
Kuskokwim River In-season Harvest and Effort Estimates

7/11/2023 Subsistence Harvest Opportunity (Drift & Set Nets)

Opportunity Time Period: 9:00 AM – 3:00 PM (6 Hours)

Area Covered by Estimates: Tuntutuliak ↔ Bogus Cr.



Data Sources

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

| Data Source | Interviews | Percent |
|--------------------------|------------|-------------|
| Bethel Boat Harbor (ONC) | 49 | 74% |
| Other Villages (KRITFC) | 17 | 26% |
| Total | 66 | 100% |

Of these interviews, **63** were from drift nets and **3** 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 |
| 12:30 PM | 2:26 PM | 1.93 | 99 | 16 |

Effort Estimates

- An estimated **120** drift boat trips occurred.
 - An estimated **21** trips started and ended when no flights occurred.
- An estimated **16** set net trips occurred.

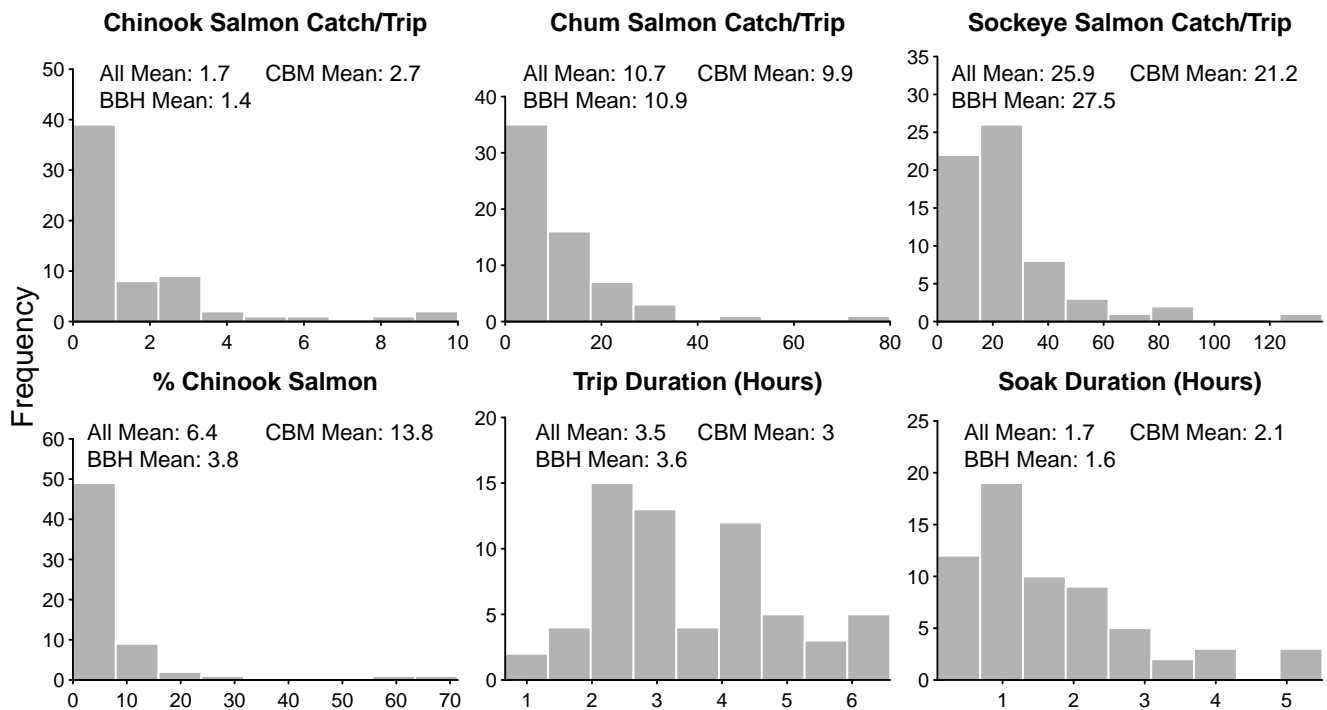
Harvest Estimates

- An estimated total of **6,649 (5,710 – 7,688)** salmon were harvested.
 - An estimated total of **260 (205 – 324)** Chinook salmon were harvested.
 - An estimated total of **1,914 (1,450 – 2,473)** chum salmon were harvested.
 - An estimated total of **4,475 (3,798 – 5,213)** sockeye salmon were harvested.
- Harvest by set nets accounted for an estimated **375 (32 – 570)** total salmon (**7%** Chinook salmon, **29%** chum salmon, and **64%** 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 ↔ Johnson R. | 2 | 29 | 64 (40 – 96) | 577 (313 – 923) | 1,052 (702 – 1,428) | 1,693 (1,159 – 2,396) |
| Johnson R. ↔ Napaskiak | 23 | 23 | 51 (29 – 76) | 453 (236 – 729) | 820 (526 – 1,144) | 1,323 (894 – 1,861) |
| Napaskiak ↔ Akiachak | 36 | 44 | 72 (42 – 115) | 509 (258 – 885) | 1,537 (1,125 – 2,082) | 2,118 (1,588 – 2,736) |
| Akiachak ↔ Akiak | 2 | 12 | 22 (13 – 34) | 133 (65 – 235) | 414 (299 – 561) | 569 (426 – 741) |
| Akiak ↔ Bogus Cr. | 0 | 12 | 23 (13 – 34) | 134 (66 – 232) | 414 (298 – 568) | 571 (428 – 740) |
| Total | 63 | 120 | 232 (184 – 286) | 1,806 (1,341 – 2,340) | 4,237 (3,577 – 4,961) | 6,274 (5,319 – 7,288) |

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; BBH = Bethel Boat Harbor (ONC), CBM = Other Villages (KRITFC).



Appendix A: Detailed Interview Summaries

Column Meanings

- **Area:** the area of the river the trip occurred in
- **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 | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|----------|----------|----------|-----------|
| Tuntutuliak ↔ Johnson R. | 2 | 1 | 1 | 1 | 1 | 1 |
| Johnson R. ↔ Napaskiak | 23 | 0 | 1 | 2 | 2 | 10 |
| Napaskiak ↔ Akiachak | 36 | 0 | 0 | 1 | 2 | 10 |
| Akiachak ↔ Akiak | 2 | 3 | 4 | 4 | 4 | 5 |
| All | 63 | 0 | 0 | 2 | 2 | 10 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|----------|------------|----------|------------|
| Tuntutuliak ↔ Johnson R. | 2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 |
| Johnson R. ↔ Napaskiak | 22 | 0 | 0.3 | 1.2 | 1.9 | 3.3 |
| Napaskiak ↔ Akiachak | 35 | 0 | 0 | 1.3 | 2 | 7.2 |
| Akiachak ↔ Akiak | 2 | 0.7 | 1.9 | 3.1 | 4.3 | 5.6 |
| All | 61 | 0 | 0 | 1.3 | 2 | 7.2 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|----------|-----------|-----------|-----------|
| Tuntutuliak ↔ Johnson R. | 2 | 3 | 6 | 10 | 14 | 17 |
| Johnson R. ↔ Napaskiak | 23 | 0 | 6 | 15 | 19 | 80 |
| Napaskiak ↔ Akiachak | 36 | 0 | 2 | 9 | 10 | 50 |
| Akiachak ↔ Akiak | 2 | 1 | 1 | 2 | 2 | 2 |
| All | 63 | 0 | 2 | 11 | 14 | 80 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|------------|------------|----------|-----------|
| Tuntutuliak ↔ Johnson R. | 2 | 1.2 | 2 | 2.7 | 3.5 | 4.2 |
| Johnson R. ↔ Napaskiak | 22 | 0 | 2.6 | 11 | 14.7 | 70 |
| Napaskiak ↔ Akiachak | 35 | 0 | 1.8 | 9 | 8.8 | 96 |
| Akiachak ↔ Akiak | 2 | 0.5 | 0.6 | 0.8 | 1 | 1.1 |
| All | 61 | 0 | 1.8 | 9.2 | 9 | 96 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|-----------|-----------|-----------|------------|
| Tuntutuliak ↔ Johnson R. | 2 | 15 | 18 | 20 | 22 | 25 |
| Johnson R. ↔ Napaskiak | 23 | 1 | 16 | 28 | 40 | 80 |
| Napaskiak ↔ Akiachak | 36 | 2 | 8 | 26 | 30 | 139 |
| Akiachak ↔ Akiak | 2 | 0 | 0 | 0 | 1 | 1 |
| All | 63 | 0 | 10 | 26 | 30 | 139 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|----------|-------------|-----------|------------|
| Tuntutuliak ↔ Johnson R. | 2 | 6 | 6.1 | 6.1 | 6.2 | 6.2 |
| Johnson R. ↔ Napaskiak | 22 | 1.4 | 9.2 | 19.9 | 25.9 | 78 |
| Napaskiak ↔ Akiachak | 35 | 1.5 | 12.6 | 27.6 | 32.5 | 105 |
| Akiachak ↔ Akiak | 2 | 0 | 0.3 | 0.6 | 0.8 | 1.1 |
| All | 61 | 0 | 9 | 23.2 | 30 | 105 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|-----------|-----------|-----------|-----------|------------|
| Tuntutuliak ↔ Johnson R. | 2 | 2% | 3% | 4% | 5% | 5% |
| Johnson R. ↔ Napaskiak | 23 | 0% | 1% | 5% | 8% | 25% |
| Napaskiak ↔ Akiachak | 36 | 0% | 0% | 4% | 6% | 17% |
| Akiachak ↔ Akiak | 2 | 60% | 63% | 66% | 69% | 71% |
| All | 63 | 0% | 0% | 6% | 7% | 71% |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|------------|------------|------------|------------|------------|
| Tuntutuliak ↔ Johnson R. | 2 | 3.1 | 3.8 | 4.6 | 5.3 | 6.1 |
| Johnson R. ↔ Napaskiak | 22 | 0.7 | 2 | 3 | 4 | 5.5 |
| Napaskiak ↔ Akiachak | 35 | 1 | 2.6 | 3.4 | 4.2 | 6.6 |
| Akiachak ↔ Akiak | 2 | 6 | 6 | 6 | 6 | 6 |
| All | 61 | 0.7 | 2.5 | 3.4 | 4.3 | 6.6 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|------------|------------|------------|------------|----------|
| Tuntutuliak ↔ Johnson R. | 2 | 1.5 | 2.1 | 2.8 | 3.4 | 4 |
| Johnson R. ↔ Napaskiak | 22 | 0.5 | 1 | 1.9 | 2.3 | 5 |
| Napaskiak ↔ Akiachak | 35 | 0.2 | 0.8 | 1.5 | 2 | 5 |
| Akiachak ↔ Akiak | 2 | 0.8 | 1.3 | 1.9 | 2.4 | 3 |
| All | 61 | 0.2 | 0.8 | 1.7 | 2.2 | 5 |

Appendix B: Non-salmon Harvest Information

- An estimated total of **48 (4 – 114)** nonsalmon were harvested.
 - An estimated total of **3 (0 – 8)** sheefish were harvested.
 - An estimated total of **44 (0 – 112)** all whitefishes were harvested.
- Harvest by set nets accounted for an estimated **0 (0 – 0)** total nonsalmon (**0%** sheefish and **0%** 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 ↔ Johnson R. | 2 | 29 | 2 (0 – 6) | 0 (0 – 0) | 2 (0 – 6) |
| Johnson R. ↔ Napaskiak | 23 | 23 | 1 (0 – 5) | 0 (0 – 0) | 1 (0 – 5) |
| Napaskiak ↔ Akiachak | 36 | 44 | 0 (0 – 0) | 28 (0 – 94) | 28 (0 – 94) |
| Akiachak ↔ Akiak | 2 | 12 | 0 (0 – 0) | 8 (0 – 26) | 8 (0 – 26) |
| Akiak ↔ Bogus Cr. | 0 | 12 | 0 (0 – 0) | 8 (0 – 27) | 8 (0 – 27) |
| Total | 63 | 120 | 3 (0 – 8) | 44 (0 – 112) | 48 (4 – 114) |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|----------|----------|----------|----------|
| Tuntutuliak ↔ Johnson R. | 2 | 0 | 0 | 0 | 0 | 0 |
| Johnson R. ↔ Napaskiak | 23 | 0 | 0 | 0 | 0 | 1 |
| Napaskiak ↔ Akiachak | 36 | 0 | 0 | 0 | 0 | 0 |
| Akiachak ↔ Akiak | 2 | 0 | 0 | 0 | 0 | 0 |
| All | 63 | 0 | 0 | 0 | 0 | 1 |

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

| Area | N | Min | 25% | Mean | 75% | Max |
|--------------------------|-----------|----------|----------|----------|----------|----------|
| Tuntutuliak ↔ Johnson R. | 2 | 0 | 0 | 0 | 0 | 0 |
| Johnson R. ↔ Napaskiak | 23 | 0 | 0 | 0 | 0 | 0 |
| Napaskiak ↔ Akiachak | 36 | 0 | 0 | 0 | 0 | 3 |
| Akiachak ↔ Akiak | 2 | 0 | 0 | 0 | 0 | 0 |
| All | 63 | 0 | 0 | 0 | 0 | 3 |