Community-Based Harvest Monitoring

2020 PROGRAM SUMMARY & REPORT

KUSKOKWIM RIVER INTER-TRIBAL FISH COMMISSION

BSFA BERING SEA FISHERMEN'S ASSOCIATION

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KRITFC AND ONC harvest monitors and staff at the 2019 CBHM training. Because of the COVID-19 pandemic, all CBHM trainings happened virtually in 2020.

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

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INTRODUCTION

Community-Based Harvest Monitoring (CBHM) is a program jointly run by the Kuskokwim River Inter-Tribal Fish Commission (KRITFC) and Bering Sea Fishermen's Association (BSFA). Created by BSFA in 2017, the CBHM program sends locally hired harvest monitors to boat harbors and fish camps in their Kuskokwim communities to collect harvest information after subsistence Chinook salmon harvest opportunities. This information is converted to Chinook 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 salmon stocks (see Figure 1). **The information collected through CBHM, coupled with the Traditional Knowledge of KRITFC In-Season Managers, is invaluable for fisheries management on the Kuskokwim.**

The following report describes the CBHM program and summarizes its operation in 2020. **This year, there were six harvest monitors conducting surveys in four lower Kuskokwim villages: Akiak, Kwethluk, Napaskiak, and Tuntutuliak.**

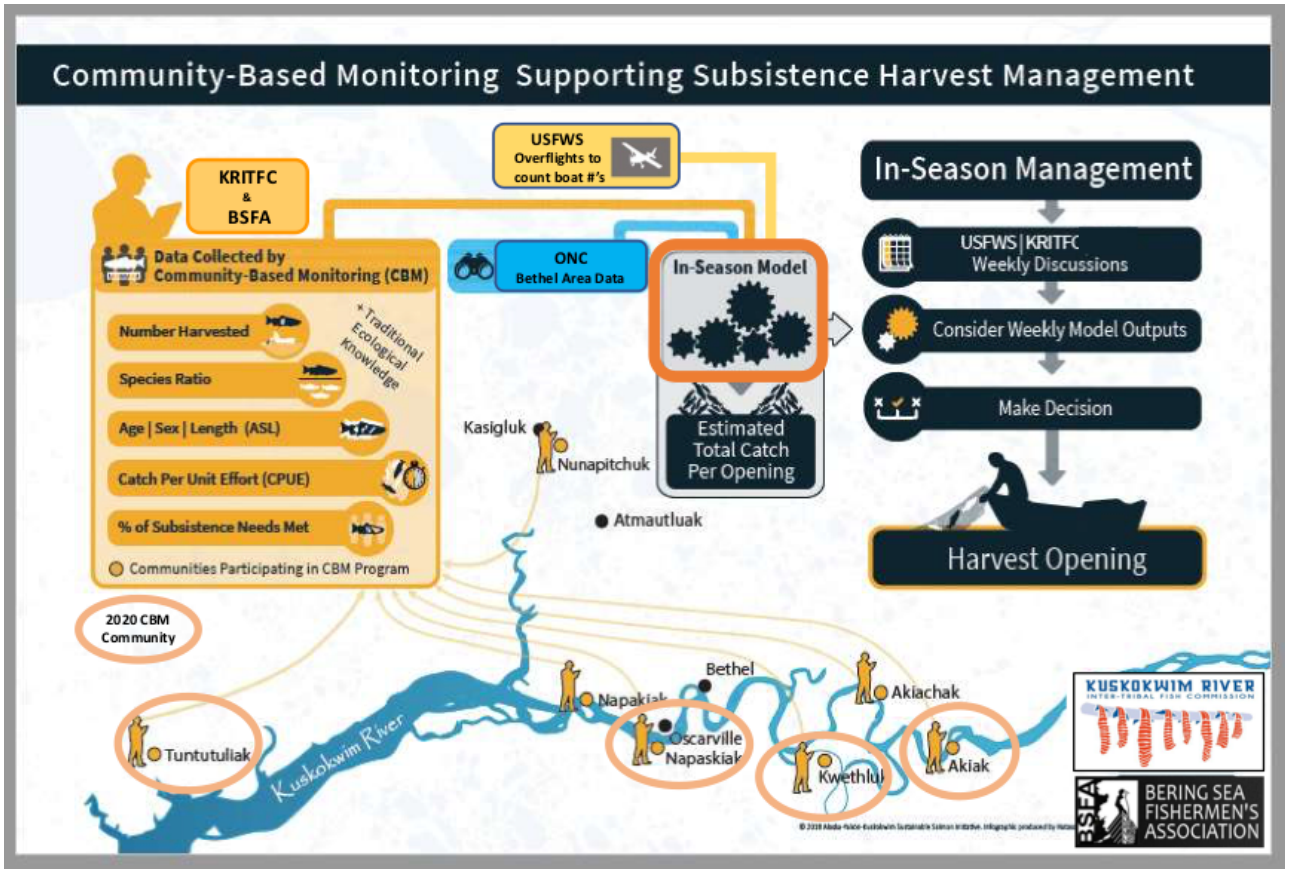


Figure 1: Graphical overview of the CBHM program.

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** (see Figure 2). This provides a wealth of harvest information for the CBHM team to collect and utilize.

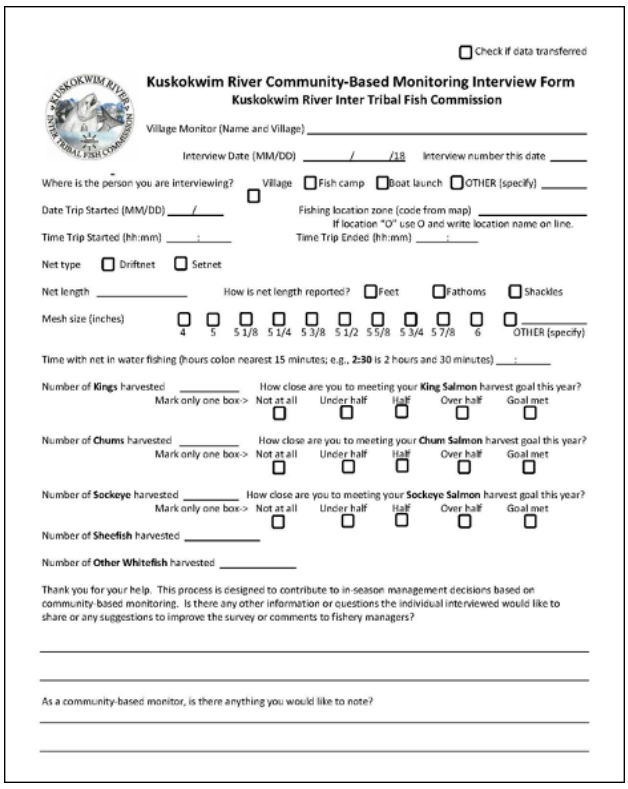
Each year in April and May, before the salmon fishing season starts, KRITFC and BSFA interview and hire Harvest Monitors from the communities participating in CBHM. **These Harvest Monitors are often Tribal youth, and all have specific local knowledge of their communities and local fisheries and fishing spots.** KRITFC, BSFA, and 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 phones, interview protocols and apps, and knowledge about the importance of the CBHM program for fisheries management.

Figure 2: Lower river communities of the Kuskokwim, where the CBHM program has generally been operated and from where Harvest Monitors are hired.

After each Chinook salmon subsistence 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 also collect age, sex, and length 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 application to submit it to CBHM staff.**

After consolidating this data, CBHM staff submit it to the U.S. Fish and Wildlife (USFWS) biologist to **produce post-harvest opportunity models that estimate Chinook salmon run sizes, run timings, and total subsistence catch in the Kuskokwim.** Data from aerial boat counts conducted by USFWS and post-harvest interviews collected by ONC are also included into the models. These Chinook salmon estimates are then handed to fisheries managers from KRITFC and USFWS, who meet weekly during the Chinook 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) ____/____/18 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?

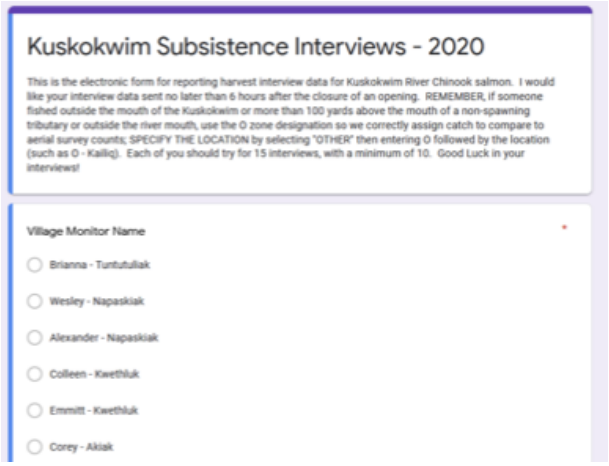
_____

_____

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

_____

_____



Kuskokwim Subsistence Interviews - 2020

This is the electronic form for reporting harvest interview data for Kuskokwim River Chinook salmon. I would like your interview data sent no later than 6 hours after the closure of an opening. REMEMBER, if someone fished outside the mouth of the Kuskokwim or more than 100 yards above the mouth of a non-spawning tributary or outside the river mouth, use the O zone designation so we correctly assign catch to compare to aerial survey counts; SPECIFY THE LOCATION by selecting "OTHER" then entering O followed by the location (such as O - Kalliq). Each of you should try for 15 interviews, with a minimum of 10. Good Luck in your interviews!

Village Monitor Name *

- Brianna - Tuntutuliak
- Wesley - Napaskiak
- Alexander - Napaskiak
- Colleen - Kwethluk
- Emmitt - Kwethluk
- Corey - Akiak

Examples of the interview form and app that Harvest Monitors fill out after conducting their interviews.

View of a Kuskokwim slough from a Bethel area fish camp.

WHY IS CBHM IMPORTANT?

The CBHM program brings **reliable, community-gathered harvest information** from communities with the historically highest Chinook salmon harvest rates in the Kuskokwim watershed immediately to KRITFC and USFWS in-season managers. 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.** 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 and often 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 serves as **a linkage between 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.

2020 CBHM PROGRAM SUMMARY

The COVID-19 pandemic presented some challenges for the CBHM program in 2020. Typically, CBHM staff attend in-person meetings with village elders and Tribal councils to recruit Harvest Monitors. Trainings, interviews, and weekly management discussions also usually occur in person. However, **COVID-19 caused many Kuskokwim villages to lock down and create strict inter-village travel restrictions** in 2020 to keep their communities safe. All CBHM trainings and communications among villages, Harvest Monitors, and staff were thus moved online to calls via Zoom and telephone. Harvest Monitors were encouraged to conduct their interviews over the phone or at a distance of at least six feet, if in person. The lack of in-person communication limited the transfer of Traditional Knowledge and the personal contact that is preferred along the Kuskokwim and in this program.

Despite the communications challenges the pandemic created, **the CBHM program was successfully implemented in four lower Kuskokwim villages in 2020.** These villages, upriver to downriver, were Akiak, Kwethluk, Napaskiak, and Tuntutuliak. The CBHM program also hired **six Harvest Monitors: Corey Jasper (Akiak), Colleen Andrew (Kwethluk), Emmitt Nicori (Kwethluk and Napaskiak), Wesley Nicholai (Napaskiak), Alexander Beaver (Napaskiak), and Brianna Dock (Tuntutuliak).** These Harvest Monitors were trained via Zoom on June 3, and sent out for their first post-harvest interviews on June 6, after a 24-hour set gillnet opportunity.

Five of the six 2020 Harvest Monitors and the villages in which they live and conducted interviews.

The 2020 Harvest Monitors conducted **443 interviews after six different subsistence harvest opportunities and one optional end-of-season (EOS) interview** in late July (see Figure 3). Almost all of the data transferred from Harvest Monitors to the USFWS biologist to produce harvest estimates within 6 hours after each opportunity closed. This is overall a successful operation of the data collection portion of the CBHM program, especially considering this occured during the COVID-19 pandemic.

Village	6/6	6/9	6/12	6/15	6/18	6/24	EOS	Total
Tuntutuliak	8	15	18	17	21	13	32	124
Napaskiak	7	9	19	22	21	24	45	147
Kwethluk	7	3	22	21	20	16	38	127
Akiak	0	8	11	10	11	5	0	45
Total	22	35	70	70	73	58	115	443

Figure 3: Harvest interviews collected for the 2020 CBHM program.

Combined with information from USFWS overflights and ONC post-harvest surveys, this CBHM data directly informed 2020 Chinook salmon management. The three 2020 KRITFC In-Season Managers, Megan Leary (Napaimute), James Nicori (Kwethluk), and Jacki Cleveland (Quinhagak); USFWS Manager Ray Born; and CBHM staff coordinator and Kuskokwim River Salmon Management Working Group member LaMont Albertson used the harvest estimates and run timing and run size models to guide their weekly in-season management discussions, which were held over Zoom because of COVID-19.



2020 KRITFC In-Season Managers: Megan Leary (pictured with her son, Mason), James Nicori, and Jacki Cleveland.

In 2020, the timely harvest estimates produced with CBHM data led the in-season management group to provide for as much subsistence harvest of Chinook salmon as possible and avoid collective overharvest throughout the Kuskokwim watershed. While pre-season Chinook salmon run forecasts predicted a midpoint of 220,000 fish would enter the Kuskokwim in 2020, run reconstruction models estimated that just over 116,000 Chinook salmon – half of the forecasted run and one of the lowest runs on record – appeared in the river. **Had KRITFC and USFWS in-season managers based their management decisions solely on the pre-season forecast, it is possible that collective overharvest could have occurred and not enough spawners could have laid their eggs in the gravel.**

Instead, harvest estimates produced from CBHM data allowed KRITFC and USFWS fisheries managers to get a more accurate representation of the number of Chinook salmon in the river and in subsistence users' smokehouses during the season, rather than months after it ended. **With these estimates and data, the in-season managers were able to provide four 24-hour subsistence harvest opportunities throughout the 2020 season.** Kuskokwim subsistence users harvested around 28,000 Chinook salmon during these opportunities, and around 88,000 Chinook salmon made it to their spawning grounds. Though each of these numbers is below ideal harvest and spawner escapement amounts, the CBHM program has undoubtedly contributed to more reliable in-season data that leads to adequate harvest and escapement levels.

KRITFC, BSFA, and all their CBHM partners are looking forward to continuing this program in the years to come.

Boater heading upriver on the Kuskokwim near Bethel.