MATANUSKA-SUSITNA BOROUGH Fish & Wildlife Commission

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Regular Meeting

October 24, 2024

Supplemental Handout – Table of Contents

- 1 = Draft ADFG Comment (2)
- 2 = NPFMC Letter
- 5 = AK Salmon Research Task Force Presentation

Physical Location of Meeting: Conference Room 203, DSJ Bldg, Palmer. Remote Participation: See agenda.

Planning and Land Use Department - Planning Division

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ADF&G 2024 Fishing Season Summary Questions – DRAFT (2)

12. How closely do the feds and ADF&G meet and work together on the management of the Cook Inlet salmon fishery? The two divisions of ADF&G meet at least weekly, if not daily, to review and plan management strategies of the salmon fishery during the season. Does ADF&G meet with the federal managers weekly, if not daily, and how well is the coordination in developing management practices in-season? How well has the current system worked and what improvements can be made?

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Fish and Game

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September 12, 2024

Jon Kurland, Administrator
NOAA Fisheries, Alaska Region
PO Box 21668
Juneau, Alaska 99802-1668

Dear Mr. Kurland,

In April 2015, the North Pacific Fishery Management Council (Council) adopted an action that lowers Chinook salmon bycatch caps in the Bering Sea walleye pollock fishery when Chinook salmon abundance in Western Alaska is at historically low levels.[1] The Council's action identifies historically low Western Alaskan Chinook salmon abundance using a three-system index of inriver adult Chinook salmon run sizes from the Unalakleet, Upper Yukon, and Kuskokwim rivers combined at or below the threshold level of 250,000 fish. The Council's action also specified a process by which the Alaska Department of Fish and Game (department) would provide postseason abundance estimates to the National Marine Fisheries Service (NMFS) by October 1, following the salmon season each year. If the threshold is not met, the low performance standard and hard cap applicable to the Bering Sea walleye pollock fishery is in effect the following year.

Methods and analyses used by the department to estimate the postseason run size for each of the three systems have been approved by the Council, and there were no changes to those methods in 2024. The methods used for the Unalakleet and Upper Yukon rivers are consistent with what is outlined in the Council's public review analysis.[2] Methods used for the Kuskokwim River were approved by the Council in June 2018[3].

The 2024 three-system index of inriver adult Chinook salmon run sizes from the Unalakleet, Upper Yukon, and Kuskokwim rivers is 197,359 and is below the threshold level of 250,000.

The following details the preliminary total run estimates for each system:

Unalakleet River
An extremely low run size of 887 Unalakleet River Chinook salmon returned in 2024. The preliminary 2024 run size estimate was based on the sum of reported commercial harvest, expected subsistence harvest, and estimated total escapement. Commercial fishing in Norton Sound Subdistrict 6 (Unalakleet Subdistrict) was limited during the 2024 season, and 5 Chinook

[1] https://npfmc.legistar.com/LegislationDetail.aspx?ID=2237783&GUID=89E4DA9C-19B8-4BDE-8643-B19D68DD9EE3
[2] Public Review draft Environmental Assessment/ Regulatory Impact Review/ Initial Regulatory Flexibility Analysis for Proposed Amendment to the Fishery Management Plan for Bering Sea Aleutian Islands Groundfish Bering Sea Chinook and Chum salmon bycatch management measures, March 2015.
[3] https://npfmc.legistar.com/LegislationDetail.aspx?ID=3486558&GUID=81056FD0-C9E8-4376-BD59-C2F6084C82E9&Options=ID|Text|&Search=Kuskokwim

salmon were commercially harvested and retained for personal use. The department estimates approximately 100 Unalakleet River Chinook salmon were harvested for subsistence uses in 2024. Subsistence harvest in 2024 is expected to be smaller than the 2023 harvest (489 fish) due to reduced fishing opportunities in response to not meeting the established Chinook salmon escapement goal on the North River. The North River Tower and Unalakleet River weir operated successfully during much of the target operational period, and estimates were made for periods of missed passage. The preliminary total escapement of Chinook salmon to the Unalakleet River was estimated to be 782 and is considered reliable (95% CI[4]: 586–1,016).

Upper Yukon River

An extremely low run size of 24,748 Upper Yukon River Chinook salmon returned in 2024. The preliminary total run size estimate is based on the inseason assessment of passage into Canada and expectations of the total harvest in Alaska. Chinook salmon passage into Canada was based on a sonar project operated near the U.S./Canada border, downriver from Eagle, Alaska. The end-of-season sonar count is expected to be 24,048 (90% CI: 23,753–24,343). The total harvest of Upper Yukon River Chinook salmon in Alaska is expected to be about 700. Nearly all harvest occurred in research test fisheries operated by the department and collaborators, and minimal harvest is expected to have occurred incidentally during non-Chinook subsistence fisheries. Conservation actions were implemented to protect Chinook salmon in 2024. There were no commercial salmon fisheries opened in the Yukon River drainage in 2024, and relevant sport and personal use fisheries were closed. Subsistence fishing was limited to the use of small mesh gillnets (≤ 4”) directed at non-salmon, except for a two-week period coinciding with the peak of the Chinook salmon run when all gillnets were removed from the water. Late-season subsistence opportunity was provided to harvest summer chum salmon with selective gear, but all Chinook salmon were required to be released alive. The preliminary 2024 run size estimate was consistent with the preseason forecast of 19,000–28,000 and the inseason run size estimate of 28,000 (90% CI: 21,000–35,000), based on independent sonar and genetic stock identification programs operated in the lower portion of the Yukon River.

Kuskokwim River

A below-average run size of 171,724 (95% CI: 127,038–232,131), Kuskokwim River Chinook salmon returned in 2024. The preliminary total run size estimate was based on results of a maximum likelihood model informed by direct observations of escapement and an expectation of drainagewide harvest. The preliminary escapement estimate (142,998) is uncertain (95% CI: 98,311–203,404) because the model was informed by only one weir project and eight aerial surveys. Poor survey conditions prevented the department from obtaining reliable index counts from a subset of aerial surveys during the 2024 season. Additionally, extended periods of missed passage resulted in the inability to produce escapement estimates at two of three weirs that operated in 2024. The total harvest of Kuskokwim River Chinook salmon is expected to be 28,726. Nearly all harvest occurred in the subsistence fishery, and minimal harvest occurred in test fisheries operated by the department and collaborators. Conservation actions were implemented to protect Chinook salmon in 2024. No commercial or sport harvest of Kuskokwim River Chinook salmon occurred during the 2024 season. Subsistence fishing restrictions were implemented throughout the Chinook salmon run in 2024. A preliminary estimate of drainagewide subsistence harvest was generated using an eight-year relationship between partial harvest estimates and drainagewide post season estimates. The 2024 inseason harvest estimate was produced by the Kuskokwim River Inter-Tribal Fish Commission, through collaboration in data collection efforts with the Orutsararmiut Native Council and the Yukon Delta National Wildlife Refuge. Prior-year post season estimates were developed by the department. The preliminary total run size of

[4] CI: confidence interval

Kuskokwim River Chinook salmon exceeded the preseason run forecast of 108,000–160,000 fish and the independent total run estimate of approximately 163,000 Chinook salmon, based on a sonar project operated near Bethel, Alaska plus harvest downriver.

Sincerely,

Doug Vincent-Lang
Commissioner

cc: Rachel Baker, Deputy Commissioner, Alaska Department of Fish and Game
David Witherell, Executive Director North Pacific Fishery Management Council

Alaska Salmon Research Task Force

Presentation to the
North Pacific Fishery Management Council

October 3, 2024

Presented by:

Ed Farley
NOAA Fisheries
Alaska Fisheries Science Center
Juneau, AK

Reference: S.3429 An Act

Purposes of the Act

1. to ensure that Pacific salmon trends in Alaska regarding productivity and abundance are characterized and that research needs are identified;
2. to prioritize scientific research needs for Pacific salmon in Alaska;
3. to address the increased variability or decline in Pacific salmon returns in Alaska by creating a coordinated salmon research strategy; and
4. to support collaboration and coordination for Pacific salmon conservations efforts in Alaska.

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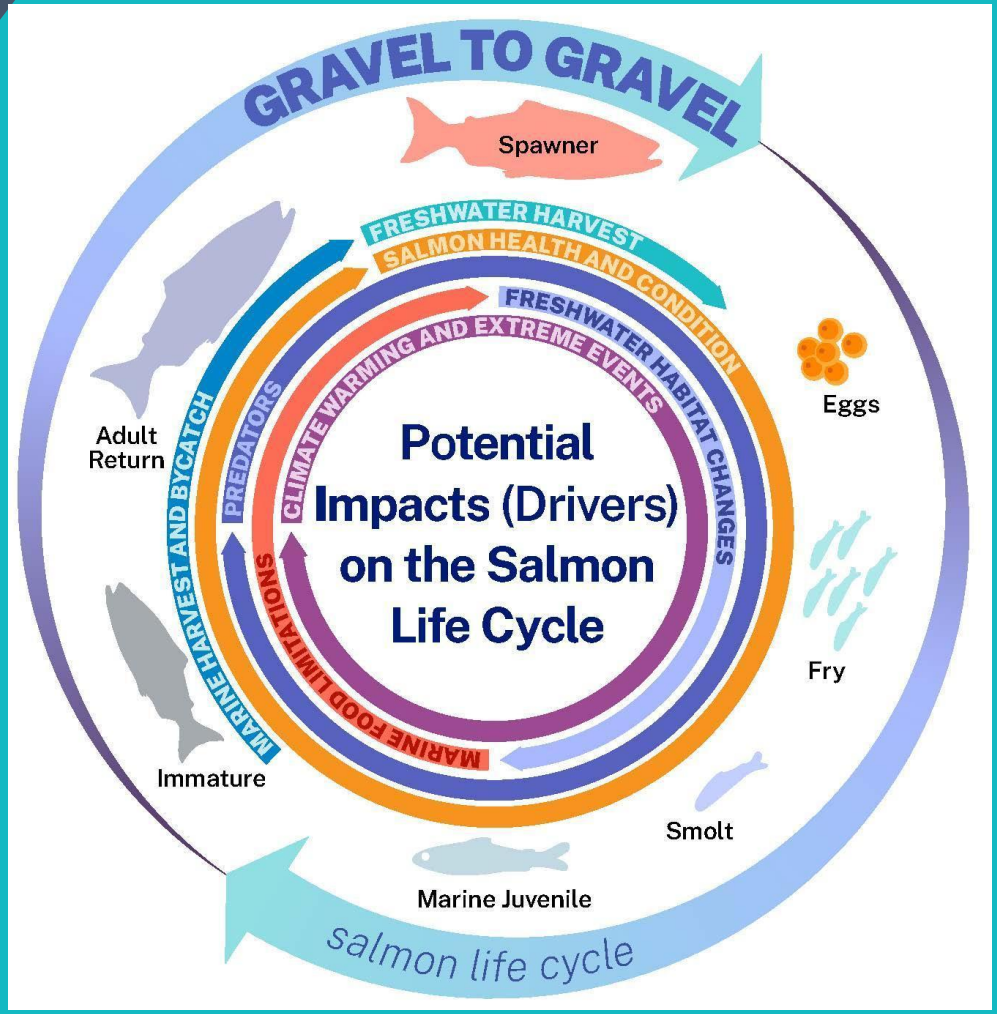

Coordinated Research Strategy

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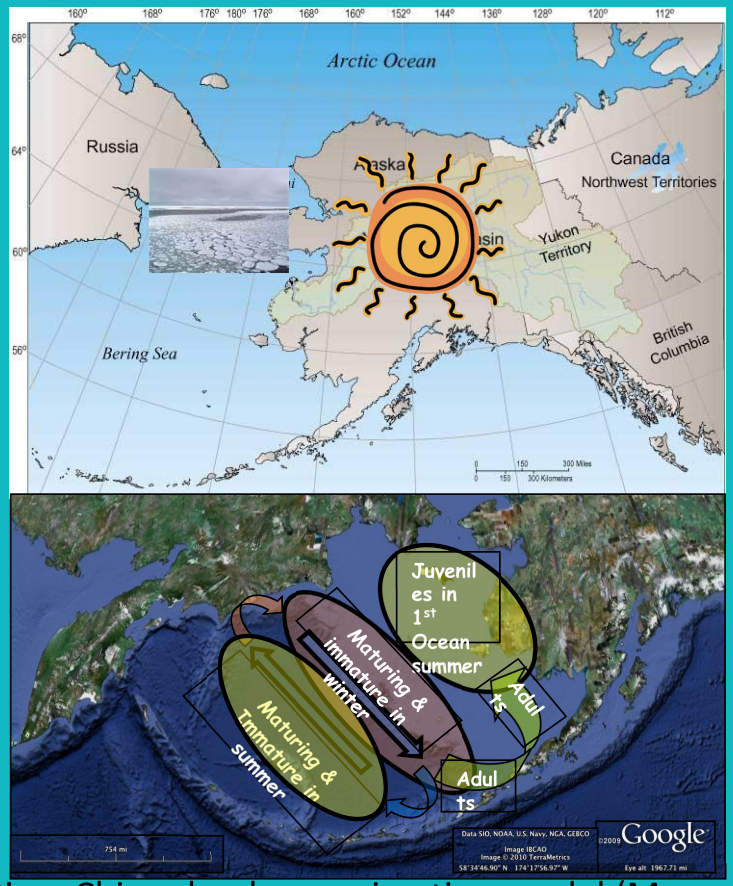
Recommended Applied Research Needs

Warming Climate and Extreme Events



Research to understand and quantify the effects of natural environmental variability and warming climate on Alaska salmon distribution and abundance.

Yukon River Chinook salmon migration model (Myers et al. 2007)

Recommended Applied Research Needs

Salmon Health and Condition

Ichthyophonus in Chinook salmon

Research to understand the connections between freshwater, estuarine, and the marine environment that lead to pathogens or declines in some vitamin levels for salmon.

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Recommended Applied Research Needs

Salmon Health and Condition

Climate

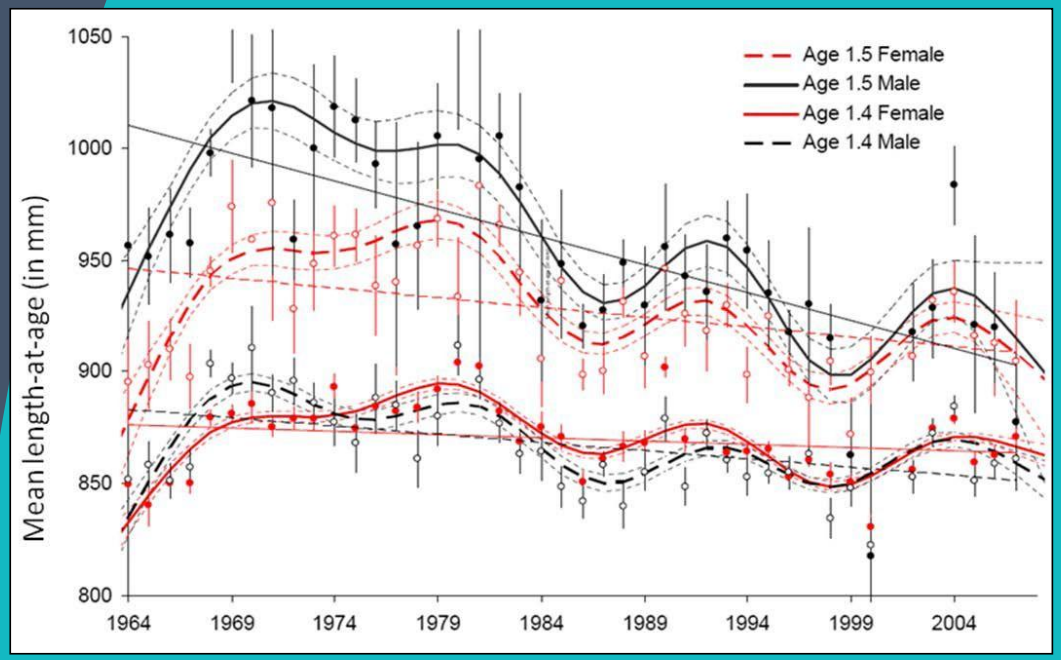
Prey
Quality and Quantity

Fish Size and Fat Reserves

Research to understand prey quality and quantity on health and condition of salmon in marine estuarine and freshwater habitats.

Recommended Applied Research Needs

Salmon Health and Condition



Yukon Chinook Salmon Length at Age

Research to understand the mechanism(s) behind **declining size at age** as these declines impact the amount of food available per fish, the size and number of eggs per female for future generations, and can contribute to declining run sizes.

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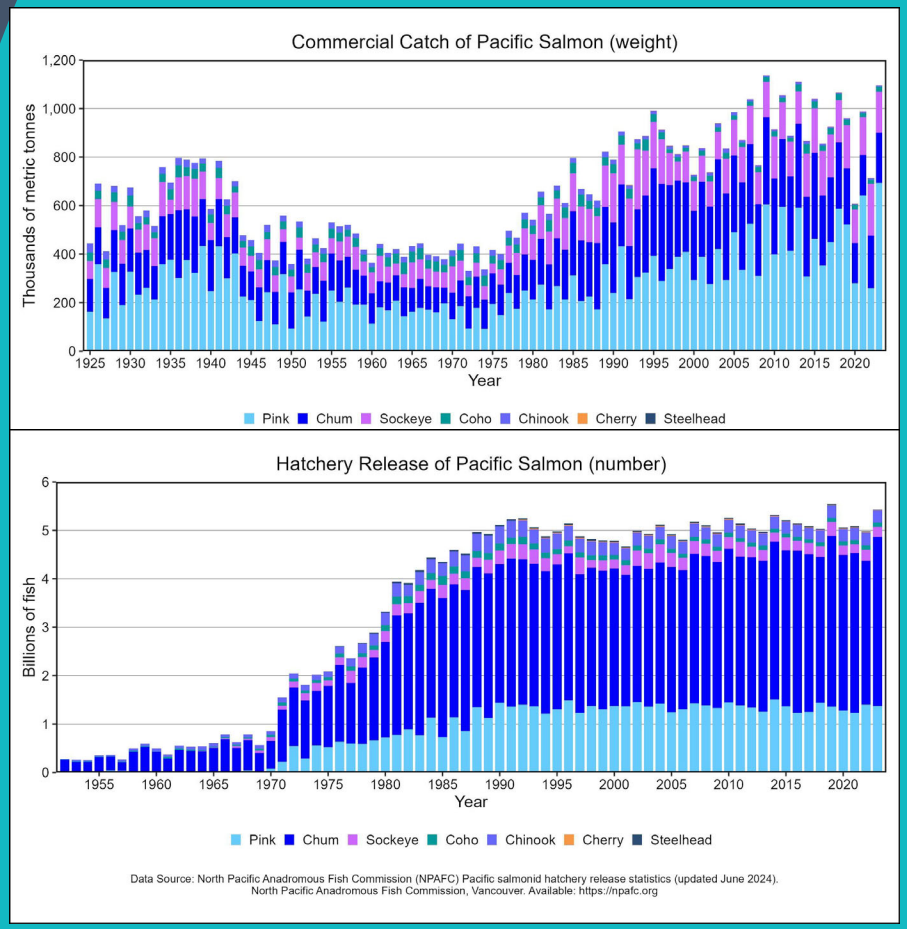
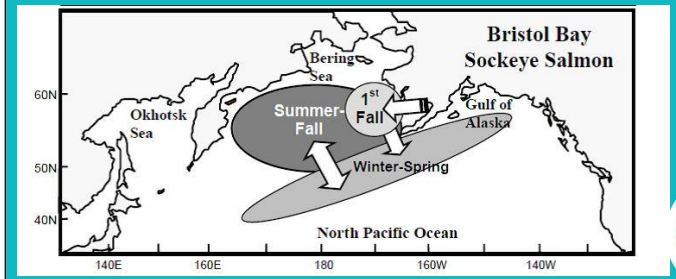
Recommended Applied Research Needs

Marine Food Limitations



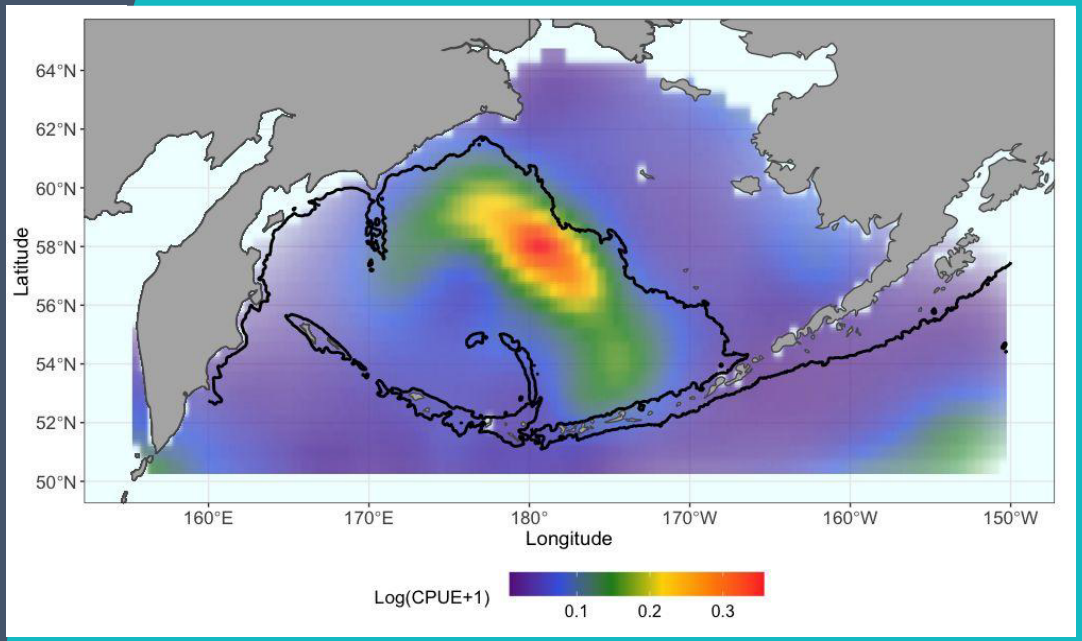
Research to understand the implications of habitat use by Alaska salmon populations at various levels of abundance, the productive capacity of habitats for each life stage, and the potential implications of density-dependent effects.



Recommended Applied Research Needs

Marine Harvest and Bycatch

Chinook Salmon summer “hotspot” distribution prediction



Research to reduce bycatch, interception, and Illegal, Unreported, and Unregulated (IUU) fishing through **improved understanding of distribution and migration patterns of Alaska salmon stocks to better predict and avoid incidental harvest in the migratory corridors for Alaska salmon including Bering Sea, Aleutian Island, and Gulf of Alaska areas and regions in the North Pacific where there is increased potential for IUU fishing.**

Langan et al. 2024

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Recommended Applied Strategies to Address Priority Research Needs

- Improved understanding of the social impacts
- Improved stock identification methods
- Better characterization of ocean distributions and marine migration routes
- Expanded ocean ecosystem surveys
- Strategies to minimize human impacts on freshwater and coastal habitats
- Making use of new technologies
- More effective monitoring of salmon indicator stocks
- Improved stock assessments for in-season management
- Life-cycle modeling and management strategy evaluations for climate resilience
- Better data management and sharing

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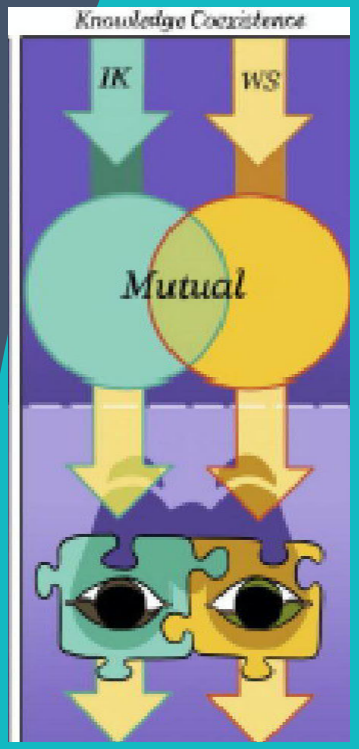
Recommended Framework - Research project development should include a framework that involves "salmon people" across tribal, federal, state, non-profit, international, and other entities



Reid et al. 2020

One example would be to initiate "Two-Eyed Seeing" framework that embraces "learning to see from one eye with the strengths of Indigenous knowledge and ways of knowing, and from the other eye with the strengths of mainstream knowledge and ways of knowing

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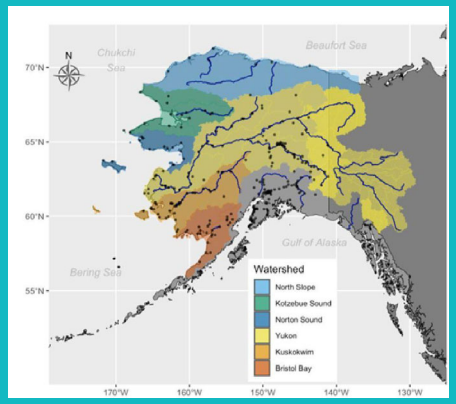
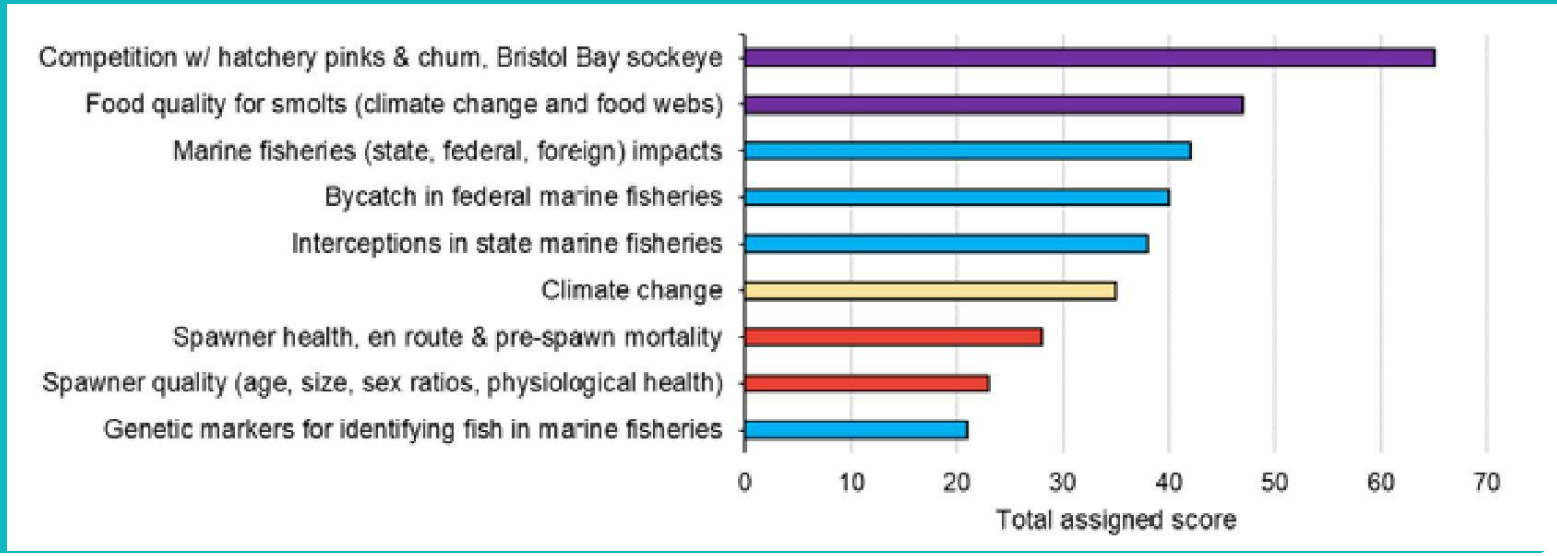
Arctic Yukon Kuskokwim Working Group Report



Identify Research Needs for that region of Alaska



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AKSRTF Research Priorities and Strategies Link to NPFMC Research Priorities

Further research to reduce **western Alaska salmon bycatch** in Bering Sea groundfish fisheries (e.g. research on salmon and drivers of salmon distribution, as well as drivers of groundfish fishery behavior including avoidance of other PSC species).

Continue to acquire **basic life history information** with an emphasis on improved estimates of size/age at maturity to advance understanding of the mechanisms for how maturity changes over space and through time.

Examine the economic, social, and cultural **effects of fisheries and fishery management policy on communities** over time (including impacts from fishery policy changes and Tribal citizen and Tribal Nation reliance on, participation in, and impacts of federally managed fisheries).

Develop predictive tools and **models that evaluate the impact of multiple projected climate scenarios** on managed resources to inform management options related to ecosystem production and resilience and adaptation of fishing communities.

Maintain the core biological and oceanographic data (e.g., biophysical moorings, stomach data, zooplankton, age 0 surveys, benthic production) necessary to support integrated ecosystem assessment

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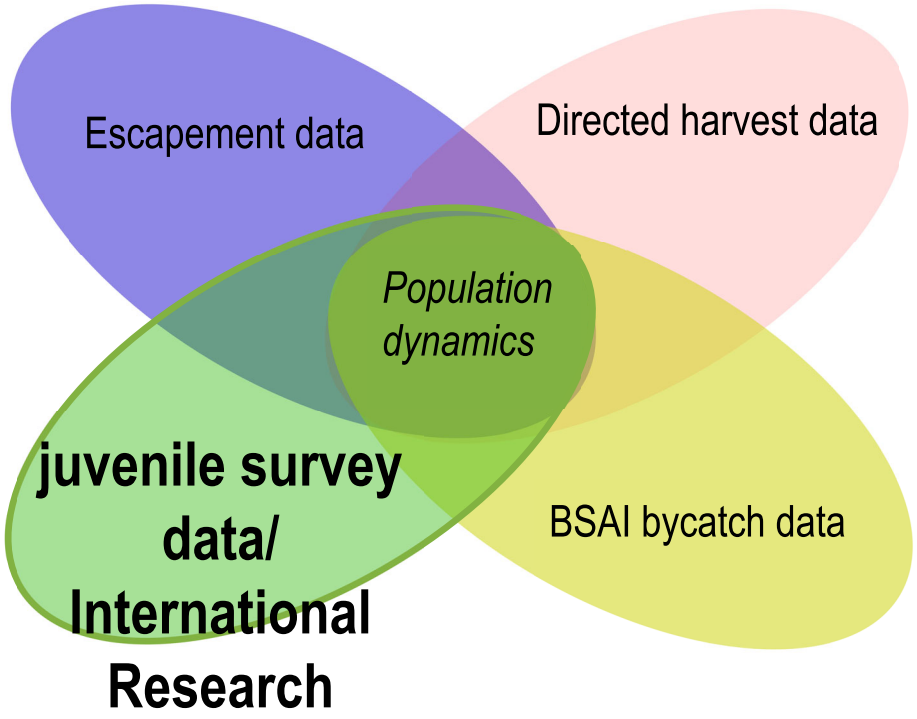
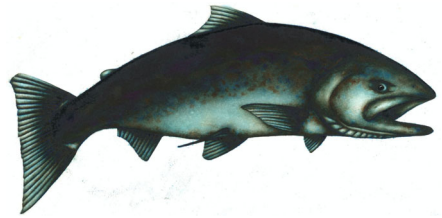
Salmon Life cycle models

- Difficult to estimate **key life history processes** from traditional adult monitoring data alone
- **Addition of juvenile/International research survey data** from fishery independent surveys greatly expands ability to estimate:
  - **Marine survival**
  - **Maturation schedules**
  - **Spawner-recruitment patterns**
  - **Environmental and anthropogenic impacts**
  - **Distribution and migration models**



- **Life cycle models** informed by **juvenile survey /International Research survey data** can be used to identify drivers of population variability and evaluate alternative management/environmental scenarios using best available science
  - **Adult Equivalent Models**
  - **Forecasts of Adult returns**
  - **Management Strategy Evaluations**



AYK Working Group Members

Name	Primary Affiliation
Katie Howard (co-chair of WG)	Alaska Department of Fish and Game
Daniel Schindler (co-chair of WG)	University of Washington
Andrew Munro	Alaska Department of Fish and Game
Estabrooks	At-Sea Processors Association
Bill Templin	Alaska Department of Fish and Game
Caroline Brown	Alaska Department of Fish and Game
Ed Farley	NOAA Fisheries, Alaska Fisheries Science Center
Jacob Ivanoff	Native Village of Unalakleet
Justin Leon	Kuskokwim River Inter-Tribal Fish Commission
Megan McPhee	University of Alaska Fairbanks
Megan Williams	Ocean Conservancy
Michelle Stratton	Alaska Marine Conservation Council/ Fisherman
Noelle Yochum	Trident Seafoods
Oscar Evon	Coastal Villages Region Fund (CVRF)
Steve Reifenstuhl	Salmon Biologist/Consultant (Retired)
Tom Carpenter	Commercial Fisherman
Adolph Lupie	Lower Kuskokwim River
Andy Bassich	Upper Yukon River
Bill Alstrom	Lower Yukon River
Brooke Woods	Yukon River
Charlie Lean	Norton Sound
Charlie Wright	
Courtney Weiss	Yukon Delta Fisheries Development Association (YDFDA)
Austin	

Name	Primary Affiliation
Curry Cunningham	University of Alaska – Fairbanks
Dan Gillikin	Native Village of Napaimute, Aniak, AK
Hannah Heimbuch	Commercial Fisher
James Nicori	Kuskokwim region
Jennifer Hooper	Association of Village Council Presidents, Yukon-Kuskokwim Delta Region
Jessica Black	Associate vice chancellor for rural, community education and Native education. University of Alaska - Fairbanks
Joe Spaeder	Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative
Mark McNeley	Native Village of Nelson Lagoon
Martin Andrew	Kuskokwim region
Marvin Okitkun	Kotlik, lower Yukon Delta
Michelle Quillin	Tanana Chiefs Conference, Fairbanks
Patrick Barry	NOAA Alaska Fisheries Science Center
Ragnar Alstrom	Executive Director, Yukon Delta Fisheries Development Association (YDFDA)
Renae Ivanoff	NSEDC's Fisheries Research and Development Director
Scott Gende	National Park Service
Serena Fitka	Yukon Delta Fisheries Development Association (YDFDA)
Todd Sformo	North Slope Borough - Department of Wildlife Management
Vanessa von Biela	U.S. Geological Survey, Alaska Science Center
Virgil Umphenour	Upper Yukon River

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Task Force

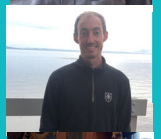
Ed Farley (Chair), *NOAA Fisheries, Alaska Fisheries Science Center*

Jacob Ivanoff (vice Chair), *Native Village of Unalakleet*

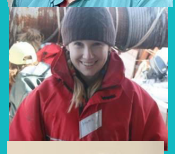
Bill Templin, *Alaska Department of Fish and Game*

Andrew Munro, *North Pacific Fishery Management Council*

Karla Jensen, *Native Village of Pedro Bay*

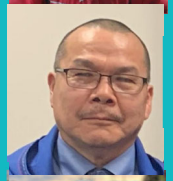


Austin Estabrooks, *At-sea Processors Association*



Katie Howard, *Alaska Department of Fish and Game*

Caroline Brown, *Alaska Department of Fish and Game*



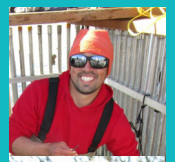
Oscar Evon, *Native Village of Kwigillingok*

Michelle Stratton, *Alaska Marine Conservation Council/Fisherman*

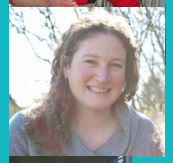
Megan Williams, *Arctic Program, Ocean Conservancy/ University of Alaska Fairbanks*

Tom Carpenter, *Commercial Fisherman*

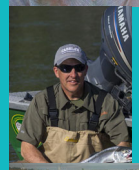
Tommy Sheridan, *University of Alaska Fairbanks*



Justin Leon, *Kuskokwim River Inter-Tribal Fish Commission*

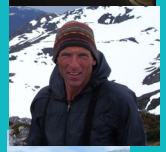


Megan McPhee, *University of Fairbanks, Alaska*



Mike Flores, *Charter Boat Fisherman*

Noëlle Yochum, *Alaska Pacific University/ Trident Seafoods*



Steve Reifenstuhl, *retired, Northern Southeast Regional Aquaculture Association*

Andrew Piston, *Pacific Salmon Commission*

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https://www.fisheries.noaa.gov/resource/outreach-materials/alaska-salmon-research-task-force-report