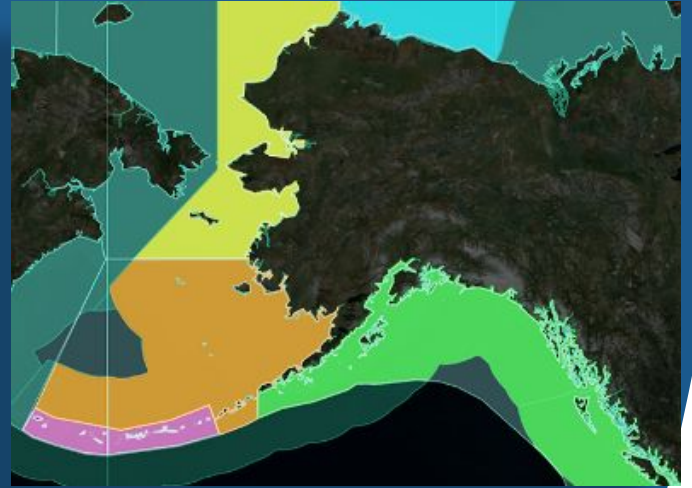


Alaska Fisheries Science Center Research Update

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

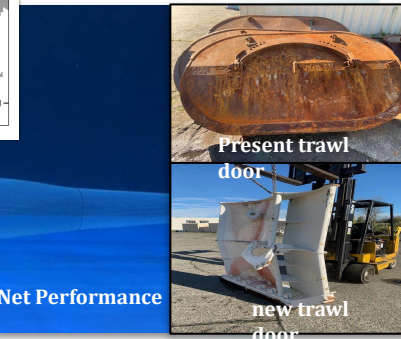
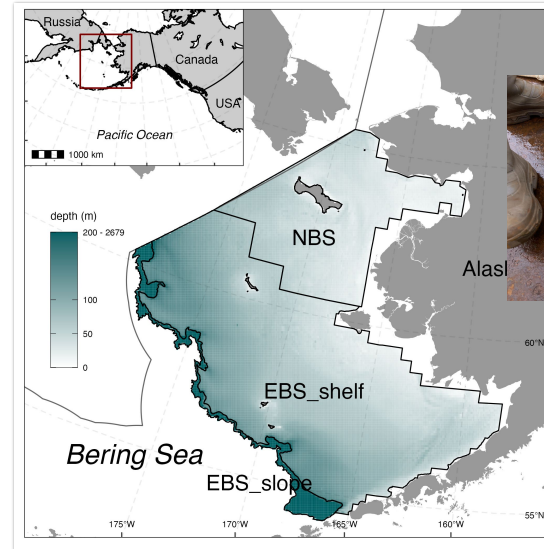


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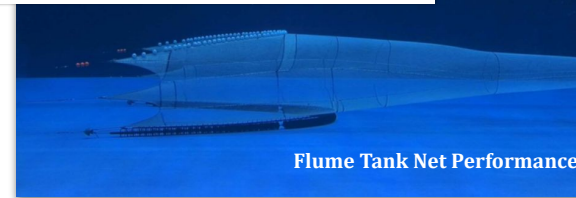
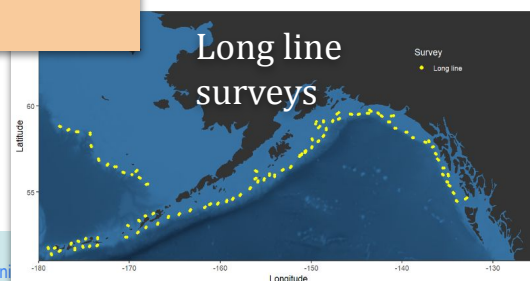
Climate Ready Fisheries - Historic, Current, and Future Fisheries States

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



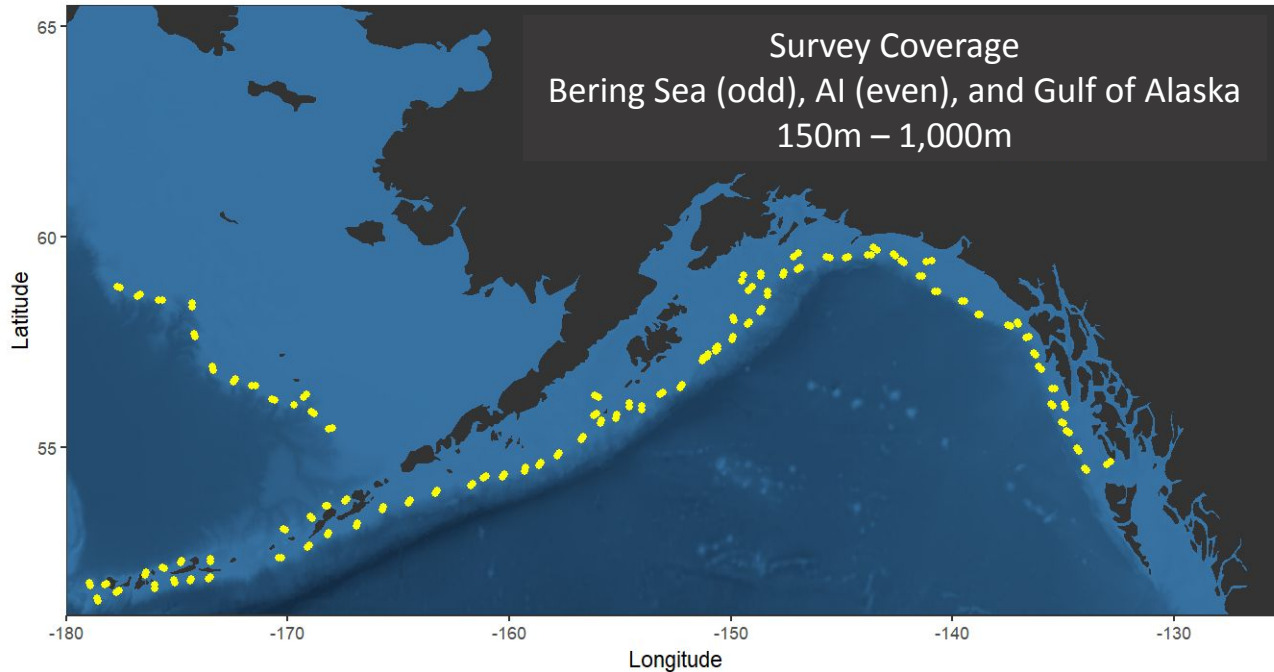
Roughey
Rockfish



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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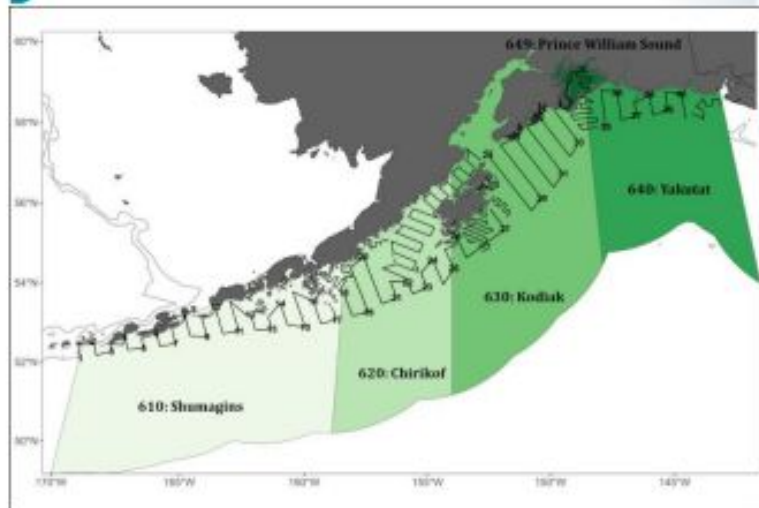


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History of GOA Acoustic-Trawl Summer Survey

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

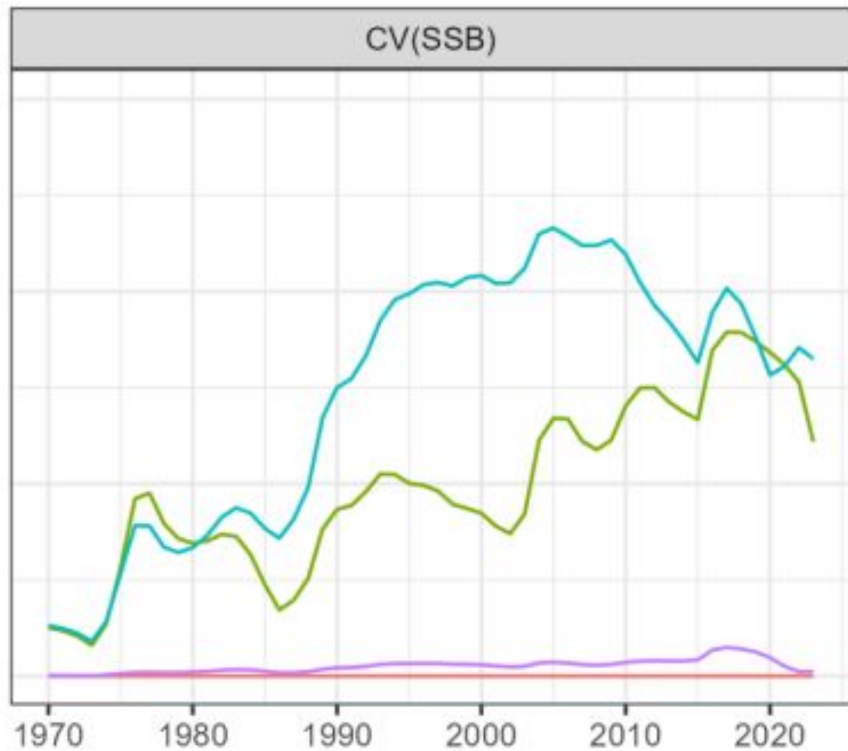
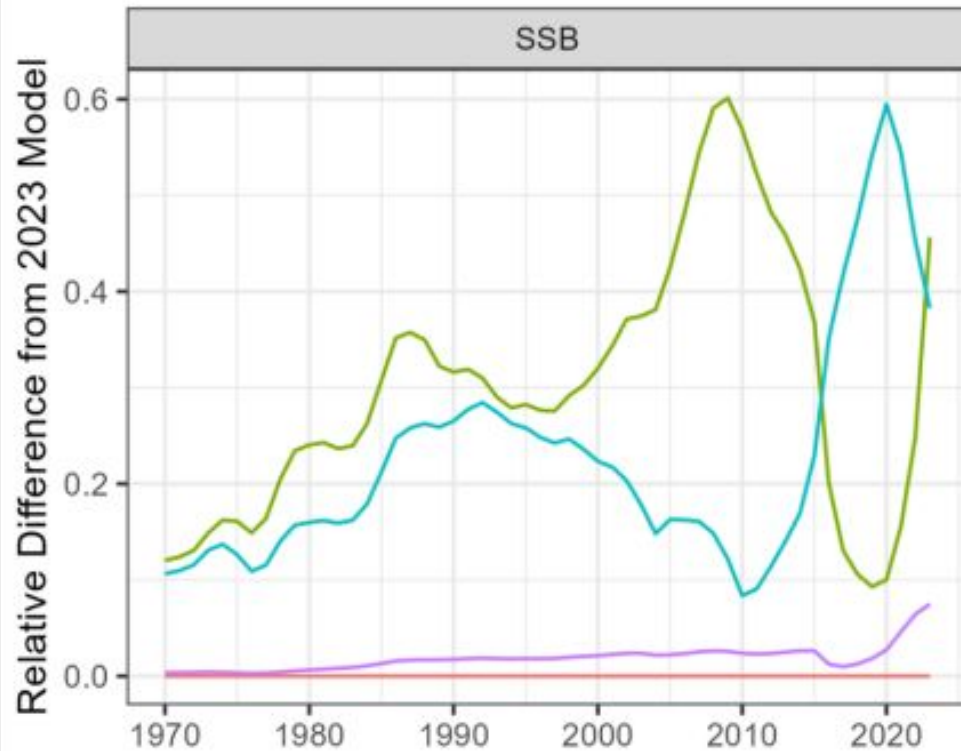
- The AFSC is facing resourcing challenges in being able to fully execute our survey and research priorities while also being able to address emerging priorities
 - Staffing/Expertise: A challenge across all of our survey teams
 - Vessel Time: We are often working with reduced survey duration/compressed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



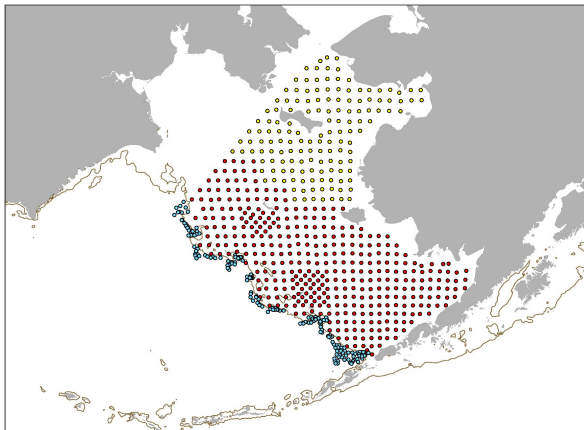


Analysis

— 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:

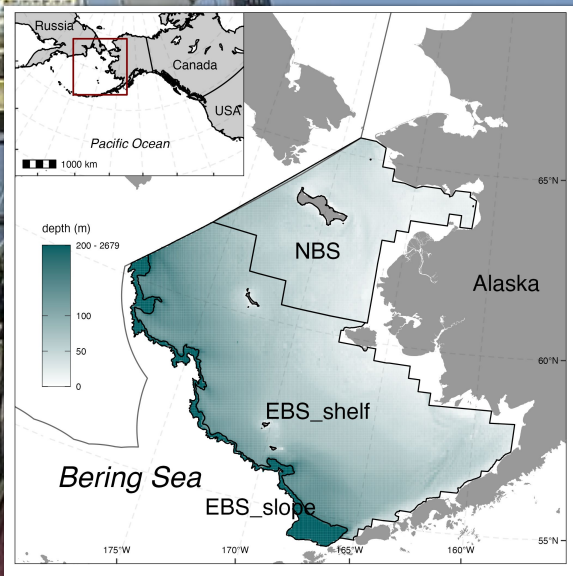
1. Sampling design – area, frequency, sampling density (started in 2023)
2. Calibration factors derived for slope/shelf surveys (2023-2025)
3. New bottom trawl gear designed and built (2025) - [2023 workshop]
4. New Bering Sea survey design proposed and agreed upon (2026)
5. 15 min vs 30 min catchability/selectivity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

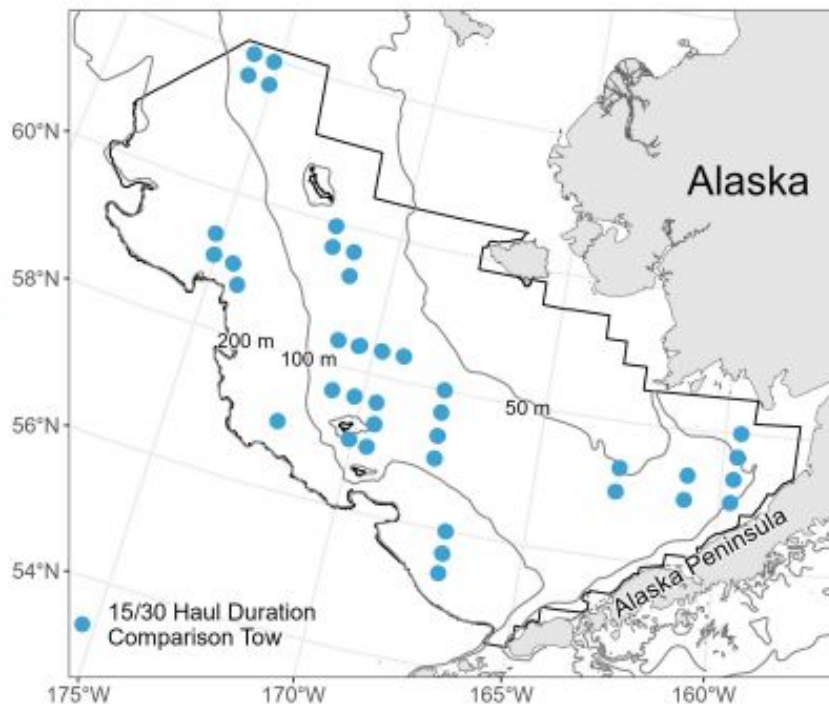
2024 update

- 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



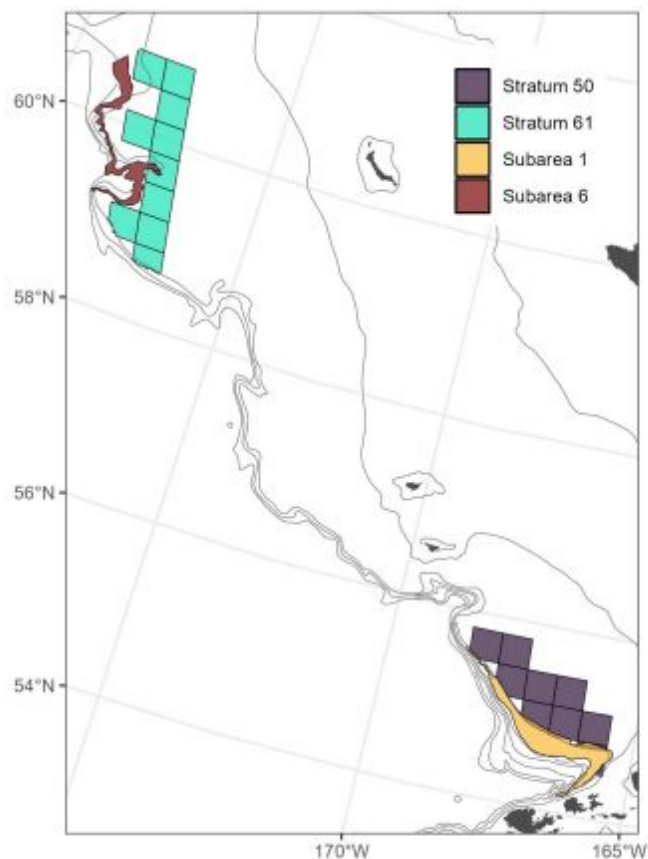
Survey Modernization Work: Tow duration

- 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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Thank You!



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