ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

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2013 Preliminary Yukon River Summer Season Summary

This informational letter provides a preliminary summer season summary of the 2013 Yukon Area Chinook and summer chum salmon fisheries. Subsistence and personal use harvests for 2013 are not available at this time. For management purposes, the Yukon River is divided into several fishing districts and subdistricts (Figure 1).

2013 Preseason Outlook

Chinook Salmon

The Yukon River Chinook salmon run has experienced a dramatic decline in run size since 1998 (Figure 2). The cause of this drastic drop in abundance remains largely unknown. Though parent year escapement objectives were generally achieved throughout the drainage, Chinook salmon returns since 2007 have been much lower than expected. The 2013 run outlook, which attempts to account for low productivity observed since 2007, was 98,000–144,000 Chinook salmon. Thus, the 2013 Yukon River Chinook salmon run was anticipated to be poor to below average. Considering that total run sizes observed in recent years have fallen closer to the lower end of their respective preseason projection ranges, initial management of the 2013 run was focused on an anticipated total run size of approximately 100,000. Achieving escapement objectives was expected to be extremely challenging with a run of this size and severe conservation measures were necessary.

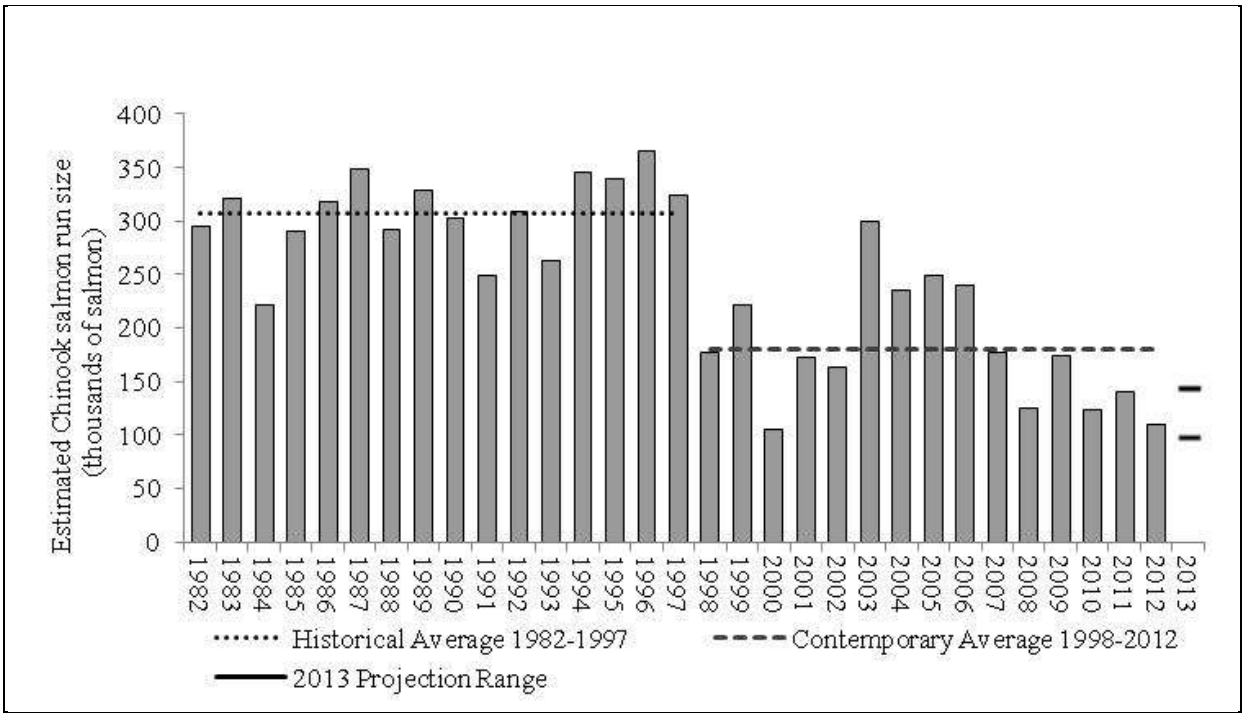

Figure 2.–Yukon River Chinook salmon historical estimated total run size and projected run size in 2013, illustrating the drastic decline beginning in 1998.

Summer Chum Salmon

The strength of the summer chum salmon run in 2013 was dependent on production from the 2009 (age-4 fish) and 2008 (age-5 fish) escapements, as these age classes generally dominate the run. Total run size during 2008 and 2009 was approximately 1.8 and 1.4 million summer chum salmon, respectively, though tributary escapements were highly variable. However, it is worth noting that poor runs have resulted from large escapements. Yukon River summer chum salmon generally exhibit strong run size correlations among adjacent years; however, it was expected that the 2013 total run in the Yukon River would be below the 2012 run. The 2013 summer chum preseason outlook was estimated to be 1.5 to 1.8 million fish.

The 2013 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 (2003–2012). Based on the preseason projection, it was expected that a commercially harvestable surplus of 500,000 to 800,000 summer chum salmon would be available in 2013. Similar to the last couple years, the actual commercial harvest of summer chum salmon in 2013 was anticipated to be affected by a poor Chinook salmon run, as Chinook salmon are incidentally harvested in chum salmon-directed fisheries.

2013 Preseason Management Strategy

Chinook and summer chum salmon management plans guide ADF&G (department) management actions. In response to continued poor Chinook salmon runs, the Yukon River Drainage Fisheries Association (YRDFA) facilitated preseason planning meetings each winter from 2009 to 2012 to provide managers, fishermen, tribal council representatives, and other stakeholders the

opportunity to share information, provide input, and discuss management options available in these management plans. The purpose of these meetings was to cooperatively identify practical management strategies that would assist in getting adequate numbers of Chinook salmon to the spawning grounds in Alaska and Canada. Unfortunately, funds to facilitate a meeting for the purpose of planning management strategies were not available for 2013. Department and USFWS staff attended many other fishery meetings throughout the winter and spring in 2013 to discuss management options with the user groups on the Yukon River. Based on input from these meetings, a preseason management plan was developed for the Yukon River summer season fishery that was more conservative than in previous years. The preseason plan included the following key components:

- The subsistence salmon fishing schedule would begin May 30 in District 1 and be implemented chronologically with the upriver salmon migration (Table 1).
- When the schedule was initiated, gillnets would be restricted to 6-inch maximum mesh size in each district including the Coastal District and the Innoko and Koyukuk Rivers.
- Subsistence fishing on the first pulse of Chinook salmon would be closed. Based on the poor preseason projection, it was likely the closure would be extended to protect the second pulse (meaning an approximately 10 day closure). The closure would be initiated in District 1 and similarly implemented in upriver fishing districts and subdistricts based on migratory timing. After the closure, fishing time may be reduced to further conserve Chinook salmon.
- The Tanana River would be managed to meet Chinook salmon escapement goals for the Chena and Salcha rivers. To improve escapement into the Chena River, a subsistence fishing period would be closed (approximately 5 days) and implemented based on inseason assessment and run timing information. Gillnets would likely be restricted to 6-inch maximum mesh size at the midpoint of the Chinook salmon run to conserve the female component. The personal use fishery would be restricted to 6-inch maximum mesh size on July 1.
- Fishermen were strongly encouraged to voluntarily reduce their Chinook salmon harvest to not exceed 25% of their average annual harvest to help ensure adequate escapement. For example, a family that normally harvests 40 Chinook salmon were requested to consider taking only 10 this year and shift their harvest to other salmon species, where possible, to supplement a reduced Chinook salmon harvest.
- The sport fishery for Chinook salmon would be closed in the mainstem Yukon River. In the Yukon River tributaries (excluding the Tanana River drainage), retention of Chinook salmon would not be permitted in June.
- The Tanana River drainage sport fisheries would be closed to Chinook salmon retention (restricted to catch-and-release). Sport fishing opportunities could be further restricted or liberalized based on inseason run assessments from the Chena and Salcha rivers.
- New commercial gear options available in the Lower Yukon including dip nets, beach seines, and 5.5-inch mesh size gillnets (30 meshes deep) would likely be employed early in the summer chum salmon directed commercial season to reduce the incidental harvest of Chinook salmon. Later in the season, gillnets with 6-inch maximum mesh size were expected to be utilized when the rate of incidental harvest was anticipated to be low.

Since 2001, the subsistence salmon fishery has operated on a schedule established by the Alaska Board of Fisheries (board) and implemented by the department, which is chronologically consistent with migratory timing as the run progresses upstream (Table 1). Subsistence fishing is open 7 days per week until the schedule is established. The subsistence salmon fishing schedule is based on current or past fishing schedules and provides reasonable opportunity for subsistence salmon fishing during years of normal to below average runs. The objectives of the schedule are to 1) reduce harvest early in the run when there is a higher level of uncertainty, 2) spread the harvest throughout the run to reduce harvest impacts on any particular component of the run, and 3) distribute subsistence fishing opportunity among all users during years of low salmon runs.

Table 1.–Yukon Area subsistence salmon fishing schedule, 2013.

Area	Regulatory Subsistence Fishing Periods	Date Schedule To Begin	Open Fishing Times
Coastal District	7 days/wk	All Season	M/T/W/TH/F/SA/SU - 24 hours/day
District 1	Two 36-hour periods/wk	May 30	Mon. 8 pm to Wed. 8 am / Thu. 8 pm to Sat. 8 am
District 2	Two 36-hour periods/wk	June 2	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
District 3	Two 36-hour periods/wk	June 5	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
Subdistrict 4A	Two 48-hour periods/wk	June 9	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Subdistricts 4B, C	Two 48-hour periods/wk	June 16	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Koyukuk and Innoko Rivers	7 days/wk	All Season	M/T/W/TH/F/SA/SU - 24 hours/day
Subdistricts 5A, B, C	Two 48-hour periods/wk	June 21	Tue. 6 pm to Thu. 6 pm / Fri. 6 pm to Sun. 6 pm
Subdistrict 5D	7 days/wk	All Season	M/T/W/TH/F/SA/SU - 24 hours/day
Subdistrict 6	Two 42-hour periods/wk	All Season	Mon. 6 pm to Wed. Noon / Fri. 6 pm to Sun. Noon
Old Minto Area	5 days/wk	All Season	Friday 6 pm to Wednesday 6 pm

Note: this schedule was subject to change depending on run strength.

However, in response to the poor runs observed in 2011 and 2012, extensive measures were taken to drastically alter the subsistence fishing schedule by implementing closures and reducing fishing time to conserve Chinook salmon. Based on the expectation that the 2013 Chinook salmon run could potentially be weaker than the run observed in 2012, it was anticipated that the subsistence fishing schedule would be reduced even more than in previous years in an effort to meet escapement objectives.

2013 Assessment

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

Initial assessment in the lower river is critical to implementing an inseason management plan to operate an orderly fishery throughout the drainage. Three projects on the lower river provided inseason abundance and timing information: the Lower Yukon Test Fishery (LYTF), a set net project primarily designed to assess Chinook salmon run timing operated near Emmonak; a summer chum salmon directed drift gillnet test fishery using 5.5 inch mesh; and Pilot Station sonar which provided mainstem abundance estimates for Chinook and summer chum salmon.

As in recent years, additional drift test fishing was conducted throughout the season in the South Mouth with 8.25-inch mesh gillnets for Chinook salmon to provide supplemental run timing and relative abundance information.

Ice break up in the lower river occurred on June 3, which was considerably later than the average break up date of May 23. The LYTF was operational at the South Mouth site on June 10 and at the Middle Mouth site on June 13. The first Chinook salmon was caught in both the test fishery and in the lower river subsistence fishery on June 10. In the lower river, the water level continued to be high and the debris load was moderate until the end of June. Test fishing project operations were hindered due to high water and debris and initial assessment of the Chinook salmon run in the lower river was challenging. The LYTF was not effective at monitoring the Chinook salmon run this year. The LYTF concluded operations on July 14, with a cumulative CPUE of 7.41, which was the second lowest on record and well below the historical average of 20.10. The first quarter point, midpoint, and third quarter point were June 23, June 28, and July 1. While the set net test fishery experienced problems during the Chinook salmon run, the drift gillnet project operated in Big Eddy until July 15 and provided valuable supplemental assessment information for Chinook salmon entering the South Mouth of the Yukon River.

The preliminary cumulative passage estimate at the sonar project located near Pilot Station was approximately 114,500 Chinook salmon, which was below the historical average[1] of 145,500, and below the average of 128,000 for years with late run timing[2]. Run assessment analysis was focused on making comparisons to other late run years in order to make informed management decisions. The first quarter point, midpoint, and third quarter point were on June 22, June 25, and July 2 respectively. The first pulse of Chinook salmon was estimated to be approximately 38,100 fish, the second pulse was approximately 8,400 fish, the third pulse was about 17,500 fish, and the fourth pulse was 11,400 fish.

Genetic mixed stock analysis (MSA) on the first pulse of Chinook salmon at the sonar located near Pilot Station (June 16–23) indicate that 72% were Canadian-origin Chinook salmon. Genetic MSA on the second pulse of Chinook salmon at the sonar (June 24–July 2) indicated that 50% were Canadian-origin Chinook salmon. Due to a small sample size, samples from June 29 through July 10 were pooled together for genetic MSA on the final groups of Chinook salmon moving past the sonar. Analyses indicated that27% of these samples were from Canadian-origin Chinook salmon. 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 webpage[3].

In 2013, approximately 2.7 million summer chum salmon passed the sonar project near Pilot Station, which was well above the historical median of 1.9 million for the project. The first quarter point, midpoint, and third quarter point were June 22, June 27, and July 3, respectively. Three large pulses of summer chum were detected with the largest group passing the sonar project from June 21 through June 24 and contained approximately 585,300 summer chum salmon.

[1] Average includes years 1995, 1997, 2000, 2002–2008, and 2010–2012. The sonar did not operate in 1996 and project difficulties occurred in 2000, 2001, and 2009.

[2] Years with late run timing used for comparison include 1999, 2001, 2006, 2010 and 2012.

[3] http://www.adfg.alaska.gov/index.cfm?adfg=fishinggeneconservationlab.yukonchinook_baseline

2013 Subsistence Fishery Overview

As in recent years, management of the 2013 summer salmon season was particularly challenging due to the wide disparity in run strength between the overlapping Chinook and summer chum salmon runs.

Based on the expectation that the 2013 Chinook salmon run could be near the lower end of the preseason projection range, approximately 100,000 fish, a precautionary management plan was initiated early in the season. The regulatory subsistence salmon fishing schedule was implemented in District 1 on May 30 and was chronologically implemented in Districts 2 and 3, consistent with migratory timing. Gillnets were restricted to 6-inch or smaller mesh size when the schedule was put in place in these districts. The intent of this action was to allow for harvest opportunity of summer chum salmon while minimizing the overall harvest of Chinook salmon, especially the larger, older females. However, in response to the exceptionally late ice break up, fishermen requested that inseason adjustments be made to this schedule to allow for additional harvest opportunity to target non-salmon species such as sheefish. The department responded by providing additional fishing opportunity prior to the arrival of first Chinook salmon with the reduced mesh size gillnets. Consistent with these changes, implementation of the subsistence salmon fishing schedule in Districts 4–5 were delayed to provide similar early season fishing opportunity to target non-salmon species. At the time the schedule was initiated in these districts, gillnets were also restricted to 6-inch or smaller mesh size to conserve Chinook salmon.

Based on inseason assessment information, the Chinook salmon run appeared to be tracking later than average. Consistent with the new regulation requiring the protection of the first pulse of Chinook salmon, a subsistence fishing period was cancelled in District 1 and the northern portion of the Coastal District beginning June 20, and closures were similarly implemented in upriver districts chronologically as the pulse migrated into those areas. The relatively long Subdistricts 4-A and 5-D were subdivided into smaller areas to improve management precision and flexibility to ensure full protection of Chinook salmon when the reduced subsistence fishing schedule was implemented.

As the Chinook salmon run progressed, inseason projections indicated that the run was very weak and would likely be insufficient to meet all escapement objectives. Each of the subsequent three pulses of Chinook salmon were protected by subsistence fishing closures as they migrated through districts 1–5. Very limited fishing opportunity was provided in between pulses to allow harvest of chum salmon and other species (Table 2). During these open subsistence fishing periods, gillnets continued to be restricted to 6-inch or smaller mesh size and in the upper river districts, the use of fish wheels was allowed with the stipulation that all Chinook salmon were to be release unharmed. In District 5, where relatively few summer chum salmon were available, subsistence fishing time was reduced even further to avoid offering opportunity that would primarily target Chinook salmon. Unfortunately, the most severe reductions in subsistence fishing opportunity occurred in Subdistrict 5-D (Table 2), where additional closures were necessary to increase Chinook salmon passage into Canada in an attempt to meet the Canadian Interim Management Escapement Goal (IMEG) for the Canadian stock.

Table 2.–Reduction in subsistence fishing opportunity from the implementation of the first pulse closure through the end of restrictions, by Yukon River mainstem districts and subdistricts, 2013.

District/Subdistrict	First Pulse Closure	End of Restrictions	% Schedule Reduced
1	6/20	7/15	68%
2	6/23	7/13	67%
3	6/26	7/12	73%
4-A	6/30	7/16	70%
4-B & C	7/3	7/19	70%
5-A, B & C	7/5	7/21	70%
5-D Lower	7/10	8/6	92%
5-D Middle	7/14	8/8	96%
5-D Upper	7/16	8/14	96%

Conservative management actions were also taken in Yukon River tributaries, in an effort to provide protection for Alaskan Chinook salmon stocks. Gillnets were restricted to 6 inches or smaller mesh size in the Innoko River from June 5–July 14 and in the Koyukuk River from June 19–July 26.

In the Tanana River, subsistence salmon fishing was closed to protect the first pulse of Chinook salmon from July 12–July 14 in Subdistricts 6-A and 6-B and from July 12–July 15 in the Old Minto Area. A second subsistence fishing period was closed when it became apparent that the escapement goal for the Chena River was unlikely to be achieved. These restrictions were in effect from July 20–July 25. Additionally, in Subdistrict 6-C, personal use salmon fishing was closed from July 12–August 5, nearly spanning the entire duration of the Chinook salmon run.

Over the course of the last several years, Yukon River fishermen have exhibited incredible flexibility, complying with short notice changes to subsistence fishing schedules and gear restrictions. The department acknowledges the continued commitment made by Yukon River fishermen to conserve the valuable Chinook salmon resource for future generations. Inseason subsistence harvest reports indicated that some fishermen were voluntarily lowering their Chinook salmon subsistence harvest to protect the weak run, opting to shift their harvest to alternative fish species to provide for their subsistence needs. The vast majority of fishermen reported inseason that they harvested well below 50 % of their annual Chinook salmon needs. Department staff is currently conducting the annual post season subsistence harvest surveys and the 2013 preliminary subsistence harvest estimates will not be available until later this winter. However, for a point of reference, slightly less conservative management actions taken in 2012 resulted in an estimated harvest of approximately 30,000 Chinook salmon, which is a 40% reduction of the average annual harvest of approximately 50,000 fish. Based on the aggressively conservative actions taken in 2013 and inseason harvest reports, it is plausible that the Chinook salmon subsistence harvest may be less than what was observed in 2012.

2013 Commercial Fishery

Lower Yukon Districts

In 2013, for the sixth consecutive year, no commercial periods targeting Chinook salmon were allowed in the mainstem Yukon River or in the Tanana River. However, commercial fishing opportunity was provided to target the available surplus of summer chum salmon in Districts 1,

2, Subdistrict 4-A, and District 6. A suite of strategies were used to conservatively manage these fisheries to minimize the impact to the weak Chinook salmon run which are encountered incidentally.

Utilizing new regulations adopted by the board in 2013, the department allowed for the commercial harvest of summer chum salmon using dip nets and beach seines beginning June 18 in District 1 and June 20 in District 2. The intent was to provide for summer chum commercial fishing opportunity even during times when subsistence fishing closures had been enacted to protect Chinook salmon. The impact to Chinook salmon was expected to be minimal as fishermen were required to immediately release incidentally caught Chinook salmon back to the water alive. This was the first time since the reemergence of the Lower Yukon summer chum salmon commercial fishery in 2008, in which commercial fishing began near the first quarter point of the summer chum salmon run when a large volume of fish were available. The department allowed fifteen 12-hour periods in District 1 and seventeen periods in District 2 using dip nets and beach seines only, for a combined harvest of approximately 189,000 summer chum salmon, with 928 Chinook salmon reported released (Table 3). Dip nets were surprisingly successful and accounted for the majority of the summer chum harvest taken with these new gear types. Unfortunately, due to the difficulty of operating beach seine gear in the high water conditions present during the summer season, very few fishermen chose to operate beach seine gear and the limited interest in using this gear quickly waned.

Table 3.–Summer chum salmon harvest and Chinook salmon released, by dip net and beach seine, during the Lower Yukon commercial fishery, 2013.

			Chinook Salmon	Summer Chum Salmon		
District	Gear	Number of Fishermen	Number Caught and Released	Number	Pounds	Avg. Wt.
1	Dip Net	118	281	69,647	418,348	6.0
	Beach Seine	4	19	720	4,538	6.3
2	Dip Net	126	628	119,241	693,176	5.8
Total:		384	928	189,608	1,116,062	5.9

As in recent years, the use of gillnet gear was delayed until after the midpoint of the Chinook salmon run to reduce incidental harvest of Chinook salmon. Utilizing another new gear option, the first commercial gillnet period in District 1 took place July 2 and gillnets were restricted to 5 ½-inch or smaller mesh size, not exceeding 30 meshes in depth (Table 6). This gear option was used for the first six commercial gillnet periods in District 1. Additionally, similar to the last several years, commercial gillnet fishing in District 1 was initially limited to the South Mouth only, where the incidental Chinook salmon harvest rates were anticipated to be low. Later in the season, all of District 1 was open to commercial fishing and the gillnet gear restriction was relaxed to 6-inch or smaller mesh size (Table 6).

Unfortunately, the strategy of limiting the area open to commercial fishing to minimize the incidental harvest of Chinook salmon is more challenging to implement in District 2. As the Yukon River begins to become more channelized in this area, Chinook salmon are more difficult to avoid when commercial fishing with gillnet gear. Therefore, the use of dip nets and beach seine gear was continued for several more periods, before transitioning to gillnet gear in District 2 on July 8. At that time, gillnets were restricted to the traditional, 6-inch or smaller

mesh size to maximize the summer chum salmon harvest while trying to avoid limiting fishermen participation by restricting the gear further.

During the gillnet portion of the commercial season in Districts 1 and 2, concurrent subsistence and commercial fishing periods were regularly instituted. The intent of these concurrent openings was to streamline commercial and subsistence fishing into a single event, therefore reducing the amount of time that Chinook salmon were susceptible to harvest.

The sale of incidentally caught Chinook salmon was prohibited by emergency order during the entire commercial fishing season because subsistence fishing had been restricted during the season in Districts 1-5. This action helped ensure fishermen would not target Chinook salmon during commercial fishing periods, and fishermen could release any incidentally caught live Chinook salmon or use them for subsistence purposes. It was required to report on fish tickets any Chinook salmon caught but not sold. A total of 439 Chinook salmon were reported incidentally harvested in Districts 1 and 2 during the summer season. The prohibition of Chinook salmon sales continued through the fall season. A total of 44 Chinook salmon were caught but not sold in the fall season (Table 6).

The preliminary cumulative summer chum salmon commercial harvest for Districts 1 and 2 combined was 379,143 fish (Table 6). The summer chum salmon harvest was 210% above the 2003–2012 average harvest of 112,289 fish (Table 7). Dip net and beach seine harvest was a significant contributor in making the 2013 summer chum salmon harvest in the Lower Yukon the largest on record since 1989.

Upper Yukon Districts

Regulations adopted by the board in March 2012 allowed the department to open summer chum salmon directed commercial fishing periods in Subdistrict 4-A during times of Chinook salmon conservation with fish wheels only. Commercial fishing began July 1 and fish wheels had to be attended at all times during operations and all Chinook salmon caught in the fish wheels had to be immediately released to the water alive. Additionally, new regulations were adopted in 2013 that detailed construction specifications for commercial fish wheels in Subdistrict 4-A that are intended to reduce the potential for injuring Chinook salmon while being released. After the vast majority of the Chinook salmon run had passed through the area, the requirement that commercial fish wheels must be manned at all times during operations and all Chinook salmon caught in the fish wheels must immediately be released to the water alive was discontinued. A total of 27 24-hour periods were implemented resulting in a total of 648 fishing hours (Table 6). The preliminary cumulative summer chum salmon harvest for Subdistrict 4-A was 100,507 fish, with the majority of the harvest being female (Table 6). A single fish buyer operated in Kaltag during the 2013 season and the summer chum salmon harvest was 167% above the most recent 10-year average (2003–2012) (Table 7). A total of 100 Chinook salmon were reported as caught and released alive back to the water, and no Chinook salmon were reported to have been kept for subsistence purposes (Table 6).

District 6 was managed using inseason assessment information provided by multiple 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. Based upon this surplus and favorable market interest, the department scheduled the first commercial fishing period to target summer chum salmon in District 6 on July 19 (Table 6). As in Subdistrict 4-A, commercial fishing gear was initially restricted to fish wheels that had to be

attended at all times during operations, and all Chinook salmon caught in the fish wheels had to be immediately released to the water alive. These gear restrictions were relaxed on August 4 after the Chinook run in the Tanana River was nearly over. The department scheduled seven commercial fishing periods and the preliminary cumulative harvest was 5,937 summer chum salmon (Table 6). A total of 97 Chinook salmon were reported as caught and released alive back to the water, and 1 Chinook salmon was recorded on a fish ticket as caught but not sold. No Chinook salmon were allowed to be sold.

The total commercial harvest for the entire Yukon Area was 485,587 summer chum salmon, which was 220% above the 2003–2012 average harvest of 151,776 fish (Table 7).

2013 Fishing Effort and Exvessel Value

A total of 395 permit holders participated in the summer chum salmon fishery, which was approximately 22% below the 2003–2012 average of 506 permit holders (Table 8). 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 384 permit holders fished in the Lower Yukon Area in 2013, which was approximately 22% below the 2003–2012 average of 489. In the Upper Yukon Area, 11 permit holders fished, which was approximately 35% below the 2003–2012 average of 17.

Yukon River fishermen in Alaska received an estimated $1.87 million for their summer chum salmon harvest in 2013, approximately 4% above the 2003–2012 average of $1.79 million (Table 9). Lower Yukon River exvessel value was estimated to be $1.7 million and fishermen received $0.75 per pound for summer chum salmon. The estimated average income for Lower Yukon Area fishermen in 2013 was $4,483.

Upper Yukon Area fishermen received an average of $0.30 per pound for summer chum salmon sold in the round. The average price paid in the Upper Yukon Area was slightly above the 2003-2012 average of $0.26 per pound (Table 9). The exvessel value was estimated to be $150,852. The average income for Upper Yukon Area fishermen that participated in the 2012 fishery was $17,025. No Chinook salmon were sold in the Yukon Area in 2013.

2013 Age and Sex Composition

Test Fisheries

The Chinook salmon age composition from the 8.5 inch LYTF set nets through the end of season was 2% age-4, 21% age-5, 75% age-6, and 2% age-7 fish. The sample size was 581 fish and females comprised 62% of the sample.

The Chinook salmon age composition from the 8.25 inch Big Eddy drift nets through the end of the season was 2% age-4, 26% age-5, 68% age-6, and 4% age-7 fish. The sample size was 123 fish and females comprised 59% of the sample.

The summer chum salmon age composition from the 5.5 inch LYTF drift nets through the end of season was 45% age-4, 53% age-5, and 2% age-6 fish. The sample size was 1,197 fish and females comprised 50% of the sample.

Age composition data from other projects are not yet available.

Subsistence Harvest

Chinook salmon were sampled throughout the subsistence harvest season in Districts 1 and 2 from subsistence fishermen working in conjunction with the Association of Village Council Presidents (AVCP). In addition, department sampled the incidental commercial catch that was retained for subsistence in District 1. The Chinook salmon age composition from the subsistence harvest in Districts 1 and 2 was 25% age-4, 35% age-5, 39% age-6, and 2% age-7 fish. The sample size was 227 fish and females comprised 35% of the sample.

Commercial Harvest

The summer chum salmon age composition from the District 1 commercial harvest was 45% age-4, 53% age-5, and 2% age-6 fish. The sample size was 1,760 fish collected from 11 periods and females comprised 46% of the sample.

The summer chum salmon age and sex composition from the commercial harvest in Subdistrict 4-A and District 6 are not available at this time.

2013 Escapement

Chinook Salmon

Chinook salmon escapement goals for the West Fork Andreafsky, Nulato, and Salcha rivers were achieved (Tables 4 & 10). However, the escapement goals for the East Fork Andreafsky, Anvik and Chena rivers were not met. The cumulative count on the Gisasa River was below average. High water conditions on the Chena River precluded counting for much of the season. Preliminary Chinook salmon passage at Eagle sonar was approximately 30,700 fish (Table 4), yielding a preliminary border passage estimate of approximately 30,400[1]. These numbers, however, are subject to change with postseason data analysis.

Table 4.–Escapement goals and estimates for Chinook salmon at selected Yukon River tributaries. Escapement estimates are preliminary.

Stream	Current Goal	Type of Goal	2013 Escapement
East Fork Andreafsky River Weir	2,100–4,900	SEG	1,998
West Fork Andreafsky River Aerial	640–1,600	SEG	1,141
Anvik River Index Aerial	1,100–1,700	SEG	940
Nulato River Aerial (Forks Combined)	940–1,900	SEG	1,118
Chena River Tower	2,800–5,700	BEG	1,653[2]
Salcha River Tower	3,300–6,500	BEG	4,941
Eagle Sonar	42,500–55,000	IMEG[3]	30,725

[1] Border passage was calculated by subtracting the average subsistence harvest above Eagle sonar (years 2010-2012) from the passage estimate at Eagle sonar.

[2] Project operations were hindered by high water conditions for much of the season.

[3] The US/Canada Yukon River Panel agreed to a 1-year 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 include a minimum of 42,500 fish for escapement, provide for a subsistence harvest in the community of Eagle upstream of the sonar (approximately 1,000–2,000 fish), and incorporate Canadian harvest sharing as dictated in the US/Canada Yukon River Treaty (20%–26% of the total allowable catch).

Summer Chum Salmon

Most tributaries producing summer chum salmon experienced above average escapement (Table 5). The East Fork Andreafsky River Sustainable Escapement Goal (SEG) and Anvik River Biological Escapement Goal (BEG) were achieved and counts at the Gisasa and Henshaw rivers were above average. Salcha River and Chena River escapements, as assessed by tower counts, were above their historical medians.

Table 5.–Escapement goals and estimates for summer chum salmon at selected Yukon River tributaries. Escapement estimates are preliminary.

Stream	Current Goal	Type of Goal	2013 Escapement
East Fork Andreafsky River Weir	> 40,000	SEG	61,234
Anvik River Sonar	350,000–750,000	BEG	571,690
Gisasa River Weir	N/A		80,055
Henshaw Creek Weir	N/A		263,746
Chena River Tower	N/A		21,385
Salcha River Tower	N/A		59,188

Canadian Fisheries

The preseason outlook was for a run of approximately 49,000 to 72,000 Canadian-origin Chinook salmon, and Department of Fisheries and Oceans (DFO) managers conducted Chinook salmon fisheries according to available abundance and international harvest sharing provisions. Based on the projected border passage of between 32,000 and 36,000 Chinook salmon, which fell far below the preseason projection, the Chinook salmon run was classified to be in the "yellow management zone", which indicates that the First Nation fishery would likely be restricted to ensure an adequate spawning escapement. The domestic and commercial fishery remained closed throughout the 2013 Chinook salmon run. Recreational harvest limits were varied to zero and further closures were implemented to prohibit catch and release fishing by closing certain spawning areas to all angling (Tatchun River and a portion of the Teslin River). Additionally, First Nations fishermen were asked to continue to reduce harvest significantly or curtail harvest completely in order to maximize escapement to the spawning grounds. While not all information is currently available, the preliminary First Nation harvest is estimated to be approximately 1,500 to 2,000 Chinook salmon. Therefore, the 2013 harvest is expected to be similar to the 2012 harvest (2,000 Chinook salmon), which was the lowest harvest on record. Several communities curtailed fishing effort altogether.

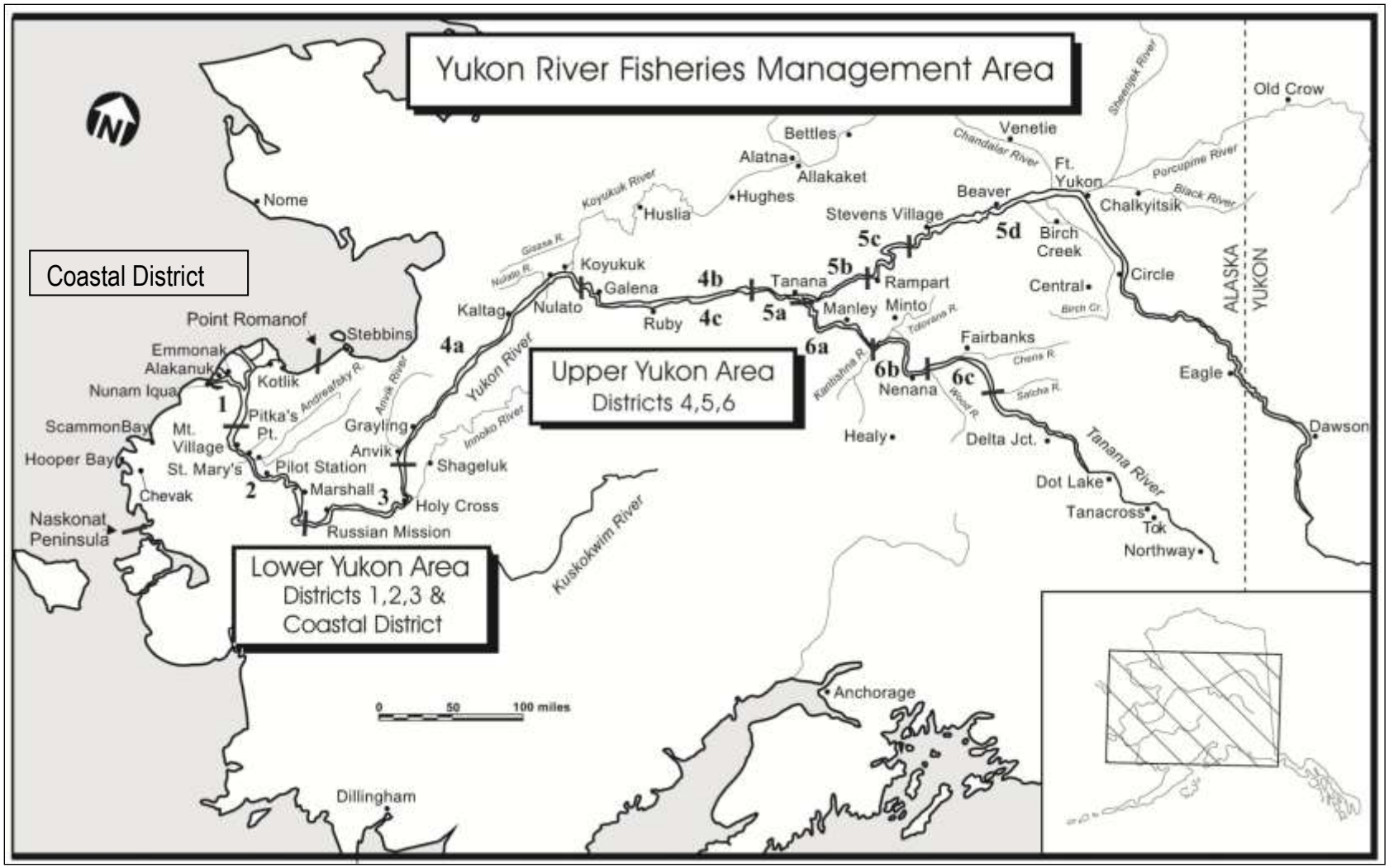

Figure 1.–Yukon Area communities and fishing districts.

Table 6.–Preliminary summer season commercial harvest summary, Yukon Area, 2013.

District 1														
										Chinook Salmon		Summer Chum Salmon		
Period		Starting Time	Start Date	Ending Time	End Date	Hours Fished	Gear Type Type [a]	Mesh Size	Number of Fishermen	Number Caught and Released	Number Caught but Not Sold	Number	Pounds	Avg. Wt.
1		12:00 PM	18-Jun	12:00 AM	18-Jun	12	DN/BS		12	30		1,583	10,063	6.4
2		6:00 PM	19-Jun	3:00 AM	20-Jun	9	DN/BS		21	17		2,378	14,819	6.2
3		12:00 PM	20-Jun	12:00 AM	20-Jun	12	DN/BS		36	49		4,356	26,968	6.2
4		12:00 PM	21-Jun	12:00 AM	21-Jun	12	DN/BS		40	21		5,623	35,036	6.2
5		12:00 PM	22-Jun	12:00 AM	22-Jun	12	DN/BS		53	29		6,101	37,928	6.2
6		12:00 PM	23-Jun	12:00 AM	23-Jun	12	DN/BS		64	37		5,671	35,189	6.2
7		12:00 PM	24-Jun	12:00 AM	24-Jun	12	DN/BS		56	14		6,121	37,248	6.1
8		12:00 PM	25-Jun	12:00 AM	25-Jun	12	DN/BS		76	33		12,699	76,888	6.1
9		12:00 PM	26-Jun	12:00 AM	26-Jun	12	DN/BS		66	43		9,375	55,283	5.9
10		8:00 AM	27-Jun	8:00 PM	27-Jun	12	DN/BS		37	8		4,020	23,470	5.8
11		12:00 PM	28-Jun	12:00 AM	28-Jun	12	DN/BS		65	12		6,419	37,476	5.8
12		12:00 PM	29-Jun	12:00 AM	29-Jun	12	DN/BS		33	1		1,755	10,375	5.9
13		12:00 PM	30-Jun	12:00 AM	30-Jun	12	DN/BS		21	6		1,467	8,303	5.7
14		8:00 AM	1-Jul	8:00 PM	1-Jul	12	DN/BS		22	0		1,642	9,341	5.7
15		8:00 AM	2-Jul	4:00 PM	2-Jul	8	DN/BS		19	0		757	4,499	5.9
16	b,c	6:00 PM	2-Jul	12:00 AM	2-Jul	6	GN	5.5	74		23	16,204	97,934	6.0
17	b,c	6:00 PM	3-Jul	12:00 AM	3-Jul	6	GN	5.5	84		38	15,969	98,090	6.1
18	b,c	2:00 PM	4-Jul	8:00 PM	4-Jul	6	GN	5.5	80		5	12,541	74,652	6.0
19	b,c	6:00 PM	5-Jul	12:00 AM	5-Jul	6	GN	5.5	109		6	14,085	83,442	5.9
20	b,c	6:00 PM	6-Jul	12:00 AM	6-Jul	6	GN	5.5	89		9	7,565	44,477	5.9
21	c	6:00 PM	7-Jul	12:00 AM	7-Jul	6	GN	5.5	94		7	8,088	48,692	6.0
22		8:00 PM	8-Jul	2:00 AM	9-Jul	6	GN	6.0	131		21	13,077	82,119	6.3
23		6:00 PM	9-Jul	12:00 AM	9-Jul	6	GN	6.0	148		33	19,842	128,094	6.5
24		3:00 PM	11-Jul	12:00 AM	11-Jul	9	GN	6.0	149		28	13,011	82,927	6.4
25		3:00 PM	13-Jul	12:00 AM	13-Jul	9	GN	6.0	70		5	1,879	11,536	6.1
26		3:00 PM	15-Jul	12:00 AM	15-Jul	9	GN	6.0	137		20	15,643	102,182	6.5
									Fall Season		15			
District 1 Subtotal:						248			220	300	210	207,871	1,277,031	6.1

-continued-

Table 6.–Page 2 of 4.

District 2													
									Chinook Salmon		Summer Chum Salmon		
Period	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Gear Type Type [a]	Mesh Size	Number Fishermen	Number Caught and Released	Number Caught but Not Sold	Number	Pounds	Avg. Wt.
1	6:00 PM	20-Jun	3:00 AM	21-Jun	9	DN/BS		15	0		1,882	10,903	5.8
2	12:00 PM	22-Jun	12:00 AM	22-Jun	12	DN/BS		27	12		5,318	32,286	6.1
3	12:00 PM	23-Jun	12:00 AM	23-Jun	12	DN/BS		34	22		5,967	36,065	6.0
4	12:00 PM	24-Jun	12:00 AM	24-Jun	12	DN/BS		45	14		5,722	34,524	6.0
5	12:00 PM	25-Jun	12:00 AM	25-Jun	12	DN/BS		63	47		7,570	45,346	6.0
6	12:00 PM	26-Jun	12:00 AM	26-Jun	12	DN/BS		61	60		7,214	42,812	5.9
7	12:00 PM	27-Jun	12:00 AM	27-Jun	12	DN/BS		65	68		12,858	74,876	5.8
8	12:00 PM	28-Jun	12:00 AM	28-Jun	12	DN/BS		69	98		16,530	95,667	5.8
9	12:00 PM	29-Jun	12:00 AM	29-Jun	12	DN/BS		58	19		9,912	56,903	5.7
10	12:00 PM	30-Jun	12:00 AM	30-Jun	12	DN/BS		35	44		6,999	42,010	6.0
11	12:00 PM	1-Jul	12:00 AM	1-Jul	12	DN/BS		52	38		7,390	41,566	5.6
12	12:00 PM	2-Jul	12:00 AM	2-Jul	12	DN/BS		54	57		6,601	37,390	5.7
13	8:00 AM	3-Jul	12:00 AM	3-Jul	16	DN/BS		57	57		8,821	49,998	5.7
14	8:00 AM	4-Jul	8:00 PM	4-Jul	12	DN/BS		48	23		5,287	30,002	5.7
15	12:00 PM	5-Jul	12:00 AM	5-Jul	12	DN/BS		57	27		5,352	30,434	5.7
16	12:00 PM	6-Jul	12:00 AM	6-Jul	12	DN/BS		65	33		4,878	27,176	5.6
17	8:00 AM	7-Jul	8:00 PM	7-Jul	12	DN/BS		28	9		940	5,218	5.6
18	8:00 PM	8-Jul	12:00 AM	8-Jul	4	GN	6.0	112		76	12,162	75,312	6.2
19	4:00 PM	10-Jul	8:00 PM	10-Jul	4	GN	6.0	115		33	10,168	62,426	6.1
20	6:00 PM	11-Jul	10:00 PM	11-Jul	4	GN	6.0	107		43	10,124	62,829	6.2
21	11:00 AM	14-Jul	8:00 PM	14-Jul	9	GN	6.0	56		38	8,086	50,401	6.2
22	3:00 PM	17-Jul	12:00 AM	17-Jul	9	GN	6.0	128		54	11,491	74,190	6.5
								Fall Season		29			
District 2 Subtotal:					235			174	628	273	171,272	1,018,334	5.9
Lower Yukon Area, Summer Season, Districts 1, 2, and 3 Subtotal [d,e]:					483			384	928	483	379,143	2,295,365	6.1

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Table 6.–Page 3 of 4.

District 4														
						Hours				Chinook Salmon		Summer Chum Salmon		
Period		Starting Time	Start Date	Ending Time	End Date	Fished 4-A	Gear Type	Mesh Size	Number Fishermen	Number Caught and Released	Number Caught but Not Sold	Number	Pounds	Avg. Wt.
1	f	12:01 AM	1-Jul	12:00 AM	1-Jul	24	FW		-	-		-	-	-
2	f	12:01 AM	2-Jul	12:00 AM	2-Jul	24	FW		-	-		-	-	-
3	f	12:01 AM	3-Jul	12:00 AM	3-Jul	24	FW		2	0		638	2,999	4.7
4	f	12:01 AM	4-Jul	12:00 AM	4-Jul	24	FW		6	0		4,174	20,453	4.9
5	f	12:01 AM	5-Jul	12:00 AM	5-Jul	24	FW		6	8		5,394	24,812	4.6
6	f	12:01 AM	6-Jul	12:00 AM	6-Jul	24	FW		5	2		3,394	16,970	5.0
7	f	12:01 AM	7-Jul	12:00 AM	7-Jul	24	FW		8	1		8,682	37,333	4.3
8	f	12:01 AM	8-Jul	12:00 AM	8-Jul	24	FW		7	5		6,404	28,818	4.5
9	f	12:01 AM	9-Jul	12:00 AM	9-Jul	24	FW		7	0		7,151	31,464	4.4
10	f	12:01 AM	10-Jul	12:00 AM	10-Jul	24	FW		8	4		3,543	15,944	4.5
11	f	12:01 AM	11-Jul	12:00 AM	11-Jul	24	FW		8	10		6,745	32,376	4.8
12	f	12:01 AM	12-Jul	12:00 AM	12-Jul	24	FW		8	16		6,814	31,344	4.6
13	f	12:01 AM	13-Jul	12:00 AM	13-Jul	24	FW		9	8		6,674	33,370	5.0
14	f	12:01 AM	14-Jul	12:00 AM	14-Jul	24	FW		9	14		5,979	27,503	4.6
15	f	12:01 AM	15-Jul	12:00 AM	15-Jul	24	FW		7	15		4,520	22,148	4.9
16	f	12:01 AM	16-Jul	12:00 AM	16-Jul	24	FW		7	0		3,247	15,274	4.7
17	f	12:01 AM	17-Jul	12:00 AM	17-Jul	24	FW		8	8		3,212	15,095	4.7
18	f	12:01 AM	18-Jul	12:00 AM	18-Jul	24	FW		7	7		2,761	12,980	4.7
19	f	12:01 AM	19-Jul	12:00 AM	19-Jul	24	FW		7	1		3,410	15,683	4.6
20	f	12:01 AM	20-Jul	12:00 AM	20-Jul	24	FW		8	0		1,858	8,361	4.5
21		12:01 AM	21-Jul	12:00 AM	21-Jul	24	FW/GN	6.0	8	0		2,980	13,708	4.6
22		12:01 AM	22-Jul	12:00 AM	22-Jul	24	FW/GN	6.0	7	1		2,948	13,856	4.7
23		12:01 AM	23-Jul	12:00 AM	23-Jul	24	FW/GN	6.0	9	0		3,512	17,560	5.0
24		12:01 AM	24-Jul	12:00 AM	24-Jul	24	FW/GN	6.0	9	0		2,602	13,010	5.0
25		12:01 AM	25-Jul	12:00 AM	25-Jul	24	FW/GN	6.0	7	0		1,808	9,040	5.0
26		12:01 AM	26-Jul	12:00 AM	26-Jul	24	FW/GN	6.0	7	0		1,218	6,090	5.0
27		12:01 AM	27-Jul	12:00 AM	27-Jul	24	FW/GN	6.0	7	0		839	4,195	5.0
District 4 Subtotal:						648			9	100		100,507	470,386	4.7

-continued-

Table 6.–Page 4 of 4.

Subdistricts 6-A, 6-B, and 6-C														
						Hours				Chinook Salmon		Summer Chum Salmon		
Period		Starting Time	Start Date	Ending Time	End Date	Fished 6-AB	Gear Type	Mesh Size	Number Fishermen	Number Caught and Released	Number Caught but Not Sold	Number	Pounds	Avg. Wt.
1	[f]	6:00 PM	19-Jul	12:00 PM	21-Jul	42	FW		1	20		283	1,700	6.0
2	[f]	6:00 PM	22-Jul	12:00 PM	24-Jul	42	FW		1	39		881	5,247	6.0
3	[f]	6:00 PM	26-Jul	12:00 PM	28-Jul	42	FW		2	23		1,530	10,352	6.8
4	[f]	6:00 PM	29-Jul	12:00 PM	31-Jul	42	FW		1	12		1,198	7,516	6.3
5		6:00 PM	2-Aug	12:00 PM	4-Aug	42	FW/GN	6.0	2	3	1	1,345	7,845	5.8
6		6:00 PM	5-Aug	12:00 PM	7-Aug	42	FW/GN	6.0	1	0		700	3,990	5.7
7		6:00 PM	9-Aug	12:00 PM	11-Aug	42	FW/GN	6.0	-	-		-	-	-
District 6 Subtotal:						294			2	97	1	5,937	36,650	6.2
Upper Yukon Area, Summer Season, Districts 4, 5, and 6 Subtotal:						942			11	197	1	106,444	507,036	4.8
Yukon Area, Summer Season, Districts 1 Through 6 Total: [d,e]						1,425			395	1,125	484	485,587	2,802,401	5.8

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 fishwheels must immediately be released alive. DN = dip net; BS = beach seine; GN = gillnet; FW = fish wheel. No commercial fishing occurred in Districts 3 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 portion open to commercial fishing was the South Mouth area down river of the lower point of Head of Passes to Chris Point within District 1.

[c] Gillnets were restricted to a maximum mesh size of 5.5 inches not to exceed 30 meshes in depth.

[d] 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.

[e] Includes Chinook salmon caught but not sold in the fall season.

[f] Fish wheels were to be manned at all times. Chinook salmon caught in fish wheels were to be released immediately back to the water alive.

Table 7.–Summer Chum commercial harvest and escapement comparisons, Yukon River, 2003–2013.

District/ Subdistrict	Guideline Harvest Range	Summer Chum Salmon Harvest [a]											Comparison of 2013 With Recent 10-Year Average (In Parentheses)
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
1		3,579	13,993	23,965	21,816	106,790	67,459	71,355	102,267	163,439	150,800	207,871	187% (72,546)
2		2,583	5,782	8,313	25,543	69,432	58,139	86,571	80,948	103,071	57,049	171,272	244% (49,743)
Subtotal 1 & 2	251,000-755,000	6,162	19,775	32,278	47,359	176,222	125,598	157,926	183,215	266,510	207,849	379,143	210% (122,289)
3	6,000-19,000				116	1							
4A	113,000-338,000					7,304	23,746	4,589	44,207		108,222	100,507	167% (37,614
4BC	16,000-47,000	62											(62)
Subtotal 4		62				7,304	23,746	4,589	44,207		108,222	100,507	221% (31,355)
5ABC		0	25	0	0	0							(5)
5D		0											
Subtotal 5	1,000-3,000		25		0								(13)
6	13,000-38,000	4,461	6,610	8,986	44,621	14,674	1,846	7,777	5,466	8,651	3,504	5,937	-44% (10,660)
Total	400,000-1,200,000	10,685	26,410	41,264	92,096	198,201	151,190	170,292	232,888	275,161	319,575	485,587	220% (151,776)

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Table 7.–Page 2 of 2.

Project	Summer Chum Salmon Escapement											Comparison of 2013 With Recent 5-Year Average (In Parentheses)
	Escapement Goal	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
East Fork Andreafsky River Weir	>40,000 SEG[b]	22,461	64,883	20,127	102,260	69,642	57,259	8,770	72,839	100,473	56,680	61,234 [d]	3% (59,204)
Pilot Station Sonar		1,168,518	1,357,826	2,439,616	3,767,044	1,726,885	1,665,667 [e]	1,285,437	1,327,581	1,977,808	2,130,89	2,695,70 [d]	61% (1,677,478)
Anvik River Sonar	350,000-700,000 BEG[f]	256,920	365,353	525,391	605,485 [g]	460,121	374,928 [d]	193,099	396,173	642,527	483,972	571,690 [d]	37% (418,140)
Henshaw Creek Weir		22,556	86,474	237,481	[h]	44,425	97,281	156,201	105,398	248,247	292,082	263,746 [d]	47% (179,842)
Nulato River Tower		19,590 [c]	[h]	[h]	[h]	[h]	[h]	[h]	[h]	[h]		[h]	
Gisasa River Weir		25,999	37,851	172,259	261,305	46,257	36,938	25,904	47,669	95,796	83,423	80,055 [d]	38% (57,946)
Clear Creek Tower		6,159	15,661	26,420	29,166	6,029 [i]	[h]	[h]	[h]	[h]		[h]	
Chena River Tower		573 [c]	15,162 [c]	2,928 [c]	35,109 [c]	4,999	1,300 [c]	16,516	7,560	[j]	6,882	21,385 [d]	165% (8,065)
Salcha River Tower		[j]	47,861	193,085	111,869	13,069	2,212 [c]	31,035	22,185	31,002 [j]	46,252	59,188 [d]	123% (26,537)
ESCAPEMENT INDEX [k]		348,099	617,584	1,151,271	1,116,028	638,513	569,918	431,525	651,824	1,118,045	969,291	1,057,29	41% (748,121)

[a] Commercial harvest includes the estimated harvest of females to produce roe sold, except for Districts 3 and 4, which also includes the estimated number of males harvested to produce roe sold.

[b] SEG = "Sustainable escapement goal", as defined by the Sustainable Fisheries Policy.

[c] Incomplete count due to late installation and/or early removal of project.

[d] Data are preliminary.

[e] 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.

[f] BEG = "Biological escapement goal", as defined by the Sustainable Fisheries Policy. Range established in 2001.

[g] HTI and DIDSON sonar equipment used in 2006. Estimates reported are DIDSON derived.

[h] Did not operate.

[i] Videography count.

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

[k] The escapement index is the summed escapements for East Fork Andreafsky weir, Anvik sonar, Gisasa weir, Henshaw weir, Nulato, and Salcha towers.

Table 8.–Number of commercial salmon fishing gear permit holders who delivered fish, listed by district and season, Yukon Area, 1971–2013.

	Chinook and Summer Chum Salmon Season								
	Lower Yukon Area				Upper Yukon Area				
Year	District 1	District 2	District 3	Subtotal [a]	District 4	District 5	District 6	Subtotal	Total
1971	405	154	33	592	-	-	-	-	592
1972	426	153	35	614	-	-	-	-	614
1973	438	167	38	643	-	-	-	-	643
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	455	225	20	700	77	34	25	136	836
1984	444	217	20	613	54	31	27	112	725
1985	425	223	18	666	74	32	27	133	799
1986	441	239	7	672	75	21	27	123	795
1987	440	239	13	659	87	30	24	141	800
1988	456	250	22	678	95	28	33	156	834
1989	445	243	16	687	98	32	29	159	846
1990	453	242	15	679	92	27	23	142	821
1991	489	253	27	678	85	32	22	139	817
1992	438	263	19	679	90	28	19	137	816
1993	448	238	6	682	75	30	18	123	805
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
2003-2012 Avg.	307	198	5	489	6	14	6	17	506
2013 vs. Avg.	-28.4%	-12.2%		-21.5%	42.1%	-100.0%	-67.2%	-34.5%	-22.0%

[a] 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. Some individuals fishermen in the Lower Yukon Area may have operated in more than one district during the season.

Table 9.–Value of commercial salmon fishery to Yukon Area fishermen, 1977–2013.

	Chinook					Summer Chum						Value by Species		Value by Area		
	Lower Yukon		Upper Yukon			Lower Yukon			Upper Yukon							
Year	$/lb	Value	$/lb	$/Roe	Value	$/lb	$/Roe	Value	$/lb	$/Roe	Value	Chinook	Summer Chum	Lower	Upper	Total
1977	0.85	1,841,033	1.37		148,766	0.40		1,007,280	0.27	2.66	306,481	1,989,799	1,313,761	2,848,313	455,247	3,303,560
1978	0.90	2,048,674	0.87		66,472	0.45		2,071,434	0.24	N/A	655,738	2,115,146	2,727,172	4,120,108	722,210	4,842,318
1979	1.09	2,763,433	1.00		124,230	0.52		2,242,564	0.25	3.00	444,924	2,887,663	2,687,488	5,005,997	569,154	5,575,151
1980	1.04	3,409,105	0.85		113,662	0.20		1,027,738	0.23	2.50	627,249	3,522,767	1,654,987	4,436,843	740,911	5,177,754
1981	1.20	4,420,669	1.00		206,380	0.40		2,741,178	0.20	3.00	699,876	4,627,049	3,441,054	7,161,847	906,256	8,068,103
1982	1.41	3,768,107	1.02		162,699	0.40		1,237,735	0.18	2.75	452,837	3,930,806	1,690,572	5,005,842	615,536	5,621,378
1983	1.40	4,093,562	1.08		105,584	0.34		1,734,270	0.16	1.66	281,883	4,199,146	2,016,153	5,827,832	387,467	6,215,299
1984	1.50	3,510,923	0.95		102,354	0.26		926,922	0.23	1.78	382,776	3,613,277	1,309,698	4,437,845	485,130	4,922,975
1985	1.50	4,294,432	0.86		82,644	0.35		1,032,700	0.23	1.94	593,801	4,377,076	1,626,501	5,327,132	676,445	6,003,577
1986	1.63	3,165,078	0.89		73,363	0.38		1,746,455	0.22	2.08	634,091	3,238,441	2,380,546	4,911,533	707,454	5,618,987
1987	1.98	5,428,933	0.79		136,196	0.48		1,313,618	0.19	2.22	323,611	5,565,129	1,637,229	6,742,551	459,807	7,202,358
1988	2.97	5,463,800	1.04		142,284	0.66		5,001,100	0.23	4.33	1,213,991	5,606,084	6,215,091	10,464,900	1,356,275	11,821,175
1989	2.77	5,181,700	0.84		108,178	0.34		2,217,700	0.24	4.41	1,377,117	5,289,878	3,594,817	7,399,400	1,485,295	8,884,695
1990	2.84	4,820,859	0.72		105,295	0.24		497,571	0.11	4.41	506,611	4,926,154	1,004,182	5,318,430	611,906	5,930,336
1991	3.70	7,128,300	0.70	2.92	97,140	0.36		782,300	0.18	4.21	627,177	7,225,440	1,409,477	7,910,600	724,317	8,634,917
1992	4.12	9,957,002	0.91	2.82	168,999	0.27		606,976	0.30	4.53	525,204	10,126,001	1,132,180	10,563,978	694,203	11,258,181
1993	2.70	4,884,044	1.06	5.52	113,217	0.37		226,772	0.35	8.53	203,762	4,997,261	430,534	5,110,815	316,979	5,427,794
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

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	Chinook					Summer Chum										
	Lower Yukon		Upper Yukon			Lower Yukon			Upper Yukon			Value by Species		Value by Area		
Year	$/lb	Value	$/lb	$/Roe	Value	$/lb	$/Roe	Value	$/lb	$/Roe	Value	Chinook	Summer Chum	Lower	Upper	Total
2008	4.64	325,470				0.40		326,930	0.25	3.00	65,840	325,470	392,770	656,606 [a]	65,840	718,240
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
2003-2012 Avg.	3.86	1,637,766	1.01		32,697	0.35		421,363	0.26	3	45,545	1,658,202	466,908	1,731,996	61,894	1,793,470
2013 vs. Avg.						114.9%		308.6%	17.1%	-100.0%	231.2%	-100.0%	301.0%	-0.6%	143.7%	4.4%

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.

Table 10.–Chinook salmon commercial harvest and escapement comparisons, Yukon River, 2003–2013.

Chinook Salmon Commercial Harvest [a]														
District/Subdistrict	Guideline Harvest Range	2003	2004	2005	2006	2007	2008	2009 [b]	2010	2011 [b]	2012 [b]	2013[b]	Comparison of 2013 With Recent 10-Year Average (In Parentheses)	
1		22,709	28,403	16,694	23,748	18,616	2,530	90	5,744	36	0	0	-100%	(11,857)
2		14,220	24,145	13,413	19,843	13,306	2,111	226	4,153	46	0	0	-100%	(9,146)
Subtotal 1 & 2	60,000-120,000	36,929	52,548	30,107	43,591	31,922	4,641	316	9,897	82	0	0	-100%	(21,003)
3	1,800-2,200				315	190								(253)
4A														
4BC		562												
Subtotal 4	2,250-2,850	562												
5ABC	2,400-2,800	908	1,546	1,469	1,839	1,241								(1,401)
5D	300-500	226												(226)
Subtotal 5		1,134	1,546	1,469	1,839	1,241								(1,446)
6	600-800	1,813	2,057	453	84	281								(11,857)
Total Alaska	67,350-129,150	40,438	56,151	32,029	45,829	33,634	4,641	316	9,897	82				(24,737)
Canada [c]		2,672	3,785	4,066	2,332		1	364	0	4	0	0	-100%	(1,469)

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Chinook Salmon Escapement

Project	Escapement Goal	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Comparison of 2013 With Recent 5-Year Average (In Parentheses)
East Fork Andreafsky River Weir	2,100-4,900 SEG[f]	4,336	8,045	2,239	6,463	4,504	4,242	3,004	2,413	5,213	2,517	1,998 [d]	-43% (3,478)
East Fork Andreafsky River Aerial[e]	960-1,700 SEG[f]	1,116 [g]	2,879	1,715	591 [g]	1,758	278 [g]	84 [g]	537	620	[h]	1,441 [d]	279% (380)
West Fork Andreafsky River Aerial[e]	640-1,600 SEG[f]	1,578 [g]	1,317	1,492	824	976	262 [g]	1,678	858	1,173	[h]	1,090 [d]	10% (993)
Pilot Station Sonar		268,537	156,606	159,441	169,403	125,553	130,643 [i]	144,049 [j]	120,175	123,369	106,731	114,482 [d]	-8% (124,993)
Anvik River Index Aerial [e]	1,100-1,700 SEG[f]	973 [g]	3,304	1,922	1,776	1,497	827 [g]	590	721	501	451	940 [d]	52% (618)
Henshaw Creek Weir		763	1,248	1,059	[k]	740	766	1,637	857	1,796	922	706 [d]	-41% (1,196)
Nulato River Tower		1,716	[k]	[k]	[k]	[k]	[k]	[k]	[k]	[k]	[k]	[k]	
Nulato River Aerial [e]	940-1,900 SEG[f]	[g]	1,321	553	1,292	2,583	922	2,260	711	1,401	1,373	1,118 [d]	-16% (1,333)
Gisasa River Weir		1,901	1,774	3,111	3,030	1,425	1,735	1,955	1,516	2,692	1,323	1,126 [d]	-39% (1,844)
Gisasa River Aerial [e]	420-1,100 SEG[f]	[h]	731	958	843	593	487	515	264	906	[h]	[h]	(543)
Chena River Tower MR Tagging [m]	2,800-5,700 BEG[l]	11,100 [o]	9,645	[n]	2,936	3,806	3,208	5,253	2,382	[n]	2,220	1,653 [d]	-49% (3,266)
Salcha River Tower MR Tagging [m]	3,300-6,500 BEG[l]	15,500 [p]	15,761	5,988	10,679	6,425	5,415 [p]	12,774	6,135	3,537 [q]	7,165	4,941 [d]	-29% (7,005)
Eagle Sonar				81,527	73,691	41,697	38,097	69,957	35,074	51,271	34,747	30,725 [d]	-33% (45,829)
Canadian Estimated Escapement[r]	IMEG 42,500-55,000[s]	80,591	48,469	67,985	62,630	34,904	33,883	65,278	32,010	46,307	32,747	29,725 [d]	-29% (42,045)
ESCAPEMENT INDEX [t]		115,144	83,694	79,323	85,738	51,064	48,483	88,264	44,456	57,749	45,972	39,443	-31% (56,985)

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[a] Commercial harvest includes the estimated harvest of females to produce roe sold.

[b] Since 2009 the department has had the authority to prohibit the sale of Chinook salmon in times of conservation. In 2009, 131 Chinook salmon were sold during the final period of the summer season, and 185 were sold in the fall season. In 2011, no Chinook salmon were sold during the summer season, and 82 were sold during the fall season. In 2012 and 2013, no sales of Chinook salmon occurred in either the summer or fall season.

[c] Harvest in the commercial fishery in Canadian mainstem Yukon River.

[d] Data are preliminary.

[e] Aerial surveys rated good to fair unless noted otherwise.

[f] SEG = "Sustainable 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] BEG = "Biological escapement goal", as defined by the Sustainable Fisheries Policy. Range established in 2001.

[m] Mark and recapture tagging estimate; tower counts were minimum/incomplete due to late installation and/or early removal of project, or high water events/weather conditions.

[n] No count due to high water conditions that prevented counting for much of the season.

[o] Estimate includes an expansion for missed counting days based on average run timing. Minimum documented abundance during successful counting days was 8,739 (SE = 653) fish.

[p] 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.

[q] Aerial survey estimate. High water conditions prevented tower counting during much of the season.

[r] Canadian escapement estimated as border passage minus total Canadian harvest.

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

[t] The escapement index is the summed escapements for East Fork Andreafsky weir, Nulato tower, Gisasa weir, Chena and Salcha towers, and Canada mainstem border passage minus the Canadian catch.