

ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

NEWS RELEASE



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2015 Preliminary Yukon River Summer Season Summary

This informational letter provides a preliminary summary of the 2015 summer season Yukon River Chinook and summer chum salmon fisheries. Subsistence and personal use harvests for 2015 are not available at this time. For management purposes, the Yukon River is divided into several fishing districts and subdistricts (Figure 1).

2015 Preseason Outlook

Chinook Salmon

The Yukon River Chinook salmon stocks have experienced a drastic downward shift in production since the 1998 run (Figure 2). The cause of this decline in production remains largely unknown, though it is generally believed that many factors (e.g., freshwater survival, marine conditions, climate change) are involved. Though parent year escapement objectives were generally achieved throughout the drainage, Chinook salmon returns since 2007 have been much lower than expected. The 2015 preseason outlook, which attempts to account for low productivity observed since 2007, was 118,000–140,000 Chinook salmon. Thus, the 2015 Yukon River Chinook salmon run was expected to range from poor to below average. The upper end of this range is on par with the run size observed in 2014 and, similar to 2014, subsistence fishing restrictions would be necessary to meet escapement goals. As in recent years, initial management would be based on the expectation that the 2015 Chinook salmon run size would likely be near the lower end of this range. Achieving escapement objectives was expected to be challenging with this run size and severe conservation measures would be necessary.

Summer Chum Salmon

The strength of the summer chum salmon run in 2015 was dependent on production from the 2011 (age-4 fish) and 2010 (age-5 fish) escapements, as these age classes dominate the run. Escapement estimates for summer chum salmon in primary parent years 2010 and 2011 were approximately 1.3 million and 1.8 million, respectively. Yukon River summer chum salmon generally exhibit strong run size correlations among adjacent years and it was expected that the

2015 total run would be similar to the 2014 run. The 2015 summer chum salmon preseason outlook was estimated to be 1.8 to 2.4 million fish.

The 2015 summer chum salmon run was anticipated to provide for escapements, a normal subsistence harvest, and a surplus for commercial harvest. Summer chum salmon runs have provided for a harvestable surplus in each of the last 10 years (2005–2014). Based on the preseason forecast, it was expected that a commercially harvestable surplus of 800,000 to 1,400,000 summer chum salmon would be available in 2015. Similar to last year, the actual harvest of summer chum salmon in 2015 was anticipated to be affected by a weak Chinook salmon run, as Chinook salmon are incidentally harvested in summer chum salmon-directed fisheries. It was anticipated that gear types that allow for the live release of Chinook salmon, such as beach seines, dip nets and live-release fish wheels, would be employed for both the subsistence and commercial harvest of summer chum salmon.

2015 Preseason Management Strategy

In response to continued weak Chinook salmon runs, the Yukon River Drainage Fisheries Association (YRDFA) facilitated a preseason planning meeting to provide managers, fishermen, tribal council representatives, and other stakeholders the opportunity to share information, provide input, and discuss management options available. The purpose of this meeting was to cooperatively identify practical management strategies that would assist in getting adequate numbers of Chinook salmon to their spawning grounds in Alaska and Canada. Based on input from this meeting, a conservative preseason management plan was developed for the Yukon River summer season fishery. The preseason plan included the following key components:

- Before Chinook salmon enter the river, subsistence fishing opportunity for non-salmon species would be provided and gillnets would be restricted to 6-inch or smaller mesh size.
- Subsistence salmon fishing closures would be initiated in the Coastal District and Districts 1 and 2 when assessment information from test fisheries indicated that the first Chinook salmon have begun their migration into the river. Closures would occur chronologically in each district based on the historical upriver migration timing of Chinook salmon. It was expected that subsistence fishing in the Koyukuk, Innoko, and Tanana rivers would also experience closures to protect Chinook salmon in those areas.
- During subsistence salmon fishing closures, non-salmon species could be harvested using 4-inch or smaller mesh size gillnets not exceeding 60-feet in length. However, targeting of Chinook salmon with this gear type would not be allowed. The opportunity to harvest non-salmon would be discontinued if this gear was used to target Chinook salmon.
- When summer chum salmon become abundant, subsistence and commercial fishing opportunities would be provided with selective gear such as dip nets, beach seines, and manned fish wheels that require the immediate and careful release of all Chinook salmon alive.
- Fishermen would be strongly encouraged to avoid fishing where Chinook salmon may be encountered.
- Subsistence restrictions would be relaxed after the Chinook salmon run passed through each district. If inseason assessment projects indicated that escapement goals would be met, the use of 6-inch gillnets would be considered to allow the harvest of summer chum salmon and small Chinook salmon between pulses when incidental harvest of Chinook salmon was expected to be low.

- The sport fishery for Chinook salmon would be closed in the U.S. portion of the Yukon River drainage (excluding the Tanana River drainage). Retention and possession of Chinook salmon would not be allowed.

2015 Assessment

The department monitors a suite of assessment projects that provide critical salmon run timing, relative abundance, and stock composition information. Inseason run assessments included test fisheries, sonar passage estimates, subsistence and commercial harvest data, and age, sex, and length (ASL) data. In addition, genetic samples were collected and analyzed inseason from multiple assessment projects to determine stock contribution for both Chinook and summer chum salmon. Information from multiple assessment projects and subsistence and commercial fishing reports was corroborated when possible to provide the best information possible.

Initial assessment in the lower river is critical to implementing an inseason management plan throughout the drainage. Three projects on the lower river provided timing information and inseason abundance: the Lower Yukon Test Fishery (LYTF), a 8.5-inch set net project primarily designed to assess Chinook salmon run timing operated in the Middle and South mouths of the Yukon River; a summer chum salmon directed drift gillnet test fishery using 5.5-inch mesh operated in the Middle and South mouths of the Yukon River; and a mainstem sonar project near Pilot Station which provides abundance estimates for Chinook and summer chum salmon. Additional drift gillnet test fishing with 8.25-inch mesh was conducted throughout the season in the South Mouth only for Chinook salmon to provide supplemental run timing and relative abundance information. Given the anticipated low run size, efforts were made by the department to reduce Chinook salmon mortality in test fisheries. Chinook salmon caught in drift and set nets that were deemed healthy were released alive immediately. Any Chinook salmon mortalities were delivered to Tribal Councils in various villages for distribution to village elders. Additionally, set net test fishing in the South Mouth for Chinook salmon was discontinued once the first pulse of Chinook salmon was identified.

Ice break up at the mouth of the Yukon River occurred from May 18–19, which was a few days earlier than the average break up date of May 22 (based on the years 1994–2014). The first summer chum salmon of the year was caught in the 5.5-inch drift gillnet test fishery on May 24, about a week earlier than the average date of June 2 (based on the years 1994–2014). The first subsistence caught Chinook salmon was reportedly harvested on May 27, three days earlier than the average date of May 30 (based on the years 1994–2014). The department relied on subsistence harvest reports to guide initial management actions during the early portion of the salmon runs.

The LYTF was operational at the South Mouth site on May 28 and at the Middle Mouth site on June 6. The first Chinook salmon caught in the test fishery was on May 28. In an effort to reduce Chinook salmon mortality, the set net site located in the Big Eddy area of the South Mouth was discontinued after June 13. Additionally, only one set net site operated in Middle Mouth in a further effort to reduce Chinook mortality. The LYTF concluded operations on July 13 with a cumulative CPUE of 39.63, which was above the historical¹ average CPUE of 20.04. The first quarter point, midpoint, and third quarter point were June 15, June 25, and June 30, respectively. The 8.25-inch drift gillnet project for Chinook salmon operated in Big Eddy until July 15 and

¹ Includes years 1998–2011. The years of 2012–2014 were not included due to project difficulties.

provided valuable supplemental run timing information for Chinook salmon entering the South Mouth of the Yukon River. In accordance with the goal of reducing Chinook salmon mortality, 506 Chinook salmon were released from the LYTF and the 8.25-inch drift gillnet test fishery.

The preliminary cumulative passage estimate at the sonar project located near Pilot Station was approximately 115,800 Chinook salmon, which was below the recent historical average² of 143,600. Chinook salmon entered the river in four pulses consisting of 15,500 fish, 27,500 fish, 9,800 fish, and 31,300 fish each. Inseason run assessment analysis was focused on making comparisons to years with similar run timing in order to make informed management decisions. However, assessment of the 2015 run timing was complicated by the early entry of Chinook salmon into the river after an early ice out followed by a delayed buildup of fish in the river. The first quarter point, midpoint, and third quarter point for the sonar project near Pilot Station were on June 18, June 24, and June 29, respectively, which were similar to historical averages. While the 2015 Chinook salmon run began entering the river early, the run timing ended up being close to historical average run timing.

Genetic mixed stock analysis (MSA) characterized three strata groups of Chinook salmon as they passed the sonar project located near Pilot Station. The three strata periods were May 30–June 17 (number sampled (n) = 139), June 18–June 25 (n=131), and June 26–July 2 (n=110). Genetic MSA indicated the Canadian-origin component of each stratum to be 50%, 39%, and 31% for the first, second, and third stratum, respectively. The results of the genetic MSA suggested a weaker contribution of the Canadian-origin stock to the overall Chinook salmon run size than 2014. For more background information on genetic MSA for Yukon River Chinook salmon and related topics and updates, please refer to the department's Gene Conservation Laboratory webpage².

In 2015, an estimated 1.4 million summer chum salmon passed the sonar project near Pilot Station, which was below the historical median of 1.7 million for the project. The first quarter point, midpoint, and third quarter point were June 21, June 28, and July 2, respectively. Four large pulses of summer chum salmon were detected with the largest group, approximately 361,700 fish, passing the sonar project from June 27–June 29.

2015 Subsistence Fishery Overview

As in recent years, management of the 2015 summer salmon season was based on the disparity in run strength between the overlapping Chinook and summer chum salmon runs.

In response to what was initially expected to be an early and weak Chinook salmon run, a precautionary management approach was taken following break up by restricting gillnets to 6-inch or smaller mesh size beginning May 20 in the Coastal District and Districts 1 and 2. The intent was to have a gear restriction already in place as Chinook salmon began their migration while still providing fishing opportunity for non-salmon species (e.g., sheefish) traditionally harvested in the Lower Yukon immediately following break up. This gear restriction was also implemented in upriver districts chronologically prior to the arrival of Chinook salmon in each district.

Consistent with the preseason management plan, conservative actions were broadly implemented early in the Chinook salmon run. Subsistence salmon fishing was closed in the Northern portion

² Average includes years 1995, 1997, 2000, 2002–2008, and 2010–2014. The sonar did not operate in 1996 and project difficulties occurred in 2000, 2001, and 2009.

² http://www.adfg.alaska.gov/index.cfm?adfg=fishinggeneconservationlab.yukonchinook_baseline

of the Coastal District and Districts 1 and 2 on May 30. Subsistence salmon fishing closures were similarly implemented in upriver districts chronologically as Chinook salmon migrated through these areas. Based on the expectation that the 2015 Chinook salmon run would be weak, these closures were expected to be in place for nearly the entire duration of the Chinook salmon run unless inseason assessment projects indicated that escapement goals were likely to be met.

Subsistence fishing opportunity was provided during subsistence salmon closures for the harvest of non-salmon species, such as sheefish, whitefish species, and Northern pike, with 4-inch or smaller mesh size gillnets not exceeding 60 feet in length. This opportunity to harvest non-salmon species was allowed at all times during subsistence salmon fishing closures. The department encouraged subsistence fishermen to avoid fishing in areas where Chinook salmon were known to migrate.

When assessment information indicated that summer chum salmon were beginning to enter the river, subsistence opportunity was provided 24 hours a day, seven days per week with dip net gear in Districts 1 through 3, and with dip nets and live-release fish wheels in District 4. Chinook salmon were required to be immediately released alive from these selective gear types. Assessment information from the sonar project near Pilot Station and genetic analysis indicated a weaker-than-expected Canadian-origin Chinook salmon run, but that the run size was likely large enough to meet the border objective and could support a small incidental harvest of Chinook salmon. Subsistence fishing opportunities with gillnets restricted to 6-inch or smaller mesh was provided in Districts 1 through 4 between Chinook salmon pulses to more efficiently harvest summer chum salmon, while minimizing the incidental harvest of Chinook salmon. These gillnet openings were intended to target large groups of summer chum salmon passing through the area and any incidentally caught Chinook salmon could be kept for subsistence purposes. Efforts were made to protect Canadian-origin Chinook salmon in areas where the Alaska and Canadian stocks segregate and bank-orient. For example, subsistence salmon fishing in Subdistrict 4-B (north bank) remained restricted to selective gear types and gillnet opportunity was not provided until late in the season, since Canadian-origin stocks primarily migrate along the north bank of the mainstem Yukon River in that area.

Once the majority of the Canadian-origin Chinook salmon run was through each district, subsistence salmon fishing restrictions were relaxed. Starting July 9, subsistence salmon fishing in Districts 1 and 2 was open with 6-inch or smaller mesh size gillnets 24 hours a day, seven days per week except for six hours before, during, and six hours after a commercial fishing period. On July 12, District 3 was put on their regulatory subsistence salmon fishing schedule of two 36-hour periods per week with gillnets restricted to 6-inch or smaller mesh and dip net fishing was officially discontinued. However, starting July 14, subsistence salmon fishing time in District 3 was relaxed to 24 hours a day, seven days per week with 6-inch or smaller mesh size gillnets to target summer chum salmon after most of the Chinook salmon had passed. Selective gear types were discontinued and subsistence salmon fishing with gillnets restricted to 6-inch or smaller mesh was allowed on their regulatory schedules in Subdistrict 4-A Lower on July 15, in Subdistrict 4-A Upper on July 19, and in Subdistricts 4-B and 4-C on July 19. Shortly after, subsistence salmon fishing with the restricted gillnets was allowed five days a week starting July 22 in all of Subdistrict 4-A and starting July 26 in Subdistricts 4-B and 4-C.

While the subsistence salmon fishing closures were similarly implemented in District 5, harvest opportunity with selective gear types was not provided as very few summer chum salmon

migrate through the upper river. The most severe reductions in subsistence fishing opportunity occurred in Subdistricts 5-A, 5-B, and 5-C due to uncertainty with run assessment through this area and to avoid offering opportunity that would primarily target Canadian-origin Chinook salmon. Subsistence salmon fishing closed June 14 in Subdistricts 5-A, 5-B, and 5-C and remained closed for the majority of the season. During the subsistence fishing closures, a 48-hour 6-inch gillnet and fish wheel subsistence fishing opportunity was provided in Subdistrict 5-A along the south bank to harvest summer chum salmon and, as indicated by genetic MSA, the stronger Chinook salmon stock component bound for the Tanana River. Another 24-hour subsistence salmon fishing opportunity was provided on July 16 in Subdistricts 5-A, 5-B, and 5-C given the cumulative passage of Chinook salmon at the sonar projects near Pilot Station and Eagle indicated that the lower end of the border objective would be met. Subsistence salmon fishing in Subdistricts 5-A, 5-B, and 5-C opened on their regulatory schedule of two 48-hour periods per week on July 21 but were then liberalized to five days per week on July 28 once it was highly likely that the upper end of the border objective would be exceeded. Gear restrictions were relaxed on July 29 and fishermen could use 7.5-inch or smaller mesh gillnets and fish wheels to harvest salmon.

As in previous years, Subdistrict 5-D was further divided into three areas to allow for more management precision and flexibility when implementing management actions. Following actions taken in the lower river, Subdistrict 5-D Lower, Middle, and Upper were restricted to 6-inch or smaller mesh size gillnets prior to the arrival of Chinook salmon. As discussed at preseason meetings, fishermen in Subdistrict 5-D Lower, Middle, and Upper were provided a few days to fish on the early trickle of Chinook salmon prior to the first pulse closures on June 29, July 3, and July 5, respectively. Similar to Subdistricts 5-A, 5-B, and 5-C, a 24-hour subsistence salmon fishing opportunity with 6-inch or smaller mesh size gillnets was provided on July 19 in Subdistrict 5-D Lower and Middle. Another 36-hour subsistence fishing opportunity was provided on July 23 in Subdistricts 5-D Lower and Middle and on July 24 in Subdistrict 5-D Upper. Subsistence salmon fishing opened 24 hours a day, seven days per week on July 27 in Subdistricts 5-D Lower and Middle and on July 28 in Subdistrict 5-D Upper once confidence was gained that the upper end of the border objective would be exceeded. Gear restrictions were also relaxed on July 29 and fishermen could use 7.5-inch or smaller mesh gillnets and fish wheels to harvest salmon.

Conservative management actions were also taken in Yukon River tributaries in an effort to provide protection for Alaskan Chinook salmon stocks. In the Tanana River (Subdistricts 6-A and 6-B), subsistence salmon fishing remained on its regulatory schedule of two 42-hour periods per week for the entirety of the Chinook salmon season. However, gear was restricted to 6-inch or smaller mesh size gillnets and manned fish wheels. On July 17, fishermen were no longer required to attend their fish wheels and could retain Chinook salmon for subsistence use. Starting July 31, gillnet restrictions were relaxed and fishermen could use 7.5-inch or smaller mesh size gillnets. In Subdistrict 6-C, personal use salmon fishing was closed from June 19–July 16, spanning nearly the entire duration of the Chinook salmon run. The Koyukuk and Innoko Rivers were closed to subsistence salmon fishing from June 25–July 3 and June 26–July 3, respectively. Subsistence salmon fishing reopened 24 hours a day, seven days per week with gillnets restricted to 6-inch or smaller mesh to target summer chum salmon beginning July 4. This gear restriction was in place for the remainder of the Chinook salmon run in both tributaries.

The 2015 Chinook salmon run was conservatively managed throughout the season. The final cumulative passage at both the sonar projects near Pilot Station and Eagle indicated that the run was better than expected and hopefully subsistence fishermen can reap the benefits of their conservation efforts with improved runs in the years to come. Maintaining a management course that was focused on meeting escapement objectives would not have been possible without the full cooperation and understanding of the fishermen of the Yukon River. Over the course of the last several years, Yukon River fishermen have exhibited incredible flexibility in complying with schedule changes and gear restrictions. The department acknowledges the continued commitment made by Yukon River fishermen to conserve the valuable Chinook salmon resource for future generations.

The 2015 preliminary subsistence harvest estimates will not be available until later this winter. However, for a point of reference, more conservative management actions taken in 2014 resulted in an estimated harvest of approximately 3,300 Chinook salmon, which was a 94% reduction of the average annual harvest of approximately 51,600 fish based on harvests from 2004 to 2008. Based on the better than expected run size and inseason harvest reports, it is likely that the 2015 Chinook salmon subsistence harvest will be higher than what was observed in 2014.

2015 Commercial Fishery

Lower Yukon Districts

For the eighth consecutive year, no commercial periods targeting Chinook salmon were allowed in the mainstem Yukon River or in the Tanana River in 2015. Sale of Chinook salmon was prohibited for the fifth consecutive year. However, liberal commercial fishing opportunity with selective gear was provided to target the available surplus of summer chum salmon in Districts 1, 2, and 6. No buyer operated in Subdistrict 4-A in 2015, therefore, no commercial openings were provided in that subdistrict. Since Chinook salmon are encountered incidentally in the commercial summer chum salmon fishery, a suite of strategies were used to conservatively manage these fisheries to minimize the impact to the poor Chinook salmon run.

An early break up and the use of selective gear types allowed the department to open commercial harvest of summer chum salmon using dip nets and beach seines beginning June 11 in District 1 and June 15 in District 2. The impact to Chinook salmon was expected to be minimal as fishermen were required to immediately release all incidentally caught Chinook salmon back to the water alive from dip net and beach seine gear. The department allowed two 10-hour and seventeen 12-hour periods in District 1 and twenty 10-hour periods in District 2 using dip nets and beach seines only. The combined harvest in Districts 1 and 2 with selective gear types was approximately 227,200 summer chum salmon with 9,500 Chinook salmon reported released alive (Table 1). Dip nets accounted for the majority of the summer chum salmon harvest taken with these gear types as only a few fishermen used beach seines to commercially harvest summer chum salmon in 2015.

Table 1.—Harvest by gear type and species in the summer chum directed commercial fishery, 2015.

District	Gear	Chinook Salmon		Summer Chum Salmon		Avg. Wt.
		Number Of Fishers	Number Caught and Released	Number	Pounds	
1	Dip Net	207	3,909	83,613	495,774	5.9
	Beach Seine	13	663	8,030	48,221	6.0
2	Dip Net ^a	154	4,748	134,041	781,520	5.8
	Beach Seine	2	187	1,530	9,231	6.0
Total:		359	9,507	227,214	1,334,746	5.9

^a Seven coho salmon (31 pounds, average weight 4.4 pounds) and one pink salmon (weighing 4 pounds) were harvested in District 2 using dip nets.

The use of gillnet gear was delayed until inseason assessment indicated the majority of the Chinook salmon run had migrated upriver in an effort to reduce the incidental harvest of Chinook salmon. In District 1 only, commercial opportunity with 5.5-inch or smaller mesh size gillnets not exceeding 30 meshes in depth was provided for three periods in a further attempt to reduce the incidental harvest of Chinook salmon. Once managers were confident that the majority of the run had migrated out of each district, gillnet opportunity with 6-inch gillnet gear was provided for the remainder of the summer season beginning on July 7 in District 1 and July 6 in District 2 (Appendix A).

Concurrent subsistence and commercial fishing periods were regularly instituted throughout the commercial fishing season. Concurrent openings streamlined commercial and subsistence fishing into a single event, thereby reducing the amount of time that Chinook salmon were susceptible to harvest. However, subsistence only fishing periods were regularly provided in the mornings prior to commercial fishing periods to provide subsistence users less competitive opportunity to harvest summer chum salmon.

The sale of incidentally caught Chinook salmon was prohibited during the entire commercial fishing season (both summer and fall seasons). This action helped ensure fishermen would not target Chinook salmon during gillnet commercial fishing periods; and fishermen could either release incidentally caught Chinook salmon alive or use them for subsistence purposes. It was required to report any Chinook salmon caught but not sold on fish tickets. An estimated 3,400 Chinook salmon were reported incidentally harvested in Districts 1 and 2 during the summer season commercial gillnet fishery. A total of 95 Chinook salmon were caught but not sold in the fall season (Appendix A).

The cumulative summer chum salmon commercial harvest for Districts 1 and 2 for all gear types combined was 354,086 fish (Appendices A and B). Lower Yukon Area fishermen also harvested 3,347 pink salmon and 113 coho salmon during the summer season. The summer chum salmon harvest was 21% above the 2010–2014 average harvest of 238,929 fish (Appendix B). Dip net and beach seine harvest was a significant contributor (approximately 64% of the total harvest) in making the 2015 summer chum salmon harvest in the Lower Yukon the third largest since 2004.

Upper Yukon Districts

No commercial fishery operated in District 4 in 2015 due to a lack of a buyer. District 6 was managed using inseason assessment information provided by genetic MSA collected at the sonar

project near Pilot Station and tributary escapement projects that operated in the Tanana River drainage. A harvestable surplus of summer chum salmon was expected based upon sonar abundance estimates and genetic stock composition information. Given the available surplus and favorable market interest, the department scheduled the first summer chum salmon-directed commercial fishing period in District 6 on July 13 (Appendix A). In line with conservative actions taken in the lower river commercial fishery, commercial fishing gear was initially restricted to fish-friendly (as defined in regulation) manned fish wheels and all Chinook salmon caught in fish wheels had to be immediately released alive. Gear restrictions were relaxed on July 24 after Chinook salmon escapement goals on the Chena and Salcha Rivers were met. Starting with the fourth commercial fishing period on July 24, fishermen were allowed to use 6-inch or smaller mesh size gillnets and no longer required to attend their fish wheels or release Chinook salmon alive from fish wheels. The department scheduled eight commercial fishing periods. The preliminary cumulative harvest was 4,770 summer chum salmon, 347 Chinook salmon released alive from fish wheels, and 83 Chinook kept for personal use (Appendix A). The 2015 District 6 commercial harvest was 22% below the recent five-year average of 6,094 summer chum salmon (Appendix B).

The total 2015 commercial harvest for the entire Yukon Area was 358,856 summer chum salmon, which was 3% below the 2010–2014 average harvest of 368,771 fish (Appendix B).

2015 Fishing Effort and Exvessel Value

A total of 437 permit holders participated in the summer chum salmon commercial fishery, approximately 7% below the 2005–2014 average of 472 permit holders. The Lower Yukon Area (Districts 1–3) and Upper Yukon Area (Districts 4–6) are separate Commercial Fisheries Entry Commission (CFEC) permit areas. A total of 435 permit holders fished in the Lower Yukon Area in 2015, which was approximately 5% below the 2005–2014 average of 458. In the Upper Yukon Area, two permit holders fished, which was approximately 86% below the 2005–2014 average of 14 (Appendix C). The dramatic decrease in permit holders that fished in the Upper Yukon Area is mostly due to the lack of a commercial fishery in District 4.

Lower Yukon Area fishermen received an estimated \$1.27 million for their summer chum salmon harvest in 2015 (Appendix D). Additionally, fishermen received \$2,125 from the sale of pink and coho salmon in Districts 1 and 2. In 2015 fishermen received an average \$0.60 per pound for summer chum salmon, \$0.70 per pound of coho salmon, and \$0.50 per pink salmon. The estimated average income for Lower Yukon Area fishermen in 2015 was \$2,918.

Upper Yukon Area fishermen received an average of \$0.23 per pound for summer chum salmon sold in the round. The average price paid in the Upper Yukon Area was below the 2005–2014 average of \$0.26 per pound (Appendix D). The exvessel value was estimated to be \$7,088. No Chinook salmon were sold in the Yukon Area in 2015.

2015 Age and Sex Composition

Test Fisheries

The Chinook salmon age composition from the 8.5-inch mesh LYTF (Big Eddy and Middle Mouth sites combined) set nets was 10% age-4, 17% age-5, 72% age-6, and 1% age-7 fish. The sample size was 593 fish and females comprised 54% of the samples. The age-4 and age-6 percentages were above average, age-5 and age-7 percentages were below average, and females were average (Table 2).

The Chinook salmon age composition from the Pilot Station sonar drift nets was 0% age-3, 22% age-4, 34% age-5, 43% age-6, and 1% age-7 fish. The sample size was 410 fish and females comprised 36% of the samples. The age-4 percentage was above average, age-5 and age-7 percentages were below average, age-6 percentage was near average, and females were below average (Table 2).

The preliminary Chinook salmon age composition from the Eagle sonar drift nets was 0% age-3, 6% age-4, 35% age-5, 57% age-6, and 2% age-7 fish. The sample size was 714 fish and females comprised 44% of the samples. The age-4 percentage was near average, age-5 percentage was below average, age-6 percentage was above average, age-7 percentage was near average, and females were near average (Table 2).

The Chinook salmon age and sex composition from other projects will be processed this winter and are not yet available.

The summer chum salmon age composition from the 5.5-inch mesh LYTF drift nets was 2% age-3, 38% age-4, 59% age-5, and 1% age-6 fish. The sample size was 856 fish and females comprised 53% of the samples. The age-4 percentage was below average, age-5 was above average, and females were below average.

Table 2.—Yukon River Chinook salmon age and female percentages from selected projects, 2015.

Age group	Percent Chinook Salmon (%)					
	<i>LYTF 8.5" Mesh Gillnet</i>		<i>Sonar Project near Pilot Station</i>		<i>Eagle Sonar Project</i>	
	Historical average ^a		Historical average		Historical average	
	(1998-2014)	2015	(1998-2014)	2015	(2005-2014)	2015 ^b
4-year old	2	10	12	22	7	6
5-year old	29	17	45	34	42	35
6-year old	64	72	41	43	48	57
7-year old	5	1	3	1	3	2
female	53	54	41	36	42	44

^a Averages were not weighted by number of fish sampled each year.

^b Data are preliminary.

Subsistence Harvest

Once commercial gillnet opportunity was provided in the lower river to target summer chum salmon, ASL and genetic samples were opportunistically taken from incidentally-caught Chinook salmon that were kept for subsistence use. The Chinook salmon age composition from the summer chum salmon commercial fishery was 49% age-4, 18% age-5, and 33% age-6 fish. The sample size was 67 fish and females comprised 32% of the samples.

Commercial Harvest

The summer chum salmon age composition from the District 1 dip net commercial fishery was 1% age-3, 34% age-4, 63% age-5, and 2% age-6 fish. The sample size was 712 fish and females comprised 47% of the harvest.

The summer chum salmon age composition from the District 1 gillnet commercial fishery was 2% age-3, 54% age-4, 43% age-5, and 2% age-6 fish. The sample size was 396 fish and females comprised 43% of the harvest.

The summer chum salmon age and sex composition from commercial harvests in District 6 are not yet available.

2015 Escapement

Chinook Salmon

Four Sustainable Escapement Goals (SEG), two Biological Escapement Goals (BEG), and an international Interim Management Escapement Goal (IMEG) exist for Chinook salmon. In 2015, all escapement goals for Chinook salmon were met or surpassed (Table 3 and Appendix E). Preliminary Chinook salmon passage at the Eagle sonar was approximately 83,400 fish, which was adequate to exceed both the Canadian Yukon River mainstem escapement and harvest sharing objectives (Table 3 and Appendix E). These numbers, however, are subject to change with postseason data analysis.

Table 3.—2015 escapement goals and estimates for Chinook salmon at selected Yukon River tributaries. Escapement estimates are preliminary.

Stream	Current Goal	Type of Goal	2015 Counts
East Fork Andreafsky River Weir	2,100–4,900	SEG	5,474
West Fork Andreafsky River Aerial	640–1,600	SEG	1,356
Anvik River Index Aerial	1,100–1,700	SEG	2,809
Nulato River Aerial (Forks Combined)	940–1,900	SEG	1,505
Chena River Tower	2,800–5,700	BEG	4,067 ^b
Salcha River Tower	3,300–6,500	BEG	4,558 ^b
Mainstem Sonar Project near community of Eagle	42,500–55,000	IMEG ^a	82,000 ^c

^a In 2010, the US/Canada Yukon River Panel agreed to a Canadian Interim Management Escapement Goal (IMEG) of 42,500–55,000 Chinook salmon based on the Eagle sonar program. In order to meet this goal, the passage at Eagle sonar must be a minimum of 42,500 fish for escapement, after accounting for estimated subsistence harvest in the community of Eagle upstream of the sonar and additional fish for Canadian harvest sharing as dictated in the US/Canada Yukon River Treaty (20–26% of the total allowable catch).

^b Project operations were hindered by unfavorable conditions for parts of the season.

^c Preliminary estimated spawning escapement. Estimate is based on cumulative Chinook salmon counts at the sonar project (83,376) minus estimated harvest above the project in Alaska (approximately 400 fish, based on historical average for years 2009-2014) and harvest in Canada (approximately 1,000). Subject to change once final harvest estimates are available.

Summer Chum Salmon

Two escapement goals exist for summer chum salmon on the East Fork Andreafsky and Anvik rivers (Table 4). Both escapement goals for summer chum salmon were met, however, all summer chum salmon tributaries (except for Henshaw Creek) experienced below average escapement in 2015 (Appendix B). The 2015 summer chum salmon counts on the Chena and Salcha rivers were inhibited by unfavorable water conditions.

Table 4.–2015 escapement goals and estimates for summer chum salmon at selected Yukon River tributaries. Escapement estimates are preliminary.

Stream	Current Goal	Type of Goal	2015 Escapement
East Fork Andreafsky River Weir	> 40,000	SEG	48,809
Anvik River Sonar	350,000–750,000	BEG	371,633
Stream	Historical Average	Years Included	2015 Escapement
Gisasa River Weir	67,537	1994-2014	42,747
Henshaw Creek Weir	127,901	2000-2013 ^a	238,529
Chena River Tower	9,481	1994-2014 ^b	2,506 ^d
Salcha River Tower	44,684	1994-2013 ^c	9,606 ^d

^a Project did not operate in 2014 due to high water conditions.

^b Project did not operate in 2011 due to high water conditions.

^c Project did not operate in 2003, 2011, and 2014 due to unfavorable water conditions.

^d Project was hindered by unfavorable water conditions.

Canadian Fisheries

The preseason outlook was for a run size of approximately 59,000 to 70,000 Canadian-origin Chinook salmon. The managers at the Department of Fisheries and Oceans (DFO) conduct Canadian Chinook salmon fisheries according to available abundance and international harvest sharing provisions. Based on the projected border passage of 83,400 Chinook salmon, which was above the preseason projection and the IMEG range of 42,500–55,000, the Chinook salmon run was classified to be in the “green management zone”. A “green management zone” would allow for an unrestricted First Nation fishery and commercial, recreational, and domestic fisheries depending on the available abundance. Although a green zone level on management was achieved, DFO continued to manage the fishery as if it were in the “yellow management zone”, which requires closures in the commercial, domestic, and recreational fisheries. The majority of First Nations chose to refrain from harvesting Chinook salmon in recognition of long-term conservation concerns. The commercial, domestic, and recreational fisheries were all set to zero catch and remained closed throughout the 2015 Chinook salmon run. While not all information is currently available, the preliminary First Nation harvest is estimated to be less than 1000 Chinook salmon. The overall Canadian assessment program (e.g., Big Salmon Sonar, Teslin Sonar, Blind Creek, and Porcupine River sonar) showed above average Chinook salmon run into Canada for 2015 as compared to their historical averages.

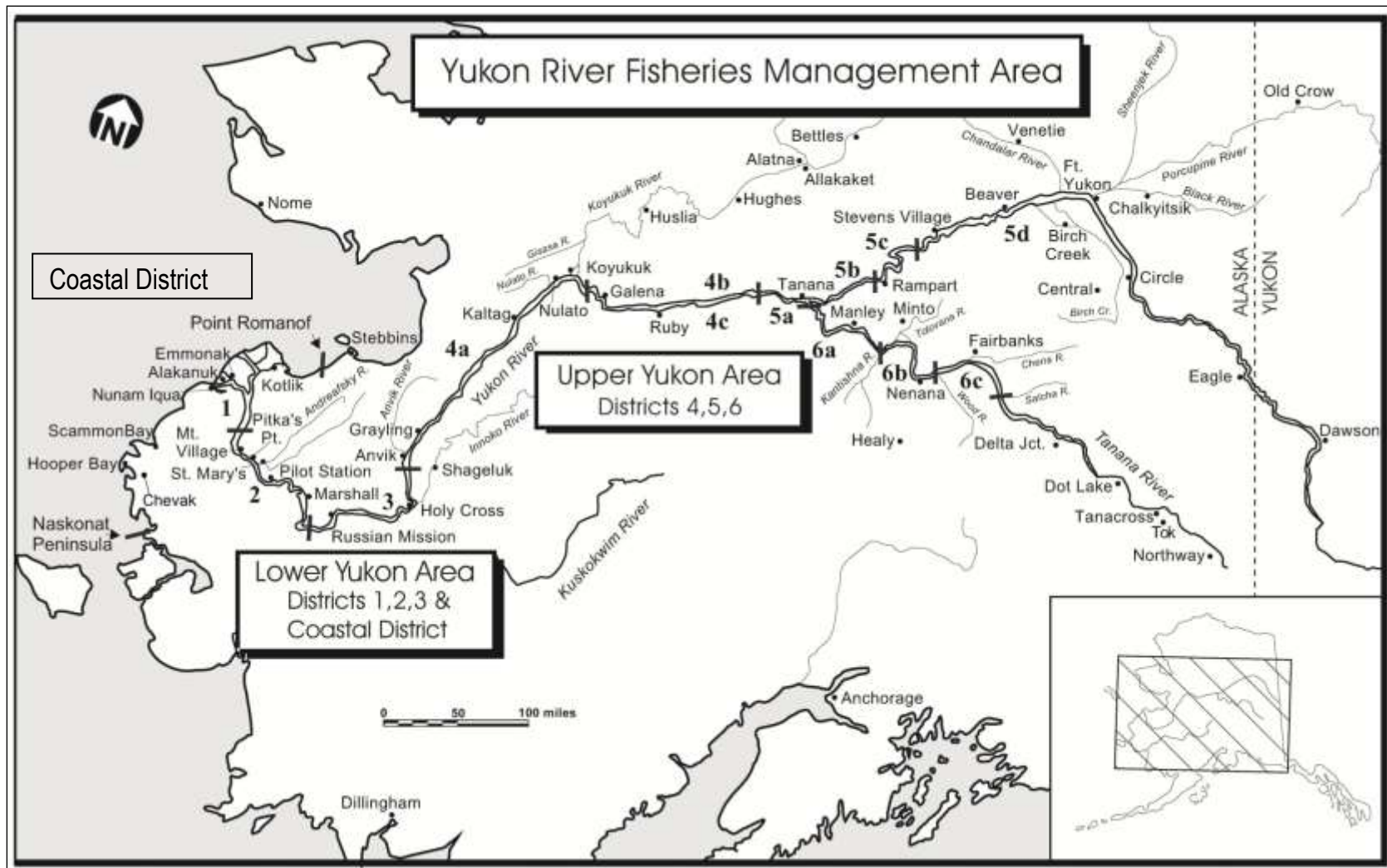


Figure 1.—Yukon Area communities and fishing districts.

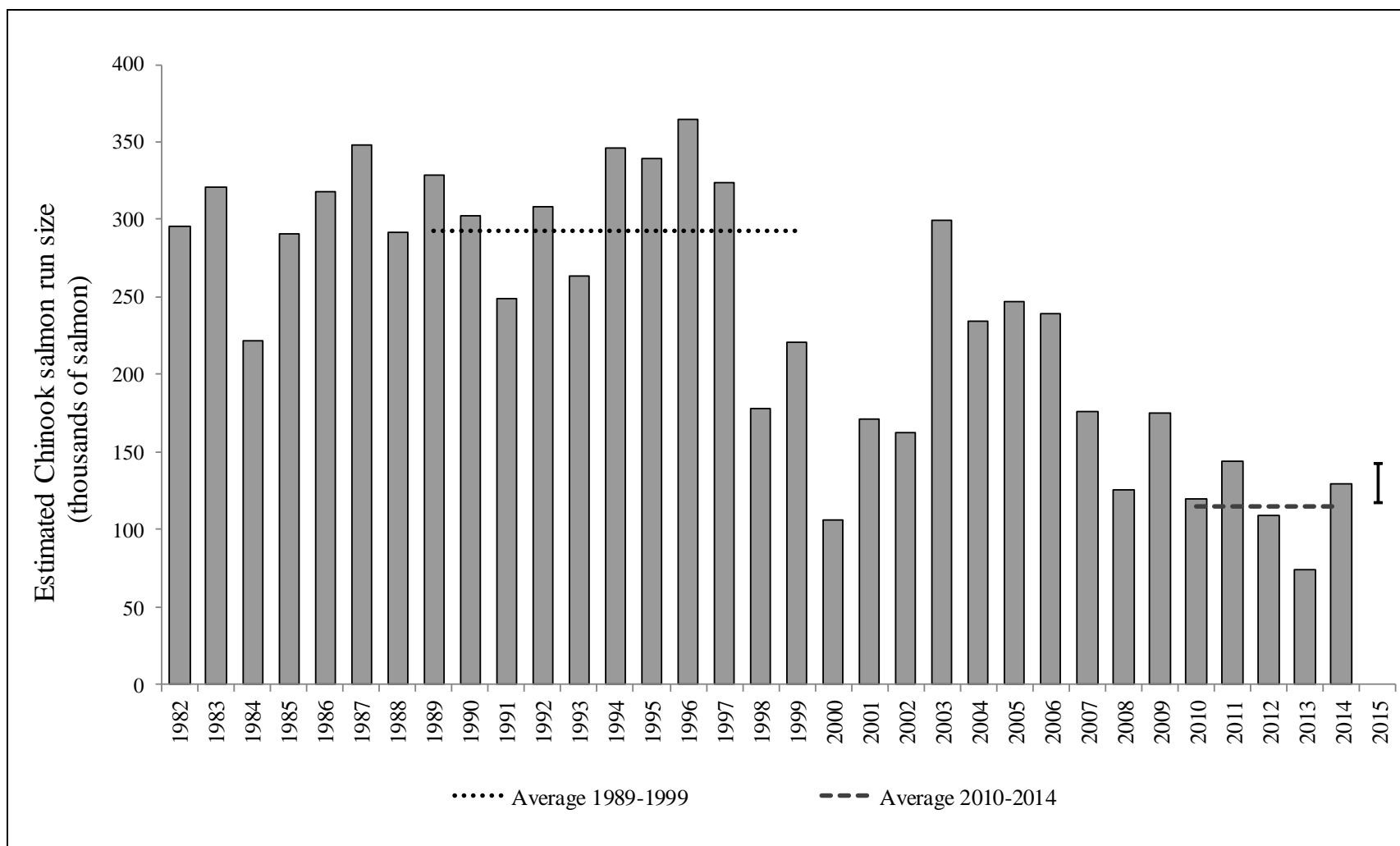


Figure 2.—Yukon River Chinook salmon historical estimated total run size and projected run size in 2015, illustrating the decline in run sizes due to a production shift beginning in 1998. Note: The bars associated with the 2015 projection bar represent the outlook range of 118,000 to 140,000 Chinook salmon.

Appendix A.–Preliminary summer season commercial harvest summary, Yukon Area, 2015. Page 1 of 3.

District 1												
Period	Start Time	Start Date	End Time	End Date	Hours Fished	Gear Type Type ^a	Mesh Size	Number of Fishermen	Chinook Salmon		Summer Chum Salmon	
									Number Caught and Released	Number Caught but Not Sold	Number	Pounds
1	2:00 PM	11-Jun	12:00 AM	11-Jun	10	DN/BS		69	92		2,411	15,493
2	2:00 PM	12-Jun	12:00 AM	12-Jun	10	DN/BS		63	73		2,909	18,559
3	12:00 PM	14-Jun	12:00 AM	14-Jun	12	DN/BS		98	254		6,338	41,550
4	12:00 PM	15-Jun	12:00 AM	15-Jun	12	DN/BS		85	107		3,515	22,086
5	12:00 PM	16-Jun	12:00 AM	16-Jun	12	DN/BS		67	176		4,009	25,788
6	12:00 PM	17-Jun	12:00 AM	17-Jun	12	DN/BS		81	346		6,081	36,900
7	12:00 PM	18-Jun	12:00 AM	18-Jun	12	DN/BS		90	412		5,464	32,728
8	12:00 PM	19-Jun	12:00 AM	19-Jun	12	DN/BS		82	335		5,636	33,482
9	12:00 PM	21-Jun	12:00 AM	21-Jun	12	DN/BS		52	126		727	4,122
10	12:00 PM	22-Jun	12:00 AM	22-Jun	12	DN/BS		30	82		332	1,951
11	12:00 PM	23-Jun	12:00 AM	23-Jun	12	DN/BS		89	264		5,280	31,153
12	12:00 PM	24-Jun	7:00 PM	24-Jun	12	DN/BS		41	162		912	5,289
13	12:00 PM	25-Jun	11:59 PM	25-Jun	12	DN/BS		110	597		13,724	80,310
14	12:00 PM	26-Jun	11:59 PM	26-Jun	12	DN/BS		108	516		12,119	70,518
15	12:00 PM	27-Jun	11:59 PM	27-Jun	12	DN/BS		102	390		7,836	45,208
16	12:00 PM	28-Jun	11:59 PM	28-Jun	12	DN/BS		90	219		3,858	21,937
17	12:00 PM	29-Jun	11:59 PM	29-Jun	12	DN/BS		52	76		1,264	7,025
18	12:00 PM	30-Jun	11:59 PM	30-Jun	12	DN/BS		69	132		3,711	19,937
19	12:00 PM	1-Jul	11:59 PM	1-Jul	12	DN/BS		96	213		5,517	29,959
20	8:00 PM	2-Jul	11:59 PM	2-Jul	4	R	5.5	142		553	18,620	111,114
21	9:00 PM	3-Jul	11:59 PM	3-Jul	3	R	5.5	126		161	9,441	56,991
22	6:00 PM	5-Jul	11:59 PM	5-Jul	6	R	5.5	102	2	160	6,092	35,672
23	3:00 PM	7-Jul	11:59 PM	7-Jul	9	R	6.0	122	4	336	13,966	85,939
24	3:00 PM	9-Jul	11:59 PM	9-Jul	9	R	6.0	158		243	10,292	62,289
25	6:00 PM	11-Jul	6:00 AM	12-Jul	12	R	6.0	156		220	17,269	104,921
26	6:00 PM	13-Jul	6:00 AM	14-Jul	12	R	6.0	130		104	3,954	23,335
27	12:00 PM	15-Jul	11:59 PM	15-Jul	12	R	6.0	79		33	1,362	7,918
Fall Season										56		
District 1 Subtotal ^{b,c} :					291			270	4,578	1,866	172,639	1,032,174

Appendix A.– Preliminary summer season commercial harvest summary, Yukon Area, 2015. Page 2 of 3.

District 2													
Period	Start Time	Start Date	End Time	End Date	Hours Fished	Gear Type Type ^a	Mesh Size	Number Fishermen	Chinook Salmon		Summer Chum Salmon		Avg. Wt.
									Number Caught and Released	Number Caught but Not Sold	Number	Pounds	
1	12:00 PM	15-Jun	10:00 PM	15-Jun	10	DN/BS		57	208		3,241	21,249	6.6
2	12:00 PM	16-Jun	10:00 PM	16-Jun	10	DN/BS		65	206		4,495	28,354	6.3
3	12:00 PM	17-Jun	10:00 PM	17-Jun	10	DN/BS		84	165		5,224	33,124	6.3
4	12:00 PM	18-Jun	10:00 PM	18-Jun	10	DN/BS		54	138		3,608	22,599	6.3
5	12:00 PM	19-Jun	10:00 PM	19-Jun	10	DN/BS		58	247		3,860	23,711	6.1
6	12:00 PM	21-Jun	10:00 PM	21-Jun	10	DN/BS		71	360		4,350	26,089	6.0
7	12:00 PM	22-Jun	10:00 PM	22-Jun	10	DN/BS		57	214		2,608	16,014	6.1
8	12:00 PM	23-Jun	10:00 PM	23-Jun	10	DN/BS		37	136		1,305	7,459	5.7
9	12:00 PM	24-Jun	10:00 PM	24-Jun	10	DN/BS		50	258		3,790	22,704	6.0
10	12:00 PM	25-Jun	10:00 PM	25-Jun	10	DN/BS		81	238		5,679	33,666	5.9
11	12:00 PM	26-Jun	10:00 PM	26-Jun	10	DN/BS		101	437		14,023	83,195	5.9
12	12:00 PM	27-Jun	10:00 PM	27-Jun	10	DN/BS		110	511		18,943	111,466	5.9
13	8:00 AM	28-Jun	6:00 PM	28-Jun	10	DN/BS		106	413		16,977	98,073	5.8
14	12:00 PM	29-Jun	10:00 PM	29-Jun	10	DN/BS		108	443		15,394	88,378	5.7
15	12:00 PM	30-Jun	10:00 PM	30-Jun	10	DN/BS		89	309		9,324	51,999	5.6
16	12:00 PM	1-Jul	10:00 PM	1-Jul	10	DN/BS		48	145		4,333	24,246	5.6
17	9:00 AM	2-Jul	7:00 PM	2-Jul	10	DN/BS		44	129		3,446	18,629	5.4
18	12:00 PM	3-Jul	10:00 PM	3-Jul	10	DN/BS		73	168		6,480	35,026	5.4
19	12:00 PM	4-Jul	10:00 PM	4-Jul	10	DN/BS		35	120		3,432	18,051	5.3
20	12:00 PM	5-Jul	10:00 PM	5-Jul	10	DN/BS		68	90		5,059	26,719	5.3
21	9:00 AM	6-Jul	11:59 PM	6-Jul	3	R	6.0	90		229	7,632	46,782	6.1
22	4:00 PM	8-Jul	10:00 PM	8-Jul	6	R	6.0	114		413	7,089	42,372	6.0
23	4:00 PM	10-Jul	10:00 PM	10-Jul	6	R	6.0	98		258	9,402	57,760	6.1
24	2:00 PM	12-Jul	11:00 PM	12-Jul	9	R	6.0	118		278	10,566	63,572	6.0
25	2:00 PM	14-Jul	11:00 PM	14-Jul	9	R	6.0	118		238	9,273	55,866	6.0
26	2:00 PM	16-Jul	11:00 PM	16-Jul	9	R	6.0	44		63	1,914	10,570	5.5
27	2:00 PM	18-Jul	11:00 PM	18-Jul	9	R	6.0	0		—	—	—	—
								Fall Season		39			
District 2 Subtotal:					251			177	4,935	1,518	181,447	1,067,673	5.9
Lower Yukon Area, Summer Season, Districts 1 and 2													
Subtotal ^{b,c,d} :					542			435	9,513	3,384	354,086	2,099,847	5.9

Appendix A.–Preliminary summer season commercial harvest summary, Yukon Area, 2015. Page 3 of 3.

Subdistricts 6-A, 6-B, and 6-C													
Period	Start Time	Start Date	End Time	End Date	Hours	Gear Type ^e	Mesh Size	Number Fishermen	Chinook Salmon		Summer Chum Salmon		
					Fished 6-AB				Number Caught and Released	Number Caught but Not Sold	Number	Pounds	Avg. Wt.
1	6:00 PM	13-Jul	12:00 PM	15-Jul	42	FW		1	78	0	0	0	-
2	6:00 PM	17-Jul	12:00 PM	19-Jul	42	FW		1	85	0	503	3,345	6.7
3	6:00 PM	20-Jul	12:00 PM	22-Jul	42	FW		1	105	0	838	5,588	6.7
4	6:00 PM	24-Jul	12:00 PM	26-Jul	42	FW/GN	6.0	1	79	22	1,383	9,205	6.7
5	6:00 PM	27-Jul	12:00 PM	29-Jul	42	FW/GN	6.0	1	0	24	781	5,186	6.6
6	6:00 PM	31-Jul	12:00 PM	2-Aug	42	FW/GN	6.0	1	0	15	355	2,225	6.3
7	6:00 PM	3-Aug	12:00 PM	5-Aug	42	FW/GN	6.0	2	0	16	551	3,230	5.9
8	6:00 PM	7-Aug	12:00 PM	9-Aug	42	FW/GN	6.0	1	0	6	359	2,037	5.7
District 6 Subtotal:					336			1	347	83	4,770	30,816	6.5
Upper Yukon Area, Summer Season,													
Districts 4, 5, and 6 Subtotal ^b :					336			2	347	83	4,770	30,816	6.5
Yukon Area, Summer Season,													
Districts 1 Through 6 Total ^{b,c,d} :					878			437	9,860	3,464	358,856	2,130,663	5.9

Note: Chinook salmon caught in gillnets were not allowed to be sold throughout the summer and fall season. Chinook salmon caught in dip nets, beach seines, and fish wheels were required to be immediately released alive. DN = dip net; BS = beach seine; GN = gillnet; FW = fish wheel. No commercial fishing occurred in Districts 3, 4, and 5.

^a Under new commercial fishing regulations adopted by the Alaska Board of Fisheries in 2013, the department may allow the use of dip nets and beach seines.

^b The number of fishermen is the unique number of permits fished. Some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

^c Includes Chinook salmon caught but not sold in the fall season.

^d Lower Yukon Area fishermen also sold 3,347 pink salmon (13,501 pounds) and 113 coho salmon (645 pounds).

^e Fish wheels were to be manned at all times during commercial periods 1, 2, and 3 and Chinook salmon caught in fish wheels were to be released immediately back to the water alive.

Appendix B.—Summer chum salmon commercial harvest and escapement comparisons, Yukon River, 2004–2015. Page 1 of 2.

Summer Chum Salmon Commercial Harvest ^a														2015 Percent Change From Recent 5-Year Average (In Parentheses)
District/Subdistrict	Guideline Harvest Range	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		
1		23,965	21,816	106,790	67,459	71,355	102,267	163,439	150,800	207,871	198,240	172,639	5%	(164,523)
2		8,313	25,543	69,432	58,139	86,571	80,948	103,071	57,049	171,272	229,107	181,447	41%	(128,289)
<i>Subtotal 1 & 2</i>	251,000–755,000	32,278	47,359	176,222	125,598	157,926	183,215	266,510	207,849	379,143	427,347	354,086	21%	(238,929)
3	6,000–19,000		116	1										
4A	113,000–338,000			7,304	23,746	4,589	44,207		108,222	100,507	96,385			(87,330)
4BC	16,000–47,000													
<i>Subtotal 4</i>				7,304	23,746	4,589	44,207		108,222	100,507	96,385			(87,330)
5ABC		0	20	0										
5D														
<i>Subtotal 5</i>	1,000–3,000	0	20	0										
6	13,000–38,000	8,986	44,621	14,674	1,842	7,777	5,466	8,651	3,504	5,937	6,912	4,770	-22%	(6,094)
Total	400,000–1,200,000	41,264	92,116	198,201	151,186	170,292	232,888	275,161	319,575	485,587	530,644	358,856	-3%	(368,771)
Summer Chum Salmon Escapement														2015 Percent Change From Recent 5-Year Average (In Parentheses)
Project	Escapement Goal ^b	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 ^c		
East Fork Andreafsky River Weir	>40,000 SEG	20,127	102,260	69,642	57,259	8,770	72,839	100,473	56,680	61,234	37,793	48,809	-26%	(65,804)
Pilot Station Sonar ^d		2,439,616	3,767,044	1,726,885	1,665,667	1,285,437	1,327,581	1,977,808	2,130,899	2,747,248	1,922,086	1,385,083	-31%	(2,021,124)
Anvik River Sonar	350,000-700,000 BEG	525,391	605,485 ^f	460,121	374,928	193,099	396,173	642,527	483,972	577,877	399,223	371,633	-26%	(499,954)
Henshaw Creek Weir		237,481	^g	44,425	97,281	156,201	105,398	248,247	292,082	285,008	^j	238,529	3%	(232,684)
Gisasa River Weir		172,259	261,305	46,257	36,938	25,904	47,669	95,796	83,423	80,055	32,137	42,747	-37%	(67,816)
Clear Creek Tower		26,420	29,166	6,029 ^h	^g	^g	^g	^g	^g	^g	^g	^g		
Chena River Tower		2,928	35,109 ⁱ	4,999	1,300 ⁱ	16,516	7,560	^j	6,882	21,372	17,076 ^{j,k}	2,506 ^{e,i}	-81%	(13,223)
Salcha River Tower		193,085	111,869	13,069	2,212 ⁱ	31,035	22,185	31,002 ⁱ	46,252	60,980	^j	9,606 ^{e,i}	-76%	(40,105)

Appendix B.–Summer chum salmon commercial harvest and escapement comparisons, Yukon River, 2004–2015. Page 2 of 2

Note: Blank cells indicate no commercial fishing occurred, zeroes indicate summer chum salmon were not sold.

^a Commercial harvest only includes fish sold in the round.

^b SEG = "Sustainable escapement goal", BEG= "Biological escapement goal " as defined by the Sustainable Fisheries Policy

^c Data are preliminary.

^d Due to the large run of pink salmon observed in 2008, species apportionment issues were encountered. After more thorough analysis, sonar estimates have been adjusted post season.

^e Counts missing due to murky water and low visibility.

^f HTI and DIDSON sonar equipment used in 2006. Estimates reported are DIDSON derived.

^g Project did not operate.

^h Videography count.

ⁱ Incomplete count due to late installation and/or early removal of project

^j No count due to high water conditions that prevented counting for much of the season.

^k Due to high water, DIDSON sonar equipment was used and preliminary species apportionment was estimated using average run timing.

Appendix C.—Number of commercial salmon fishing gear permit holders who delivered fish during the summer season, listed by district, Yukon Area, 1994–2015.

Year	Lower Yukon Area				Upper Yukon Area				Total
	District 1	District 2	District 3	Subtotal	District 4	District 5	District 6	Subtotal	
1994	414	250	7	659	55	28	20	103	762
1995	439	233	0	661	87	28	21	136	797
1996	448	189	9	627	87	23	15	125	752
1997	457	188	0	639	39	29	15	83	722
1998	434	231	0	643	0	18	10	28	671
1999	412	217	5	631	5	26	6	37	668
2000	350	214	—	562	—	—	—	—	562
2001	—	—	—	—	—	—	—	—	—
2002	323	223	—	540	—	14	6	20	560
2003	352	217	—	556	3	16	7	26	582
2004	396	213	—	550	—	14	6	20	570
2005	370	228	—	578	—	12	5	17	595
2006	379	214	6	569	—	15	10	25	594
2007	359	220	3	564	5	12	10	27	591
2008	266	181	—	444	8	—	5	13	457
2009	213	166	—	376	6	—	5	11	387
2010	264	181	—	440	5	—	5	10	450
2011	230	183	—	403	—	—	5	5	408
2012	242	178	—	413	11	—	3	14	427
2013	220	174	—	384	9	—	2	11	395
2014	231	183	—	405	10	—	1	11	416
2015	270	177	—	435	—	—	2	2	437
10-yr Avg.	277	191	5	458	8	13	5	14	472
2015 Percent Change from 10-year Avg.									
	-2.7	-7.2		-4.9			-60.8	-86.1	-7.4

Note: En dash (—) indicates no commercial fishing activity occurred. Some individual fishermen in the Lower Yukon Area may have operated in more than one district during the season. Since 1984 the subtotal for the Lower Yukon Area was the unique number of permits fished. Prior to 1984, the subtotals are additive for District 1, 2, and 3.

Appendix D.—Value of commercial salmon fishery to Yukon Area fishermen, 1994–2015.

Year	Chinook					Summer Chum					Value by Species		Value by Area		Total	
	Lower Yukon		Upper Yukon		Lower Yukon		Upper Yukon									
	\$/lb	Value	\$/lb	\$/Roe	Value	\$/lb	\$/Roe	Value	\$/lb	\$/Roe	Value	Chinook	Summer Chum	Lower		Upper
1994	2.07	4,169,270	0.92	3.11	124,270	0.21		79,206	0.20	3.77	396,685	4,293,540	475,891	4,248,476	520,955	4,769,431
1995	2.09	5,317,508	0.77	2.64	87,059	0.16		241,598	0.13	3.57	1,060,322	5,404,567	1,301,920	5,559,106	1,147,381	6,706,487
1996	1.95	3,491,582	0.95	2.57	47,282	0.09	2.96	89,020	0.07	3.05	966,277	3,538,864	1,055,297	3,580,602	1,013,559	4,594,161
1997	2.46	5,450,433	0.97	1.62	110,713	0.10		56,535	0.07	1.08	96,806	5,561,146	153,341	5,506,968	207,519	5,714,487
1998	2.51	1,911,370	0.91	2.00	17,285	0.14		26,415	0.18	1.90	821	1,928,655	27,236	1,937,785	18,106	1,955,891
1999	3.80	4,950,522	1.10	2.11	74,475	0.10		19,687	0.18	2.25	1,719	5,024,997	21,406	4,970,209	76,194	5,046,403
2000	4.57	725,606				0.17		8,633				725,606	8,633	734,239		734,239
2001																
2002	3.77	1,691,105	0.75	1.75	20,744	0.06		4,342	0.32	2.25	6,176	1,711,849	10,518	1,695,447	26,920	1,722,367
2003	2.37	1,871,202	0.80		40,957	0.05		1,585	0.27		6,879	1,912,159	8,464	1,872,787	47,836	1,920,623
2004	2.80	3,063,667	0.77		38,290	0.05		8,884	0.27		9,645	3,101,957	18,529	3,072,551	47,935	3,120,486
2005	3.43	1,952,109	0.87		24,415	0.05		11,004	0.25		13,479	1,976,524	24,483	1,963,113	37,894	2,001,007
2006	3.94	3,290,367	1.30		32,631	0.05		23,862	0.16		42,988	3,322,998	66,850	3,314,229	75,619	3,389,848
2007	3.73	1,939,114	1.33		27,190	0.19		220,715	0.25	2.36	34,421	1,966,304	255,136	2,159,829	61,611	2,221,440
2008	4.64	325,470				0.40		326,930	0.25	3.00	65,840	325,470	392,770	656,606 ^a	65,840	722,896
2009	5.00	20,970				0.50		514,856	0.26	3.00	20,430	20,970	535,286	535,826	20,430	556,256
2010	5.00	639,230				0.70		823,967	0.23		61,534	639,230	885,501	1,463,197	61,534	1,524,731
2011						0.75		1,301,403	0.26		12,966		1,314,369	1,301,403	12,966	1,314,369
2012						0.75		980,424	0.37		187,272		1,167,696	980,424	187,272	1,167,696
2013						0.75		1,721,524	0.30		150,852		1,872,376	1,721,524	150,852	1,872,376
2014						0.60		1,648,872	0.29		157,211		1,806,083	1,703,510 ^b	157,211	1,819,758
2015						0.60		1,259,908	0.23		7,088		1,266,996	1,269,122 ^c	7,088	1,276,210
2005–2014																
Average	4.29	1,361,210	1.17		28,079	0.47		757,356	0.26	2.79	74,699	1,375,249	832,055	1,579,966	83,123	1,659,038
2015 % Change from 10-Year Avg.								26.6%					52.3%	-19.7%	-91.5%	-23.1%

Note: Blank cells indicate no sales occurred or harvest level was insufficient to generate summary information.

^a Includes \$4,656 in sales of pink salmon in Districts 1 and 2.

^b Includes \$13,675 in sales of pink salmon in Districts 1 and 2.

^c Includes \$1,674 in sales of pink salmon and \$452 in sales of coho salmon in Districts 1 and 2.

Appendix E.—Chinook salmon commercial harvest and escapement comparisons, Yukon River, 2004–2015. Page 1 of 2.

Chinook Salmon Commercial Harvest ^a													
District/Subdistrict	Guideline Harvest Range	2005	2006	2007	2008	2009	2010	2011	2012 ^b	2013 ^b	2014 ^b	2015 ^b	2015 Percent Change From 5-Year Average (In Parentheses)
1		16,694	23,748	18,616	2,530	90	5,744	36	0	0	0	0	-100% (1,156)
2		13,413	19,843	13,306	2,111	226	4,153	46	0	0	0	0	-100% (840)
<i>Subtotal 1 & 2</i>	60,000–120,000	30,107	43,591	31,922	4,641	316	9,897	82	0	0	0	0	-100% (1,996)
3	1,800–2,200		315	190									
4A				0	0	0	0		0	0	0		(0)
4BC				0	0	0	0		0	0	0		(0)
<i>Subtotal 4</i>	2,250–2,850			0	0	0	0		0	0	0		(0)
5ABC	2,400–2,800	1,469	1,839	1,241	0	0		0	0	0	0	0	(0)
5D	300–500				0	0		0	0	0	0	0	(0)
<i>Subtotal 5</i>		1,469	1,839	1,241	0	0		0	0	0	0	0	(0)
6	600–800	453	84	281	0	0	0	0	0	0	0	0	(0)
<i>Total Alaska</i>	67,350–129,150	32,029	45,829	33,634	4,641	316	9,897	82	0	0	0	0	(1,996)
Canada ^c	8,500–11,500	4,066	2,332		1	364		4		2			-100% (1)
Chinook Salmon Escapement													
Project	Escapement Goal	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 ^d	2015 Percent Change From 5-Year Average (In Parentheses)
East Fork Andreafsky River Weir	2,100–4,900 SEG ^f	2,239	6,463	4,504	4,242	3,004	2,413	5,213	2,517	1,998	5,949	5,474	51% (3,618)
East Fork Andreafsky River Aerial ^e	960–1,700 SEG ^f	1,715	591 ^g	1,758	278 ^g	84 ^g	537	620	^h	1,441		2,167 ^g	150% (866)
West Fork Andreafsky River Aerial ^e	640–1,600 SEG ^f	1,492	824	976	262 ^g	1,678	858	1,173	^h	1,090	1,695	1,356	13% (1,204)
Pilot Station Sonar		159,441	169,403	125,553	130,643 ⁱ	144,049 ^j	120,175	123,369	106,731	117,159	137,666	116,084	-4% (121,020)
Anvik River Index Aerial ^e	1,100–1,700 SEG ^f	1,922	1,776	1,497	827 ^g	590	721	501	451	940	1,584	2,809	235% (839)
Henshaw Creek Weir		1,059		740 ^k	766	1,637	857	1,796	922	772		2,391	120% (1,087)
Nulato River Aerial ^e	940–1,900 SEG ^f	553	1,292	2,583	922	2,260	711	1,401	1,373	1,118		1,505	31% (1,151)
Gisasa River Weir		3,111	3,030	1,425	1,735	1,955	1,516	2,692	1,323	1,126	1,570	1,319	-20% (1,645)
Gisasa River Aerial ^e	420–1,100 SEG ^f	958	843	593	487	515	264	906	^h	^h		558	-5% (585)
Chena River Tower	2,800–5,700 BEG ^l	ⁿ	2,936	3,806	3,208	5,253	2,382	ⁿ	2,220	1,859	4,358 ^l	4,067	50% (2,705)
Salcha River Tower	3,300–6,500 BEG ^l	5,988	10,679	6,425	5,415 ^o	12,774	6,135	3,537 ^p	7,165	5,465		4,558	-18% (5,576)
Eagle Sonar		81,527	73,691	41,697	38,097	69,957	35,074	51,271	34,747	30,725	64,522	83,376	93% (43,268)
Canadian Estimated Escapement ^q	IMEG 42,500–55,000 ^r	67,985	62,630	34,904	33,883	65,278	32,010	46,307	32,656	28,669	64,422	82,000 ^r	(40,813)

Appendix E. –Chinook salmon commercial harvest and escapement comparisons, Yukon River, 2004–2015. Page 2 of 2

Note: Blank cells indicate no commercial fishing occurred, zeroes indicate fishing occurred but Chinook salmon were not sold.

^a Commercial harvest does not include the estimated harvest of females to produce roe sold.

^b From 2012–2015, no sales of Chinook salmon occurred in either the summer or fall season.

^c Harvest in the commercial fishery in Canadian mainstem Yukon River. Blank cells indicate no commercial fishery occurred.

^d Data are preliminary.

^e Aerial surveys rated good to fair unless noted otherwise.

^f SEG = "Sustainable escapement goal", BEG = "Biological escapement goal" as defined by the Sustainable Fisheries Policy.

^g Aerial surveys rated as incomplete and/or poor survey conditions; data not comparable to other years.

^h Aerial survey not conducted.

ⁱ Due to the large run of pink salmon observed in 2008, species apportionment issues were encountered. After more thorough analysis, sonar estimates have been adjusted post season.

^j Inseason run assessment was hampered by high water that affected Pilot Station sonar.

^k Did not operate.

^l Due to high water, DIDSON sonar equipment was used and preliminary species apportionment was estimated using average run timing.

^m No count due to high water conditions that prevented counting for much of the season.

ⁿ Estimates include an expansion for missed counting days based on average run timing. Minimum documented abundances from successful counting days were 4,644 in 2002, 11,758 in 2003, and 5,415 in 2008.

^o Aerial survey estimate. High water conditions prevented tower counting during much of the season.

^p Canadian escapement estimated as border passage minus total Canadian harvest.

^q In 2008, the escapement goal was revised to an Interim Management Escapement Goal (IMEG) of 45,000 which was continued in 2009. Since 2010 the IMEG has been established as a range, 42,500-55,000.

^r Preliminary estimate. Subject to change when final harvest data are available.