# 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: 6/19/2024 Time: 10:00 am-12:00 pm Place: Bethel

Time Called to Order:

## ROLL CALL TO ESTABLISH QUORUM:

## QUORUM MET? Yes / No

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

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

INTRODUCTIONS:
INVOCATION:
APPROVAL OF AGENDA: the agenda may be amended at this time.
APPROVAL OF MINUTES: Optional. $A D F \& G$ does not prepare official meeting minutes.
USFWS MANAGEMENT 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, KRITFC Inseason Harvest Report, 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:
- 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: $\qquad$ Time: $\qquad$ Place: $\qquad$

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

## Informational Packet

Information Packets $\boldsymbol{A R E}$ :

- 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,
Savannah Hollingworth Working Group Coordinator

# Orutsararmiut Native Council (ONC) Inseason Harvest Monitoring Weekly Report 

 June 17, 2024
## Comments from June 16, 2024 Opener:

3 fishers had stated that they would like some more fishing, 1 said to do something about the trawlers, and 2 thanked us for letting them have the opportunity to fish. 1 mentioned that it is so hot out and another said that it would be better if they left it open. 2 had asked when is the next opener and if there will be any more. A few people had said that there are a lot of people, that it is slow going, and to quit meeting. 2 fishers want more openings and to have daily openings and another 2 said they are only getting what they can handle and to let us fish more.

The Fish Campers ONC surveyed did not have any comments to say for this opener.

Table 1. Average fish harvest, net length, and mesh size range reported by surveyed Bethel area fish camps and Bethel boat harbor from the June 16, 2024 fishing opportunity.

| Data <br> Source | Number of <br> Surveys <br> Conducted | Average <br> Chinook <br> Salmon <br> Harvest | Average <br> Chum <br> Salmon <br> Harvest | Average <br> Sockeye <br> Salmon <br> Harvest | Average <br> other <br> harvest | Net <br> Length <br> Range <br> (ft.) | Mesh Size <br> Range <br> (in.) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bethel <br> Boat <br> Harbor | 118 | 8 | 2 | 1 | $>1$ | $40-300$ | $4-6$ |
| Bethel <br> Fish <br> Camps | 21 | 13 | 2 | 2 | $>1$ | $75-300$ | $5.25-6$ |

## Fish Distribution

From June 4, 2024 through June 17, 2024, ONC delivered 29 Chinook salmon to Bethel area Elders. These fish were caught by the Alaska Department of Fish \& Game Bethel Test Fishery.

Historical Water Temperature at BTF Site (1984 to Present)


Historical Water Clarity at BTF site (1984 to Present)


# Kuskokwim River Salmon Assessment Update 6/17/2024 

The data summaries presented in this document are provided by 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 Sean Larson (ADF\&G; sean.larson@alaska.gov). Original development of code used to create this document is credited 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
- 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 (6/17)

- The BTF daily CPUE was 13.
- The BTF cumulative CPUE is now 58.
- $\mathbf{2 0 \%}$ years since 2008 fell below this cumulative CPUE on this date.
- $\mathbf{1 9 \%} \mathbf{- 3 8 \%}$ of the run is likely complete based historical run timing.

Chinook 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 2024 plotted along with the prior year, a year with an average (2008-2023) cumulative CPUE, and years with the minimum and maximum (2008-2023) cumulative CPUEs.


For more detailed information, see the Chinook salmon appendix at the end of this document.
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## Chum Salmon BTF Summary (6/17)

- The BTF daily CPUE was 5.
- The BTF cumulative CPUE is now 33.
- $\mathbf{2 7 \%}$ years since 2008 fell below this cumulative CPUE on this date.
- $\mathbf{1 \% - 5 \%}$ of the run is likely complete based historical run timing.

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 2024 plotted along with the prior year, a year with an average (1984-2023) cumulative CPUE, and years with the minimum and maximum cumulative CPUEs.


For more detailed information, see the chum salmon appendix at the end of this document.
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## Sonar Passage Estimates

Sonar Figure 1. Cumulative estimates of salmon passage from the 2024 sonar operation. Grey bands show the $95 \%$ confidence intervals. Note: Estimates are subject to change.


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## Percent Composition by Salmon Species

Percent Composition Figure 1. Species percent composition in the BTF from 2024 and based on the historical average. The composition presented on each day represents the average composition over the past 2 days.


Percent Composition Figure 2. Species percent composition in the ATF from 2024 and based on the historical average. The composition presented on each day represents the average composition over the past 2 days.


## Chinook Salmon Appendix

Chinook Salmon Table A1. Cumulative CPUE from the BTF.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | $5-Y r$ | Avg. |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | $2008-2023$ Avg.

Chinook Salmon Table A2. Cumulative CPUE from the ATF.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 13 | 7 | 0 | 42 | 7 | 403 | 104 |
| $\mathbf{6 / 1 5}$ | 13 | 7 | 8 | 79 | 41 | 569 | 104 |
| $\mathbf{6 / 1 6}$ | 13 | 7 | 8 | 99 | 68 | 595 | 119 |
| $\mathbf{6 / 1 7}$ | $\mathbf{1 3}$ | $\mathbf{7}$ | $\mathbf{3 5}$ | $\mathbf{1 8 2}$ | $\mathbf{1 0 7}$ | $\mathbf{6 4 5}$ | $\mathbf{1 3 4}$ |
| $\mathbf{6 / 1 8}$ |  | 7 | 73 | 233 | 140 | 795 | 134 |
| $\mathbf{6 / 1 9}$ |  | 14 | 118 | 261 | 167 | 810 | 134 |
| $\mathbf{6 / 2 0}$ |  | 14 | 125 | 302 | 218 | 836 | 141 |
| EOS |  | 748 | 1,277 | 1,891 | 1,874 | 1,691 | 820 |

Chinook Salmon Table A3. Cumulative passage at the Kuskokwim River sonar. Note: Estimates are subject to change.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 10,947 | 8,624 | 16,884 | 15,189 | 9,295 | 37,316 | 11,383 |
| $\mathbf{6 / 1 5}$ | 11,964 | 11,290 | 20,334 | 17,920 | 11,932 | 39,021 | 14,337 |
| $\mathbf{6 / 1 6}$ | 12,682 | 14,383 | 22,624 | 18,939 | 12,826 | 43,298 | 17,789 |
| $\mathbf{6 / 1 7}$ | $\mathbf{1 4 , 4 4 8}$ | $\mathbf{1 6 , 4 1 7}$ | $\mathbf{2 3 , 5 9 5}$ | $\mathbf{2 0 , 6 3 9}$ | $\mathbf{1 3 , 8 1 9}$ | $\mathbf{4 9 , 8 6 3}$ | $\mathbf{2 2 , 9 2 9}$ |
| $\mathbf{6 / 1 8}$ |  | 17,943 | 25,889 | 22,014 | 16,174 | 52,696 | 26,317 |
| $\mathbf{6 / 1 9}$ |  | 20,515 | 27,809 | 24,599 | 18,865 | 58,284 | 27,988 |
| $\mathbf{6 / 2 0}$ |  | 22,093 | 30,191 | 27,344 | 20,870 | 63,466 | 30,604 |
| $\mathbf{E O S}$ |  | 79,166 | 145,896 | 102,549 | 106,764 | 161,888 | 132,971 |

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## Chum Salmon Appendix

Chum Salmon Table A1. Cumulative CPUE from the BTF.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 5 -Yr Avg. | $2008-2023$ Avg. |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 20 | 9 | 6 | 8 | 12 | 11 | 37 |
| $\mathbf{6 / 1 5}$ | 25 | 20 | 6 | 8 | 12 | 13 | 56 |
| $\mathbf{6 / 1 6}$ | 28 | 31 | 6 | 8 | 12 | 15 | 69 |
| $\mathbf{6 / 1 7}$ | $\mathbf{3 3}$ | $\mathbf{3 9}$ | $\mathbf{9}$ | $\mathbf{9}$ | $\mathbf{1 2}$ | $\mathbf{1 8}$ | $\mathbf{8 4}$ |
| $\mathbf{6 / 1 8}$ |  | 47 | 9 | 12 | 12 | 23 | 119 |
| $\mathbf{6 / 1 9}$ |  | 55 | 9 | 14 | 17 | 26 | 166 |
| $\mathbf{6 / 2 0}$ |  | 92 | 9 | 14 | 17 | 38 | 214 |
| EOS |  | 4,303 | 2,193 | 327 | 1,442 | 2,938 | 5,509 |

Chum Salmon Table A2. Cumulative CPUE from the ATF.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 0 | 0 | 0 | 0 | 13 | 5 | 8 |
| $\mathbf{6 / 1 5}$ | 0 | 0 | 0 | 0 | 13 | 5 | 8 |
| $\mathbf{6 / 1 6}$ | 0 | 0 | 0 | 0 | 13 | 5 | 8 |
| $\mathbf{6 / 1 7}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{1 3}$ | $\mathbf{5}$ | $\mathbf{1 5}$ |
| $\mathbf{6 / 1 8}$ |  | 0 | 0 | 0 | 13 | 5 | 32 |
| $\mathbf{6 / 1 9}$ |  | 0 | 0 | 6 | 26 | 5 | 95 |
| $\mathbf{6 / 2 0}$ |  | 0 | 0 | 6 | 32 | 5 | 137 |
| $\mathbf{E O S}$ |  | 996 | 952 | 267 | 2,611 | 1,051 | 10,277 |

Chum Salmon Table A3. Cumulative passage at the Kuskokwim River sonar. Note: Estimates are subject to change.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 891 | 364 | 0 | 320 | 0 | 379 | 446 |
| $\mathbf{6 / 1 5}$ | 1,159 | 364 | 0 | 320 | 0 | 379 | 446 |
| $\mathbf{6 / 1 6}$ | 1,585 | 498 | 0 | 320 | 432 | 379 | 446 |
| $\mathbf{6 / 1 7}$ | $\mathbf{1 , 5 8 5}$ | $\mathbf{5 8 4}$ | $\mathbf{0}$ | $\mathbf{3 2 0}$ | $\mathbf{9 5 4}$ | $\mathbf{3 7 9}$ | $\mathbf{4 4 6}$ |
| $\mathbf{6 / 1 8}$ |  | 584 | 0 | 320 | 954 | 379 | 446 |
| $\mathbf{6 / 1 9}$ |  | 1,123 | 0 | 320 | 954 | 379 | 1,806 |
| $\mathbf{6 / 2 0}$ |  | 1,237 | 0 | 320 | 954 | 659 | 2,089 |
| EOS |  | 251,542 | 103,864 | 26,973 | 76,432 | 385,409 | 552,011 |

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## Sockeye Salmon Appendix

Sockeye Salmon Table A1. Cumulative CPUE from the BTF.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | $5-Y r$ | Avg. |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | 2008-2023 Avg.

Sockeye Salmon Table A2. Cumulative CPUE from the ATF.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $\mathbf{6 / 1 5}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $\mathbf{6 / 1 6}$ | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| $\mathbf{6 / 1 7}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ |
| $\mathbf{6 / 1 8}$ |  | 0 | 6 | 0 | 0 | 0 | 0 |
| $\mathbf{6 / 1 9}$ |  | 0 | 6 | 0 | 0 | 0 | 0 |
| $\mathbf{6 / 2 0}$ |  | 0 | 6 | 0 | 0 | 0 | 0 |
| $\mathbf{E O S}$ |  | 369 | 129 | 241 | 209 | 33 | 75 |

Sockeye Salmon Table A3. Cumulative passage at the Kuskokwim River sonar. Note: Estimates are subject to change.

| Date | 2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 / 1 4}$ | 1,625 | 2,289 | 3,498 | 7,171 | 2,504 | 7,563 | 2,469 |
| $\mathbf{6 / 1 5}$ | 2,567 | 3,676 | 4,704 | 8,526 | 4,584 | 10,148 | 2,787 |
| $\mathbf{6 / 1 6}$ | 3,591 | 4,544 | 5,556 | 11,859 | 5,229 | 11,555 | 2,787 |
| $\mathbf{6 / 1 7}$ | $\mathbf{5 , 7 2 8}$ | $\mathbf{5 , 7 4 9}$ | $\mathbf{7 , 8 5 1}$ | $\mathbf{2 0 , 4 9 4}$ | $\mathbf{6 , 0 8 9}$ | $\mathbf{1 3 , 8 4 7}$ | $\mathbf{3 , 1 9 3}$ |
| $\mathbf{6 / 1 8}$ |  | 8,399 | 10,138 | 27,129 | 8,653 | 17,875 | 3,780 |
| $\mathbf{6 / 1 9}$ |  | 12,025 | 14,969 | 30,257 | 15,501 | 20,172 | 6,064 |
| $\mathbf{6 / 2 0}$ |  | 17,767 | 23,675 | 31,931 | 17,218 | 26,721 | 8,859 |
| EOS |  | 899,180 | 613,874 | 869,268 | 574,928 | 924,354 | 635,493 |

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## Kuskokwim River In-season Harvest and Effort Estimates <br> 6/16/2024 Subsistence Harvest Opportunity (Drift \& Set Nets) <br> Opportunity Time Period: 7:00 AM - 7:00 PM (12 Hours) <br> Area Covered by Estimates: Tuntutuliak $\longleftrightarrow$ Bogus Cr.

\& ONC



## Data Sources

TAbLE 1. The number and percent of fisher interviews conducted by location and organization.

| Data Source | Interviews | Percent |
| :--- | ---: | ---: |
| Bethel Boat Harbor (ONC) | 115 | $55 \%$ |
| Other Villages (KRITFC) | 75 | $36 \%$ |
| Bethel Area Fish Camps (ONC) | 20 | $9 \%$ |
| Total | $\mathbf{2 1 0}$ | $\mathbf{1 0 0 \%}$ |

Of these interviews, 203 were from drift nets and 7 were from set nets.
TABLE 2. The time each flight was conducted and fishers counted each flight.

| Time Information |  |  |  | Nets Counted |  |
| ---: | ---: | ---: | :--- | :--- | :--- |
| Start Time | End Time | Hours |  | Drift | Set |
| 10:04 AM | 12:20 PM | 2.27 |  | 449 | 78 |
| 3:12 PM | 5:35 PM | 2.38 |  | 295 | 71 |

## Effort Estimates

- An estimated 506 drift boat trips occurred.
- An estimated $8 \mathbf{8 2} \%$ of the trips counted on flight 2 were also counted on flight 1.
- An estimated 5 trips started and ended when no flights occurred.
- An estimated 85 set net trips occurred.


## Harvest Estimates

- An estimated total of $8,918(7,537-10,570)$ salmon were harvested.
- An estimated total of $6,551(5,362-7,994)$ Chinook salmon were harvested.
- An estimated total of $1,439(1,028-1,864)$ chum salmon were harvested.
- An estimated total of $928(706-1,181)$ sockeye salmon were harvested.
- Harvest by set nets accounted for an estimated 549 (245-864) total salmon ( $80 \%$ Chinook salmon, $7 \%$ chum salmon, and $13 \%$ sockeye salmon).

TABLE 3. Summaries by river stratum (area) for drift nets. Numbers in parentheses are $95 \%$ confidence intervals.

| Stratum | Interviews | Effort Est. | Estimated Harvest |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Chinook | Chum | Sockeye | Total |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 138 | $\begin{gathered} 2,189 \\ (1,311-3,461) \end{gathered}$ | $\begin{gathered} 765 \\ (393-1,188) \end{gathered}$ | $\begin{gathered} 283 \\ (124-470) \end{gathered}$ | $\begin{gathered} 3,237 \\ (2,205-4,646) \end{gathered}$ |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 87 | $\begin{gathered} 1,181 \\ (915-1,488) \end{gathered}$ | $\begin{gathered} 218 \\ (155-283) \end{gathered}$ | $\begin{gathered} 221 \\ (147-306) \end{gathered}$ | $\begin{gathered} 1,621 \\ (1,289-1,993) \end{gathered}$ |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 221 | $\begin{gathered} 2,319 \\ (1,740-3,079) \end{gathered}$ | $\begin{gathered} 342 \\ (231-470) \end{gathered}$ | $\begin{gathered} 306 \\ (193-462) \end{gathered}$ | $\begin{gathered} 2,966 \\ (2,239-3,910) \end{gathered}$ |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 30 | $\begin{gathered} 321 \\ (241-426) \end{gathered}$ | $\begin{gathered} 47 \\ (32-65) \end{gathered}$ | $\begin{gathered} 43 \\ (27-64) \end{gathered}$ | $\begin{gathered} 411 \\ (318-542) \end{gathered}$ |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 30 | $\begin{gathered} 102 \\ (63-146) \end{gathered}$ | $\begin{gathered} 26 \\ (8-53) \end{gathered}$ | $\begin{gathered} 6 \\ (0-18) \end{gathered}$ | $\begin{gathered} 134 \\ (88-193) \end{gathered}$ |
| Total | 203 | 506 | $\begin{gathered} 6,112 \\ (4,968-7,481) \end{gathered}$ | $\begin{gathered} 1,398 \\ (996-1,820) \end{gathered}$ | $\begin{gathered} 858 \\ (631-1,119) \end{gathered}$ | $\begin{gathered} 8,369 \\ (7,001-10,007) \end{gathered}$ |

TABLE 4. Estimated trips, average ( $95 \%$ confidence limits) total salmon catch per trip, and percent catch by species summarized for the areas above and below the confluence of the Johnson River with the Kuskokwim River. Quantities are derived from the strata- and species-specific harvest estimates, not the raw interview data.

|  |  |  | Salmon Species \% Composition |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Location | Total Trips | Total Catch/Trip | Chinook | Chum | Sockeye |
| Downstream of Johnson R. | 138 | $23(16-34)$ | $67 \%(54 \%-77 \%)$ | $24 \%(15 \%-38 \%)$ | $9 \%(4 \%-17 \%)$ |
| Upstream of Johnson R. | 368 | $14(12-17)$ | $76 \%(73 \%-79 \%)$ | $12 \%(10 \%-14 \%)$ | $11 \%(9 \%-14 \%)$ |

FIGURE 1. Distributions of relevant quantities from all completed trips using drift nets. The mean quantity by primary data source is shown in the top right; $\mathrm{BBH}=$ Bethel Boat Harbor (ONC), CBM = Other Villages (KRITFC), FC = Bethel Area Fish Camps (ONC).


## Appendix A: Detailed Interview Summaries

## Column Meanings

- Area: the area of the river the trip occurred in
- $\mathbf{N}$ : the number of interviews with usable information in each area
- Min: the minimum value among trips in each area
- $25 \%$ : the value that $25 \%$ of trips fell below in each area
- Mean: the average value across trips in each area
- 75\%: the value that $75 \%$ of trips fell below in each area
- Max: the maximum value among trips in each area

Information is for drift net trips only.
Table A1. Summary of drift net catch per trip of Chinook salmon by fishing area.

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 2 | 7 | 14 | 17 | 45 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 3 | 11 | 15 | 72 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 2 | 9 | 14 | 50 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 9 | 9 | 9 | 9 | 9 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 2 | 3 | 4 | 8 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{3}$ | $\mathbf{1 0}$ | $\mathbf{1 4}$ | $\mathbf{7 2}$ |

Table A2. Summary of drift net catch rate of Chinook salmon by fishing area (fish per 150 feet of net per hour).

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0.8 | 1.1 | 1.9 | 1.8 | 8.4 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0.8 | 2.7 | 3.2 | 16.1 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0.5 | 2.2 | 2.8 | 23 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0.1 | 0.3 | 0.3 | 0.6 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0 . 6}$ | $\mathbf{2 . 2}$ | $\mathbf{2 . 7}$ | $\mathbf{2 3}$ |

Table A3. Summary of drift net catch per trip of chum salmon by fishing area.

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0 | 2 | 4 | 5 | 10 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0 | 2 | 3 | 10 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0 | 1 | 2 | 15 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 8 | 8 | 8 | 8 | 8 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0 | 1 | 1 | 4 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{1 5}$ |

Table A4. Summary of drift net catch rate of chum salmon by fishing area (fish per 150 feet of net per hour).

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0 | 0.3 | 0.7 | 0.6 | 3.3 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0 | 0.5 | 0.7 | 3.8 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0 | 0.3 | 0.4 | 3.8 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0 | 0.1 | 0.1 | 0.3 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0 . 4}$ | $\mathbf{0 . 5}$ | $\mathbf{3 . 8}$ |

TABLE A5. Summary of drift net catch per trip of sockeye salmon by fishing area.

| Area | N | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0 | 0 | 2 | 4 | 6 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0 | 2 | 3 | 22 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0 | 1 | 1 | 22 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 1 | 1 | 1 | 1 | 1 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0 | 0 | 0 | 2 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{2}$ | $\mathbf{2}$ | $\mathbf{2 2}$ |

TABLE A6. Summary of drift net catch rate of sockeye salmon by fishing area (fish per 150 feet of net per hour).

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0 | 0 | 0.2 | 0.4 | 0.7 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0 | 0.5 | 0.6 | 4 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0 | 0.3 | 0.3 | 4.4 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0 | 0 | 0 | 0.1 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0 . 4}$ | $\mathbf{0 . 5}$ | $\mathbf{4 . 4}$ |

Table A7. Summary of drift net percent composition of Chinook salmon by fishing area.

| Area | N | Min | 25\% | Mean | 75\% | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | $29 \%$ | $58 \%$ | $67 \%$ | $81 \%$ | $85 \%$ |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | $0 \%$ | $52 \%$ | $66 \%$ | $86 \%$ | $100 \%$ |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | $0 \%$ | $67 \%$ | $75 \%$ | $96 \%$ | $100 \%$ |
| Akiachak $\longleftrightarrow$ Akiak | 1 | $50 \%$ | $50 \%$ | $50 \%$ | $50 \%$ | $50 \%$ |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | $0 \%$ | $68 \%$ | $78 \%$ | $100 \%$ | $100 \%$ |
| All | $\mathbf{2 0 3}$ | $\mathbf{0 \%}$ | $\mathbf{5 7 \%}$ | $\mathbf{7 1 \%}$ | $\mathbf{9 1 \%}$ | $\mathbf{1 0 0 \%}$ |

Table A8. Summary of drift net trip duration by fishing area.

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 4.4 | 6.8 | 8.5 | 9.8 | 11.5 |
| Johnson $\mathbf{R} . \longleftrightarrow$ Napaskiak | 78 | 2.5 | 5.1 | 7.1 | 8.7 | 12.7 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0.7 | 4.5 | 6.6 | 8.8 | 12.4 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 12 | 12 | 12 | 12 | 12 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 12 | 12 | 12 | 12 | 12 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0 . 7}$ | $\mathbf{5}$ | $\mathbf{7 . 2}$ | $\mathbf{9 . 5}$ | $\mathbf{1 2 . 7}$ |

Table A9. Summary of drift net active fishing hours by fishing area.

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 2.7 | 3 | 5.2 | 6.5 | 10 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 1 | 3.6 | 5.7 | 7.5 | 11 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0.7 | 2.9 | 5.2 | 7.2 | 11.2 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 10 | 10 | 10 | 10 | 10 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 10 | 10 | 10 | 10 | 10 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0 . 7}$ | $\mathbf{3}$ | $\mathbf{5 . 6}$ | $\mathbf{8}$ | $\mathbf{1 1 . 2}$ |

## Appendix B: Non-salmon Harvest Information

- An estimated total of 349 (189-523) nonsalmon were harvested.
- An estimated total of $202(105-315)$ sheefish were harvested.
- An estimated total of 147 (65-260) all whitefishes were harvested.
- Harvest by set nets accounted for an estimated 101 ( $0-238$ ) total nonsalmon ( $\mathbf{4 6 \%}$ sheefish and 54\% all whitefishes).

TABLE B1. Summaries by river stratum (area) for drift nets. Numbers in parentheses are $95 \%$ confidence intervals.

| Stratum | Interviews | Effort Est. | Estimated Harvest |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Sheefish | Whitefish | Total |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 138 | $\begin{gathered} 47 \\ (0-142) \end{gathered}$ | $\begin{gathered} 0 \\ (0-0) \end{gathered}$ | $\begin{gathered} 47 \\ (0-142) \end{gathered}$ |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 87 | $\begin{gathered} 25 \\ (7-53) \end{gathered}$ | $\begin{gathered} 29 \\ (11-52) \end{gathered}$ | $\begin{gathered} 54 \\ (25-90) \end{gathered}$ |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 221 | $\begin{gathered} 51 \\ (27-79) \end{gathered}$ | $\begin{gathered} 50 \\ (23-86) \end{gathered}$ | $\begin{gathered} 101 \\ (60-148) \end{gathered}$ |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 30 | $\begin{gathered} 7 \\ (4-11) \end{gathered}$ | $\begin{gathered} 7 \\ (3-11) \end{gathered}$ | $\begin{gathered} 14 \\ (8-20) \end{gathered}$ |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 30 | $\begin{gathered} 26 \\ (9-44) \end{gathered}$ | $\begin{gathered} 7 \\ (0-20) \end{gathered}$ | $\begin{gathered} 33 \\ (12-56) \end{gathered}$ |
| Total | 203 | 506 | $\begin{gathered} 156 \\ (83-259) \end{gathered}$ | $\begin{gathered} 93 \\ (57-134) \end{gathered}$ | $\begin{gathered} 248 \\ (159-359) \end{gathered}$ |

TABLE B2. Summary of drift net catch per trip of sheefish by fishing area.

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0 | 0 | 0 | 0 | 1 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0 | 0 | 0 | 3 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0 | 0 | 0 | 3 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 0 | 0 | 0 | 0 | 0 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0 | 1 | 1 | 3 |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{3}$ |

TABLE B3. Summary of drift net catch per trip of all whitefishes by fishing area.

| Area | $\mathbf{N}$ | Min | $\mathbf{2 5 \%}$ | Mean | $\mathbf{7 5 \%}$ | Max |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Tuntutuliak $\longleftrightarrow$ Johnson R. | 15 | 0 | 0 | 0 | 0 | 0 |
| Johnson R. $\longleftrightarrow$ Napaskiak | 78 | 0 | 0 | 0 | 0 | 3 |
| Napaskiak $\longleftrightarrow$ Akiachak | 99 | 0 | 0 | 0 | 0 | 3 |
| Akiachak $\longleftrightarrow$ Akiak | 1 | 0 | 0 | 0 | 0 | 0 |
| Akiak $\longleftrightarrow$ Bogus Cr. | 10 | 0 | 0 | 0 | 0 | $\mathbf{2}$ |
| All | $\mathbf{2 0 3}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{0}$ | $\mathbf{3}$ |

