

**Yukon River Chinook and summer chum salmon catch
composition among 5.0 inch and 6.0 inch drift gillnets of
varying depths**

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by

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1. Introduction:

Summary:

Despite very low Chinook salmon runs on the Yukon River in recent years, there have been annual surpluses of summer chum salmon, in excess of escapement requirements and subsistence needs, available for commercial harvest. However, because of the overall conservation concern for Chinook salmon and the potential to incidentally harvest Chinook salmon in a commercial summer chum salmon fishery, more severe restrictions have been imposed on the Yukon Area commercial fisheries each year to ensure Chinook salmon escapement goals and objectives are being met in Alaska and Canada. This concern for Yukon River Chinook salmon has drastically curtailed, and in some years, all but eliminated the directed commercial gillnet summer chum salmon fishery in the Lower Yukon Area. Although the fishing power of the fleet, which consists of approximately 700 commercial permit holders in the Lower Yukon Area, and the capacity of the processors are adequate to harvest and process all the commercially-available Yukon River summer chum salmon surplus, this harvestable surplus is not being taken because Chinook salmon are incidentally harvested in this fishery.

The concern for the Chinook salmon escapement and the Pacific Salmon Treaty Agreement-specified commitment to Canada has resulted in the directed Chinook salmon commercial fishery being suspended since 2007. Additionally, the sale of incidentally-harvested Chinook salmon was prohibited in 2009, 2011, 2012, and 2013 to deter commercial fishers from targeting the more valuable Chinook salmon during summer chum salmon commercial fishing periods.

An estimate of the possible foregone harvest of commercially available summer chum salmon totals nearly 4.0M fish since 2008, with approximately 1.0M available summer chum salmon foregone in 2011, 1.2M foregone in 2012, and over 1.6M in 2013. The 2011 and 2012 foregone harvest translates into a possible loss to the fishermen of over \$10M. The 2013 foregone harvest translates into a possible loss to the fishermen of over \$4.3M in Yukon Management District 1 and 2 alone.

The Lower Yukon Area is one of the most impoverished areas in the state of Alaska, and the country. Off the road system and located in remote Alaska, fuel can often cost over \$6 a gallon. With little economic opportunity available in the region, fishermen have taken a big hit with the closure of the Chinook salmon commercial fishery and are now struggling against restrictions and conservation concerns to make the commercial summer chum salmon fishery viable. There is an urgent need to find new and innovative ways to commercially harvest the surplus of summer chum salmon in the river while minimizing the impact to Chinook salmon.

Fishermen in the Lower Yukon traditionally use 6.0in or smaller mesh gillnets for commercial summer chum salmon fishing. This gear type has the potential to incidentally harvest Chinook salmon. For example, in 2012, while over 200,000 summer chum salmon were harvested commercially in the Lower Yukon, approximately 2,400 Chinook salmon were caught incidentally. We hypothesized that using a gillnet with a reduced mesh size, 5.5in, and a shallower depth, 30 meshes deep, will minimize the number of incidentally harvested Chinook salmon and may also possibly result in a higher percentage harvest of younger, smaller male salmon. The 30 meshes deep portion of the regulation will force fishers to fish closer to shore and possibly avoid the larger Chinook salmon that may travel in deeper, offshore waters.

During the January 2013 Arctic Yukon Kuskokwim (AYK) BOF meeting the Alaska Board of Fisheries (BOF) passed a regulation which gave the Alaska Department of Fish and Game (ADF&G) emergency order (EO) authority to allow a directed summer chum salmon commercial fishery with gillnets limited to a maximum of 5.5in stretch mesh and no deeper than 30 meshes. In staff comments, ADF&G speculated that the maximum 5.5in mesh size gillnet regulation will likely be more efficient for harvesting summer chum salmon, but the resulting shallower nets will be less efficient than deeper nets. With little data available, it was uncertain, however, how the gear would ultimately impact summer chum salmon harvests. Further, it was unknown to what extent the incidental harvest of king salmon might be reduced by this regulation (ADF&G 2013).

The proposer speculated that Chinook salmon catch could be significantly reduced by reducing both the depth and mesh size of the gillnet used to target summer chum salmon in the Lower Yukon Area summer chum salmon-directed fisheries. Recently, however, ADF&G AYK/Commercial Fisheries (CF) staff suggested that reducing the depth of the current gear used alone might provide a significant reduction in the Chinook salmon catch and maybe similar to the Chinook salmon catch in the 5.5in mesh, 30 mesh deep gear. The goal of this study was to possibly provide the information required by ADF&G to adequately address the management problem that ADF&G faces when Chinook salmon runs are low and summer chum salmon runs are high by determining the appropriate gillnet gear to use to harvest the abundant summer chum salmon while protecting the Chinook salmon. The results of this study, like the Chinook salmon mesh size study (Howard and Evenson 2010), may have some effect on the acceptance of this new gear by the commercial fishing fleet in the Lower Yukon Area.

Additionally, at the same AYK BOF meeting, the BOF suggested to ADF&G that they would like some information on the effect of the depth of nets on harvest of Chinook salmon. Currently, although common local knowledge indicates that larger Chinook salmon travel deeper in the water column and that it is commonly reported that larger Chinook salmon are caught along the lead line (ADF&G 2012), there have been no studies documenting fish size caught by mesh depth (ADF&G 2012). The department does not have adequate data to evaluate the effect of reducing mesh depth to a maximum of 30 meshes would have on relative summer chum and Chinook salmon catch efficiency (ADF&G 2012). This study will provide information regarding the difference in Chinook salmon catch by depth of gillnets tested and will be directly applicable to the question posed by the BOF.

Objectives:

The specific objectives of this study were to:

1. Compare the species composition (Chinook and summer chum salmon), summer chum:Chinook salmon ratio, and the associated Catch per Unit Effort (CPUE) by species

- among the: 5.5in mesh size, 50 mesh deep; 5.5in mesh size, 30 mesh deep; 6.0in mesh size, 50 mesh deep; and 6.0in mesh size, 30 mesh deep gillnets;
2. Describe the age, sex, length (ASL) composition of Chinook salmon caught in the 4 above-mentioned gillnet gear types; and
 3. Compare the sex and length composition of summer chum salmon caught in the 4 above-mentioned gillnet gear types.

Note that in the comparison between the summer chum:Chinook salmon ratio within Objective 1 was changed to compare the proportion of Chinook salmon among the various mesh depth size combination gillnets.

Given the study design and low Chinook salmon runs, sample sizes for the Chinook salmon catch by test net were not sufficient to statistically compare the Chinook salmon composition among the test nets. However, trends in the age, sex, and length composition of the Chinook salmon catch by test gillnet were explored. Sufficient sample sizes allowed for statistical comparison of sex and length of the summer chum salmon catch by gillnet tested.

2. Study Area:

The study area includes the South Mouth of District 1 of the Yukon Area. Communities either within or nearby the study area include: Fish Village; Emmonak; Alakanuk and Nunam Iqua. The South Mouth is located within the delta region of the Yukon River. During 2011 and 2012, this area was initially open for a directed summer chum salmon fishery to the exclusion of other areas in District 1 and District 2 because of the indications from test fisheries that there was a high abundance of summer chum salmon and limited presence of Chinook salmon at that location and time (ADF&G 2012, Schmidt and Newland 2012).

Initially, two sites in District 1 of the Yukon Area within the South Mouth between the villages of Emmonak and Alakanuk were selected to conduct the test fishing operations (Figure 1). These sites were identified as Inside Channel and Lower Eddy (Figure 1). However, after two days of test fishing, it became apparent that the Lower Eddy site was only catching a small proportion of the total catch of chum salmon and did not appear to be a chum salmon catching site. Therefore, after conferring with ADF&G, we decided to suspend test fishing operations at the Lower Eddy site and move test fishing operations to another site where chum salmon catches would be hopefully comparable to the Inside Channel site. The new site was located along the shore near Sunshine Bay, near John Oktoyuk's fish camp site. This test fish site is termed Sunshine Bay because of its proximal location to Sunshine Bay. The Sunshine Bay site was used for the rest of the operational period.

3. Licenses and Permits:

Because ADF&G partnered with this project, no permits were required.

4. Methods:

General Operations:

Test fishing operations commenced on June 18, 2013 and continued uninterrupted for 14 days. The last day of test fishing operations occurred on July 1, 2014 (Table 1). Based on preliminary Pilot Station sonar counts attributed to summer chum salmon, the mid-50% of the summer chum salmon run passed the sonar site over a 12-day period, from June 22 through July 3, inclusive.

Travel time from the ADF&G test fishing operations in the Lower Yukon River to the Pilot Station sonar site has been approximated at 3 days. Based on sonar counts and approximate travel time, we believe that the mid-50% passed through the Lower Yukon Area from June 19 – June 30. Therefore, the operational period for this gillnet test fishing study coincided well with the approximate time that the mid-50% of the summer chum salmon run passed through the Lower Yukon Area. Additionally, based on preliminary Pilot Station sonar counts attributed to Chinook salmon, the mid-50% of the Chinook salmon run passed the sonar site over a similar 11-day period from June 22 – July 2. Therefore, it appears that the operational period for this test fish study also encompassed the mid-50% of the Chinook salmon run through the Lower Yukon Area.

Initially, for the first three days of operations, 2 test contract fishers and 2 contract fish technicians were employed to conduct the test fishing. Because of the work load relating to fishing four separate nets and assisting in the associated sampling, an additional 2 fishers and 2 fish technicians were hired by YDFDA to assist in conducting the test fishing commencing on day 4 through the end of the operational period. There was no additional cost to the USFWS or the proponent.

Test Fishing Operations:

Test fishing operations included the daily fishing of the four different nets at each test fishing site by the four contract fishers. Daily net fishing sequence was randomly determined for each site. Fishers alternated test fishing efforts between the two sites on a daily basis. Fishers were assigned to fish the site-specific nets based on this random assignment with the first and third net being fished by the first fisher and the second and fourth net fished by the second fisher. The net-fishing sequence was randomly determined to control for confounding factors associated with the removal of fish by certain mesh and/or depth sizes. Nets used for test fishing were all 50 fathoms long. Chinook and summer chum salmon caught were identified as to the specific gillnet by securing a colored cable tie under the operculum and through the mouth or were sorted in to labeled totes. Different colored cable ties and different totes were used to represent the different nets.

Although the detailed proposal called for the suspension of test fishing efforts when a commercial fishery was scheduled, ADF&G scheduled 12 of the 14 commercial fishing periods during this time period in District 1 with beach seines and dip nets commencing at or later than 12:00 pm each day during the operational period. Because test fishing efforts were conducted during the morning hours and since there was not a conflict between the test fishing and the commercial fishing operations, we continued to test fish uninterrupted even though a commercial fishery was scheduled on each day. However, there were two commercial periods which commenced at 8:00 am, but no commercial fishers were observed at the test fish sites, so test fishing also continued on these sites during these days.

The soak time for each drift was initially set at 20 minutes but was adjusted for each drift based on the amount of salmon that the contract fisher thought was in the net. Instructions to the contract fisher were to catch at least 40 salmon in each drift. When the contract fisher subjectively assessed that the net had fished an appropriate amount of time, the net was brought into the boat without picking the fish from the net. After the net and fish were brought into the

boat and fishing had ceased, the fisher and technician counted and marked each summer chum and Chinook salmon as they were picked from the net. However, the catch from one net may not have been marked as they were counted, but was kept separate from the other catches. A mandatory 20-minute break between fishing each test gillnet at each site was employed in an attempt to allow the salmon migration to return to normal between sets.

Age, Sex, Length Sampling:

Age, sex, and length measurements were collected from each Chinook salmon retained and sampled. Sex and length measurements were collected from each summer chum salmon retained and sampled. Sampling was restricted to 30 fish of each species per test gillnet, for a total daily maximum sample of 120 Chinook salmon and 120 summer chum salmon. When catch exceeded the sampling goal, salmon were randomly selected from each site specific, mesh size and mesh depth gillnet, based on the proportion of the catch from the two test fishing sites. Sampling procedures followed protocols established and standardized by ADF&G staff for sampling Yukon River salmon (see Schumann et al. 2011).

At least three scale samples were collected from up to 30 Chinook salmon per day per test gillnet in the test fishery 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”. The scales taken from the preferred area were mounted on gum cards in the field. Information was recorded on data sheets and indexed to the scale cards by date and fish number. 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 (MEFT), to the nearest 1 mm.

After sampling was completed, summer chum salmon were either given to village residents for subsistence or were sold in the name of the state; all Chinook salmon were distributed to village residents for subsistence use.

Data collected included:

- a) date;
- b) specific fishing location (latitude and longitude, if possible, otherwise landmarks);
- c) name of the test fisher;
- d) name of technician;
- e) time of net deployment, full out, start in, and full net in;
- f) number and species of all fish captured and retained, released, and dropped out;
- g) Age, sex, length (nearest mm) data of all Chinook salmon sampled per net, including at least 3 scales per fish for aging;
- h) Sex and length (nearest mm) data of all summer chum salmon sampled per net;
- i) weather and water conditions; and
- j) ancillary information regarding the test fishing activities.

Data Analysis:

The catch per unit effort (CPUE) for each species for each net was calculated as fish per 100 fathoms-hour:

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

where: MFT = mean fishing time for each set, in minutes.

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.

Statistical analyses of CPUE, catch and age, sex, length data were conducted by ADF&G. ANOVA, blocked by date when appropriate, was used to statistically analyze differences in CPUE and salmon length and age among nets; pairwise comparisons were used to determine significant differences between all test nets for CPUE and length and age. A four-sample test for equality of proportions without continuity was used to determine significant differences in proportion related to sex composition. Note that the graphs presented in this report include confidence intervals around the mean that were simply calculated from the standard deviation of the sample and are not associated with the ANVOA confidence intervals. Because of very small sample sizes for captured and sampled Chinook salmon, examination of the graphs were used to explore differences for the proportion of Chinook salmon in the catch of each test net.

5. Results:

Capture, Retention And Sampling:

The 2013 field portion of the mesh/depth gillnet study was successfully completed during the 50% portions of the summer chum and Chinook salmon runs. Information regarding individual 112 drifts is provided in Appendix A. During the 14-day sampling period, a total of 70 Chinook and 5,834 summer chum salmon were captured (Table 1). These totals include 7 Chinook and 69 summer chum salmon that were observed to have dropped out of the net before it was pulled aboard the fishing boat. A total of 63 Chinook and 5,765 summer chum salmon were retained for sampling. All Chinook salmon retained were destined to be sampled for age, sex, and size. However, one Chinook salmon that was originally retained fell overboard and was lost before it was sampled. Additionally, four Chinook salmon were inadvertently released to the public before lengths were taken on June 20 (Appendix A2). Further, although 62 of the 63 Chinook salmon retained were sampled for age, two scales were regenerated making the age determination for those fish unavailable. Therefore, 62 Chinook salmon were successfully sampled with regard to sex; 58 for length; and 60 for age (Table 1). The maximum number of 1,680 summer chum, 120 per day (30 for each of the 4 net types) for 14 days, were sampled for length and sex (Table 1). Length measurements and sex determination for all summer chum salmon sampled by test net are presented in Appendix B. Age, sex, and size information for individual Chinook salmon are presented in Appendix C.

Generally, the small sample size associated with the Chinook salmon catch precluded a statistical analysis of the data.

Proportion of Chinook salmon in the catch:

Across all days and sites, mean proportion of Chinook salmon in the catch of each test net was not different as observed in Figure 2. Mean proportion of Chinook salmon caught in each test net ranged from 0.012 (SD=0.019) in the 5.5in/30mesh test net to 0.032 (SD=0.069) in the 6.0in/30mesh test net (Figure 2).

Catch Per Unit Effort (CPUE):

Chinook Salmon

ANOVA, blocked by day, indicated that there were no significant differences in the Chinook salmon CPUE among the four test nets ($p=0.6479$). Mean CPUE ranged from 6.3 (SD=7.7) from the 6.0in/30mesh net to 10.6 (SD=11.0) in the 6.0in/50mesh net. (Table 2; Figure 3).

Summer Chum Salmon

ANOVA, blocked by day, indicated that there were significant differences for summer chum salmon CPUE among the four test nets (0.01628). Mean summer chum CPUE ranged from 438.3 (SD=318.0) for the 6in/30mesh test net to 1,000.8 (SD=737.3) for the 5.5in/50mesh test net (Table 2; Figure 3). Summer chum salmon mean CPUE for the 5.5in/50mesh net was significantly higher than the CPUE for the 6.0in/30mesh test net ($p=0.0153$). No other pairwise comparison was significantly different (Figure 4).

Size Composition:

Chinook Salmon

ANOVA results indicated that there were no significant differences in the size of Chinook salmon captured in the four test nets ($p=0.2560$). Mean length of the Chinook salmon caught and measured in the four test nets ranged from 620 mm (SD=122 mm) in the 5.5in/30mesh test net to 714 mm (SD=123 mm) in the 6.0in/50mesh test net (Table 3; Figure 5). Inspection of Figure 5 indicates that there were no significant differences in the size of male or female Chinook salmon caught in the four test nets. Male Chinook salmon ranged from 563 mm (SD=74 mm) in the 5.5in/30mesh test net to 649 mm (SD=98 mm) in the 6.0in/50mesh test net (Table 3; Figure 5). Female Chinook salmon ranged from 791 mm (SD= 33 mm) in the 5.5in/30mesh test net to 848 mm (SD= 67 mm) in the 6.0in/30mesh test net (Table 3; Figure 5).

Summer Chum Salmon

ANOVA results indicate that there are significant differences in the size of summer chum salmon captured in the four test nets ($p<2e^{-16}$). Pairwise comparisons indicate that the mean length of summer chum salmon captured in the two 5.5in mesh nets were significantly smaller than the mean length of summer chum salmon caught in the two 6.0in mesh test nets ($p<1e^{-04}$) for all 4 pairwise comparisons between the 5.5in and the 6.0in nets. Pairwise comparisons between the two 5.5in test nets ($p=0.374$) and the two 6.0in mesh test nets ($p=0.776$) did not significantly differ from each other (Table 4; Figure 6). Mean length of summer chum salmon ranged from 563mm (SD 74) caught in the 5.5in/30mesh net to 575mm (SD=27) in the 6.0in/30mesh net.

Inspection of Figure 6 indicates that the significant differences observed in size of the combined summer chum salmon for the sexes combined may also be apparent for each sex separately.

Sex Composition:

Chinook Salmon

Inspection of Figure 7 indicates that there are no significant differences in the mean proportion of female Chinook salmon caught in the four test nets. Mean proportion of female Chinook salmon ranged from 0.20 (SD=0.10) for the 5.5in/30mesh and the 6.0in/30mesh test gillnets to 0.33 for the 6.0in/50mesh test gillnet (Table 5; Figure 7).

Summer Chum Salmon

ANOVA results indicated that there are significant differences in the mean proportion of female summer chum salmon caught in the four test nets ($p < 2.2e^{-16}$). Pairwise comparisons among the test nets indicated that both 5.5in mesh nets caught a significantly higher proportion of female salmon than the two 6.0in mesh nets ($p < 1.0e^{-04}$). Mean proportion of female summer chum salmon ranged from 0.35 (SD=0.02) in the 6.0in/30mesh test net to 0.63 (SD=0.02) in the 5.5in/30mesh test net (Table 5; Figure 8).

Age Composition:

Chinook Salmon

ANOVA indicates that there are no significant differences in the mean age of Chinook salmon caught in the four test nets ($p=0.2130$). Mean age of Chinook salmon ranged from 4.5 years (SD=0.7) for salmon caught in the 5.5in/30mesh net to 5.1 years (SD=0.8) for the 6.0in/50mesh net (Table 6; Figure 9). Mean age by net for male and female Chinook salmon are also presented in Table 6 and Figure 9. No significant differences are apparent among the test nets with regard to sex (Figure 9).

6. Discussion:

Although comparisons of summer chum salmon among the nets were significantly different, the lack of an adequate sample size for Chinook salmon hampered the analysis of this study. However, although significant differences were not observed for any test for Chinook salmon, there may be some useful information to build on for future studies and for managers to use in management of the Yukon River commercial summer chum salmon fishery. Although not significant, the 6.0in/50 mesh net had a higher CPUE than the other three nets (Figure 2) and caught larger and older Chinook salmon, which were primarily male Chinook salmon, than the other three nets (Figure 5). Additionally, proportion of female Chinook salmon caught was higher in the deeper nets (Figure 7). These trends may become more apparent with an increased sample size. Further, it appears that utilizing the 5.5in/30mesh deep net for commercial purposes may have the desired effect of incidentally harvesting less Chinook salmon along with the Chinook salmon catch consisting of more, smaller, and younger male Chinook salmon than the 6.0in/50mesh net. However, note that the reduction in net mesh size to 5.5in will catch significantly higher proportion of female summer chum salmon than the 6.0in/50 mesh net. Although the harvest of predominantly female summer chum salmon should not be a concern presently, because of the large runs and associated escapements, the high harvest of female salmon could become a concern when the runs are lower.

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8. References:

- ADF&G (Alaska Department of Fish and Game). 2012a. Alaska Department of Fish and Game staff comments on commercial, sport, subsistence, and personal use finfish regulatory proposals, committee of the Whole, Committees A and B, for the Arctic-Yukon-Kuskokwim Management Areas Alaska Board of Fisheries meeting, Anchorage, Alaska. January 15-20, 2013. Alaska Department of Fish and Game, Regional Information Report No. 3A12-05, Anchorage.
http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2012-2013/ayk/staff_comments_2012_rc3.pdf
- Howard, K. G., and D. F. Evenson. 2010. Yukon River Chinook salmon comparative mesh size study. Alaska Department of Fish and Game, Fishery Data Series No. 10-92, Anchorage.
<http://www.adfg.alaska.gov/FedAidPDFs/FDS10-92.pdf>
- Koo, T.S.Y. 1955. Biology of the red salmon, *Oncorhynchus nerka* (Walbaum), of Bristol Bay, Alaska as revealed by a study of their scales. Doctoral dissertation, University of Washington, Seattle
- Schmidt, S.N., and E. Newland 2012., Yukon River king salmon stock status, action plan and summer chum salmon fishery, 2012; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 12-30 Anchorage.
- Schumann, K., and L. DuBois. 2011. Salmon age and sex composition and mean lengths for the Yukon River area, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-48, Anchorage. <http://www.adfg.alaska.gov/FedAidPDFs/FDS11-48.pdf>

Table 1. Summary table of the number of Chinook and summer chum salmon captured and sampled, Yukon River gillnet mesh/depth study, 2013.

mesh size (inches)	net depth (meshes)	Number of Chinook Salmon						Number of Summer Chum Salmon				
		Retained	Drop Out	Total Caught	Sampled for:			Retained	Drop Out	Total Caught	Sampled for:	
					Length	Sex	Age				Length	Sex
5.5	30 ^a	15	1	16	12	15	15	1,530	18	1,548	420	420
5.5	50 ^b	14	4	18	14	14	13	1,775	21	1,796	420	420
6	30 ^b	15	1	16	15	15	14	968	17	985	420	420
6	50 ^c	19	1	20	17	18	18	1,492	13	1,505	420	420

^a Three Chinook salmon were inadvertently not measured for length on June 20. All three were male salmon; one was an age 1.3 salmon; two were age 1.2 salmon.

^b One salmon was not assigned an age because the associated scale was unreadable.

^c One salmon was inadvertently not sampled for length on June 20. This salmon was a male and age 1.4. One salmon was lost (fell overboard) before it was sampled for length, sex, and age on July 1.

Table 2. Number of Chinook and summer chum salmon captured and associated CPUE by net, by mesh size and net depth, Yukon River gillnet mesh/depth study, 2013.

mesh size (inches)	net depth (meshes)	Chinook Salmon			Summer Chum Salmon		
		n ^a	CPUE	SD	n ^a	CPUE	SD
5.5	30	16	7.3	10.3	1,548	827.7	481.3
5.5	50	18	7.9	7.7	1,796	1,000.8	737.3
6	30	16	6.3	7.7	985	438.3	318.0
6	50	20	10.6	11.0	1,796	878.5	648.6

^a Includes fish retained and sampled, retained and not sampled, and those fish that were observed to drop out of the net.

Table 3. Chinook salmon mean length summary table, Yukon River gillnet mesh/depth study, 2013.

mesh size (inches)	net depth (meshes)	Sexes Combined			Male Salmon			Female Salmon		
		n ^a	length (mm)	SD (mm)	n	length (mm)	SD (mm)	n	length (mm)	SD (mm)
5.5	30	12	620	122	9	563	74	3	791	33
5.5	50	14	671	133	10	608	96	4	830	46
6	30	15	650	138	12	600	100	3	848	67
6	50	17	714	123	11	649	98	6	835	49

^a Total number of Chinook salmon identified by sex.

Table 4. Summer chum salmon mean length summary table, Yukon River gillnet mesh/depth study, 2013.

mesh size (inches)	net depth (meshes)	Sexes Combined			Male Salmon			Female Salmon		
		n ^a	length (mm)	SD (mm)	n	length (mm)	SD (mm)	n	length (mm)	SD (mm)
5.5	30	420	558	24	156	566	25	264	554	23
5.5	50	420	561	27	183	570	28	237	554	23
6	30	420	575	27	275	579	29	145	567	20
6	50	420	573	25	267	578	26	153	565	22

^a Total number of salmon identified by sex.

Table 5. Chinook and summer chum salmon sex composition summary table, Yukon River gillnet mesh/depth study, 2013.

mesh size	net depth	Chinook Salmon			Summer Chum Salmon		
(inches)	(meshes)	n ^a	Prop of Female Salmon	SD	n ^a	Prop of Female Salmon	SD
5.5	30	15	0.20	0.10	420	0.63	0.02
5.5	50	14	0.29	0.12	420	0.56	0.02
6	30	18	0.17	0.09	420	0.35	0.02
6	50	18	0.33	0.11	420	0.36	0.02

^a Total number of salmon identified by sex.

Table 6. Chinook salmon mean age summary table, Yukon River gillnet mesh/depth study, 2013.

mesh size	net depth	Sexes Combined			Male Salmon			Female Salmon		
(inches)	(meshes)	n	Mean Age	SD	n	Mean Age	SD	n	Mean Age	SD
5.5	30	15	4.5	0.7	12	4.3	0.5	3	5.7	0.6
5.5	50	13	4.8	0.9	9	4.4	0.7	4	5.8	0.5
6	30	14	4.6	0.8	11	4.4	0.7	3	5.7	0.6
6	50	18	5.1	0.8	12	4.8	0.8	6	5.7	0.5



Figure L Map of study sites, gillnet mesh/depth study, June 18-July 1, 2013

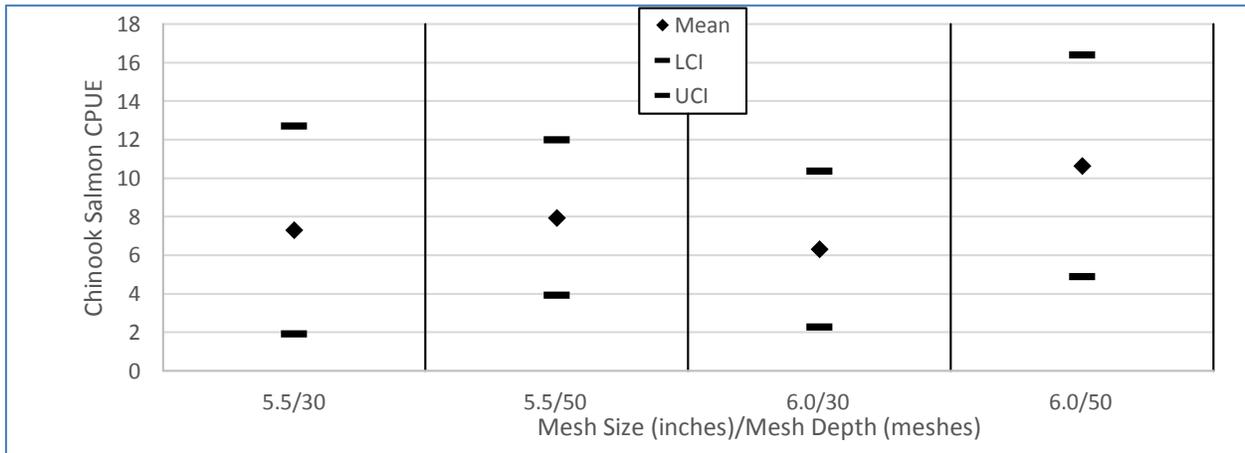


Figure 2. Chinook salmon mean CPUE and the associated 95% CI (LCI – lower confidence interval, UCI – upper confidence interval), by test net, mesh size, and mesh depth, Yukon River gillnet mesh/depth study, 2013

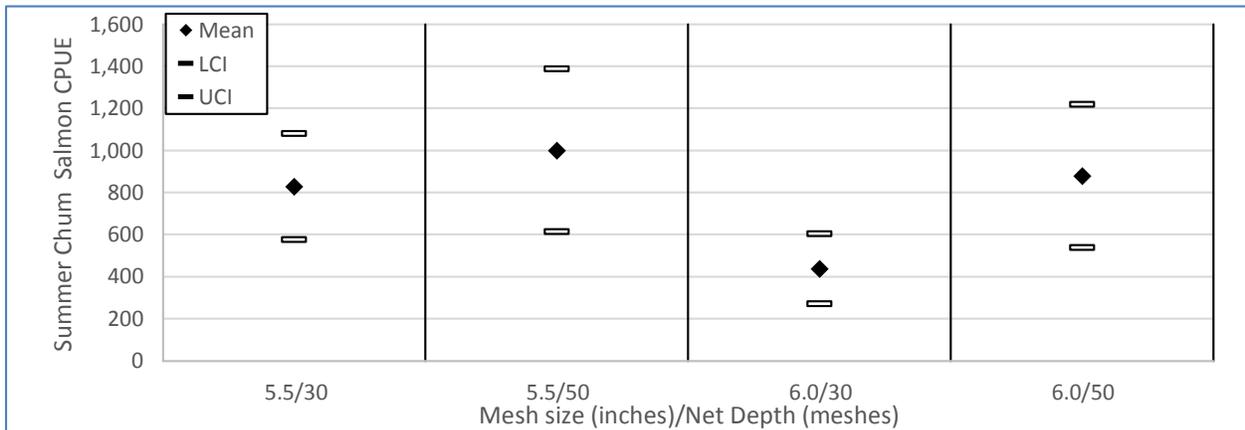


Figure 3. Summer chum salmon mean CPUE and the associated 95% CI by test net, mesh size, and mesh depth, Yukon River gillnet mesh/depth study, 2013.

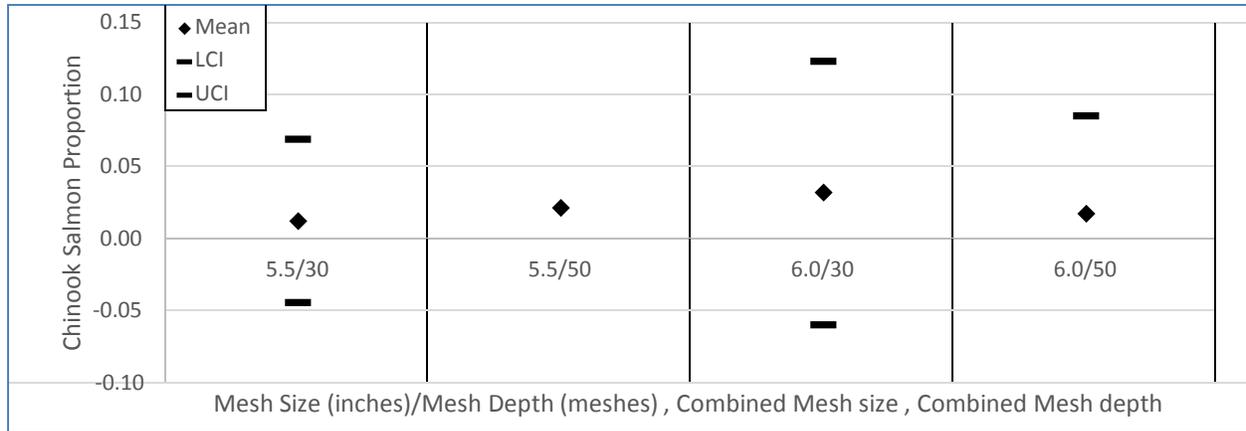


Figure 4. Mean proportion of Chinook salmon in the total catch and the associated 95% CI by test net, mesh size, and mesh depth, Yukon River gillnet mesh/depth study, 2013.

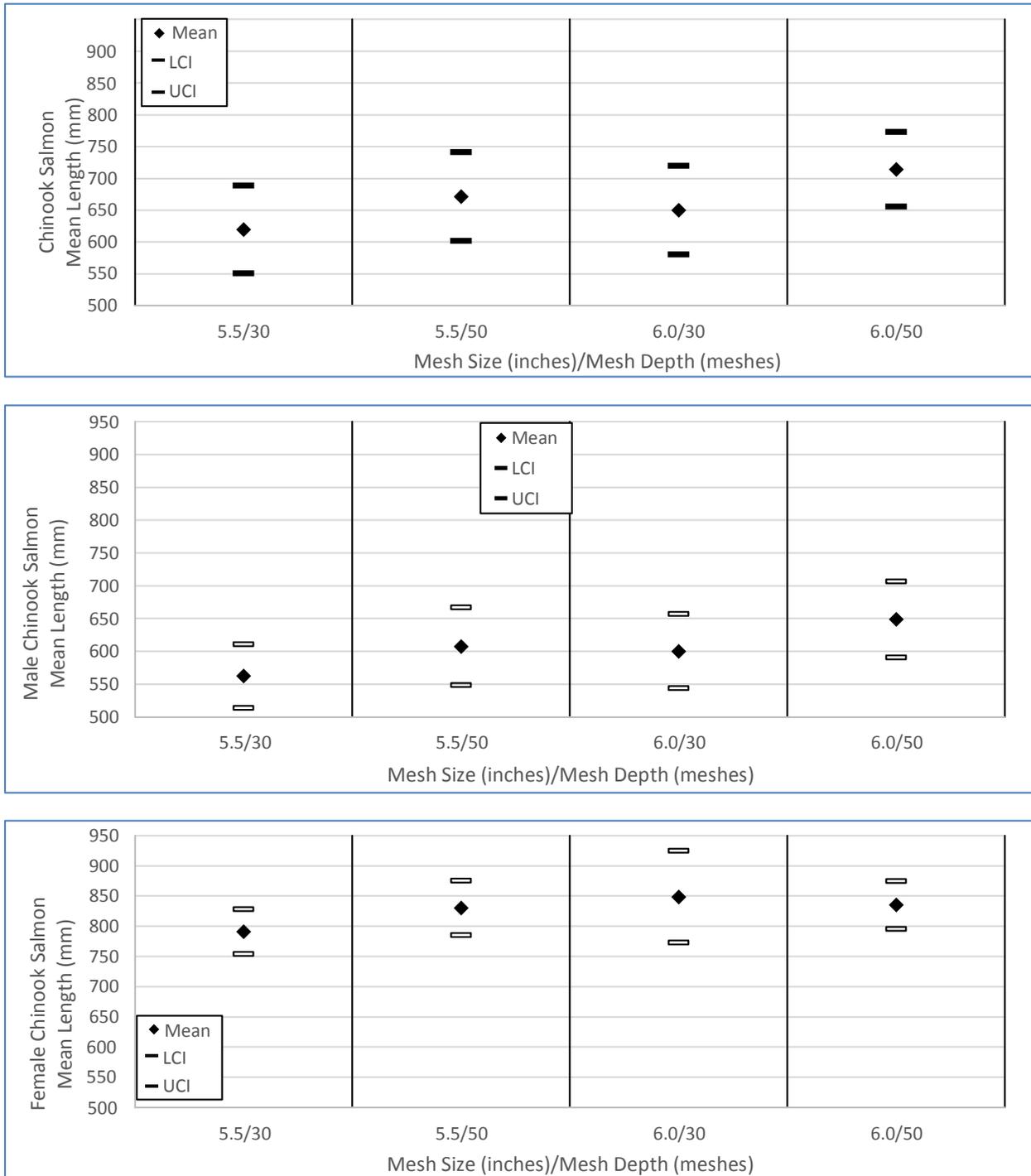


Figure 5. Chinook salmon mean length and the 95% CI by test net, by mesh size, and by mesh depth for both sexes combined (top figure), male Chinook salmon (middle figure) and female Chinook salmon (bottom figure), Yukon River gillnet mesh/depth test net study, 2013.

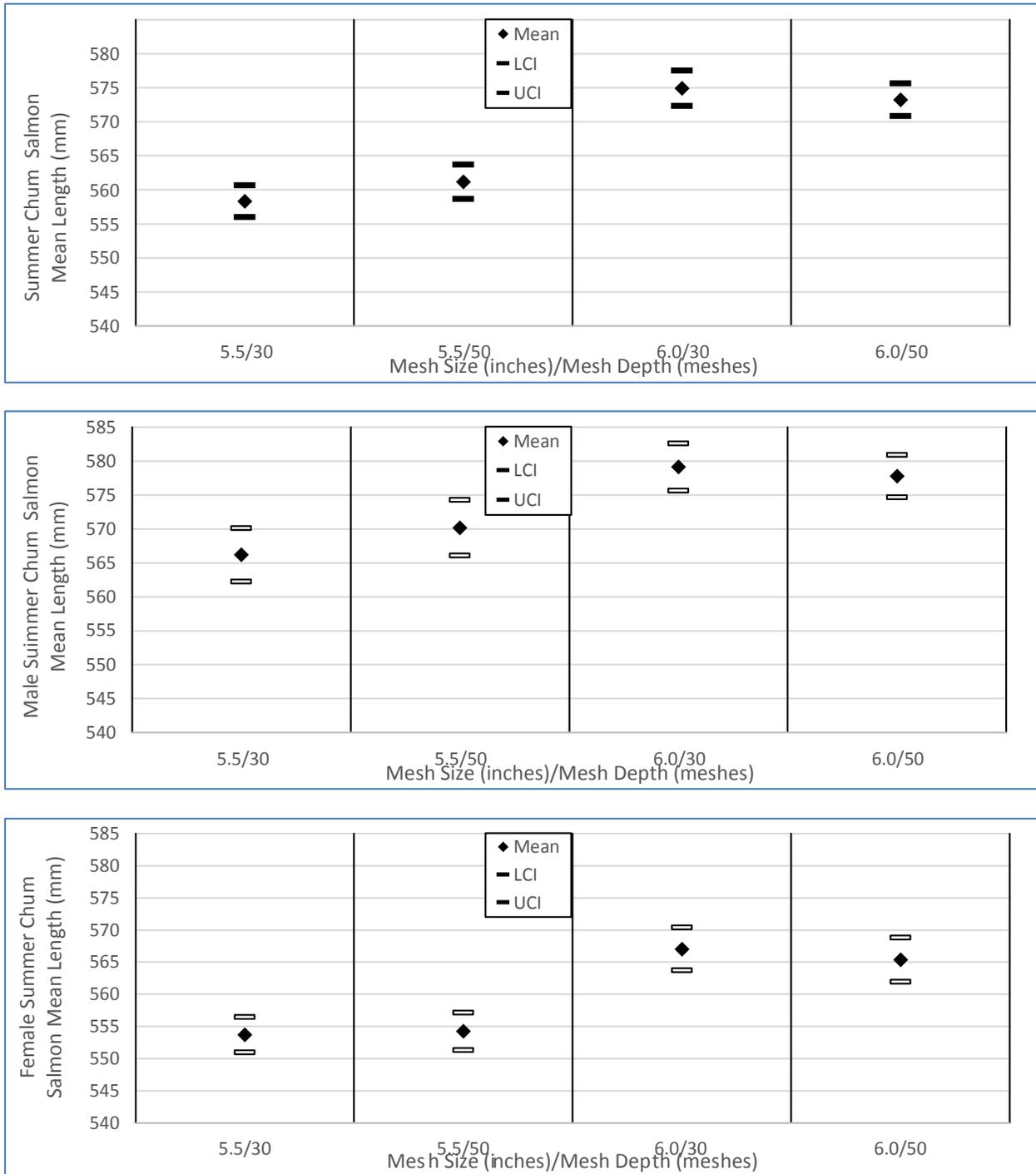


Figure 6. Summer chum salmon mean length and the associated 95% CI by test net, by mesh size, and by mesh depth for both sexes combined (top figure), male summer chum salmon (middle figure), and female summer chum salmon (bottom figure), Yukon River gillnet mesh/depth test net study, 2013.

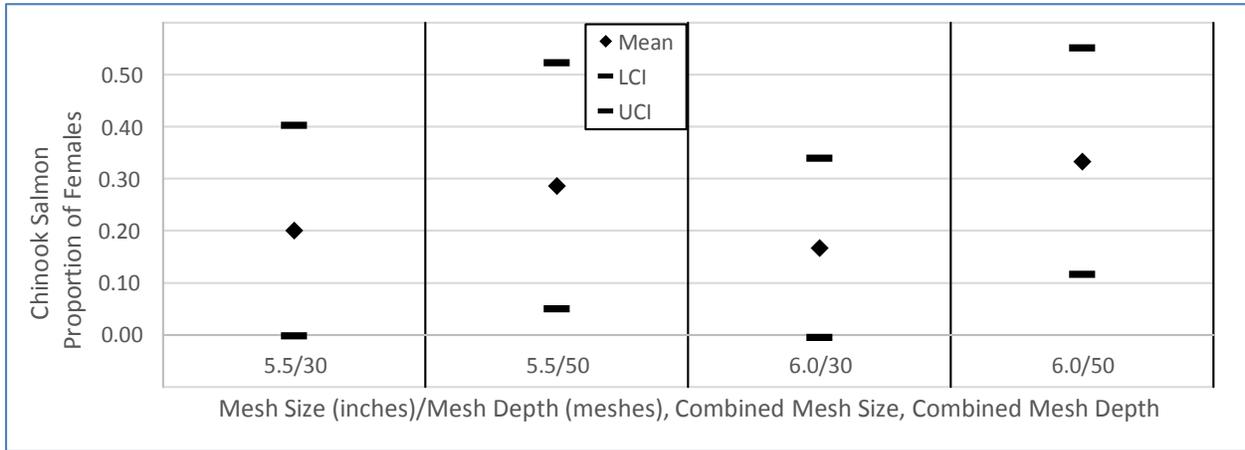


Figure 7. Mean proportion of female Chinook salmon and the associated 95% CI by test net, by mesh size, and by mesh depth, Yukon River gillnet mesh/depth test net study, 2013.

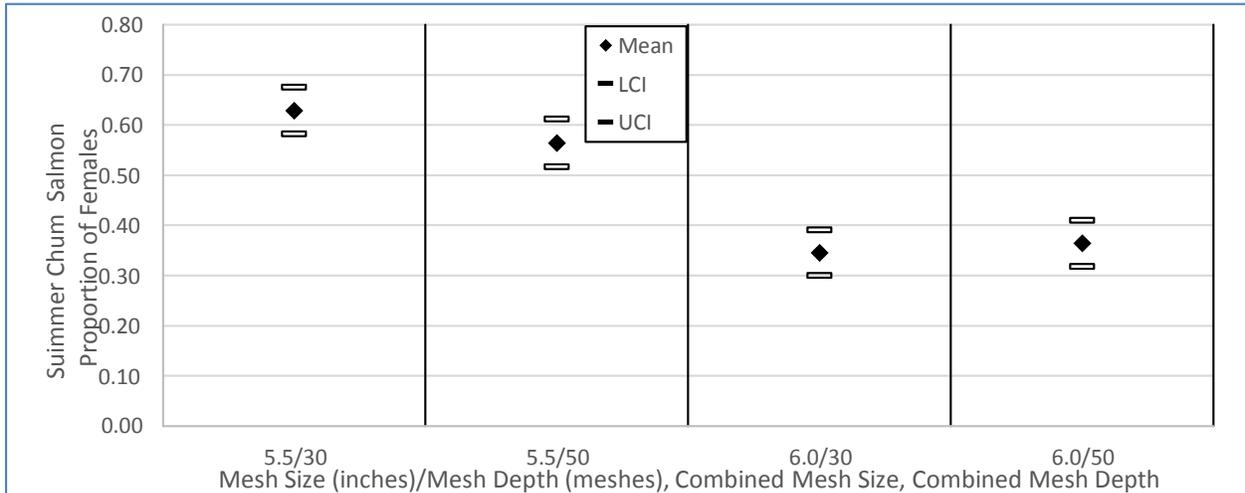


Figure 8. Mean proportion of female summer chum salmon and the associated 95% CI by test net, by mesh size, and by mesh depth, Yukon River gillnet mesh/depth test net study, 2013.

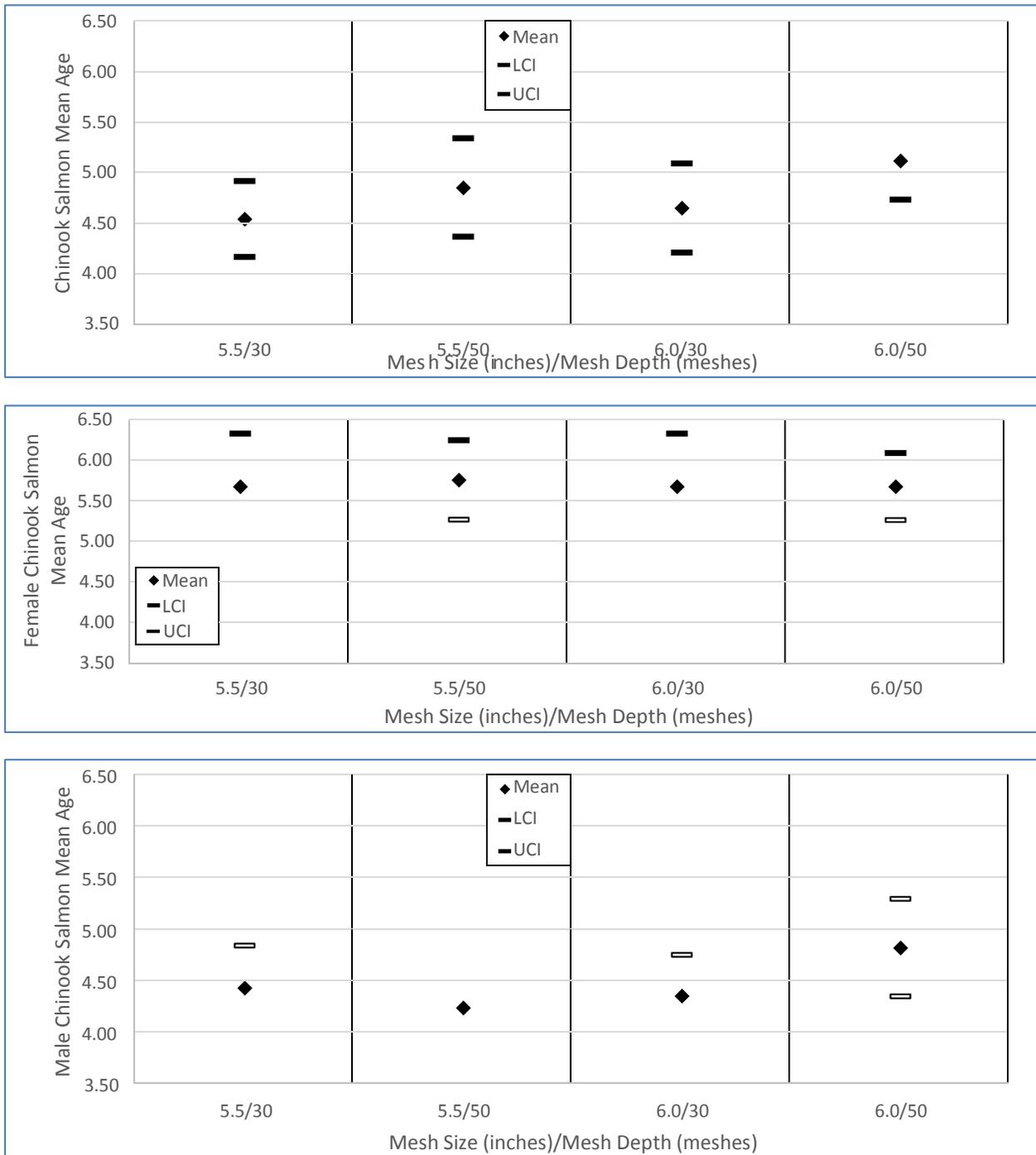


Figure 9. Chinook salmon mean age and the associated 95% CI by test net, by mesh size, and by mesh depth for both sexes combined (top figure), male Chinook salmon (middle figure), and female Chinook chum salmon (bottom figure), Yukon River gillnet mesh/depth test net study, 2013.

APPENDIX A

Test fishing summary table, Yukon River gillnet mesh/depth study, 2013

Appendix A1. Test fishing summary table, including date, drift number, sampling site, mesh size and depth, mean fishing time, and salmon catch, gillnet mesh/depth study, June 18-July1, 2013.

Date 2013	Drift No.	Site Name	mesh size (inches)	net depth (meshes)	Mean Fishing Time ^a	Chinook Salmon			Summer Chum Salmon		
						Retained	total drop out	Total	Retained	total drop out	Total Catch
18-Jun	L-01	Inside Channel	5.5	50	0:19:00	2	1	3	17	0	17
18-Jun	L-02	Inside Channel	6.0	50	0:19:00	1	0	1	13	0	13
18-Jun	L-03	Inside Channel	6.0	30	0:19:00	1	0	1	38	1	39
18-Jun	L-04	Inside Channel	5.5	30	0:16:00	2	0	2	53	1	54
18-Jun	R-01	Lower Eddy	6.0	50	0:30:00	1	0	1	19	1	20
18-Jun	R-02	Lower Eddy	6.0	30	0:25:00	1	1	2	2	0	2
18-Jun	R-03	Lower Eddy	5.5	30	0:26:30	2	0	2	18	0	18
18-Jun	R-04	Lower Eddy	5.5	50	0:26:30	0	1	1	20	0	20
19-Jun	L-05	Lower Eddy	6.0	50	0:19:30	0	0	0	0	0	0
19-Jun	L-06	Lower Eddy	5.5	30	0:18:30	0	0	0	3	0	3
19-Jun	L-07	Lower Eddy	6.0	30	0:18:30	0	0	0	17	0	17
19-Jun	L-08	Lower Eddy	5.5	50	0:22:30	0	0	0	7	0	7
19-Jun	R-05	Inside Channel	6.0	50	0:09:30	1	0	1	45	0	45
19-Jun	R-06	Inside Channel	6.0	30	0:10:30	0	0	0	16	0	16
19-Jun	R-07	Inside Channel	5.5	50	0:06:30	0	0	0	170	0	170
19-Jun	R-08	Inside Channel	5.5	30	0:04:00	0	0	0	80	0	80
20-Jun	L-09	Inside Channel	6.0	30	0:10:30	0	0	0	19	0	19
20-Jun	L-10	Inside Channel	5.5	50	0:09:00	0	0	0	47	1	48
20-Jun	L-11	Inside Channel	6.0	50	0:17:00	1	0	1	28	0	28
20-Jun	L-12	Inside Channel	5.5	30	0:04:00	2	0	2	67	1	68
20-Jun	R-09	Sunshine Bay	5.5	30	0:22:30	1	0	1	79	0	79
20-Jun	R-10	Sunshine Bay	5.5	50	0:17:30	0	0	0	13	0	13
20-Jun	R-11	Sunshine Bay	6.0	30	0:19:30	0	0	0	34	0	34
20-Jun	R-12	Sunshine Bay	6.0	50	0:15:30	0	0	0	29	0	29

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Appendix A1. (continued page 2 of 5).

Date 2013	Drift No.	Site Name	mesh size (inches)	net depth (meshes)	Mean Fishing Time ^a	Chinook Salmon			Summer Chum Salmon		
						Retained	total drop out	Total	Retained	total drop out	Total Catch
21-Jun	L-13	Sunshine Bay	5.5	30	0:12:00	0	0	0	10	0	10
21-Jun	L-14	Sunshine Bay	6.0	30	0:13:30	0	0	0	12	0	12
21-Jun	L-15	Sunshine Bay	5.5	50	0:19:30	0	0	0	18	1	19
21-Jun	L-16	Sunshine Bay	6.0	50	0:19:00	1	0	1	26	0	26
21-Jun	R-13	Inside Channel	6.0	30	0:22:30	0	0	0	22	0	22
21-Jun	R-14	Inside Channel	6.0	50	0:14:30	2	0	2	105	0	105
21-Jun	R-15	Inside Channel	5.5	50	0:22:30	0	0	0	73	0	73
21-Jun	R-16	Inside Channel	5.5	30	0:05:30	0	0	0	122	0	122
22-Jun	L-17	Sunshine Bay	5.5	50	0:15:00	3	0	3	165	2	167
22-Jun	L-18	Sunshine Bay	6.0	30	0:08:30	1	0	1	25	1	26
22-Jun	L-19	Sunshine Bay	6.0	50	0:07:00	1	0	1	48	0	48
22-Jun	L-20	Sunshine Bay	5.5	30	0:15:00	0	0	0	48	0	48
22-Jun	R-17	Inside Channel	6.0	50	0:22:30	0	0	0	8	0	8
22-Jun	R-18	Inside Channel	5.5	30	0:07:30	1	0	1	117	0	117
22-Jun	R-19	Inside Channel	6.0	30	0:13:30	0	0	0	67	0	67
22-Jun	R-20	Inside Channel	5.5	50	0:05:30	0	0	0	88	0	88
23-Jun	L-21	Inside Channel	5.5	30	0:04:00	0	0	0	31	0	31
23-Jun	L-22	Inside Channel	6.0	50	0:04:30	0	1	1	59	0	59
23-Jun	L-23	Inside Channel	6.0	30	0:06:00	0	0	0	49	0	49
23-Jun	L-24	Inside Channel	5.5	50	0:09:00	1	0	1	43	4	47
23-Jun	R-21	Sunshine Bay	6.0	50	0:10:30	1	0	1	97	0	97
23-Jun	R-22	Sunshine Bay	5.5	50	0:14:30	1	0	1	76	0	76
23-Jun	R-23	Sunshine Bay	5.5	30	0:13:00	0	0	0	20	0	20
23-Jun	R-24	Sunshine Bay	6.0	30	0:15:30	1	0	1	30	0	30

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Appendix A1. (page 3 of 5).

Date 2013	Drift No.	Site Name	mesh size (inches)	net depth (meshes)	Mean Fishing Time ^a	Chinook Salmon			Summer Chum Salmon		
						Retained	total drop out	Total	Retained	total drop out	Total Catch
24-Jun	L-25	Sunshine Bay	6.0	30	0:11:30	0	0	0	70	1	71
24-Jun	L-26	Sunshine Bay	6.0	50	0:08:00	1	0	1	24	0	24
24-Jun	L-27	Sunshine Bay	5.5	50	0:05:30	0	0	0	52	0	52
24-Jun	L-28	Sunshine Bay	5.5	30	0:11:00	1	0	1	60	1	61
24-Jun	R-25	Inside Channel	5.5	30	0:11:00	0	0	0	40	0	40
24-Jun	R-26	Inside Channel	5.5	50	0:19:30	1	0	1	3	0	3
24-Jun	R-27	Inside Channel	6.0	50	0:11:30	0	0	0	82	0	82
24-Jun	R-28	Inside Channel	6.0	30	0:19:30	0	0	0	3	0	3
25-Jun	L-29	Inside Channel	5.5	30	0:05:00	1	0	1	113	2	115
25-Jun	L-30	Inside Channel	6.0	30	0:06:00	1	0	1	49	3	52
25-Jun	L-31	Inside Channel	6.0	50	0:04:30	0	0	0	68	3	71
25-Jun	L-32	Inside Channel	5.5	50	0:06:00	0	0	0	116	3	119
25-Jun	R-29	Sunshine Bay	5.5	30	0:19:30	1	0	1	44	0	44
25-Jun	R-30	Sunshine Bay	6.0	50	0:08:30	0	0	0	140	0	140
25-Jun	R-31	Sunshine Bay	5.5	50	0:13:00	0	0	0	71	0	71
25-Jun	R-32	Sunshine Bay	6.0	30	0:10:00	1	0	1	46	1	47
26-Jun	L-33	Sunshine Bay	6.0	50	0:05:30	4	0	4	139	0	139
26-Jun	L-34	Sunshine Bay	5.5	30	0:07:30	3	0	3	39	3	42
26-Jun	L-35	Sunshine Bay	6.0	30	0:10:00	3	0	3	41	1	42
26-Jun	L-36	Sunshine Bay	5.5	50	0:04:30	2	0	2	100	2	102
26-Jun	R-33	Inside Channel	6.0	30	0:07:00	1	0	1	104	3	107
26-Jun	R-34	Inside Channel	5.5	50	0:05:30	0	0	0	87	0	87
26-Jun	R-35	Inside Channel	5.5	30	0:06:30	0	0	0	42	0	42
26-Jun	R-36	Inside Channel	6.0	50	0:04:30	0	0	0	53	0	53

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Appendix A1. (page 4 of 5).

Date 2013	Drift No.	Site Name	mesh size (inches)	net depth (meshes)	Mean Fishing Time ^a	Chinook Salmon			Summer Chum Salmon		
						Retained	total drop out	Total	Retained	total drop out	Total Catch
27-Jun	L-37	Inside Channel	5.5	30	0:06:30	0	0	0	126	3	129
27-Jun	L-38	Inside Channel	6.0	50	0:09:30	0	0	0	82	1	83
27-Jun	L-39	Inside Channel	6.0	30	0:05:30	0	0	0	34	1	35
27-Jun	L-40	Inside Channel	5.5	50	0:05:00	0	0	0	55	0	55
27-Jun	R-37	Sunshine Bay	5.5	50	0:04:00	0	1	1	105	5	110
27-Jun	R-38	Sunshine Bay	5.5	30	0:12:30	0	0	0	71	1	72
27-Jun	R-39	Sunshine Bay	6.0	50	0:04:00	1	0	1	45	4	49
27-Jun	R-40	Sunshine Bay	6.0	30	0:13:30	2	0	2	53	3	56
28-Jun	L-41	Sunshine Bay	5.5	30	0:09:00	0	0	0	37	2	39
28-Jun	L-42	Sunshine Bay	5.5	50	0:08:30	1	0	1	51	2	53
28-Jun	L-43	Sunshine Bay	6.0	50	0:05:00	1	0	1	54	0	54
28-Jun	L-44	Sunshine Bay	6.0	30	0:08:00	1	0	1	33	0	33
28-Jun	R-41	Inside Channel	5.5	30	0:08:30	0	0	0	30	3	33
28-Jun	R-42	Inside Channel	5.5	50	0:07:30	0	0	0	19	0	19
28-Jun	R-43	Inside Channel	6.0	50	0:23:30	0	0	0	54	0	54
28-Jun	R-44	Inside Channel	6.0	30	0:19:30	0	0	0	11	0	11
29-Jun	L-45	Inside Channel	5.5	30	0:08:30	0	0	0	45	0	45
29-Jun	L-46	Inside Channel	6.0	30	0:10:00	1	0	1	9	2	11
29-Jun	L-47	Inside Channel	5.5	50	0:13:00	0	0	0	45	0	45
29-Jun	L-48	Inside Channel	6.0	50	0:13:00	0	0	0	14	1	15
29-Jun	R-45	Sunshine Bay	6.0	50	0:09:00	0	0	0	62	2	64
29-Jun	R-46	Sunshine Bay	5.5	30	0:13:30	1	0	1	71	0	71
29-Jun	R-47	Sunshine Bay	6.0	30	0:13:30	1	0	1	24	0	24
29-Jun	R-48	Sunshine Bay	5.5	50	0:08:30	1	1	2	110	1	111

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Appendix A1. (page 5 of 5).

Date 2013	Drift No.	Site Name	mesh size (inches)	net depth (meshes)	Mean Fishing Time ^a	Chinook Salmon			Summer Chum Salmon		
						Retained	total drop out	Total	Retained	total drop out	Total Catch
30-Jun	L-49	Sunshine Bay	6.0	30	0:14:00	0	0	0	31	0	31
30-Jun	L-50	Sunshine Bay	5.5	30	0:14:30	0	1	1	48	1	49
30-Jun	L-51	Sunshine Bay	6.0	50	0:09:30	2	0	2	36	1	37
30-Jun	L-52	Sunshine Bay	5.5	50	0:12:00	0	0	0	50	0	50
30-Jun	R-49	Inside Channel	5.5	30	0:10:30	0	0	0	98	0	98
30-Jun	R-50	Inside Channel	6.0	30	0:20:30	0	0	0	39	0	39
30-Jun	R-51	Inside Channel	5.5	50	0:09:30	1	0	1	46	0	46
30-Jun	R-52	Inside Channel	6.0	50	0:03:30	0	0	0	63	0	63
1-Jul	L-53	Inside Channel	6.0	30	0:09:30	0	0	0	47	0	47
1-Jul	L-54	Inside Channel	5.5	50	0:14:00	1	0	1	73	2	75
1-Jul	L-55	Inside Channel	6.0	50	0:15:00	1	0	1	47	0	47
1-Jul	L-56	Inside Channel	5.5	30	0:15:00	0	0	0	48	0	48
1-Jul	R-53	Sunshine Bay	6.0	30	0:05:30	0	0	0	43	0	43
1-Jul	R-54	Sunshine Bay	6.0	50	0:05:00	0	0	0	52	0	52
1-Jul	R-55	Sunshine Bay	5.5	50	0:09:00	0	0	0	55	0	55
1-Jul	R-56	Sunshine Bay	5.5	30	0:13:00	0	0	0	29	0	29

APPENDIX B

Sex, and size information for individual summer chum salmon captured, retained and sampled, Yukon River gillnet mesh/depth study, 2013.

Appendix B1. Individual summer chum salmon sex and length data, by day, sampled from the 5.5 inch mesh, 30 mesh deep gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
18-Jun	1	F	556	19-Jun	1	F	571
18-Jun	2	F	536	19-Jun	2	M	594
18-Jun	3	M	567	19-Jun	3	F	573
18-Jun	4	M	526	19-Jun	4	F	517
18-Jun	5	M	563	19-Jun	5	F	545
18-Jun	6	F	594	19-Jun	6	F	582
18-Jun	7	F	530	19-Jun	7	M	563
18-Jun	8	F	548	19-Jun	8	M	576
18-Jun	9	M	568	19-Jun	9	F	580
18-Jun	10	F	551	19-Jun	10	M	564
18-Jun	11	M	559	19-Jun	11	M	596
18-Jun	12	F	553	19-Jun	12	M	608
18-Jun	13	F	571	19-Jun	13	F	591
18-Jun	14	F	563	19-Jun	14	F	583
18-Jun	15	F	520	19-Jun	15	M	569
18-Jun	16	M	572	19-Jun	16	M	614
18-Jun	17	M	549	19-Jun	17	M	544
18-Jun	18	F	536	19-Jun	18	M	573
18-Jun	19	F	552	19-Jun	19	F	527
18-Jun	20	M	625	19-Jun	20	M	529
18-Jun	21	M	534	19-Jun	21	M	560
18-Jun	22	F	556	19-Jun	22	F	591
18-Jun	23	F	562	19-Jun	23	F	539
18-Jun	24	M	560	19-Jun	24	M	552
18-Jun	25	M	523	19-Jun	25	M	591
18-Jun	26	F	552	19-Jun	26	F	571
18-Jun	27	F	529	19-Jun	27	F	602
18-Jun	28	F	536	19-Jun	28	F	623
18-Jun	29	F	563	19-Jun	29	F	524
18-Jun	30	F	537	19-Jun	30	F	564

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
20-Jun	1	F	560	21-Jun	1	F	555
20-Jun	2	F	555	21-Jun	2	M	527
20-Jun	3	F	621	21-Jun	3	F	548
20-Jun	4	F	525	21-Jun	4	F	569
20-Jun	5	F	559	21-Jun	5	M	606
20-Jun	6	F	534	21-Jun	6	F	562
20-Jun	7	F	555	21-Jun	7	M	603
20-Jun	8	F	539	21-Jun	8	M	595
20-Jun	9	F	556	21-Jun	9	M	580
20-Jun	10	M	519	21-Jun	10	M	567
20-Jun	11	M	561	21-Jun	11	F	617
20-Jun	12	F	554	21-Jun	12	F	582
20-Jun	13	F	545	21-Jun	13	F	584
20-Jun	14	F	559	21-Jun	14	F	576
20-Jun	15	F	531	21-Jun	15	M	595
20-Jun	16	F	595	21-Jun	16	M	592
20-Jun	17	F	563	21-Jun	17	F	560
20-Jun	18	F	561	21-Jun	18	M	567
20-Jun	19	F	565	21-Jun	19	F	550
20-Jun	20	F	565	21-Jun	20	F	548
20-Jun	21	F	556	21-Jun	21	M	575
20-Jun	22	F	530	21-Jun	22	F	553
20-Jun	23	F	580	21-Jun	23	F	521
20-Jun	24	F	545	21-Jun	24	M	555
20-Jun	25	F	556	21-Jun	25	F	538
20-Jun	26	F	578	21-Jun	26	F	572
20-Jun	27	F	554	21-Jun	27	F	540
20-Jun	28	F	535	21-Jun	28	F	558
20-Jun	29	M	556	21-Jun	29	F	581
20-Jun	30	M	582	21-Jun	30	F	588

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
22-Jun	1	M	656	23-Jun	1	M	564
22-Jun	2	M	563	23-Jun	2	F	537
22-Jun	3	F	552	23-Jun	3	M	546
22-Jun	4	F	593	23-Jun	4	F	560
22-Jun	5	F	581	23-Jun	5	M	589
22-Jun	6	M	579	23-Jun	6	M	582
22-Jun	7	F	561	23-Jun	7	F	600
22-Jun	8	F	566	23-Jun	8	F	528
22-Jun	9	F	554	23-Jun	9	F	535
22-Jun	10	F	543	23-Jun	10	F	545
22-Jun	11	F	563	23-Jun	11	F	570
22-Jun	12	F	539	23-Jun	12	F	540
22-Jun	13	F	533	23-Jun	13	F	578
22-Jun	14	F	558	23-Jun	14	M	539
22-Jun	15	M	545	23-Jun	15	F	505
22-Jun	16	F	536	23-Jun	16	F	570
22-Jun	17	F	578	23-Jun	17	F	575
22-Jun	18	F	534	23-Jun	18	M	574
22-Jun	19	F	546	23-Jun	19	M	594
22-Jun	20	F	531	23-Jun	20	F	530
22-Jun	21	F	544	23-Jun	21	F	544
22-Jun	22	F	553	23-Jun	22	F	569
22-Jun	23	F	536	23-Jun	23	F	541
22-Jun	24	M	595	23-Jun	24	M	572
22-Jun	25	M	597	23-Jun	25	F	551
22-Jun	26	F	543	23-Jun	26	M	589
22-Jun	27	F	554	23-Jun	27	F	529
22-Jun	28	F	546	23-Jun	28	F	533
22-Jun	29	F	539	23-Jun	29	M	631
22-Jun	30	F	575	23-Jun	30	M	551

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
24-Jun	1	M	649	25-Jun	1	F	544
24-Jun	2	M	571	25-Jun	2	F	549
24-Jun	3	M	610	25-Jun	3	F	536
24-Jun	4	F	578	25-Jun	4	F	564
24-Jun	5	F	541	25-Jun	5	F	567
24-Jun	6	F	533	25-Jun	6	M	561
24-Jun	7	F	535	25-Jun	7	F	515
24-Jun	8	F	524	25-Jun	8	M	552
24-Jun	9	F	555	25-Jun	9	M	559
24-Jun	10	M	549	25-Jun	10	M	555
24-Jun	11	F	556	25-Jun	11	M	574
24-Jun	12	F	590	25-Jun	12	M	611
24-Jun	13	F	579	25-Jun	13	F	575
24-Jun	14	M	547	25-Jun	14	F	542
24-Jun	15	M	550	25-Jun	15	F	540
24-Jun	16	M	549	25-Jun	16	F	555
24-Jun	17	F	542	25-Jun	17	F	557
24-Jun	18	F	544	25-Jun	18	F	561
24-Jun	19	M	543	25-Jun	19	F	549
24-Jun	20	F	583	25-Jun	20	M	535
24-Jun	21	F	552	25-Jun	21	M	557
24-Jun	22	F	581	25-Jun	22	F	525
24-Jun	23	M	577	25-Jun	23	M	544
24-Jun	24	F	541	25-Jun	24	F	557
24-Jun	25	F	567	25-Jun	25	F	539
24-Jun	26	F	580	25-Jun	26	F	569
24-Jun	27	F	535	25-Jun	27	F	575
24-Jun	28	M	560	25-Jun	28	M	563
24-Jun	29	F	542	25-Jun	29	M	520
24-Jun	30	F	570	25-Jun	30	M	566

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
26-Jun	1	F	574	27-Jun	1	M	549
26-Jun	2	M	576	27-Jun	2	M	556
26-Jun	3	F	535	27-Jun	3	F	540
26-Jun	4	M	578	27-Jun	4	F	543
26-Jun	5	M	572	27-Jun	5	F	501
26-Jun	6	M	569	27-Jun	6	M	543
26-Jun	7	M	555	27-Jun	7	F	563
26-Jun	8	F	539	27-Jun	8	M	548
26-Jun	9	F	576	27-Jun	9	M	588
26-Jun	10	F	583	27-Jun	10	M	596
26-Jun	11	F	531	27-Jun	11	M	577
26-Jun	12	F	552	27-Jun	12	M	580
26-Jun	13	F	555	27-Jun	13	M	552
26-Jun	14	F	573	27-Jun	14	M	538
26-Jun	15	F	540	27-Jun	15	F	542
26-Jun	16	M	606	27-Jun	16	F	544
26-Jun	17	M	589	27-Jun	17	F	539
26-Jun	18	M	572	27-Jun	18	F	567
26-Jun	19	F	572	27-Jun	19	F	514
26-Jun	20	M	572	27-Jun	20	M	558
26-Jun	21	M	554	27-Jun	21	F	642
26-Jun	22	M	579	27-Jun	22	F	590
26-Jun	23	M	549	27-Jun	23	F	557
26-Jun	24	F	562	27-Jun	24	F	589
26-Jun	25	M	557	27-Jun	25	M	569
26-Jun	26	F	551	27-Jun	26	M	601
26-Jun	27	F	561	27-Jun	27	M	554
26-Jun	28	F	538	27-Jun	28	F	568
26-Jun	29	M	559	27-Jun	29	F	581
26-Jun	30	M	585	27-Jun	30	F	567

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
28-Jun	1	F	509	29-Jun	1	F	562
28-Jun	2	F	565	29-Jun	2	F	531
28-Jun	3	F	529	29-Jun	3	F	564
28-Jun	4	F	513	29-Jun	4	M	574
28-Jun	5	M	525	29-Jun	5	F	549
28-Jun	6	M	528	29-Jun	6	F	554
28-Jun	7	M	600	29-Jun	7	M	549
28-Jun	8	F	550	29-Jun	8	F	513
28-Jun	9	F	559	29-Jun	9	M	526
28-Jun	10	F	534	29-Jun	10	M	540
28-Jun	11	M	578	29-Jun	11	F	505
28-Jun	12	F	536	29-Jun	12	M	554
28-Jun	13	M	538	29-Jun	13	F	509
28-Jun	14	F	510	29-Jun	14	F	515
28-Jun	15	F	553	29-Jun	15	F	579
28-Jun	16	F	534	29-Jun	16	F	568
28-Jun	17	F	585	29-Jun	17	M	562
28-Jun	18	F	560	29-Jun	18	F	529
28-Jun	19	F	556	29-Jun	19	F	554
28-Jun	20	F	545	29-Jun	20	F	561
28-Jun	21	M	601	29-Jun	21	F	553
28-Jun	22	M	597	29-Jun	22	F	549
28-Jun	23	F	537	29-Jun	23	F	547
28-Jun	24	F	550	29-Jun	24	F	546
28-Jun	25	F	525	29-Jun	25	M	596
28-Jun	26	M	554	29-Jun	26	M	561
28-Jun	27	F	590	29-Jun	27	F	588
28-Jun	28	M	559	29-Jun	28	F	559
28-Jun	29	F	532	29-Jun	29	F	544
28-Jun	30	F	549	29-Jun	30	F	556

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
30-Jun	1	M	544	1-Jul	1	M	546
30-Jun	2	F	556	1-Jul	2	M	546
30-Jun	3	F	487	1-Jul	3	F	535
30-Jun	4	M	536	1-Jul	4	M	554
30-Jun	5	M	546	1-Jul	5	M	534
30-Jun	6	M	546	1-Jul	6	M	549
30-Jun	7	M	594	1-Jul	7	M	552
30-Jun	8	F	562	1-Jul	8	F	566
30-Jun	9	F	504	1-Jul	9	M	538
30-Jun	10	F	553	1-Jul	10	F	554
30-Jun	11	M	522	1-Jul	11	M	607
30-Jun	12	M	561	1-Jul	12	F	553
30-Jun	13	F	564	1-Jul	13	M	568
30-Jun	14	F	566	1-Jul	14	F	571
30-Jun	15	M	569	1-Jul	15	M	563
30-Jun	16	F	519	1-Jul	16	M	596
30-Jun	17	M	541	1-Jul	17	F	542
30-Jun	18	F	564	1-Jul	18	M	559
30-Jun	19	F	529	1-Jul	19	M	561
30-Jun	20	F	562	1-Jul	20	M	553
30-Jun	21	F	542	1-Jul	21	M	553
30-Jun	22	M	605	1-Jul	22	M	563
30-Jun	23	M	557	1-Jul	23	F	594
30-Jun	24	F	588	1-Jul	24	F	591
30-Jun	25	F	551	1-Jul	25	M	532
30-Jun	26	F	563	1-Jul	26	F	574
30-Jun	27	M	581	1-Jul	27	F	530
30-Jun	28	F	562	1-Jul	28	F	516
30-Jun	29	F	527	1-Jul	29	M	551
30-Jun	30	M	547	1-Jul	30	F	555

^a MEFT = length measurement from mid-eye to fork of tail.

Appendix B2. Individual summer chum salmon sex and length data, by day, sampled from the 5.5 inch mesh, 50 mesh deep gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
18-Jun	1	F	549	19-Jun	1	F	545
18-Jun	2	F	547	19-Jun	2	M	584
18-Jun	3	F	597	19-Jun	3	M	554
18-Jun	4	M	564	19-Jun	4	F	596
18-Jun	5	F	597	19-Jun	5	F	546
18-Jun	6	F	569	19-Jun	6	F	565
18-Jun	7	M	590	19-Jun	7	M	601
18-Jun	8	F	572	19-Jun	8	F	576
18-Jun	9	F	558	19-Jun	9	F	558
18-Jun	10	F	561	19-Jun	10	F	540
18-Jun	11	F	521	19-Jun	11	M	635
18-Jun	12	F	527	19-Jun	12	M	568
18-Jun	13	M	529	19-Jun	13	F	534
18-Jun	14	M	588	19-Jun	14	F	590
18-Jun	15	F	561	19-Jun	15	F	530
18-Jun	16	F	537	19-Jun	16	F	556
18-Jun	17	M	586	19-Jun	17	M	601
18-Jun	18	F	580	19-Jun	18	F	569
18-Jun	19	F	589	19-Jun	19	F	560
18-Jun	20	F	549	19-Jun	20	M	574
18-Jun	21	M	612	19-Jun	21	F	561
18-Jun	22	F	579	19-Jun	22	F	605
18-Jun	23	M	582	19-Jun	23	F	544
18-Jun	24	F	530	19-Jun	24	M	571
18-Jun	25	F	540	19-Jun	25	M	577
18-Jun	26	M	555	19-Jun	26	F	551
18-Jun	27	F	556	19-Jun	27	F	563
18-Jun	28	F	575	19-Jun	28	F	543
18-Jun	29	F	559	19-Jun	29	M	595
18-Jun	30	F	565	19-Jun	30	M	587

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
20-Jun	1	F	598	21-Jun	1	M	558
20-Jun	2	F	536	21-Jun	2	M	553
20-Jun	3	F	550	21-Jun	3	F	539
20-Jun	4	F	570	21-Jun	4	F	552
20-Jun	5	F	538	21-Jun	5	F	558
20-Jun	6	F	525	21-Jun	6	M	529
20-Jun	7	M	563	21-Jun	7	F	565
20-Jun	8	M	585	21-Jun	8	F	549
20-Jun	9	F	515	21-Jun	9	F	552
20-Jun	10	F	569	21-Jun	10	F	531
20-Jun	11	F	537	21-Jun	11	F	553
20-Jun	12	F	610	21-Jun	12	M	587
20-Jun	13	F	508	21-Jun	13	M	555
20-Jun	14	F	555	21-Jun	14	M	582
20-Jun	15	F	534	21-Jun	15	F	577
20-Jun	16	F	574	21-Jun	16	M	654
20-Jun	17	M	567	21-Jun	17	M	545
20-Jun	18	F	576	21-Jun	18	M	576
20-Jun	19	F	554	21-Jun	19	F	581
20-Jun	20	F	589	21-Jun	20	F	522
20-Jun	21	F	563	21-Jun	21	F	545
20-Jun	22	M	569	21-Jun	22	F	627
20-Jun	23	F	544	21-Jun	23	M	592
20-Jun	24	F	546	21-Jun	24	M	630
20-Jun	25	F	587	21-Jun	25	F	561
20-Jun	26	F	564	21-Jun	26	F	552
20-Jun	27	F	554	21-Jun	27	M	578
20-Jun	28	F	558	21-Jun	28	M	554
20-Jun	29	M	646	21-Jun	29	M	570
20-Jun	30	M	550	21-Jun	30	F	567

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
22-Jun	1	F	550	23-Jun	1	M	520
22-Jun	2	M	570	23-Jun	2	M	572
22-Jun	3	F	565	23-Jun	3	F	579
22-Jun	4	M	565	23-Jun	4	M	616
22-Jun	5	M	566	23-Jun	5	F	561
22-Jun	6	M	579	23-Jun	6	M	573
22-Jun	7	M	590	23-Jun	7	M	588
22-Jun	8	M	587	23-Jun	8	M	575
22-Jun	9	F	586	23-Jun	9	F	567
22-Jun	10	F	544	23-Jun	10	M	628
22-Jun	11	M	557	23-Jun	11	F	511
22-Jun	12	F	576	23-Jun	12	F	540
22-Jun	13	M	559	23-Jun	13	F	563
22-Jun	14	M	556	23-Jun	14	M	571
22-Jun	15	F	567	23-Jun	15	M	604
22-Jun	16	M	614	23-Jun	16	M	603
22-Jun	17	M	554	23-Jun	17	F	595
22-Jun	18	F	564	23-Jun	18	M	624
22-Jun	19	F	524	23-Jun	19	M	588
22-Jun	20	M	569	23-Jun	20	M	558
22-Jun	21	M	594	23-Jun	21	M	577
22-Jun	22	F	541	23-Jun	22	M	567
22-Jun	23	M	563	23-Jun	23	M	540
22-Jun	24	M	533	23-Jun	24	F	482
22-Jun	25	F	529	23-Jun	25	F	593
22-Jun	26	F	551	23-Jun	26	F	535
22-Jun	27	M	584	23-Jun	27	F	575
22-Jun	28	M	547	23-Jun	28	M	520
22-Jun	29	M	559	23-Jun	29	M	552
22-Jun	30	F	565	23-Jun	30	M	599

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
24-Jun	1	M	575	25-Jun	1	F	551
24-Jun	2	F	544	25-Jun	2	M	564
24-Jun	3	M	542	25-Jun	3	M	587
24-Jun	4	F	549	25-Jun	4	F	508
24-Jun	5	F	530	25-Jun	5	M	569
24-Jun	6	F	560	25-Jun	6	F	518
24-Jun	7	F	579	25-Jun	7	M	582
24-Jun	8	F	534	25-Jun	8	M	553
24-Jun	9	F	553	25-Jun	9	M	553
24-Jun	10	F	572	25-Jun	10	M	559
24-Jun	11	F	591	25-Jun	11	M	564
24-Jun	12	M	561	25-Jun	12	F	558
24-Jun	13	F	510	25-Jun	13	F	556
24-Jun	14	M	595	25-Jun	14	F	555
24-Jun	15	M	550	25-Jun	15	F	589
24-Jun	16	F	560	25-Jun	16	F	583
24-Jun	17	F	550	25-Jun	17	F	549
24-Jun	18	M	519	25-Jun	18	M	559
24-Jun	19	F	566	25-Jun	19	M	564
24-Jun	20	M	526	25-Jun	20	M	560
24-Jun	21	F	511	25-Jun	21	F	580
24-Jun	22	M	620	25-Jun	22	F	534
24-Jun	23	M	550	25-Jun	23	M	539
24-Jun	24	F	524	25-Jun	24	F	524
24-Jun	25	F	599	25-Jun	25	F	574
24-Jun	26	F	540	25-Jun	26	M	588
24-Jun	27	F	566	25-Jun	27	M	605
24-Jun	28	F	568	25-Jun	28	M	639
24-Jun	29	M	586	25-Jun	29	F	520
24-Jun	30	F	528	25-Jun	30	F	557

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
26-Jun	1	M	585	27-Jun	1	F	532
26-Jun	2	F	537	27-Jun	2	F	529
26-Jun	3	F	560	27-Jun	3	F	585
26-Jun	4	M	577	27-Jun	4	F	545
26-Jun	5	F	531	27-Jun	5	F	527
26-Jun	6	F	548	27-Jun	6	M	586
26-Jun	7	M	566	27-Jun	7	F	546
26-Jun	8	F	580	27-Jun	8	M	542
26-Jun	9	F	505	27-Jun	9	F	556
26-Jun	10	F	571	27-Jun	10	M	569
26-Jun	11	F	591	27-Jun	11	M	596
26-Jun	12	M	513	27-Jun	12	M	574
26-Jun	13	M	507	27-Jun	13	M	568
26-Jun	14	F	542	27-Jun	14	M	540
26-Jun	15	M	587	27-Jun	15	F	573
26-Jun	16	M	599	27-Jun	16	M	554
26-Jun	17	M	526	27-Jun	17	F	522
26-Jun	18	M	580	27-Jun	18	M	609
26-Jun	19	F	510	27-Jun	19	M	516
26-Jun	20	F	565	27-Jun	20	M	610
26-Jun	21	F	551	27-Jun	21	M	558
26-Jun	22	M	565	27-Jun	22	F	562
26-Jun	23	M	540	27-Jun	23	M	530
26-Jun	24	F	563	27-Jun	24	F	572
26-Jun	25	M	579	27-Jun	25	M	552
26-Jun	26	M	611	27-Jun	26	M	580
26-Jun	27	F	543	27-Jun	27	F	513
26-Jun	28	M	591	27-Jun	28	M	573
26-Jun	29	M	563	27-Jun	29	M	600
26-Jun	30	F	541	27-Jun	30	M	572

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
28-Jun	1	F	545	29-Jun	1	M	532
28-Jun	2	F	570	29-Jun	2	M	511
28-Jun	3	F	519	29-Jun	3	M	612
28-Jun	4	F	600	29-Jun	4	F	535
28-Jun	5	F	569	29-Jun	5	M	476
28-Jun	6	F	547	29-Jun	6	M	597
28-Jun	7	M	553	29-Jun	7	F	538
28-Jun	8	M	560	29-Jun	8	F	561
28-Jun	9	M	554	29-Jun	9	M	577
28-Jun	10	M	553	29-Jun	10	F	532
28-Jun	11	M	550	29-Jun	11	M	562
28-Jun	12	M	539	29-Jun	12	F	516
28-Jun	13	F	540	29-Jun	13	M	557
28-Jun	14	F	544	29-Jun	14	F	538
28-Jun	15	M	534	29-Jun	15	F	544
28-Jun	16	F	566	29-Jun	16	F	564
28-Jun	17	F	545	29-Jun	17	F	545
28-Jun	18	F	509	29-Jun	18	F	538
28-Jun	19	F	537	29-Jun	19	M	530
28-Jun	20	M	569	29-Jun	20	F	564
28-Jun	21	M	598	29-Jun	21	M	540
28-Jun	22	F	534	29-Jun	22	M	533
28-Jun	23	M	533	29-Jun	23	F	569
28-Jun	24	M	577	29-Jun	24	F	593
28-Jun	25	F	552	29-Jun	25	F	520
28-Jun	26	M	544	29-Jun	26	F	580
28-Jun	27	M	534	29-Jun	27	M	592
28-Jun	28	F	557	29-Jun	28	M	586
28-Jun	29	M	581	29-Jun	29	F	533
28-Jun	30	F	528	29-Jun	30	F	549

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
30-Jun	1	M	609	1-Jul	1	F	572
30-Jun	2	M	630	1-Jul	2	F	578
30-Jun	3	F	568	1-Jul	3	M	550
30-Jun	4	F	576	1-Jul	4	M	567
30-Jun	5	M	524	1-Jul	5	F	545
30-Jun	6	M	596	1-Jul	6	M	584
30-Jun	7	F	517	1-Jul	7	F	565
30-Jun	8	F	606	1-Jul	8	F	553
30-Jun	9	F	566	1-Jul	9	F	548
30-Jun	10	F	587	1-Jul	10	F	582
30-Jun	11	F	547	1-Jul	11	M	592
30-Jun	12	F	529	1-Jul	12	M	593
30-Jun	13	M	550	1-Jul	13	M	597
30-Jun	14	F	561	1-Jul	14	F	555
30-Jun	15	F	584	1-Jul	15	F	541
30-Jun	16	F	552	1-Jul	16	F	545
30-Jun	17	F	526	1-Jul	17	F	573
30-Jun	18	F	553	1-Jul	18	M	576
30-Jun	19	F	564	1-Jul	19	M	558
30-Jun	20	M	555	1-Jul	20	F	549
30-Jun	21	F	561	1-Jul	21	M	552
30-Jun	22	F	553	1-Jul	22	M	575
30-Jun	23	F	571	1-Jul	23	M	540
30-Jun	24	F	540	1-Jul	24	F	507
30-Jun	25	M	568	1-Jul	25	M	580
30-Jun	26	F	577	1-Jul	26	F	551
30-Jun	27	M	586	1-Jul	27	F	554
30-Jun	28	M	571	1-Jul	28	M	565
30-Jun	29	F	547	1-Jul	29	F	565
30-Jun	30	F	559	1-Jul	30	F	563

^a MEFT = length measurement from mid-eye to fork of tail.

Appendix B3. Individual summer chum salmon sex and length data by day sampled from the 6.0 inch mesh, 30 mesh deep gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
18-Jun	1	M	534	19-Jun	1	F	595
18-Jun	2	F	604	19-Jun	2	F	589
18-Jun	3	M	647	19-Jun	3	M	585
18-Jun	4	F	578	19-Jun	4	M	588
18-Jun	5	F	540	19-Jun	5	M	631
18-Jun	6	F	514	19-Jun	6	M	610
18-Jun	7	F	550	19-Jun	7	M	584
18-Jun	8	F	579	19-Jun	8	F	569
18-Jun	9	M	604	19-Jun	9	F	567
18-Jun	10	F	537	19-Jun	10	F	562
18-Jun	11	F	576	19-Jun	11	M	550
18-Jun	12	M	612	19-Jun	12	M	617
18-Jun	13	M	625	19-Jun	13	M	610
18-Jun	14	M	585	19-Jun	14	M	576
18-Jun	15	M	557	19-Jun	15	M	584
18-Jun	16	F	529	19-Jun	16	M	531
18-Jun	17	M	594	19-Jun	17	F	558
18-Jun	18	F	567	19-Jun	18	M	569
18-Jun	19	F	564	19-Jun	19	M	607
18-Jun	20	F	579	19-Jun	20	M	549
18-Jun	21	M	603	19-Jun	21	M	638
18-Jun	22	F	575	19-Jun	22	M	549
18-Jun	23	M	586	19-Jun	23	M	581
18-Jun	24	M	670	19-Jun	24	M	609
18-Jun	25	M	570	19-Jun	25	F	534
18-Jun	26	M	600	19-Jun	26	M	577
18-Jun	27	M	579	19-Jun	27	F	544
18-Jun	28	F	579	19-Jun	28	F	609
18-Jun	29	F	558	19-Jun	29	M	549
18-Jun	30	F	573	19-Jun	30	F	553

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
20-Jun	1	M	572	21-Jun	1	M	587
20-Jun	2	F	587	21-Jun	2	M	560
20-Jun	3	F	586	21-Jun	3	M	603
20-Jun	4	M	565	21-Jun	4	F	537
20-Jun	5	M	564	21-Jun	5	M	590
20-Jun	6	M	593	21-Jun	6	M	608
20-Jun	7	F	585	21-Jun	7	M	580
20-Jun	8	M	542	21-Jun	8	M	619
20-Jun	9	F	583	21-Jun	9	M	639
20-Jun	10	F	614	21-Jun	10	F	567
20-Jun	11	M	599	21-Jun	11	M	615
20-Jun	12	F	569	21-Jun	12	M	560
20-Jun	13	F	556	21-Jun	13	F	565
20-Jun	14	F	564	21-Jun	14	M	624
20-Jun	15	M	578	21-Jun	15	M	572
20-Jun	16	M	561	21-Jun	16	F	597
20-Jun	17	M	563	21-Jun	17	M	549
20-Jun	18	M	564	21-Jun	18	F	592
20-Jun	19	M	580	21-Jun	19	M	571
20-Jun	20	M	507	21-Jun	20	F	568
20-Jun	21	M	614	21-Jun	21	M	599
20-Jun	22	M	608	21-Jun	22	M	570
20-Jun	23	M	590	21-Jun	23	M	590
20-Jun	24	M	594	21-Jun	24	F	578
20-Jun	25	M	553	21-Jun	25	M	598
20-Jun	26	M	546	21-Jun	26	M	594
20-Jun	27	F	561	21-Jun	27	M	568
20-Jun	28	F	586	21-Jun	28	M	628
20-Jun	29	M	618	21-Jun	29	M	572
20-Jun	30	F	556	21-Jun	30	M	577

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
22-Jun	1	M	529	23-Jun	1	M	567
22-Jun	2	M	591	23-Jun	2	M	597
22-Jun	3	M	608	23-Jun	3	F	554
22-Jun	4	M	590	23-Jun	4	M	619
22-Jun	5	F	575	23-Jun	5	M	557
22-Jun	6	M	601	23-Jun	6	M	537
22-Jun	7	M	596	23-Jun	7	M	610
22-Jun	8	M	640	23-Jun	8	M	614
22-Jun	9	M	556	23-Jun	9	M	597
22-Jun	10	F	504	23-Jun	10	M	550
22-Jun	11	F	591	23-Jun	11	F	545
22-Jun	12	M	559	23-Jun	12	F	558
22-Jun	13	F	566	23-Jun	13	M	570
22-Jun	14	F	569	23-Jun	14	F	552
22-Jun	15	M	588	23-Jun	15	M	610
22-Jun	16	M	603	23-Jun	16	M	596
22-Jun	17	M	640	23-Jun	17	F	588
22-Jun	18	F	557	23-Jun	18	F	574
22-Jun	19	M	644	23-Jun	19	M	585
22-Jun	20	M	572	23-Jun	20	M	568
22-Jun	21	F	559	23-Jun	21	F	555
22-Jun	22	F	595	23-Jun	22	M	587
22-Jun	23	F	589	23-Jun	23	M	610
22-Jun	24	F	595	23-Jun	24	M	541
22-Jun	25	M	614	23-Jun	25	F	569
22-Jun	26	F	581	23-Jun	26	M	606
22-Jun	27	M	567	23-Jun	27	M	557
22-Jun	28	F	581	23-Jun	28	M	604
22-Jun	29	M	585	23-Jun	29	M	612
22-Jun	30	M	566	23-Jun	30	F	572

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
24-Jun	1	M	553	25-Jun	1	M	616
24-Jun	2	M	606	25-Jun	2	M	583
24-Jun	3	F	593	25-Jun	3	F	563
24-Jun	4	M	573	25-Jun	4	F	578
24-Jun	5	M	609	25-Jun	5	M	560
24-Jun	6	F	570	25-Jun	6	M	573
24-Jun	7	F	566	25-Jun	7	M	583
24-Jun	8	F	576	25-Jun	8	M	559
24-Jun	9	F	559	25-Jun	9	M	601
24-Jun	10	M	577	25-Jun	10	M	573
24-Jun	11	F	546	25-Jun	11	M	542
24-Jun	12	M	591	25-Jun	12	M	617
24-Jun	13	M	601	25-Jun	13	M	578
24-Jun	14	M	612	25-Jun	14	F	529
24-Jun	15	M	586	25-Jun	15	M	592
24-Jun	16	F	555	25-Jun	16	F	555
24-Jun	17	M	619	25-Jun	17	F	557
24-Jun	18	F	562	25-Jun	18	M	587
24-Jun	19	F	567	25-Jun	19	M	652
24-Jun	20	M	560	25-Jun	20	F	603
24-Jun	21	M	562	25-Jun	21	M	535
24-Jun	22	F	566	25-Jun	22	M	573
24-Jun	23	M	576	25-Jun	23	M	550
24-Jun	24	M	568	25-Jun	24	M	613
24-Jun	25	M	609	25-Jun	25	M	536
24-Jun	26	M	623	25-Jun	26	M	556
24-Jun	27	M	555	25-Jun	27	M	541
24-Jun	28	M	562	25-Jun	28	M	606
24-Jun	29	F	558	25-Jun	29	M	587
24-Jun	30	M	600	25-Jun	30	M	533

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
26-Jun	1	M	598	27-Jun	1	F	596
26-Jun	2	F	580	27-Jun	2	M	557
26-Jun	3	F	575	27-Jun	3	M	570
26-Jun	4	F	557	27-Jun	4	M	588
26-Jun	5	M	577	27-Jun	5	M	552
26-Jun	6	M	560	27-Jun	6	M	569
26-Jun	7	M	605	27-Jun	7	M	563
26-Jun	8	M	555	27-Jun	8	M	571
26-Jun	9	F	545	27-Jun	9	M	592
26-Jun	10	F	548	27-Jun	10	F	558
26-Jun	11	F	573	27-Jun	11	M	594
26-Jun	12	F	570	27-Jun	12	M	573
26-Jun	13	F	595	27-Jun	13	M	560
26-Jun	14	M	575	27-Jun	14	M	563
26-Jun	15	F	530	27-Jun	15	M	543
26-Jun	16	M	638	27-Jun	16	M	574
26-Jun	17	F	567	27-Jun	17	M	533
26-Jun	18	M	630	27-Jun	18	F	591
26-Jun	19	M	601	27-Jun	19	M	597
26-Jun	20	F	560	27-Jun	20	F	593
26-Jun	21	F	550	27-Jun	21	M	573
26-Jun	22	F	536	27-Jun	22	F	540
26-Jun	23	F	557	27-Jun	23	M	569
26-Jun	24	M	574	27-Jun	24	M	538
26-Jun	25	F	584	27-Jun	25	M	575
26-Jun	26	F	558	27-Jun	26	M	534
26-Jun	27	F	560	27-Jun	27	F	559
26-Jun	28	M	539	27-Jun	28	M	647
26-Jun	29	M	609	27-Jun	29	M	587
26-Jun	30	M	620	27-Jun	30	F	546

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
28-Jun	1	M	518	29-Jun	1	M	575
28-Jun	2	F	530	29-Jun	2	F	565
28-Jun	3	F	584	29-Jun	3	M	556
28-Jun	4	F	569	29-Jun	4	M	552
28-Jun	5	M	558	29-Jun	5	M	554
28-Jun	6	M	576	29-Jun	6	M	568
28-Jun	7	M	540	29-Jun	7	F	619
28-Jun	8	M	618	29-Jun	8	F	587
28-Jun	9	M	584	29-Jun	9	M	570
28-Jun	10	M	609	29-Jun	10	M	529
28-Jun	11	M	596	29-Jun	11	M	520
28-Jun	12	M	542	29-Jun	12	M	571
28-Jun	13	M	549	29-Jun	13	F	581
28-Jun	14	M	573	29-Jun	14	M	578
28-Jun	15	F	579	29-Jun	15	M	585
28-Jun	16	M	579	29-Jun	16	M	560
28-Jun	17	F	606	29-Jun	17	F	572
28-Jun	18	M	610	29-Jun	18	M	510
28-Jun	19	M	567	29-Jun	19	M	581
28-Jun	20	M	577	29-Jun	20	F	574
28-Jun	21	F	557	29-Jun	21	M	605
28-Jun	22	F	562	29-Jun	22	M	538
28-Jun	23	F	529	29-Jun	23	F	579
28-Jun	24	F	555	29-Jun	24	F	516
28-Jun	25	F	564	29-Jun	25	M	593
28-Jun	26	M	684	29-Jun	26	F	539
28-Jun	27	M	593	29-Jun	27	M	588
28-Jun	28	M	591	29-Jun	28	F	549
28-Jun	29	M	566	29-Jun	29	M	621
28-Jun	30	F	574	29-Jun	30	M	534

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
30-Jun	1	M	607	1-Jul	1	M	569
30-Jun	2	F	552	1-Jul	2	F	600
30-Jun	3	M	577	1-Jul	3	F	579
30-Jun	4	M	580	1-Jul	4	M	539
30-Jun	5	F	547	1-Jul	5	F	586
30-Jun	6	M	559	1-Jul	6	M	528
30-Jun	7	M	514	1-Jul	7	M	579
30-Jun	8	M	594	1-Jul	8	M	564
30-Jun	9	M	586	1-Jul	9	M	568
30-Jun	10	M	564	1-Jul	10	F	590
30-Jun	11	M	574	1-Jul	11	F	580
30-Jun	12	M	571	1-Jul	12	M	550
30-Jun	13	M	578	1-Jul	13	M	551
30-Jun	14	M	567	1-Jul	14	M	601
30-Jun	15	M	576	1-Jul	15	M	546
30-Jun	16	M	565	1-Jul	16	F	557
30-Jun	17	M	551	1-Jul	17	M	556
30-Jun	18	M	542	1-Jul	18	F	569
30-Jun	19	M	526	1-Jul	19	M	547
30-Jun	20	F	551	1-Jul	20	M	566
30-Jun	21	M	552	1-Jul	21	F	555
30-Jun	22	M	502	1-Jul	22	F	558
30-Jun	23	F	583	1-Jul	23	M	530
30-Jun	24	M	591	1-Jul	24	F	539
30-Jun	25	M	571	1-Jul	25	F	582
30-Jun	26	M	571	1-Jul	26	F	592
30-Jun	27	F	563	1-Jul	27	M	601
30-Jun	28	M	572	1-Jul	28	M	600
30-Jun	29	M	553	1-Jul	29	M	559
30-Jun	30	M	566	1-Jul	30	F	554

^a MEFT = length measurement from mid-eye to fork of tail.

Appendix B4. Individual summer chum salmon sex and length data, by day, sampled from the 6.0 inch mesh, 50 mesh deep gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
18-Jun	1	F	606	19-Jun	1	M	586
18-Jun	2	F	552	19-Jun	2	F	569
18-Jun	3	M	591	19-Jun	3	M	581
18-Jun	4	M	595	19-Jun	4	F	566
18-Jun	5	F	541	19-Jun	5	M	617
18-Jun	6	M	565	19-Jun	6	F	605
18-Jun	7	F	582	19-Jun	7	M	623
18-Jun	8	F	550	19-Jun	8	M	586
18-Jun	9	M	580	19-Jun	9	M	581
18-Jun	10	M	599	19-Jun	10	M	593
18-Jun	11	M	579	19-Jun	11	M	602
18-Jun	12	F	605	19-Jun	12	M	574
18-Jun	13	F	584	19-Jun	13	M	613
18-Jun	14	F	586	19-Jun	14	M	584
18-Jun	15	F	574	19-Jun	15	F	572
18-Jun	16	M	590	19-Jun	16	F	554
18-Jun	17	F	570	19-Jun	17	M	591
18-Jun	18	F	570	19-Jun	18	M	562
18-Jun	19	M	612	19-Jun	19	F	584
18-Jun	20	M	620	19-Jun	20	M	572
18-Jun	21	M	585	19-Jun	21	F	554
18-Jun	22	F	577	19-Jun	22	F	595
18-Jun	23	M	635	19-Jun	23	M	557
18-Jun	24	M	615	19-Jun	24	M	590
18-Jun	25	M	549	19-Jun	25	M	621
18-Jun	26	M	565	19-Jun	26	F	566
18-Jun	27	F	564	19-Jun	27	F	561
18-Jun	28	F	586	19-Jun	28	M	567
18-Jun	29	F	565	19-Jun	29	M	589
18-Jun	30	M	540	19-Jun	30	F	545

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
20-Jun	1	M	572	21-Jun	1	M	565
20-Jun	2	M	546	21-Jun	2	M	578
20-Jun	3	F	579	21-Jun	3	M	617
20-Jun	4	M	571	21-Jun	4	F	540
20-Jun	5	M	570	21-Jun	5	M	569
20-Jun	6	M	616	21-Jun	6	M	581
20-Jun	7	M	585	21-Jun	7	M	586
20-Jun	8	M	578	21-Jun	8	M	623
20-Jun	9	F	519	21-Jun	9	F	565
20-Jun	10	M	583	21-Jun	10	M	592
20-Jun	11	M	590	21-Jun	11	F	560
20-Jun	12	M	611	21-Jun	12	M	545
20-Jun	13	M	617	21-Jun	13	M	542
20-Jun	14	M	643	21-Jun	14	F	576
20-Jun	15	F	550	21-Jun	15	M	654
20-Jun	16	M	581	21-Jun	16	M	549
20-Jun	17	M	551	21-Jun	17	M	599
20-Jun	18	F	614	21-Jun	18	M	569
20-Jun	19	M	579	21-Jun	19	M	618
20-Jun	20	F	588	21-Jun	20	M	585
20-Jun	21	M	542	21-Jun	21	M	571
20-Jun	22	M	617	21-Jun	22	M	562
20-Jun	23	M	599	21-Jun	23	M	560
20-Jun	24	M	623	21-Jun	24	M	622
20-Jun	25	M	614	21-Jun	25	F	608
20-Jun	26	M	560	21-Jun	26	M	556
20-Jun	27	M	571	21-Jun	27	M	628
20-Jun	28	F	552	21-Jun	28	M	587
20-Jun	29	F	608	21-Jun	29	M	545
20-Jun	30	M	609	21-Jun	30	F	582

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
22-Jun	1	F	545	23-Jun	1	F	556
22-Jun	2	F	583	23-Jun	2	M	619
22-Jun	3	F	592	23-Jun	3	M	555
22-Jun	4	M	654	23-Jun	4	F	605
22-Jun	5	M	542	23-Jun	5	M	612
22-Jun	6	F	587	23-Jun	6	F	554
22-Jun	7	M	547	23-Jun	7	M	574
22-Jun	8	F	578	23-Jun	8	M	565
22-Jun	9	M	648	23-Jun	9	M	595
22-Jun	10	F	549	23-Jun	10	M	551
22-Jun	11	M	588	23-Jun	11	F	556
22-Jun	12	M	586	23-Jun	12	F	563
22-Jun	13	M	597	23-Jun	13	M	545
22-Jun	14	F	589	23-Jun	14	M	570
22-Jun	15	M	652	23-Jun	15	M	580
22-Jun	16	M	570	23-Jun	16	M	580
22-Jun	17	M	594	23-Jun	17	F	572
22-Jun	18	M	624	23-Jun	18	M	574
22-Jun	19	F	590	23-Jun	19	F	560
22-Jun	20	F	569	23-Jun	20	M	563
22-Jun	21	M	589	23-Jun	21	M	569
22-Jun	22	F	545	23-Jun	22	F	566
22-Jun	23	F	570	23-Jun	23	F	573
22-Jun	24	F	557	23-Jun	24	F	583
22-Jun	25	M	570	23-Jun	25	M	550
22-Jun	26	M	573	23-Jun	26	M	591
22-Jun	27	M	606	23-Jun	27	F	597
22-Jun	28	M	585	23-Jun	28	M	589
22-Jun	29	F	588	23-Jun	29	M	575
22-Jun	30	F	565	23-Jun	30	F	560

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
24-Jun	1	F	564	25-Jun	1	F	551
24-Jun	2	M	565	25-Jun	2	M	564
24-Jun	3	F	555	25-Jun	3	M	587
24-Jun	4	M	574	25-Jun	4	F	508
24-Jun	5	F	593	25-Jun	5	M	569
24-Jun	6	M	576	25-Jun	6	F	518
24-Jun	7	M	582	25-Jun	7	M	582
24-Jun	8	F	572	25-Jun	8	M	553
24-Jun	9	M	547	25-Jun	9	M	553
24-Jun	10	M	580	25-Jun	10	M	559
24-Jun	11	M	554	25-Jun	11	M	564
24-Jun	12	M	564	25-Jun	12	F	558
24-Jun	13	M	588	25-Jun	13	F	556
24-Jun	14	F	556	25-Jun	14	F	555
24-Jun	15	M	586	25-Jun	15	F	589
24-Jun	16	F	572	25-Jun	16	F	583
24-Jun	17	F	571	25-Jun	17	F	549
24-Jun	18	F	594	25-Jun	18	M	559
24-Jun	19	F	564	25-Jun	19	M	564
24-Jun	20	F	593	25-Jun	20	M	560
24-Jun	21	F	566	25-Jun	21	F	580
24-Jun	22	M	584	25-Jun	22	F	534
24-Jun	23	M	584	25-Jun	23	M	539
24-Jun	24	F	544	25-Jun	24	F	524
24-Jun	25	M	568	25-Jun	25	F	574
24-Jun	26	F	545	25-Jun	26	M	588
24-Jun	27	F	571	25-Jun	27	M	605
24-Jun	28	M	584	25-Jun	28	M	639
24-Jun	29	M	595	25-Jun	29	F	520
24-Jun	30	F	596	25-Jun	30	F	557

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
26-Jun	1	F	542	27-Jun	1	M	526
26-Jun	2	F	586	27-Jun	2	M	578
26-Jun	3	M	588	27-Jun	3	M	556
26-Jun	4	F	573	27-Jun	4	M	580
26-Jun	5	M	588	27-Jun	5	M	557
26-Jun	6	M	586	27-Jun	6	M	569
26-Jun	7	M	575	27-Jun	7	F	541
26-Jun	8	M	534	27-Jun	8	M	609
26-Jun	9	M	586	27-Jun	9	M	553
26-Jun	10	M	553	27-Jun	10	F	564
26-Jun	11	M	598	27-Jun	11	M	629
26-Jun	12	M	590	27-Jun	12	F	569
26-Jun	13	M	552	27-Jun	13	M	540
26-Jun	14	M	581	27-Jun	14	M	586
26-Jun	15	M	553	27-Jun	15	F	545
26-Jun	16	M	599	27-Jun	16	M	564
26-Jun	17	M	564	27-Jun	17	M	580
26-Jun	18	M	547	27-Jun	18	F	570
26-Jun	19	F	572	27-Jun	19	F	583
26-Jun	20	F	514	27-Jun	20	F	570
26-Jun	21	M	570	27-Jun	21	M	562
26-Jun	22	F	548	27-Jun	22	F	500
26-Jun	23	M	579	27-Jun	23	F	592
26-Jun	24	F	566	27-Jun	24	M	546
26-Jun	25	F	540	27-Jun	25	M	575
26-Jun	26	M	562	27-Jun	26	M	608
26-Jun	27	M	593	27-Jun	27	M	566
26-Jun	28	F	534	27-Jun	28	F	562
26-Jun	29	M	526	27-Jun	29	F	553
26-Jun	30	F	560	27-Jun	30	M	556

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
28-Jun	1	M	545	29-Jun	1	M	539
28-Jun	2	F	622	29-Jun	2	F	548
28-Jun	3	M	548	29-Jun	3	M	580
28-Jun	4	F	566	29-Jun	4	M	561
28-Jun	5	M	546	29-Jun	5	M	584
28-Jun	6	M	622	29-Jun	6	M	593
28-Jun	7	M	547	29-Jun	7	M	571
28-Jun	8	M	585	29-Jun	8	F	552
28-Jun	9	M	621	29-Jun	9	F	550
28-Jun	10	M	609	29-Jun	10	F	564
28-Jun	11	M	544	29-Jun	11	F	549
28-Jun	12	M	588	29-Jun	12	F	568
28-Jun	13	M	567	29-Jun	13	F	589
28-Jun	14	M	562	29-Jun	14	M	578
28-Jun	15	M	506	29-Jun	15	M	601
28-Jun	16	M	557	29-Jun	16	M	575
28-Jun	17	F	561	29-Jun	17	M	556
28-Jun	18	M	537	29-Jun	18	F	528
28-Jun	19	F	599	29-Jun	19	M	541
28-Jun	20	M	610	29-Jun	20	M	558
28-Jun	21	F	573	29-Jun	21	F	529
28-Jun	22	M	614	29-Jun	22	M	578
28-Jun	23	M	597	29-Jun	23	M	586
28-Jun	24	F	543	29-Jun	24	M	582
28-Jun	25	M	569	29-Jun	25	M	516
28-Jun	26	F	574	29-Jun	26	M	557
28-Jun	27	M	546	29-Jun	27	M	590
28-Jun	28	M	587	29-Jun	28	F	568
28-Jun	29	M	582	29-Jun	29	F	547
28-Jun	30	M	573	29-Jun	30	M	601

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Date (2013)	Sample Number	Sex	MEFT ^a length (mm)	Date (2013)	Sample Number	Sex	MEFT ^a length (mm)
30-Jun	1	M	529	1-Jul	1	M	546
30-Jun	2	M	593	1-Jul	2	M	559
30-Jun	3	M	566	1-Jul	3	M	570
30-Jun	4	M	576	1-Jul	4	F	559
30-Jun	5	M	572	1-Jul	5	F	580
30-Jun	6	M	606	1-Jul	6	F	570
30-Jun	7	F	574	1-Jul	7	M	566
30-Jun	8	M	603	1-Jul	8	F	569
30-Jun	9	M	537	1-Jul	9	M	570
30-Jun	10	F	586	1-Jul	10	M	560
30-Jun	11	M	572	1-Jul	11	M	551
30-Jun	12	M	592	1-Jul	12	M	536
30-Jun	13	M	561	1-Jul	13	M	571
30-Jun	14	M	592	1-Jul	14	M	603
30-Jun	15	F	578	1-Jul	15	M	595
30-Jun	16	M	575	1-Jul	16	M	542
30-Jun	17	F	550	1-Jul	17	F	550
30-Jun	18	F	556	1-Jul	18	M	599
30-Jun	19	F	558	1-Jul	19	M	590
30-Jun	20	M	584	1-Jul	20	M	587
30-Jun	21	F	557	1-Jul	21	M	534
30-Jun	22	F	549	1-Jul	22	M	569
30-Jun	23	M	561	1-Jul	23	M	525
30-Jun	24	F	528	1-Jul	24	M	602
30-Jun	25	F	558	1-Jul	25	M	605
30-Jun	26	F	541	1-Jul	26	M	543
30-Jun	27	F	573	1-Jul	27	M	543
30-Jun	28	F	579	1-Jul	28	M	555
30-Jun	29	M	543	1-Jul	29	F	586
30-Jun	30	M	595	1-Jul	30	M	573

^a MEFT = length measurement from mid-eye to fork of tail.

APPENDIX C

Age, sex, and size information for individual Chinook salmon captured and retained,
Yukon River gillnet mesh/depth study, 2013.

Appendix C1. Individual Chinook salmon age, sex and length data, by day, sampled from the 5.5 inch, 30 mesh deep test gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date	mesh (inches)	depth (mesh)	scale card	fish no.	sex	MEFT ^a length (mm)	age (Europe. notation)	total age (years)
18-Jun	5.5	30	1	1	M	667	1.3	5
18-Jun	5.5	30	1	2	M	699	1.3	5
18-Jun	5.5	30	1	3	M	565	1.2	4
18-Jun	5.5	30	1	4	M	505	1.2	4
20-Jun	5.5	30	2	1	M	NA ^b	1.2	4
20-Jun	5.5	30	2	2	M	NA ^b	1.3	5
20-Jun	5.5	30	2	3	M	NA ^b	1.2	4
22-Jun	5.5	30	3	1	F	813	1.4	6
24-Jun	5.5	30	4	1	F	806	1.4	6
25-Jun	5.5	30	5	1	M	555	1.2	4
25-Jun	5.5	30	5	2	M	554	1.2	4
26-Jun	5.5	30	6	1	M	518	1.2	4
26-Jun	5.5	30	6	2	M	475	1.2	4
26-Jun	5.5	30	6	3	M	525	1.2	4
29-Jun	5.5	30	7	1	F	753	1.3	5
Male Salmon				12	0.800	563	1.23	4.3
Female Salmon				3	0.200	791	1.37	5.7
Sexes Combined				15	1.000	620	1.25	4.5

^a MEFT = length measurement from mid-eye to fork of tail.

^b Length measurement not taken.

Appendix C2. Individual Chinook salmon age, sex and length data, by day, sampled from the 5.5 inch, 50 mesh deep test gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date	mesh (inches)	depth (mesh)	scale card	fish no.	sex	MEFT ^a length (mm)	age (Europe. notation)	total age (years)
18-Jun	5.5	50	1	1	M	561	1.2	4
18-Jun	5.5	50	1	2	M	512	1.2	4
22-Jun	5.5	50	2	1	M	540	1.2	4
22-Jun	5.5	50	2	2	M	562	1.2	4
22-Jun	5.5	50	2	3	F	782	1.3	5
23-Jun	5.5	50	3	1	F	809	1.4	6
23-Jun	5.5	50	3	2	M	649	NA ^b	NA ^b
24-Jun	5.5	50	4	1	M	515	1.2	4
26-Jun	5.5	50	5	1	M	734	1.3	5
26-Jun	5.5	50	5	2	M	789	1.4	6
28-Jun	5.5	50	6	1	F	889	1.4	6
29-Jun	5.5	50	7	1	M	658	1.3	5
30-Jun	5.5	50	8	1	M	556	1.2	4
1-Jul	5.5	50	9	1	F	840	1.4	6
Male Salmon				10	0.714	608	1.24	4.4
Female Salmon				4	0.286	830	1.38	5.8
Sexes Combined				14	1.000	671	1.28	4.8

^a MEFT = length measurement from mid-eye to fork of tail.

^b Scale was regenerated and, therefore, no age is available

Appendix C3. Individual Chinook salmon age, sex and length data, by day, sampled from the 6.0 inch, 30 mesh deep test gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date	mesh (inches)	depth (mesh)	scale card	fish no.	sex	MEFT ^a length (mm)	age (Europe. notation)	total age (years)
18-Jun	6.0	30	1	1	M	664	1.3	5
18-Jun	6.0	30	1	2	M	516	1.2	4
22-Jun	6.0	30	2	1	M	569	1.2	4
23-Jun	6.0	30	3	1	M	545	1.2	4
25-Jun	6.0	30	4	1	F	802	1.4	6
25-Jun	6.0	30	4	2	M	563	1.2	4
26-Jun	6.0	30	5	1	M	538	1.2	4
26-Jun	6.0	30	5	2	M	534	1.2	4
26-Jun	6.0	30	5	3	M	512	1.2	4
26-Jun	6.0	30	5	4	M	745	Na ^b	Na ^b
27-Jun	6.0	30	6	1	F	925	1.4	6
27-Jun	6.0	30	6	2	F	818	1.3	5
28-Jun	6.0	30	7	1	M	534	1.2	4
29-Jun	6.0	30	8	1	M	665	1.4	6
29-Jun	6.0	30	8	2	M	820	1.3	5
Male Salmon				12	0.800	600.4	1.24	4.4
Female Salmon				3	0.200	848.3	1.37	5.7
Sexes Combined				15	1.000	650.0	1.26	4.6

^a MEFT = length measurement from mid-eye to fork of tail.

^b Scale was regenerated and, therefore, no age is available.

Appendix C4. Individual Chinook salmon age, sex and length data, by day, sampled from the 6.0 inch, 50 mesh deep test gillnets, Lower Yukon Area gillnet mesh-depth study, June 18-July 1, 2013.

Date	mesh (inches)	depth (mesh)	scale card	fish no.	sex	MEFT ^a length (mm)	age (Europe. notation)	total age (years)
18-Jun	6.0	50	1	1	F	856	1.4	6
18-Jun	6.0	50	1	2	M	758	1.4	6
19-Jun	6.0	50	2	1	F	764	1.3	5
20-Jun	6.0	50	3	1	M	NA	1.4	6
21-Jun	6.0	50	4	1	M	634	1.3	5
21-Jun	6.0	50	4	2	M	809	1.4	6
21-Jun	6.0	50	4	3	M	709	1.3	5
22-Jun	6.0	50	5	1	M	568	1.2	4
23-Jun	6.0	50	6	1	M	721	1.3	5
24-Jun	6.0	50	7	1	M	515	1.2	4
26-Jun	6.0	50	8	1	F	804	1.4	6
26-Jun	6.0	50	8	2	M	554	1.2	4
26-Jun	6.0	50	8	3	M	716	1.3	5
26-Jun	6.0	50	8	4	F	843	1.4	6
27-Jun	6.0	50	9	1	M	553	1.2	4
28-Jun	6.0	50	10	1	F	910	1.4	6
30-Jun	6.0	50	11	1	M	599	1.2	4
30-Jun	6.0	50	11	2	F	831	1.3	5
1-Jul	6.0	50	12	1	U	NA ^b	NA ^b	NA ^b
Male Salmon				12	0.632	648.7	1.28	4.8
Female Salmon				6	0.333	834.7	1.37	5.7
Sexes Combined ^c				19	0.965	697.6	1.29	5.1

^a MEFT = length measurement from mid-eye to fork of tail.

^b Chinook salmon was lost before sampled. Therefore, no data were collected.

^c Includes the lost salmon caught on 1–July with regard to number of salmon caught and total proportion.