755	1.3		431
7/9/2010	070	4	F	840	1.4		432
7/9/2010	070	5	M	660		regenerated	433
7/9/2010	070	6	M	825	1.4		434
7/9/2010	070	7	F	865	1.3		435
7/9/2010	071	1	F	830	1.4		436
7/9/2010	071	2	M	795	1.3		437
7/9/2010	071	3	F	865	1.3		438
7/9/2010	071	4	F	830		regenerated	439
7/10/2010	072	1	M	830	1.4		440
7/10/2010	072	2	M	740	1.3		441
7/10/2010	072	3	F	875	1.3		442
7/10/2010	072	4	F	795	1.3		443
7/10/2010	072	5	F	850	1.4		444
7/10/2010	072	6	F	750	1.3		445
7/10/2010	072	7	M	770	1.3		446
7/12/2010	073	1	M	755	1.3		447
7/12/2010	073	2	M	770	1.3		448
7/12/2010	073	3	M	810	1.3		449
7/12/2010	074	1	F	850	1.4		450
7/12/2010	074	2	M	630	1.2		451
7/12/2010	074	3	F	855	1.3		452
7/12/2010	074	4	M	740	1.3		453
7/13/2010	075	1	M	910	1.4		454
7/13/2010	075	2	M	850	1.3		455
7/13/2010	075	3	M	750	1.3		456

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Date	Scale Card	Fish number	Sex	MEF a length (mm)	Age	Scale Comment	Genetic vial #
7/13/2010	076	1	M	750	1.3		457
7/13/2010	076	2	F	820	1.4		458
7/13/2010	076	3	M	740	1.3		459
7/13/2010	076	4	M	790	1.3		460
7/13/2010	076	5	F	850	1.3		461
7/14/2010	077	1	F	860	1.4		462
7/14/2010	077	2	M	750	1.3		463
7/14/2010	077	3	M	755	1.3		464
7/15/2010	078	1	M	745	1.4		465
7/15/2010	078	2	F	900	1.4		466
7/15/2010	078	3	F	860	1.3		467
7/15/2010	078	4	F	850	1.4		468
7/15/2010	078	5	F	845	1.3		469
7/15/2010	078	6	F	840		regenerated	470
7/15/2010	078	7	F	820	1.4		471
7/15/2010	078	8	F	950	1.4		472
7/15/2010	078	9	F	835	1.3		473
7/15/2010	078	10	F	760	1.3		474
7/17/2010	079	1	M	815	1.3		475
7/17/2010	079	2	F	840	1.3		476

a Length measurement mid-eye to fork of tail.

b Fish was missing an adipose fin. Fish was released in the McClintock River in Yukon Canada.

c Fish was missing an adipose fin.
Fish was released in the Yukon River in Canada