# Mountain Village Chinook Salmon <br> Cooperative Drift Test Fishery, 2012, Project Number: URE-22-12 

A Report Submitted By<br>Yukon Delta Fisheries Development Association

Prepared by

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#### Abstract

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#### Abstract

A Chinook salmon test fishery using 7.5-inch stretch mesh drift gillnets was conducted near Mountain Village, Alaska from June 5 through July 11, 2012. During the sampling period, 74 onshore test fishing drifts were scheduled but only 72 were conducted. A total of 2 scheduled drifts were not conducted because of very rough waters. During 72 test drifts, 469 Chinook salmon were captured and retained. Additionally, 14 Chinook salmon were observed to have dropped out of the net when the net was being pulled into the boat. These 14 Chinook salmon were included in the catch per effort (CPUE) calculations. Subjective assessment of the retained Chinook salmon capture location within the net indicated that $67 \%$ were captured in the lower third of the net or near the lead line. A total of 443 Chinook salmon were sampled for age, sex, size and genetic stock identification. Four Chinook salmon were captured that did not have an adipose fin and were thought to have originated from hatchery releases in Yukon, Canada. Total cumulative CPUE index points totaled 1,736.8. The mid-50\% passage of the run occurred between June 22 and July 2, inclusive. The median date of passage was 27 June. Of the total number of Chinook salmon retained and sampled, 405 or $91.4 \%$ had ageable scales. Percent age class composition of the Chinook salmon aged sampled was $1.7 \%$ age-1.2; 44.7\% age-1.3; $49.1 \%$ age-1.4; 2.7\% age-2.4; and 1.2\% age-1.5. Additionally one age-2.2 fish and one age-2.5 fish were sampled. Females comprised $43.8 \%$ of the total number of Chinook salmon sampled. Male salmon dominated the first quartile sample, $67.2 \%$, while female salmon dominated the third quartile, $62.0 \%$. Male salmon slightly outnumbered the female salmon in the second, 54.3\% and the fourth quartile, $50.7 \%$. Chinook salmon from 700 mm to 850 mm comprised $67.5 \%$ of the sampled fish. Of the female salmon sampled, $72.7 \%$ were equal to or greater than 800 mm . Of the male salmon sampled, $77.1 \%$ were less than 800 mm . Chinook salmon equal to or greater than 900 mm comprised $4.1 \%$ of the sampled fish. Male and female salmon were equally represented in salmon equal to or greater than 900 mm . No fish over $1,000 \mathrm{~mm}$ were captured. The length frequency distribution was bimodal, with peaks occurring in the 700750 mm and $800-850 \mathrm{~mm}$ length bins. The smaller length bin was dominated by age- 1.3 males with the larger length bin dominated by age 1.4 female salmon. The MVTF Chinook salmon run length composition and run timing was very similar to the Pilot Station length composition and run timing. Local hiring of fishermen was accomplished through Asa'carsarmiut Tribal Council. This employment provided stewardship experiences in test fishing, and an understanding of how information from the MVTF project is used by management in assessing the overall run strength and timing of the Yukon River Chinook salmon stock.


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 (Figure 1) 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 (Estensen, et al. 2012) and U.S./Canada Joint Technical Committee report (JTC 2012). The vast majority of the commercial salmon harvests has occured near the mouth of the Yukon River in Districts 1 and 2 (Figure 2). The subsistence fishery has priority use of these resources, but the fish have historically passed through major commercial fisheries in the lower river before they arrive into the upper regions where more than half of the Chinook salmon subsistence harvest occurs. However, as Chinook salmon harvestable surpluses decline, the long-standing directed commercial Chinook salmon fishery has not occurred since 2007. Additionally, the directed summer chum salmon gillnet fishery, which is restricted to gillnets with a maximum mesh size of 6 inches, has been severely curtailed to avoid incidental harvest of Chinook salmon. Further, the sale of incidentally-harvested Chinook salmon was prohibited in 2009, 2011 and 2012 to deter commercial fishers from targeting the more valuable Chinook salmon during fishing periods. 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 in the lower Yukon River at the mouth of the Yukon River with set and drift gillnets near Emmonak (river mile (RM) 24; Figure 2) and set gillnets in the north and middle mouth based out of a remote camp near Akers Camp (RM 26). Test fishing efforts in the lower Yukon River are collectively referred to as the Lower Yukon Test Fishery (LYTF). The set test fishery is conducted with 8.5 in mesh set gillnets; the drift fishery with 8.25 in drift gillnets. Salmon run assessment is also conducted with hydroacoustic equipment near the village of Pilot Station (RM 122; Figure 2). Sonar targets or traces are enumerated and apportioned to fish species by catches in a test drift gillnets weighted by gillnet selectivity curves. A suite of gillnets with mesh sizes from 2.75 in to 8.5 in are used to catch fish in the test fishery at the Pilot Station sonar project (JTC 2012) Additionally, from 2007-2009 the Yukon River Chinook salmon comparative mesh size study project (Howard and Evenson 2010) provided additional run strength and timing information to managers (S. Hayes, ADF\&G, personal communication). In the past, a drift gillnet test fishery also operated near the village of Marshall (RM 163; Figure 2) in 1999, 2000, and 2005-2008 (Waltmeyer 2006, 2008; Dubey 2009). Beginning in 2010, a Chinook salmon drift test net fishery has been successfully conducted near the village of Mountain Village (RM 87; Figure 2) in 2010 and 2011 ( Sandone 2011 and Sandone 2012, respectively). All the above-mentioned projects, in conjunction with subsistence harvest reports, commercial harvest data, and age, sex, and length (ASL) data, provid information to assess the Chinook salmon run inseason (Hayes and Estensen 2012; ADF\&G 2012).

The differences in mesh size use in the three lower river test fisheries, along with variable entry patterns through the various mouths of the Yukon River, may confound the timing and relative abundance relationship among the three projects because of annual varying Chinook salmon migrational characteristics from year to year. The LYTF has used 8.5 inch mesh size in this set net fishery since its inception in 1981 because, historically, that mesh size is the size that most fishers used in the Lower Yukon Area to target Chinook salmon. This mesh size targets the historically most abundant age class, age-6 fish. In 2010, the Alaska Board of Fisheries (BOF) enacted a regulation that limited the maximum mesh size of gillnets used to catch salmon on the Yukon River to 7.5 inch mesh (Estensen et al. 2012). Although all gillnets can catch salmon of all sizes, the 7.5 inch mesh gillnet selectively targets younger and smaller individuals without impairing the Chinook salmon catchability beyond what it would be for an 8 -inch maximum mesh size fishery (Howard and Evenson 2010). The MVTF project uses 7.5 inch mesh drift gillnets because it will provide information regarding the Chinook salmon subsistence harvest and will also index the run based on the catch of the 7.5 inch mesh. The Pilot Station sonar counts
attributed to Chinook salmon are based on a suit of nets from 2.75 to 8.5 inch mesh (JTC 2012). This test fishery most likely provides the best indicator of the age, sex, and length composition of the Chinook salmon run in the lower river. Therefore, if unaffected by high water, high debris load, and high turbidity, the sonar counts attributed to Chinook salmon should also be the best indicator of the run size of the Chinook salmon in the lower Yukon River.

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 (Waltmeyer 2006, 2008). The Mountain Village test fishery (MVTF) improves upon the previous project by providing similar information, but before the fish reaches Pilot Station, and on a timelier basis since this project is 76 river miles closer to the mouth or more than 2 days travel time for Chinook salmon. Results from the MVTF project also provides additional insight into the expected Chinook salmon run strength at the Pilot Station sonar site. 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. Accordingly, MVTF can be used as a check on the other two lower Yukon assessment projects, and vice versa, to assess whether the LYTF and/or sonar are operating correctly. Further, while salmon passage data from the Yukon sonar projects remains the key component of salmon run assessment, data from the sonar project has not be reliable in some past years. High water, high debris load, and high turbidity affect the identification of sonar targets, as well as, test fishing catches at the sonar site. Likewise, the LYTF set net project is also greatly affected by high water and debris. It appears, however, that the MVTF project is not affected by high water and debris to the extent as the other two lower Yukon River projects. Therefore, the MVTF project may not only provide a check as to the accuracy of the Pilot Station sonar counts attributed to Chinook salmon but may also provide the lone reliable assessment project in the lower Yukon river in some high water:high debris years. In the least, in those years, it will cause managers to pause and scrutinize data from the sonar and LYTF project but may also cause managers to weigh other information more heavily in their run assessment. In addition to comparisons among the Lower River run assessment projects, age data will aide in the identification of trends in brood year assessment and may assist in future run forecasting.

Genetic samples collected from sampled Chinook salmon provided an additional assessment of the various Chinook salmon stocks migrating through the lower river and may be used to bolster the sample size of the genetic collection at the Pilot Station sonar site.

The MVTF project is designed to provide data and analyses that directly contribute to the assessment of the current state of knowledge of Chinook salmon for inseason management. The information gathered will aid in the goal for management of both Canada and U.S. Chinook salmon stocks, so that the Treaty obligations, escapement goals, and subsistence priority are met, and appropriate levels of commercial harvests 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 2) on the Yukon River, approximately 87 RM from the mouth. The test fishery site is located in association with the north bank (Site 1) of the river (Figure 3), near what the local residents refer to as "Liberty Landing, just downriver of "Johnny’s Village (Figure 3)."

## OBJECTIVES

The specific objectives of this project are to:

1) estimate the relative abundance (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.

## 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 to monitor the Chinook salmon run and salmon characteristics. Test fishing commenced on June 5 and continued through July 11, for a total of 37 days of scheduled 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 LYTF (RM 24), which typically begins operation the first part of June, and the Mountain Village Test fishery (RM 87) and 2) the approximate 1 day lag between the Mountain Village Test Fishery and the Pilot Station sonar project site (RM 124). The project was planned to end earlier during the 2012 summer season in an effort to reduce the catch of Chinook salmon.

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. ATC was responsible for the hiring of local fisherman as test fishers and for the orderly distribution of the test fish catches to local residents. 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. Initially, a total of four drifts were conducted daily with all drifts occurring on the north bank of the Yukon River. One drift was planned to occur near shore, with one drift in an offshore sector. However because of very low catches in the offshore sector drift, that drift was eliminated early in the season. Accordingly, a total of two drifts were conducted daily with the single north-bank near shore station being sampled twice each day. Test drifts were conducted once in the morning and approximately 12 hours later, in the evening each day. The drift locations were determined preseason and were based on local fishermen's expertise and knowledge. Drifts were conducted only on the north side of the river because the vast majority, $95 \%$, of the Chinook salmon captured during the 2010 season was captured from the drift site on the north side of the river (Sandone 2011). During the 2011 (Sandone 2012) and 2012 seasons occasional drifts were conducted on the south side of the river, in association with a prominent sand bar, to determine if substantial numbers of Chinook salmon were migrating along the south bank sandbar.

Prior to the first set of each set of drifts, wind speed and direction, air and water temperature, percent cloud cover, and precipitation were noted and recorded. Observed water condition was noted as calm, slightly choppy, choppy, or rough.

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 or set, $\mathrm{CPUE}_{\mathrm{s}}$. 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:

$$
\begin{equation*}
C P U E_{s}=\frac{100 \mathrm{fm} \times 60 \mathrm{~min} \times \text { number of fish }}{f m \text { of gear } \times M F T} \tag{1}
\end{equation*}
$$

where: $\quad$ MFT $=$ mean fishing time for each set, in minutes.
Mean fishing time (MFT) was calculated as:

$$
\begin{equation*}
M F T=(C-B)+\frac{(\mathrm{B}-A)+(\mathrm{D}-\mathrm{C})}{2} \tag{2}
\end{equation*}
$$

$$
\begin{array}{ll}
\text { where: } & \mathrm{A}=\text { time net deployment started, } \\
& \mathrm{B}=\text { time net fully deployed, } \\
\mathrm{C}=\text { time net retrieval started, and } \\
& \mathrm{D}=\text { time net fully retrieved. }
\end{array}
$$

Initially, during each drift, the net was fished, or soaked, for approximately 20 minutes. Later in the season, in order to reduce the Chinook salmon catch, soak time was reduced by about half. 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. However, when an estimated 10 salmon or more were observed in the net, the crew was instructed to pull the entire net into the boat, record the time, and then pick the salmon out of 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 $\mathrm{CPUE}_{d}$ for the Mountain Village project, $\mathrm{CPUE}_{s}$ was averaged as follows:

$$
\begin{equation*}
C P U E_{d}=\left(\sum_{s=1}^{n} C P U E_{s}\right) / n \tag{3}
\end{equation*}
$$

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

Missing daily CPUE values were estimated from the linear regression analysis of the significant relationships between the daily LYTF CPUE versus the MVTF CPUE and the MVTF CPUE versus the sonar counts.

## Salmon Migration Timing

In this project, CPUE was the primary indication of relative run strength. At the end of the season, run timing statistics, quartile days, were calculated based on the daily versus the overall total CPUE.

ADF\&G uses these run timing statistics to compared and contrasted among the three lower river projects to determine the actual run timing of the Chinook salmon migration.

Migration 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 to four scale samples were collected from up to 30 Chinook salmon per day 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 to four scales taken from the preferred area were mounted on gum cards in the field. During the season scale cards were periodically delivered to ADF\&G for inseason assessment of the age-class composition of the sample. All remaining scale cards were delivered to ADF\&G immediately after the end of the project. ADF\&G was responsible for processing and reading the scales for age determination.

Sex was determined and recorded based on internal inspection of gonads. Length of each Chinook salmon was measured from mid-eye to fork of tail (METF), to the nearest 1 mm . For graphical and table presentations of Chinook salmon length, each Chinook salmon was assigned to a length range bin dependent on the measured length of the fish. These length range bins included the following ranges: <650mm; 650mm-699, 700mm-750mm; 751mm-799mm; 800mm-850mm; 851mm-899mm; 900mm999 mm ; and $\geq 1,000 \mathrm{~mm}$.

## Genetic Sampling

Genetic samples from this test fishery were collected to provide an independent assessment of the migrational pattern of the various Chinook salmon stocks through the lower river and may also be used to bolster the genetic sample collected at the Pilot Station sonar project for inseason assessment of the run. 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

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. Through discussions with the ADF\&G and the project biologist, test fishers achieved a sense of the importance of the data that they collected to the inseason management of the Yukon River Chinook salmon run. This project supported a resource management project in a cost effective manner and facilitated communications between community and government entities. In addition, the project souight to build community capacity and was supported in the local area.

## RESULTS

## Test Fishing

The 2012 fishing season was the third year for operation of the Chinook salmon drift 7.5 inch gillnet test fishery near Mountain Village. Test fishing occurred from June 5 through July 11, 2012. During 2010 and 2011, test fishing continued through July 17 but in 2012 an earlier project termination date of July 7 was
initially planned to reduce Chinook salmon mortality. However, the project was extended until July 11 at the request of ADF\&G to monitor the run a few days longer. Funds to extend the project were available from the delayed start.

Initially, test fishing drifts were planned for onshore and offshore stations at the Mountain Village test fish site. These test fishing drifts were planned to be conducted both in the morning and evening for a total of 4 drifts per day. However, after conferring with ADF\&G, the offshore drifts station was not sampled after June 13 because no Chinook salmon were caught and on the advice of the professional fishers who stated that catches would continue to be extremely low through the season at the offshore station. Although 74 individual onshore drifts were scheduled during the season, unsafe boating and fishing conditions, because of extremely rough waters, resulted in the cancellation of 2 scheduled onshore drifts on the evenings of June 7 and 12 (Table 1). Accordingly, a total of 72 onshore drifts were conducted during the 2012 season. Test fish crew conducted individual drifts on the north bank of the mainstem Yukon River during the morning and approximately 12 hours later in the evening (Appendix Table 1). The drift schedule was altered to fish less than 12 hours between drifts when commercial fisheries were scheduled so as not to interfere with commercial fishers. In this case, drifts were conducted 3 or 4 hours prior to the onset of the commercial period.

Individual drifts ranged in mean fishing time (MFT) from 12.0 to 23.5 minutes and averaged 17.7 minutes for drifts that did not experience major snags (Appendix Table 1). The drift time for the Drift 91 was much longer than other drift times because the net was caught on a snag. The recorded fishing time was 43 minutes and the net retrieval time was 67 minutes (Appendix Table 1). Individual drifts generally took an average of 1.4 minutes to set the net out. Net soak time, the time when the net was fully deployed to the time when it was started to be retrieved, ranged from 6 to 17 minutes and averaged 12.9 minutes. The time for pulling and picking the fish out of the net as it was retrieved ranged from 3 to 21 minutes and averaged 8.3 minutes, excluding Drift 91 (Appendix Table 1).

Subjective assessment of the horizontal location of Chinook salmon capture in the drift gillnet indicated that that the onshore and mid section of the net caught nearly an equal percentage of Chinook salmon, $42 \%$ and $39 \%$ respectively. Only $18 \%$ were caught in the offshore third of the net (Appendix Table 2). Subjective assessment of the vertical location of Chinook salmon capture in the drift gillnets indicated that $67 \%$ of the salmon were caught in the lower third of the net or near the lead line (Appendix Table 2). Approximately $22 \%$ of the catch was located in the mid portion of the net, with $11 \%$ caught in the top third of the net.

A total of 469 Chinook salmon and 336 summer chum salmon were captured and retained during the test fishing project (Table 1). Fishermen observed 14 additional Chinook that dropped out of the net as it was being retrieved (Table 1). Additionally, 28 summer chum were either released or were observed dropping out of the net. The Chinook salmon drop outs were included in the calculation of the daily CPUE but recorded as "released" in Table 1. Because sampling was limited to 30 Chinook salmon per day, a total of 443 Chinook salmon were sampled for age, sex, size, genetics, and possible hatchery contribution (Table 2). Catch and retention of Chinook salmon exceeded the 30 per day sample limit on June 27, 28, and 29, when 42,42 , and 32 were captured and retained, respectively (Table 1). Total daily Chinook salmon catches (retained and released) ranged from 0 on 7 days from June 5-14, to 43 Chinook salmon on June 27 (Table 1). During the project operation, 4 Chinook salmon with missing adipose fins were captured, retained, and sampled.(Appendix Table 3). The missing adipose fin indicated that these fish were possibly from Yukon Territory hatchery releases. The head of each fish was collected, frozen, and delivered to ADF\&G for verification and reading of the Coded wire tag (CWT).

One drift was conducted on June 10 along the south bank in association with the prominent sand bar to assess Chinook salmon passage along the south bank. No Chinook salmon were captured in this drift.

Recorded air temperature ranged from $6^{\circ} \mathrm{C}$ to $22^{\circ} \mathrm{C}$ and averaged $12^{\circ} \mathrm{C}$ over the course of the project (Appendix Table 2). Recorded water temperature ranged from $12^{\circ} \mathrm{C}$ to $18^{\circ} \mathrm{C}$ and averaged $14^{\circ}$ over the course of the project (Appendix Table 2).

## Catch per Unit Effort (CPUE)

The cumulative total MVTF CPUE based on the actual catches of Chinook salmon in 2012 was 1,736.8 (Table 1). A full day of fishing was not conducted on June 7 and 12. The evening drift on both days was cancelled because of hazardous boating conditions. However, because very few fish were caught before and after that day, an estimate for June 7 and June 12 catch and CPUE was unwarranted. Daily CPUE ranged from 0.0 on numerous days to 161.4, recorded on June 28 (Table 1).

An examination of the daily CPUE indicated that Chinook salmon migrated past Mountain Village in approximately 4 pulses, separated by 1or 2 days (Figure 4). The pulses at MVTF occurred during the periods: June 15-25, June 27-29, and July 1-2 and July 4-7 (Figure 4). The three highest CPUE values were observed on 3 on consecutive days during the second pulse, June 27 (CPUE= 132.9), 28 (CPUE= 161.4) , and 29 (CPUE = 152.5) (Figure 4, Table 1). Additionally, relatively high CPUEs, ranging from 59.2 to 65.1 were observed during the initial days of the first pulse, June 15, 16, and 17 that were not reflected in the LYTF CPUE or Pilot Station sonar counts. Further, these relatively high CPUEs were not reflected at the Rapids test fish wheel or the Eagle sonar. The occurrence of this sustained relatively high CPUE during this time is puzzling and may be partially explained by a concentrated spatial Chinook salmon migrational pattern at the test fish site.

## Salmon Migration Timing

Passage of the mid-50\% of the Chinook salmon run through the Lower Yukon was very similar for the MVTF project and the Pilot Station sonar project (PS Sonar), but dissimilar to the LYTF run timing (Figure 4). The timing of the run at the LYTF project was much later then the run timing observed at the MVTF project and PS Sonar site. The mid- $50 \%$ of the passage passed through the LYTF in 12 days, between June 26 and July 7, inclusive, for the set gillnet test fishery. The median day of passage was July 2.

The mid-50\% passage for the MVTF occurred between June 22 and July 2, inclusive, a period of 11days. Median day of passage for the MVTF was June 27. The mid- $50 \%$ of the run, as defined by PS Sonar, occurred from June 24 through July 2, inclusive, 9 days, with the median day of passage occurring on June 28 (Figure 4).

The median day of passage observed at the LYTF, July 2, would have expected to pass the MVTF site on July 4 and the PS Sonar site on July 5, accounting for travel time of 2 and 3 days, respectively. The actual median day of passage occurred on June 27 at MVTF site and June 28 at the PS Sonar site, 6 days earlier than expected for both projects. However, there was no difference in the median run timing day at the MVTF, June 27, and the median date at the PS Sonar site, June 28, because of the travel time of 1 day between locations (Figure 4.)

Simple linear regression analyses indicated that while all relationships between each of the three lower Yukon Chinook salmon assessment projects, PS Sonar vs LYTF CPUE, PS Sonar vs MVTF CPUE, and MVTF CPUE vs LYTF CPUE, were significant, $\mathrm{p}<0.05$ ( $\mathrm{p}=0.0078, \mathrm{p}<0.0001$; $\mathrm{p}=0.0004$, respectively), it appears that the observed daily paired data from these three projects did not fit the respective linear models well, $\mathrm{R}^{2}=0.1442^{;} \mathrm{R}^{2}=0.4869 ; \mathrm{R}^{2}=0.3012$, respectively. Interestingly, however, it appears that the observed paired data of the PS Sonar vs MVTF CPUE fit the resulting linear model better ( $\mathrm{R}^{2}=0.4869$ )
than the paired data used for the PS Sonar vs MVTF CPUEfit the linear model $\left(\mathrm{R}^{2}=0.1442\right)$ (Figure 5). Additionally, the observed paired data used for the MVTF CPUE vs LYTF CPUE regression analysis $\left(\mathrm{R}^{2}=0.3012\right)$ fit the resulting linear model better than the paired data used in the PS Sonar vs LYTF CPUE regression analysis ( $\mathrm{R}^{2}=0.1442$ ) ( Figure 5).

## Age, Sex and Length Composition

Of the 443 sets of scales taken from the Chinook salmon caught in the MVTF $91.4 \%$, or 405 scale sets were successfully aged. Successfully aged scales by sex were only slightly higher for female salmon, $92.3 \%$, than for male salmon, $90.8 \%$ (Table 2).

In general younger, smaller salmon were dominated by males, while the older, larger salmon were dominated by females (Table 3; Figure 6 and 7). The age composition of fish sampled in the MVTF project comprised 2 major age classes, age-1.3 and age-1.4 (Table 2; Figure 7). These age classes represented brood years 2007 and 2006, with Chinook salmon returning in 2012 as 5 and 6 year old fish, respectively (Table 4). The dominant age classes in the aged sample were age-1.4, $49.1 \%$, and age -1.3 , $44.7 \%$. Contributions from minor age classes included: age-2.4, $2.7 \%$; and age-1.5, $1.2 \%$ of the aged sample (Table 2). Additionally, 1 male age- 2.2 and 1 female age- 2.5 were observed in the sample. Four adipose-clipped salmon were also observed and sampled. Three of these fish were aged as age-1.4; and 1 as age-1.3 (Appendix Table 3). Because most, if not all, Yukon-origin hatchery fish do not spend a year in freshwater as their wild counter parts, I believe that the freshwater checks in the aging process are probably suspect. If these fish were indeed Yukon hatchery-origin salmon, the apparent freshwater checks may have been caused by feeding and/or release checks (Larry Dubois, ADF\&G, Anchorage, personal communication). These fish have not been processed for presence of CWT at the time this report was submitted.

Male Chinook salmon dominated the age-1.3 component, 81.8\%, while female Chinook salmon dominated the age-1.4 age group, $67.3 \%$. During the season, the percentage of sampled female Chinook salmon dramatically increased from $32.8 \%$ during the first quartile to $62.0 \%$ during the third quartile. During the fourth quartile the percent female declined to about half the sample, 49.3\% (Figure 8). Changes in sex ratio are directly related to the changes in the age-class switch from the male-dominated age-1.3 class to the female-dominated age-1.4 class as the season progress through the third quartile (Figure 9). During the fourth quartile, however, the male-dominate age 1.3 class increased while the age1.4 class decreased to account for the near parity of the sexes in the last quartile (Figure 8 and 9 ). Overall, male Chinook salmon dominated the sampled Chinook salmon, accounting for $56.2 \%$ of the sample (Table 2).

The mean length of the sampled, and aged sample populations, 780 mm was the same (Table 2 ). The length frequency distribution of sampled Chinook salmon (Table 3; Figure 6) portrayed a bi-modal distribution, with male salmon dominating the $700-750 \mathrm{~mm}$ length bin, while female salmon dominating the larger length bin, $800-850 \mathrm{~mm}$ (Table 3 and Figure 6). The length of approximately $23.3 \%$ of the sampled salmon was between 700 and 750 mm , inclusive, and $26.4 \%$ were between 800 mm and 850 mm , inclusive. While age- 1.3 male salmon dominated the $700 \mathrm{~mm}-750 \mathrm{~mm}$ length bin, age- 1.4 female salmon dominated the $800 \mathrm{~mm}-850 \mathrm{~mm}$ length bin (Table 4; Figure 7). Additionally, the 700 mm to 750 mm length bin contained over a third of the male salmon sample, $35.3 \%$ (Table 3; Figure 6), while the 800 mm to 850 mm length bin contained $41.2 \%$ of the sampled female population (Table 3; Figure 6). Chinook salmon greater than 900 mm comprised $4.1 \%$ of the sample (Table 3; Figure 6); female and male Chinook salmon comprised $50 \%$ of the fish in this length bin (Table 3; Figure 6).

Average lengths of males, by age, ranged from 584 mm for age- 1.2 to 984 mm for age- 1.5 salmon (Table 2). Overall length of male Chinook salmon ranged from 537 mm to 994 mm for the sampled population
(Table 2). Female average length composition ranged from 780 mm for age- 1.3 salmon to 913 mm for age-1.5 salmon. Overall length of female Chinook salmon ranged from 700 mm for an age- 1.3 female to 930 for an age-1.5 female Chinook salmon (Table 2). Overall, the weighted mean age of males, 5.30 years, was younger than the weighted mean age of females, 5.89 years, in the aged sample (Table 4). Male Chinook salmon represented $56.2 \%$ of the fish sampled while females represented $43.8 \%$ (Table 3) and, similarly, $55.8 \%$ and $44.2 \%$, respectively, of the aged salmon sampled.(Table 4).

## Genetic Sampling

Genetic information is unavailable at this time. However, a genetic sample was taken from each Chinook salmon sampled for age, sex, length, 443 individuals.

## Conservation and Stewardship Experience for Rural Local Residents

Local hiring of fishermen was accomplished through ACT and provided stewardship experiences by participation in the test fishery. This project provided local residents work experience and data collection training. This project supported a resource management project in a cost effective manner and facilitated communications between community and government entities. In addition, the project souight to build community capacity and was supported in the local area.

## DISCUSSION

The 2012 MVTF project for Chinook salmon operated successfully during its third season. 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, as well as information regarding the timing of various Chinook salmon stocks through the Lower Yukon Area. This information, in conjunction with information from the LYTF and Pilot Station sonar projects provided managers and research biologists with a better understanding of the entire Chinook salmon run. 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.

Although test fishing was conducted along both banks of the Yukon River during the first year of operation, in 2010, the vast majority, over 95\%, of Chinook salmon were caught along the north bank (Sandone 2011). Occasional drifts conducted during the 2011 season resulted in only 2 captured Chinook salmon on a day that 80 were caught in the north bank drift (Sandone 2012). Because it appears that the north bank is the major migrational pathway for in this section of river, in 2012, test fishing was not routinely conducted on the south side of the river.

Of the 443 Chinook salmon sampled, $8.6 \%$ were not aged because the associated scale samples could not be read because the scales were regenerated. However, casual observation indicates that that the aged sample is quite similar to the entire sample with respect to sex and length of fish. Additionally, the mean lengths of aged versus unaged salmon by sex were not significantly different.

Although the 7.5 inch drift gillnets used in this project do not adequately sample all lengths, we believe that the vast majority of fish moving through the area at the time of fishing operations during 2012 were susceptible to capture. Evidence supporting this assumption can be found by comparing the Pilot Station sonar test fish catch length frequency distribution to the MVTF catch length frequency distribution (Figure 10). Although a suit of six nets, ranging in size from 2.5 to 8.5 inch stretch mesh are used in test fishing operations at the Pilot Station sonar project site, the length frequency distribution of the MVTF and the Pilot Station sonar are similar, except for fish less than 700 mm . It appears that the smaller mesh nets used at Pilot Station catch more fish less than 700 mm than the 7.5 inch stretch mesh used at the MVTF. Interestingly, the Pilot Station and the Mountain Village test fish length frequencies and sex
composition are quite dissimilar to the LYTF Set fish length frequency distribution and female composition, which utilizes 8.5 inch stretch mesh gear.

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Table 1. Chinook and chum salmon catches and Chinook salmon CPUE, Mountain Village drift test net fishery, June 5-July 11, 2012.

| Date |  | Chinook Salmon |  |  |  |  |  | Chum Salmon |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Retained | Released ${ }^{\text {a }}$ | Total | CPUE ${ }^{\text {b }}$ |  | $\begin{aligned} & \text { Cum. } \\ & \text { Prop } \\ & \hline \end{aligned}$ | Retained | Released ${ }^{\text {a }}$ | Total |
|  |  |  |  |  | Daily | Cum. |  |  |  |  |
| 6/5/2012 | c | 0 | 0 | 0 | 0.0 | 0.0 | 0.00 | 0 | 0 | 0 |
| 6/6/2012 | c | 0 | 0 | 0 | 0.0 | 0.0 | 0.00 | 0 | 0 | 0 |
| 6/7/2012 | d | 0 | 0 | 0 | 0.0 | 0.0 | 0.00 | 0 | 0 | 0 |
| 6/8/2012 |  | 0 | 0 | 0 | 0.0 | 0.0 | 0.00 | 0 | 0 | 0 |
| 6/9/2012 |  | 0 | 0 | 0 | 0.0 | 0.0 | 0.00 | 0 | 0 | 0 |
| 6/10/2012 |  | 1 | 0 | 1 | 2.9 | 2.9 | 0.00 | 0 | 0 | 0 |
| 6/11/2012 |  | 1 | 0 | 1 | 3.0 | 5.9 | 0.00 | 0 | 0 | 0 |
| 6/12/2012 | e | 0 | 0 | 0 | 0.0 | 5.9 | 0.00 | 0 | 0 | 0 |
| 6/13/2012 |  | 1 | 0 | 1 | 3.0 | 8.9 | 0.01 | 0 | 0 | 0 |
| 6/14/2012 |  | 0 | 0 | 0 | 0.0 | 8.9 | 0.01 | 2 | 0 | 2 |
| 6/15/2012 |  | 20 | 0 | 20 | 65.1 | 74.0 | 0.04 | 7 | 0 | 7 |
| 6/16/2012 |  | 17 | 1 | 18 | 65.1 | 139.1 | 0.08 | 4 | 2 | 6 |
| 6/17/2012 |  | 17 | 0 | 17 | 59.2 | 198.3 | 0.11 | 6 | 0 | 6 |
| 6/18/2012 |  | 4 | 1 | 5 | 16.8 | 215.1 | 0.12 | 3 | 1 | 4 |
| 6/19/2012 |  | 19 | 2 | 21 | 74.2 | 289.3 | 0.17 | 19 | 1 | 20 |
| 6/20/2012 |  | 13 | 0 | 13 | 43.3 | 332.5 | 0.19 | 24 | 2 | 26 |
| 6/21/2012 |  | 19 | 1 | 20 | 60.9 | 393.5 | 0.23 | 23 | 1 | 24 |
| 6/22/2012 |  | 16 | 0 | 16 | 50.4 | 443.9 | 0.26 | 25 | 0 | 25 |
| 6/23/2012 |  | 26 | 0 | 26 | 89.4 | 533.3 | 0.31 | 27 | 2 | 29 |
| 6/24/2012 |  | 20 | 0 | 20 | 69.3 | 602.7 | 0.35 | 24 | 2 | 26 |
| 6/25/2012 |  | 26 | 1 | 27 | 81.7 | 684.4 | 0.39 | 16 | 1 | 17 |
| 6/26/2012 |  | 13 | 0 | 13 | 46.0 | 730.3 | 0.42 | 6 | 0 | 6 |
| 6/27/2012 |  | 42 | 1 | 43 | 132.9 | 863.2 | 0.50 | 34 | 0 | 34 |
| 6/28/2012 |  | 42 | 0 | 42 | 161.4 | 1024.6 | 0.59 | 28 | 2 | 30 |

-continued-

Table 1. page 2 of 2.

a Includes fish that dropped out of the net while the net was being retrieved.
${ }^{\text {b }}$ Daily CPUE was determined from onshore drifts only. Daily CPUE was not adjusted to reflect cancelled onshore drifts on June 7 and 12.
c Evening test fishing not conducted for the offshore site because of very rough river water conditions and unsafe boating conditions.
d Evening test fishing not conducted for the onshore and offshore sites because of very rough river water conditions and unsafe boating conditions.
e Morning test fishing was not conducted for the offshore station and evening test fishing for the onshore and offshore stations were not conducted because of very rough river water conditions and unsafe boating conditions.

Table 2. Age and sex composition and mean length by major age classes of sampled Chinook salmon captured in the Mountain Village test 7.5 inch gillnet test fishery, $2012^{\text {a }}$

| Season Total |  |  |  | Brood Year (age class) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | $\begin{aligned} & 2006 \\ & \hline(1.2) \end{aligned}$ |  | $\begin{aligned} & 2005 \\ & (1.3) \\ & \hline \end{aligned}$ |  | $\begin{aligned} & 2004 \\ & \hline(1.4) \end{aligned}$ |  | $\begin{aligned} & 2003 \\ & \hline(1.5) \end{aligned}$ |  | 2003 |  | Aged <br> Total |  | Unaged <br> Total |  | Season <br> Total |  |
|  |  |  |  |  |  | (2.4) |  |  |  |  |  |  |  |  |  |  |  |
| Sample Dates |  |  | \% Aged | N | \% |  |  | N | \% | N | \% | N | \% | N | \% | N | \% | N | \% | N | \% |
| 5-Jun | 11-Jul | Male <br> Female <br> Subotal | 90.8\% | 7 | 1.7 | 148 | 36.5 | 65 | 16.0 | 1 | 0.2 | 4 | 1.0 | 226 | 55.8 | 23 | 5.2 | 249 | 56.2 |
|  |  |  | 92.3\% | 0 | 0.0 | 33 | 8.1 | 134 | 33.1 | 4 | 1.0 | 7 | 1.7 | 179 | 44.2 | 15 | 3.4 | 194 | 43.8 |
|  |  |  | 91.4\% | 7 | 1.7 | 181 | 44.7 | 199 | 49.1 | 5 | 1.2 | 11 | 2.7 | 405 | 100.0 | 38 | 8.6 | 443 | 100.0 |
|  | Male Mean Length <br> SE <br> Range $\qquad$ |  |  | 584 |  | 720 |  | 809 |  | 984 |  | 824 |  | 744 |  | 751 |  | 744 |  |
|  |  |  |  | 10.4 |  | 3.6 |  | 7.7 |  | - |  | 25.7 |  | 4.8 |  | 16.0 |  | 4.6 |  |
|  |  |  |  | 537 | 611 | 590 | 873 | 672 | 994 | 984 | 984 | 755 | 875 | 537 | 994 | 606 | 929 | 537 | 994 |
|  |  |  |  | 7 |  | 148 |  | 65 |  | 1 |  | 4 |  | 226 |  | 23 |  | 249 |  |
|  | Female Mean Length SE |  |  | - |  | 780 |  | 836 |  | 913 |  | 809 |  | 828 |  | 817 |  | 826 |  |
|  |  |  |  | - |  | 7.5 |  | 3.5 |  | 7.9 |  | 8.4 |  | 3.5 |  | 9.6 |  | 3.7 |  |
|  |  | Range |  | - | - | 700 | 850 | 725 | 925 | 892 | 930 | 780 | 835 | 700 | 930 | 763 | 873 | 700 | 930 |
|  |  | N |  | 0 |  | 33 |  | 134 |  | 4 |  | 7 |  | 179 |  | 15 |  | 194 |  |
|  | Total Mean LengthSE |  |  | 584 |  | 731 |  | 828 |  | 927 |  | 814 |  | 780 |  | 777 |  | 780 |  |
|  |  |  |  | 10.4 |  | 3.7 |  | 3.5 |  | 15.4 |  | 10.2 |  | 3.7 |  | 11.6 |  | 3.5 |  |
|  |  | Range |  | 537 | 611 | 590 | 873 | 672 | 994 | 892 | 984 | 755 | 875 | 537 | 994 | 606 | 929 | 537 | 994 |
|  |  |  |  | 7 |  | 181 |  | 199 |  | 5 |  | 11 |  | 405 |  | 38 |  | 443 |  |

[^1]Table 3. Length frequency distribution of sampled Chinook salmon captured in the Mountain Village test drift 7.5 inch gillnet fishery, 2012.

| Length Bins (mm) | Total Caught |  | Males |  | Females |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | number | \% | number | \% | number | \% |
| <650 | 13 | 2.9 | 13 | 2.9 | 0 | 0.0 |
| 650-699 | 50 | 11.3 | 50 | 11.3 | 0 | 0.0 |
| 700-750 | 103 | 23.3 | 88 | 19.9 | 15 | 3.4 |
| 751-799 | 79 | 17.8 | 41 | 9.3 | 38 | 8.6 |
| 800-850 | 117 | 26.4 | 37 | 8.4 | 80 | 18.1 |
| 851-899 | 63 | 14.2 | 11 | 2.5 | 52 | 11.7 |
| 900-999 | 18 | 4.1 | 9 | 2.0 | 9 | 2.0 |
| >=1,000 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Total | 443 | 100.0 | 249 | 56.2 | 194 | 43.8 |
| Average length (mm) |  | 780 |  | 744 |  | 826 |

Table 4. Length frequency distribution and mean age of aged Chinook salmon from the Mountain Village test drift Chinook salmon test fishery, 7.5 in stretch mesh gillnets, 2012.

| Length <br> Bins <br> (mm) | Total Aged |  |  | Males |  |  | Females |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | number | \% | mean age | number | \% | mean age | number | \% | $\begin{gathered} \text { mean } \\ \text { age } \\ \hline \end{gathered}$ |
| <650 | 11 | 2.7 | 4.36 | 11 | 2.7 | 4.36 | 0 | 0.0 | NA |
| 650-699 | 46 | 11.4 | 5.04 | 46 | 11.4 | 5.04 | 0 | 0.0 | 5.00 |
| 700-750 | 95 | 23.5 | 5.11 | 80 | 19.8 | 5.09 | 15 | 3.7 | 5.27 |
| 751-799 | 70 | 17.3 | 5.61 | 38 | 9.4 | 5.55 | 32 | 7.9 | 5.69 |
| 800-850 | 110 | 27.2 | 5.88 | 34 | 8.4 | 5.76 | 76 | 18.8 | 5.93 |
| 851-899 | 56 | 13.8 | 6.05 | 9 | 2.2 | 6.00 | 47 | 11.6 | 6.06 |
| 900-999 | 17 | 4.2 | 6.24 | 8 | 2.0 | 6.13 | 9 | 2.2 | 6.33 |
| > $=1,000$ | 0 | 0.0 | NA | 0 | 0.0 | NA | 0 | 0.0 | NA |
| Total or mean | 405 | 100.0 | 5.56 | 226 | 55.8 | 5.30 | 179 | 44.2 | 5.89 |
| \% aged | 91.4 |  |  | 90.8 |  |  | 92.3 |  |  |
| Mean length (m |  | 780 |  |  | 744 |  |  | 827 |  |



Figure 1. Map of the Yukon River drainage


Figure 2. 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 3. Map of Yukon River in the Mountain Village vicinity, with drift site.


Figure 4. Comparison of Lower Yukon and Mountain Village Chinook salmon test fish catch per unit effort (CPUE) and Pilot Station sonar counts attributed to Chinook salmon, 2011. Quartile days are indicated by Q-M-Q for each project. The $10^{\text {th }}$ and $90^{\text {th }}$ percentile is indicated by the *. The LYTF and MVTF timing is adjusted for travel time. LYTF travel time is 3 days (lagged 3 days); while the MVTF travel time is 1 day to the sonar site (lagged 1 day).



Figure 5. Linear regression analyses: MVTF CPUE vs. LYTF CPUE (top); Pilot Station sonar counts attributed to Chinook salmon vs. MVTF CPUE (middle); and LYTF CPUE vs. Pilot Station sonar counts attributed to Chinook salmon (lower) 2012.


Figure 6. Frequency of sampled Chinook salmon by sex and length bin, and total number sampled by length bin, Mountain Village Chinook salmon test fishery, 2012.


Figure 7. Frequency of Chinook salmon sampled by age and sex, Mountain Village Chinook salmon test fishery, 2012.


Figure 8. Proportion of female and male Chinook salmon sampled, by quartile, from the Mountain Village drift test net catch, 2012.


Figure 9. Proportion of 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, 2012.


Figure 10. Comparison of length frequency distribution of Chinook salmon test fish catches among the Lower Yukon, Mountain Village, and Pilot Station sonar projects, summer season, 2012. Note that ADF\&G data from the Lower Yukon and Pilot Station test fish projects are preliminary and subject to change.

Appendix Table 1. Chinook salmon drift test fish log, Mountain Village, Alaska, June 5 - July 11, 2012.

| Date | $\begin{gathered} \text { Drift } \\ \text { No. } \\ \hline \end{gathered}$ |  | Fishing Time |  |  |  |  | Catch |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | (A) | (B) | (C) | (D) | (E) | Chinook Salmon |  |  |  | Summer Chum Salmon |  |  |  | Other <br> Total <br> Catch |
|  |  |  | Start <br> Net <br> Out | Net <br> Full <br> Out | Start <br> Net In | Net <br> Full In | Mean Fishing Time | Total Kept | Total Release | Total Dropout | Total Catch | Total Kept | Total Release | Total Dropout | Total Catch |  |
| 5-Jun | 1 |  | 14:41 | 14:43 | 15:00 | 15:06 | 21.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 5-Jun | 2 | a | 15:10 | 15:11 | 15:28 | 15:31 | 19.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5-Jun | 3 |  | 20:45 | 20:47 | 20:54 | 21:04 | 13.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5-Jun | 4 | a,b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 6-Jun | 5 |  | 8:54 | 8:56 | 9:13 | 9:17 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6-Jun | 6 | a | 9:21 | 9:22 | 9:39 | 9:45 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6-Jun | 7 |  | 20:50 | 20:53 | 21:10 | 21:20 | 23.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6-Jun | 8 | a,b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 7-Jun | 9 |  | 8:41 | 8:43 | 9:00 | 9:04 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-Jun | 10 | a | 9:08 | 9:09 | 9:26 | 9:30 | 19.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7-Jun | 11 | b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 7-Jun | 12 | a,b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 8-Jun | 13 |  | 8:57 | 8:59 | 9:16 | 9:21 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8-Jun | 14 | a | 9:26 | 9:27 | 9:44 | 9:50 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8-Jun | 15 |  | 20:40 | 20:43 | 21:00 | 21:06 | 21.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8-Jun | 16 | a | 21:11 | 21:13 | 21:30 | 21:37 | 21.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9-Jun | 17 |  | 8:45 | 8:46 | 9:03 | 9:09 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9-Jun | 18 | a | 9:19 | 9:20 | 9:37 | 9:43 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9-Jun | 19 | a | 20:19 | 20:21 | 20:38 | 20:43 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9-Jun | 20 |  | 20:48 | 20:50 | 21:07 | 21:11 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

-continued-

Appendix Table 1. Page 2 of 3.

| Date | Drift No. |  | Fishing Time |  |  |  |  | Catch |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | (A) | (B) | (C) | (D) | (E) | Chinook Salmon |  |  |  | Summer Chum Salmon |  |  |  | Other <br> Total <br> Catch |
|  |  |  | Start <br> Net <br> Out | Net <br> Full <br> Out | Start Net In | Net <br> Full In | Mean Fishing Time | Total Kept | Total Release | Total <br> Dropout | Total Catch | Total Kept | Total Release | Total Dropout | Total Catch |  |
| 10-Jun | 21 |  | 8:58 | 9:00 | 9:17 | 9:22 | 20.5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-Jun | 22 | a | 9:25 | 9:26 | 9:43 | 9:47 | 19.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-Jun | 23 |  | 20:45 | 20:46 | 21:03 | 21:10 | 21.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10-Jun | 24 | a | 21:28 | 21:29 | 21:46 | 21:51 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11-Jun | 25 |  | 8:57 | 8:58 | 9:15 | 9:20 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11-Jun | 26 | a | 9:24 | 9:25 | 9:42 | 9:47 | 20.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11-Jun | 27 |  | 20:33 | 20:34 | 20:51 | 20:56 | 20.0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11-Jun | 28 | a | 21:00 | 21:01 | 21:18 | 21:22 | 19.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12-Jun | 29 |  | 9:04 | 9:06 | 9:23 | 9:28 | 20.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12-Jun | 30 | a,b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 12-Jun | 31 | b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 12-Jun | 32 | a,b | na | na | na | na | 0.0 | na | na | na | na | na | na | na | na | na |
| 13-Jun | 33 | a | 8:38 | 8:39 | 8:56 | 9:00 | 19.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13-Jun | 34 |  | 9:06 | 9:07 | 9:24 | 9:29 | 20.0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13-Jun | 35 |  | 21:00 | 21:01 | 21:15 | 21:20 | 17.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14-Jun | 36 |  | 9:07 | 9:09 | 9:24 | 9:28 | 18.0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| 14-Jun | 37 |  | 21:12 | 21:14 | 21:29 | 21:35 | 19.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15-Jun | 38 |  | 10:45 | 10:46 | 10:58 | 11:08 | 17.5 | 10 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 |
| 15-Jun | 39 |  | 21:38 | 21:39 | 21:54 | 22:02 | 19.5 | 10 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| 16-Jun | 40 |  | 10:13 | 10:14 | 10:24 | 10:36 | 16.5 | 15 | 0 | 0 | 0 | 2 | 0 | 2 | 4 | 0 |

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Appendix Table 1. Page 3 of 3.

| Date | Drift <br> No. | Fishing Time |  |  |  |  | Catch |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (A) | (B) | (C) | (D) | (E) | Chinook Salmon |  |  |  | Summer Chum Salmon |  |  |  | Other <br> Total <br> Catch |
|  |  | Start <br> Net <br> Out | Net <br> Full <br> Out | Start <br> Net In | Net Full In | Mean Fishing Time | Total Kept | Total Release | Total Dropout | Total Catch | Total Kept | Total Release | Total Dropout | Total Catch |  |
| 16-Jun | 41 | 21:00 | 21:02 | 21:15 | 21:21 | 17.0 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 |
| 17-Jun | 42 | 9:46 | 9:47 | 10:00 | 10:09 | 18.0 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| 17-Jun | 43 | 19:49 | 19:50 | 20:02 | 20:11 | 17.0 | 13 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| 18-Jun | 44 | 9:57 | 9:58 | 10:12 | 10:18 | 17.5 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 |
| 18-Jun | 45 | 21:03 | 21:04 | 21:18 | 21:25 | 18.0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 |
| 19-Jun | 46 | 10:19 | 10:20 | 10:34 | 10:43 | 19.0 | 10 | 0 | 0 | 0 | 7 | 0 | 1 | 8 | 0 |
| 19-Jun | 47 | 21:28 | 21:30 | 21:36 | 21:53 | 15.5 | 9 | 0 | 0 | 2 | 12 | 0 | 0 | 12 | 0 |
| 20-Jun | 48 | 10:12 | 10:14 | 10:25 | 10:36 | 17.5 | 10 | 0 | 0 | 0 | 15 | 0 | 2 | 17 | 0 |
| 20-Jun | 49 | 19:53 | 19:55 | 20:10 | 20:18 | 20.0 | 3 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0 |
| 21-Jun | 50 | 10:15 | 10:16 | 10:30 | 10:42 | 20.5 | 15 | 0 | 0 | 1 | 19 | 0 | 1 | 20 | 0 |
| 21-Jun | 51 | 19:21 | 19:22 | 19:36 | 19:41 | 17.0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 |
| 22-Jun | 52 | 10:00 | 10:01 | 10:15 | 10:27 | 20.5 | 10 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0 |
| 22-Jun | 53 | 21:18 | 21:20 | 21:30 | 21:42 | 17.0 | 6 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 0 |
| 23-Jun | 54 | 10:16 | 10:17 | 10:28 | 10:41 | 18.0 | 12 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | $1{ }^{\text {c }}$ |
| 23-Jun | 55 | 22:08 | 22:09 | 22:18 | 22:33 | 17.0 | 14 | 0 | 0 | 0 | 11 | 0 | 2 | 13 | 0 |
| 24-Jun | 56 | 10:23 | 10:24 | 10:33 | 10:51 | 18.5 | 15 | 0 | 0 | 0 | 16 | 0 | 0 | 16 | $1{ }^{\text {c }}$ |
| 24-Jun | 57 | 20:21 | 20:22 | 20:31 | 20:41 | 14.5 | 5 | 0 | 0 | 0 | 8 | 0 | 2 | 10 | 0 |
| 25-Jun | 58 | 10:19 | 10:20 | 10:32 | 10:44 | 18.5 | 14 | 0 | 0 | 0 | 12 | 0 | 1 | 13 | 0 |
| 25-Jun | 59 | 21:27 | 21:29 | 21:44 | 21:55 | 21.5 | 12 | 0 | 0 | 1 | 4 | 0 | 0 | 4 | 0 |
| 26-Jun | 60 | 11:07 | 11:09 | 11:24 | 11:32 | 20.0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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## Appendix Table 1. Page 4 of .

| Date | $\begin{gathered} \text { Drift } \\ \text { No. } \\ \hline \end{gathered}$ | Fishing Time |  |  |  |  | Catch |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (A) | (B) | (C) | (D) | (E) | Chinook Salmon |  |  |  | Summer Chum Salmon |  |  |  | Other |
|  |  | Start <br> Net <br> Out | Net <br> Full <br> Out | Start <br> Net In | Net <br> Full In |  | Total Kept | Total Release | Total Dropout | Total Catch | Total Kept | Total <br> Release | Total Dropout | Total Catch | Total Catch |
| 26-Jun | 61 | 21:38 | 21:39 | 21:50 | 21:58 | 15.5 | 8 | 0 | 0 | 8 | 6 | 0 | 0 | 6 | 0 |
| 27-Jun | 62 | 11:07 | 11:08 | 11:18 | 11:39 | 21.0 | 35 | 0 | 1 | 36 | 32 | 0 | 0 | 32 | 0 |
| 27-Jun | 63 | 21:18 | 21:21 | 21:29 | 21:38 | 14.0 | 7 | 0 | 0 | 7 | 2 | 0 | 0 | 2 | 0 |
| 28-Jun | 64 | 9:15 | 9:17 | 9:27 | 9:42 | 18.5 | 21 | 0 | 0 | 21 | 21 | 2 | 0 | 23 | 0 |
| 28-Jun | 65 | 21:00 | 21:01 | 21:10 | 21:18 | 13.5 | 21 | 0 | 0 | 21 | 7 | 0 | 0 | 7 | $1{ }^{\text {d }}$ |
| 29-Jun | 66 | 9:10 | 9:11 | 9:20 | 9:25 | 12.0 | 16 | 0 | 1 | 17 | 17 | 0 | 0 | 17 | $1{ }^{\text {d }}$ |
| 29-Jun | 67 | 21:01 | 21:02 | 21:12 | 21:23 | 16.0 | 16 | 0 | 2 | 18 | 3 | 0 | 1 | 4 | 0 |
| 30-Jun | 68 | 9:02 | 9:03 | 9:14 | 9:21 | 15.0 | 6 | 0 | 0 | 6 | 6 | 0 | 0 | 6 | 0 |
| 30-Jun | 69 | 21:18 | 21:19 | 21:29 | 21:36 | 14.0 | 6 | 0 | 0 | 6 | 5 | 0 | 0 | 5 | 0 |
| 1-Jul | 70 | 9:01 | 9:02 | 9:12 | 9:19 | 14.0 | 5 | 0 | 0 | 5 | 4 | 0 | 0 | 4 | 0 |
| 1-Jul | 71 | 21:05 | 21:06 | 21:16 | 21:25 | 15.0 | 9 | 0 | 0 | 9 | 2 | 0 | 1 | 3 | 1 |
| 2-Jul | 72 | 9:08 | 9:10 | 9:20 | 9:36 | 19.0 | 10 | 0 | 1 | 11 | 8 | 3 | 3 | 14 | 4 |
| 2-Jul | 73 | 19:25 | 19:28 | 19:38 | 19:50 | 17.5 | 17 | 0 | 0 | 17 | 4 | 1 | 0 | 5 | $2{ }^{\text {d }}$ |
| 3-Jul | 74 | 10:18 | 10:20 | 10:30 | 10:35 | 13.5 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 |
| 3-Jul | 75 | 21:05 | 21:06 | 21:17 | 21:22 | 14.0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 3 | 0 |
| 4-Jul | 76 | 9:07 | 9:08 | 9:18 | 9:30 | 16.5 | 9 | 0 | 0 | 9 | 9 | 1 | 0 | 10 | 0 |
| 4-Jul | 77 | 21:05 | 21:06 | 21:16 | 21:22 | 13.5 | 7 | 0 | 0 | 7 | 3 | 0 | 1 | 4 | 0 |
| 5-Jul | 78 | 9:11 | 9:12 | 9:22 | 9:35 | 17.0 | 11 | 0 | 0 | 11 | 6 | 0 | 0 | 6 | 0 |
| 5-Jul | 79 | 21:06 | 21:07 | 21:16 | 21:26 | 14.5 | 8 | 0 | 2 | 10 | 0 | 0 | 0 | 0 | $1{ }^{\text {d }}$ |
| 6-Jul | 80 | 9:59 | 10:00 | 10:10 | 10:19 | 15.0 | 6 | 0 | 0 | 6 | 5 | 0 | 2 | 7 | 0 |
| -continued- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Appendix Table 1. Page 5 of 5.

| Date | $\begin{gathered} \text { Drift } \\ \text { No. } \\ \hline \end{gathered}$ | Fishing Time |  |  |  |  | Catch |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (A) | (B) | (C) | (D) | (E) | Chinook Salmon |  |  |  | Summer Chum Salmon |  |  |  | Other |
|  |  | Start <br> Net Out | Net <br> Full <br> Out | Start <br> Net In | Net <br> Full In | Mean Fishing Time | Total Kept | Total Release | Total Dropout | Total Catch | Total Kept | Total <br> Release | Total Dropout | Total Catch | Total Catch |
| 6-Jul | 81 | 21:01 | 21:03 | 21:13 | 21:20 | 14.5 | 6 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 |
| 7-Jul | 82 | 10:44 | 10:45 | 10:55 | 11:03 | 14.5 | 7 | 0 | 0 | 7 | 2 | 0 | 0 | 2 | 0 |
| 7-Jul | 83 | 21:04 | 21:05 | 21:15 | 21:23 | 14.5 | 5 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 0 |
| 8-Jul | 84 | 9:05 | 9:06 | 9:16 | 9:22 | 13.5 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 8-Jul | 85 | 19:02 | 19:03 | 19:13 | 19:17 | 12.5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 9-Jul | 86 | 9:07 | 9:08 | 9:20 | 9:26 | 15.5 | 5 | 0 | 0 | 5 | 1 | 1 | 0 | 2 | 0 |
| 9-Jul | 87 | 20:59 | 21:00 | 21:10 | 21:19 | 15.0 | 6 | 0 | 0 | 6 | 2 | 0 | 0 | 2 | 0 |
| 10-Jul | 88 | 9:05 | 9:06 | 9:16 | 9:22 | 13.5 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 2 | 0 |
| 10-Jul | 89 | 20:55 | 20:57 | 21:10 | 21:18 | 18.0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 3 |
| 11-Jul | 90 | 9:07 | 9:08 | 9:18 | 9:26 | 14.5 | 7 | 0 | 0 | 7 | 1 | 0 | 0 | 1 | 2 |
| 11-Jul | 91 | 17:30 | 17:31 | 17:40 | 18:47 | 43.0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Totals |  |  |  |  |  |  | 469 | 0 | 14 | 483 | 336 | 8 | 20 | 364 | 23 |
| ${ }^{\text {a }}$ Scheduled offshore drift |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Tes she pink 3 | hing not con <br> h Imon <br> salmon an | ducted <br> 1 burbo | cause of | ugh rive | water res | in un | fe boating | conditi |  |  |  |  |  |  |

Appendix Table 2. Weather, fishing conditions, and location of salmon caught in drift gillnet, Chinook salmon Mountain Village drift test fish log, Mountain Village, Alaska, June 10 - July 11, 2012

| Date | $\begin{gathered} \text { Drift } \\ \text { no. } \\ \hline \end{gathered}$ | Temperature$\left({ }^{\circ} \mathrm{C}\right)$$\quad$ Wind |  |  |  | cloud cover (\%) | Precip. ${ }^{\text {a }}$ | Water <br> Condition ${ }^{\text {b }}$ | Chinook <br> Salmon <br> Retained | Horizontal location of Chinook salmon caught in net (number) |  |  | Vertical location of Chinook salmon caught in net (number) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Water | Air | Dir. | $\begin{aligned} & \text { speed } \\ & \text { (mph) } \end{aligned}$ |  |  |  |  | Inshore | midnet | offshore | cork | middle | leadline |
| 5-Jun | 1 | 12 | 15 | S | 5-7 | 100 | N | 2 | 0 |  |  |  |  |  |  |
| 5-Jun | 2 | 12 | 15 | S | 5-7 | 100 | N | 2 | 0 |  |  |  |  |  |  |
| 5-Jun | 3 | 12 | 16 | W | 18-20 | 60 | N | 5 | 0 |  |  |  |  |  |  |
| 5-Jun | $4^{\text {c }}$ | 12 | 16 | W | 18-20 | 60 | N | 6 | na |  |  |  |  |  |  |
| 6-Jun | 5 | 12 | 7 | NW | 10-12 | 80 | N | 4 | 0 |  |  |  |  |  |  |
| 6-Jun | 6 | 12 | 7 | NW | 10-12 | 80 | N | 4 | 0 |  |  |  |  |  |  |
| 6-Jun | 7 | 12 | 10 | NW | 20-22 | 60 | N | 6 | 0 |  |  |  |  |  |  |
| 6-Jun | $8{ }^{\text {c }}$ | 12 | 10 | NW | 20-22 | 60 | N | 6 | na |  |  |  |  |  |  |
| 7-Jun | 9 | 12 | 7 | NW | 12-14 | 90 | N | 5 | 0 |  |  |  |  |  |  |
| 7-Jun | 10 | 12 | 7 | NW | 12-14 | 90 | N | 5 | 0 |  |  |  |  |  |  |
| 7-Jun | $11^{\text {c }}$ | 12 | 9 | NW | 20-24 | 100 | I | 6 | na |  |  |  |  |  |  |
| 7-Jun | $12^{\text {c }}$ | 12 | 9 | NW | 20-24 | 100 | I | 6 | na |  |  |  |  |  |  |
| 8-Jun | 13 | 12 | 8 | W | 2-4 | 100 | F | 1 | 0 |  |  |  |  |  |  |
| 8-Jun | 14 | 12 | 8 | W | 2-4 | 100 | F | 1 | 0 |  |  |  |  |  |  |
| 8-Jun | 15 | 12 | 10 | NW | 14-16 | 100 | I | 5 | 0 |  |  |  |  |  |  |
| 8-Jun | 16 | 12 | 10 | NW | 14-16 | 100 | I | 5 | 0 |  |  |  |  |  |  |
| 9-Jun | 17 | 12 | 7 | NW | 6-8 | 100 | I | 4 | 0 |  |  |  |  |  |  |
| 9-Jun | 18 | 12 | 7 | NW | 6-8 | 100 | I | 4 | 0 |  |  |  |  |  |  |
| 9-Jun | 19 | 12 | 9 | S | 6-8 | 100 | I | 2 | 0 |  |  |  |  |  |  |
| 9-Jun | 20 | 12 | 9 | S | 6-8 | 100 | I | 2 | 0 |  |  |  |  |  |  |

## Appendix Table 2. Page 2 of 5.

| Date | $\begin{gathered} \text { Drift } \\ \text { no. } \\ \hline \end{gathered}$ | $\begin{aligned} & \text { Temperature } \\ & \left({ }^{\circ} \mathrm{C}\right) \end{aligned}$ |  |  | Wind | cloud cover (\%) | Precip. ${ }^{\text {a }}$ | Water Condition ${ }^{\text {b }}$ | Chinook <br> Salmon <br> Retained | Horizontal location of Chinook salmon caught in net (number) |  |  | Vertical location of Chinook salmon caught in net (number) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Water | Air | Dir. | speed (mph) |  |  |  |  | Inshore | midnet | offshore | cork | middle | leadline |
| 10-Jun | 21 | 12 | 7 | S | 8-10 | 100 | N | 4 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 10-Jun | 22 | 12 | 7 | S | 8-10 | 100 | N | 4 | 0 |  |  |  |  |  |  |
| 10-Jun | 23 | 12 | 14 | S | 2-4 | 60 | N | 1 | 0 |  |  |  |  |  |  |
| 10-Jun | 24 | 12 | 14 | S | 2-4 | 60 | N | 1 | 0 |  |  |  |  |  |  |
| 11-Jun | 25 | 12 | 9 | N | 8-10 | 65 | N | 2 | 0 |  |  |  |  |  |  |
| 11-Jun | 26 | 12 | 9 | N | 8-10 | 65 | N | 2 | 0 |  |  |  |  |  |  |
| 11-Jun | 27 | 12 | 10 | W | 14-16 | 100 | D | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| 11-Jun | 28 | 12 | 10 | W | 14-16 | 100 | D | 4 | 0 |  |  |  |  |  |  |
| 12-Jun | 29 | 12 | 6 | NW | 18-20 | 100 | N | 5 | 0 |  |  |  |  |  |  |
| 12-Jun | $30^{\text {c }}$ | 12 | 6 | NW | 18-20 | 100 | N | 6 | na |  |  |  |  |  |  |
| 12-Jun | $31^{\text {c }}$ | 12 | 7 | W | 22-24 | 1 | N | 7 | na |  |  |  |  |  |  |
| 12-Jun | $32^{\text {c }}$ | 12 | 7 | W | 22-24 | 1 | N | 7 | na |  |  |  |  |  |  |
| 13-Jun | 33 | 12 | 6 | NW | 14-16 | 100 | F | 4 | 0 |  |  |  |  |  |  |
| 13-Jun | 34 | 12 | 6 | NW | 14-16 | 100 | F | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 13-Jun | 35 | 13 | 12 | NW | 8-10 | 0 | N | 3 | 0 |  |  |  |  |  |  |
| 14-Jun | 36 | 13 | 11 | NW | 6-8 | 0 | N | 2 | 0 |  |  |  |  |  |  |
| 14-Jun | 37 | 14 | 22 | NW | 5 | 15 | N | 2 | 0 |  |  |  |  |  |  |
| 15-Jun | 38 | 14 | 21 | SE | 3 | 25 | N | 1 | 10 | 6 | 4 | 0 | 0 | 4 | 6 |
| 15-Jun | 39 | 14 | 16 | SW | 10 | 90 | I | 2 | 10 | 5 | 5 | 0 | 0 | 7 | 3 |
| 16-Jun | 40 | 14 | 16 | SW | 15 | 10 | N | 3 | 15 | 10 | 4 | 1 | 3 | 2 | 10 |

Appendix Table 2. Page 3 of 5.

|  |  | Temperature <br> $\left({ }^{\circ} \mathrm{C}\right)$ <br> Wind |  |  |  | cloud cover (\%) | Precip. ${ }^{\text {a }}$ |  |  | Horizontal location of Chinook salmon caught in net (number) |  |  | Vertical location of Chinook salmon caught in net (number) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | $\begin{gathered} \text { Drift } \\ \text { no. } \end{gathered}$ | Water | Air | Direction | speed <br> (mph) |  |  | Water <br> Condition ${ }^{\text {b }}$ | Salm <br> Retained | inshore | midnet | offshore | cork | middle | Leadline |
| 16-Jun | 41 | 14 | 18 | SE | 20 | 10 | N | 4 | $3^{\text {e }}$ | 1 | 1 | 1 | 0 | 0 | 3 |
| 17-Jun | 42 | 15 | 14 | SW | 10 | 10 | N | 2 | 4 | 2 | 1 | 1 | 0 | 0 | 4 |
| 17-Jun | 43 | 16 | 17 | SE | 15 | 40 | N | 3 | 13 | 8 | 3 | 2 | 0 | 3 | 10 |
| 18-Jun | 44 | 15 | 9 | SW | 5 | 100 | F | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| 18-Jun | 45 | 16 | 16 | SW | 10 | 25 | N | 2 | $4^{\text {e }}$ | 3 | 1 | 0 | 0 | 1 | 3 |
| 19-Jun | 46 | 16 | 9 | SW | 10 | 100 | F | 2 | 10 | 7 | 2 | 1 | 1 | 2 | 7 |
| 19-Jun | 47 | 16 | 9 | w | 25 | 80 | N | 5 | 9 | 6 | 3 | 0 | 2 | 2 | 5 |
| 20-Jun | 48 | 14 | 10 | SW | 10 | 90 | N | 3 | 10 | 5 | 3 | 2 | 0 | 3 | 7 |
| 20-Jun | 49 | 16 | 14 | SW | 15 | 60 | N | 4 | 3 | 2 | 1 | 0 | 0 | 0 | 3 |
| 21-Jun | 50 | 14 | 9 | SW | 5 | 100 | N | 2 | 15 | 13 | 2 | 0 | 2 | 2 | 11 |
| 21-Jun | 51 | 16 | 16 | SW | 5 | 15 | N | 1 | 4 | 2 | 2 | 0 | 2 | 0 | 2 |
| 22-Jun | 52 | 16 | 12 | S | 5 | 50 | N | 1 | 10 | 7 | 2 | 1 | 1 | 2 | 7 |
| 22-Jun | 53 | 17 | 16 | NW | 10 | 90 | N | 2 | 6 | 4 | 2 | 0 | 1 | 0 | 5 |
| 23-Jun | 54 | 16 | 12 | SE | 3 | 100 | D,F | 2 | 12 | 10 | 1 | 1 | 3 | 3 | 6 |
| 23-Jun | 55 | 16 | 13 | S | 5 | 100 | D | 2 | 14 | 7 | 5 | 2 | 2 | 4 | 8 |
| 24-Jun | 56 | 16 | 12 | SW | 10 | 100 | D | 2 | 15 | 11 | 2 | 2 | 2 | 5 | 8 |
| 24-Jun | 57 | 16 | 16 | SW | 20 | 100 | I,S | 5 | 5 | 3 | 1 | 1 | 0 | 2 | 3 |
| 25-Jun | 58 | 16 | 11 | SE | 10 | 100 | S,F | 3 | 14 | 10 | 3 | 1 | 0 | 5 | 9 |
| 25-Jun | 59 | 16 | 14 | SE | 5 | 100 | I | 2 | 12 | 7 | 5 | 0 | 0 | 1 | 11 |
| 26-Jun | 60 | 14 | 15 | SW | 3 | 90 | I,F | 2 | 5 | 4 | 1 | 0 | 0 | 0 | 5 |

Appendix Table 2. Page 4 of 5.

|  |  | Temperature <br> $\left({ }^{\circ} \mathrm{C}\right)$ <br> Wind |  |  |  | cloud cover (\%) | Precip. ${ }^{\text {a }}$ |  |  | Horizontal location of Chinook salmon caught in net (number) |  |  | Vertical location of Chinook salmon caught in net (number) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Date | Drift no. | Water | Air | Direction | speed <br> (mph) |  |  | Water <br> Condition ${ }^{\text {b }}$ | Salm Retained | inshore | midnet | offshore | cork | middle | Leadline |
| 26-Jun | 61 | 16 | 13 | SE | 5 | 90 | 1 | 2 | 8 | 6 | 2 | 0 | 0 | 0 | 8 |
| 27-Jun | 62 | 16 | 12 | S | 5 | 90 | N | 2 | 35 | 10 | 20 | 5 | 8 | 6 | 21 |
| 27-Jun | 63 | 16 | 14 | SW | 5 | 95 | N | 2 | 7 | 2 | 2 | 3 | 2 | 1 | 4 |
| 28-Jun | 64 | 15 | 11 | SE | 5 | 99 | N | 2 | 21 | 5 | 15 | 1 | 4 | 2 | 15 |
| 28-Jun | 65 | 15 | 14 | W | 3 | 95 | N | 2 | 21 | 6 | 6 | 9 | 3 | 4 | 14 |
| 29-Jun | 66 | 16 | 11 | W | 5 | 70 | N | 2 | $17^{\text {e }}$ | 3 | 9 | 5 | 3 | 3 | 11 |
| 29-Jun | 67 | 17 | 14 | W | 3-5 | 10 | N | 1 | 16 | 2 | 5 | 9 | 1 | 2 | 13 |
| 30-Jun | 68 | 17 | 10 | NW | 5 | 90 | N | 2 | 6 | 2 | 2 | 2 | 0 | 1 | 5 |
| 30-Jun | 69 | 17 | 14 | NW | 10-15 | 85 | N | 3 | 6 | 1 | 3 | 2 | 0 | 2 | 4 |
| 1-Jul | 70 | 17 | 11 | N | 5 | 100 | N | 1 | 5 | 1 | 2 | 2 | 0 | 2 | 3 |
| 1-Jul | 71 | 17 | 10 | SW | 10-12 | 98 | N | 3 | 9 | 3 | 3 | 3 | 2 | 3 | 4 |
| 2-Jul | 72 | 17 | 11 | S | 15-20 | 100 | N | 4 | 10 | 1 | 7 | 2 | 0 | 4 | 6 |
| 2-Jul | 73 | 17 | 14 | S | 20-25 | 95 | D | 5 | 17 | 2 | 12 | 3 | 0 | 3 | 14 |
| 3-Jul | 74 | 17 | 10 | SE | 15 | 100 | S | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 3-Jul | 75 | 17 | 12 | SE | 10 | 100 | S | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| 4-Jul | 76 | 16 | 11 | SE | 10-15 | 98 | N | 3 | 9 | 2 | 6 | 1 | 2 | 2 | 5 |
| 4-Jul | 77 | 17 | 16 | E | 8 | 15 | N | 2 | 7 | 1 | 4 | 2 | 1 | 1 | 5 |
| $5-\mathrm{Jul}$ | 78 | 17 | 15 |  | 0 | 10 | N | 1 | 11 | 1 | 7 | 3 | 0 | 3 | 8 |
| 5-Jul | 79 | 17 | 18 | NW | 15 | 5 | N | 3 | 8 | 2 | 4 | 2 | 0 | 2 | 6 |
| 6-Jul | 80 | 17 | 15 | NW | 15 | 10 | N | 2 | 6 | 2 | 2 | 2 | 0 | 2 | 4 |

Appendix Table 2. Page 5 of 5.

[ ${ }^{\text {a }}$ Precipitation code: N= no precipitation; D= drizzle; I = Intermittent rain; F = Fog; LR = light rain; SR = steady rain; S = showers;
b Water condition code: $1=$ calm; 2=small waves; $3=$ slight chop; $4=$ choppy; $5=$ rough; $6=$ very rough; and $7=$ hazardous
No test fishing was conducted because of extremely rough waters that resulted in unsafe boating conditions
7 salmon were retained but only 6 were located in the net.
Includes salmon that dropped out of the net and were not retained.

Appendix Table 3. Length (mm), sex, and age of individual sampled Chinook salmon by date and scale and fish number, Mountain Village Chinook salmon test fishery, June 10-July 11, 2012.

| Date | Scale Card | Fish Number | Sex | MEFT $^{\text {a }}$ length (mm) | Age | Scale Comment |
| :--- | :---: | :---: | :---: | :---: | :---: | :--- |
| 10-Jun | 1 | 1 | M | 758 | 1.3 |  |
| 11-Jun | 2 | 1 | F | 782 | 2.4 |  |
| 13-Jun | 3 | 1 | M | 589 | 1.2 |  |
| 15-Jun | 4 | 1 | F | 817 | na | regenerated |
| 15-Jun | 4 | 2 | M | 755 | 2.4 |  |
| 15-Jun | 4 | 3 | M | 745 | 1.3 |  |
| 15-Jun | 4 | 4 | F | 804 | 2.4 |  |
| 15-Jun | 4 | 5 | F | 854 | 1.4 |  |
| 15-Jun | 4 | 6 | F | 904 | 1.4 |  |
| 15-Jun | 4 | 7 | M | 779 | 1.4 |  |
| 15-Jun | 4 | 8 | M | 711 | na | regenerated |
| 15-Jun | 4 | 9 | M | 697 | 1.3 |  |
| 15-Jun | 4 | 10 | M | 668 | na | regenerated |
| 15-Jun | 5 | 1 | M | 809 | 1.4 |  |
| 15-Jun | 5 | 2 | M | 674 | 1.3 |  |
| 15-Jun | 5 | 3 | F | 832 | 1.4 |  |
| 15-Jun | 5 | 4 | M | 763 | 1.4 |  |
| 15-Jun | 5 | 5 | M | 725 | 1.3 |  |
| 15-Jun | 5 | 6 | M | 729 | 1.3 |  |
| 15-Jun | 5 | 7 | F | 864 | 2.5 |  |
| 15-Jun | 5 | 8 | F | 821 | na | regenerated |
| 15-Jun | 5 | 9 | M | 651 | 1.3 |  |
| 15-Jun | 5 | 10 | M | 809 | 1.4 |  |
| 16-Jun | 6 | 1 | M | 686 | 1.3 |  |
| 16-Jun | 6 | 2 | M | 676 | 1.3 |  |
| 16-Jun | 6 | 3 | M | 721 | 1.3 |  |
| 16-Jun | 6 | 4 | M | 686 | 1.3 |  |
| 16-Jun | 6 | 5 | M | 627 | na | regenerated |
| 16-Jun | 6 | 6 | M | 824 | na | regenerated |
| 16-Jun | 6 | 7 | M | 823 | 1.4 |  |
| 16-Jun | 6 | 8 | F | 826 | 1.4 |  |
| 16-Jun | 6 | 9 | F | 900 | 1.4 |  |
| 16-Jun | 6 | 10 | F | 841 | 1.4 |  |
| 16-Jun | 7 | 1 | F | 840 | 1.4 |  |
| 16-Jun | 7 | 2 | F | 813 | 1.4 |  |
| 16-Jun | 7 | 3 | M | 706 | 1.3 |  |
|  |  |  | continued- |  |  |  |

Appendix Table 3. Page 2 of 13.

| Date | $\begin{aligned} & \text { Scale } \\ & \text { Card } \\ & \hline \end{aligned}$ | Fish <br> Number | Sex | MEFT $^{\text {a }}$ length (mm) | Age | Scale Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 16-Jun | 7 | 4 | M | 725 | 1.3 |  |
| 16-Jun | 7 | 5 | F | 812 | 1.4 |  |
| 16-Jun | 7 | 6 | F | 852 | 1.4 |  |
| 16-Jun | 7 | 7 | M | 686 | na | regenerated |
| 17-Jun | 8 | 1 | F | 834 | 1.4 |  |
| 17-Jun | 8 | 2 | M | 803 | 1.4 |  |
| 17-Jun | 8 | 3 | M | 687 | 1.3 |  |
| 17-Jun | 8 | 4 | F | 855 | na | regenerated |
| 17-Jun | 8 | 5 | M | 769 | 1.4 |  |
| 17-Jun | 8 | 6 | M | 703 | 1.3 |  |
| 17-Jun | 8 | 7 | F | 805 | 1.4 |  |
| 17-Jun | 8 | 8 | F | 702 | 1.3 |  |
| 17-Jun | 8 | 9 | F | 797 | 1.4 |  |
| 17-Jun | 8 | 10 | F | 896 | 1.4 |  |
| 17-Jun | 9 | 1 | M | 681 | 1.3 |  |
| 17-Jun | 9 | 2 | M | 984 | 1.5 |  |
| 17-Jun | 9 | 3 | M | 703 | 1.3 |  |
| 17-Jun | 9 | 4 | M | 832 | 1.4 |  |
| 17-Jun | 9 | 5 | M | 740 | 1.3 |  |
| 17-Jun | 9 | 6 | F | 773 | 1.4 |  |
| 17-Jun | 9 | 7 | F | 848 | 1.3 |  |
| 18-Jun | 10 | 1 | M | 758 | 1.3 |  |
| 18-Jun | 10 | 2 | M | 803 | 1.4 |  |
| 18-Jun | 10 | 3 | M | 785 | 1.4 |  |
| 18-Jun | 10 | 4 | M | 686 | 1.3 |  |
| 19-Jun | 11 | 1 | M | 786 | 1.4 |  |
| 19-Jun | 11 | 2 | M | 761 | 1.3 |  |
| 19-Jun | 11 | 3 | M | 852 | na | regenerated |
| 19-Jun | 11 | 4 | F | 847 | 1.4 |  |
| 19-Jun | 11 | 5 | M | 781 | 1.4 |  |
| 19-Jun | 11 | 6 | M | 794 | 1.4 |  |
| 19-Jun | 11 | 7 | M | 706 | 1.3 |  |
| 19-Jun | 11 | 8 | M | 835 | 1.4 |  |
| 19-Jun | 11 | 9 | M | 724 | 1.3 |  |
| 19-Jun | 11 | 10 | F | 750 | 1.4 |  |
| 19-Jun | 12 | 1 | M | 590 | 1.3 |  |

Appendix Table 3. Page 3 of 13.

| Date | Scale <br> Card | Fish <br> Number | Sex | MEFT <br> a <br> length <br> (mm) | Age | Scale <br> Comment |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 19-Jun | 12 | 2 | F | 872 | na | regenerated |
| 19-Jun | 12 | 3 | M | 730 | 1.4 |  |
| 19-Jun | 12 | 4 | M | 732 | 1.3 |  |
| 19-Jun | 12 | 5 | F | 909 | 1.4 |  |
| 19-Jun | 12 | 6 | F | 863 | 1.4 |  |
| 19-Jun | 12 | 7 | M | 791 | na | regenerated |
| 19-Jun | 12 | 8 | M | 690 | 1.3 |  |
| 19-Jun | 12 | 9 | M | 706 | 1.3 |  |
| 20-Jun | 13 | 1 | F | 869 | 1.4 |  |
| 20-Jun | 13 | 2 | M | 657 | 1.3 |  |
| 20-Jun | 13 | 3 | F | 786 | 1.4 |  |
| 20-Jun | 13 | 4 | M | 847 | 2.4 |  |
| 20-Jun | 13 | 5 | M | 655 | 1.3 |  |
| 20-Jun | 13 | 6 | F | 801 | 1.4 |  |
| 20-Jun | 13 | 7 | M | 703 | 1.3 |  |
| 20-Jun | 13 | 8 | M | 753 | 1.4 |  |
| 20-Jun | 13 | 9 | F | 745 | 1.3 |  |
| 20-Jun | 13 | 10 | F | 763 | na | regenerated |
| 20-Jun | 14 | 1 | M | 733 | 1.3 |  |
| 20-Jun | 14 | 2 | M | 727 | na | regenerated |
| 20-Jun | 14 | 3 | M | 760 | 1.3 |  |
| 21-Jun | 15 | 1 | M | 705 | 1.3 |  |
| 21-Jun | 15 | 2 | F | 727 | 1.3 |  |
| 21-Jun | 15 | 3 | M | 709 | 1.3 |  |
| 21-Jun | 15 | 4 | M | 674 | 1.3 |  |
| 21-Jun | 15 | 5 | F | 850 | 1.3 |  |
| 21-Jun | 15 | 6 | F | 814 | 1.3 |  |
| 21-Jun | 15 | 7 | F | 774 | 1.4 |  |
| 21-Jun | 15 | 8 | M | 738 | 1.3 |  |
| 21-Jun | 15 | 9 | M | 717 | 1.3 |  |
| 21-Jun | 15 | 10 | M | 726 | 1.3 |  |
| 21-Jun | 16 | 1 | M | 737 | 1.3 |  |
| 21-Jun | 16 | 2 | F | 790 | 1.4 |  |
| 21-Jun | 16 | 3 | M | 755 | 1.3 |  |
| 21-Jun | 16 | 4 | F | 896 | 1.4 |  |
| 21-Jun | 16 | 5 | F | 876 | 1.4 |  |
|  |  |  | -continued- |  |  |  |
|  |  |  |  |  |  |  |

Appendix Table 3. Page 4 of 13.

| Date | Scale <br> Card | Fish Number | Sex | MEFT ${ }^{\text {a }}$ length (mm) | Age | Scale <br> Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21-Jun | 16 | 6 | M | 685 | 1.3 |  |
| 21-Jun | 16 | 7 | M | 678 | 1.3 |  |
| 21-Jun | 16 | 8 | M | 610 | 1.2 |  |
| 21-Jun | 16 | 9 | M | 716 | 1.3 |  |
| 22-Jun | 17 | 1 | M | 755 | 1.3 |  |
| 22-Jun | 17 | 2 | F | 824 | 1.3 |  |
| 22-Jun | 17 | 3 | M | 740 | 1.3 |  |
| 22-Jun | 17 | 4 | F | 897 | 1.4 |  |
| 22-Jun | 17 | 5 | F | 847 | 1.3 |  |
| 22-Jun | 17 | 6 | M | 810 | 1.3 |  |
| 22-Jun | 17 | 7 | M | 718 | 1.3 |  |
| 22-Jun | 17 | 8 | M | 690 | 1.3 |  |
| 22-Jun | 17 | 9 | M | 731 | 1.3 |  |
| 22-Jun | 17 | 10 | M | 734 | na | regenerated |
| 22-Jun | 18 | 1 | M | 910 | 1.4 |  |
| 22-Jun | 18 | 2 | M | 734 | 1.4 |  |
| 22-Jun | 18 | 3 | F | 812 | 1.4 |  |
| 22-Jun | 18 | 4 | F | 834 | 1.4 |  |
| 22-Jun | 18 | 5 | M | 769 | 1.4 |  |
| 22-Jun | 18 | 6 | M | 873 | 1.3 |  |
| 23-Jun | 19 | 1 | M | 740 | 1.3 |  |
| 23-Jun | 19 | 2 | M | 751 | 1.3 |  |
| 23-Jun | 19 | 3 | M | 752 | 1.4 |  |
| 23-Jun | 19 | 4 | F | 784 | 1.4 |  |
| 23-Jun | 19 | 5 | M | 778 | 1.4 |  |
| 23-Jun | 19 | 6 | M | 637 | 1.3 |  |
| 23-Jun | 19 | 7 | M | 752 | 1.3 |  |
| 23-Jun | 19 | 8 | M | 729 | 1.3 |  |
| 23-Jun | 19 | 9 | M | 803 | 1.4 |  |
| 23-Jun | 19 | 10 | M | 785 | 1.3 |  |
| 23-Jun | 20 | 1 | M | 679 | 1.3 |  |
| 23-Jun | 20 | 2 | M | 728 | 1.3 |  |
| 23-Jun | 20 | 3 | M | 699 | 1.3 |  |
| 23-Jun | 20 | 4 | M | 681 | 1.3 |  |
| 23-Jun | 20 | 5 | M | 658 | 1.3 |  |
| 23-Jun | 20 | 6 | M | 653 | 1.3 |  |

Appendix Table 3. Page 5 of 13.

| Date | Scale <br> Card | Fish <br> Number | Sex | MEFT <br> a <br> length <br> (mm) | Age | Scale <br> Comment |
| ---: | :---: | :---: | :---: | :---: | :---: | :--- |
| 23-Jun | 20 | 7 | F | 834 | 1.4 |  |
| 23-Jun | 20 | 8 | M | 908 | 1.4 |  |
| 23-Jun | 20 | 9 | F | 804 | 1.4 |  |
| 23-Jun | 20 | 10 | M | 880 | 1.4 |  |
| 23-Jun | 21 | 1 | M | 689 | 1.3 |  |
| 23-Jun | 21 | 2 | F | 821 | 2.4 |  |
| 23-Jun | 21 | 3 | F | 840 | 1.4 |  |
| 23-Jun | 21 | 4 | M | 680 | 1.3 |  |
| 23-Jun | 21 | 5 | M | 825 | 1.4 |  |
| 23-Jun | 21 | 6 | M | 869 | 1.4 |  |
| 24-Jun | 22 | 1 | M | 710 | 1.3 |  |
| 24-Jun | 22 | 2 | M | 732 | 1.4 |  |
| 24-Jun | 22 | 3 | M | 722 | 1.3 |  |
| 24-Jun | 22 | 4 | M | 745 | 1.4 |  |
| 24-Jun | 22 | 5 | M | 716 | 1.3 |  |
| 24-Jun | 22 | 6 | M | 723 | 1.3 |  |
| 24-Jun | 22 | 7 | M | 676 | 1.3 |  |
| 24-Jun | 22 | 8 | F | 829 | 1.4 |  |
| 24-Jun | 22 | 9 | M | 740 | 1.3 |  |
| 24-Jun | 22 | 10 | M | 737 | na | regenerated |
| 24-Jun | 23 | 1 | M | 670 | 1.3 |  |
| 24-Jun | 23 | 2 | M | 783 | 1.4 |  |
| 24-Jun | 23 | 3 | M | 876 | 1.4 |  |
| 24-Jun | 23 | 4 | F | 814 | 1.4 |  |
| 24-Jun | b | 23 | 5 | F | 800 | 1.4 |
| 24-Jun | 23 | 6 | F | 820 | 1.4 |  |
| 24-Jun | 23 | 7 | F | 888 | 1.4 |  |
| 24-Jun | 23 | 8 | F | 778 | na | regenerated |
| 24-Jun | 23 | 9 | M | 680 | 1.3 |  |
| 24-Jun | 23 | 10 | F | 895 | 1.4 |  |
| 25-Jun | 24 | 1 | M | 695 | 1.3 |  |
| 25-Jun | 24 | 2 | F | 849 | 1.4 |  |
| 25-Jun | 24 | 3 | M | 797 | na | regenerated |
| 25-Jun | 24 | 4 | M | 724 | na | regenerated |
| 25-Jun | 24 | 5 | M | 740 | 1.3 |  |
| 25-Jun | 24 | 6 | M | 672 | 1.3 |  |
|  |  |  | -continued |  |  |  |
|  |  |  |  |  |  |  |

Appendix Table 3. Page 6 of 13.

| Date | Scale <br> Card | Fish Number | Sex | MEFT $^{\text {a }}$ length (mm) | Age | Scale Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 25-Jun | 24 | 7 | F | 878 | 1.4 |  |
| 25-Jun | 24 | 8 | M | 818 | 1.3 |  |
| 25-Jun | 24 | 9 | M | 810 | 1.4 |  |
| 25-Jun | 24 | 10 | F | 865 | 1.4 |  |
| 25-Jun | 25 | 1 | M | 676 | 1.3 |  |
| 25-Jun | 25 | 2 | F | 869 | 1.4 |  |
| 25-Jun | 25 | 3 | F | 858 | 1.4 |  |
| 25-Jun | 25 | 4 | M | 750 | 1.3 |  |
| 25-Jun | 25 | 5 | M | 739 | 1.4 |  |
| 25-Jun | 25 | 6 | F | 814 | 1.3 |  |
| 25-Jun | 25 | 7 | F | 854 | 1.4 |  |
| 25-Jun | 25 | 8 | F | 810 | 1.4 |  |
| 25-Jun | 25 | 9 | M | 820 | na | regenerated |
| 25-Jun | 25 | 10 | M | 869 | 1.4 |  |
| 25-Jun | 26 | 1 | M | 818 | 2.4 |  |
| 25-Jun | 26 | 2 | M | 810 | 1.4 |  |
| 25-Jun | 26 | 3 | M | 939 | 1.4 |  |
| 25-Jun | 26 | 4 | M | 720 | na | regenerated |
| 25-Jun | 26 | 5 | M | 700 | 1.3 |  |
| 25-Jun | 26 | 6 | M | 688 | 1.3 |  |
| 26-Jun | 27 | 1 | M | 838 | 1.3 |  |
| 26-Jun | 27 | 2 | F | 854 | na | regenerated |
| 26-Jun | 27 | 3 | M | 650 | 1.3 |  |
| 26-Jun | 27 | 4 | F | 770 | 1.4 |  |
| 26-Jun | 27 | 5 | F | 756 | 1.4 |  |
| 26-Jun | 27 | 6 | M | 843 | 1.4 |  |
| 26-Jun | 27 | 7 | F | 819 | 1.4 |  |
| 26-Jun | 27 | 8 | F | 852 | 1.4 |  |
| 26-Jun | 27 | 9 | F | 777 | na | regenerated |
| 26-Jun | 27 | 10 | F | 776 | 1.3 |  |
| 26-Jun | 28 | 1 | M | 686 | 1.3 |  |
| 26-Jun | 28 | 2 | F | 893 | 1.4 |  |
| 26-Jun | 28 | 3 | M | 755 | 1.3 |  |
| 27-Jun | 29 | 1 | F | 772 | 1.4 |  |
| 27-Jun | 29 | 2 | F | 917 | 1.5 |  |
| 27-Jun | 29 | 3 | M | 822 | 1.3 |  |

Appendix Table 3. Page 7 of 13.

| Date | Scale <br> Card | Fish Number | Sex | MEFT ${ }^{\text {a }}$ length (mm) | Age | Scale <br> Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 27-Jun | 29 | 4 | M | 733 | 1.3 |  |
| 27-Jun | 29 | 5 | M | 757 | 1.4 |  |
| 27-Jun | 29 | 6 | F | 700 | 1.3 |  |
| 27-Jun | 29 | 7 | F | 724 | 1.3 |  |
| 27-Jun | 29 | 8 | M | 852 | 1.4 |  |
| 27-Jun | 29 | 9 | F | 784 | 1.4 |  |
| 27-Jun | 29 | 10 | M | 783 | 1.4 |  |
| 27-Jun | 30 | 1 | M | 745 | na | regenerated |
| 27-Jun | 30 | 2 | M | 704 | 1.3 |  |
| 27-Jun | 30 | 3 | M | 692 | 1.3 |  |
| 27-Jun | 30 | 4 | M | 723 | 1.3 |  |
| 27-Jun | 30 | 5 | F | 821 | 1.4 |  |
| 27-Jun | 30 | 6 | M | 725 | 1.4 |  |
| 27-Jun | 30 | 7 | M | 760 | 1.3 |  |
| 27-Jun | 30 | 8 | F | 865 | 1.4 |  |
| 27-Jun | 30 | 9 | M | 699 | 1.3 |  |
| 27-Jun | 30 | 10 | M | 994 | 1.4 |  |
| 27-Jun | 31 | 1 | F | 816 | 1.4 |  |
| 27-Jun | 31 | 2 | F | 822 | 1.4 |  |
| 27-Jun | 31 | 3 | F | 780 | 1.3 |  |
| 27-Jun | 31 | 4 | M | 721 | 1.3 |  |
| 27-Jun | 31 | 5 | F | 925 | 1.4 |  |
| 27-Jun | 31 | 6 | F | 794 | 1.3 |  |
| 27-Jun | 31 | 7 | F | 744 | 1.3 |  |
| 27-Jun | 31 | 8 | M | 854 | 1.4 |  |
| 27-Jun | 31 | 9 | M | 750 | 1.4 |  |
| 27-Jun | 31 | 10 | F | 897 | 1.4 |  |
| 28-Jun | 32 | 1 | F | 883 | 1.4 |  |
| 28-Jun | 32 | 2 | F | 877 | 1.4 |  |
| 28-Jun | 32 | 3 | F | 871 | 1.4 |  |
| 28-Jun | 32 | 4 | M | 831 | 1.4 |  |
| 28-Jun | 32 | 5 | M | 916 | 1.4 |  |
| 28-Jun | 32 | 6 | M | 817 | 1.3 |  |
| 28-Jun | 32 | 7 | M | 821 | 1.4 |  |
| 28-Jun | 32 | 8 | M | 709 | 1.3 |  |
| 28-Jun | 32 | 9 | M | 875 | 2.4 |  |

Appendix Table 3. Page 8 of 13.

| Date | Scale <br> Card | Fish Number | Sex | MEFT ${ }^{\text {a }}$ length (mm) | Age | Scale <br> Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28-Jun | 32 | 10 | F | 810 | 1.4 |  |
| 28-Jun | 33 | 1 | M | 689 | 1.3 |  |
| 28-Jun | 33 | 2 | F | 749 | 1.3 |  |
| 28-Jun | 33 | 3 | F | 746 | 1.3 |  |
| 28-Jun | 33 | 4 | F | 761 | 1.3 |  |
| 28-Jun | 33 | 5 | F | 870 | 1.4 |  |
| 28-Jun | 33 | 6 | M | 701 | 1.3 |  |
| 28-Jun | 33 | 7 | M | 699 | 1.3 |  |
| 28-Jun | 33 | 8 | F | 846 | 1.4 |  |
| 28-Jun | 33 | 9 | M | 726 | 1.3 |  |
| 28-Jun | 33 | 10 | M | 731 | 1.3 |  |
| 28-Jun | 34 | 1 | M | 812 | 1.3 |  |
| 28-Jun | 34 | 2 | F | 812 | 1.4 |  |
| 28-Jun | 34 | 3 | F | 892 | 1.5 |  |
| 28-Jun | 34 | 4 | F | 889 | 1.4 |  |
| 28-Jun | 34 | 5 | F | 757 | 1.4 |  |
| 28-Jun | 34 | 6 | M | 789 | 1.4 |  |
| 28-Jun | 34 | 7 | M | 719 | 1.3 |  |
| 28-Jun | 34 | 8 | F | 840 | 1.4 |  |
| 28-Jun | 34 | 9 | M | 929 | na | regenerated |
| 28-Jun | 34 | 10 | M | 686 | 1.4 |  |
| 29-Jun | 35 | 1 | F | 812 | 1.4 |  |
| 29-Jun | 35 | 2 | M | 775 | 1.3 |  |
| 29-Jun | 35 | 3 | F | 794 | 1.4 |  |
| 29-Jun | 35 | 4 | F | 844 | 1.4 |  |
| 29-Jun | 35 | 5 | F | 817 | 1.4 |  |
| 29-Jun | 35 | 6 | F | 748 | 1.4 |  |
| 29-Jun | 35 | 7 | M | 712 | 1.4 |  |
| 29-Jun | 35 | 8 | F | 819 | 1.3 |  |
| 29-Jun | 35 | 9 | M | 684 | 1.3 |  |
| 29-Jun | 35 | 10 | M | 743 | 1.3 |  |
| 29-Jun | 36 | 1 | F | 773 | 1.3 |  |
| 29-Jun | 36 | 2 | M | 727 | 1.3 |  |
| 29-Jun | 36 | 3 | F | 842 | 1.4 |  |
| 29-Jun | 36 | 4 | M | 703 | 1.3 |  |
| 29-Jun | 36 | 5 | M | 710 | 1.3 |  |

Appendix Table 3. Page 9 of 13.

| Date | Scale Card | Fish Number | Sex | MEFT ${ }^{\text {a }}$ length (mm) | Age | Scale Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 29-Jun | 36 | 6 | M | 611 | 1.2 |  |
| 29-Jun | 36 | 7 | F | 848 | 1.4 |  |
| 29-Jun | 36 | 8 | F | 832 | 2.4 |  |
| 29-Jun | 36 | 9 | M | 825 | na | regenerated |
| 29-Jun | 36 | 10 | M | 828 | 1.4 |  |
| 29-Jun | 37 | 1 | M | 721 | 1.3 |  |
| 29-Jun | 37 | 2 | F | 725 | 1.4 |  |
| 29-Jun | 37 | 3 | F | 903 | 1.4 |  |
| 29-Jun | 37 | 4 | F | 862 | 1.4 |  |
| 29-Jun | 37 | 5 | M | 743 | 1.3 |  |
| 29-Jun | 37 | 6 | F | 797 | na | regenerated |
| 29-Jun | 37 | 7 | M | 697 | 1.3 |  |
| 29-Jun | 37 | 8 | M | 604 | 1.2 |  |
| 29-Jun | 37 | 9 | F | 822 | 1.4 |  |
| 29-Jun | 37 | 10 | M | 759 | 1.3 |  |
| 30-Jun | 38 | 1 | F | 797 | 1.3 |  |
| 30-Jun | 38 | 2 | M | 733 | 1.3 |  |
| 30-Jun | 38 | 3 | M | 774 | 1.4 |  |
| 30-Jun | 38 | 4 | M | 723 | 1.3 |  |
| 30-Jun | 38 | 5 | F | 859 | 1.4 |  |
| 30-Jun | 38 | 6 | M | 737 | 1.3 |  |
| 30-Jun | 38 | 7 | M | 705 | 1.3 |  |
| 30-Jun | 38 | 8 | F | 844 | 1.4 |  |
| 30-Jun | 38 | 9 | F | 853 | 1.4 |  |
| 30-Jun | 38 | 10 | F | 843 | 1.4 |  |
| 30-Jun | 39 | 1 | F | 777 | na | regenerated |
| 30-Jun | 39 | 2 | F | 799 | 1.4 |  |
| 1-Jul | 40 | 1 | F | 746 | 1.3 |  |
| 1-Jul | 40 | 2 | F | 797 | 1.4 |  |
| 1-Jul | 40 | 3 | M | 764 | 1.3 |  |
| 1-Jul | 40 | 4 | M | 834 | 1.4 |  |
| 1-Jul | 40 | 5 | M | 934 | 1.4 |  |
| 1-Jul | 40 | 6 | M | 741 | 1.3 |  |
| 1-Jul | 40 | 7 | F | 843 | 1.4 |  |
| 1-Jul | 40 | 8 | M | 724 | 1.3 |  |
| 1-Jul | 40 | 9 | M | 663 | 1.3 |  |

Appendix Table 3. Page 10 of 13.

| Date | Scale <br> Card | Fish Number | Sex | MEFT ${ }^{\text {a }}$ length (mm) | Age | Scale <br> Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1-Jul | 40 | 10 | F | 828 | 1.4 |  |
| 1-Jul | 41 | 1 | F | 841 | 1.4 |  |
| 1-Jul | 41 | 2 | F | 749 | 1.4 |  |
| 1-Jul | 41 | 3 | M | 672 | 1.4 |  |
| 1-Jul | 41 | 4 | F | 745 | 1.3 |  |
| 2-Jul | 42 | 1 | F | 820 | 1.4 |  |
| 2-Jul | 42 | 2 | F | 808 | 1.4 |  |
| 2-Jul | 42 | 3 | M | 661 | 1.3 |  |
| 2-Jul | 42 | 4 | M | 748 | 1.3 |  |
| 2-Jul | 42 | 5 | F | 768 | 1.3 |  |
| 2-Jul | 42 | 6 | F | 856 | na | regenerated |
| 2-Jul | 42 | 7 | F | 764 | 1.3 |  |
| 2-Jul | 42 | 8 | F | 819 | na | regenerated |
| 2-Jul | 42 | 9 | F | 805 | na | regenerated |
| 2-Jul | 42 | 10 | M | 758 | na | regenerated |
| 2-Jul | 43 | 1 | F | 856 | 1.4 |  |
| 2-Jul | 43 | 2 | F | 892 | 1.4 |  |
| 2-Jul | 43 | 3 | F | 780 | 2.4 |  |
| 2-Jul | 43 | 4 | F | 816 | 1.4 |  |
| 2-Jul | 43 | 5 | F | 818 | 1.4 |  |
| 2-Jul | 43 | 6 | F | 806 | 1.4 |  |
| 2-Jul | 43 | 7 | F | 839 | 1.4 |  |
| 2-Jul | 43 | 8 | F | 868 | 1.4 |  |
| 2-Jul | 43 | 9 | F | 898 | 1.4 |  |
| 2-Jul | 43 | 10 | F | 834 | 1.3 |  |
| 2-Jul | 44 | 1 | M | 846 | 1.3 |  |
| 2-Jul | 44 | 2 | M | 652 | 1.3 |  |
| 2-Jul | 44 | 3 | F | 790 | 1.4 |  |
| 2-Jul | 44 | 4 | F | 820 | 1.4 |  |
| 2-Jul | 44 | 5 | F | 794 | 1.3 |  |
| 2-Jul | 44 | 6 | F | 860 | 1.4 |  |
| 2-Jul | 44 | 7 | M | 578 | 1.2 |  |
| 3-Jul | 45 | 1 | F | 821 | 1.4 |  |
| 3-Jul | 45 | 2 | F | 808 | 2.4 |  |
| 4-Jul | 46 | 1 | M | 821 | 1.4 |  |
| 4-Jul | 46 | 2 | M | 776 | 1.3 |  |

Appendix Table 3. Page 11 of 13.

| Date | Scale <br> Card | Fish <br> Number | Sex | $\begin{gathered} \text { MEFT }^{\text {a }} \\ \text { length } \\ (\mathrm{mm}) \end{gathered}$ | Age | Scale Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4-Jul | 46 | 3 | M | 787 | 1.4 |  |
| 4-Jul | 46 | 4 | F | 823 | 1.4 |  |
| 4-Jul | 46 | 5 | M | 831 | 1.4 |  |
| 4-Jul | 46 | 6 | F | 882 | 1.4 |  |
| 4-Jul | 46 | 7 | F | 821 | 1.4 |  |
| 4-Jul | 46 | 8 | M | 537 | 1.2 |  |
| 4-Jul | 46 | 9 | M | 929 | 1.4 |  |
| 4-Jul | 46 | 10 | F | 808 | 1.4 |  |
| 4-Jul | 47 | 1 | F | 871 | 1.4 |  |
| 4-Jul | 47 | 2 | F | 781 | 1.4 |  |
| 4-Jul | 47 | 3 | F | 845 | 1.4 |  |
| 4-Jul | 47 | 4 | M | 700 | 1.3 |  |
| 4-Jul | 47 | 5 | M | 817 | 1.4 |  |
| 4-Jul | 47 | 6 | M | 651 | 1.3 |  |
| 5-Jul | 48 | 1 | M | 689 | 1.3 |  |
| 5-Jul | 48 | 2 | M | 726 | 1.3 |  |
| 5-Jul | 48 | 3 | M | 779 | 1.3 |  |
| 5-Jul | 48 | 4 | F | 807 | 1.4 |  |
| 5-Jul | 48 | 5 | F | 873 | na | regenerated |
| 5-Jul | 48 | 6 | F | 857 | 1.4 |  |
| 5-Jul | 48 | 7 | M | 800 | 1.4 |  |
| 5-Jul | 48 | 8 | F | 827 | 1.4 |  |
| 5-Jul | 48 | 9 | F | 869 | 1.4 |  |
| 5-Jul | 48 | 10 | M | 707 | 1.3 |  |
| 5-Jul | 49 | 1 | M | 736 | na | regenerated |
| 5-Jul | 49 | 2 | M | 857 | na | regenerated |
| 5-Jul | 49 | 3 | F | 835 | 2.4 |  |
| 5-Jul | 49 | 4 | F | 826 | 1.4 |  |
| 5-Jul | 49 | 5 | M | 732 | 1.3 |  |
| 5-Jul | 49 | 6 | M | 847 | 1.4 |  |
| 5-Jul | 49 | 7 | F | 885 | 1.4 |  |
| 5-Jul | 49 | 8 | M | 752 | 1.3 |  |
| 5-Jul | 49 | 9 | F | 780 | 1.3 |  |
| 6-Jul | $50$ | 1 | M | 706 | 1.3 |  |
| 6-Jul | 50 | 2 | M | 733 | 1.3 |  |
| 6-Jul | 50 | 3 | M | 713 | 1.3 |  |

Appendix Table 3. Page 12 of 13.

| Date | $\begin{aligned} & \text { Scale } \\ & \text { Card } \\ & \hline \end{aligned}$ | Fish Number | Sex | MEFT $^{\text {a }}$ length (mm) | Age | Scale <br> Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 6-Jul | 50 | 4 | F | 875 | 1.4 |  |
| 6 -Jul | 50 | 5 | F | 787 | 1.4 |  |
| 6 -Jul | 50 | 6 | M | 806 | 1.3 |  |
| 6 -Jul | 50 | 7 | F | 860 | 1.4 |  |
| 6-Jul | 50 | 8 | F | 838 | 1.4 |  |
| 6 -Jul | 50 | 9 | M | 606 | na | regenerated |
| 6-Jul | 50 | 10 | M | 712 | 1.3 |  |
| 6-Jul | 51 | 1 | M | 778 | 1.4 |  |
| 6-Jul | 51 | 2 | F | 792 | 1.3 |  |
| 7-Jul | 52 | 1 | F | 790 | na | regenerated |
| 7-Jul | 52 | 2 | M | 749 | 1.3 |  |
| 7-Jul | 52 | 3 | F | 801 | 1.4 |  |
| 7-Jul | 52 | 4 | M | 645 | 1.3 |  |
| 7-Jul | 52 | 5 | F | 909 | 1.4 |  |
| 7-Jul | 52 | 6 | F | 841 | 1.3 |  |
| 7-Jul | 52 | 7 | F | 858 | 1.4 |  |
| 7-Jul | 52 | 8 | M | 770 | 1.4 |  |
| 7-Jul | 52 | 9 | M | 607 | 2.2 |  |
| 7-Jul | 52 | 10 | F | 818 | 1.4 |  |
| 7-Jul | 53 | 1 | F | 867 | 1.4 |  |
| 7-Jul | 53 | 2 | F | 890 | 1.4 |  |
| 8-Jul | 54 | 1 | F | 860 | 1.4 |  |
| 8-Jul | 54 | 2 | M | 815 | $1.4$ |  |
| 8-Jul | 54 | 3 | F | 840 | 1.3 |  |
| 9-Jul | 55 | 1 | F | 914 | 1.5 |  |
| 9-Jul | 55 | 2 | M | 699 | na | regenerated |
| 9-Jul | $55$ | 3 | F | 754 | 1.3 |  |
| 9-Jul | $55$ | 4 | M | 664 | 1.3 |  |
| 9-Jul | 55 | 5 | M | 734 | 1.3 |  |
| 9-Jul | 55 | 6 | F | 846 | 1.4 |  |
| 9-Jul | 55 | 7 | M | 855 | 1.4 |  |
| 9-Jul | $55$ | $8$ | F | 930 | 1.5 |  |
| 9-Jul | $55$ | $9$ | M | 815 | 1.3 |  |
| 9-Jul | 55 | 10 | F | 855 | $1.4$ |  |
| 9-Jul | 56 | 1 | M | 562 | 1.2 |  |
| 10-Jul | 57 | 1 | M | 757 | 1.3 |  |

Appendix Table 3. Page 13 of 13.

| Date | Scale <br> Card | Fish <br> Number | Sex | MEFT <br> a <br> length <br> $(m m)$ | Age | Scale <br> Comment |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10-Jul | 57 | 2 | F | 779 | 1.4 |  |
| 10-Jul | 57 | 3 | F | 821 | 1.4 |  |
| 10-Jul | 57 | 4 | M | 740 | 1.3 |  |
| 11-Jul | 58 | 1 | M | 696 | na | regenerated |
| 11-Jul | 58 | 2 | M | 723 | 1.3 |  |
| 11-Jul | 58 | 3 | F | 826 | 1.4 |  |
| 11-Jul | 58 | 4 | $M$ | 801 | 1.3 |  |
| 11-Jul | 58 | 5 | M | 700 | 1.3 |  |
| 11-Jul | 58 | 6 | M | 719 | 1.3 |  |
| 11-Jul | 58 | 7 | F | 733 | 1.3 |  |
| 11-Jul | 58 | 8 | F | 888 | 1.4 |  |

${ }^{2}$ MEFT = length measurement from mid-eye to fork of tail.
${ }^{\mathrm{b}}$ Fish was missing an adipose when sampled. Because this fish is suspected to be of hatchery origin, the freshwater age is suspect. The ages of these fish is probably 0.x. The freshwater check(s) could have been the result of a feeding and/or release checks.


[^0]:    ${ }^{1}$ G. Sandone Consulting, LLC
    4950 W. Clayton Ave.
    Wasilla, AK 99654

[^1]:    ${ }^{\text {a }}$ Minor age classes include: 1 male age 2.2 salmon ; and 1 female age 2.5 salmon.

