



Community-Based Harvest Monitoring

2021 PROGRAM SUMMARY & REPORT

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KRITFC harvest monitors and staff at the 2021 CBHM training.

Credit all photos in this report to the Kuskokwim River Inter-Tribal Fish Commission.

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INTRODUCTION

The Community-Based Harvest Monitoring (CBHM) program sends locally hired harvest monitors to boat harbors and fish camps in their Kuskokwim communities to collect harvest information after subsistence salmon harvest opportunities. This information is converted to salmon run size and run timing estimates, which go directly to federal, state, and KRITFC fisheries managers to inform their management decisions and support the rebuilding of healthy Chinook and chum salmon stocks (see Figure 1). **The information collected through CBHM, coupled with the Indigenous Knowledge of KRITFC In-Season Managers, is invaluable for fisheries management on the Kuskokwim.** The CBHM program was created by the Bering Sea Fishermen's Association (BSFA) in 2017, jointly run by BSFA and the Kuskokwim River Inter-Tribal Fish Commission (KRITFC) through 2020, and operated solely by KRITFC in 2021.

The following report describes the CBHM program and summarizes its operation in 2021. **This year, there were 9 harvest monitors conducting surveys in 5 lower Kuskokwim villages: Kwethluk, Napaskiak, Napakiak, Tuntutuliak, and Eek.**

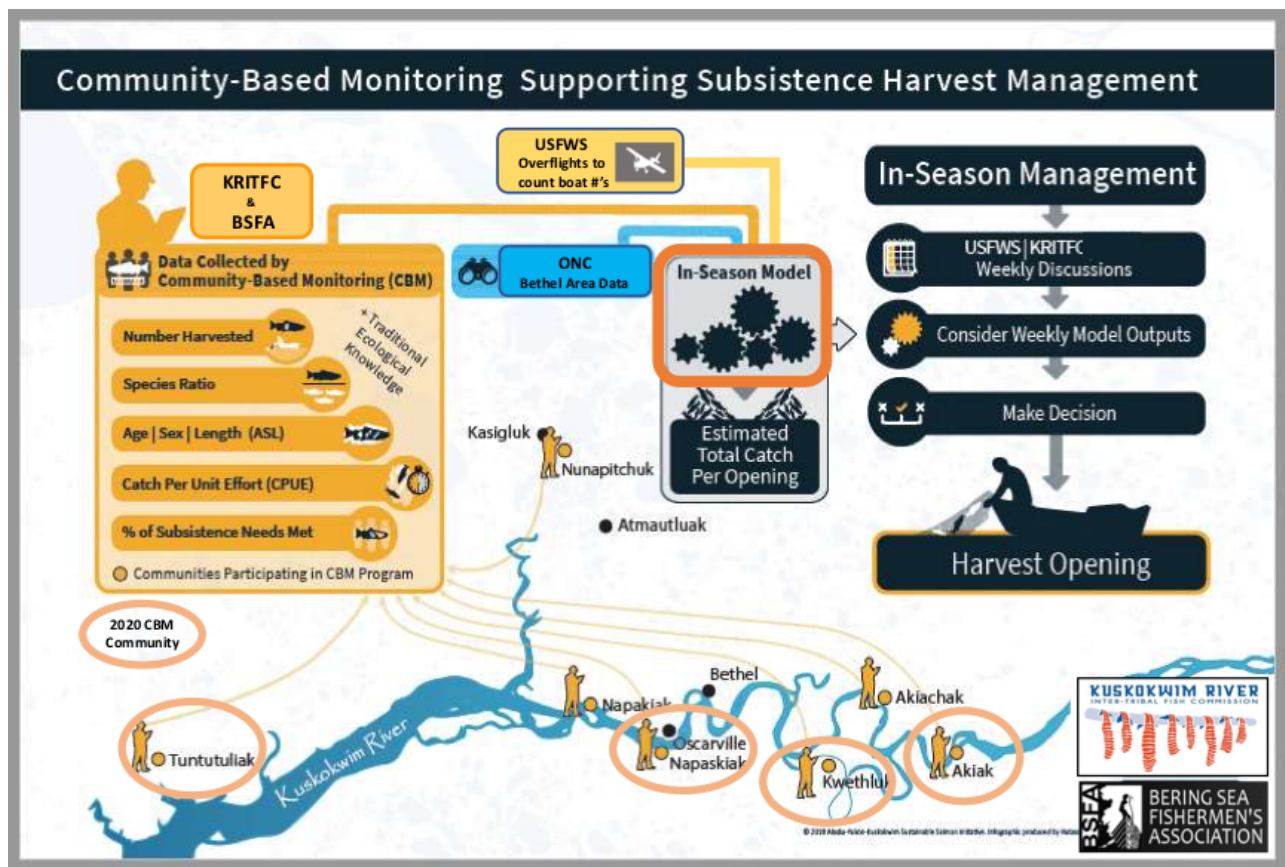
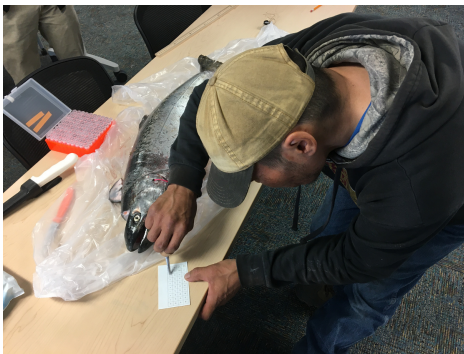


Figure 1: Graphical overview of the CBHM program featuring the 2020 participating communities.

HOW DOES CBHM WORK?

The CBHM program is a multifaceted project that connects communities along the Kuskokwim River with fisheries management agencies and provides these agencies with critically important in-season Chinook salmon harvest information (see Figure 1 for an overview of the CBHM program). Since its inception, **it has generally been operated in lower Kuskokwim communities, where Chinook salmon harvest rates are historically among the highest of any villages in the watershed.** This provides a wealth of harvest information for the CBHM team to collect and utilize.

Each year in April and May, before the salmon fishing season starts, KRITFC hires Harvest Monitors from the communities participating in CBHM. **These Harvest Monitors are Tribal citizens recommended by their Village or Tribal Councils; many are youth; and all have specific local knowledge of their communities and local fisheries and fishing spots.** KRITFC and the Orutsararmiut Native Council (ONC) – which runs a similar in-season harvest monitoring project at the Bethel boat harbor and in Bethel area fish camps – provide training for Harvest Monitors before subsistence fishing opportunities begin. The Harvest Monitors are equipped with cell phone data and apps to conduct interviews, age-sex-length (ASL) and scale collection training, and knowledge about the importance of the CBHM program for fisheries management.



2021 Harvest Monitor training.

After each subsistence salmon harvest opportunity, the Harvest Monitors go out into their communities and interview subsistence users who participated in the harvest opportunity. These interviews collect a variety of data, including date and location of the interview; date, time, and location of the fishing trip; net type and size used; and the number of Chinook, chum, and red salmon, whitefish, and sheefish caught during the trip. The Harvest Monitors can also collect ASL data from Chinook salmon, as well as any comments or concerns subsistence users want to voice to fisheries managers. **All of this information is collected within 12 hours after each harvest opportunity, and the Harvest Monitors enter it into an app (Google Forms) to submit it to CBHM staff.**

After consolidating this data, CBHM staff submit it to KRITFC, ONC, and their partners to **produce post-harvest opportunity models that estimate salmon run sizes, run timings, and total subsistence catches in the Kuskokwim.** Data from aerial boat counts conducted by the U.S. Fish and Wildlife Service (USFWS) and post-harvest interviews collected by ONC are also included into the models. These harvest estimates are then handed to fisheries managers from KRITFC and USFWS, who meet weekly during the salmon season to decide on subsistence harvest opportunities and closures, depending on how the run appears to be coming in.

The information collected by Harvest Monitors is used directly by fisheries management agencies to monitor, open, and close the Kuskokwim for subsistence harvests. This data is thus invaluable for ensuring that in-season managers provide for both subsistence harvest and salmon conservation.

Check if data transferred

Kuskokwim River Community-Based Monitoring Interview Form
Kuskokwim River Inter Tribal Fish Commission

Village Monitor (Name and Village) _____

Interview Date (MM/DD) ____ / ____ / 2021 Interview number this date ____

Where is the person you are interviewing? Village Fish camp Boat launch OTHER (specify) _____

Date Trip Started (MM/DD) ____ / ____ Fishing location zone (code from map) _____
If location "O" use O and write location name on line.

Time Trip Started (hh:mm) ____ : ____ Time Trip Ended (hh:mm) ____ : ____

Net type Driftnet Setnet

Net length _____ How is net length reported? Feet Fathoms Shackles

Mesh size (inches) 4 5 5 1/8 5 1/4 5 3/8 5 1/2 5 5/8 5 3/4 5 7/8 6 OTHER (specify) _____

Time with net in water fishing (hours colon nearest 15 minutes; e.g., 2:30 is 2 hours and 30 minutes) _____

Number of Kings harvested _____ How close are you to meeting your King Salmon harvest goal this year?
Mark only one box-> Not at all Under half **Half** Over half Goal met

Number of Chums harvested _____ How close are you to meeting your Chum Salmon harvest goal this year?
Mark only one box-> Not at all Under half **Half** Over half Goal met

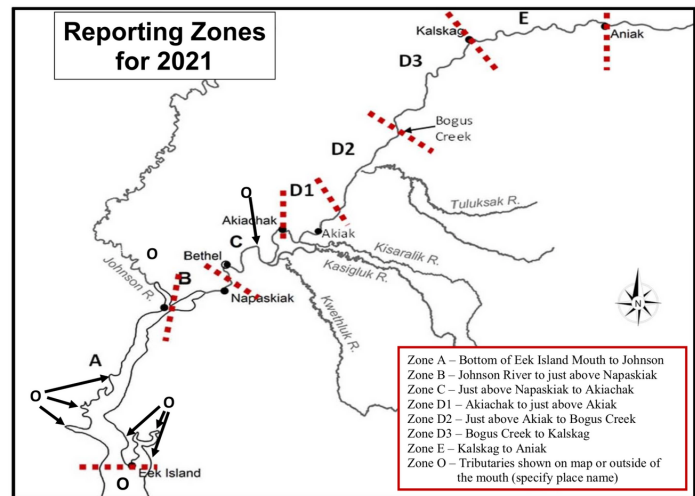
Number of Sockeye harvested _____ How close are you to meeting your Sockeye Salmon harvest goal this year?
Mark only one box-> Not at all Under half **Half** Over half Goal met

Number of Sheefish harvested _____

Number of Other Whitefish harvested _____

Thank you for your help. This process is designed to contribute to in-season management decisions based on community-based monitoring. Is there any other information or questions the individual interviewed would like to share or any suggestions to improve the survey or comments to fishery managers?

As a community-based monitor, is there anything you would like to note?



The interview form and fishing reporting zones used in the 2021 season.



WHY IS CBHM IMPORTANT?

The CBHM program brings **reliable, community-gathered harvest information** from Kuskokwim fishing communities to the KRITFC and USFWS fisheries management team. This is important because until around June 12 of each year, the only other sources of Chinook salmon indexes on the Kuskokwim – pre-season run forecasts, Bethel Sonar data, and Bethel Test Fish data – are highly uncertain and insufficient. That means that **without CBHM information, fisheries managers have little to no solid data to guide their management decisions to provide for adequate spawner escapement and subsistence harvest until the Chinook salmon run is almost halfway over.** Moreover, the CBHM program helps to document overall salmon harvests, which **helps managers track strong and poor runs per species.** This is useful during times like 2020 and 2021, when the chum salmon population crashed. Because Harvest Monitors gather information straight from subsistence users in the most heavily fished region of the Kuskokwim and collect this information immediately after subsistence harvest opportunities, it is not only highly accurate for fisheries managers but also legitimate in the eyes of Kuskokwim community members.

The CBHM program also **helps build capacity in Kuskokwim communities.** By employing local Tribal community members as Harvest Monitors, the CBHM program provides a seasonal employment option, connects subsistence users with in-season managers, and increases community engagement in the fisheries management process.

Finally, CBHM **links subsistence users and fisheries management agencies.** The Harvest Monitors are the conduit of the information sharing between these two groups. While Harvest Monitors collect data to inform in-season managers, including local knowledge and concerns from community members, they also communicate fisheries decisions and salmon conservation information to subsistence users. **It is important to note that Harvest Monitors do not enforce laws.** However, since they have contact with both community members and fisheries managers, they serve an important role in spreading information about fisheries decisions and regulations.

2021 CBHM PROGRAM SUMMARY

In 2021, **nine Harvest Monitors** were hired from **five lower river communities** (see below):

- Colleen Andrew, William Egoak, and Alfred Epchook of Kwethluk.
- Dezmin Johnson and Wesley Nicholai of Napaskiak.
- Emmitt Nicori of Napakiak.
- Brianna Pavila and Isaiah Pavila of Tuntutuliak.
- James Heakin of Eek.

The 2021 CBHM program began with **in-season training on May 26** in Bethel. ONC Fisheries ran this training jointly with KRITFC. Harvest Monitors and ONC Fisheries Technicians received overviews of the CBHM and ONC survey programs, practiced ASL and otolith collection on salmon from Bethel Test Fish, and learned best practices for in-season interviews. Four KRITFC Harvest Monitors attended in-person training, and five received training over the phone or in their villages after the in-person training. All were encouraged to conduct at least 10 harvest interviews per harvest opportunity and collect at least 5 ASL samples throughout the season.

Because of the ongoing Covid-19 pandemic, Harvest Monitors were advised to wear masks, keep safe social distances from subsistence fishermen, and call subsistence fishermen instead of conducting in-person interviews when necessary.



*William Egoak,
Kwethluk*



*Colleen Andrew,
Kwethluk*



*Alfred Epchook,
Kwethluk*



*Wesley Nicholai and
Dezmin Johnson,
Napaskiak*



*Emmitt Nicori,
Napakiak*



*James Heakin,
Eek*



*Brianna Pavila,
Tuntutuliak*

Not pictured: Isaiah Pavila, Tuntutuliak

There were 12 subsistence fishing opportunities between July 1 and July 22, 2021, within the boundaries of Yukon Delta National Wildlife Refuge. **KRITFC Harvest Monitors collected harvest interviews after 11 of those 12 opportunities:**

1. **June 2, 2021**, 6:00am – 10:00pm (16 hours), set gillnet only
2. **June 5, 2021**, 6:00am – 10:00pm (16 hours), set gillnet only
3. **June 9, 2021**, 6:00am – 10:00pm (16 hours), set gillnet only
4. **June 12, 2021**, 6:00am – 6:00pm (12 hours), drift or set gillnet
5. **June 15, 2021**, 6:00am – 6:00pm (12 hours), drift or set gillnet
6. **June 19, 2021**, 6:00am – 6:00pm (12 hours), drift or set gillnet
7. **June 28, 2021**, 10:00am – 10:00pm (12 hours), drift or set gillnet. *Note: This harvest opportunity was illegally announced by the Alaska Department of Fish & Game, not USFWS.*
8. **July 2, 2021**, 6:00am – 3:00pm (9 hours), drift or set gillnet
9. **June 9, 2021**, 6:00am – 6:00pm (12 hours), drift or set gillnet
10. **June 10, 2021**, 12:01am – June 11, 2021, 11:59pm (24 hours), set gillnet only
11. **June 16, 2021**, 6:00am – 6:00pm (12 hours), drift or set gillnet
12. June 17, 2021, 12:01am – June 18, 2021, 11:59pm (24 hours), set gillnet only. *Note: No CBHM interviews were collected.*

Altogether, **KRITFC Harvest Monitors collected 540 harvest interviews** after these harvest opportunities. These interviews were combined with ONC surveys of fishermen at the Bethel boat harbor and in Bethel area fish camps and USFWS aerial boat count surveys to produce in-season harvest estimates. KRITFC and ONC biologists were able to produce harvest estimates for every subsistence harvest opportunity except July 9 (because poor weather prevented aerial surveys), July 10-11 (because ONC did not collect surveys), and July 17-18 (because ONC did not collect surveys).

These harvest estimates were given to KRITFC In-Season Managers (see below) and USFWS Fisheries Managers during their weekly in-season management meetings to inform their management decisions. Utilizing this information – which comes directly from subsistence fishermen – is especially important for fisheries managers when it is too early for Bethel Test Fish and Bethel sonar to paint a picture of strong or weak, late or early salmon runs.



Megan Leary,
Napaimute,
Upper River ISM



James Nicori,
Kwethluk,
Middle River ISM



Avery Hoffman,
Bethel,
Middle River ISM



Jacki Cleveland,
Quinhagak,
Lower River ISM

These harvest estimates, coupled with the KRITFC In-Season Managers Indigenous Knowledge and observations, guided management decisions in 2021. **It is, in part, because of these estimates that the federal fisheries management team was able to provide the harvest opportunities listed above while conservatively managing the Chinook and chum salmon fisheries.** Through KRITFC-USFWS collaborative management, a preliminarily estimated 21,630 Chinook salmon were harvested in the lower river; 27,802 Chinook salmon were harvested river-wide; and 101,203 Chinook salmon escaped to their spawning grounds. This is a successful management season because subsistence fishermen had some opportunities for harvest during conservation, and the estimated escapement reached the upper end of the escapement goal range (65,000 to 120,000 fish).

KRITFC looks forward to continuing the CBHM program in 2022 and hopes to expand it to middle and upper river communities. Although some of these communities lie outside of the boundaries of federal management, KRITFC believes it is important to track harvest data over time to better understand how subsistence fishing is changing with salmon declines and restoration, as well as to ensure federal conservation closures in the lower river enable fish to reach upriver communities and tributaries. **If your community would like to become involved in the CBHM program, please contact Terese Schomogyi at (907)-545-7388 or terese@kritfc.org.**

QUYANA! TSEN'AHN! THANK YOU!

