Kuskokwim River Salmon Management Working Group

1 (800) 315-6338 (MEET) Code: 58756# (KUSKO)

ADF&G Bethel toll free: 1 (855) 933-2433

Meeting Agenda

Date: **07/03/2019** Time: **10:00 a.m.** Place**: ADF&G Office, Bethel**

Time Called to Order: Chair: Alissa N. Rogers

ROLL CALL TO ESTABLISH QUORUM:	**QUORUM MET? Yes / No**
Upriver Elder:	**Processor**:
Downriver Elder:	**Member at Large**:
Commercial Fisher:	**Sport Fisher**:
Lower River Subsistence:	**Western Interior RAC**:
Middle River Subsistence:	**Y-K Delta RAC**:
Upper River Subsistence:	**KRITFC:**
Headwaters Subsistence:	**ADF&G**:

INTRODUCTIONS:
INVOCATION:
APPROVAL OF AGENDA: *the agenda may be amended at this time.*
APPROVAL OF MINUTES: *Optional. ADF&G does not prepare official meeting minutes.*
USFWS/KRITFC UPDATE:
ADF&G MANAGEMENT ACTIONS UNDER CONSIDERATION:
PEOPLE TO BE HEARD: *Non-Working Group Members*
CONTINUING BUSINESS:

- Subsistence Reports: Lowest River, ONC Inseason Subsistence Report, CBM (Bill B.), Lower River, Middle River, Upper River, Headwaters
- Overview of Kuskokwim River salmon run assessment:
  a. Test Fisheries (Bethel and Aniak):
  b. Sonar/Weirs/Aerial Surveys/Other:
  c. Subsistence Division Project Update:
  d. NVN Report:
- Commercial Catch Report: N/A
- Processor Report: N/A
- Sport Fish Report:
- Intercept Fishery Report: *optional*
- Weather Forecast:
- Discussion of ADF&G Management considerations and discussion of possible alternatives (recommendations from the Working Group):
- Motion for Discussion and Action:

OLD BUSINESS:

NEW BUSINESS:

COMMENTS FROM WORKING GROUP MEMBERS:

NEXT MEETING DATE:_____Time:_____Place:_____

Kuskokwim River Salmon Management Working Group
ADF&G Bethel toll free: 1 (855) 933-2433

Informational Packet

Information Packets *ARE*:

- **Intended to help inform Working Group discussions.**
- **To be viewed and used in context with Working Group meetings only.**

Packets *ARE NOT*:

- **To be viewed as standalone documents.**
- **A final say on fisheries management decisions.**

Please use this information responsibly:
Packet information is an incomplete snapshot of an ongoing discussion and changing conditions. Packet information should not be reproduced for any purpose other than to describe Working Group meeting discussions.

Misuse of Packet information can contribute to misunderstandings that can **cause harm to salmon users** and potentially **damage salmon resources**.

Ask Questions: ADF&G staff will be happy to answer biology and management questions. Please call **1-855-933-2433** to reach ADF&G Kuskokwim Area staff.

Attend Meetings: Each Working Group meeting is announced at least 48 hours prior to time and date of meeting. In addition, each meeting is recorded. Recordings can be found here: **http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareakuskokwim.kswg**

Viewing the information packet while listening to meetings/recordings will provide a better understanding of the information presented in this packet.

Thank you.
Lily Reichard
Aaron Tiernan
Working Group Coordinators

Orutsararmiut Native Council (ONC) Inseason Harvest Monitoring Weekly Report

July 3, 2019

Summary of Interview Activities

On Friday and Saturday, June 28-29, our fisheries team visited a total of 38 fish camps from Oscarville slough up to the bluffs. Overall, fishers were glad to see a high abundance of sockeye salmon in the river. The majority of fish camps (n=27) had not gone out fishing recently because their drying racks and smoke houses were full. There was one report of rod and reel fishing gear used to target sockeye salmon.

Table 1. Average number of salmon harvested by surveyed Bethel area fish camps.

Data Source	Number of Fishing Trips	Average Chinook Salmon Harvest	Average Chum Salmon Harvest	Average Sockeye Salmon Harvest	Average other harvest
Bethel Area Fish Camps	11	2.2	7.8	33.2	<1

Fishing Progress Information

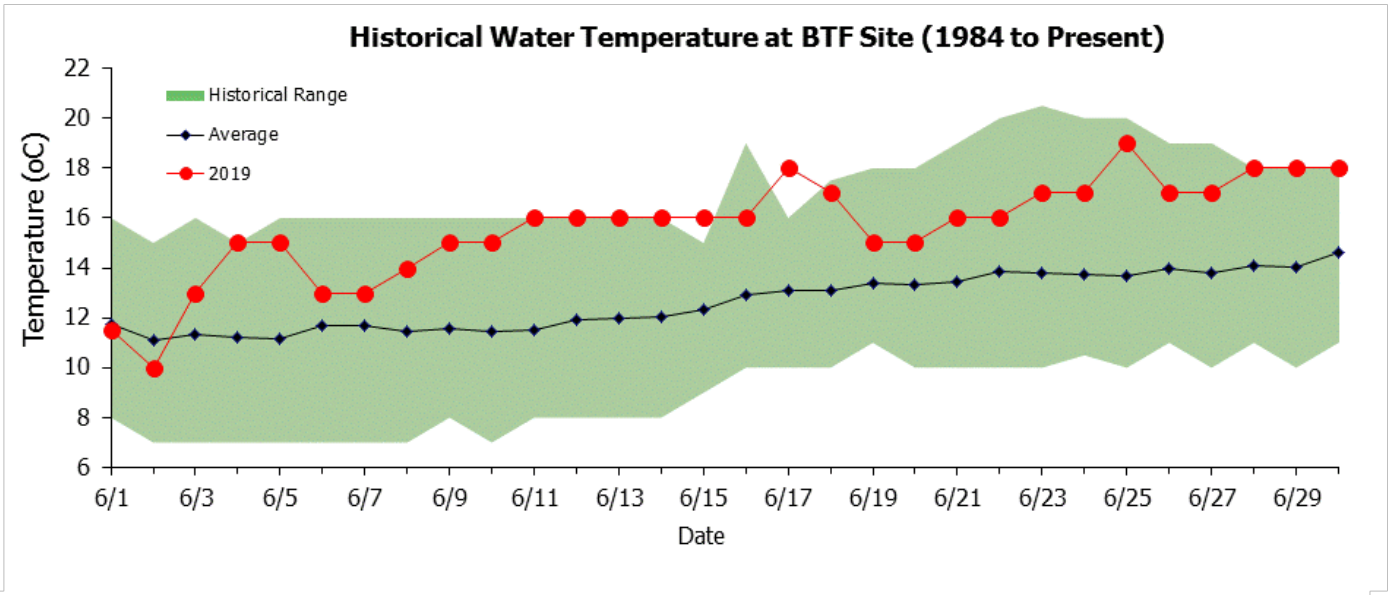
We only asked fish camps who went out fishing recently for updated fishing progress information. 70% of respondents reported being over half way or having met their Chinook and sockeye salmon harvest goals and 50% reported being in these same categories for chum salmon.

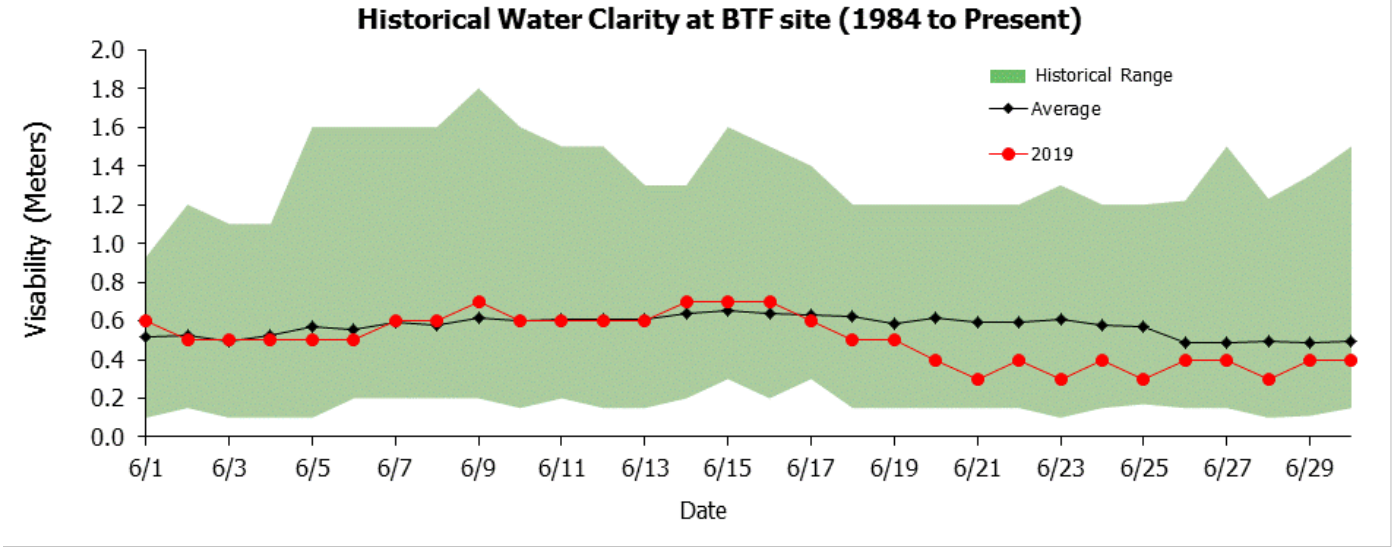
ASL Recruitment

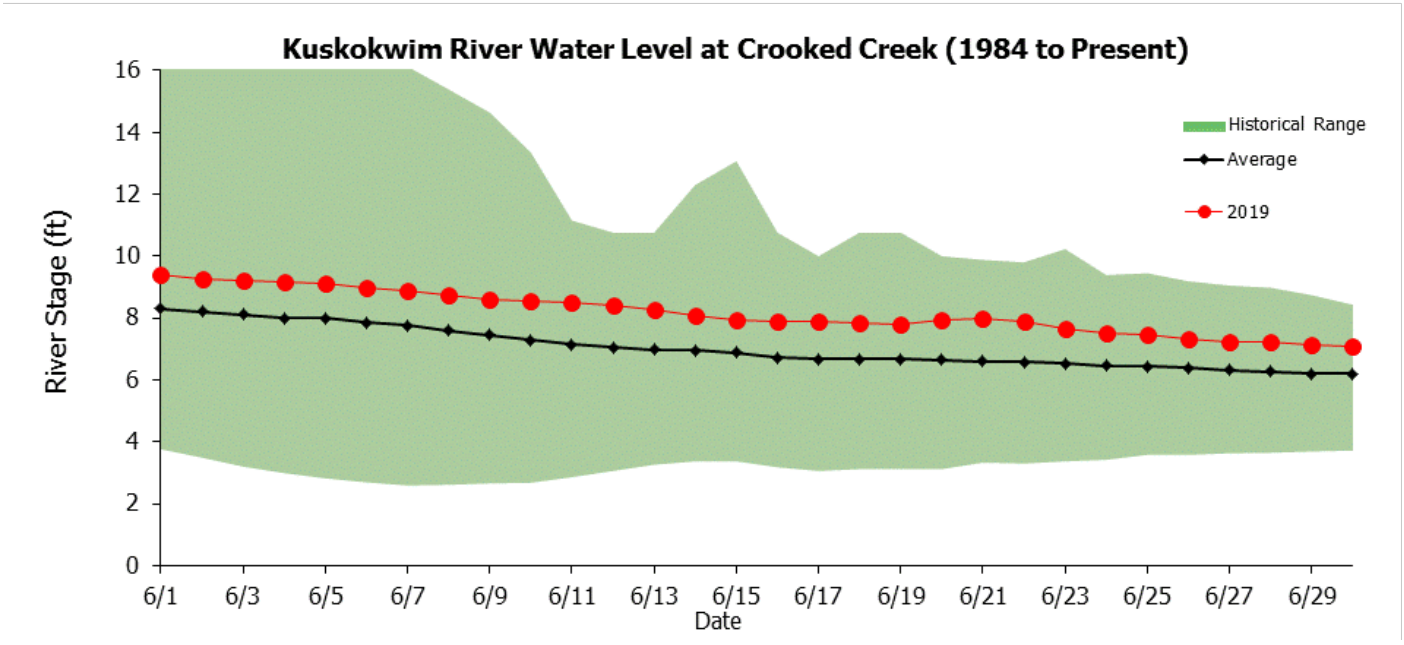
Chinook salmon-age-sex-length sampling recruitment has gone very well this season. We haven't done this well with Bethel area recruitment since 2011. We express gratitude to all of the local fishers who took the time to sample their Chinook salmon catches this season.

Fish Distribution

As of Friday June 28, the community fish bin was put out by ADF&G near Brown slough. Our crew will continue to sample Chinook salmon otoliths and distribute those fish. From June 24-30th, we distributed 139 Chinook salmon, 48 chum salmon and 34 sockeye salmon to Bethel area Elders, disabled and widows as well as ONC Senior Services department to provide salmon for the meals on wheels program. These fish served an estimated 59 Elders, disabled and widows in Bethel excluding those registered with the meals on wheels program. These fish were caught by the Alaska Department of Fish & Game Bethel Test Fishery.


Historical Water Temperature at BTF Site (1984 to Present)
Historical Range
Average
2019
Temperature (oC)
22
20
18
16
14
12
10
8
6
6/1
6/3
6/5
6/7
6/9
6/11
6/13
6/15
6/17
6/19
6/21
6/23
6/25
6/27
6/29
Date


Historical Water Clarity at BTF site (1984 to Present)
Historical Range
Average
2019
Visability (Meters)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
6/1
6/3
6/5
6/7
6/9
6/11
6/13
6/15
6/17
6/19
6/21
6/23
6/25
6/27
6/29
Date


Kuskokwim River Water Level at Crooked Creek (1984 to Present)
Historical Range
Average
2019
River Stage (ft)
16
14
12
10
8
6
4
2
0
6/1
6/3
6/5
6/7
6/9
6/11
6/13
6/15
6/17
6/19
6/21
6/23
6/25
6/27
6/29
Date

Kuskokwim River Salmon Assessment Update
7/1/2019

This document presents the key assessment information considered by managers in-season. The production of this document is a collaborative effort between USFWS and ADF&G. **All data and analyses contained are preliminary and are subject to change, so please make interpretations carefully**.

If you have any questions about the content, please contact Gary Decossas (USFWS; gary_decossas@fws.gov) or Nick Smith (ADF&G; nick.smith@alaska.gov). Major credit for the development of this data packet belongs to Ben Staton.

Table of Contents:

Bethel Test Fishery Summaries

- **Page 2:** Chinook Salmon
- **Page 3:** Chum Salmon
- **Page 4:** Sockeye Salmon

Species Composition Summaries

- **Page 5:** Chum/Sockeye:Chinook Salmon Ratio
- **Page 6:** Percent Composition

Appendices

- **Page 7:** Sonar Passage Estimates
- **Page 8:** In-Season Harvest Estimates
- **Page 9:** Chinook Salmon
- **Page 10:** Chum Salmon
- **Page 11:** Sockeye Salmon

Abbreviations:

- BTF: Bethel Test Fishery
- ATF: Aniak Test Fishery
- CPUE: Catch-per-unit-effort
- EOS: End-of-Season
- ADF&G: Alaska Department of Fish and Game
- KRITFC: Kuskokwim River Inter-tribal Fisheries Commission
- OTNC: Orutsaramiut Traditional Native Council
- USFWS: United States Fish and Wildlife Service
- YDNWR: Yukon Delta National Wildlife Refuge

To view escapement information, please visit the ADF&G Kuskokwim River Fish Counts page:

- http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareakuskokwim.salmon#fishcounts

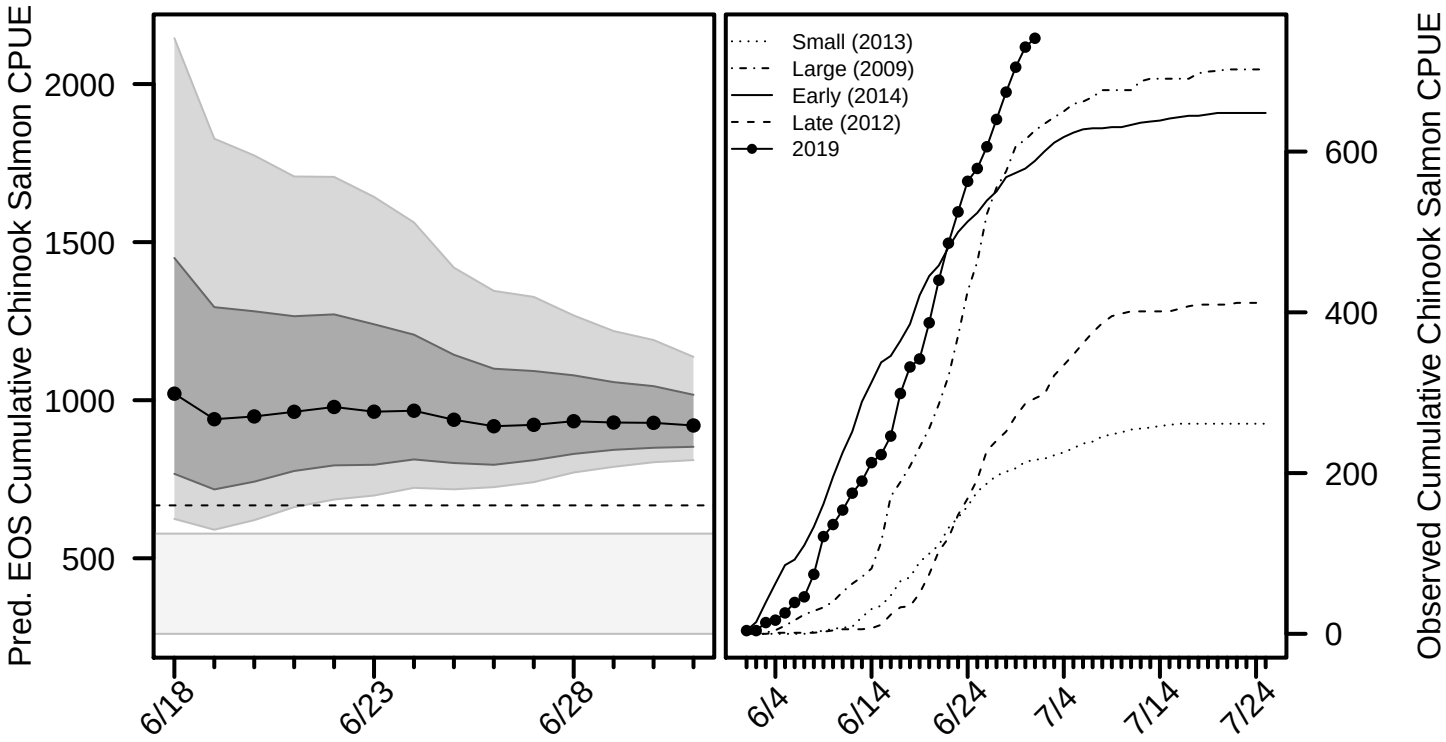
For the most up-to-date information regarding fishing opportunities please visit:

- **USFWS:** https://www.fws.gov/refuge/yukon_delta/wildlife_and_habitat/dailyupdate.html
- **ADF&G:** http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main

Chinook Salmon BTF Summary (7/1)

- The BTF daily CPUE was **11**.
- The BTF cumulative CPUE is now **741**.
- **100%** years since 2008 fell below this cumulative CPUE on this date.
- **81%** of the run is complete based on historical average run timing.
- **73% - 87%** of the run is complete based the central 50% of all historical run timing scenarios.
- **6% - 12%** of the run is expected to pass Bethel in the next 5 days.
- Over the last 3 days, Chinook salmon made up **11%** of the BTF catches, compared to **5%** on average.

Chinook Salmon Figure 1. *Left*: predicted cumulative EOS BTF CPUE according to various run timing scenarios: central 80% (light grey band), central 50% (dark grey band), and the historical median (circles). The grey box shows the range of EOS values from 2010 - 2013, which indexed run sizes past Bethel ranging from 60,000 to 82,000. The dashed horizontal line shows the EOS value from 2018. *Right*: The cumulative BTF CPUE from 2019 plotted along with four previous years intended to represent a range of early/late and small/large index values.



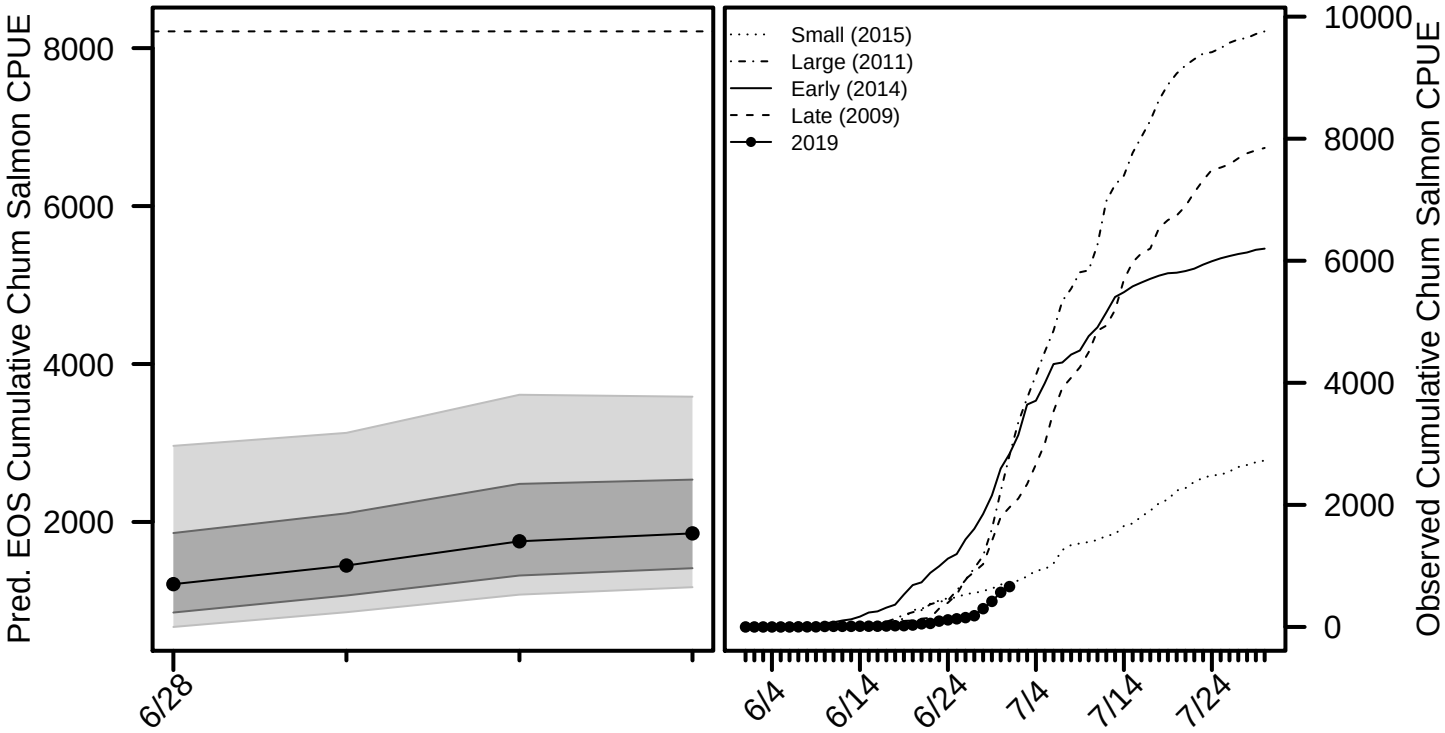
For more detailed information, see the ***Chinook salmon appendix*** *at the end of this document.*

Return to Table of Contents

Chum Salmon BTF Summary (7/1)

- The BTF daily CPUE was **94**.
- The BTF cumulative CPUE is now **661**.
- **0%** years since 2008 fell below this cumulative CPUE on this date.
- **36%** of the run is complete based on historical average run timing.
- **26% - 46%** of the run is complete based the central 50% of all historical run timing scenarios.
- **18% - 21%** of the run is expected to pass Bethel in the next 5 days.
- Over the last 3 days, chum salmon made up **62%** of the BTF catches, compared to **61%** on average.

Chum Salmon Figure 1. *Left*: predicted cumulative EOS BTF CPUE according to various run timing scenarios: central 80% (light grey band), central 50% (dark grey band), and the historical median (circles). The dashed horizontal line shows the EOS value from 2018. *Right*: The cumulative BTF CPUE from 2019 plotted along with four previous years intended to represent a range of early/late and small/large index values.



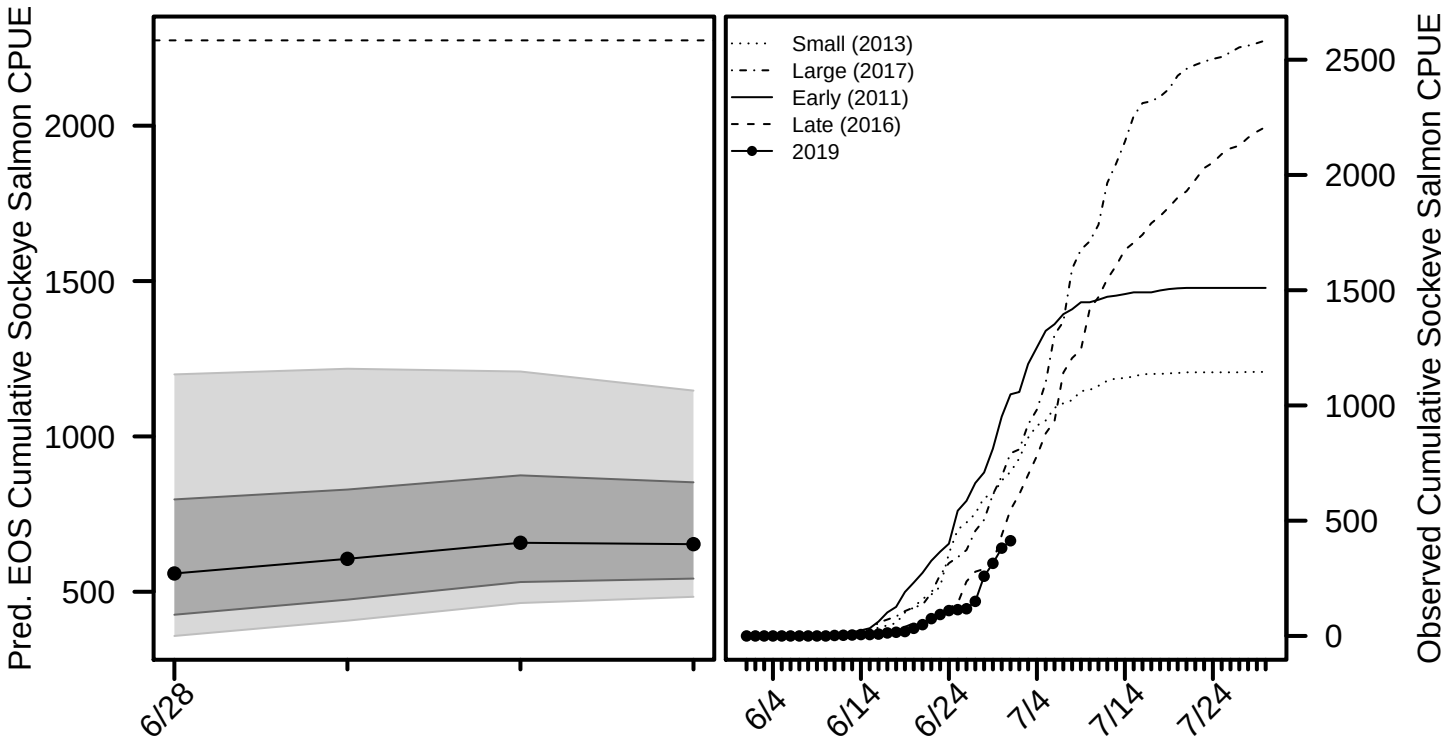
For more detailed information, see the ***chum salmon appendix*** *at the end of this document.*

Return to Table of Contents

Sockeye Salmon BTF Summary (7/1)

- The BTF daily CPUE was **32**.
- The BTF cumulative CPUE is now **413**.
- **0%** years since 2008 fell below this cumulative CPUE on this date.
- **63%** of the run is complete based on historical average run timing.
- **48% - 76%** of the run is complete based the central 50% of all historical run timing scenarios.
- **17% - 23%** of the run is expected to pass Bethel in the next 5 days.
- Over the last 3 days, sockeye salmon made up **26%** of the BTF catches, compared to **35%** on average.

Sockeye Salmon Figure 1. *Left*: predicted cumulative EOS BTF CPUE according to various run timing scenarios: central 80% (light grey band), central 50% (dark grey band), and the historical median (circles). The dashed horizontal line shows the EOS value from 2018. *Right*: The cumulative BTF CPUE from 2019 plotted along with four previous years intended to represent a range of early/late and small/large index values.



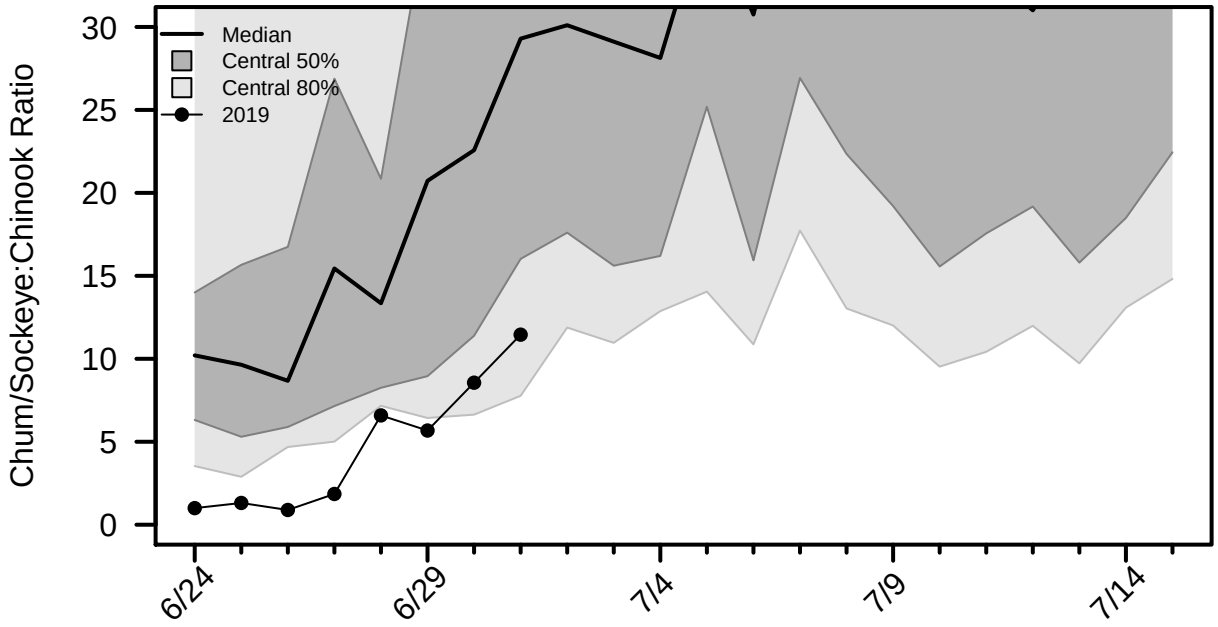
For more detailed information, see the ***sockeye salmon appendix*** *at the end of this document.*

Return to Table of Contents

Chum/Sockeye:Chinook Salmon Ratio

This ratio is calculated by dividing the total number of chum and sockeye salmon counted by the number of Chinook salmon counted by a project each day. A value of zero indicates Chinook salmon were counted that day, but not chum or sockeye salmon. A missing value on a day the project operated indicates no Chinook salmon were counted that day.

Species Ratio Figure 1. Time series of the species ratio in the BTF with historical quantiles shown as grey regions and the ratio time series for 2019 shown with points connected by lines.



Ratio Table 1. A subset of the species ratios displayed in **Ratio Figure 1**, including the ratios from the ATF.

Date	2019 BTF	BTF Median	BTF Lower 10%	BTF Upper 10%	2019 ATF
6/28	6.59	13.35	7.17	31.18	1.18
6/29	5.68	20.73	6.43	57.66	0
6/30	8.56	22.57	6.64	60.59	1.23
7/1	**11.45**	**29.3**	**7.77**	**57.02**	**2.2**
7/2		30.1	11.88	81.64	
7/3		29.11	10.96	75.4	
7/4		28.13	12.87	91.43	

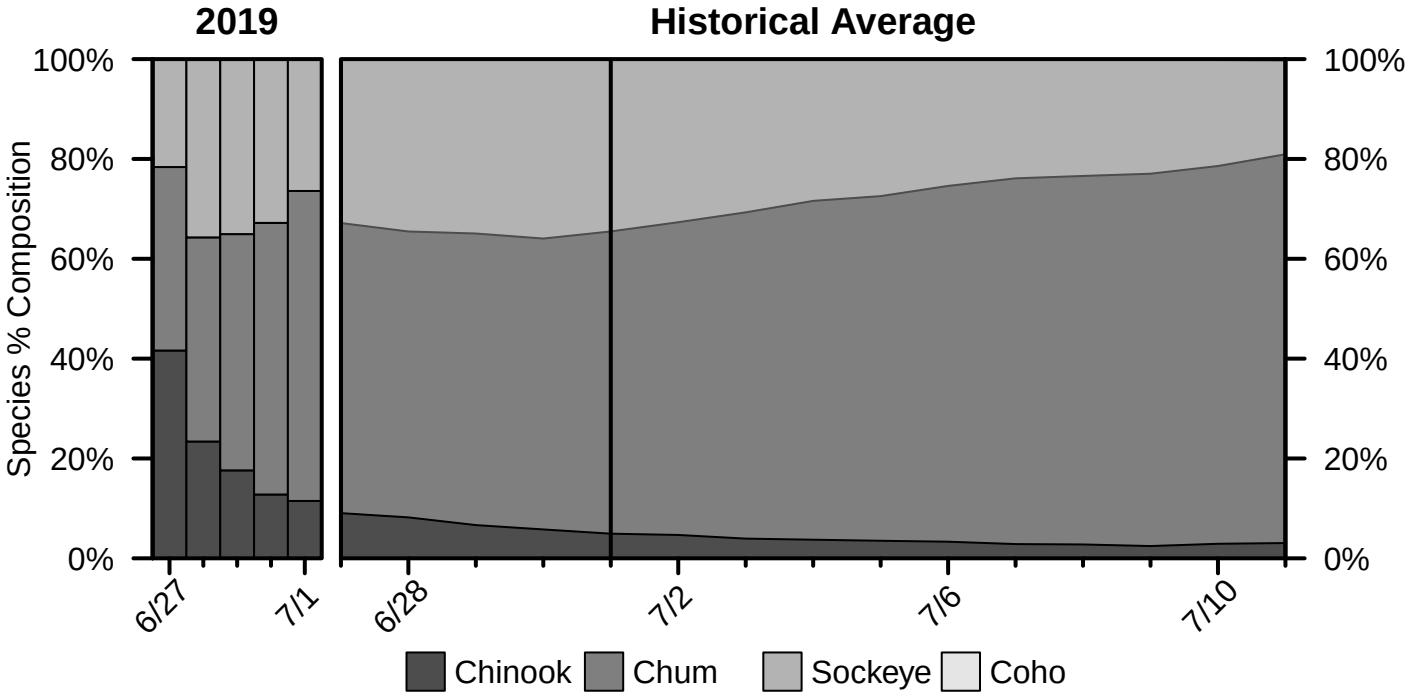
Ratio Table 2. The percent of previous years in which a given species ratio was exceeded at least once before a certain day in the BTF.

Date	Ratio > 3	Ratio > 5	Ratio > 7	Ratio > 10	Ratio > 20
6/28	100%	100%	100%	91%	66%
6/29	100%	100%	100%	94%	74%
6/30	100%	100%	100%	97%	80%
7/1	**100%**	**100%**	**100%**	**100%**	**86%**
7/2	100%	100%	100%	100%	86%
7/3	100%	100%	100%	100%	89%
7/4	100%	100%	100%	100%	94%

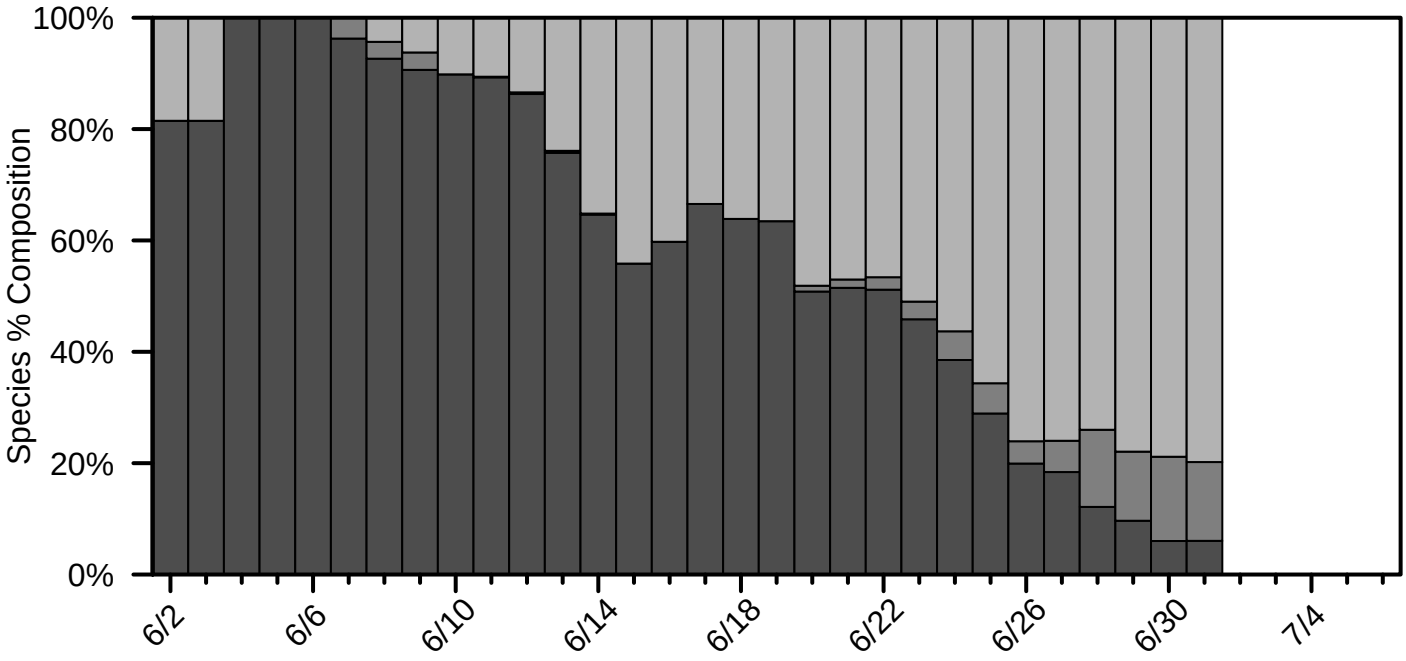
Return to Table of Contents

Percent Composition by Salmon Species

Percent Composition Figure 1. Species percent composition in the BTF from 2019 and based on the historical average. The composition presented on each day represents the average composition over the past 3 days.



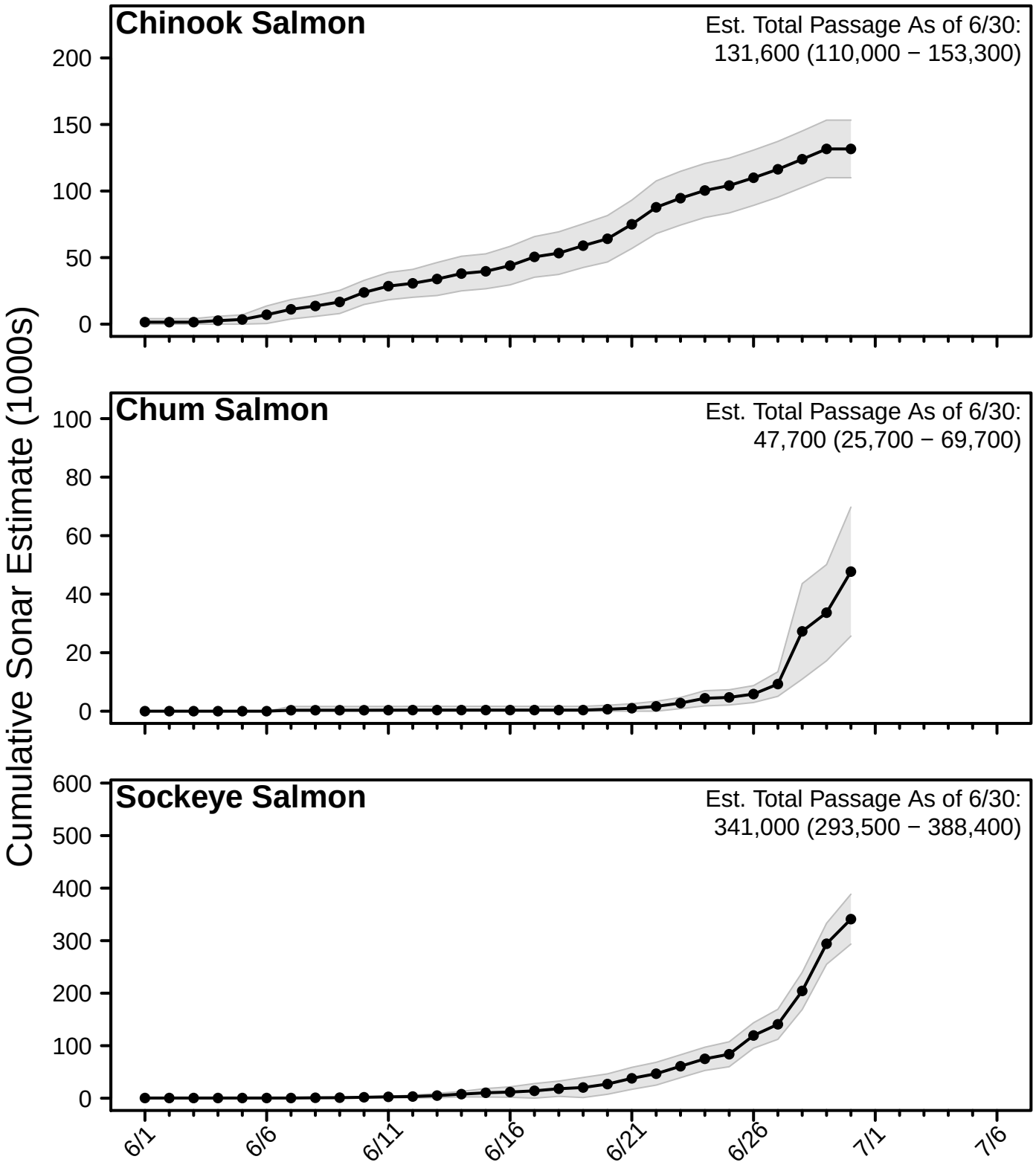
Species Composition Figure 2. Species percent composition from the sonar estimates from 2019 (salmon species only, excluding pink salmon). The composition presented on each day represents the average composition over the past 3 days.



Return to Table of Contents

Sonar Passage Estimates

Sonar Figure 1. Cumulative estimates of salmon passage from the 2019 sonar operation through the last complete reporting day. Grey bands show the 95% confidence intervals on each complete reporting day.



Return to Table of Contents

In-Season Harvest Estimates

In-season harvest estimates are produced by combining counts of total fishing effort (usually obtained via aerial survey) and on-the-ground fisher interview information using statistically-rigorous methodology. The data collection efforts to produce these estimates is a highly collaborative effort, involving staff from ADF&G, KRITFC, OTNC, and USFWS. Although USFWS performs the data analysis and harvest estimation, all estimates undergo technical review by a panel comprised of representatives from each of these entities.

Much more detailed information can be found on the YDNWR website (https://www.fws.gov/refuge/yukon_delta/wildlife_and_habitat/dailyupdate.html).

In the tables below, CV stands for coefficient of variation, which is a commonly-used measure of uncertainty in the estimate (larger CV values are more uncertain).

Harvest Table 1. Estimated total Chinook salmon harvest within the YDNWR, excluding the section between Akiak and Kalskag.

Date	Daily Harvest	Cumulative Harvest	Daily CV	Cumulative CV
6/1	70	70	0.22	0.22
6/8	740	810	0.15	0.14
6/12	8,040	8,850	0.12	0.11
6/15	7,480	16,320	0.09	0.07
6/19	13,630	29,950	0.09	0.06
6/22	10,130	40,080	0.12	0.05

Harvest Table 2. Estimated total chum salmon harvest within the YDNWR, excluding the section between Akiak and Kalskag.

Date	Daily Harvest	Cumulative Harvest	Daily CV	Cumulative CV
6/1	0	0	0	0
6/8	30	30	0.35	0.35
6/12	310	340	0.14	0.13
6/15	350	690	0.23	0.13
6/19	2,340	3,030	0.2	0.16
6/22	4,120	7,150	0.17	0.12

Harvest Table 3. Estimated total sockeye salmon harvest within the YDNWR, excluding the section between Akiak and Kalskag.

Date	Daily Harvest	Cumulative Harvest	Daily CV	Cumulative CV
6/1	0	0	0	0
6/8	10	10	0.49	0.49
6/12	290	300	0.2	0.19
6/15	1,140	1,440	0.17	0.14
6/19	2,900	4,340	0.14	0.1
6/22	9,060	13,400	0.1	0.08

Return to Table of Contents

Chinook Salmon Appendix

Chinook Salmon Table A1. Cumulative CPUE from the BTF.

Date	2019	2018	2017	2016	2015	5-Yr Avg.	2008 - 2018 Avg.
6/28	674	434	216	463	387	413	384
6/29	705	461	228	484	405	430	403
6/30	730	481	242	499	431	446	419
7/1	**741**	**507**	**254**	**510**	**444**	**461**	**431**
7/2		522	257	522	456	471	441
7/3		546	266	531	465	484	453
7/4		558	278	542	484	496	465
EOS		667	374	687	625	601	550

Chinook Salmon Table A2. Cumulative CPUE from the ATF.

Date	2019	2018	2017	2016	2015
6/28	1,359	330	3,012	1,763	2,187
6/29	1,367	388	3,416	1,857	2,228
6/30	1,445	429	3,718	1,964	2,251
7/1	**1,510**	**445**	**3,996**	**2,056**	**2,286**
7/2		491	4,258	2,207	2,381
7/3		522	4,522	2,267	2,408
7/4		531	4,943	2,372	2,467
EOS		820	6,508	2,729	2,916

Chinook Salmon Table A3. Percent of run complete according to various historical run timing scenarios from the BTF.

Timing	Midpoint	7/1 Cumulative %
Earliest	6/14	95%
Early 10%	6/17	91%
Early 25%	6/21	87%
Median	6/22	81%
Late 25%	6/25	73%
Late 10%	6/27	65%
Latest	7/3	56%

Return to Table of Contents

Chum Salmon Appendix

Chum Salmon Table A1. Cumulative CPUE from the BTF.

Date	2019	2018	2017	2016	2015	5-Yr Avg.	2008 - 2018 Avg.
6/28	299	1,242	1,671	602	590	1,191	1,215
6/29	419	1,404	2,042	724	628	1,391	1,428
6/30	567	1,593	2,183	747	695	1,563	1,709
7/1	**661**	**1,758**	**2,454**	**817**	**722**	**1,717**	**1,933**
7/2		1,990	2,574	886	760	1,871	2,161
7/3		2,144	2,744	943	829	2,061	2,407
7/4		2,380	2,849	1,028	923	2,178	2,629
EOS		8,212	6,785	3,894	2,943	5,636	6,678

Chum Salmon Table A2. Cumulative CPUE from the ATF.

Date	2019	2018	2017	2016	2015
6/28	311	1,276	1,966	958	810
6/29	311	1,560	2,165	1,124	877
6/30	407	1,772	2,221	1,318	944
7/1	**550**	**2,092**	**2,629**	**1,769**	**969**
7/2		2,656	3,112	1,915	1,037
7/3		3,129	3,724	2,091	1,379
7/4		3,445	4,670	2,429	1,568
EOS		10,277	11,588	5,304	5,669

Chum Salmon Table A3. Percent of run complete according to various historical run timing scenarios from the BTF.

Timing	Midpoint	7/1 Cumulative %
Earliest	6/23	66%
Early 10%	7/1	56%
Early 25%	7/3	47%
Median	7/6	36%
Late 25%	7/7	26%
Late 10%	7/11	19%
Latest	7/14	12%

Return to Table of Contents

Sockeye Salmon Appendix

Sockeye Salmon Table A1. Cumulative CPUE from the BTF.

Date	2019	2018	2017	2016	2015	5-Yr Avg.	2008 - 2018 Avg.
6/28	259	216	504	291	393	371	474
6/29	315	298	614	319	499	446	541
6/30	381	411	692	437	713	568	641
7/1	**413**	**563**	**793**	**547**	**873**	**695**	**736**
7/2		623	810	615	955	761	801
7/3		696	917	699	1,113	876	893
7/4		905	982	781	1,248	992	977
EOS		2,275	2,690	2,463	2,157	2,190	1,762

Sockeye Salmon Table A2. Cumulative CPUE from the ATF.

Date	2019	2018	2017	2016	2015
6/28	22	8	118	26	129
6/29	22	17	118	26	145
6/30	22	34	126	26	160
7/1	**22**	**42**	**126**	**61**	**177**
7/2		52	135	69	205
7/3		60	145	77	257
7/4		60	196	110	290
EOS		75	393	405	1,245

Sockeye Salmon Table A3. Percent of run complete according to various historical run timing scenarios from the BTF.

Timing	Midpoint	7/1 Cumulative %
Earliest	6/22	92%
Early 10%	6/24	86%
Early 25%	6/26	76%
Median	6/29	64%
Late 25%	7/1	49%
Late 10%	7/7	36%
Latest	7/10	23%

Return to Table of Contents

Supplemental Kuskokwim River Salmon Escapement Data

Salmon escapement projects are located upriver from where the majority of salmon harvest occurs. Therefore, escapement data provide limited information about the status of salmon runs in season. Data from escapement projects are primarily used post season to assess escapement goals and trends.

Daily escapement information can be viewed online at the ADF&G Kuskokwim Management Area Fish Counts webpage. This can be accessed through the following link:
http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareakuskokwim.salmon#fishcounts

7/1/2019	Cumulative Count			Average % of run complete		
Weir	Chinook	Chum	Sockeye	Chinook	Chum	Sockeye
Kwethluk	1,050	191	1,234	9%	5%	26%
George	997	105	-	17%	7%	-
Kogrukluk	183	28	0	3%	3%	1%
Salmon (Pitka Fork)	623	-	-	7%	-	-
Takotna	1	0	-	4%	5%	-
Telaquana	Operations begin July 3			-	-	-