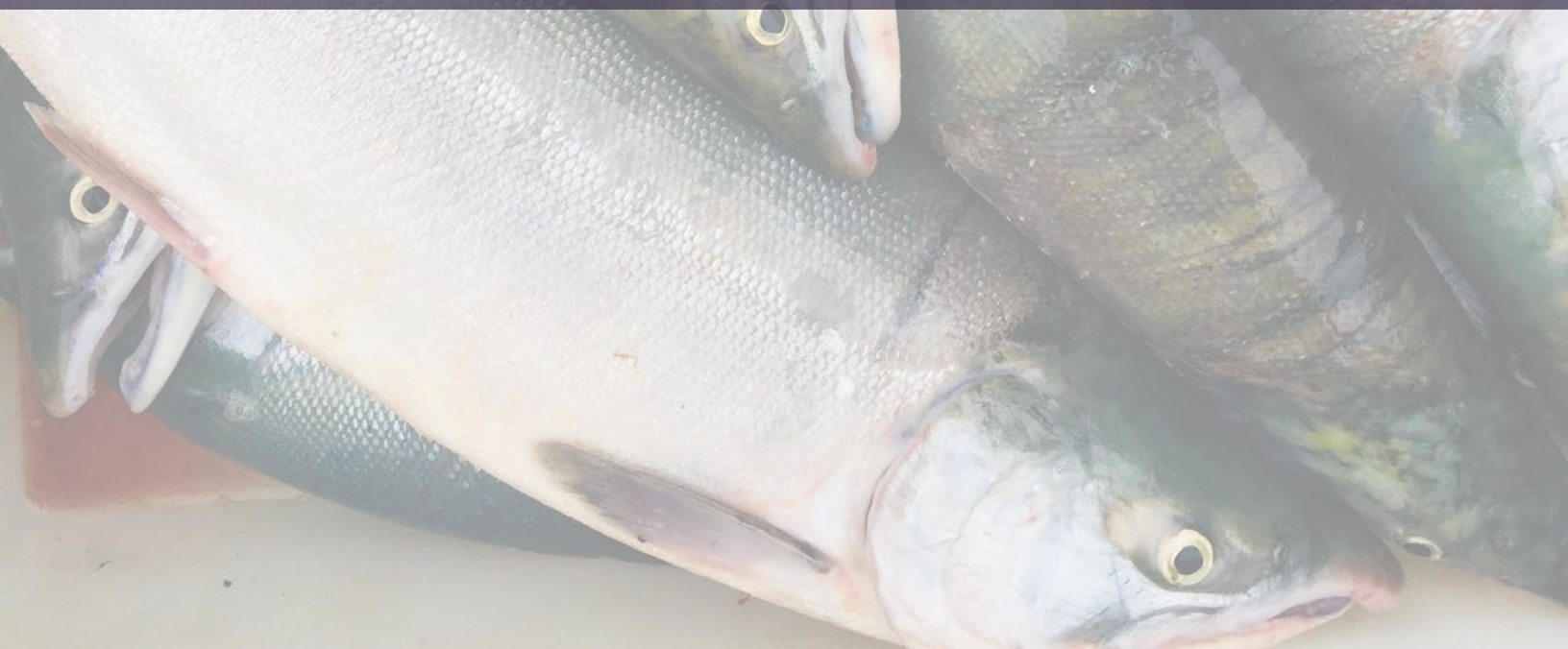
KUSKOKWIM RIVER

Salmon Situation Report

SEPTEMBER 2021

KUSKOKWIM RIVER
INTER-TRIBAL FISH COMMISSION



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This situation report documents the current Chinook and chum salmon disasters on the Kuskokwim River and its impacts on the 33 subsistence-dependent communities in its watershed. The aim of the Kuskokwim River Inter-Tribal Fish Commission (KRITFC) in this report is to communicate the magnitude of our subsistence salmon declines and articulate the critical need for new conservation-based and ecosystem-based management regimes, particularly in their marine environment. These catastrophic Chinook and chum salmon declines, threatening food, cultural, spiritual, and economic security in the Kuskokwim drainage, demand attention and immediate action by the North Pacific Fishery Management Council.

While this report focuses on the impacts of these salmon stock collapses in the Kuskokwim drainage, we are acutely aware that other parts of western and interior Alaska are experiencing the same declines. Recent record-low Chinook and chum salmon returns to the Yukon River have had a devasting impact on subsistence-dependent communities throughout its entire international drainage, and salmon returns to rivers in the Norton Sound region have been in steep decline for nearly two decades.

This situation report is not meant to be a complaint or to dismiss our gratitude for the fish we are able to harvest along the Kuskokwim. Rather, it is meant to be an honest documentation of the experiences of our communities during Chinook and chum salmon shortages so we can effectively and equitably act to maintain our fishing ways of life for future generations.

About the Kuskokwim River Inter-Tribal Fish Commission

KRITFC represents the interests of the 33 federally recognized Tribal governments in the Kuskokwim River (Figure 1) in fisheries assessment and sustainable fisheries management. Its 33 Tribally appointed Fish Commissioners, 7 Executive Council members, and 4 In-Season Managers combine Traditional Knowledge and western science to conservatively manage Kuskokwim fisheries according to Yupik and Athabascan Dené values, subsistence harvest needs, and escapement targets aimed at rebuilding depleted salmon populations.

The values at the core of KRITFC's work are social and environmental justice, equitable and sustainable salmon harvests throughout the watershed, and unity as one fishing people along the Kuskokwim River.

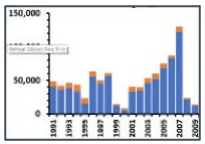
"The decline of chum and kings, they're really hurting us, but we're told to keep going through it with much effort, even [when] we're feeling bad about it. They told us we'll be reaching it, and do not complain too much. Do not complain too much about that. And it's hard not to complain, but we go through it."

ADOLPH LUPIE | TUNTUTULIAK

Kuskokwim River Chinook and Chum Salmon: TIMELINE OF A SUBSISTENCE SALMON CATASTROPHE

2007

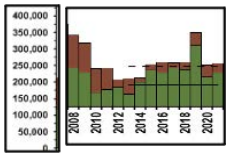
Chinook salmon bycatch in the Bering Sea pollock fishery peaks at 120,000.



(See Figure 7.)

2010-13

Lowest Chinook salmon runs on record. Escapement averages 47,000 fish.



(See Figure 3.)

2014

Chinook salmon crash requires assumption of management by USFWS under ANILCA.

2016

Subsistence-dependent communities sacrifice harvest to successfully meet critical Chinook salmon escapement goals and help rebuild populations.

2019

First year of Kuskokwim River chum salmon crash. Stocks declined by over 80% compared to long-term averages. (See Figure 5.)

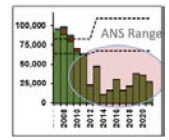
2021

Chum salmon stocks collapse on both the Kuskokwim & Yukon Rivers by **over 90%** compared to long-term averages. (See Figure 5.)

2021

Salmon bycatch in the Bering Sea pollock fishery continues unabated. As of September 2021:
2021 Bycatch = 13,000 Chinook salmon
2021 Bycatch = 528,000 chum salmon

(See Figure 4.)



Subsistence-dependent communities meet less than half of their Chinook salmon needs for the eighth year in a row.

Multi-Species Salmon Collapse Threatens Food Security and the Foundation of the Subsistence Economy in Kuskokwim River Communities

The Kuskokwim River has historically supported the largest subsistence salmon fishery in the state of Alaska, based on both the number of residents in the 33 villages (Figure 1) who participate in the fishery and the number of salmon harvested (Fall et al. 2011). With some of the lowest per capita monetary incomes in the state, this region is characterized by a high production of wild foods for local use (Wolfe and Walker 1987).

Over the past thirty years, village residents in the Kuskokwim region have annually harvested over 360 pounds of wild foods per person for human consumption, with fish comprising up to 85% of the total poundage of subsistence harvests, and salmon contributing up to 53% of subsistence harvests (Simon et al. 2007; Wolfe et al. 2011). Residents harvest all five species of Pacific salmon: Chinook, chum, coho, pink, and sockeye. One out of every two Chinook salmon caught for subsistence in the state is harvested by Kuskokwim River communities. In other words, salmon-dependent communities in the Kuskokwim watershed utilize half of all Chinook salmon harvested for subsistence state-wide (Figure 2).

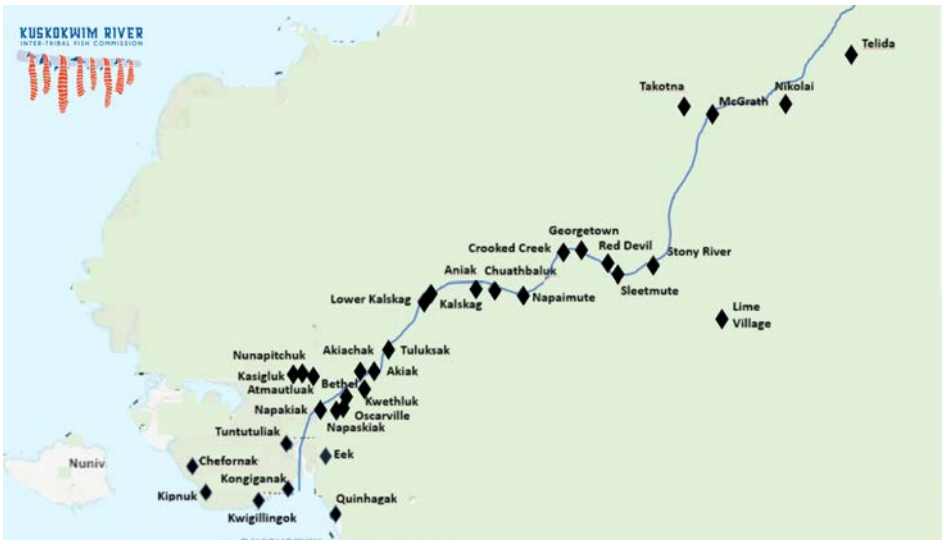


Figure 1: KRITFC represents the interests of 33 Tribal communities heavily dependent on salmon for food security and cultural vitality along the Kuskokwim River.

The importance of salmon, particularly Chinook salmon, to residents extends well beyond nutrition and economic values to include socio-cultural identities and a way of life (Ikuta et al. 2013).

Since at least 2009, subsistence-dependent communities in the Kuskokwim drainage have noticed and suffered because of significant and sudden drops in salmon populations, beginning with Chinook salmon and now including chum salmon. The Kuskokwim River is experiencing a catastrophic multi-species salmon decline not seen in living memory. This situation report continues with detailed impacts of this decline on Kuskokwim communities.

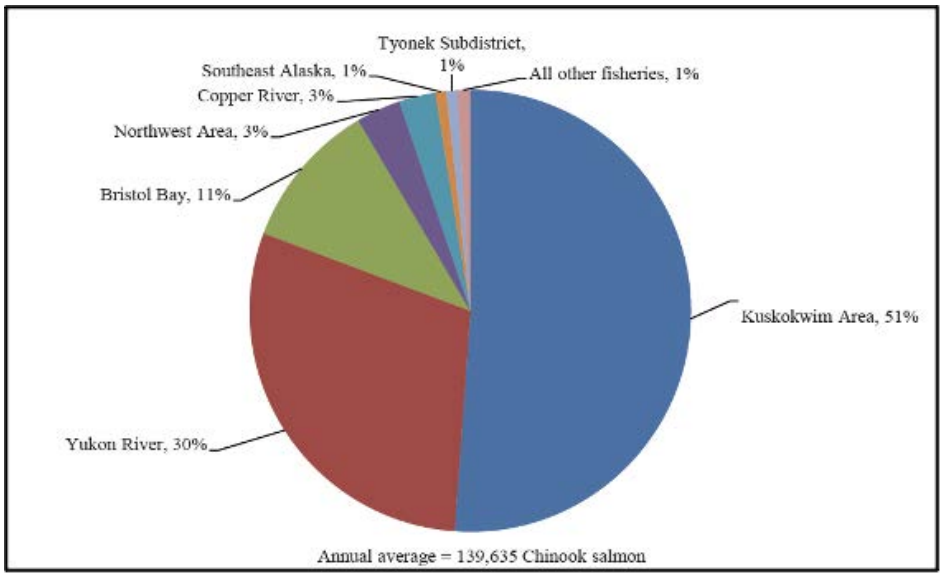


Figure 2: Percentage of average annual subsistence harvest of Chinook salmon by management area, 1994–2018. ADF&G 2020.

Impacts of the Prolonged Chinook Salmon Crash

Since 2009, the Chinook salmon (king salmon, *kiagtaq*, *taryaqvak*, *Oncorhynchus tshawytscha*) populations in the Kuskokwim River have crashed catastrophically and remain severely depressed through the 2021 season.

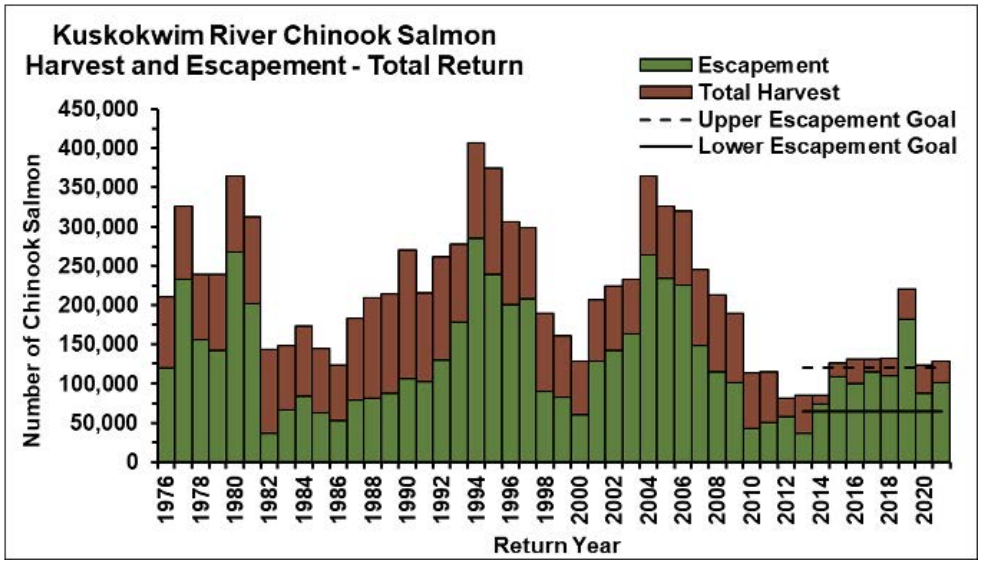


Figure 3: Kuskokwim River Chinook salmon escapement and total harvest by all user groups during 1976—2020. Source: Alaska Department of Fish & Game AYK Database. Note: The 2021 estimate of harvest and escapement is preliminary.

The 2021 Chinook salmon run was 47% below the long-term average (Figure 3). During the run, communities on the river were heavily regulated with very few limited harvest opportunities per week and net size and gear restrictions to try to meet the critical escapement goals. Consequently, in 2021, residents of the Kuskokwim River met less than one-third of their long-term Chinook salmon

"The numbers say two things: lower quality and lower quantity. The kings, as we are experiencing all over the Delta, are not as big and not as many. The same can be said for here in Quinhagak. Not as many females were captured, but that's fine because we don't want to take the females. I'm hoping this means the big females are going up to spawn."

JACQUELINE CLEVELAND | QUINHAGAK

harvest needs. Moreover, as the average size of Chinook salmon returning to the Kuskokwim has decreased from around 33 pounds per fish to 11 pounds per fish, subsistence fishers are not only harvesting fewer numbers of fish but fewer total pounds of fish. This compounds the food security crisis already unfolding with declined Chinook salmon stocks and restricted harvest opportunities.

Due to the steep declines and management actions required to meet critical escapement needs, only a fraction of the amount reasonably necessary for subsistence uses (ANS) (67,200-109,800 fish) was available for harvest for the past decade. Residents have not met their long-term harvest levels since 2010 (Figure 4). In the past decade, chum (dog) salmon, sockeye (red) salmon, and coho (silver) salmon have provided a critical supplement and source of food security during Chinook salmon declines; yet, recently, chum salmon returns have also crashed.

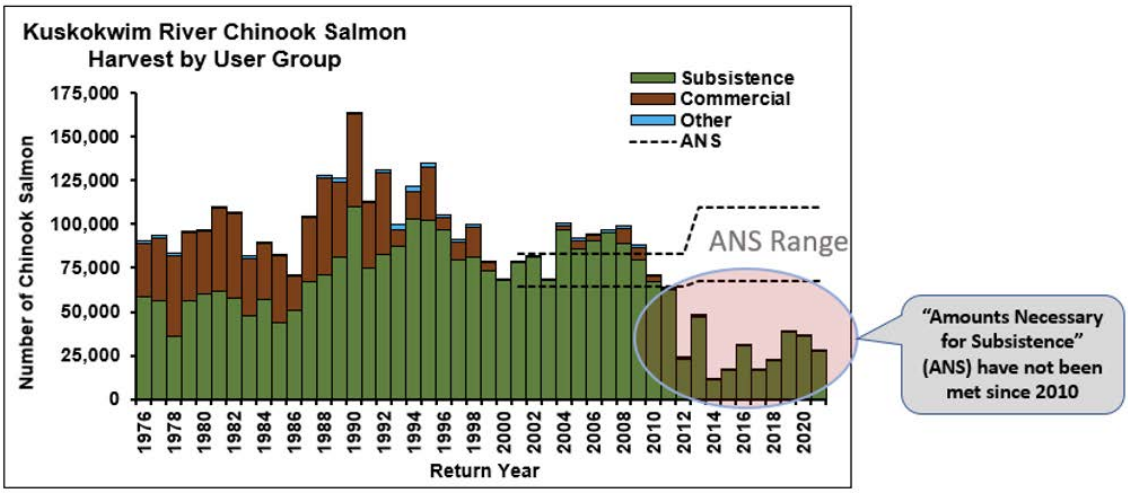


Figure 4: Kuskokwim River Chinook salmon harvest by user groups during 1976—2020, showing that long-term subsistence harvest needs in the watershed have not been meet since 2010. Subsistence harvest needs are based on ANS as determined by the Alaska Board of Fish in 2013. Source: Kuskokwim River Salmon Management Working Group November 18, 2020, meeting packet, ADF&G.

Unprecedented Recent Chum Salmon Crash

Chum salmon (dog salmon, *aluyak*, *iqalluk*, *neqepik*, *O. keta*) are especially critical for food security during years of poor Chinook salmon returns. They also provide unique traditional foods that cannot be prepared with other salmon species. While chum salmon harvests have declined in recent decades resulting from changes in customary and traditional use patterns (e.g., fewer dog teams), they are highly sought for preparing traditional delicacies like *eggamarrlluk* (half-dried, half-smoked salmon) and for feeding Elders and other family members who cannot consume the high fat content of other salmon species.

However, in 2020 and 2021, Kuskokwim chum salmon returns crashed unexpectedly (Figure 5). The 2021 chum run is clearly the lowest on record with fewer chum than Chinook salmon counted in the lower river sonar, during a period of continually poor Chinook returns. Because 2021 in-season run assessment data

"With one fish, you can feed about 3 families, and maybe more. For a small family, like a person that is just starting out, if you have maybe 1 or 2 children, 20 kings will probably feed you all winter. That's the way it used to be. That's how it was; but not anymore. We're lucky we put away about 10 to 15 kings in the past 10 years now. And the size of the kings is smaller."

SAM BERLIN | KASIGLUK

showed a poor chum salmon return, restricted management of chum management took place for the first time. Conservation closures, previously instituted to protect Chinook salmon and typically removed by the end of June as the Chinook salmon run wanes, continued through the end of July to protect depleted chum salmon.

As a result of this crash and the restriction of harvest to meet escapement needs, subsistence harvests of chum salmon in the Kuskokwim River in 2020 and 2021 have been well below the ANS range of 41,200-116,400 fish designated by the Alaska Board of Fisheries, representing some of the poorest harvests on record.

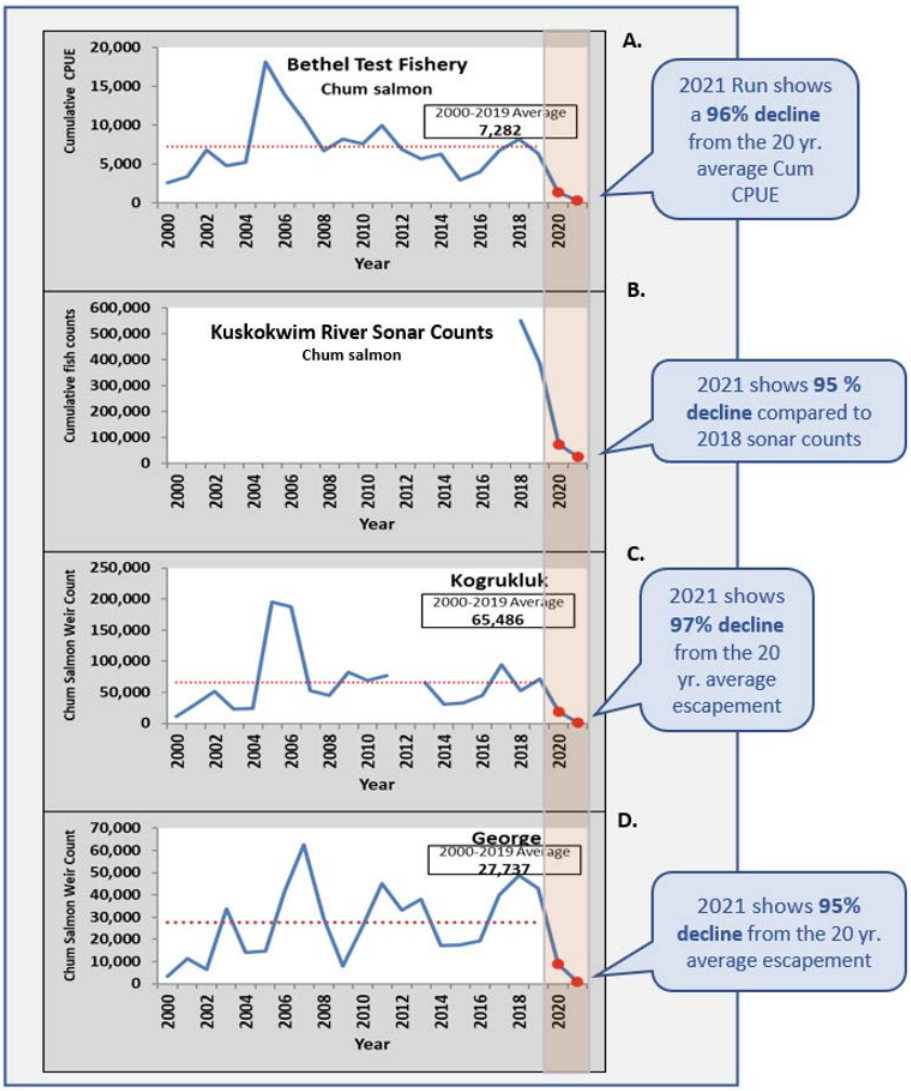


Figure 5: Evidence of catastrophically low 2020 and 2021 Kuskokwim River chum salmon abundance: A. Cumulative end-of-season CPUE of chum salmon caught in the Bethel Test Fishery, 2000–2021. B. Cumulative annual counts of chum salmon from the Kuskokwim River sonar project, 2018–2021. C. Kogrukluk river weir, 2000–2021. D. George River weir, 2000–2021. Source: ADF&G (Alaska Department of Fish and Game), AYK Database Management System.

"I honestly have no idea what's up with the chum. It was such a rapid decline. They were coming in the hundreds of thousands, millions, to the river to almost nothing. I don't really know what happened to them."

JONATHAN SAMUELSON | GEORGETOWN

Furthermore, the Chinook and chum salmon run failures have the potential to place increased harvest pressure on other limited fish stocks which could threaten the sustainability of those species. These failures and their associated in-river restrictions also limited subsistence-dependent communities from practicing their ways of life and passing on generations-old Traditional Knowledge to youth, especially the specialized food processing and preparation methods of cultural delicacies that are otherwise at risk of being lost. The collapse of both Chinook and chum salmon threatens the food and economic security and spiritual and cultural vitality of subsistence fishing communities on the Kuskokwim River.

"[In terms of chums,] there were none this year. That was different. I like to get chums for dryfish and for my half-dried. There just weren't any. I was having to harvest a lot more reds than I normally would for all of that other stuff…I think a lot more people were just getting a lot more reds. So, then that makes me concerned about the red numbers. If we have to keep doing this and hitting them hard, then maybe, is that going to negatively impact what's spawning, what comes back…? And that was the talk, too, a couple of years ago. I remember as we were having to harvest more chum, people were like, 'Well, you guys are going to have to start watching the chum numbers.' Same with whitefish, people were bringing that up. If we're having to harvest more whitefish, we're going to have to start thinking about watching those species. I guess it all has a ripple effect."

MEGAN LEARY | NAPAIMUTE

"I'm one of the fish campers…but I don't go to fish camp because of the fish closures. There's only maybe 5 in Tunt [who use their] fish camp right now. No, that's not that many."

ADOLPH LUPIE | TUNTUTULIAK

"We only had 2 chums in my fish rack all summer. That's unreal. I usually put up 2,000 chums for dogs…We put up a lot of reds, a healthy run of reds. I hope that all of us are hoping and praying that we would have enough returns on the kings, and that's unlikely."

MIKE WILLIAMS SR. | AKIAK

"I have not seen a dog salmon in long time. Even when I had nets out before, about a couple years ago, I didn't catch no dog salmon…Usually they're a pain in the butt, all over in your net. But no more, I guess not."

HELEN EVAN | MCGRATH

"There used to be [a lot of people from Eek who would commercially fish in Kuskokwim Bay], before all the restrictions and before the fish declined. It used to be almost the whole community going down, or most of the men from the community would go down and commercial fish in Quinhagak and Goodnews [Bay]. Now, it's just 3 or 4 boats that go down. Subsistence has been so slow that it's cutting into commercial fishing time. A lot of the guys are just focusing on subsistence fishing now."

JAMES HEAKIN | EEK

Bering Sea Chinook & Chum Salmon Bycatch Negatively Impacting Western Alaska Rivers

There are many potential factors affecting western Alaska salmon that cumulatively have caused declines in these populations (Figure 6). Though not the entire source of current poor salmon returns to the Kuskokwim, Yukon, and Norton Sound Rivers, it is undeniable that salmon bycatch in Bering Sea commercial fisheries is one such factor that has a negative impact on Chinook and chum salmon stocks in this region of the state. Humans can influence salmon bycatch levels and the effects of large-scale groundfish harvests through a variety of management actions, all of which are crucial during present-day collapses in subsistence salmon fisheries.

Moreover, the 33 Tribes of the Kuskokwim River all share Tribal rules associated with conservation of non-human relatives, namely taking only what one needs and can process and preserve properly without resulting in waste. Waste by humans offends these non-human relatives, resulting in resource collapses. As a result, Tribal ways of knowing clearly identify the wasteful harvest of prohibited salmon species as violating these Tribal rules and hold the North Pacific Fisheries Management Council culpable.

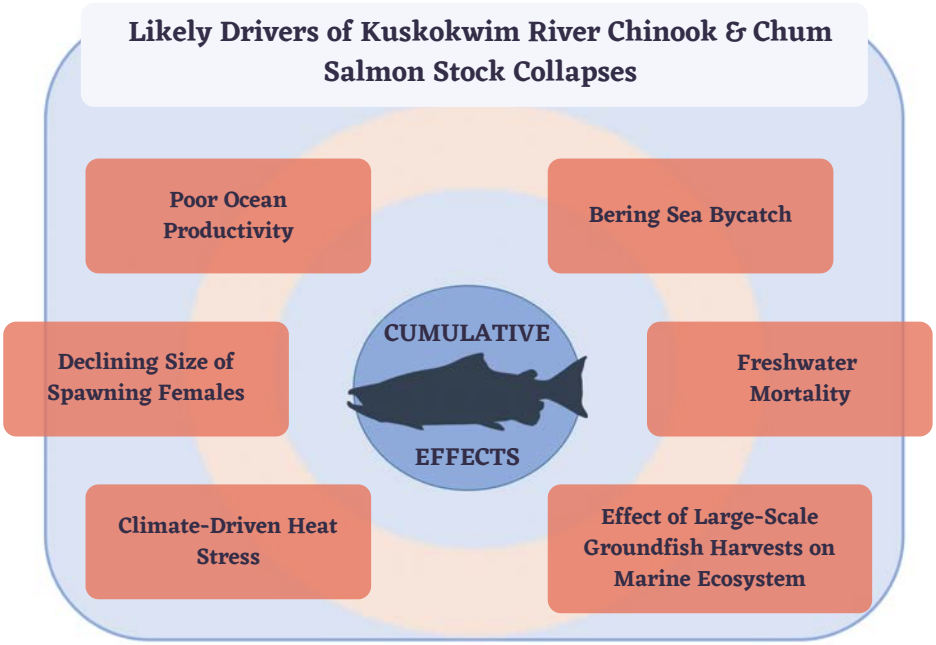


Figure 6: Potential factors that cumulatively work to cause salmon declines in the Kuskowkim River and other western Alaska rivers.

Overview of Bering Sea Salmon Bycatch

Kuskokwim River Chinook and chum salmon are caught as bycatch in the Bering Sea pollock fishery. Salmon are not the target species for the pollock fishery, and in fact are prohibited species. Chinook and chum salmon caught by the pollock fishery cannot be sold (so as not to create an incentive to catch them) and must either be discarded or donated. In the Bering Sea Aleutian Islands management area, the pollock trawl fishery is responsible for most chum salmon and Chinook salmon bycatch and accounted for

99% and 92% of 2020 chum and Chinook salmon bycatch, respectively (NMFS 2021). The pollock fishery is divided into two seasons: the A-season running January 20 extending into April, and the B-season running June 10 to November 1 annually.

Chinook Salmon Bycatch

Coastal Western Alaska Chinook stocks comprise the largest portion of Chinook salmon bycatch in the Bering Sea pollock fishery most years, especially during A-season. From 2008-2014, Coastal Western Alaska comprised over 40% of the estimated Chinook salmon bycatch (and greater than 60% of bycatch in many years). In 2019, Coastal Western Alaska and north Alaska Peninsula stocks accounted for approximately 40% and 15% of Chinook salmon bycatch, respectively (Figure 7).

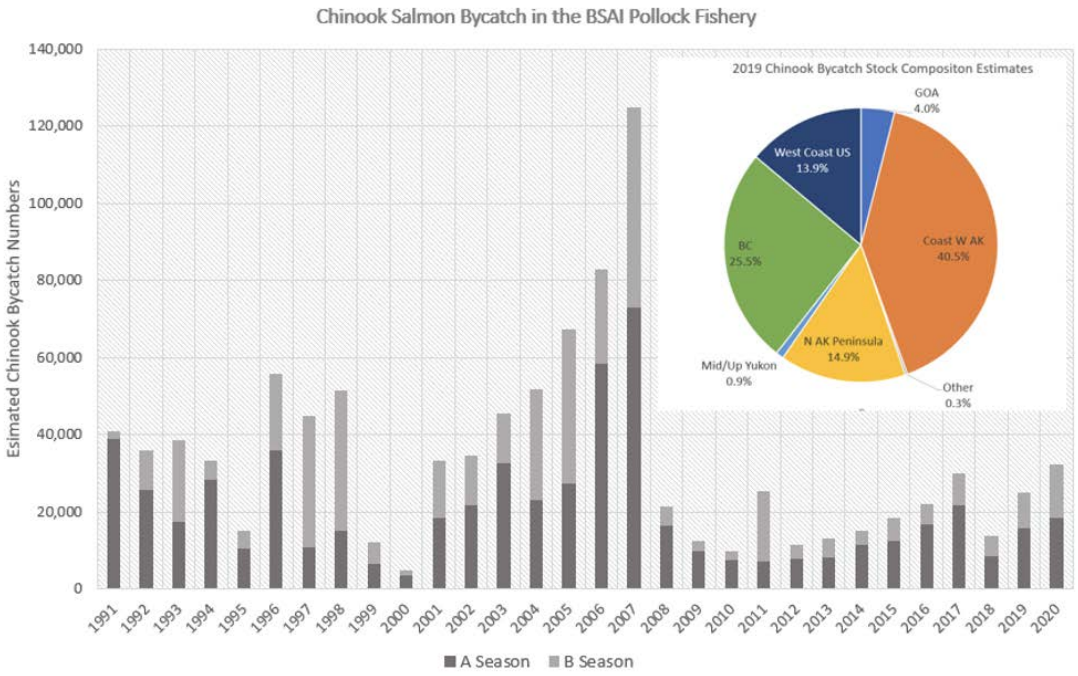


Figure 7: Chinook salmon bycatch in the BSAI pollock trawl fishery, 1991-2020 (NMFS 2021) and estimated Chinook stock composition for the 2019 pollock fishery (Guthrie et al. 2021).

Overall, 103,662 Chinook salmon from northern and western Alaskan rivers were caught as bycatch in the BSAI pollock trawl fishery between 2011 and 2019 (annual average 11,518 salmon). Estimates of Chinook salmon bycatch (numbers) have increased moderately in the Coastal Western Alaska and north Alaska Peninsula regions from 2012 to 2019 (Figure 8). While directed salmon fisheries are closed and subsistence use is exceedingly limited in western Alaska rivers, Chinook salmon bycatch continues with dire impacts to regional communities, including the 33 subsistence-dependent communities of the Kuskokwim River watershed.

"I don't like people that take advantage of something that we have eaten [for] subsistence all our lives."

SAM BERLIN | KASIGLUK

"If we are put on restrictions, how come the commercial fisheries and the deep sea trawlers are not bearing the burden like us[?]. The Kuskokwim, Yukon, and Norton Sound areas have less fish every year."

ANDREW MARTIN | BETHEL

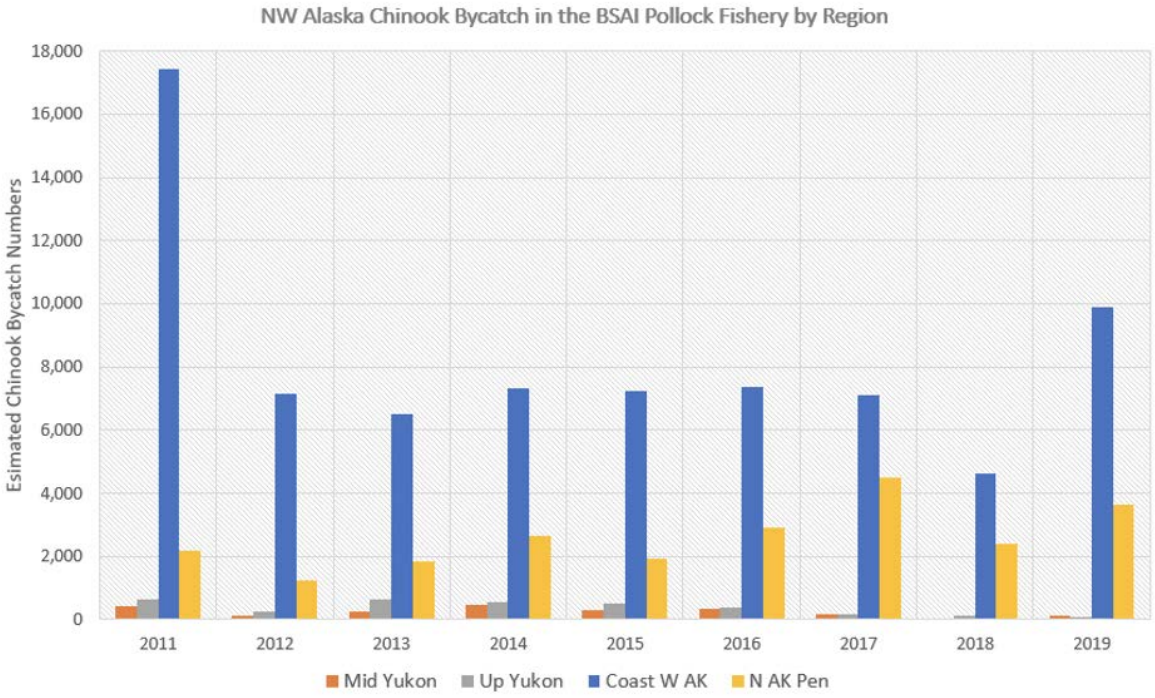


Figure 8: Estimated Chinook salmon bycatch numbers in the BSAI pollock fishery 2011-2019 by northwest Alaska region (Guthrie et al. 2021).

Chum Salmon Bycatch

Chum salmon bycatch in the Bering Sea increased dramatically from 2012-2021 (Figure 9). Chum salmon bycatch primarily occurs in the B-season BSAI pollock fishery. Western Alaskan rivers accounted for approximately 16% of chum incidentally caught in the 2019 BSAI B-season pollock fishery, and a total of 334,516 chum salmon (annual average 66,903 salmon) from Western Alaska and the Upper/Middle Yukon were caught as bycatch from 2014-2019 (Figure 10).

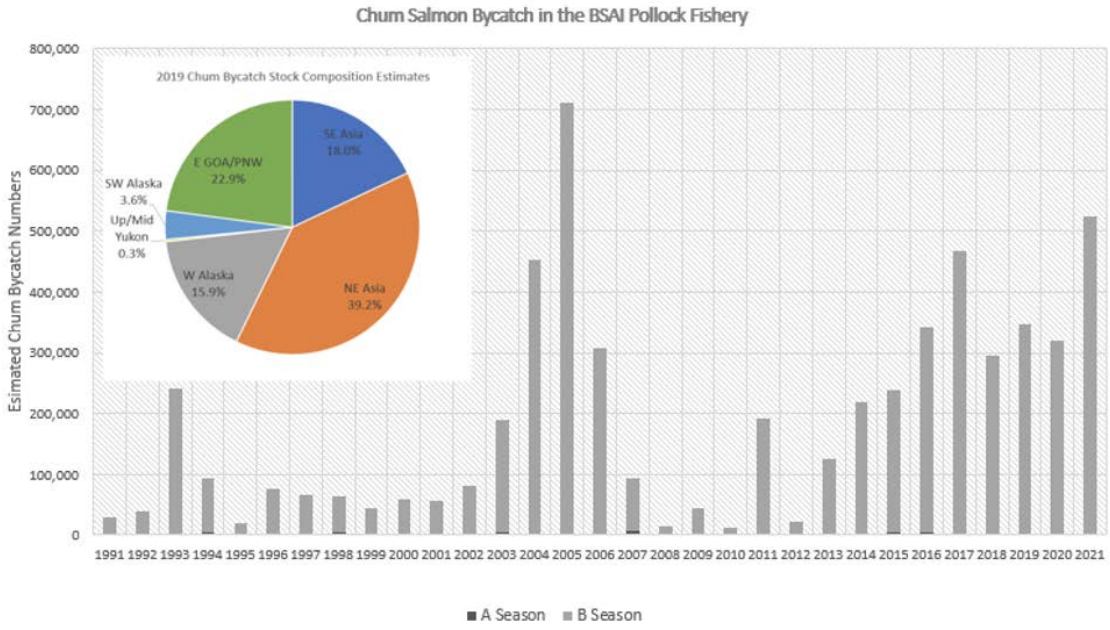


Figure 9: Chum salmon bycatch in the BSAI pollock trawl fishery, 1991-2021 (NMFS 2021) and estimated chum stock composition for the 2019 pollock fishery (Kondzela et al. 2021). Note: The 2021 values extend only through September.

Genetic analyses from recent years confirm that Western Alaska, Upper/Middle Yukon, and Southwest Alaska chum salmon stocks are heavily impacted by pollock trawl bycatch. A very low proportion of Upper/Middle Yukon chum were caught in BSAI B-season pollock bycatch in 2019, which may have been an early indicator that the Upper/Middle Yukon chum salmon are experiencing a decline in stock status.

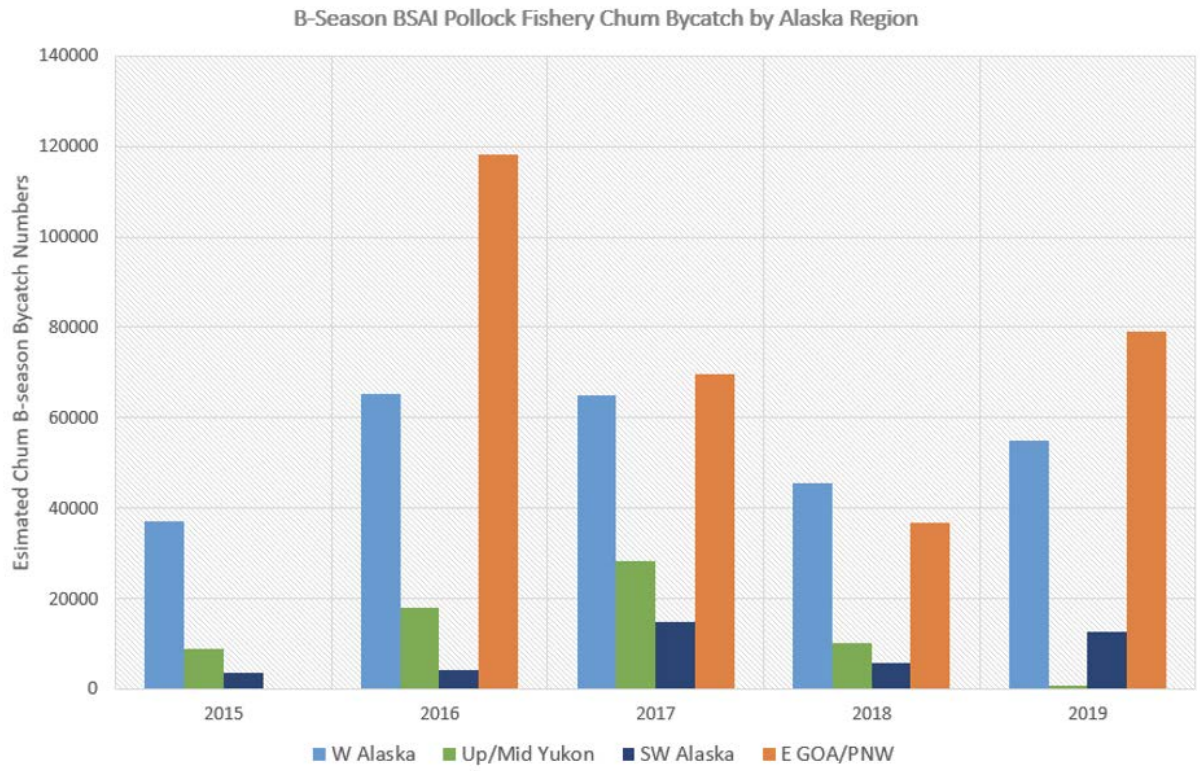


Figure 10: Estimated chum salmon bycatch numbers in the BSAI pollock fishery 2015-2019 by Alaska region (Kondzela et al. 2021).

Salmon Bycatch Management

Chum and Chinook salmon are managed as Prohibited Species Catch (PSC) in Alaska. In response to record-high chum and Chinook salmon bycatch levels in 2003-2007, the North Pacific Fishery Management Council (Council) implemented Amendment 91 in 2011, which established two Chinook salmon PSC limits for the pollock fishery: a 60,000 overall limit (fleetwide hard cap) and a 47,591-performance standard (sector specific performance target each year) for Chinook salmon. In 2016, the Council also implemented Amendment 110 in response to multiple years of historically low Chinook salmon abundance. Amendment 110 has two primary provisions: existing Incentive Plan Agreements (IPAs) were extended to include chum salmon, and a 3-System Index for western Alaska was developed based on the post-season in-river Chinook salmon run size for the Kuskokwim, Unalakleet, and Upper Yukon rivers. When this index is less than or equal to 250,000 Chinook salmon, NMFS applies a lower performance standard and low PSC limit for the following year (NPFMC 2021).

There is currently no cap or limit on the amount of chum salmon that can be caught as bycatch.

Asks of the North Pacific Fishery Management Council

While bycatch is one of numerous cumulative stressors linked with significant Chinook and chum declines in Western Alaska rivers (Figure 6), salmon bycatch is a known source of mortality over which we have control. Every Chinook and chum salmon matters to western Alaska subsistence fishing families that are unable to meet their food, cultural, spiritual, and economic security needs due to these declines. It is critical now more than ever that the Council institutes adaptive, inclusive, and ecosystem-wide sustainable management practices into the Bering Sea Aleutian Islands management area to protect these salmon stocks.

The Kuskokwim River Inter-Tribal Fish Commission has four priority asks of the North Pacific Fisheries Management Council:

(1) The Council should take emergency action to limit Chinook and chum salmon bycatch to zero in 2022 in the Bering Sea pollock fishery.

- We are amid a multi-species salmon collapse within the Kuskokwim River watershed.
- Chinook and chum salmon runs throughout the Artic-Yukon-Kuskokwim region were disastrous in 2020 and 2021. Chinook and chum salmon fisheries were completely shut down or severely limited.
- People on the Kuskokwim have lost a critical source of food and a key component of their culture. Every possible action must be taken to protect salmon stocks and ensure a collapse does not happen again.
- Given the current state of Chinook and chum salmon, and the lack of information about why this is happening, sustainable fishery management requires that the Council limit salmon bycatch in the Bering Sea pollock fishery to ensure that NO salmon are taken as bycatch in the Bering Sea pollock fishery in 2022.

(2) Ensure Alaska Native Tribes have a seat at the decision-making table.

- Support the amendment to the Magnuson-Stevens Act to add 2 Tribal seats to the NPFMC table.
- Ensure Alaska Native Tribal representation on all Council bodies, including the Advisory Panel (AP), Scientific and Statistical Committee (SSC), and plan teams.

(3) Send a letter to NMFS supporting funding for disaster declarations and research, observation and monitoring by Tribal organizations and co-management organizations.

(4) Support and encourage NOAA to initiate Tribal Consultation on the issue of salmon bycatch so that both NOAA and the Council have the best available information.

"In Yup'ik, the general word for food is neqa, which is also the word for fish. So if neqa is not how you view fish – if food is not the first thing you think of – then we come from different worlds. For us, we wouldn't exist without salmon. On the river, we coexist, salmon and people. And it's always been that way. We have this deep spiritual relationship that we have the obligation, but also the privilege, to maintain between fish and people."

JONATHAN SAMUELSON | GEORGETOWN

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"Without my subsistence life, I don't know how I'd get through it. It's my therapy, being outdoors on the land and on the water. I'd hate to lose that, but we could possibly lose the fishery part, which is the most important part, if we're not proactive about this."

JACQUELINE CLEVELAND | QUINHAGAK