

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: 06/30/2021

Time: 10:00 a.m.–12:00 p.m.

Place: ADF&G Office, Bethel, AK

Time Called to Order:

Chair:

ROLL CALL TO ESTABLISH QUORUM:

Upriver Elder:
Downriver Elder:
Commercial Fisher:
Lower River Subsistence:
Middle River Subsistence:
Upper River Subsistence:
Headwaters Subsistence:

QUORUM MET? Yes / No

Member at Large 1:
Member at Large 2:
Sport Fisher:
Western Interior RAC:
Y-K Delta RAC:
KRITFC:
ADF&G:

INTRODUCTIONS:

INVOCATION:

APPROVAL OF MINUTES: *Optional. ADF&G does not prepare official meeting minutes.*

APPROVAL OF AGENDA: *the agenda may be amended at this time.*

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, Lower River, Middle River, Upper River, Headwaters
- Inseason Harvest Report (ONC/KRITFC)
- 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:
- Working Group KRITFC Representative Report:
- Commercial Catch Report: N/A
- Processor Report: N/A
- Sport Fish Report:
- Trawl Bycatch Report
- Donlin Gold
- 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:** _____

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=commercialbyarea_kuskokwim.kswg

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

Thank you,
Nick Smith and Ben Gray
Working Group Coordinators



Orutsararmiut Native Council (ONC) Inseason Harvest Monitoring Weekly Report

June 30, 2021

On June 28, 2021, a total of 45 Bethel boat harbor surveys and 16 Bethel area fish camp surveys were conducted. Comments collected from the fisher interviews are summarized below. Harvest information from the June 28th opener will be included in next week's report.

Comments from June 28, 2021 Opener:

One fisher stated they were happy to fish and one was glad that the state provided an opener. 7 fishers stated that they wanted more openers and two wanted them at the same time as this opener. Two fishers wanted the whole river to open up and one questioned how long the river will be closed for. One user wanted the state and federal management to compromise and provide a six hour opener and another does not want any more conflict between those management entities. One person requested federal management to leave us alone and one didn't want their data given to federal management.

Two people were scared of law enforcement presence on the river and did not fish or quit fishing early in fear of receiving a fine or net getting taken away. Two fishers heard rumors that law enforcement was out and subsistence users were getting fined and their fish was taken away.

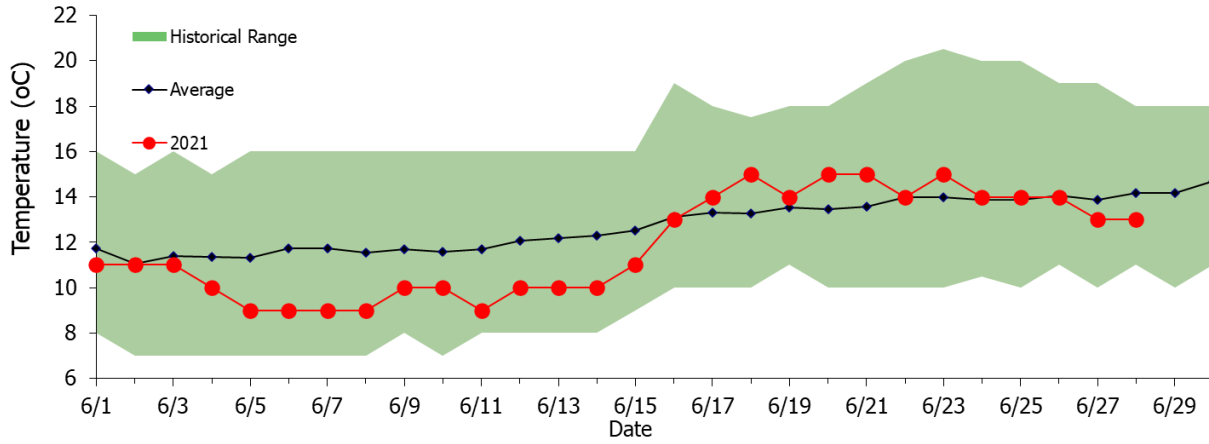
One person expressed concern over trawlers. One stated that a hatchery should open up on the Kuskokwim River to increase king salmon populations. One fisher commented on the low return of king salmon while another commented on the low return of chum salmon. Fishers also commented on the increased number of red salmon and jack salmon observed this season. One noticed that one of their red salmon looked sick. Lastly, one fisher stated that their fishrack is not as full as it was back then and the fish they have harvested this summer won't last them for all of winter.

Fish Distribution

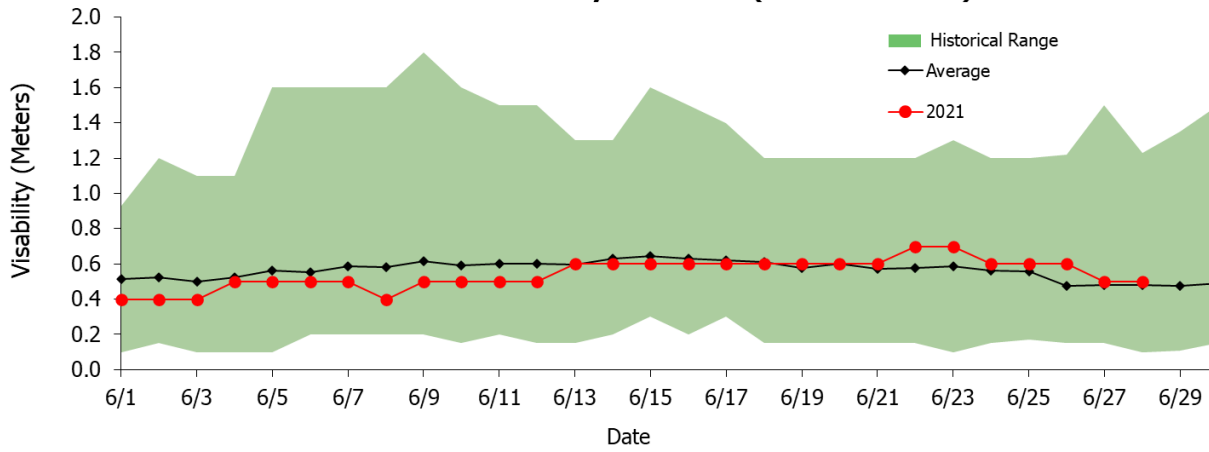
From June 22, 2021 through the morning of June 29, 2021, ONC delivered 96 Chinook salmon, 12 chum salmon, 94 red salmon, and 1 whitefish to Bethel area Elders. These fish were caught by the Alaska Department of Fish & Game Bethel Test Fishery.

Weather summary at BTF as of 6/28

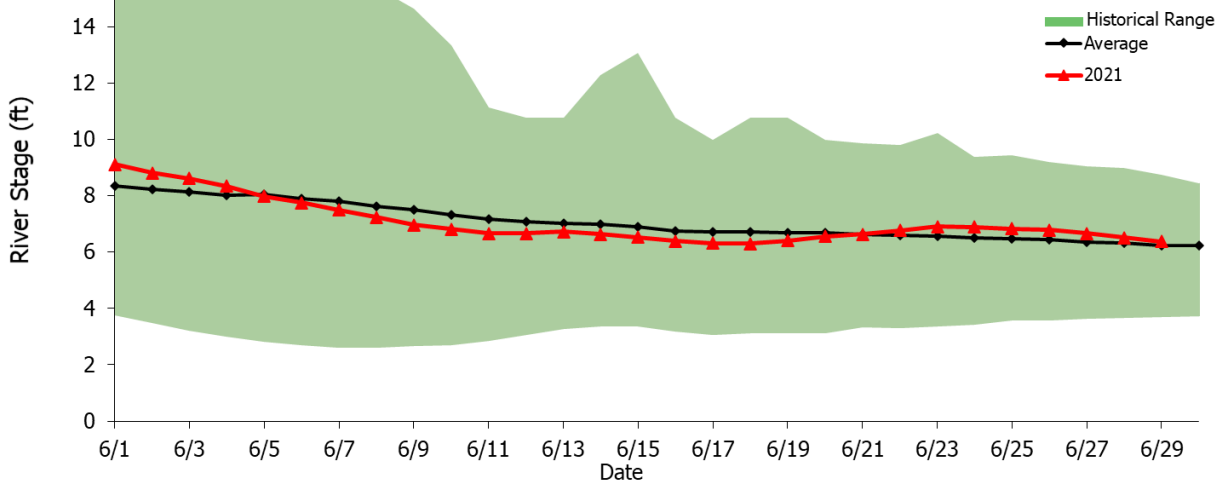
Historical Water Temperature at BTF Site (1984 to Present)



Historical Water Clarity at BTF site (1984 to Present)



Kuskokwim River Water Level at Crooked Creek (1984 to Present)



Kuskokwim River Salmon Assessment Update

6/28/2021



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 Spencer Rearden (USFWS; spencer_rearden@fws.gov) or Sean Larson (ADF&G; sean.larson@alaska.gov). Major credit for the development of this data packet belongs to Benjamin Staton.

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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
- ONC: Orutsaramiut 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>

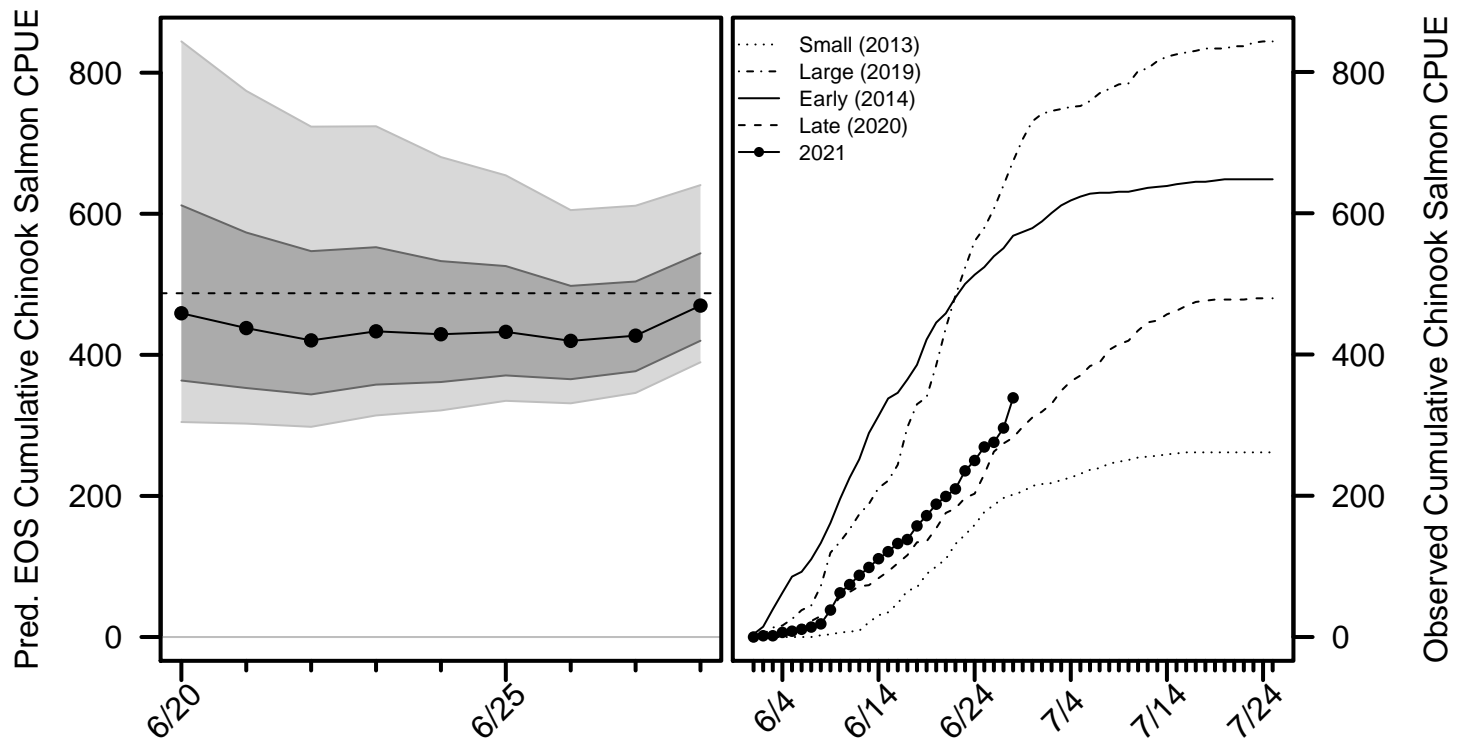
For the most up-to-date information regarding fishing opportunities please visit:

- 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 (6/28)

- The BTF daily CPUE was **43**.
- The BTF cumulative CPUE is now **339**.
- **38%** years since 2008 fell below this cumulative CPUE on this date.
- **73%** of the run is complete based on historical average run timing.
- **63% - 81%** of the run is complete based the central 50% of all historical run timing scenarios.
- **9% - 16%** of the run is expected to pass Bethel in the next 5 days.
- Over the last 3 days, Chinook salmon made up **30%** of the BTF catches, compared to **9%** 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 dashed horizontal line shows the EOS value from 2020. *Right:* The cumulative BTF CPUE from 2021 plotted along with four previous years intended to represent a range of early/late and small/large index values.



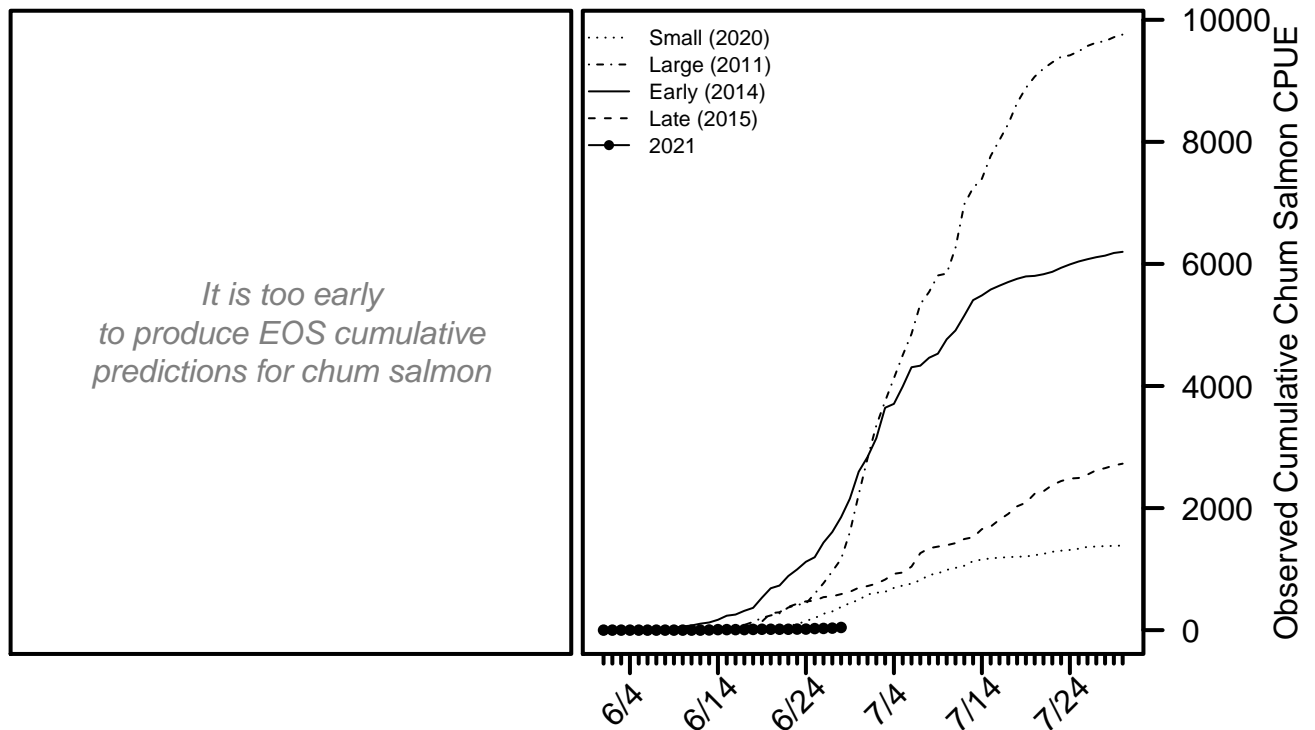
For more detailed information, see the [Chinook salmon appendix](#) at the end of this document.

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Chum Salmon BTF Summary (6/28)

- The BTF daily CPUE was **11**.
- The BTF cumulative CPUE is now **43**.
- **0%** years since 2008 fell below this cumulative CPUE on this date.
- **24%** of the run is complete based on historical average run timing.
- **16% - 34%** of the run is complete based the central 50% of all historical run timing scenarios.
- **17% - 20%** of the run is expected to pass Bethel in the next 5 days.
- Over the last 3 days, chum salmon made up **8%** of the BTF catches, compared to **57%** on average.

Chum Salmon Figure 1. *Left:* will show predicted cumulative EOS BTF CPUE according to various run timing scenarios when enough data have been collected. *Right:* The cumulative BTF CPUE from 2021 plotted along with four previous years intended to represent a range of early/late and small/large index values.



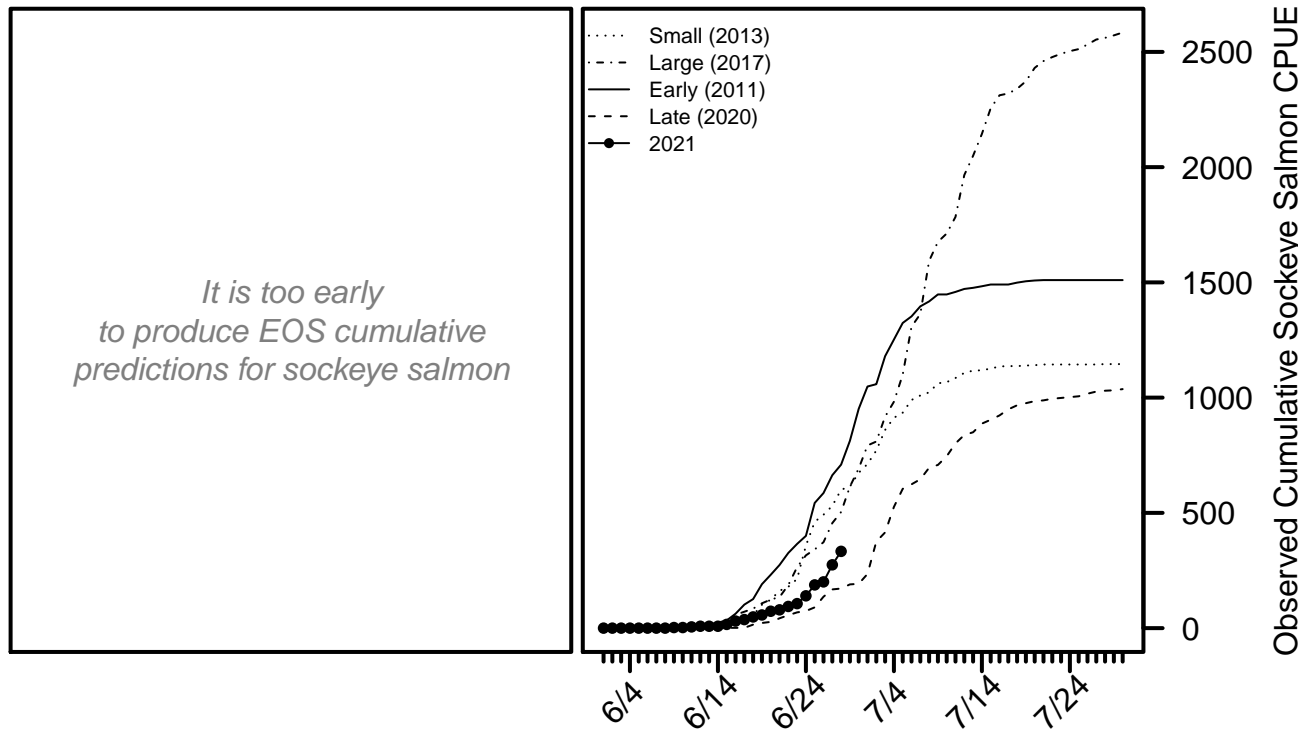
For more detailed information, see the [chum salmon appendix](#) at the end of this document.

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Sockeye Salmon BTF Summary (6/28)

- The BTF daily CPUE was **58**.
- The BTF cumulative CPUE is now **333**.
- **23%** years since 2008 fell below this cumulative CPUE on this date.
- **44%** of the run is complete based on historical average run timing.
- **30% - 59%** of the run is complete based the central 50% of all historical run timing scenarios.
- **25% - 26%** of the run is expected to pass Bethel in the next 5 days.
- Over the last 3 days, sockeye salmon made up **62%** of the BTF catches, compared to **34%** on average.

Sockeye Salmon Figure 1. *Left:* will show predicted cumulative EOS BTF CPUE according to various run timing scenarios when enough data have been collected. *Right:* The cumulative BTF CPUE from 2021 plotted along with four previous years intended to represent a range of early/late and small/large index values.



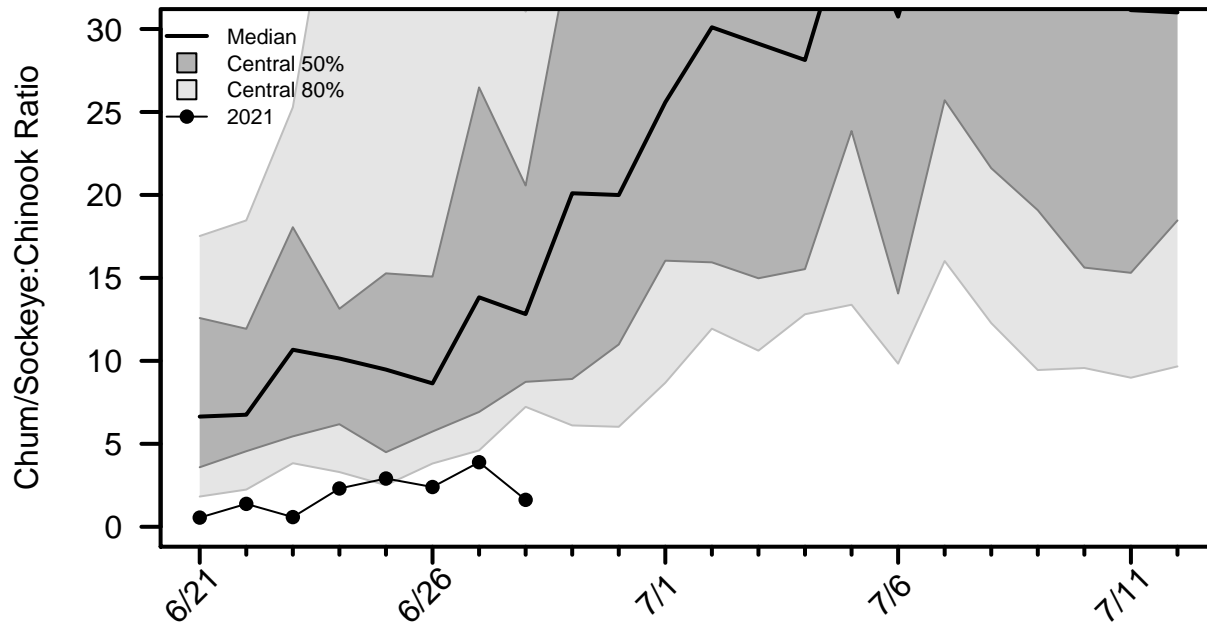
For more detailed information, see the [sockeye salmon appendix](#) at the end of this document.

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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 with historical quantiles shown as grey regions and the ratio time series for 2021 shown with points connected by lines.



Ratio Table 1. A subset of the species ratios, including the ratios from the ATF.

Date	2021 BTF	BTF Median	BTF Lower 10%	BTF Upper 10%	2021 ATF
6/25	2.91	9.47	2.51	44	0.12
6/26	2.4	8.64	3.81	31.56	0.17
6/27	3.89	13.83	4.6	46.65	0.09
6/28	1.62	12.82	7.23	31.04	0.12
6/29		20.1	6.11	57.19	
6/30		19.99	6.03	60.42	
7/1		25.58	8.68	54.71	

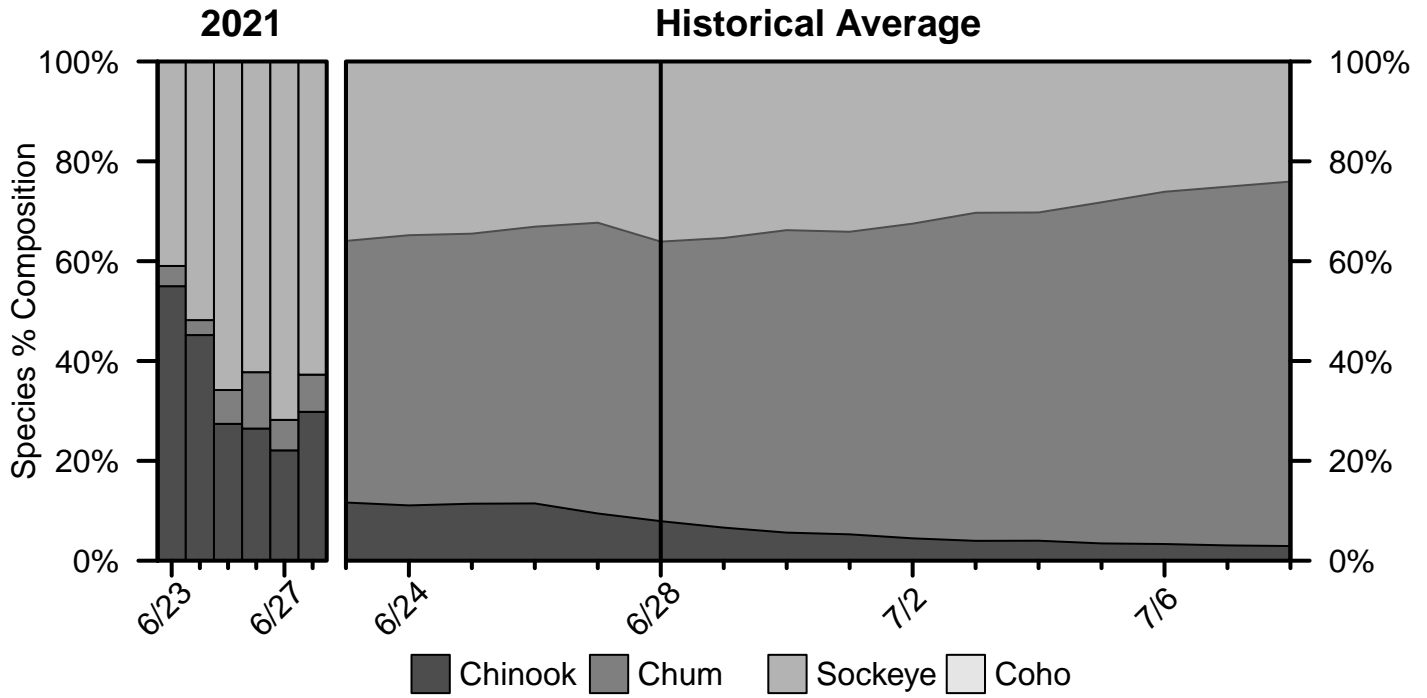
Ratio Table 2. The percent of previous years in which a given species ratio was exceeded at least once before a certain day in the BTF.

Date	Ratio > 1	Ratio > 3	Ratio > 5	Ratio > 10	Ratio > 20
6/25	100%	97%	97%	84%	41%
6/26	100%	97%	97%	86%	43%
6/27	100%	100%	97%	86%	54%
6/28	100%	100%	100%	92%	62%
6/29	100%	100%	100%	95%	70%
6/30	100%	100%	100%	97%	76%
7/1	100%	100%	100%	100%	84%

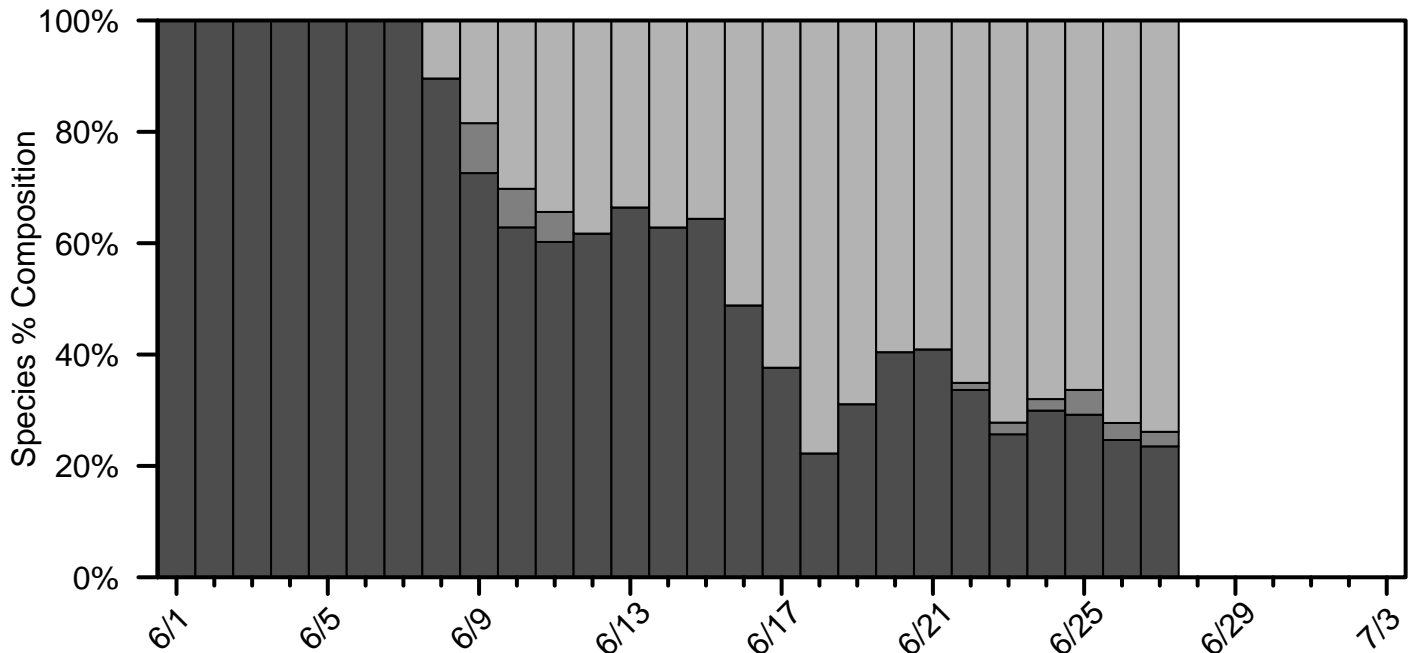
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Percent Composition by Salmon Species

Percent Composition Figure 1. Species percent composition in the BTF from 2021 and based on the historical average. The composition presented on each day represents the average composition over the past 2 days.

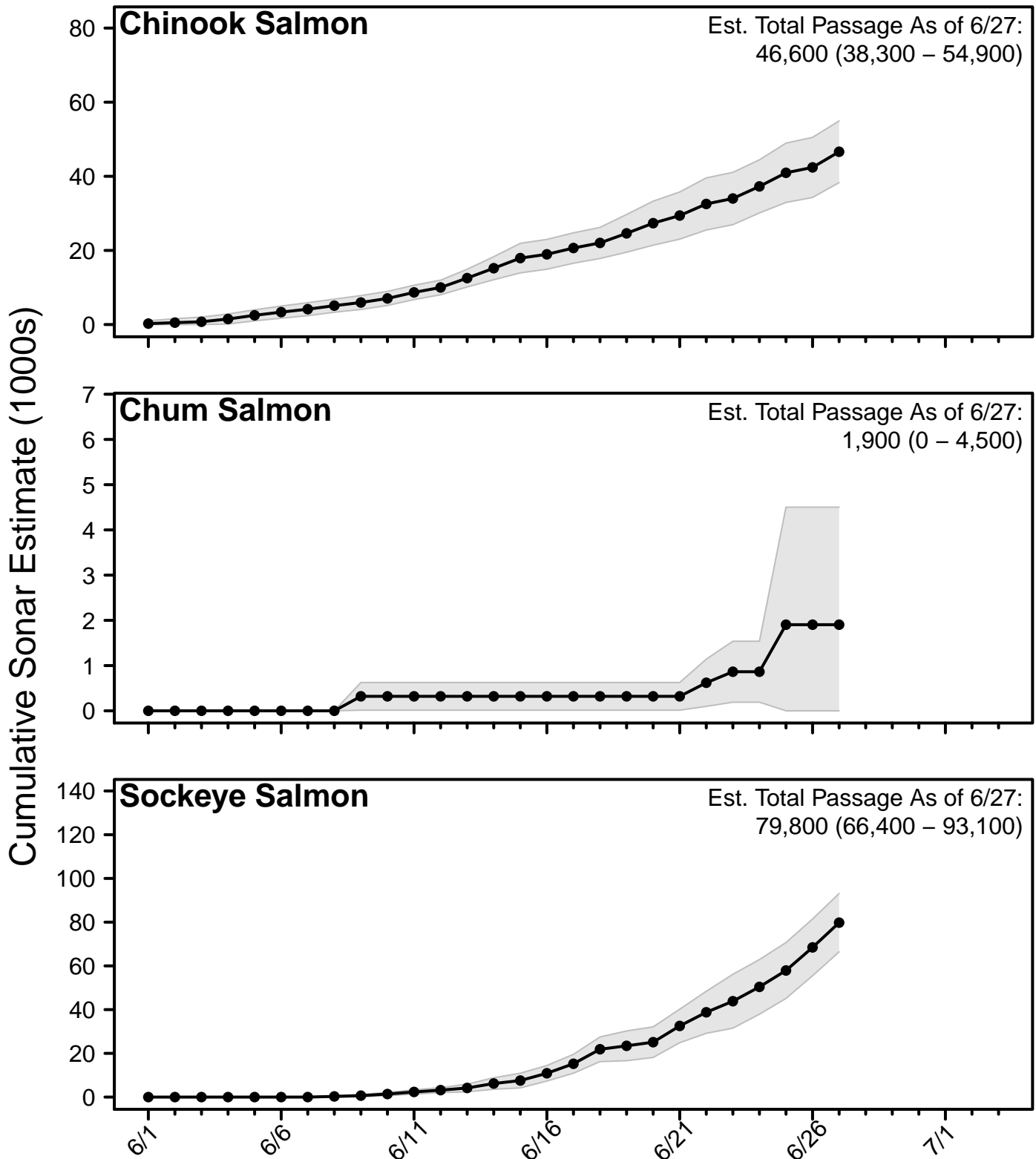


Species Composition Figure 2. Species percent composition from the sonar estimates from 2021 (salmon species only, excluding pink salmon). The composition presented on each day represents the average composition over the past 3 days.



Sonar Passage Estimates

Sonar Figure 1. Cumulative estimates of salmon passage from the 2021 sonar operation through the last complete reporting day. Grey bands show the 95% confidence intervals on each complete reporting day.



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In-Season Harvest Estimates

In-season harvest estimates are produced by combining counts of total fishing effort (usually obtained via aerial surveys performed by USFWS) 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 KRITFC and ONC, with harvest data collected by community based harvest monitors and ONC. Fishing periods from 6/2-6/9 were set net only opportunities. More detailed information can be found on the KRITFC website (<https://www.kuskosalmon.org/2021-fishing-info>).

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 Aniak.

Date	Daily Harvest	Cumulative Harvest	Daily CV	Cumulative CV
6/2	30	30	0.23	0.23
6/5	310	340	0.47	0.43
6/9	480	820	0.19	0.21
6/12	3,220	4,040	0.06	0.06
6/15	6,780	10,820	0.06	0.04
6/19	6,190	17,010	0.08	0.04

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

Date	Daily Harvest	Cumulative Harvest	Daily CV	Cumulative CV
6/2	0	0	0	0
6/5	20	20	0.65	0.65
6/9	0	20	0	0.65
6/12	70	90	0.18	0.2
6/15	350	440	0.15	0.13
6/19	990	1,430	0.19	0.14

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

Date	Daily Harvest	Cumulative Harvest	Daily CV	Cumulative CV
6/2	0	0	0	0
6/5	50	50	0.44	0.44
6/9	20	70	0.43	0.34
6/12	340	410	0.16	0.14
6/15	1,400	1,810	0.11	0.09
6/19	2,400	4,210	0.07	0.06

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Chinook Salmon Appendix

Chinook Salmon Table A1. Cumulative CPUE from the BTF.

Date	2021	2020	2019	2018	2017	5-Yr Avg.	2008 - 2020 Avg.
6/25	269	230	579	354	161	345	339
6/26	276	262	606	387	168	371	365
6/27	296	274	640	406	196	394	383
6/28	339	282	674	434	216	414	399
6/29		298	705	461	228	435	418
6/30		311	730	481	242	452	435
7/1		319	741	507	254	466	446
EOS		487	848	667	374	613	568

Chinook Salmon Table A2. Cumulative CPUE from the ATF.

Date	2021	2020	2019	2018	2017
6/25	677	403	1,139	218	1,945
6/26	752	487	1,181	245	2,165
6/27	823	554	1,321	280	2,500
6/28	922	653	1,359	330	3,012
6/29		765	1,367	388	3,416
6/30		839	1,445	429	3,718
7/1		924	1,510	445	3,996
EOS		1,874	1,691	820	6,508

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

Timing	Midpoint	6/28 Cumulative %
Earliest	6/14	92%
Early 10%	6/18	87%
Early 25%	6/21	81%
Median	6/22	73%
Late 25%	6/25	63%
Late 10%	6/26	53%
Latest	7/3	43%

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Chum Salmon Appendix

Chum Salmon Table A1. Cumulative CPUE from the BTF.

Date	2021	2020	2019	2018	2017	5-Yr Avg.	2008 - 2020 Avg.
6/25	25	197	257	878	760	497	685
6/26	28	268	294	997	930	590	812
6/27	33	307	357	1,149	1,317	734	962
6/28	43	379	582	1,242	1,671	895	1,102
6/29		443	816	1,404	2,042	1,086	1,305
6/30		495	1,088	1,593	2,183	1,221	1,568
7/1		584	1,280	1,758	2,454	1,379	1,779
EOS		1,442	6,427	8,212	6,785	5,352	6,256

Chum Salmon Table A2. Cumulative CPUE from the ATF.

Date	2021	2020	2019	2018	2017
6/25	19	86	88	401	1,214
6/26	19	148	177	561	1,494
6/27	19	169	266	928	1,696
6/28	19	218	311	1,276	1,966
6/29		326	311	1,560	2,165
6/30		425	407	1,772	2,221
7/1		481	550	2,092	2,629
EOS		2,611	1,051	10,277	11,588

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

Timing	Midpoint	6/28 Cumulative %
Earliest	6/23	56%
Early 10%	7/1	44%
Early 25%	7/3	34%
Median	7/6	24%
Late 25%	7/8	16%
Late 10%	7/11	10%
Latest	7/15	5%

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Sockeye Salmon Appendix

Sockeye Salmon Table A1. Cumulative CPUE from the BTF.

Date	2021	2020	2019	2018	2017	5-Yr Avg.	2008 - 2020 Avg.
6/25	187	90	212	125	341	182	302
6/26	201	136	221	184	373	230	349
6/27	275	168	272	204	456	276	395
6/28	333	172	476	216	504	332	451
6/29		190	577	298	614	399	517
6/30		192	694	411	692	485	610
7/1		235	751	563	793	578	699
EOS		1,060	2,685	2,275	2,690	2,234	1,779

Sockeye Salmon Table A2. Cumulative CPUE from the ATF.

Date	2021	2020	2019	2018	2017
6/25	19	0	11	0	83
6/26	32	0	22	0	83
6/27	38	0	22	0	92
6/28	51	12	22	8	118
6/29		24	22	17	118
6/30		30	22	34	126
7/1		48	22	42	126
EOS		209	33	75	393

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

Timing	Midpoint	6/28 Cumulative %
Earliest	6/22	83%
Early 10%	6/24	73%
Early 25%	6/27	60%
Median	6/29	44%
Late 25%	7/2	30%
Late 10%	7/6	19%
Latest	7/10	10%

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Bering Sea Bycatch Update

Bycatch updated through June 24, 2021

- King salmon bycatch to date: **11,224** (all stocks)
- Non-king salmon bycatch to date: **2,214** (all stocks)

Important: Kuskokwim River fish are a small component of the total bycatch.

Background Information

- Bycatch occurs in the Bering Sea and Aleutian Island (BSAI) groundfish fishery, which is managed by the National Marine Fisheries Service and is one of the most extensively monitored fisheries in the U.S.
- The 2011–2020¹ average king bycatch of all stocks is ~23,000
- The impact of bycatch on adult Kuskokwim River King salmon runs is small compared to other sources of mortality and does not explain the magnitude of declines we have observed on the Kuskokwim River.

We think this is true because:

- The Kuskokwim River is only one of many stocks that make up the total bycatch (other stocks range from California, Alaska, to Russia)
- The Kuskokwim River is one part of the Western Alaska stock group², which makes up about 45%–70% of the total annual bycatch.
- Most of the bycatch is made up of juvenile fish, many of which would not have survived to adulthood due to natural mortality³.
- Of the fish that would have survived in they had not been caught, only subset of them would have returned this year because salmon spend a varying amount of time in ocean.

Helpful Links

Bycatch numbers are reported by the National Marine Fisheries Service, available at: <https://alaskafisheries.noaa.gov/fisheries-catch-landings?tid=286>

Bycatch updates are reported by the North Pacific Fisheries Management Council, available at: <https://www.npfmc.org/bsai-salmon-bycatch/>

¹ 2011–2020 is the recent 10-year average. In 2011, amendments to Fishery Management Plans were enacted to reduce King salmon bycatch in the BSAI Pollock fishery.

² The Western Alaska group includes Bristol Bay, Kuskokwim, Yukon, and Norton Sound stocks.

³ It is estimated that about 90% of all salmon that enter the marine environment die of natural causes.