

Mountain Village Cooperative Fall Season Drift Gillnet Test Fishery Project, 2014.

By

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ABSTRACT

During the 2014 Yukon River fall fishing season, test fishing by expert contract fishermen was conducted near the village of Mountain Village, at three preselected sites from, July 17 through September 9, inclusive. The total Fall Chum Salmon *Oncorhynchus keta* Mountain Village Test Fishery (MVTF) catch in 2014 was 269 salmon. The total cumulative MVTF CPUE for fall chum totaled 1,182.50. The mid-50% of the run occurred from July 22 through August 15, with the midpoint of the run occurring on August 3. A total of 255 Fall Chum Salmon were sampled for age, sex, and length (ASL). Female Fall Chum Salmon comprised 60.5% of all the sampled fish. Overall, age-0.3 dominated the sample, accounting for 53.7% of the sample, followed by age-0.4 salmon, 43.7%, and age 0-5 salmon, 2.2%. Mean length at age was 529 mm for age-0.2 (n=1), 576 mm for age-0.3 salmon (n=124), 594 for age-0.4 salmon (n=100), and 570mm for age-0.5 salmon (n=5). Generally, mean length at age of male Fall Chum Salmon was larger than female salmon for all age groups and significantly different for age-0.3, and age-0.4 salmon.

The total Coho Salmon *O. kisutch* MVTF catch in 2014 was 171 salmon, while the total cumulative MVTF CPUE totaled 677.58. The mid-50% of the run occurred from August 19 through August 28, 10 days, with the midpoint of the run occurring on August 22. A total of 160 Coho Salmon were sampled for ASL. Female Coho Salmon comprised 52.5% of the sample. Age-1.2 dominated the sample, accounting for 83.3% of the sample, followed by age-1.1 salmon, 10.6%, and age 1.3 salmon, 6.1%. Mean length at age was 535 mm for age-1.1 (n=14), 555 mm for age-1.2 salmon (n=110), and 564 for age-1.3 salmon (n=8). Mean length at age of female Coho Salmon was significantly larger than male salmon for age-1.1 group (Table 3). Interestingly, mean length for age-1.2 Coho Salmon were nearly identical for this dominant age group (Table 4).

In addition to the Fall Chum Salmon and Coho Salmon captured, a total of 67 Pink Salmon *O. gorbushcha*, 1 Dolly Varden *Salvelinus malma*, 1 Sockeye Salmon *O. nerka*, and two Sheefish *Stenodus leucichthyes* were caught and retained. Additionally, two Sheefish and two Burbot *Lota lota* were caught and released.

This project successfully supported Yukon River fisheries management in a cost effective manner and facilitated communications between community and government entities. In addition, the project sought to build community capacity and was support in the local area.

INTRODUCTION

The Alaska Department of Fish and Game's (ADF&G) Yukon River Fisheries Management Area includes all waters of Alaska within the Yukon River drainage and coastal waters from Point Romanof, northeast of Kotlik, to the Naskonat Peninsula. For management purposes, the Yukon Area is divided into seven districts and 10 subdistricts (Figure 1). A description of the districts and subdistricts is provided in Estensen et al. (2013). Five species of Pacific salmon are found in the Yukon River drainage: Chinook Salmon *Oncorhynchus tshawytscha*, Chum Salmon *O. keta*, Coho Salmon *O. kisutch*, Pink Salmon *O. gorbuscha*, and Sockeye Salmon *O. nerka* (Estensen et al. 2013). The Chum Salmon run is comprised of two genetically distinct runs, an early Summer Chum Salmon run and a later Fall Chum Salmon run. Additional information regarding these two races of Yukon River chum salmon, along with the other four salmon species indigenous to the Yukon River drainage, can be found in Estensen et al. 2013. This document reports on test fishing activities for fall chum and Coho Salmon near the village of Mountain Village (RM 87) within the Lower Yukon Area (Figure 1) during the 2014 fall fishing season, starting on July 17. This project is commonly referred to as the fall season Mountain Village Test Fish (MVTF) project.

Accurate and timely assessment of Yukon River Fall Chum Salmon and Coho Salmon run strength and timing as the runs pass through the lower Yukon River is a critical component of the information base used to determine harvestable surpluses of Yukon River fall chum and Coho Salmon. Fall Chum Salmon runs have been large in recent years and concern over meeting subsistence needs and escapement requirements have not played a major role in Fall Chum Salmon management. However, substantial reductions in the recent Chinook Salmon subsistence harvests, because of the very poor Chinook salmon runs, have no doubt caused subsistence fishers to increase their subsistence harvest of fall chum and Coho Salmon to make up for the low Chinook salmon harvests. Simultaneously, recent reductions in the commercial summer chum salmon harvest due to efforts to reduce incidental take of Chinook salmon in that fishery, more commercial emphasis has been placed on efficient management of the fall runs. Therefore, managers are striving to more accurately assess the current run sizes, in a timelier manner, so that harvestable surplus can be more fully utilized. In addition to providing relative run strength, species composition and run timing information, the fall season MVTF project serves as a check on the other two lower river run assessment projects and vice versa. This project either provides confidence in the information provided from the Lower Yukon Test Fish (LYTF) project and Pilot Station sonar project or provides a basis for questioning data from either one or the other or both of these ADF&G projects.

Yukon River Fall Chum Salmon runs tend to be cyclic in run abundance (Estensen et al. 2013). Therefore, most biologists expect that the large Fall Chum Salmon runs recently observed returning to the Yukon River will not persist (Bonnie Borba, ADF&G Fairbanks, personal communication). In the past, Yukon River Fall Chum Salmon runs have been so small that restrictions on subsistence harvest have been implemented. In addition, because of the above-described implications of the low Chinook salmon runs to the subsistence and commercial fisheries, more efficient management of the fall season salmon stocks is necessary, especially during low abundance years. Therefore, managers will be striving to more accurately assess anticipated smaller Fall Chum salmon run sizes so that conservation efforts can be equitably distributed among all subsistence users within the Alaska portion of the drainage. Additionally, managers are also simultaneously tasked with meeting the U.S./Canada

Agreement obligations and escapement needs for Canadian-origin Fall Chum Salmon. Therefore, it is imperative that this project continues during times of high abundance, as well as low abundance runs.

Project Justification:

The MVTF project is strategically located between two ADF&G assessment projects that are separated by over 100 river miles and approximately three salmon travel days. This project provides the first composite assessment of the run after the stocks pass through the Lower Yukon Test Fisheries (LYTF) and merge into the mainstem from the three different mouths, but before the fish pass the Pilot Station sonar project. In conjunction with the LYTF and Pilot Station sonar projects, the fall season MVTF project provides, in part, a timely and accurate comparative assessment of the inseason salmon run strengths and run timings as the salmon runs pass through the lower river. This project also provides additional insight into the expected fall chum and Coho Salmon run strengths at the Pilot Station sonar site. Age, sex, size data from this project is used in conjunction with the LYTF to provide insight into the characteristics of the test net catch, the subsistence harvest, and possibly the run. All fish retained are distributed to village residents for subsistence purposes.

While salmon passage data from the Yukon sonar projects remains the key component of salmon run assessment, data from the sonar project has not been reliable in some past years (Reference please). River stage, debris load, and high turbidity affect the identification of sonar targets, as well as, test fishing catches at the sonar site. It appears, however, that the MVTF project is less affected by river stage 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 fall chum and Coho Salmon, but may also provide the lone reliable assessment project in the lower Yukon river in some years. In the least, in those years, it may 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 from MVTF aides in the identification of trends in brood year assessment and may assist in future run forecasting.

Information from the MVTF project is also used inseason and post season in conjunction with other project data to adjust or verify the species composition and run sizes of the salmon runs that were based on the Pilot Station sonar test fishery. Additionally, the fall season MVTF project serves as a check on the other two lower river run assessment projects and vice versa. Further, for the time in September after the sonar project terminates, the MVTF provides species-specific catch per unit effort (CPUE) estimates that are used to estimate the number of salmon that pass the sonar site, but not counted by sonar, based on the inseason relationship between the projects when both project were operational during the season.

Project Partnership:

The partnership among the principal investigator, Gene Sandone (G.Sandone Consulting, LLC), the Asacarsarmiut Tribal Council (ATC); Yukon Delta Fisheries Development Association (YDFDA); and ADF&G provides an opportunity for improving public support and participation in management of the fall season salmon runs. Expert fishers from the village of Mountain Village and hired by ATC, are not only trained in proper test fishing techniques, but are also encouraged to view their activities as being a contributing factor in the management of the fall season salmon runs.

The participation in this project by ATC, YDFDA, and the expert fishermen hired to conduct the test fishery instills ownership in the management of the fishery because they see that the data collected from this project is used in management decisions. The PI is regularly involved discussions with the expert fishers and their assistants, regarding the management of the fisheries to achieve management objectives, the U.S./Canada Agreement and the U.S. Agreement obligations to Canada, and the upriver commercial and subsistence fisheries. These conversations and discussions promotes stewardship of the resource and results in a more fully understanding of the value of the salmon resource. The local engagement through this project not only builds and maintains community capacity and support for the project, but also encourages the understanding that there are additional upriver needs and demands on the same resource that passes by their community.

Project Goals:

The long-term project goal is to develop a CPUE and age, sex and length (ASL) database that can be used, primarily and in conjunction with the Pilot Station sonar abundance database to more efficiently manage the fall season fisheries. Additionally, genetic stock identification (GSI) samples will be taken to augment the Pilot Station samples or to be archived for later unknown use. Further, this project seeks to build local capacity through participation of the tribal government and expert fishers, foster understanding and acceptance by the project partners of the management of the salmon resources, encourage local stewardship, and promote the value of the salmon resource throughout the drainage.

Objectives:

The specific objectives of this project are to:

- a. estimate the relative abundance (test fish CPUE) and run timing of the Yukon River fall chum and Coho Salmon run at Mountain Village;
- b. describe the ASL composition of the fall chum and Coho Salmon caught in test drift nets ;
and
- c. provide a conservation and stewardship experience for rural local residents.

Study Area:

The study area is near the community of Mountain Village, Alaska. Test fishing is conducted at three specifically-identified locations approximately 5 miles upriver from the community of Mountain Village (Figure 2). Locations were identified as Site 1, Site 2 and Site 3 (Figure 2)

METHODS

Test Fishing

G.Sandone, Consulting, LLC, in cooperation with ATC and ADF&G, conducted a test fishery near Mountain Village to monitor the fall chum and Coho Salmon runs and salmon characteristics. Test fishing was planned to commence on July 17 and continue for 57 days of scheduled test fishing through September 11. This period encompasses the entire fall season salmon migration. This schedule takes into account: 1) the approximate two day lag time between the LYTF (RM 24), which begins fall season operation on July 16, 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 first day of the Fall Chum Salmon migration passed Mountain Village July 18, but test fishing commenced on July 17 for training purposes. ADF&G staff traveled to Mountain Village to train all the contract

fishermen before commencement of test fishing efforts. Gene Sandone was precluded from travelling to Mountain Village for the training day because of weather. Fall season operations started at the Pilot Station sonar site July 18. Note that a portion of the Fall Chum Salmon run passes the above-mentioned projects prior to the onset of the respective fall season operational date and a portion of the summer chum salmon run passes the projects after the start of the fall season at each respective project. However, it is beyond the scope of this study to adjust the CPUE and ASL information based on this overlap.

Although ATC hires the individual fishermen, Gene Sandone of G.Sandone, Consulting, LLC, 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 by ATC and their expertise was employed in identifying drift sites. Contract fishermen and ATC were responsible for the submission of drift and biological data on a daily basis to ADF&G and to Gene Sandone. ATC was also responsible for the orderly distribution of the test fish catches to local residents.

Three contract fishermen were used to test fish during this period. One of the contract fishermen was also hired as a “senior” contract fisherman. This senior fisherman was hired to oversee that the transition from one contract fisherman to another went smoothly and that the collection of all the data was consistent among all fishermen. The senior fishermen was also tasked with taking care of the nets during the off season and ensuring that all the nets were properly mended. Gillnet gear consisted of a 25 fathom shackle of 5.875-inch stretch mesh, multi-filament drift gillnet. The net was 35 meshes deep and was constructed of mono-multifilament strands in a light brown color. A total of three drifts were conducted daily starting at 1100 at the three locations fished in previous years, Site 1, Site 2 and Site 3 (Figure 2). The specific study area is approximately 5 miles above the community of Mountain Village. One drift was conducted along the north and south bank of the river. One additional drift was conducted on the south side of a prominent sandbar located mid-river (Figure 2).

Two data notebooks were provided to the test fishing crew. The drift data log data book was used to record daily test fishing drift information. The biological data book, was used to record catch information such as the sex and length of each species caught. A page from each of these data books is provided in Appendix A. Prior to the first set of each set of drifts, wind speed and direction, air and water temperature, percent cloud cover, precipitation and river water condition was noted and recorded in the drift data book (Appendix A). Both data books were delivered to Gene Sandone after the MVTF project terminated for the season. Gene Sandone provided a copy of each data book to ADF&G.

Sampling/Statistical Design:

Salmon sampling protocols developed and standardized by ADF&G staff (see Schumann et al. 2011) were used in test fishing and sampling the catch. Additionally, a project operational plan was updated from previous versions and provided to the contract fishers. Further, a summary of data collection instructions for the drift log as well as for the sex and length (biological) data was provided on the inside front cover of the respective data books (Appendix A). CPUE calculations were based on the same method that ADF&G uses. Run timing assessment was based on ADF&G procedures. All methods and data analysis are based on ADF&G protocols (Schumann, K. and L. DuBois. 2011). Additionally, ADF&G assisted in the initial training of the test fishers in test fishing and sampling methods and procedures during the first day of test fishing operations.

Objective 1: *Estimate the relative abundance and run timing of the fall chum and Coho Salmon runs.*

Fishing times, catch data, and other ancillary data regarding each drift was recorded in the MVTF drift log data book (Appendix A) in addition to weather data. . For this project, CPUE was the primary indication of relative run strength. Daily species-specific CPUE was calculated as the average of the three daily drift-specific CPUEs for fall chum and Coho Salmon based on the catch of each species, the amount of net fished, and mean the fishing time. The species-specific CPUE index standardizes catch reporting as the number of fall chum or Coho Salmon caught in 100 fathoms of gear, standardized to one hour of fishing time. The daily drift-specific CPUE for each species was calculated as follows;

$$CPUE_s = \frac{100 \text{ fm} \times 60 \text{ min} \times \text{number of fish}}{\text{fm of gear} \times MFT} \quad (1)$$

where: MFT = mean fishing time for each set, in minutes.
Number of fish is species specific

Mean fishing time (*MFT*) was calculated as:

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

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

Fishing times was recorded to the nearest minute for each drift in the drift log data book. Time is recorded for the beginning of net deployment, when the net is fully deployed, when the net retrieval starts, and when the net is fully retrieved.

Each net was drifted for a maximum of 20 minutes unless catch rates were high. However, drifts were long enough to collect at least 30 salmon from each drift. Note that the net is capable of capturing fish prior to being fully deployed, and during the time it is 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 are 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 will depend on the time the net is in the water, as well as water and wind conditions.

To calculate daily species-specific $CPUE_d$ for the Mountain Village project, $CPUE_s$ was averaged as follows:

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

The average of all daily drifts used as the daily CPUE statistic ($CPUE_d$) for developing relative abundance

and timing information.

On occasion, test fishing was not conducted because of rough water and unsafe boating conditions. Missing daily CPUE values were developed by ADF&G through calculating the relationships between the daily LYTF CPUE versus the MVTF CPUE and/or the MVTF CPUE versus the Pilot Station sonar counts.

Migration of fall chum and Coho 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 was 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.

Objective 2: *Describe the ASL composition of the fall chum and Coho Salmon caught in test drift nets.* Sex of each species was determined and recorded based on internal inspection of gonads. Length of each sampled fall chum and Coho Salmon was measured from mid-eye to fork of tail (METF), to the nearest 1 mm using a caliper. Sex and length data was recorded in the appropriate section of the biological data notebook (Appendix A).

One scale sample was collected from up to 30 Fall Chum Salmon and three scale samples from up to 20 Coho Salmon per day for subsequent age determination. Scales were 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”. Salmon scales taken from the preferred area were mounted on gum cards, or scale cards, in the field. Scale cards were sequentially numbered based on species. A new species-specific, sequentially numbered scale card was started for each day for each species only if the species-specific catch was greater than 0. Sequential number of species-specific scale cards was suspended on days when the species-specific catch was 0. Depending on the number of salmon sampled each day, each scale could contain a maximum of 30 fall chum or 10 Coho Salmon. During the season, scale cards were periodically delivered to ADF&G for possible 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.

Once the catch is sampled, local residents were allowed to take the fish for subsistence use. All fish retained in the MVTF were available for the local residents to take for subsistence purposes.

Objective 3: *Provide a conservation and stewardship experience for rural local residents.* This project’s local hire component and involvement of the local tribal government provided an opportunity to build community capacity and stewardship.

RESULTS

Test Fishing

Initially, budget constraints, resulting from the payment of a senior fisherman for additional duties, restricted the test fishery from the planned end of September 11 to September 9. However, after sufficient funding became available to extend the season through September 11, as initially planned,

ADF&G decided to terminate the project on September 9 because of the extremely low catches of Fall Chum Salmon during the first week of September.

During the 2014 season, test fishing by expert contract fishermen was conducted from July 17 through September 9, inclusive, for a total of 55 possible days of test fishing days. Test fishing occurred at least at one site on 54 of those 55 days. Test fishing was conducted at all three sites on 53 days (Table 1).

Test fishing was not conducted at Site 2 and Site 3 on July 19 because of hazardous river water conditions at those sites; test fishing was not conducted at all three sites on July 20 because the contract fisherman was ill (Table 1; Appendix B1, B2 and B3).

Prior to commencing daily test fishing activities, weather information was collected at Site 1 every day during the test fishing period, with the exception of July 20, when the contract fisherman was ill (Table 2). Observed air and water temperature at Site 1 of the MVTF project were compared to the air and water temperature taken at noon at the USGS gauging station at Pilot Station (http://waterdata.usgs.gov/ak/nwis/uv/?site_no=15565447&PARAMeter_cd=00065,00060). Although air temperatures were similar and followed the same general pattern, water temperatures, especially during the period, August 5 through August 21, did not (Figure 3). Although the Andreadfsky River enters the Yukon River between these two sites and could contribute to the cooling of the Yukon River water, the abrupt changes in water temperature during this period could not be explained by this. It appears that this period of very low water temperatures coincides with the duration of one of the contract fishermen. Therefore, the PI believes that either the thermometer was broken and was providing the incorrect water temperature or the thermometer was not being read correctly.

Subjective assessment of river stage was also taken at Site 1 of the MVTF project. Fishermen subjectively assessed river as remaining constant, increasing or decreasing. This subjective assessment is reported in Table 2 and is also compared to the river stage data collected at noon at the Pilot Station USGS gauging station (Figure 4). In general the subjective assessment is similar to changes in the USGS river stage data.

Additional daily observations included in Table 2 include occurrence and intensity of precipitation, cloud cover and fog, wind direction and speed, and river water condition.

Objective 1: *Estimate the relative abundance and run timing of the fall chum and Coho Salmon runs.*

Fall Chum Salmon

Fall Chum Salmon catch and daily CPUE among the three test fish sites was dominated by Site 1 followed by Site 3. Site 1 (Figure 2) accounted for 69% of the catch; the cumulative Site 1 CPUE was nearly double, 197%, that of the MVTF cumulative CPUE. Site 2 (Figure 2) accounted for 14% of the total fall chum catch; the Site 2 cumulative CPUE was only 40% of the MVTF cumulative CPUE. Site 3 (Figure 2) accounted for 17% of the catch; the Site 3 cumulative CPUE was only 46% of the MVTF cumulative CPUE. Comparison of the daily CPUE among the three sites is presented in Figure 5.

The total Fall Chum Salmon MVTF catch in 2014, 269 salmon, was very similar to the historic median catch of 274 (Bonnie Borba, ADF&G/CF, Fairbanks, personal communication; Table 1). Fall Chum Salmon catch ranged from 0 on 23 days of the 54 days when test fishing occurred (43% of the time) to

37 Fall Chum Salmon on August 3. Daily CPUE ranged from 0.00 on 23 of the 54 days when test fishing occurred to 165.53 on August 15. On August 15 a total of 34 Fall Chum Salmon were captured (Table 1; Figure 6).

The total cumulative MVTF CPUE for Fall Chum Salmon during the period, July 17 through September 9 totaled 1,182.50 (Table 1). The mid-50% of the run occurred from July 22 through August 15, with the midpoint of the run occurring on August 3 (Table 1; Figure 6). The Fall Chum Salmon run at the MVTF site appeared to be earlier than the historic median run timing. The 2014 first quartile day of passage occurred 7 days earlier than the historic median day of passage, July 22 versus July 29; the 2014 median day of passage occurred 5 days earlier than the historic median; but the 2014 third quartile day of passage occurred 3 days earlier than the historic median (Figure 6),

The 2014 cumulative CPUE approximately 45% below the historic (1997-2012) median cumulative CPUE of 2,146.55 for this project (Figure 7; Bonnie Borba, ADF&G Commercial Fisheries Division, Fairbanks, personal communication).

Coho Salmon

Coho Salmon total catch, and CPUE among the three test fish sites was highest from Site 1, followed by Site 3. Site 1 (Figure 2) accounted for 43% of the catch; the cumulative Site 1 CPUE was 129%, of the MVTF cumulative Coho Salmon CPUE. Site 2 (Figure 2) accounted for 23% of the total Coho Salmon catch; the Site 2 cumulative CPUE was 69% of the MVTF cumulative Coho Salmon CPUE. Site 3 (Figure 2) accounted for 34% of the catch; the Site 3 cumulative CPUE was nearly equal, 102%, of the MVTF cumulative Coho Salmon CPUE. Comparison of the daily CPUE among the three sites is presented in Figure 8.

The total Coho Salmon MVTF catch in 2014, 171 salmon, was approximately 27% below the historic median catch of 235 Coho Salmon (Bonnie Borba, ADF&G/CF, Fairbanks, personal communication; Table 1). Coho Salmon catch ranged from 0 on 16 of the 54 days when test fishing occurred (30% of the time) to 29 Coho Salmon on August 22. Similarly, daily CPUE ranged from 0.00 on 16 of the 54 days when test fishing occurred to 110.38 on August 22 (Table 1; Figure 9).

The total cumulative MVTF CPUE for Coho Salmon during the period, July 17 through September 9 totaled 677.58 (Table 1). The 2014 cumulative CPUE was approximately 38% below the historic (1995-2012) median cumulative CPUE of 1,092.62 for this project (Figure 10; Bonnie Borba, ADF&G/CF, Fairbanks, personal communication). The mid-50% of the run occurred from August 19 through August 28, 10 days, with the midpoint of the run occurring on August 22 (Table 1; Figure 10). The Coho Salmon run at the MVTF site appeared to be similar to the historic run timing because the median day of passage was the same, August 22. However, the 2014 run appeared to be more compressed. While the mid-50% of the run passed in 10 days in 2014, the historic median run timing of the mid-50% of the run lasted 16 days, from August 15 through August 30, 16 days. The 2014 first quartile was 3 days later than the historic first quartile day of passage and the third quartile day of passage was 2 days earlier than the median historic third quartile (Figure 9).

Other Species

In addition to the fall chum and Coho Salmon captured, a total of 67 pink salmon *O.gorbushcha*, 1 Dolly Varden *Salvelinus malma*, 1 sockeye salmon *O. nerka*, and 2 sheefish *Stenodus leucichthyes* were caught and retained. Additionally, 2 sheefish and 2 burbot *Lota lota* were caught and released (Table 1)

Objective 2: *Describe the ASL composition of the fall chum and Coho Salmon caught in test drift nets.* ASL records of individual fall chum and Coho Salmon are archived in the AYK database management system (DBMS; <http://www.adfg.alaska.gov/CommFishR3/WebSite/AYKDBMSWebsite/Default.aspx>). Therefore, the individual records of sampled fish are not included in this report. However, summaries are provided.

Fall Chum Salmon

A total of 255 Fall Chum Salmon were sampled for ASL during the 2014 MVTF operations. Of this total, 230 scales, or 90.2%, were successfully aged and 254 were successfully sexed. Fall Chum Salmon that were successfully aged and sexed numbered 239 (Table 3), or 89.8%, of the sampled salmon. Female Fall Chum Salmon comprised 60.5% of the 254 successfully sexed Fall Chum Salmon and 61.1% of the aged and sexed sample (Table 3). Age-0.3 dominated the sample, accounting for 53.7% of the sample, followed by age-0.4 salmon, 43.7%, and age 0-5 salmon, 2.2%. Additionally 1 age-0.2 Fall Chum Salmon was caught and sampled, 0.2% (Table 3). Mean length at age was 529 mm for age-0.2 (n=1), 576 mm for age-0.3 salmon (n=124), 594 for age-0.4 salmon (n=100), and 570mm for age-0.5 salmon (n=5). Generally, mean length at age of male Fall Chum Salmon was larger than female salmon for all age groups (Table 3) and significantly different for age-0.3, and age-0.4 salmon (Table 3). Mean length of male age-0.3 salmon, 587 mm (SE=5) was significantly larger than female age-0.3 salmon, 569 mm (SE=3); and mean length of male age-0.4 Fall Chum Salmon, 602 mm (SE=6) was significantly larger than female age-0.4 salmon, 590 mm (SE=4) (Table 3). Insufficient sample size precluded statistical comparisons between mean lengths of male and female salmon for the other representative age groups.

Coho Salmon

A total of 160 Coho Salmon were sampled for ASL during the 2014 MVTF operations. Of this total, 132 scales, or 82.5%, were successfully aged and all fish sampled were successfully sexed. Coho Salmon that were successfully aged and sexed numbered 132 (Table 4), or 82.5%, of the sampled salmon. Female Coho Salmon comprised 52.5% of the 160 successfully sexed Coho Salmon and 50% of the aged and sexed sample (Table 4). Age-1.2 dominated the sample, accounting for 83.3% of the sample, followed by age-1.1 salmon, 10.6%, and age 1.3 salmon, 6.1%. Mean length at age was 535 mm for age-1.1 (n=14), 555 mm for age-1.2 salmon (n=110), and 564 for age-1.3 salmon (n=8). Mean length at age of female Coho Salmon was significantly larger than male salmon for age-1.1 group (Table 3). Mean length of female age-1.1 salmon, 550 mm (SE=3) was significantly larger than male age-1.1 salmon, 513 mm (SE=8). Interestingly, mean length for age-1.2 Coho Salmon were nearly identical for this dominant age group (Table 4).

Objective 3: *Provide a conservation and stewardship experience for rural local residents.*

The partnership among the principal investigator, Gene Sandone (G.Sandone Consulting, LLC), ATC, YDFDA, and ADF&G provided the opportunity for improving public support and participation in

management of the fall season salmon runs. Expert fishers from the village of Mountain Village were hired by ATC, and were not only trained in proper test fishing techniques but are also encouraged to view their activities as being a contributing factor in the management of the fall season salmon runs.

The participation in this project by ATC, YDFDA, and the expert fishermen hired to conduct the test fishery instills ownership in the management of the fishery because they see that the data collected from this project was used in management decisions. ADF&G provides charts to ATC that comparatively portrays the 2014 test fish data CPUE to historical levels. Based on these charts, the fishers and general public are to determine relative run strength and hopefully understand the need for management actions. Further, On-site discussions with the expert fishers and their helpers, either during the pre-season training period or in conversations during the project, regarding the management of the fisheries to achieve management objectives, the U.S./Canada Agreement and the U.S. Agreement obligations to Canada, and the upriver commercial and subsistence fisheries not only builds and maintains community capacity and support for the project but also encourages the understanding that there are additional upriver needs and demands on the same resource that passes by their village. I believe that these conversations and discussions promotes stewardship of the resource and results in a more fully understanding the value of the salmon resource. In the least, it does provide a conservation and stewardship experience for the expert fishers and also for the ATC staff. The public can view the charts provided by ADF&G and can understand the importance of this project to the management scheme.

DISCUSSION

As in previous years, three sites (Figure 2) were fished once a day, according to the operational plan. However, the CPUE from the MVTF in 2014 did not track well with the Pilot Station Fall Chum Salmon passage (Bonnie Borba, ADF&G Fairbanks, personal communication). One theory is that the Fall Chum Salmon may have moved through the lower river faster and in short bursts than in previous years (Bonnie Borba, ADF&G Fairbanks, personal communication). Note that only one site, the site closest to the North shore of the Yukon River, site 1 (Figure 2) was very productive at catching fish on a regular basis (Figure 5). This site has and continues to be observed as a favored subsistence and commercial fishing site for residence of Mountain Village. During the 2014 season, Site 2 was the most unproductive site (Figure 5). Therefore, to expand the temporal coverage at the MVTF site, along with the concern as not taxing the expert fishers beyond their ability to conduct the test fishery in a timely manner, G. Sandone, in consultation with ADF&G suggested major changes to the 2015 operational plan. These suggestions were as follows and were incorporated into the 2015 operational plan. To ensure that the MVTF did not miss small bursts of passing salmon, the scheduled fishing time was increased to twice a day. Additionally, the most unproductive site, site 2 (Figure 2) was deleted from the test fishing plan. These changes would allow more temporal coverage of the MVTF site while not taxing the expert fisher unacceptably.

LITERATURE CITED

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ACKNOWLEDGEMENTS

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TABLES

Table 1. Total daily catch and CPUE for chum and Coho Salmon, MVTF fall season project, July 17-September 9, 2014. Shaded area indicates the mid-50% portion of the CPUE along with the midpoint.

Date (2014)	Chum Salmon				Coho Salmon				Pink Salmon
	Catch ^a	Daily CPUE ^b	Cum CPUE	prop	Catch ^a	Daily CPUE ^b	Cum CPUE	prop	Catch ^a
17-Jul	7	27.93	27.93	0.02	0	0.00	0.00	0.00	33
18-Jul	24	94.87	122.80	0.10	0	0.00	0.00	0.00	2
19-Jul	^{c,d} 5	58.54	181.34	0.15	0	0.00	0.00	0.00	10
20-Jul	^e	31.10	212.44	0.18		0.00	0.00	0.00	
21-Jul	^f 13	58.35	270.79	0.23	0	0.00	0.00	0.00	6
22-Jul	11	47.45	318.24	0.27	0	0.00	0.00	0.00	3
23-Jul	4	16.31	334.55	0.28	0	0.00	0.00	0.00	1
24-Jul	16	62.93	397.48	0.34	0	0.00	0.00	0.00	0
25-Jul	6	25.26	422.74	0.36	0	0.00	0.00	0.00	0
26-Jul	^g 3	11.43	434.17	0.37	0	0.00	0.00	0.00	4
27-Jul	4	15.24	449.41	0.38	1	3.81	3.81	0.01	3
28-Jul	5	19.05	468.46	0.40	0	0.00	3.81	0.01	4
29-Jul	4	15.24	483.70	0.41	0	0.00	3.81	0.01	1
30-Jul	3	11.43	495.13	0.42	1	3.81	7.62	0.01	1
31-Jul	10	38.10	533.23	0.45	3	11.43	19.05	0.03	1
1-Aug	2	7.62	540.85	0.46	4	15.24	34.29	0.05	1
2-Aug	2	7.62	548.47	0.46	2	7.62	41.91	0.06	1
3-Aug	37	161.17	709.64	0.60	0	0.00	41.91	0.06	0
4-Aug	22	82.81	792.45	0.67	2	7.64	49.55	0.07	1
5-Aug	7	27.32	819.77	0.69	2	7.80	57.35	0.08	0
6-Aug	2	7.80	827.57	0.70	1	4.00	61.35	0.09	0
7-Aug	0	0.00	827.57	0.70	2	8.42	69.77	0.10	0
8-Aug	0	0.00	827.57	0.70	0	0.00	69.77	0.10	0
9-Aug	0	0.00	827.57	0.70	0	0.00	69.77	0.10	0
10-Aug	^g 0	0.00	827.57	0.70	1	4.00	73.77	0.11	0
11-Aug	1	3.90	831.47	0.70	2	7.90	81.67	0.12	0
12-Aug	0	0.00	831.47	0.70	1	4.00	85.67	0.13	0

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Table 1. continued (p 2 of 3).

Date (2014)	Chum Salmon				Coho Salmon				Pink Salmon
	Catch ^a	Daily CPUE ^b	Cum CPUE	prop	Catch ^a	Daily CPUE ^b	Cum CPUE	prop	Catch ^a
13-Aug	0	0.00	831.47	0.70	1	4.00	89.67	0.13	0
14-Aug	0	0.00	831.47	0.70	0	0.00	89.67	0.13	1
15-Aug	34	165.53	997.00	0.84	3	14.77	104.44	0.15	0
16-Aug	1	3.90	1,000.90	0.85	10	39.62	144.06	0.21	0
17-Aug	^g 0	0.00	1,000.90	0.85	4	15.90	159.96	0.24	0
18-Aug	3	12.21	1,013.11	0.86	2	7.80	167.76	0.248	0
19-Aug	2	7.62	1,020.73	0.86	2	7.62	175.38	0.26	0
20-Aug	24	94.29	1,115.02	0.94	6	23.43	198.81	0.29	0
21-Aug	5	19.82	1,134.84	0.96	20	79.09	277.90	0.41	0
22-Aug	3	11.25	1,146.09	0.97	29	110.38	388.28	0.57	0
23-Aug	0	0.00	1,146.09	0.97	7	27.61	415.89	0.61	0
24-Aug	0	0.00	1,146.09	0.97	9	36.92	452.81	0.67	0
25-Aug	0	0.00	1,146.09	0.97	4	16.41	469.22	0.69	0
26-Aug	^h 0	0.00	1,146.09	0.97	2	8.10	477.32	0.70	0
27-Aug	ⁱ 0	0.00	1,146.09	0.97	4	16.52	493.84	0.73	0
28-Aug	^h 4	16.10	1,162.19	0.98	4	16.10	509.94	0.75	0
29-Aug	1	4.10	1,166.29	0.99	5	20.51	530.45	0.78	0
30-Aug	0	0.00	1,166.29	0.99	5	20.51	550.96	0.81	0
31-Aug	4	16.21	1,182.50	1.00	4	16.41	567.37	0.84	0
1-Sep	0	0.00	1,182.50	1.00	10	40.41	607.78	0.90	0
2-Sep	0	0.00	1,182.50	1.00	4	16.10	623.88	0.92	0
3-Sep	0	0.00	1,182.50	1.00	2	7.71	631.59	0.93	0
4-Sep	0	0.00	1,182.50	1.00	3	11.52	643.11	0.95	0
5-Sep	0	0.00	1,182.50	1.00	4	15.33	658.44	0.97	0
6-Sep	0	0.00	1,182.50	1.00	2	7.62	666.06	0.98	0
7-Sep	0	0.00	1,182.50	1.00	2	7.62	673.68	0.99	0
8-Sep	0	0.00	1,182.50	1.00	0	0.00	673.68	0.99	0
9-Sep	0	0.00	1,182.50	1.00	1	3.90	677.58	1.00	0

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Table 1. continued (page 3 of 3).

- ^a Includes retained, released, and fish that dropped out of the net. Chum and Coho Salmon were not released.
- ^b Daily CPUE is calculated as the average of the 3 site-specific daily CPUEs.
- ^c Includes data from site 1 only; hazardous water conditions precluded fishing at the other 2 sites
- ^d Catch includes 1 Dolly Varden trout; retained for subsistence.
- ^e Test fishing was not conducted; fisherman was ill. Daily CPUE data calculated and provided by ADF&G
- ^f Catch includes 1 sockeye salmon; retained for subsistence.
- ^g Catch includes 1 sheefish; retained for subsistence
- ^h Catch included 1 burbot; released
- ⁱ Catch included 2 sheefish; released

Table 2. Weather observations at Site 1 of the MVTF project and water temperature and river stage at the Pilot Station USGS gauging station, July 17-September 9, 2014.

Date (2014)	Time	Temperature (°C)		Sky Cover ^c	Wind		Precip. ^d	River Water Cond. ^e	River Stage (ft) ^f
		Air Temp ^a	Water Temp ^b		Direction	Speed (mph)			
17-Jul	15:20	12.0	17.2	4	SW	2-5	I	na	22.97
18-Jul	12:03	12.0	17.1	5	NW	15-25	I	3	22.90
19-Jul	^g 11:25	10.5	16.5	5	SW	30-35	I	6	22.68
20-Jul	^h	na	16.1	na	na	na	na	na	22.72
21-Jul	11:02	12.0	15.8	5	SW	5-10	I	2	22.77
22-Jul	11:11	12.0	15.6	5	SW	0-5	I	2	22.81
23-Jul	11:03	10.0	15.3	5	SW	10-15	I	4	23.64
24-Jul	11:13	11.0	15.0	5	NNW	5-10	N	3	23.23
25-Jul	10:52	12.5	15.0	2	NW	5-10	N	1	23.43
26-Jul	11:19	12.0	14.7	4	NW	0-5	N	1	23.64
27-Jul	^j 11:00	13.0	14.7	5	W	0-5	N	1	23.69
28-Jul	^k 11:00	11.0	14.5	6	W	5-10	I	4	23.70
29-Jul	11:09	18.0	14.5	2	NW	0-5	N	1	23.62
30-Jul	10:45	15.5	14.7	2	NW	0-5	N	1	23.61
31-Jul	11:54	12.5	14.8	6	W	10-15	I	4	23.70
1-Aug	12:23	14.5	14.7	5	W	5-10	I	3	23.59
2-Aug	11:15	13.5	14.7	5	W	0-5	N	1	23.50
3-Aug	10:09	15.0	15.1	2	NW	0-5	N	1	23.40
4-Aug	10:55	16.1	15.4	2	SW	5-10	N	2	23.18
5-Aug	11:00	16.1	15.6	6	W	5-10	N	1	23.10
6-Aug	10:46	14.4	15.9	5	SW	5	N	1	22.97
7-Aug	10:49	13.9	16.1	4	E	15-20	N	4	22.78
8-Aug	10:50	15.0	16.2	5	E	5-10	R	2	22.73
9-Aug	10:46	15.0	16.3	3	E	5-10	N	2	22.35
10-Aug	10:45	18.3	16.4	2	na	0	N	1	22.28
11-Aug	10:46	18.3	16.8	2	na	0	N	1	22.04
12-Aug	10:46	17.8	17.0	2	E	5	N	1	21.85

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Table 2. continued (page 2 of 3).

Date (2014)	Time	Temperature (°C)		Sky Cover ^c	Wind			River Water Cond. ^e	River Stage (ft) ^f
		Air Temp ^a	Water Temp ^b		Direction	Speed (mph)	Precip. ^d		
13-Aug	10:47	17.8	17.2	2	E	5	N	1	21.75
14-Aug	10:48	13.9	17.3	4	E	5-10	N	1	21.58
15-Aug	10:43	15.6	17.4	2	na	0	N	1	21.66
16-Aug	10:49	14.4	17.5	4	E	5	N	1	21.27
17-Aug	10:48	15.0	17.3	3	na	0	N	1	21.16
18-Aug	10:48	12.8	17.5	5	W	15-20	I	5	20.97
19-Aug	10:48	11.7	17.3	5	W	5-10	I	2	20.76
20-Aug	10:48	14.4	17.1	2	W	5-10	N	1	20.71
21-Aug	10:49	14.4	16.9	2	E	5	N	1	20.67
22-Aug	10:27	na	17.1	4	E	5	N	1	20.04
23-Aug	12:10	13.9	17.4	4	E	5	N	1	19.73
24-Aug	10:48	13.9	17.3	4	NE	5	N	1	19.54
25-Aug	11:44	14.4	17.3	5	NW	7	N	1	19.41
26-Aug	11:57	13.9	17.0	5	SW	10	I	2	19.09
27-Aug	9:45	13.9	16.9	6	N	5	N	1	19.00
28-Aug	11:37	11.1	16.4	4	W	20	I	na	18.77
29-Aug	11:34	13.3	15.8	2	NW	10	N	2	18.85
30-Aug	^l 10:17	11.1	15.4	2	N	2-3	N	1	18.73
31-Aug	11:14	11.7	15.4	4	NW	5	N	2	18.69
1-Sep	12:25	11.1	15.3	5	SW	20	I	4	18.44
2-Sep	11:46	8.9	14.9	5	Var	0	N	1	18.64
3-Sep	9:35	6.1	14.6	2	NE	3	N	1	18.64
4-Sep	11:43	6.1	14.0	3	SE	15	N	3	18.68
5-Sep	11:24	5.6	13.5	2	SE	5	N	1	18.71
6-Sep	11:38	6.7	13.4	2	NE	10	N	2	18.73
7-Sep	11:30	5.6	12.5	4	SE	15	N	na	18.74
8-Sep	11:21	6.1	12.2	5	SE	15	I	3	18.78
9-Sep	11:20	9.4	12.2	5	SE	5	I	1	18.87

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Table 2. continued (page 3 of 3.)

- a Air temperature taken at MVTF Site 1 on a daily basis.
- b Water temperature at the Pilot Station USGS gauging station at noon each day.
- c Sky cover codes: 1=no observation; 2=clear or mostly clear; 3=cloud cover \leq 50% of the sky;
4=cloud cover >50% of the sky; 5=100% overcast; 6=thick fog.
- d Precipitation codes: N=no precipitation; I=intermittent rain; R=continuous rain; S=snow;
M=mixed snow and rain; H=hail; T=thunder storms
- e River water condition codes: 1=calm; 2=small waves; 3=slight chop; 4=choppy; 5=rough;
6=very rough; 7=hazardous conditions
- f River stage (ft) observed at the Pilot Station USGS gauging station at noon each day.
- g Very windy and rough; couldn't keep the net straight. Too rough to fish at site 2 and 3.
- h Test fishing not conducted because the contract fisher was ill.
- j Some light debris
- k Light debris; very heavy debris at Site 2; fishing at site 2 located farther offshore because of debris
- l Test fishing at Site 2 and 3 moved farther offshore because of falling water levels.

Table 3. Yukon River Fall Chum Salmon from the Mountain Village (Village/City) 5.875 Drift Gillnet Test Fishing project age and sex composition and mean length (mm), 2014.

Sample Dates (Stratum Dates)	Sample Size		Brood Year (Age)										Total	
			2011		2010		2009		2008		2007			
			N	%	N	%	N	%	N	%	N	%	N	%
(7/17-8/1)	100	Male	0	0.0	15	15.0	23	23.0	1	1.0	0	0.0	39	39.0
		Female	0	0.0	28	28.0	31	31.0	2	2.0	0	0.0	61	61.0
		Subtotal	0	0.0	43	43.0	54	54.0	3	3.0	0	0.0	100	100.0
		Male Mean Length	-		594		604		557		-			
		SE	-		10		7		-		-			
		Range	-		532-664		539-664		557-557		-			
		n	-		15		23		1		-			
		Female Mean Length	-		566		583		558		-			
		SE	-		4		5		29		-			
		Range	-		532-619		513-648		529-586		-			
		n	-		28		31		2		-			
(8/2-8/31)	129	Male	0	0.0	30	23.3	20	15.5	0	0.0	0	0.0	50	38.8
		Female	1	0.8	50	38.8	26	20.2	2	1.6	0	0.0	79	61.2
		Subtotal	1	0.8	80	62.0	46	35.7	2	1.6	0	0.0	129	100.0
		Male Mean Length	-		584		600		-		-			
		SE	-		6		10		-		-			
		Range	-		523-646		544-688		-		-			
		n	-		30		20		-		-			
		Female Mean Length	529		570		598		595		-			
		SE	-		5		5		9		-			
		Range	529-529		396-631		543-685		586-604		-			
		n	1		50		26		2		-			
Weighted Total	229	Male	0	0.0	45	19.7	43	18.8	1	0.4	0	0.0	89	38.9
		Female	1	0.4	78	34.1	57	24.9	4	1.7	0	0.0	140	61.1
		Total	1	0.4	123	53.7	100	43.7	5	2.2	0	0.0	229	100.0
		Male Mean Length	-		587		602		557		-			
		SE	-		5		6		0		-			
		Range	0-0		523-664		539-688		557-557		0-0			
		n	-		45		43		1		-			
		Female Mean Length	529		569		590		576		-			
		SE	0		3		4		15		-			
		Range	529-529		396-631		513-685		529-604		0-0			
		n	1		78		57		4		-			

Table 4. Yukon River Coho Salmon from the Mountain Village (Village/City) 5.875 Drift Gillnet Test Fishing project age and sex composition and mean length (mm), 2014.

Stratum Dates	Sample Size	Brood Year (Age)								
		2011		2010		2009		Total		
		N	%	N	%	N	%	N	%	
7/27-8/18	35	Male	2	5.7	20	57.1	0	0.0	22	62.9
		Female	2	5.7	10	28.6	1	2.9	13	37.1
		Subtotal	4	11.4	30	85.7	1	2.9	35	100.0
	Male Mean Length		491		536		-			
	SE		22		6		-			
	Range		469-513		484-582		-			
	n		2		19		-			
	Female Mean Length		542		555		530			
	SE		3		12		-			
	Range		539-544		467-598		530-530			
	n		2		10		1			
	8/19-8/22	38	Male	3	7.9	16	42.1	2	5.3	21
Female			1	2.6	15	39.5	1	2.6	17	44.7
Subtotal			4	10.5	31	81.6	3	7.9	38	100.0
Male Mean Length		532		562		554				
SE		7		7		16				
Range		523-545		517-611		538-570				
n		3		16		2				
Female Mean Length		554		554		602				
SE		-		7		-				
Range		554-554		500-611		602-602				
n		1		15		1				
8/23-8/28		24	Male	0	0.0	7	29.2	0	0.0	7
	Female		3	12.5	14	58.3	0	0.0	17	70.8
	Subtotal		3	12.5	21	87.5	0	0.0	24	100.0
	Male Mean Length		-		576		-			
	SE		-		8		-			
	Range		-		550-603		-			
	n		-		7		-			
	Female Mean Length		552		555		-			
	SE		7		7		-			
	Range		538-560		524-604		-			
	n		3		14		-			

-continued-

Table 4. continued (page 2 of 2.)

Stratum Dates	Sample Size		Brood Year (Age)								
			2011		2010		2009		Total		
			N	%	N	%	N	%	N	%	
8/29-9/9	35	Male	1	2.9	13	37.1	2	5.7	16	45.7	
		Female	2	5.7	15	42.9	2	5.7	19	54.3	
		Subtotal	3	8.6	28	80.0	4	11.4	35	100.0	
		Male Mean Length	504		562		560				
		SE	-		5		27				
		Range	504-504		539-594		533-586				
		n	1		13		2				
		Female Mean Length	556		559		575				
		SE	1		8		5				
		Range	555-557		514-615		570-580				
		n	2		15		2				
	Weighted Total	132	Male	6	4.5	56	42.4	4	3.0	66	50.0
			Female	8	6.1	54	40.9	4	3.0	66	50.0
			Total	14	10.6	110	83.3	8	6.1	132	100.0
		Male Mean Length	513		554		557				
		SE	8		3		15				
		Range	469-545		484-611		533-586				
		n	6		55		4				
		Female Mean Length	550		556		570				
		SE	3		4		2				
		Range	538-560		467-615		530-602				
		n	8		54		4				

FIGURES

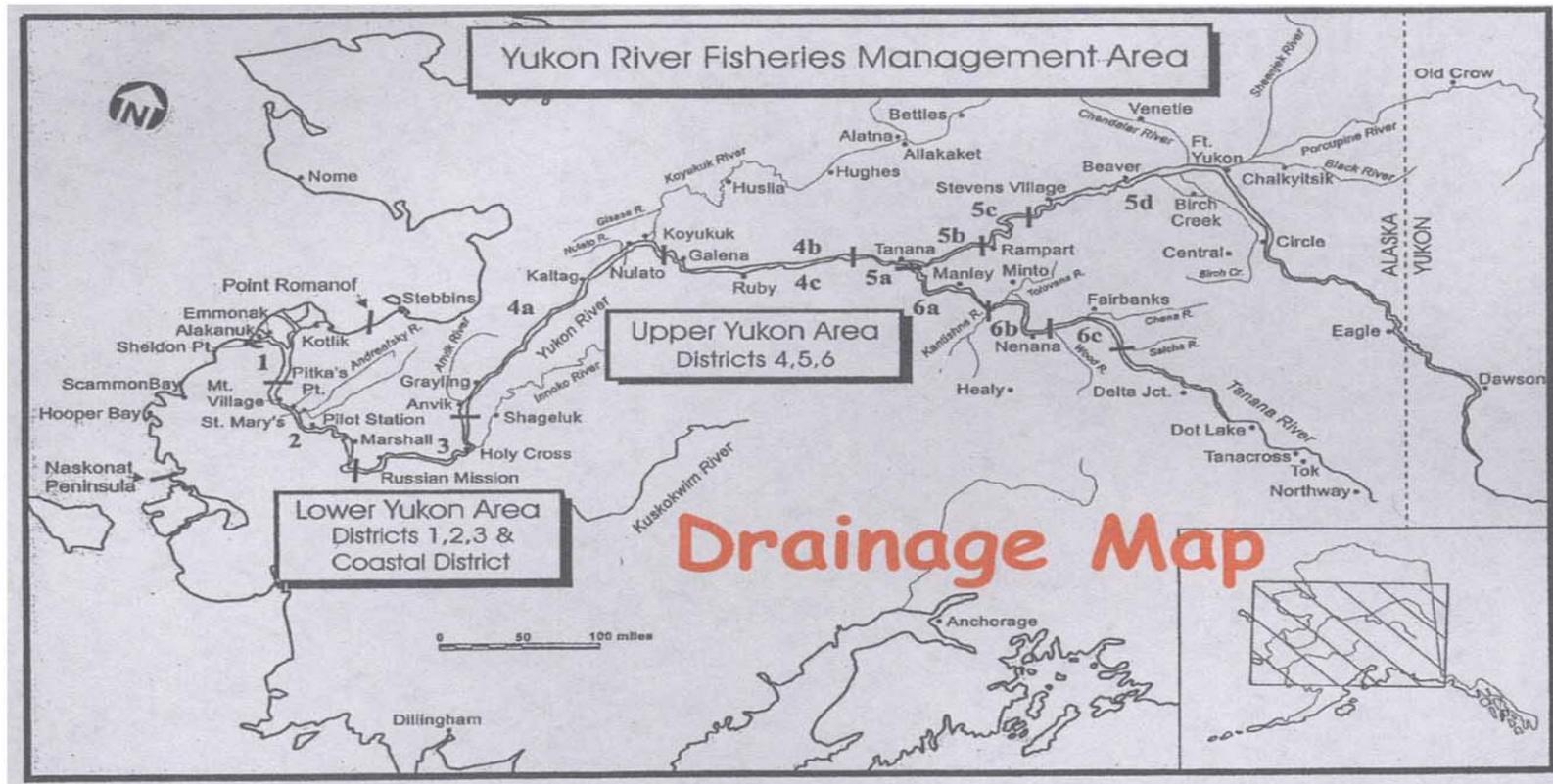


Figure 1. Map of the Yukon River drainage in Alaska showing the established Alaska Department of Fish and Game's fisheries management units.



Figure 2. Map of Yukon River in the vicinity of Mountain Village and the approximate location of the drift test fish Site 1, along the north bank of the Yukon River near Liberty Landing; Site 2 on the north side of a prominent sandbar; and Site 3 on the south side of the prominent sandbar.

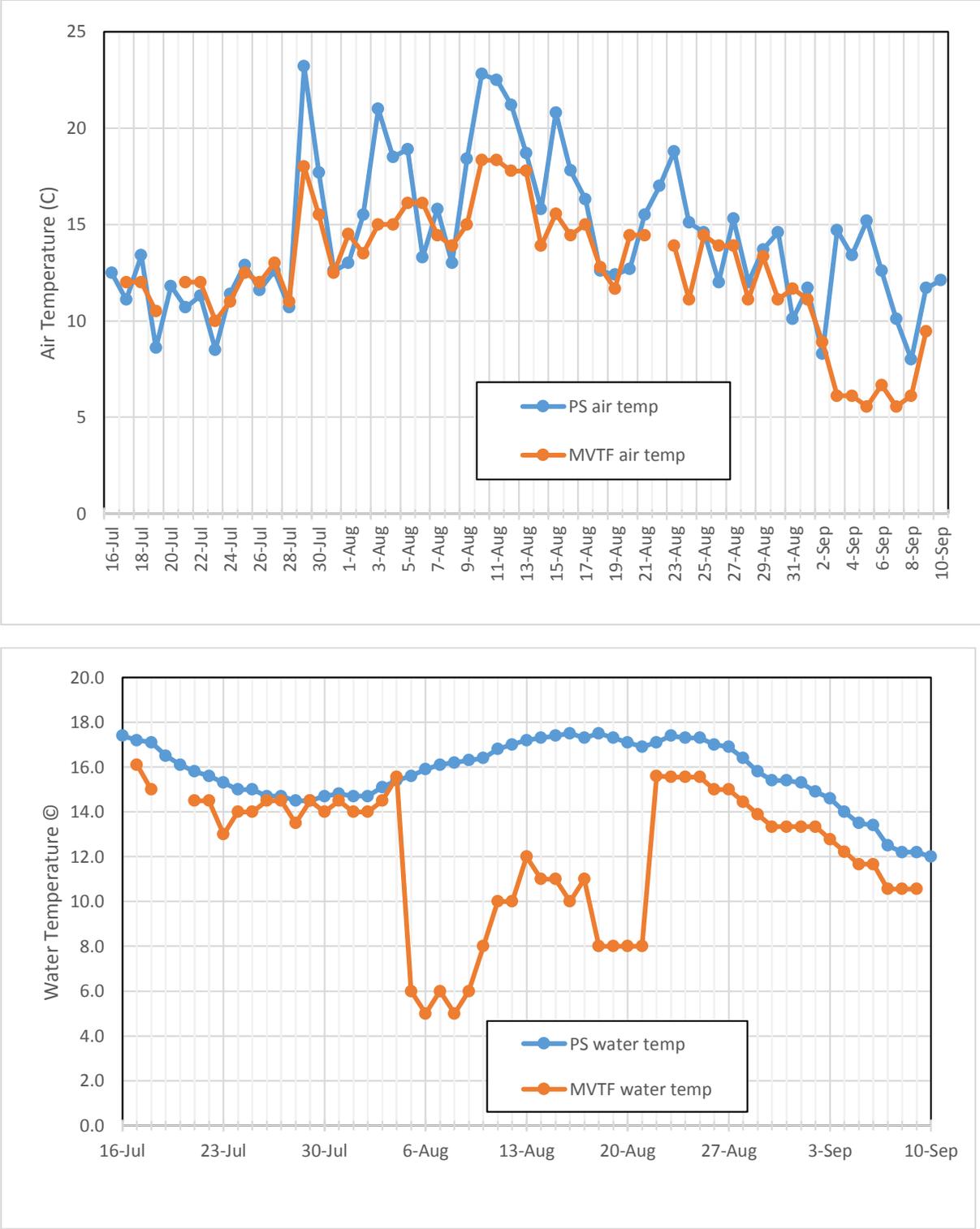


Figure 3. Comparison of air (above) and water temperatures (below) taken daily at Site 1 of the MVTF project and at noon at the Pilot Stations USGS gauging station, July 17 – September 9, 2014.

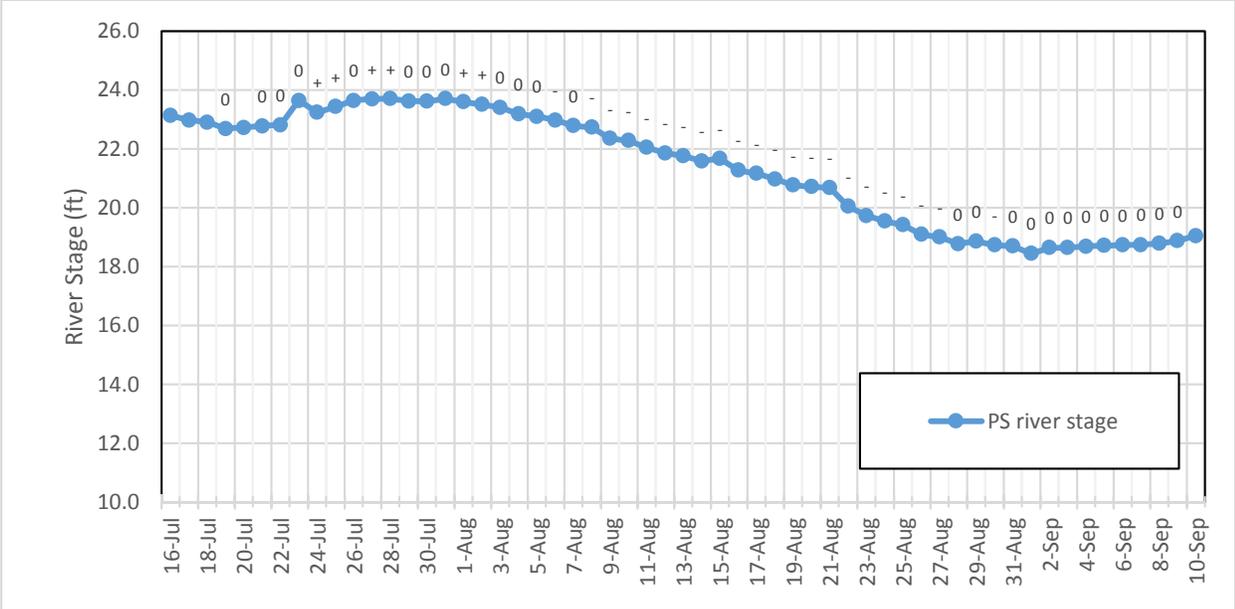


Figure 4. Yukon River stage data collected at the Pilot Station gauging station at noon each day compared to the subjective assessment made by the contract fishermen at Site 1 of the MVTF project, July 17-September 9, 2014. Note that the symbols of the subjective assessment are: “0” = stable; “+” = increasing and “-” = decreasing water level.

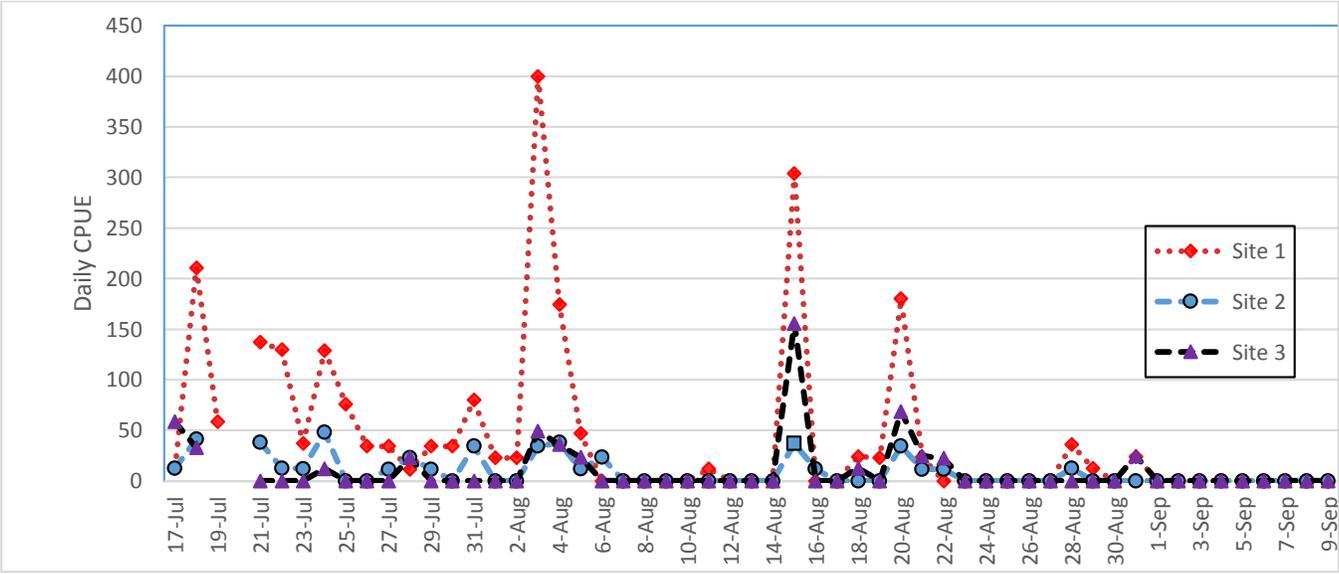


Figure 5. Comparison of the daily Fall Chum Salmon CPUE at the 3 test MVTF sites included in the Mountain Village fall season test fishery, July 17-September 9, 2014.

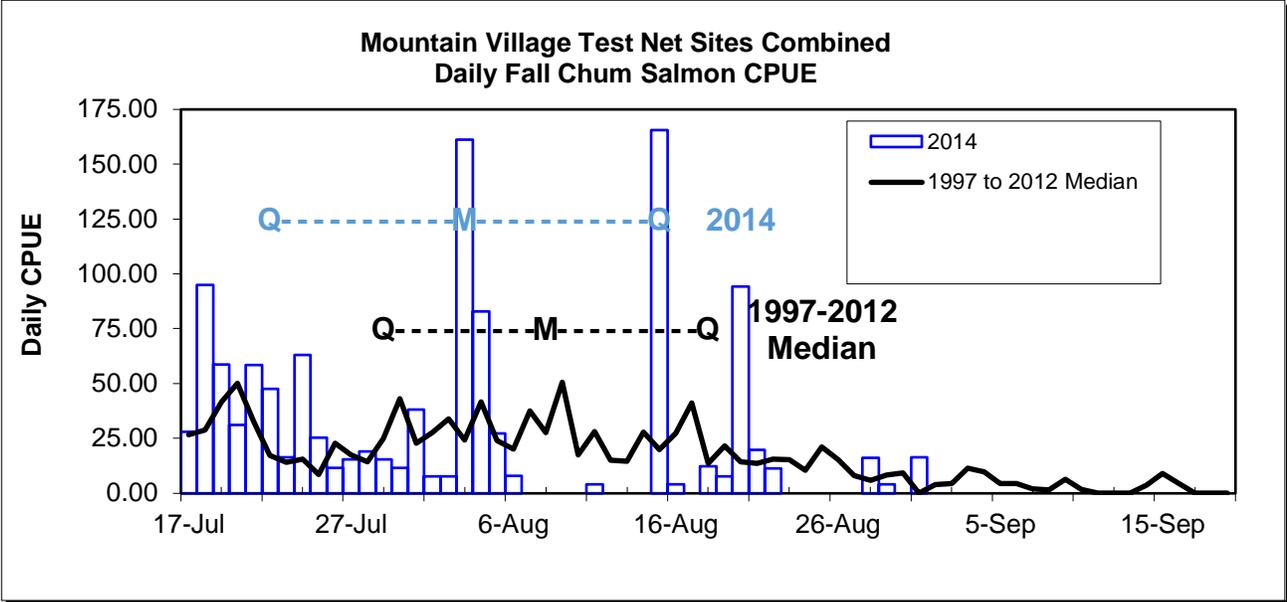


Figure 6. Daily MVTF Fall Chum Salmon CPUE comparison between the historic, 1997-2012, median daily CPUE and the 2014 daily CPUE. Quartile days, or run timing information, are also presented for each data set.

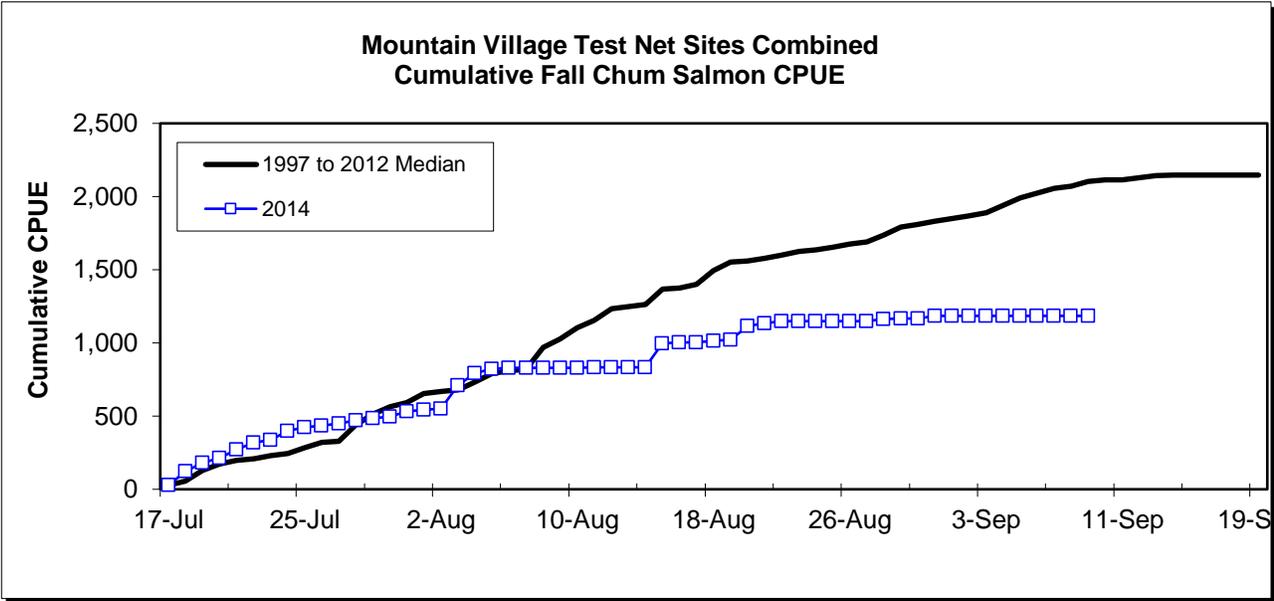


Figure 7. Comparison between the historic (1997-2012) MVTF cumulative Fall Chum Salmon CPUE and the 2014 MVTF cumulative CPUE.

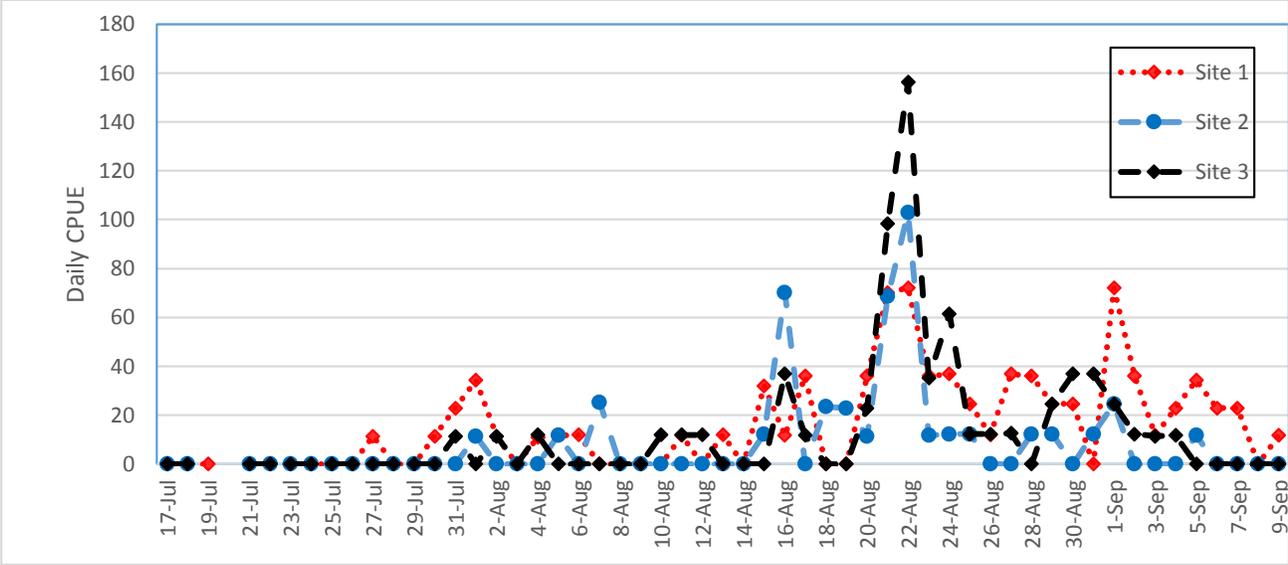


Figure 8. Comparison of the daily Coho Salmon CPUE at the 3 test MVTF sites included in the Mountain Village fall season test fishery, July 17-September 9, 2014.

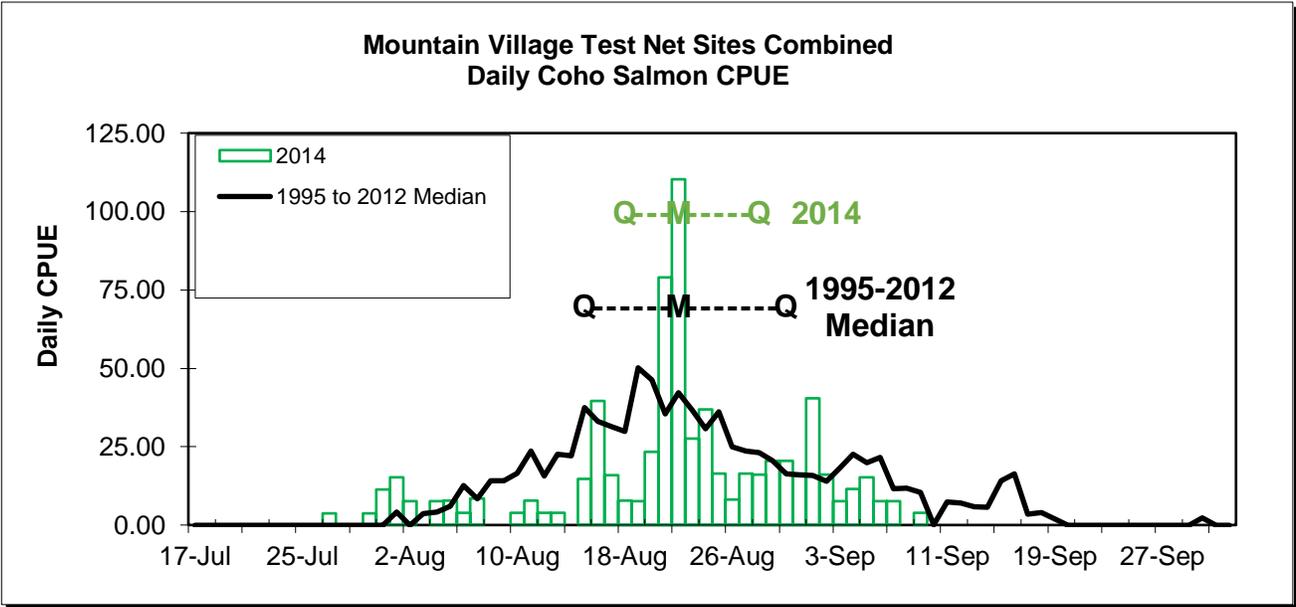


Figure 9. Daily MVTF Coho Salmon CPUE comparison between the historic, 1995-2012, median daily CPUE and the 2014 daily CPUE. Quartile days, or run timing information, are also presented for each data set.

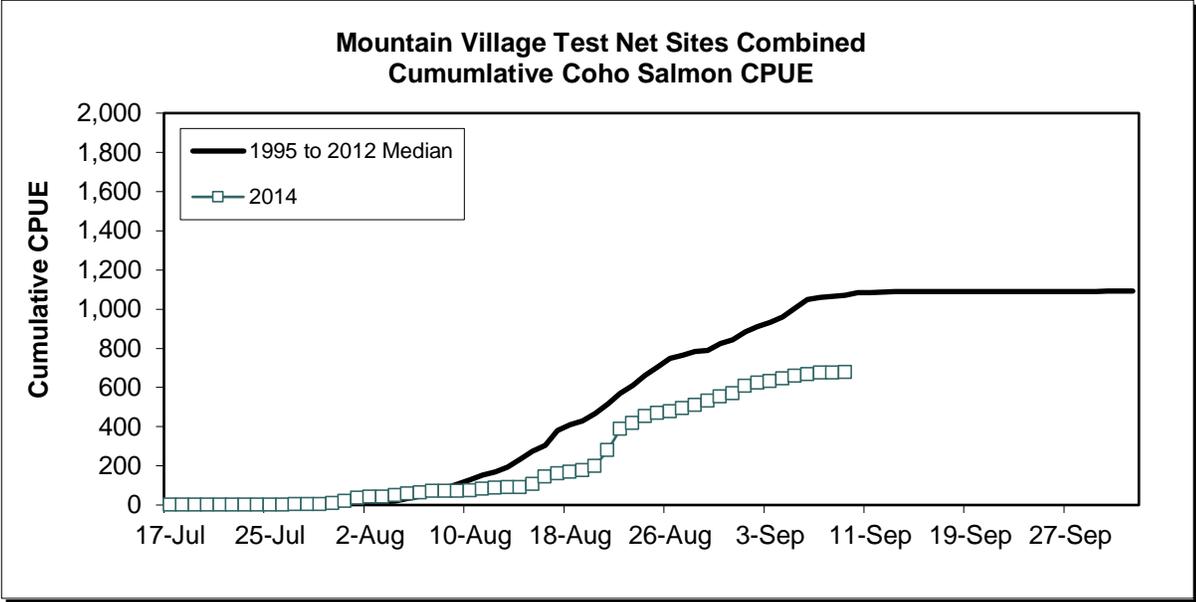


Figure 10. Comparison between the historic (1995-2012) MVTF cumulative Coho Salmon CPUE and the 2014 MVTF cumulative CPUE.

APPENDIX A: Data Books

Appendix A1. Instructions for collecting data from the test fishing drifts, MVTF, July 17-September 9, 2014.

Instructions for Drift Log	
Date	Record date of test fishing activities.
Military Time	Record time in 24-h clock
Captain/ Crew	Record name of fisher/Captain and crew/helper and anyone else who participates in fishing or data collection.
Site:	Record site A1, A2, or A3
Percent of net used	Record % of net used. Usually 100% but may be different because of the density of salmon.
Drift #	Record the drift number. Drift number starts with 1 for the first drift on the first day and is sequentially numbered. Include drift number for sites and/or days not drifted.
Net Time	Start out: Record time when first buoy hits the water; Full out: Record time when net is fully deployed; Start in: Record time when you start bringing the net in. Full out: Record time when net is completely in the boat. NOTE: if more than 15 fall chum salmon are in the net, bring the entire net into the boat and pick the fish from shore.
CATCH	Record number of fish by species (CHUM, COHO, PINK, OTHER) that you KEEP, RELEASE, or DROP OUT separately. The TOTAL includes all fish that are kept, released, and that you observe to drop out of the net.
WEATHER	
Temp.	Record H ₂ O (water) and air temperature and associated time taken.
Site:	Record Drift Site (A1, A2, or A3) where weather was observed.
Clouds	Circle the percentage that the SKY is COVERED with clouds.
Wind	Wind Speed: Estimate and Record wind speed in mph. Wind Direction: Circle the direction that the wind is coming from.
Precipitation	Circle the appropriate descriptor.
Water Condition	Circle the appropriate descriptor.

CONTACT NUMBERS

Gene Sandone (voice)	631-6033
ADF&G (FAX)	949-1830

FAX DRIFT LOG AND BIOLOGICAL DATA
TO ADF&G BEFORE 5:00 AM
EVERYDAY.

*Direct any questions, comments, suggestions, etc. directly to
Gene Sandone and/or ADF&G Emmonak*

Appendix A3. Instructions for collecting sex and length data and scales from sampled fall chum and Coho Salmon, MVTF, July 17-September 9, 2014.

COLLECTION OF FALL CHUM AND COHO SALMON BIOLOGICAL DATA

- 1** Sample up to 30 fall chum salmon

- 2** Determine the number of scales cards that you will use for fall chum samples.
Use 1 scale card for each 30 fall chum salmon.
Take 1 scale for each fall chum salmon sampled

- 3** Determine the number of scales cards that you will use for coho samples.
Use 1 scale card for each 10 coho salmon sampled
Take 3 scales for each coho salmon sampled

- 4** Fill out the information on the back of the scale card.
Keep scale cards and scale number separate for each speices
(See back page for instructions.)

- 5** Sample fall chum first and coho salmon second.

- 6** Lay out up to 10 fall chum or coho salmon at one time in 2 rows of 5 with left side of the fish up. Number 1 fish is located in the upper left row.

- 7** Record date on data sheet.

- 8** Determine sex from internal examination of the gonads.

- 9** Circle the appropriate letter, "M" or "F", denoting male or female salmon.

- 10** Measure each sampled salmon from mid-eye to fork of tail to the nearest 1 mm. Record the length in the appropriate box.

- 11** Obtain scales from each salmon sampled from the preferred area.
Inspect scales to ensure that scales are not regenerated.
After the scales have dried, place a piece of waxed paper over scales and store. Keep all scales in a secure place (office).

- 12** Obtain 1 scale for each fall chum salmon and place it on the appropriate scale (gum) card. Place each scale on the sample number on the scale card.

- 13** Obtain 3 scales for each coho salmon and place it on the appropriate scale (gum) card. Note that the 3 scales from the first fish are placed on numbers 1, 11, 21 on the scale card.

- 14** After the scales have dried, place a piece of waxed paper over scales and store. Keep all scales in a secure place (office).

- 15** Copy and transfer written data to Gene Sandone and ADF&G no later than 5:00 pm of the day sampling takes place.

- 16** Transfer scale cards to ADF&G Emmonak when requested.

CONTACT NUMBERS

Gene Sandone (voice)	631-6033
ADF&G (FAX)	949-1830

FAX DRIFT LOG AND BIOLOGICAL DATA
TO ADF&G **BEFORE 5:00 PM**
EVERYDAY.

*Direct any questions, comments, suggestions, etc. directly to
Gene Sandone or ADF&G Emmonak.*

SCALE CARD EXAMPLE: for Drift 1 on July 17, 2014

Species:	<u>FALL CHUM SALMON</u>	Card No: <u>001F</u>
Locality:	<u>Mountain Village</u>	
Stat. Code:	<u>334-21- -239</u>	
Sampling Date:	Mo: <u>July</u> Day: <u>17</u> Year: <u>2014</u>	
Gear:	<u>5.875"; 25 fathoms</u>	
Collector(s):	<u>(write names of captain and crew here)</u>	
Comments:	_____	

Appendix A4. Data sheet for the collection of sex and length information from captured and sampled fall chum and Coho Salmon, MVTF, July 17 – September 9, 2014.

FALL CHUM SALMON: Fall Season MVTF					COHO SALMON: Fall Season MVTF						
Date: enter date here			Crew: enter crew initials here		Date: enter date here			Crew: enter crew initials here			
Card#:	enter card #		Length (mm)	Genetic#	Comments/notes	Card#:	enter card #		Length (mm)	Genetic#	Comments/notes
1	M	F				1	M	F			
2	M	F				2	M	F			
3	M	F				3	M	F			
4	M	F				4	M	F			
5	M	F				5	M	F			
6	M	F				6	M	F			
7	M	F				7	M	F			
8	M	F				8	M	F			
9	M	F				9	M	F			
10	M	F				10	M	F			
			Length (mm)	Genetic#	Comments/notes				Length (mm)	Genetic#	Comments/notes
11	M	F				1	M	F			
12	M	F				2	M	F			
13	M	F				3	M	F			
14	M	F				4	M	F			
15	M	F				5	M	F			
16	M	F				6	M	F			
17	M	F				7	M	F			
18	M	F				8	M	F			
19	M	F				9	M	F			
20	M	F				10	M	F			
			Length (mm)	Genetic#	Comments/notes				Length (mm)	Genetic#	Comments/notes
21	M	F									
22	M	F									
23	M	F									
24	M	F									
25	M	F									
26	M	F									
27	M	F									
28	M	F									
29	M	F									
30	M	F									

APPENDIX B. Raw fishing time, catch, and CPUE data from Site 1, 2, and 3 of the Mountain Village Test Fall Season Test Fishery, Alaska, 2014.

Appendix B1. Drift number, raw fishing time, mean fishing time, catch, and respective CPUE for fall chum and Coho Salmon, Site 1, MVTF, July 17-September 9, 2014.

Date (2014)	Drift number	Net Time					Mean Fishing Time ^a	Chum Salmon Catch				Coho Salmon Catch				Pink Salmon Catch		
		Start Out (A)	Full Out (B)	Start In (C)	Full In (D)	Drop Kept		Drop Out	Drop Total	CPUE ^b	Drop Kept	Drop Out	Drop Total	CPUE ^b	Kept	Release	Total	
17-Jul	1	15:20	15:21	15:38	15:41	19.00	1	0	1	12.63	0	0	0	0.00	33	0	33	
18-Jul	4	11:54	11:55	12:13	12:17	20.50	18	0	18	210.73	0	0	0	0.00	1	1	2	
19-Jul ^c	7	11:29	11:30	11:48	11:52	20.50	5	0	5	58.54	0	0	0	0.00	10	0	10	
20-Jul ^d	10																	
21-Jul	13	11:00	11:01	11:16	11:20	17.50	10	0	10	137.14	0	0	0	0.00	6	0	6	
22-Jul ^e	16	11:09	11:10	11:27	11:29	18.50	10	0	10	129.73	0	0	0	0.00	1	0	1	
23-Jul	19	10:59	11:00	11:18	11:20	19.50	3	0	3	36.92	0	0	0	0.00	1	0	1	
24-Jul	22	11:10	11:11	11:30	11:32	20.50	11	0	11	128.78	0	0	0	0.00	0	0	0	
25-Jul	25	10:50	10:51	11:09	11:10	19.00	6	0	6	75.79	0	0	0	0.00	0	0	0	
26-Jul ^f	28	11:20	11:21	11:41	11:42	21.00	3	0	3	34.29	0	0	0	0.00	0	3	3	
27-Jul	31	10:58	10:59	11:19	11:20	21.00	3	0	3	34.29	1	0	1	11.43	0	3	3	
28-Jul	34	11:00	11:01	11:21	11:22	21.00	1	0	1	11.43	0	0	0	0.00	0	2	2	
29-Jul	37	11:07	11:08	11:28	11:29	21.00	3	0	3	34.29	0	0	0	0.00	0	1	1	
30-Jul	40	10:43	10:44	11:04	11:05	21.00	3	0	3	34.29	1	0	1	11.43	0	1	1	
31-Jul	43	11:53	11:54	12:14	12:15	21.00	7	0	7	80.00	2	0	2	22.86	0	1	1	
1-Aug	46	12:20	12:21	12:41	12:42	21.00	2	0	2	22.86	3	0	3	34.29	0	1	1	
2-Aug	49	11:14	11:15	11:35	11:36	21.00	2	0	2	22.86	1	0	1	11.43	0	1	1	
3-Aug	52	10:04	10:05	10:22	10:23	18.00	30	0	30	400.00	0	0	0	0.00	0	0	0	
4-Aug	55	10:55	10:56	11:15	11:20	22.00	16	0	16	174.55	1	0	1	10.91	1	0	1	
5-Aug	58	10:46	10:47	11:05	11:09	20.50	4	0	4	46.83	1	0	1	11.71	0	0	0	
6-Aug	61	10:44	10:46	11:04	11:06	20.00	0	0	0	0.00	1	0	1	12.00	0	0	0	
7-Aug	64	10:49	10:50	11:03	11:05	14.50	0	0	0	0.00	0	0	0	0.00	0	0	0	
8-Aug	67	10:46	10:48	11:06	11:08	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0	
9-Aug	70	10:44	10:46	11:04	11:06	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0	
10-Aug	73	10:45	10:47	11:05	11:06	19.50	0	0	0	0.00	0	0	0	0.00	0	0	0	
11-Aug	76	10:45	10:46	11:05	11:07	20.50	1	0	1	11.71	1	0	1	11.71	0	0	0	
12-Aug	79	10:45	10:46	11:05	11:06	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0	

Appendix B1. Continued (p 2 of 3).

Date (2014)	Drift number	Net Time				Mean Fishing Time ^a	Chum Salmon Catch				Coho Salmon Catch				Pink Salmon Catch		
		Start Out (A)	Full Out (B)	Start In (C)	Full In (D)		Drop			Drop			Kept	Release	Total		
		Out (A)	Out (B)	In (C)	In (D)		Kept	Out	Total	CPUE ^b	Kept	Out				Total	CPUE ^b
13-Aug	82	10:45	10:47	11:05	11:07	20.00	0	0	0	0.00	1	0	1	12.00	0	0	0
14-Aug	85	10:44	10:45	11:04	11:05	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0
15-Aug	88	10:42	10:43	10:54	11:01	15.00	19	0	19	304.00	2	0	2	32.00	0	0	0
16-Aug	91	10:46	10:47	11:06	11:08	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0
17-Aug	94	10:44	10:46	11:04	11:06	20.00	0	0	0	0.00	3	0	3	36.00	0	0	0
18-Aug	97	10:46	10:48	11:06	11:08	20.00	2	0	2	24.00	0	0	0	0.00	0	0	0
19-Aug	100	10:46	10:47	11:06	11:09	21.00	2	0	2	22.86	0	0	0	0.00	0	0	0
20-Aug	103	10:45	10:46	11:03	11:08	20.00	14	1	15	180.00	3	0	3	36.00	0	0	0
21-Aug	106	10:47	10:48	11:07	11:09	20.50	2	0	2	23.41	6	0	6	70.24	0	0	0
22-Aug	109	10:20	10:21	10:39	10:42	20.00	0	0	0	0.00	6	0	6	72.00	0	0	0
23-Aug	112	12:05	12:06	12:24	12:27	20.00	0	0	0	0.00	3	0	3	36.00	0	0	0
24-Aug	115	10:41	10:42	11:00	11:02	19.50	0	0	0	0.00	3	0	3	36.92	0	0	0
25-Aug	118	11:31	11:32	11:50	11:52	19.50	0	0	0	0.00	2	0	2	24.62	0	0	0
26-Aug ^g	121	11:46	11:47	12:05	12:08	20.00	0	0	0	0.00	1	0	1	12.00	0	0	0
27-Aug ^h	124	9:33	9:34	9:52	9:54	19.50	0	0	0	0.00	3	0	3	36.92	0	0	0
28-Aug	127	11:31	11:32	11:50	11:53	20.00	3	0	3	36.00	3	0	3	36.00	0	0	0
29-Aug	130	11:26	11:27	11:45	11:47	19.50	1	0	1	12.31	2	0	2	24.62	0	0	0
30-Aug	133	10:14	10:15	10:33	10:35	19.50	0	0	0	0.00	2	0	2	24.62	0	0	0
31-Aug	136	11:08	11:09	11:27	11:30	20.00	2	0	2	24.00	0	0	0	0.00	0	0	0
1-Sep	139	11:57	11:58	12:16	12:19	20.00	0	0	0	0.00	6	0	6	72.00	0	0	0
2-Sep	142	11:38	11:39	11:57	12:00	20.00	0	0	0	0.00	3	0	3	36.00	0	0	0
3-Sep	145	9:28	9:29	9:48	9:50	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0
4-Sep	148	11:34	11:35	11:54	11:57	21.00	0	0	0	0.00	2	0	2	22.86	0	0	0
5-Sep	151	11:20	11:21	11:40	11:43	21.00	0	0	0	0.00	3	0	3	34.29	0	0	0
6-Sep	154	11:34	11:35	11:54	11:57	21.00	0	0	0	0.00	2	0	2	22.86	0	0	0
7-Sep	157	11:13	11:14	11:33	11:36	21.00	0	0	0	0.00	2	0	2	22.86	0	0	0
8-Sep	160	11:17	11:18	11:37	11:39	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
9-Sep	163	11:13	11:14	11:33	11:35	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0

Appendix B1. Continued (p 3 of 3).

^a Expressed as minutes; Mean Fishing Time = $((B-A+D-C)/2)+(C-B)$

^b Expressed as catch per 100 fathom hour

^c Test fishing did not occur. Fisherman was ill

^d catch includes 1 Dolly Varden trout; retained for subsistence

^e catch includes 1 sockeye salmon; retained for subsistence

^f catch includes 1 sheefish; retained for subsistence

^g catch includes 1 burbot; released

^h catch includes 1 sheefish; released

Appendix B2. Drift number, raw fishing time, mean fishing time, catch, and respective CPUE for fall chum and Coho Salmon, Site 2, MVTF, July 17-September 9, 2014.

Date (2014)	Drift number	Net time				Mean Fishing Time ^a	Chum Salmon Catch				Coho Salmon Catch				Pink Salmon Catch		
		Start Out	Full Out	Start In	Full In		Kept	Drop Out	Total	CPUE ^b	Kept	Drop Out	Total	CPUE ^b	Kept	d	Total
17-Jul	2	16:01	16:02	16:20	16:21	19.00	1	0	1	12.63	0	0	0	0.00	0	0	0
18-Jul	5	12:23	12:24	12:40	12:42	17.50	3	0	3	41.14	0	0	0	0.00	0	0	0
19-Jul ^c	8								0			0				0	
20-Jul ^d	11								0			0				0	
21-Jul	14	11:31	11:32	11:50	11:51	19.00	3	0	3	37.89	0	0	0	0.00	0	0	0
22-Jul	17	11:41	11:42	12:00	12:01	19.00	1	0	1	12.63	0	0	0	0.00	1	0	1
23-Jul	20	11:23	11:24	11:43	11:44	20.00	1	0	1	12.00	0	0	0	0.00	0	0	0
24-Jul	23	11:40	11:41	12:00	12:01	20.00	4	0	4	48.00	0	0	0	0.00	0	0	0
25-Jul	26	11:18	11:19	11:38	11:39	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0
26-Jul	29	11:49	11:50	12:10	12:11	21.00	0	0	0	0.00	0	0	0	0.00	0	1	1
27-Jul	32	11:28	11:29	11:49	11:50	21.00	1	0	1	11.43	0	0	0	0.00	0	0	0
28-Jul	35	11:30	11:31	11:51	11:52	21.00	1	1	2	22.86	0	0	0	0.00	0	2	2
29-Jul	38	11:37	11:38	11:58	11:59	21.00	0	1	1	11.43	0	0	0	0.00	0	0	0
30-Jul	41	11:11	11:12	11:32	11:33	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0
31-Jul	44	12:23	12:24	12:44	12:45	21.00	3	0	3	34.29	0	0	0	0.00	0	0	0
1-Aug	47	12:50	12:51	13:11	13:12	21.00	0	0	0	0.00	1	0	1	11.43	0	0	0
2-Aug	50	11:44	11:45	12:05	12:06	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0
3-Aug	53	10:34	10:35	10:55	10:56	21.00	3	0	3	34.29	0	0	0	0.00	0	0	0
4-Aug	56	11:27	11:28	11:45	11:48	19.00	3	0	3	37.89	0	0	0	0.00	0	0	0
5-Aug	59	11:13	11:15	11:33	11:36	20.50	1	0	1	11.71	0	1	1	11.71	0	0	0
6-Aug	62	11:10	11:11	11:30	11:32	20.50	2	0	2	23.41	0	0	0	0.00	0	0	0
7-Aug	65	11:07	11:08	11:25	11:28	19.00	0	0	0	0.00	2	0	2	25.26	0	0	0
8-Aug	68	11:10	11:12	11:30	11:32	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0
9-Aug	71	11:08	11:09	11:28	11:30	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
10-Aug	74	11:09	11:10	11:29	11:30	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0
11-Aug	77	11:09	11:10	11:29	11:31	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
12-Aug	80	11:08	11:10	11:28	11:30	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0

Appendix B2. Continued (page 2 of 3).

Date (2014)	Drift number	Net Time				Mean Fishing Time ^a	Chum Salmon Catch				Coho Salmon Catch				Pink Salmon Catch		
		Start Out (A)	Full Out (B)	Start In (C)	Full In (D)		Kept	Drop Out	Total	CPUE ^b	Kept	Drop Out	Total	CPUE ^b	Kept	Release	Total
13-Aug	83	11:09	11:10	11:29	11:30	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0
14-Aug	86	11:09	11:10	11:29	11:30	20.00	0	0	0	0.00	0	0	0	0.00	0	1	1
15-Aug	89	11:05	11:07	11:24	11:27	19.50	3	0	3	36.92	1	0	1	12.31	0	0	0
16-Aug	92	11:11	11:13	11:31	11:34	20.50	1	0	1	11.71	6	0	6	70.24	0	0	0
17-Aug	e 95	11:08	11:09	11:28	11:30	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
18-Aug	98	11:10	11:11	11:30	11:32	20.50	0	0	0	0.00	2	0	2	23.41	0	0	0
19-Aug	101	11:11	11:13	11:32	11:34	21.00	0	0	0	0.00	2	0	2	22.86	0	0	0
20-Aug	104	11:12	11:13	11:32	11:35	21.00	3	0	3	34.29	1	0	1	11.43	0	0	0
21-Aug	107	11:14	11:15	11:34	11:37	21.00	1	0	1	11.43	6	0	6	68.57	0	0	0
22-Aug	110	10:43	10:44	11:03	11:06	21.00	1	0	1	11.43	9	0	9	102.86	0	0	0
23-Aug	113	12:34	12:35	12:54	12:56	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0
24-Aug	116	11:05	11:06	11:24	11:26	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0
25-Aug	119	11:54	11:55	12:13	12:15	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0
26-Aug	122	12:10	12:11	12:29	12:31	19.50	0	0	0	0.00	0	0	0	0.00	0	0	0
27-Aug	125	9:58	9:59	10:17	10:14	17.00	0	0	0	0.00	0	0	0	0.00	0	0	0
28-Aug	128	11:55	11:56	12:14	12:16	19.50	1	0	1	12.31	1	0	1	12.31	0	0	0
29-Aug	131	11:49	11:50	12:08	12:10	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0
30-Aug	134	10:37	10:38	10:56	10:58	19.50	0	0	0	0.00	0	0	0	0.00	0	0	0
31-Aug	137	11:33	11:34	11:52	11:54	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0
1-Sep	140	12:31	12:32	12:50	12:52	19.50	0	0	0	0.00	2	0	2	24.62	0	0	0
2-Sep	143	12:04	12:05	12:23	12:25	19.50	0	0	0	0.00	0	0	0	0.00	0	0	0
3-Sep	146	9:57	9:58	10:17	10:19	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
4-Sep	149	12:00	12:01	12:20	12:22	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
5-Sep	152	11:48	11:49	12:08	12:10	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0
6-Sep	155	12:02	12:03	12:22	12:25	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0
7-Sep	158	11:42	11:43	12:02	12:04	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0
8-Sep	161	11:49	11:50	12:09	12:00	15.00	0	0	0	0.00	0	0	0	0.00	0	0	0
9-Sep	164	11:39	11:40	11:59	12:02	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0

Appendix B2. Continued (page 3 of 3).

^a Expressed in minutes; Mean Fishing Time = $((B-A+D-C)/2)+(C-B)$

^b Expressed as catch per 100 fathom hour

^c Test fishins suspended because of hazardous river water conditions

^d Test fishing did not occur. Fisherman was ill

^e catch includes 1 sheefish; retained for subsistence

Appendix B3. Drift number, raw fishing time, mean fishing time, catch, and respective CPUE for fall chum and Coho Salmon, Site 3, MVTF, July 17-September 9, 2014.

Date (2014)	Drift number	Net time				Mean Fishing Time ^a	Chum Salmon Catch				Coho Salmon Catch				Pink Salmon Catch		
		Start Out	Full Out	Start In	Full In		Kept	Drop Out	Total	CPUE ^b	Kept	Drop Out	Total	CPUE ^b	Kept	Release d	Total
17-Jul	3	16:30	16:31	16:50	16:52	20.50	5	0	5	58.54	0	0	0	0.00	0	0	0.0
18-Jul	6	12:49	12:50	13:09	13:14	22.00	3	0	3	32.73	0	0	0	0.00	0	0	0.0
19-Jul ^c	9								0				0			0.0	
20-Jul ^d	12								0				0			0.0	
21-Jul	15	12:01	12:02	12:21	12:22	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
22-Jul	18	12:07	12:08	12:26	12:27	19.00	0	0	0	0.00	0	0	0	0.00	1	0	1.0
23-Jul	21	11:52	11:53	12:12	12:13	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
24-Jul	24	12:10	12:11	12:30	12:31	20.00	1	0	1	12.00	0	0	0	0.00	0	0	0.0
25-Jul	27	11:47	11:48	12:08	12:09	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
26-Jul	30	12:18	12:19	12:39	12:40	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
27-Jul	33	11:59	12:00	12:20	12:21	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
28-Jul	36	12:00	12:01	12:21	12:22	21.00	2	0	2	22.86	0	0	0	0.00	0	0	0.0
29-Jul	39	12:06	12:07	12:27	12:28	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
30-Jul	42	11:37	11:38	11:58	11:59	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
31-Jul	45	12:55	12:56	13:16	13:17	21.00	0	0	0	0.00	1	0	1	11.43	0	0	0.0
1-Aug	48	13:19	13:20	13:40	13:41	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
2-Aug	51	12:12	12:13	12:33	12:34	21.00	0	0	0	0.00	1	0	1	11.43	0	0	0.0
3-Aug	54	11:01	11:02	11:20	11:22	19.50	4	0	4	49.23	0	0	0	0.00	0	0	0.0
4-Aug	57	11:53	11:54	12:12	12:15	20.00	3	0	3	36.00	1	0	1	12.00	0	0	0.0
5-Aug	60	11:42	11:43	12:02	12:04	20.50	2	0	2	23.41	0	0	0	0.00	0	0	0.0
6-Aug	63	11:38	11:39	11:58	11:59	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
7-Aug	66	11:33	11:34	11:53	11:55	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0
8-Aug	69	11:36	11:38	11:56	11:58	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
9-Aug	72	11:34	11:36	11:54	11:56	20.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0
10-Aug ^e	75	11:35	11:37	11:55	11:57	20.00	0	0	0	0.00	1	0	1	12.00	0	0	0.0
11-Aug	78	11:35	11:37	11:55	11:57	20.00	0	0	0	0.00	1	0	1	12.00	0	0	0.0
12-Aug	81	11:34	11:36	11:54	11:56	20.00	0	0	0	0.00	1	0	1	12.00	0	0	0.0

Appendix B3. Continued (page 2 of 3).

Date (2014)	Drift number	Net Time					Mean Fishing Time ^a	Chum Salmon Catch				Coho Salmon Catch				Pink Salmon Catch		
		Start Out (A)	Full Out (B)	Start In (C)	Full In (D)	Kept		Drop Out	Total	CPUE ^b	Kept	Drop Out	Total	CPUE ^b	Kept	Release	Total	
13-Aug	84	11:34	11:35	11:54	11:56	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
14-Aug	87	11:35	11:37	11:55	11:56	19.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
15-Aug	90	11:32	11:34	11:50	11:53	18.50	12	0	12	155.68	0	0	0	0.00	0	0	0.0	
16-Aug	93	11:39	11:40	11:58	12:00	19.50	0	0	0	0.00	3	0	3	36.92	0	0	0.0	
17-Aug	96	11:36	11:37	11:56	11:58	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0.0	
18-Aug	99	11:37	11:39	11:56	11:58	19.00	1	0	1	12.63	0	0	0	0.00	0	0	0.0	
19-Aug	102	11:39	11:40	11:59	12:01	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
20-Aug	105	11:39	11:40	11:59	12:02	21.00	6	0	6	68.57	2	0	2	22.86	0	0	0.0	
21-Aug	108	11:41	11:42	11:59	12:03	19.50	2	0	2	24.62	7	1	8	98.46	0	0	0.0	
22-Aug	111	11:13	11:14	11:32	11:38	21.50	2	0	2	22.33	14	0	14	156.28	0	0	0.0	
23-Aug	114	13:01	13:02	13:21	13:23	20.50	0	0	0	0.00	3	0	3	35.12	0	0	0.0	
24-Aug	117	11:34	11:35	11:53	11:55	19.50	0	0	0	0.00	5	0	5	61.54	0	0	0.0	
25-Aug	120	12:20	12:21	12:39	12:41	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0.0	
26-Aug	123	12:37	12:38	12:56	12:58	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0.0	
27-Aug	126	10:23	10:24	10:42	10:43	19.00	0	0	0	0.00	1	0	1	12.63	0	0	0.0	
28-Aug ^f	129	12:20	12:21	12:39	12:41	19.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
29-Aug ^g	132	12:14	12:15	12:33	12:35	19.50	0	0	0	0.00	2	0	2	24.62	0	0	0.0	
30-Aug	135	11:02	11:03	11:21	11:23	19.50	0	0	0	0.00	3	0	3	36.92	0	0	0.0	
31-Aug	138	11:59	12:00	12:18	12:20	19.50	2	0	2	24.62	3	0	3	36.92	0	0	0.0	
1-Sep	141	13:02	13:03	13:21	13:23	19.50	0	0	0	0.00	2	0	2	24.62	0	0	0.0	
2-Sep	144	12:30	12:31	12:49	12:51	19.50	0	0	0	0.00	1	0	1	12.31	0	0	0.0	
3-Sep	147	10:28	10:29	10:48	10:51	21.00	0	0	0	0.00	1	0	1	11.43	0	0	0.0	
4-Sep	150	12:30	12:31	12:50	12:52	20.50	0	0	0	0.00	1	0	1	11.71	0	0	0.0	
5-Sep	153	12:20	12:21	12:40	12:42	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
6-Sep	156	12:34	12:35	12:54	12:56	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
7-Sep	159	12:14	12:15	12:34	12:37	21.00	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
8-Sep	162	12:22	12:23	12:42	12:44	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	
9-Sep	165	12:12	12:13	12:32	12:34	20.50	0	0	0	0.00	0	0	0	0.00	0	0	0.0	

Appendix B3. Continued (page 3 of 3).

^a Expressed in minutes; Mean Fishing Time = $((B-A+D-C)/2)+(C-B)$

^b Expressed as catch per 100 fathom hour

^c Test fishins suspended because of hazardous river water conditions

^d Test fishing did not occur. Fisherman was ill

^e catch includes 1 sheefish; retained for subsistence

^f catch includes 1 sheefish; released

^g catch includes 1 burbot; released