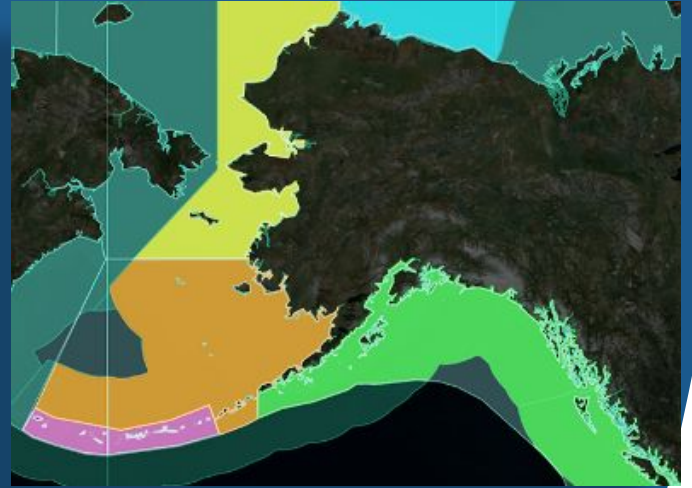


Alaska Fisheries Science Center Research Update

Robert Foy

AFSC Research and Science Director



*Presentation for
North Pacific
Fisheries
Management
Council*



Overview

- Staff updates
- Survey updates
- Survey Modernization Effort
- Alaska Salmon Research Task Force (Ed Farley)
- Equity & Environmental Justice (Amilee Wilson, Maggie Mooney-Seus, Mabel Baldwin-Schaeffer)
- Socioeconomics Program Overview (Sarah Wise)



AFSC Staff updates



Jennifer Ferdinand

AFSC

Deputy Director



Elaina Jorgensen

AFSC

Chief of Staff



Abigail Harley

**REFM Economic and
Social Sciences
Research**

Program Manager



Alix Laferriere

RACE

Deputy Division
Director



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2024-2025 survey status update



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Aleutian Islands

Platform	Survey	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Charter	GAP Aleutian Islands Bottom Trawl Summer	█		█		█		█		█		█		█		█	
Charter	MESA Gulf of Alaska & Eastern Bering Sea & Aleutian Islands Longline Summer	█		█		█		█		█		█		█		█	█
NOAA Ship	EcoFOCI Alaska Movement of Key Fishes Summer	█	█	█	█	█	█	█	█		█	X	X	X	X	X	X

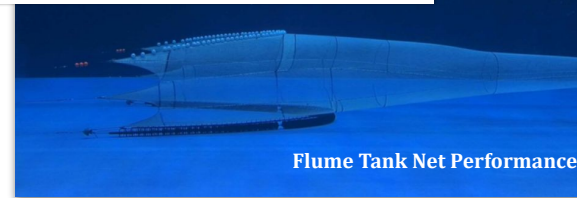
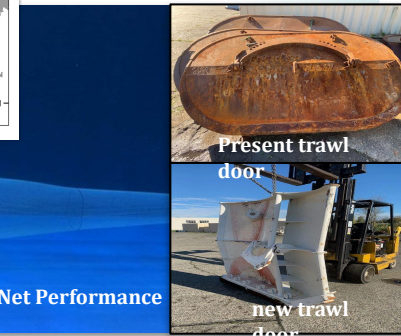
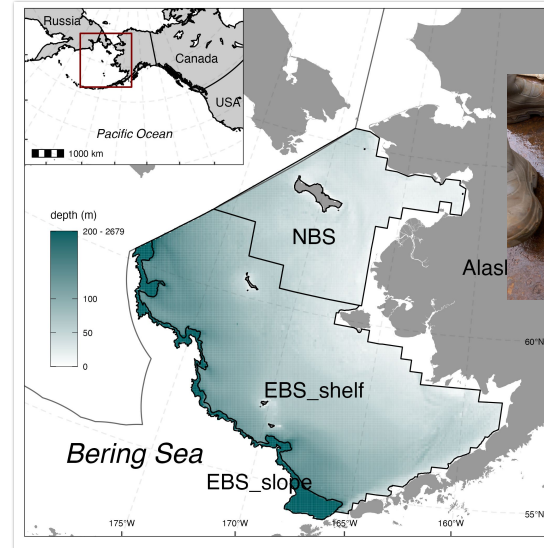


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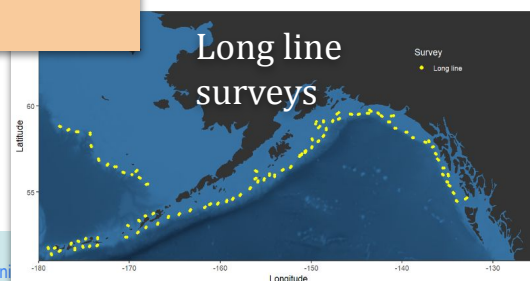
Climate Ready Fisheries - Historic, Current, and Future Fisheries States

Bering Sea/GOA Survey Modernization

- 1. Update EBS/NBS/EBS-Slope survey design**
 - Integrate into one cohesive survey design increasing efficiency and nimbleness to respond to a changing environment.
 - Modernize sampling net: Current 83-112 eastern trawl dates from the 1970's
- 2. Incorporate new sampling technologies**
 - eDNA
 - Greater use of optical systems/AI
 - Increased capacity for environmental sampling (pH, oxygen, etc)
- 3. Increase design capacity to accommodate multi-mission survey operations**
 - e.g. acoustics, oceanography, marine mammals, etc.



Longline survey modernization underway as well



Longline Survey



Sablefish



Pacific
Cod



Greenland
Turbot



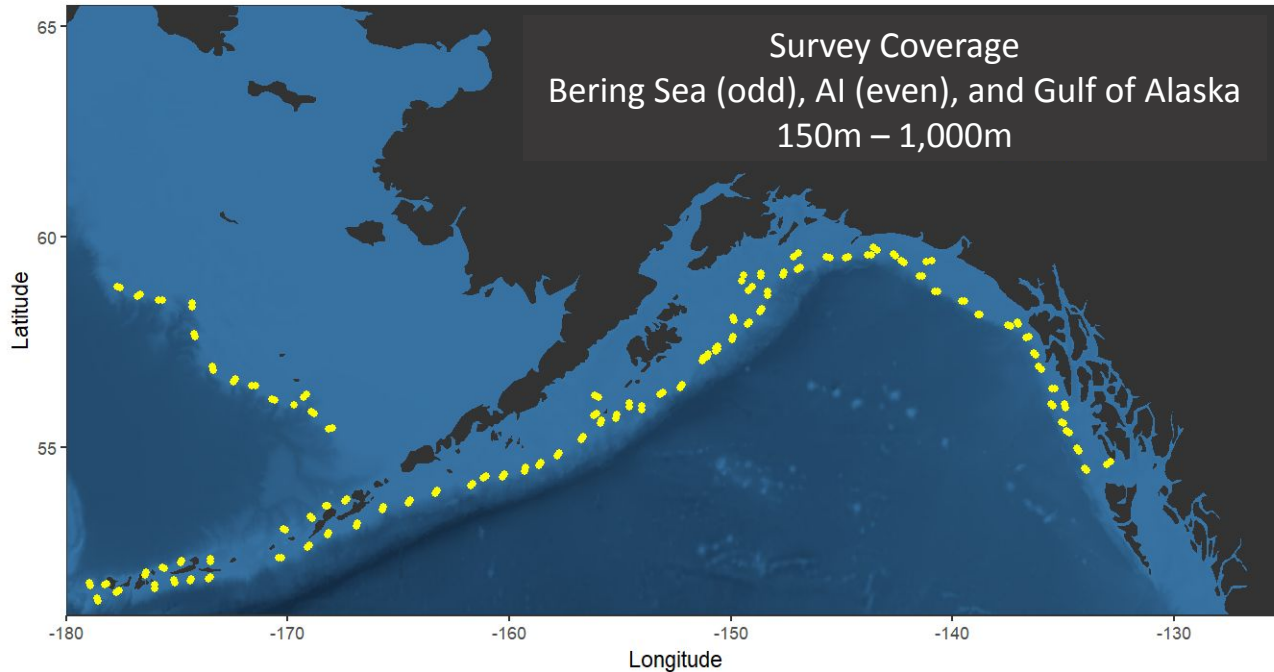
Roughey
Rockfish



Blackspotted
Rockfish



Shortraker
Rockfish



Purpose: Extending a 40+ year time series of monitoring sablefish and other commercially important and non-target groundfish species throughout Alaska for stock assessment and ecosystem monitoring.

Vessel: Contracted freezer longliner



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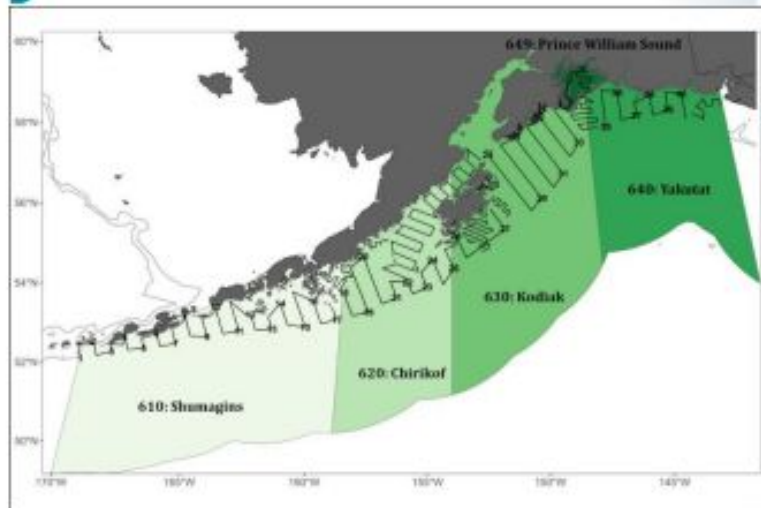


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History of GOA Acoustic-Trawl Summer Survey

Time series 2013-2023 (6 years)

- Biennial
- Survey attempt in 2011 did not sample east of Kodiak due to ship issues
- 2021 and 2023 were at a reduced resolution



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Pros/Cons



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Pros

- Secure and fortify vessel days for GOA Winter Acoustic-Trawl surveys
- Better align survey portfolio with staffing capacity
- Free up NOAA Ship days for emergent survey/research needs

Cons

- Halt of a developing time series
- Reduced summer walleye pollock data. Could impact apportionment
- Loss of other ecosystem data/indicators (forage fish index, euphausiid index, etc)



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Survey Schedule Challenges

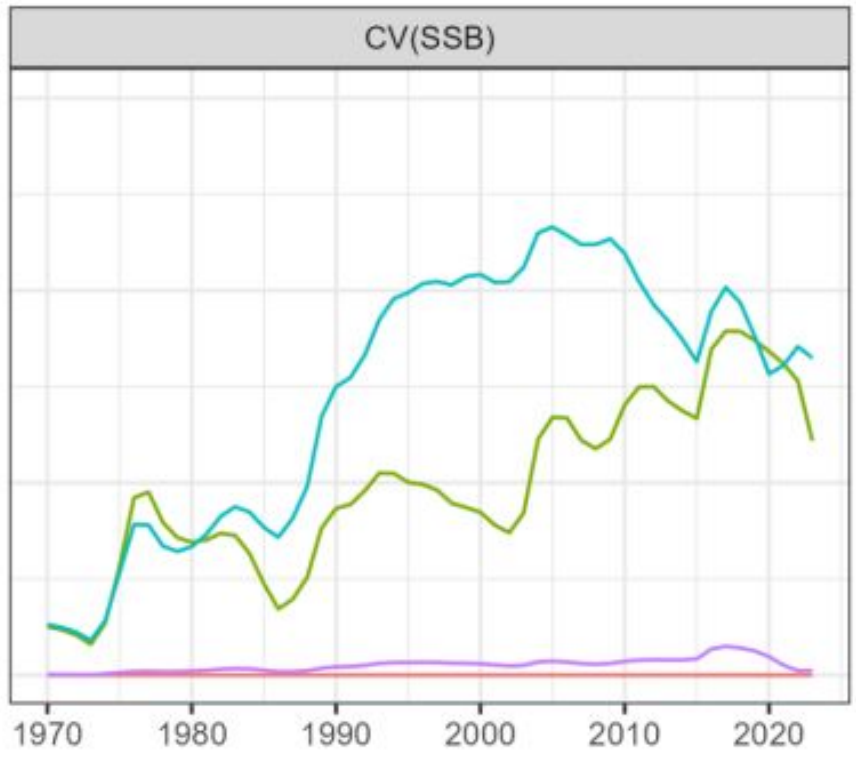
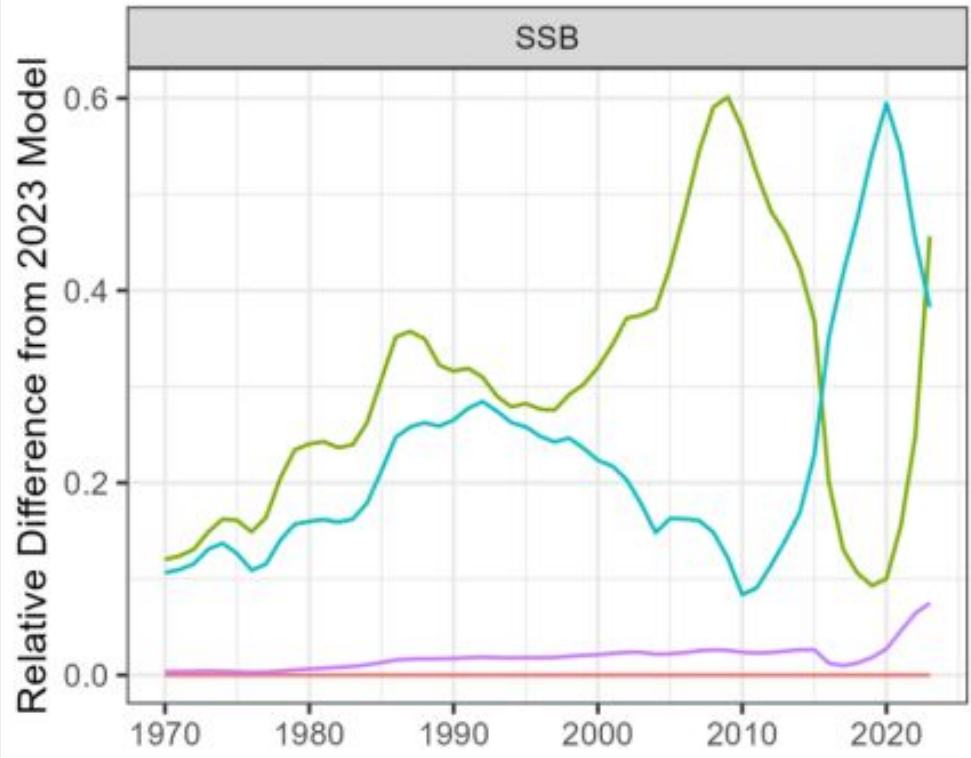
- The AFSC is facing resourcing challenges in being able to fully execute our survey and research priorities while also being able to address emerging priorities
 - Staffing/Expertise: A challenge across all of our survey teams
 - Vessel Time: We are often working with reduced survey duration/compressed schedules and lack time to conduct other priority work
- Ongoing internal review of acoustic-trawl survey portfolio
 - 3 years of internal discussion and analysis



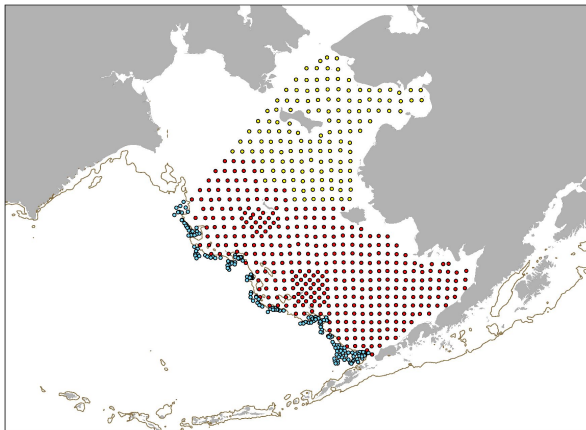


Analysis

— 23: 2023 final — Drop Shellkof — Drop ADF&G — Drop Summer AT



Survey Modernization



Why?

- Foundation of current survey design dates back to the 1950s
- **Better response to changes** in environmental conditions and distribution of fish and crab stocks – more nimble, adaptive survey approach
- **New advanced survey technologies** that improve efficiency and effectiveness (e.g., uncrewed vessel systems, eDNA, trawl sensors, camera systems)
- **Obsolete survey gear** material and design (cost, availability, supply chain)
- **New methods** (i.e., stratified random approach)
- **New survey analysis tools** (e.g., model-based methods, Artificial Intelligence)
- Need for **new data types** to support ecosystem-based fisheries management, Essential Fish Habitat designations, and climate forecasting

Working Milestones

AFSC working group on EBS survey modernization (Oct 2023) - Multiple public meetings with stakeholders for feedback on new EBS survey bottom trawl design.

Projects:

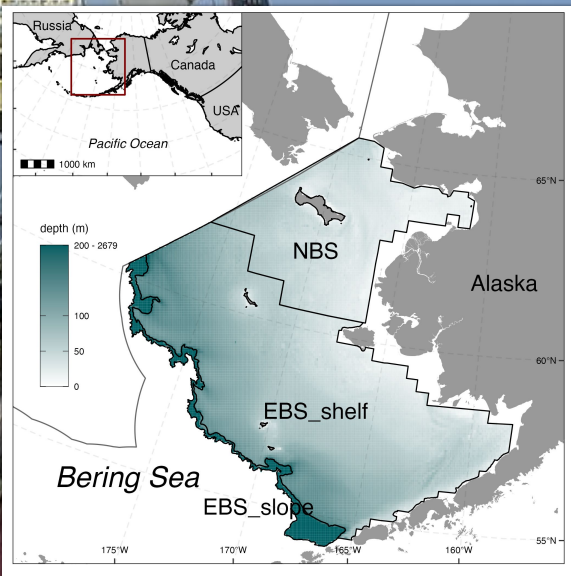
1. Sampling design – area, frequency, sampling density (started in 2023)
2. Calibration factors derived for slope/shelf surveys (2023-2025)
3. New bottom trawl gear designed and built (2025) - [2023 workshop]
4. New Bering Sea survey design proposed and agreed upon (2026)
5. 15 min vs 30 min catchability/selectivity correction factors derived (2024-26)
6. New survey gear calibration (2026)
7. Survey time series calibration (2026), transition design (2026), and transition implementation (2027)



Survey Modernization

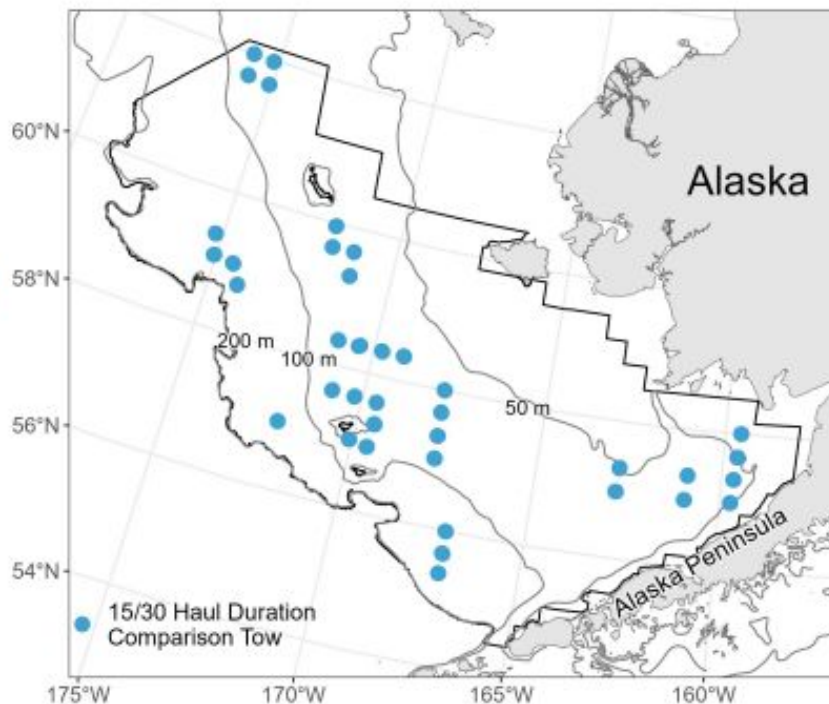
2024 update

- **Upper Slope Feasibility and Calibration Study**
 - Paired-tow study along upper BS Slope to calibrate the shelf and slope nets to increase the utility of the past slope data.
 - Testing EBS shelf net along the upper slope to confirm the area that can be integrated into the new survey design with the low-profile footrope/ground gear.
- **Survey Effort**
 - Tow duration study conducted to determine effects of reducing tow duration from 30 min to 15 min. This study is likely completed, pending analysis.
- **New trawl door design (stable net spread; surface/bottom)**
 - Finished procurement of new trawl doors based on results from initial testing in 2023. New doors will be tested in 2025.
- **Flume tank studies (NFLD) - Dec 2024**
 - **Scale models: comparative analysis of current trawl and new designs**
 - **Identify optimized trawl design**



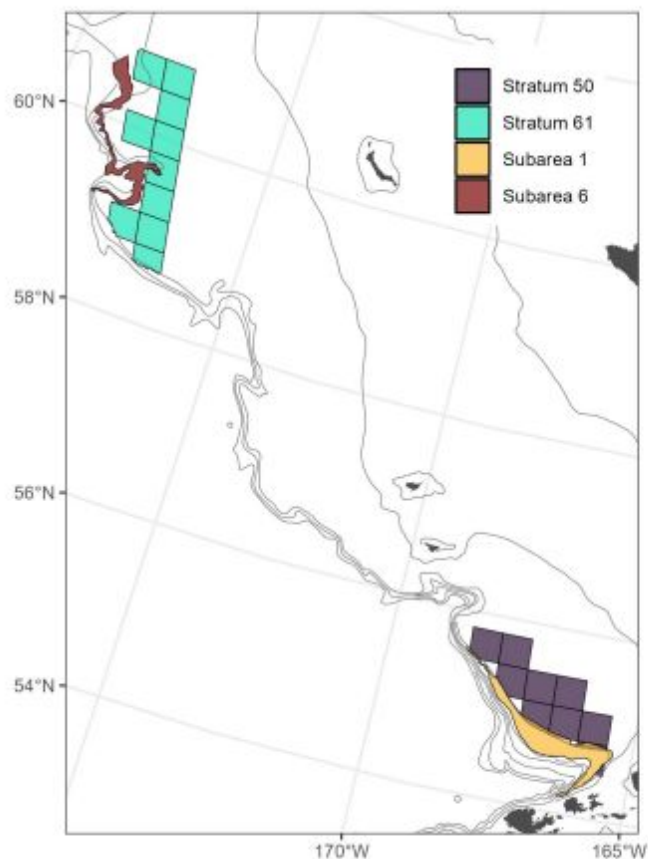
Survey Modernization Work: Tow duration

- 15/30 minute paired tows (Rohan/Haehn/Ryznar/Long)
 - Estimate efficiency ratios between tow durations
 - 38 successful pairs of tows in 2024
 - 123 pairs from 1995–2023
- Begin phased transition to 15 minute tows in 2026?



Survey Modernization Work: Shelf/slope

- Paired tows with shelf and slope gear (NPRB - DeFilippo; Rohan/Haehn/Ryznar/Long)
 - Slope 200-400 m
 - Estimate efficiency ratios between gears/methods
 - 35 successful pairs of tows in 2024
 - 5 pairs in 2023
- Shelf gear viable to 400 m
- EBS survey redesign operating model



NOAA Vessel Oscar Dyson Mid-life Repair (20 y extension)

Planned for October 2026 - September 2027

- **NOAA Vessel Bell M. Shimada to cover**
 - Combined west coast surveys (NOAA Vessel Lasker)
- **Charter**
 - May be needed to conduct ecosystem work on the shoulder periods during the Shimada/Dyson transition
- **Acoustic data collection integrity**



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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



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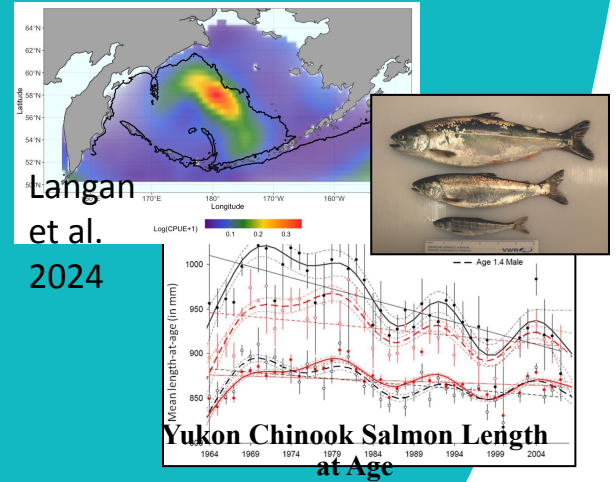
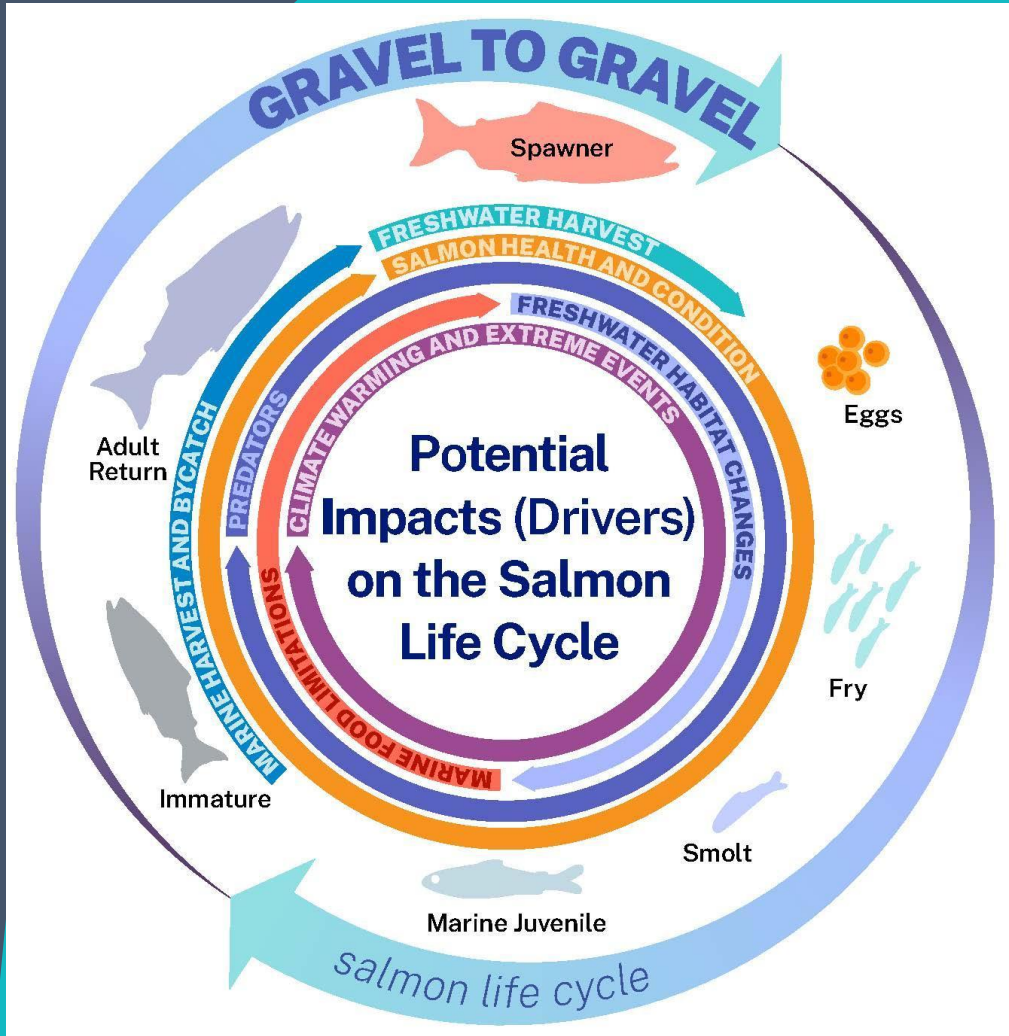
Purposes of the Act

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.

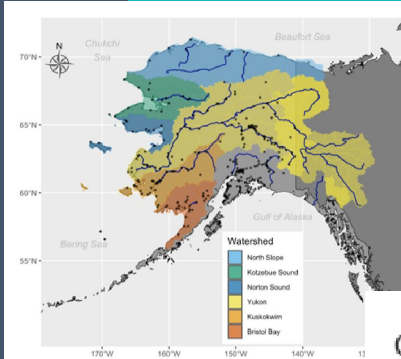


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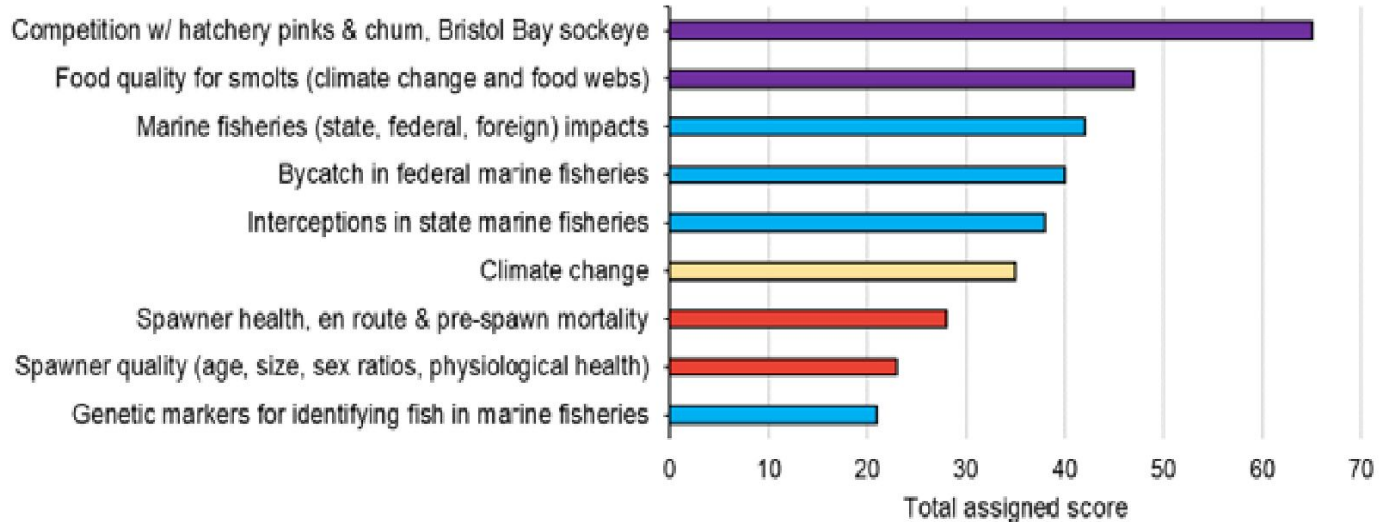
Coordinated Research Strategy - applied research needs



Arctic Yukon Kuskokwim Working Group Report



Identify Research Needs for that region of Alaska



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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NOAA Fisheries Equity and Environmental Justice

North Pacific Fishery Management Council
October 2024

Amilee Wilson, Maggie Mooney-Seus and Mabel Baldwin-Schaeffer



NOAA Fisheries National EEJ Strategy

NEWS

NOAA Fisheries Releases Final Equity and Environmental Justice Strategy

May 22, 2023

Agency to incorporate equity and environmental justice into the vital services we provide to

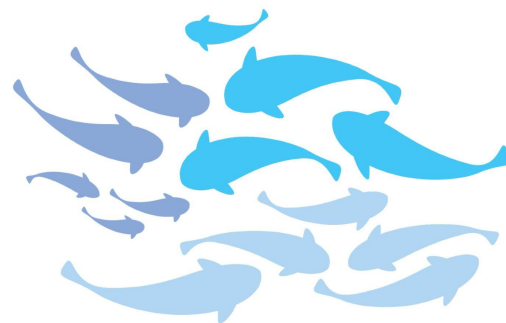
[Feature Story](#) | National



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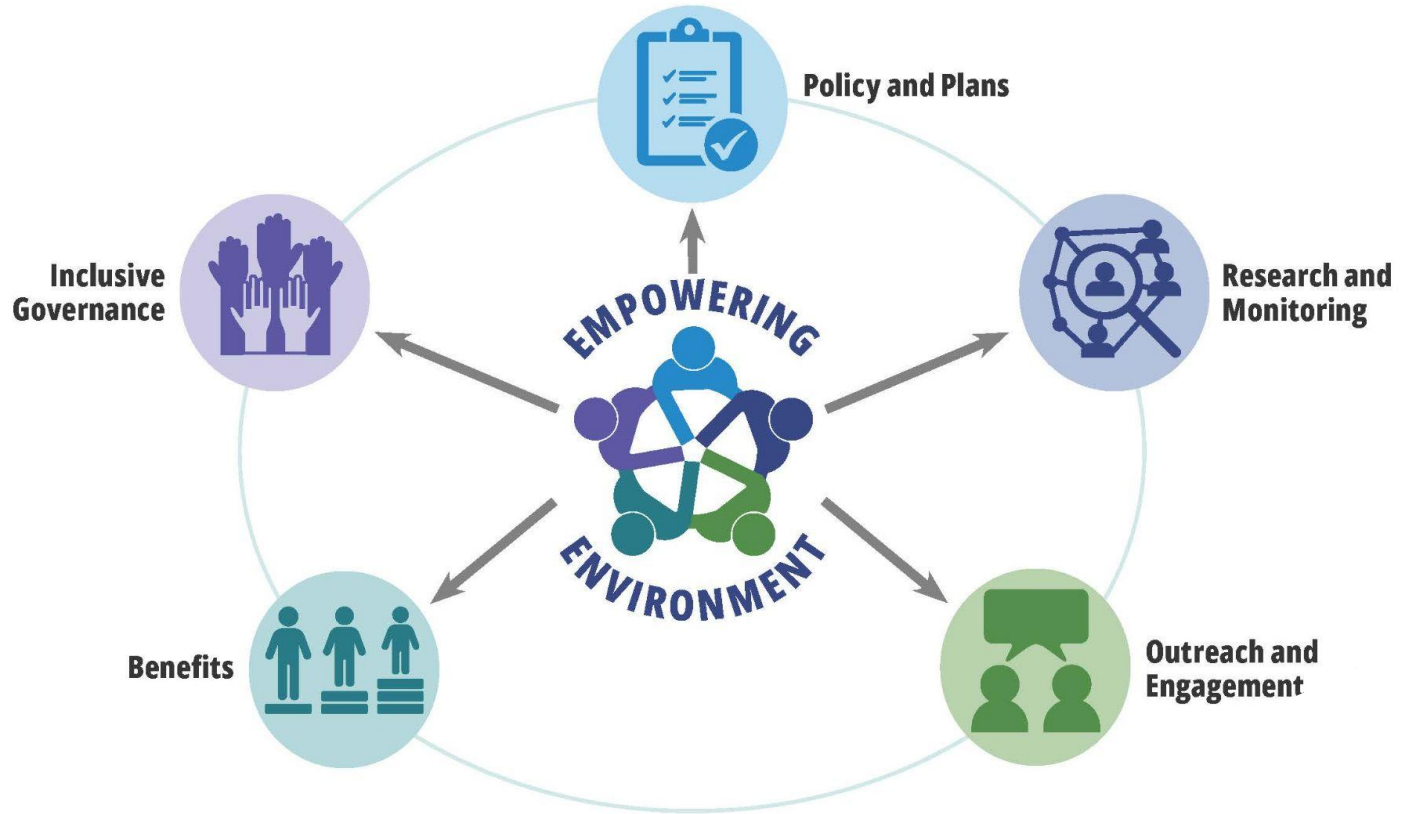
NOAA Fisheries' Alaska Region

Equity and Environmental Justice Implementation Plan



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EEJ Core Areas





EEJ in the Alaska Region



Questions We Have Been Asking

- How can we improve science and management for sustainable fisheries, protected resources, and marine ecosystems to better serve communities?
- What types of information regarding our science and management are you interested in receiving from us?
- How can we best provide that information to you (e.g., emails, publications, presentations)?



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Thank You!



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