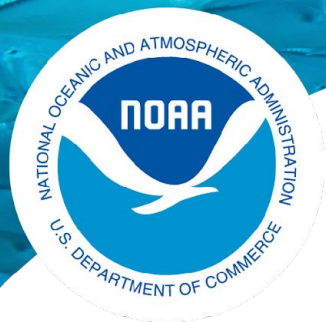




**NOAA
FISHERIES**



**Emily Markowitz, Nicole Charriere,
Sophia Wassermann, Sean Rohan, and
Duane Stevenson**

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NOAA Fisheries
Alaska Fisheries Science Center
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Results of the 2026 Eastern Bering Sea Bottom Trawl Survey

Groundfish Plan Team Meeting
September 10, 2026



NOAA FISHERIES

A Few of the Survey Team Members!



At-Sea Staffing Support

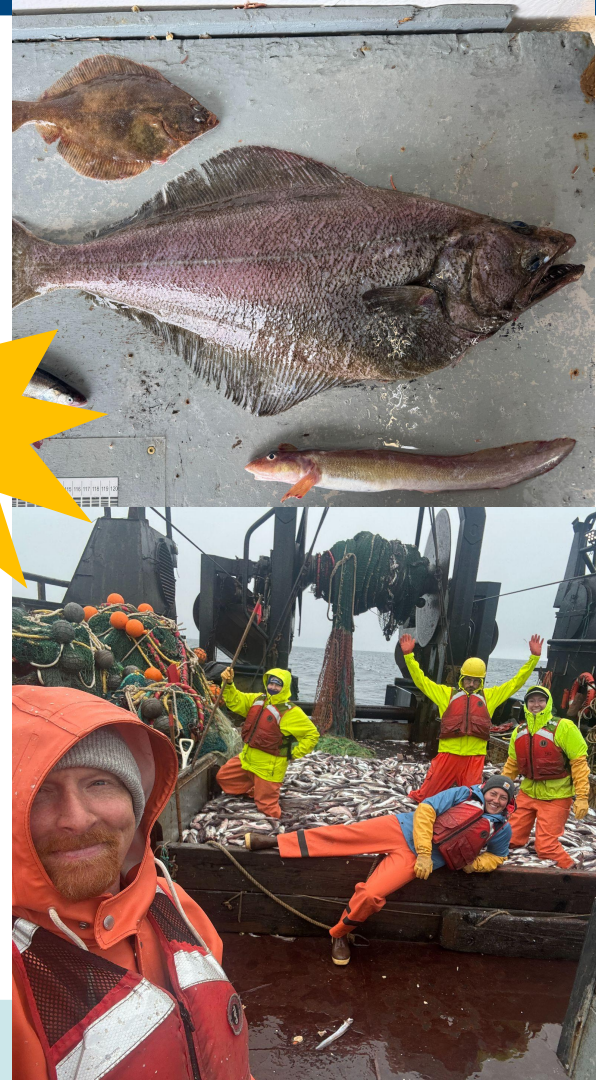
NOAA Fisheries Alaska Fisheries Science Center

Resource Assessment and Conservation Engineering Division (RACE)
Groundfish Assessment Program (GAP)
Shellfish Assessment Program (SAP)
Research Fishing Gear Program (Net Loft)
Fish Behavioral Ecology Program (Newport, OR)
Fisheries Monitoring and Analysis Division (FMA)
Resource Ecology and Fisheries Management Division (REFM)
Status of Stocks and Multispecies Assessment (SSMA)

Other Participants and Collaborators

Alaska Department of Fish and Game (ADF&G)
Alaska Regional Office (AKRO)
International Pacific Halibut Commission (IPHC)
NOAA Fisheries Northeast Fisheries Science Center (NEFSC)
NOAA National Systematics Laboratory (NSL)
NOAA Office of Management and Budget (OMB)
University of Alaska Fairbanks (UAF)
Western Washington University (WWU)

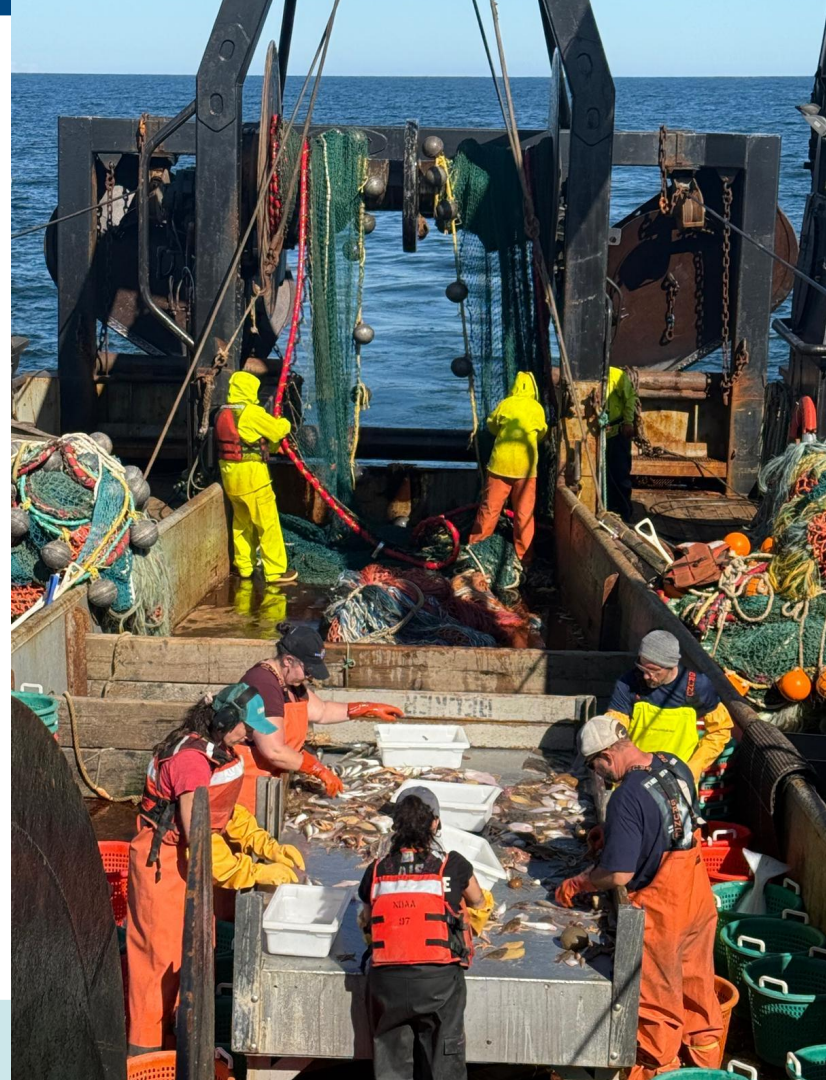
Thanks!



NOAA FISHERIES

Outline

- Survey overview
- Environmental data
- Fish biomass data
- Additional research



Survey Charter Vessels



FV Alaska Knight

2010 - present

16th year



FV Northwest Explorer

2023 - present

4th year

2026 Bering Sea Survey Season

Eastern Bering Sea (EBS):

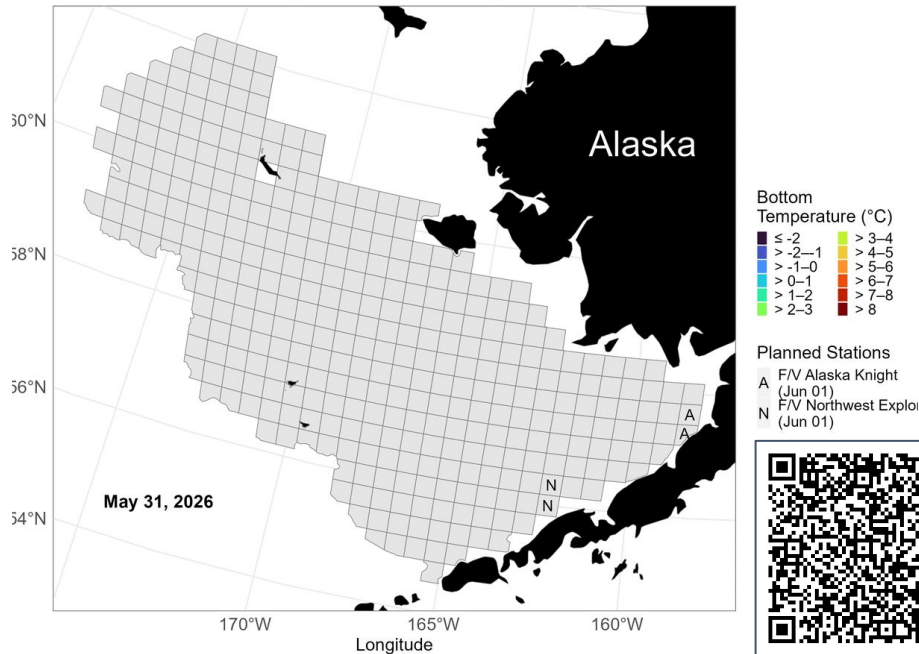
- 44th year of survey
1982-2026
- May 31 - August 4, 2026
- 350/350 stations sampled

Northern Bering Sea (NBS):

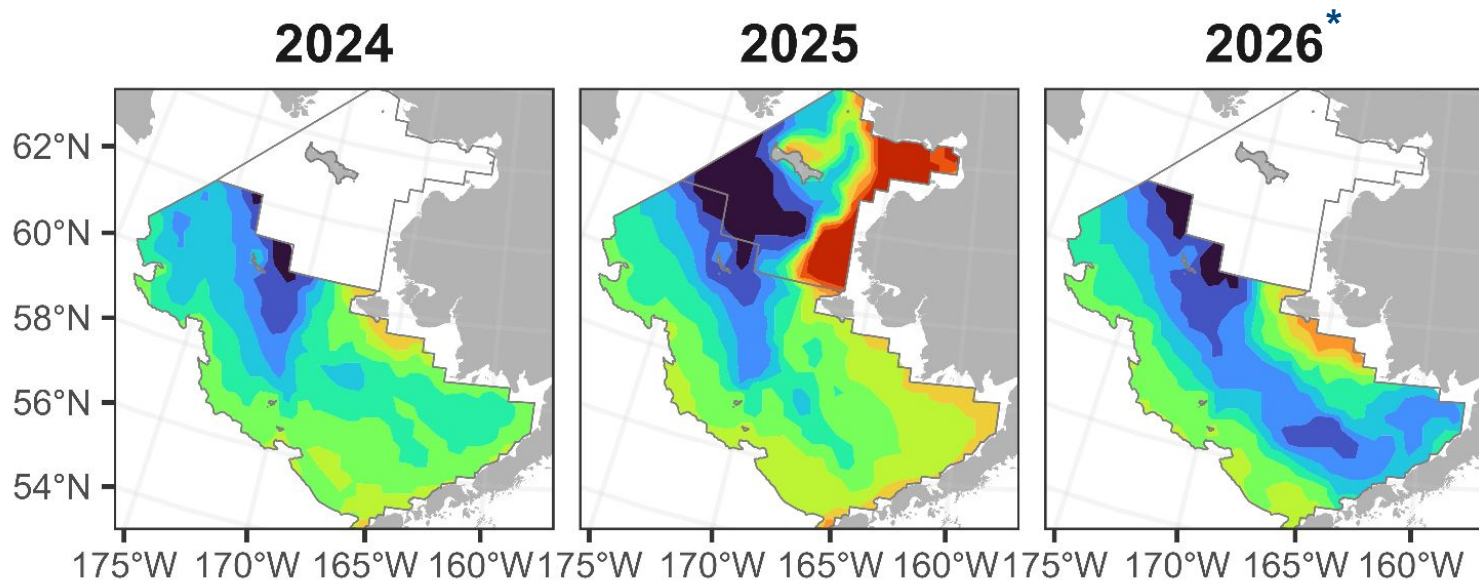
- 7 years
2010, 2017, 2019, 2021, 2022,
2023, and 2025
- Not conducted in 2026

2026 Bottom Temperature (°C)

NOAA Fisheries Eastern Bering Sea Bottom Trawl Survey



Bottom Temperatures

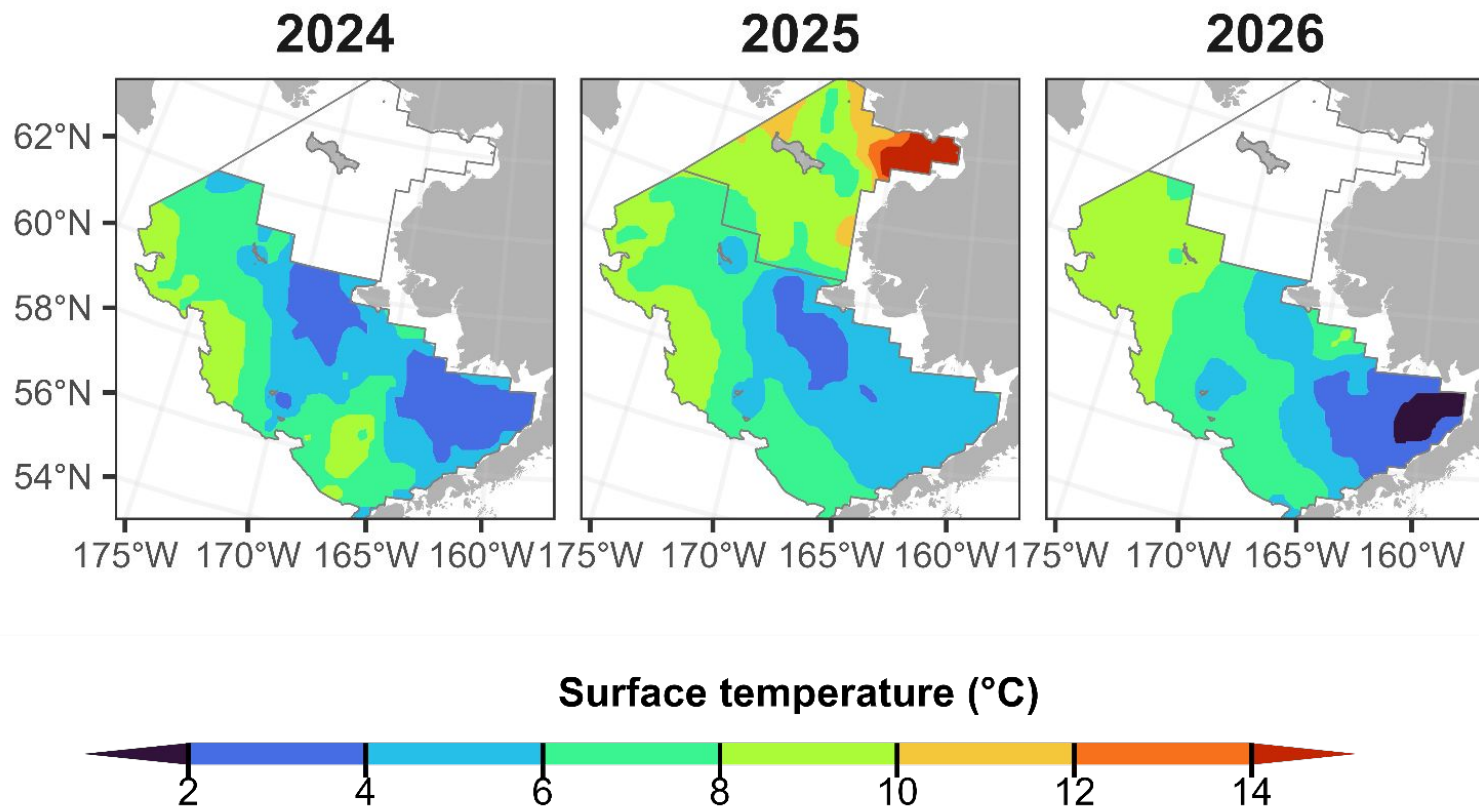


***2026: First time since 2012 that 2°C cold pool extended into Bristol Bay**

Bottom temperature (°C)

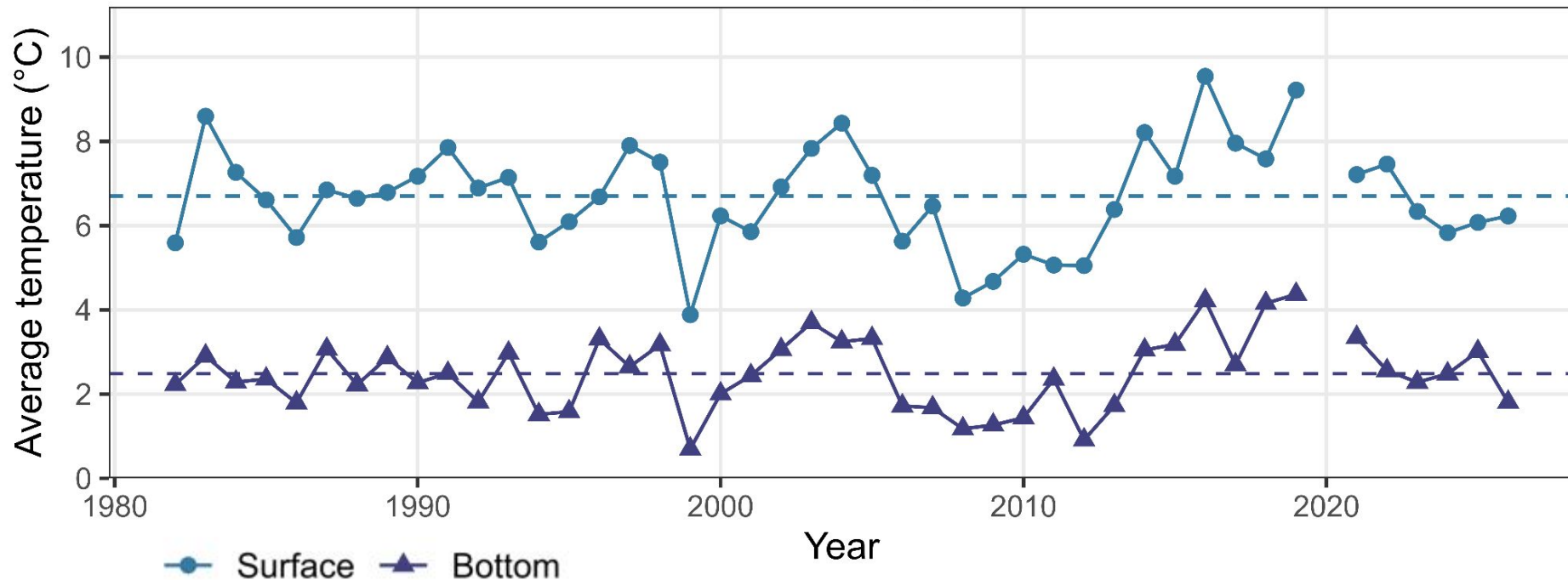


Surface Temperatures



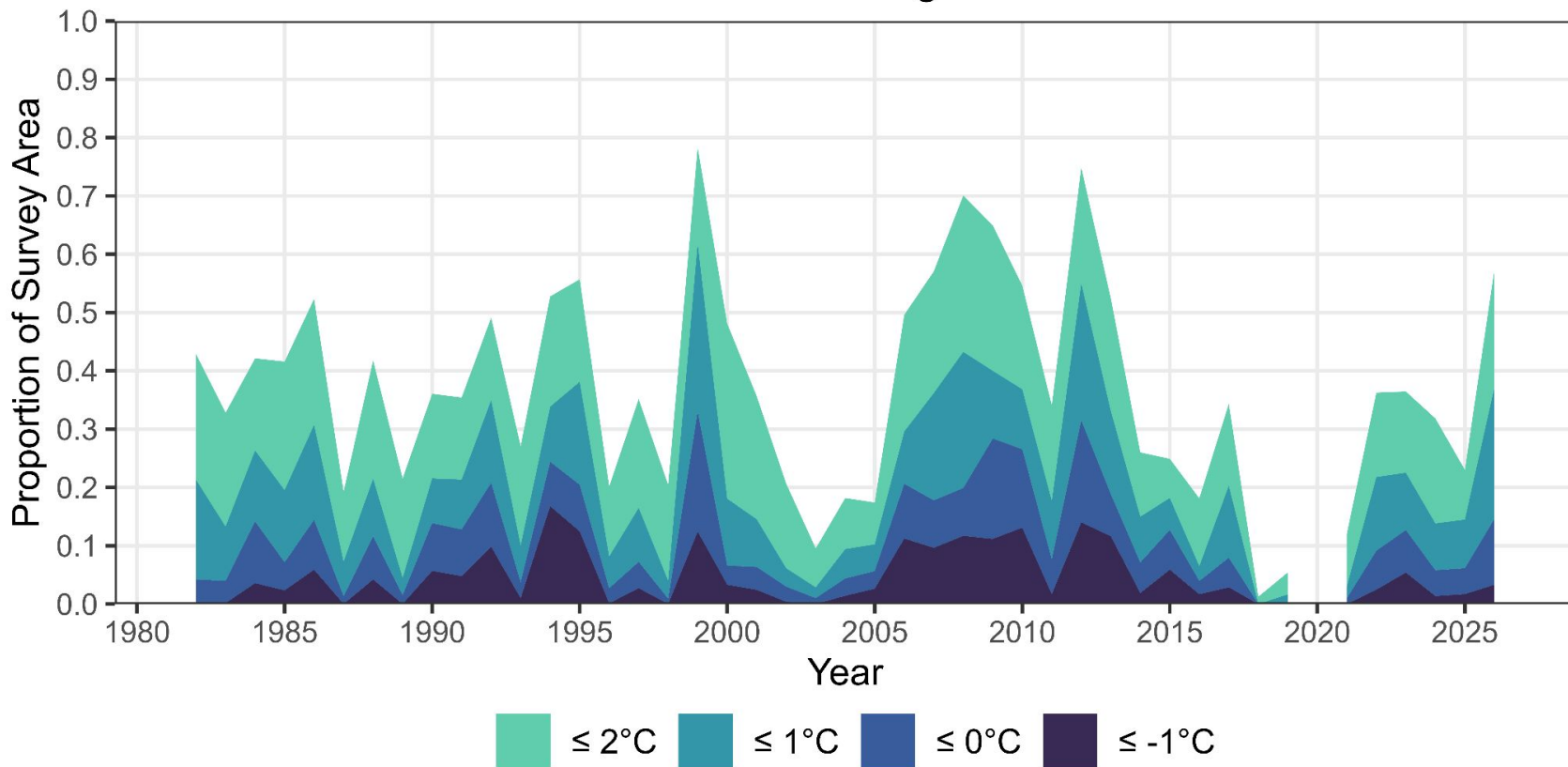
Annual Mean Temperature

Eastern Bering Sea

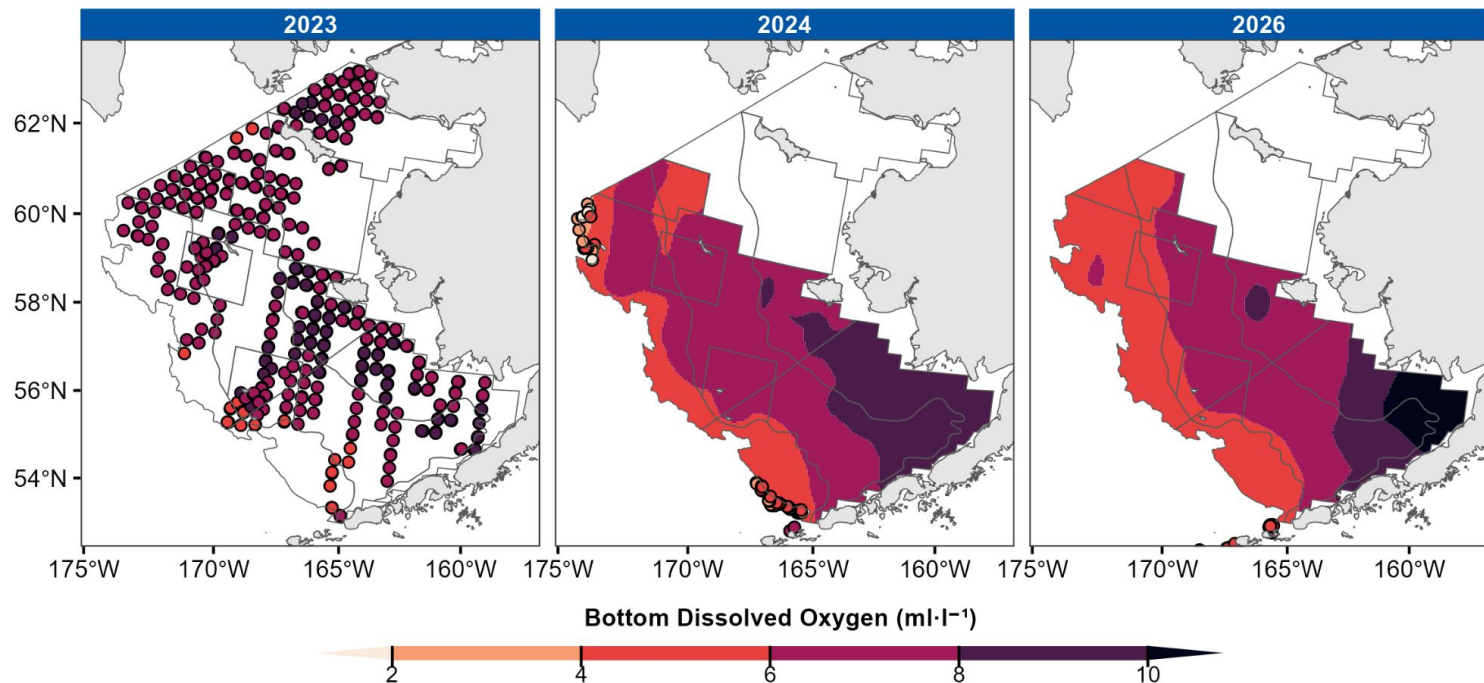


Cold Pool Area

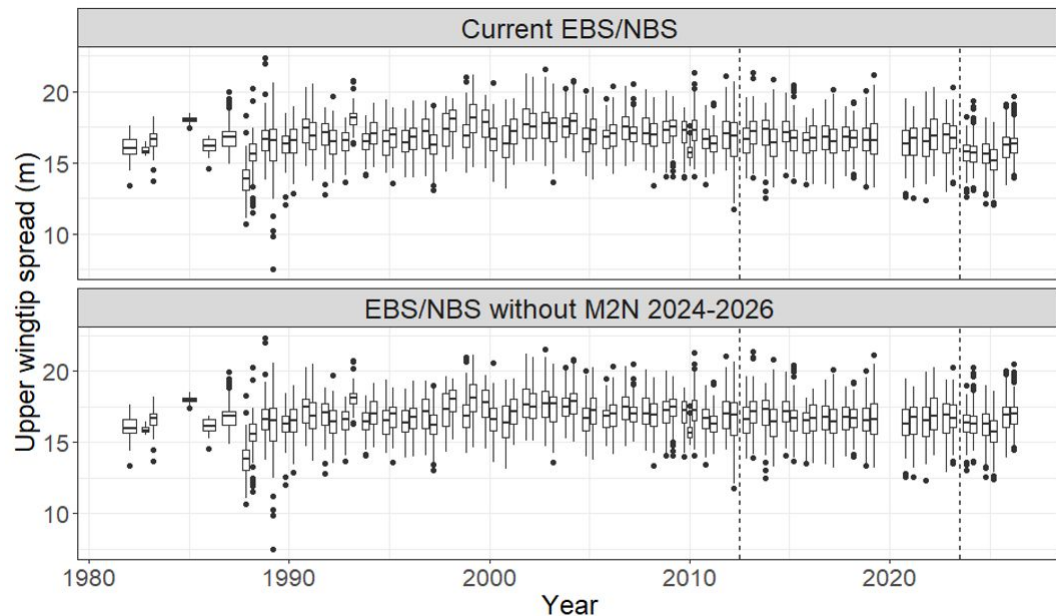
Eastern Bering Sea



CTD and Dissolved Oxygen data collected in 2026



Discontinuation of Marport-Netmind Correction



- GAP transitioned from Netmind to Marport net spread sensors in 2009-2012
- Marport-Netmind correction initiated in 2013 to standardize new sensors to historical data
- GAP transitioned to new gen digital Marport sensors in 2024
- 3 years of field data and recent field experiments show that New Marport sensors are more consistent with historical Netmind data
- 2024+ survey effort is now calculated without M2N correction
- Previously released biomass indices for 2024 and 2025 have been adjusted 3-4% down

*Details of Marport-Netmind correction in Lauth and Kotwicki, 2014

2026 Core Sample Collections

Common name	Lengths
Alaska plaice	9,129
Alaska skate	2,804
Arrowtooth flounder	5,097
Bering flounder	1,594
Flathead sole	12,473
Kamchatka flounder	1,005
Longhead dab	1,607
Northern rock sole	19,388
Pacific cod	10,351
Pacific halibut	2,520
Plain sculpin	2,771
Walleye pollock	31,296
Yellowfin sole	15,676
Other taxa* (2026: 28)	4,350
TOTAL	120,061

**All species with more than 1,000 count lengths are shown.*

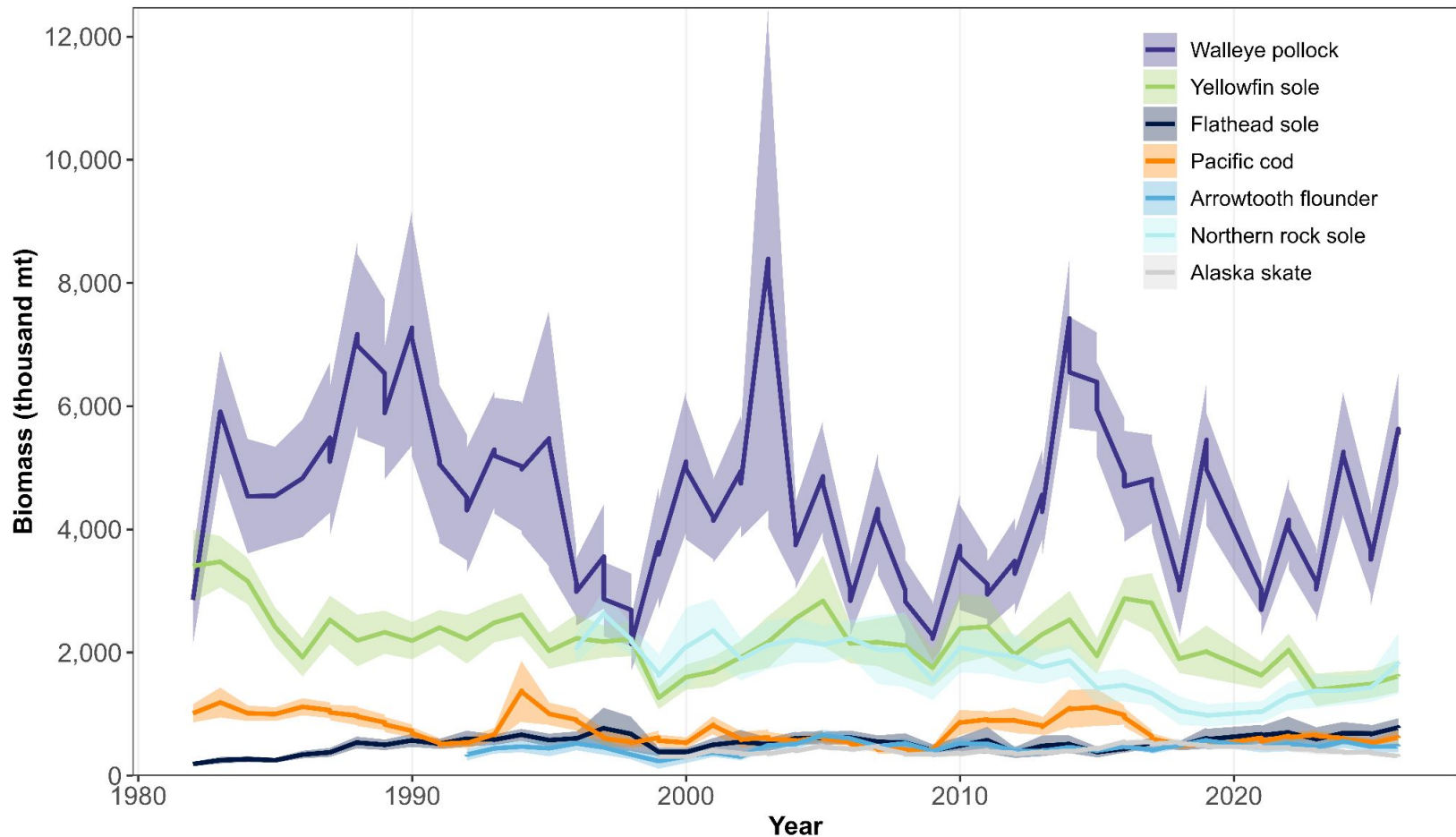
Common name	Otoliths
Alaska plaice	370
Arrowtooth flounder	440
Flathead sole	647
Greenland turbot	43
Kamchatka flounder	594
Northern rock sole	833
Pacific cod	1,403
Walleye pollock	1,639
Yellowfin sole	563
TOTAL*	6,532

**These values represent the number of otoliths collected by GAP and do not include the number of Pacific halibut otoliths collected by IPHC secretariats.*

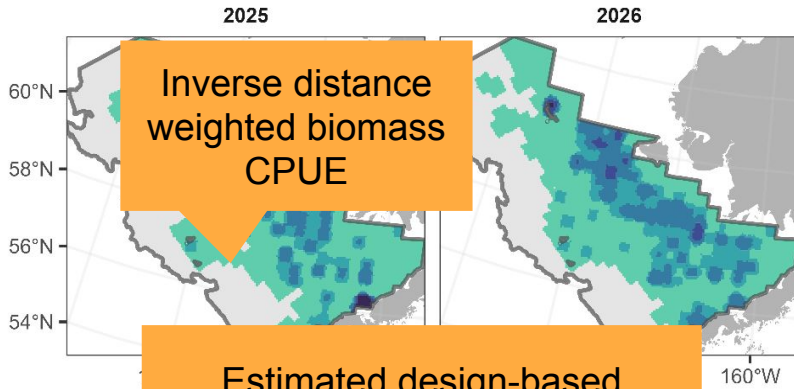
Common name	Stomachs
Arctic cod	17
Arrowtooth flounder	372
Flathead sole	711
Kamchatka flounder	94
Pacific cod	860
Pacific halibut*	290
Saffron cod	34
Walleye pollock	1,291
TOTAL	3,669

**Stomachs were only collected from IPHC sampled fish aboard the F/V Alaska Knight.*

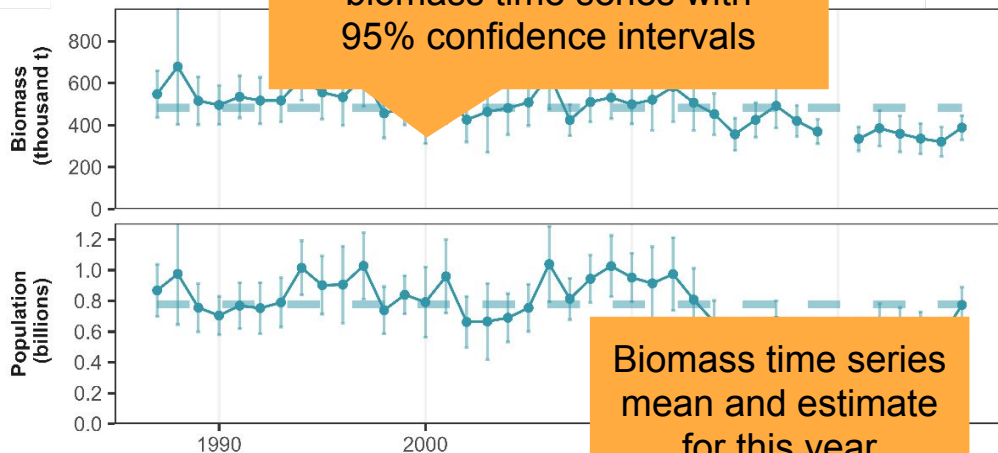
Long-Term Observed Trends



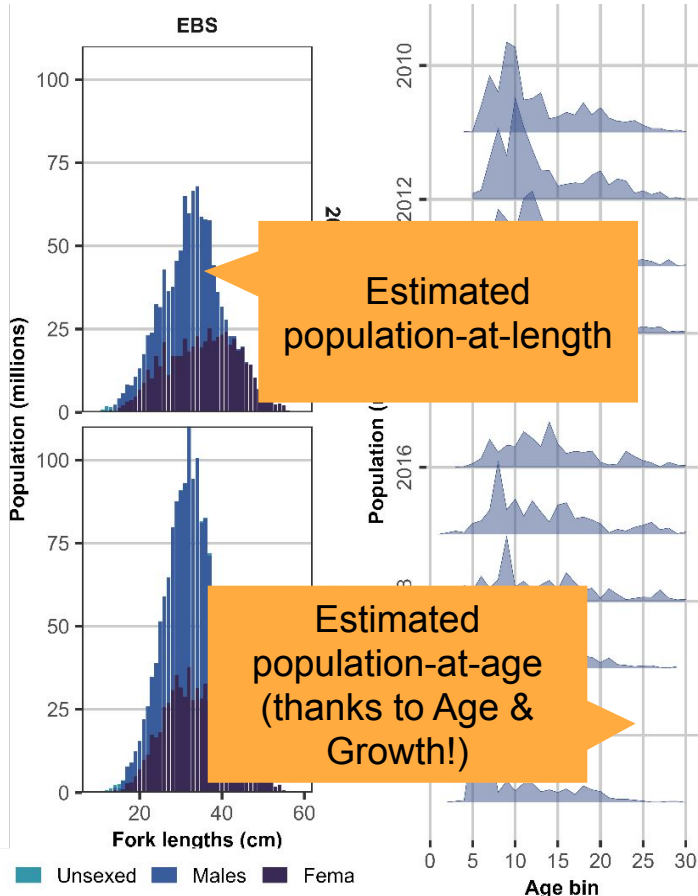
A Species of Interest



Estimated design-based biomass time series with 95% confidence intervals



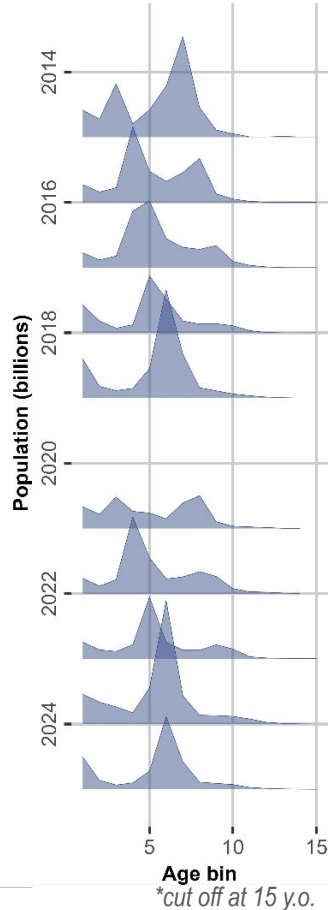
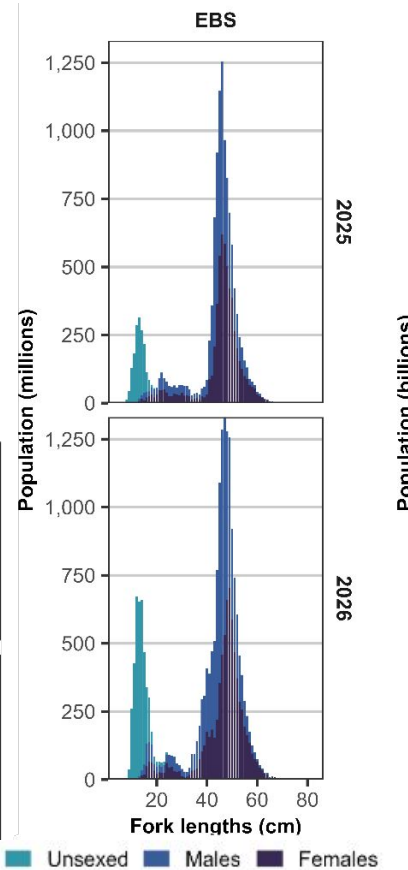
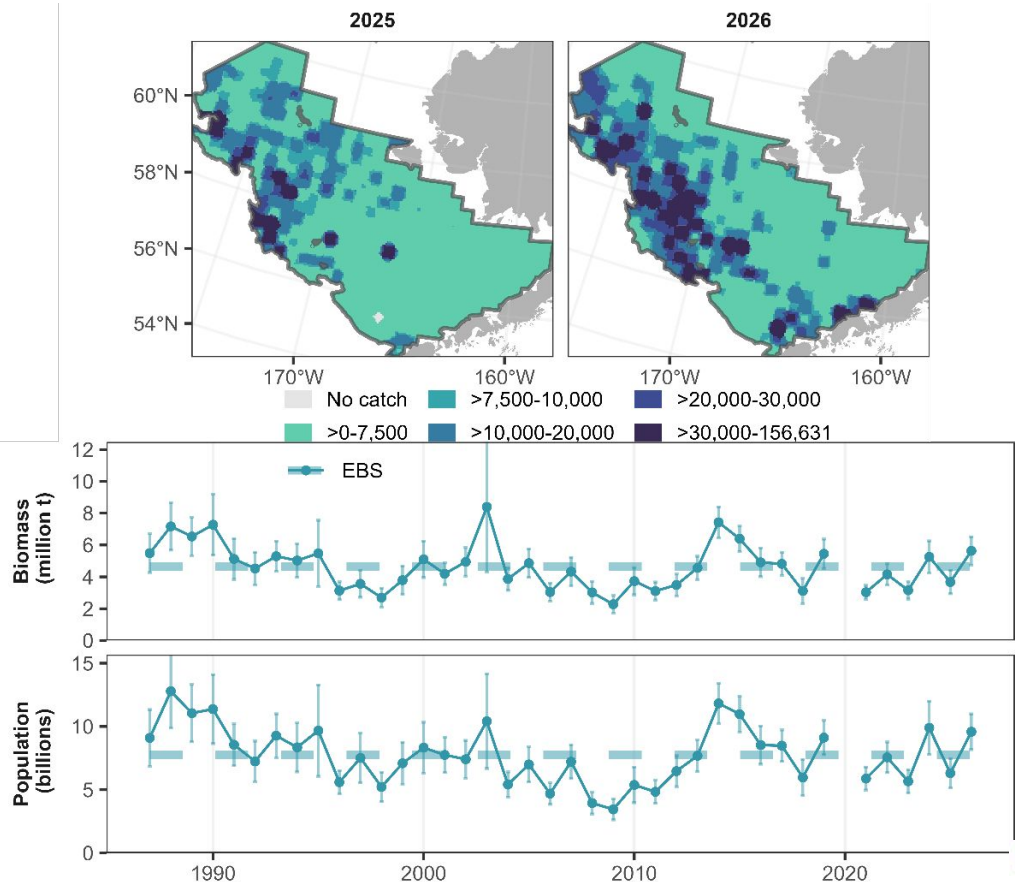
Biomass time series mean and estimate for this year



Estimated population-at-age (thanks to Age & Growth!)

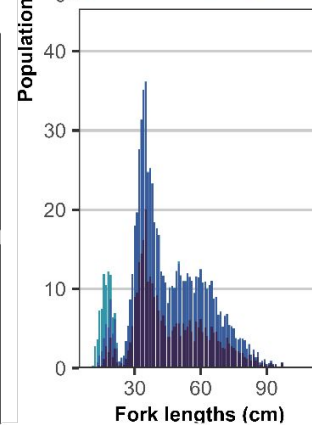
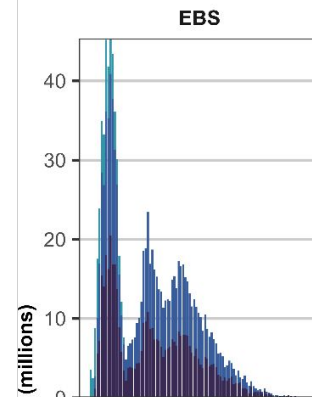
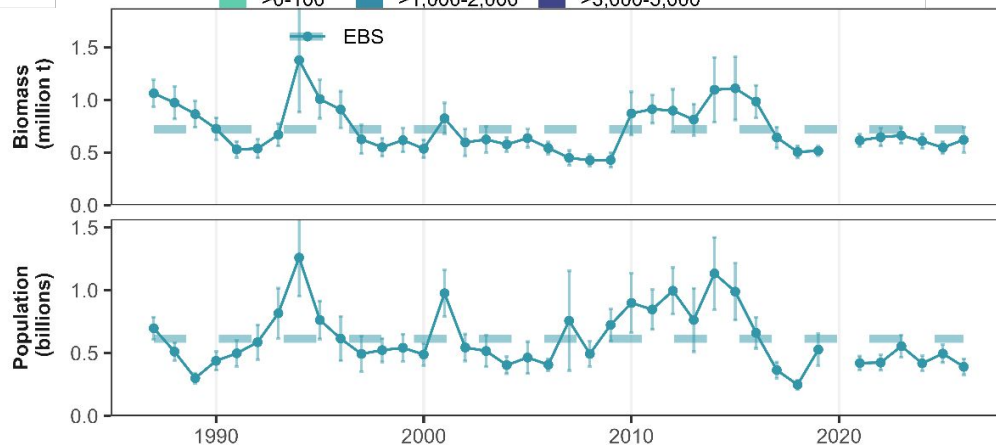
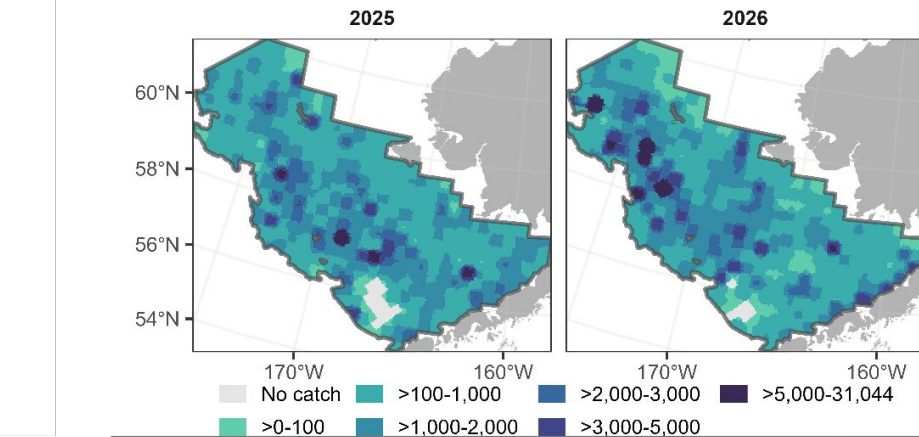
EBS Biomass Mean: X.X M | 2026: XX M (+XX%) (-XX%)

Walleye Pollock



EBS Biomass Mean: 4.6 million t | 2026: 5.6 million t (+53%)

Pacific Cod



Unsexed Males Females

2025

2026

Population (millions)

Population (millions)

2014

2016

2018

2020

2022

2024

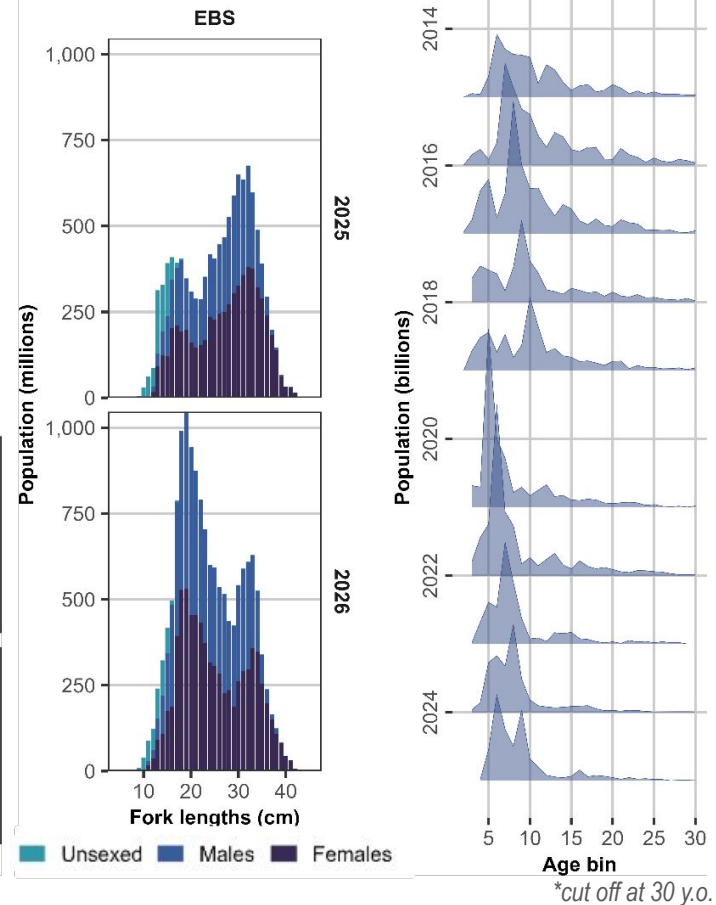
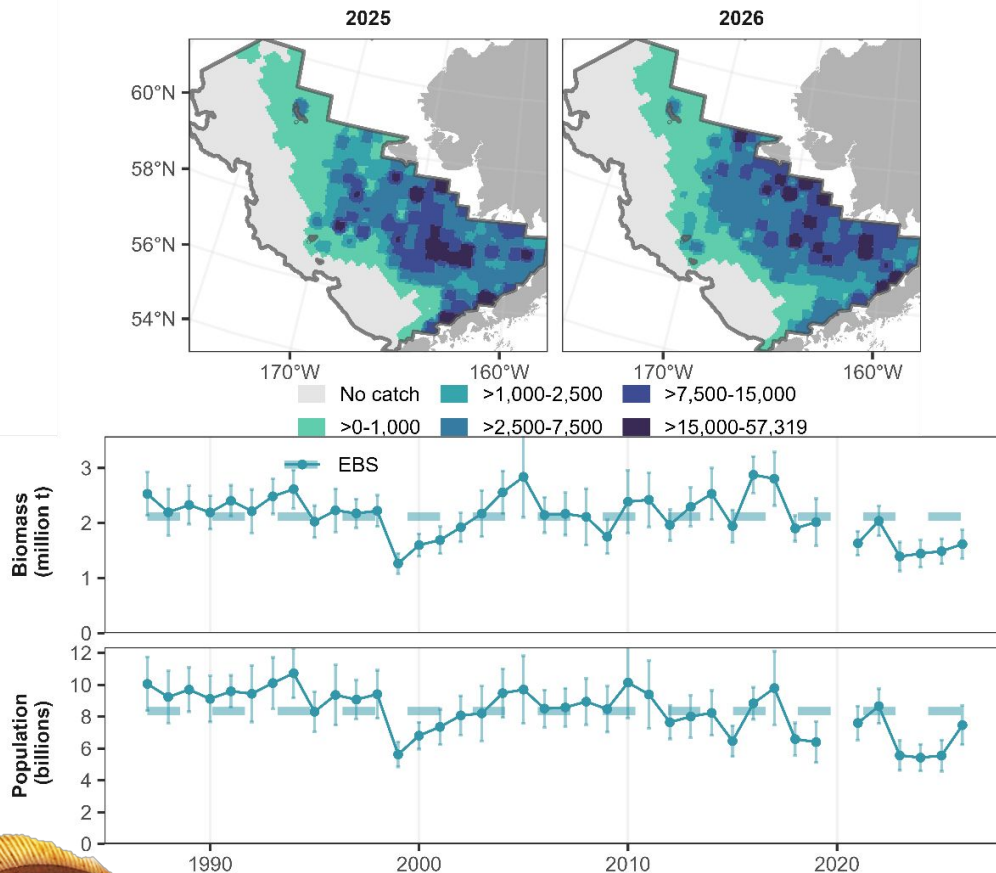
Age bin

*cut off at 10 y.o.

EBS Biomass Mean: 0.7 million t | 2026: 0.622 million t (+13%)

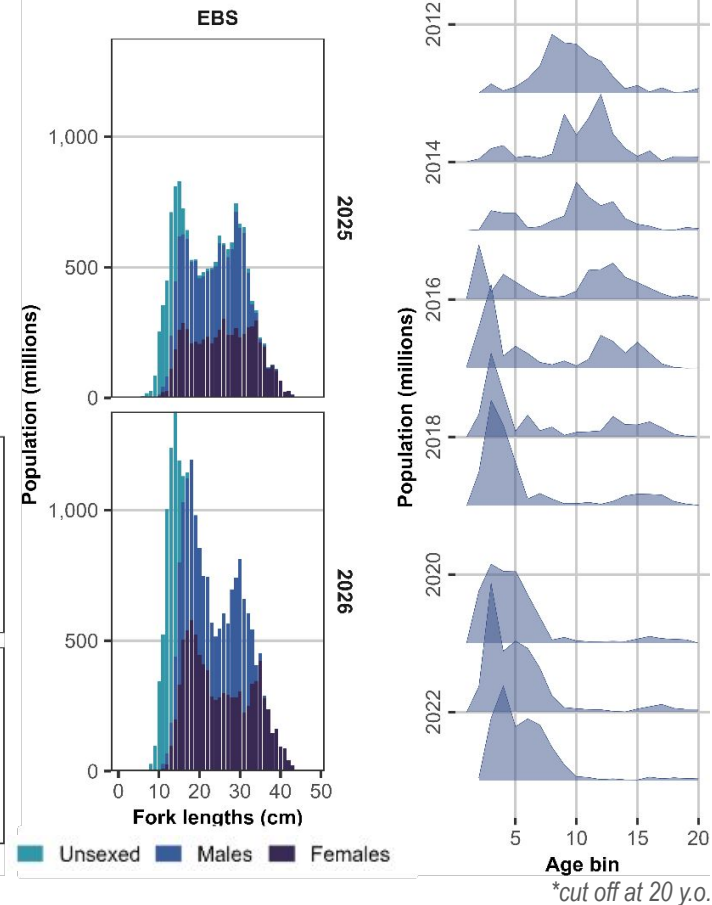
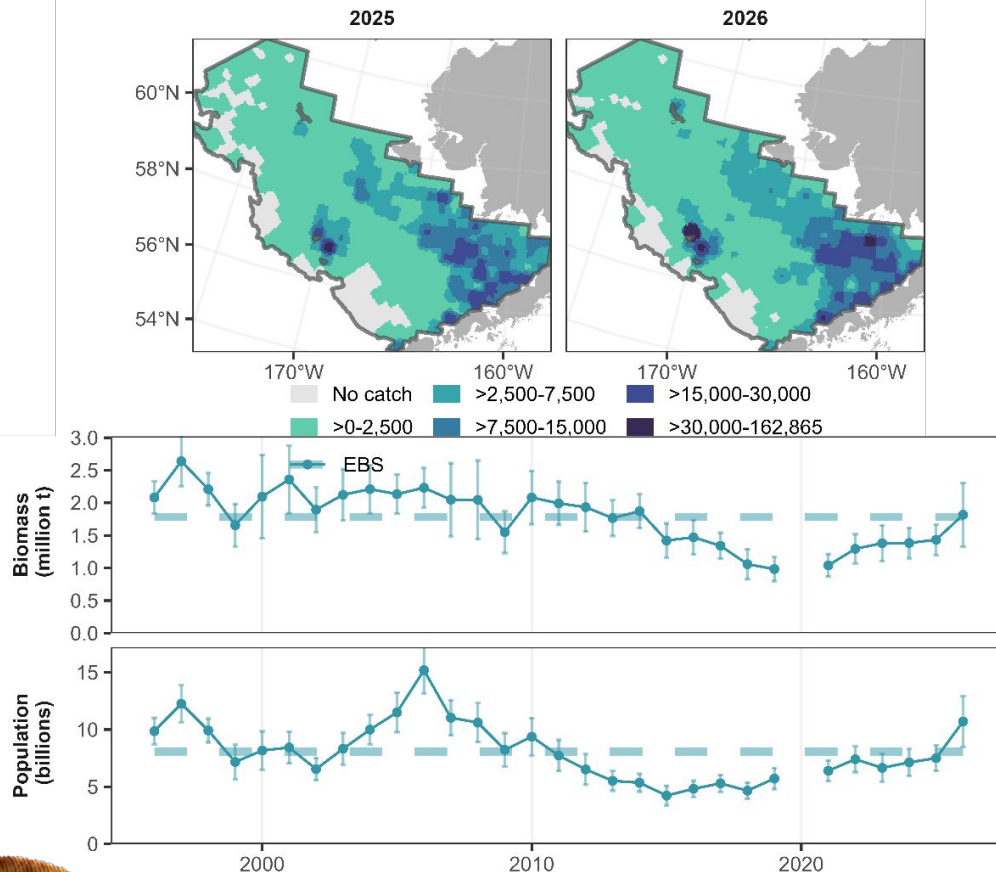


Yellowfin Sole



EBS Biomass Mean: 2.1 million t | 2026: 1.6 million t (+9%)

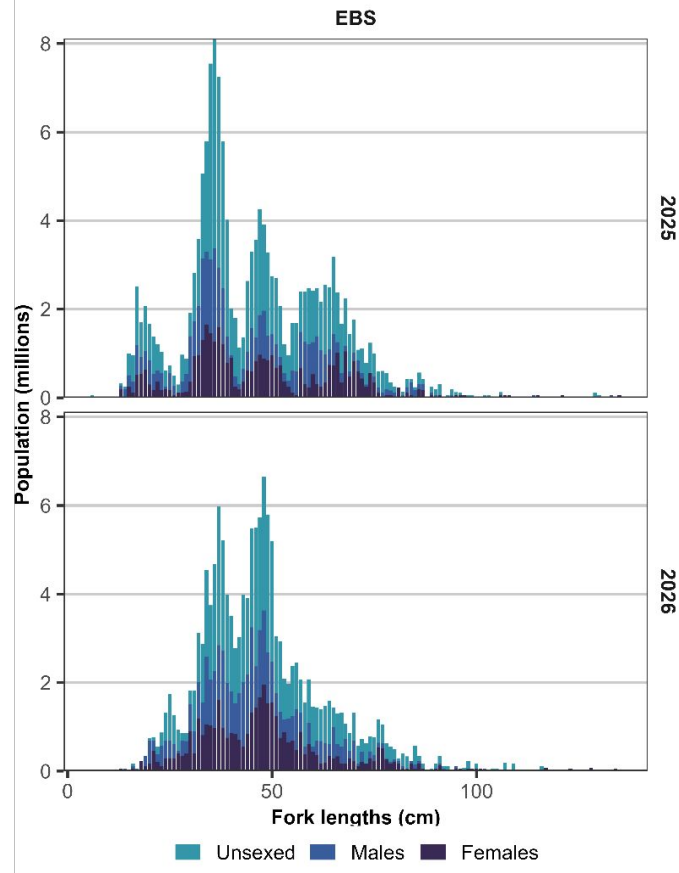
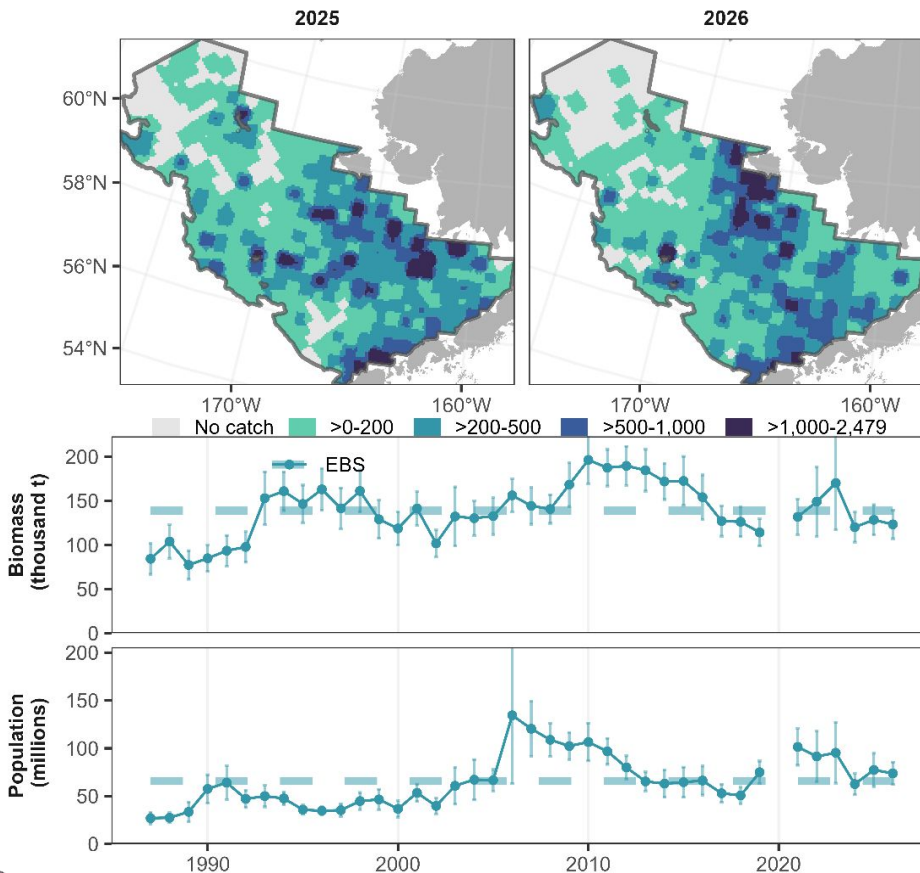
Northern Rock Sole



EBS Biomass Mean: 1.8 million t | 2026: 1.8 million t (+27%)

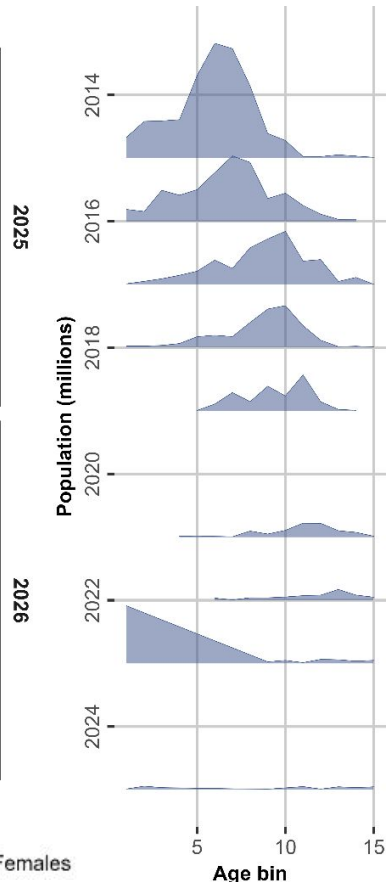
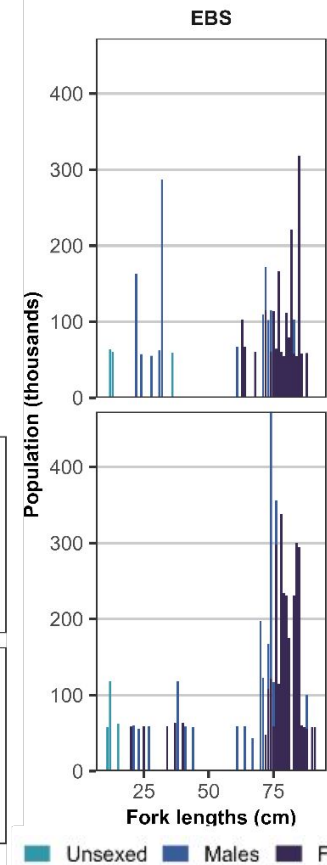
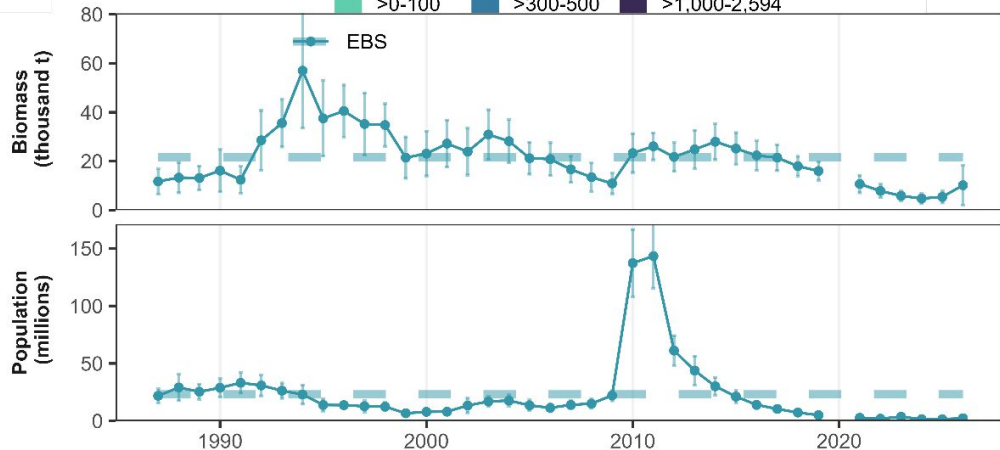
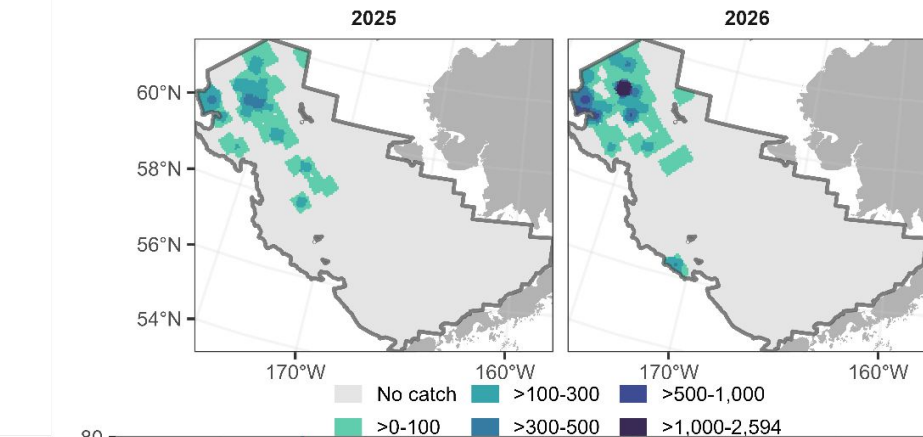
*cut off at 20 y.o.

Pacific Halibut



EBS Biomass Mean: 138.8 Kt | 2026: 123.3 Kt (-4%)

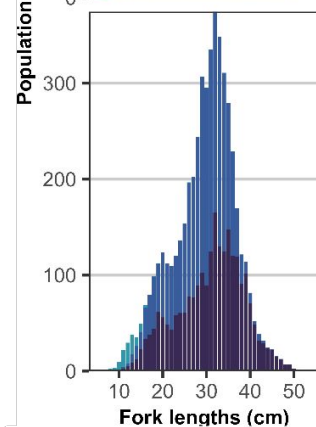
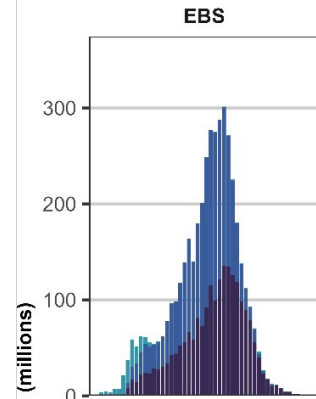
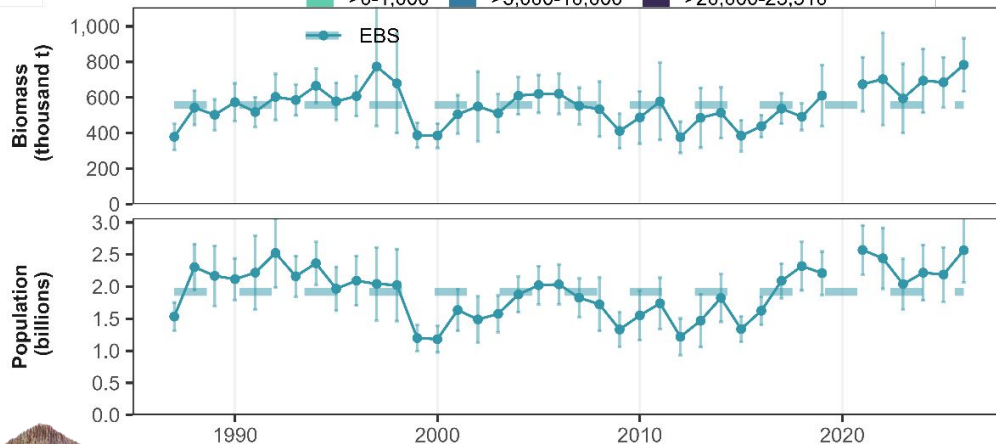
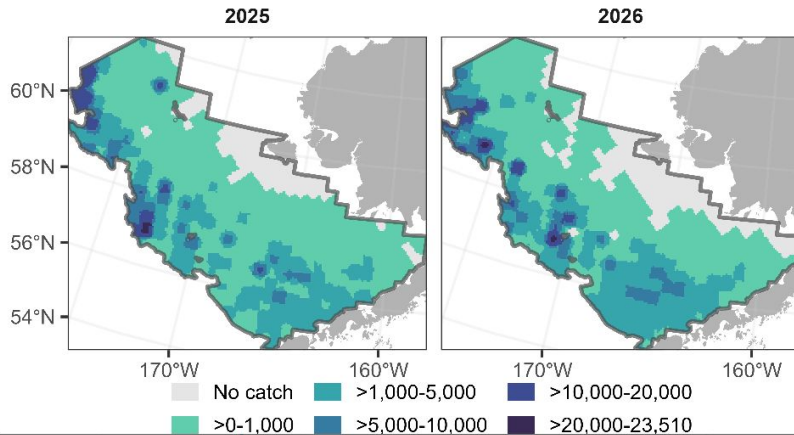
Greenland Turbot



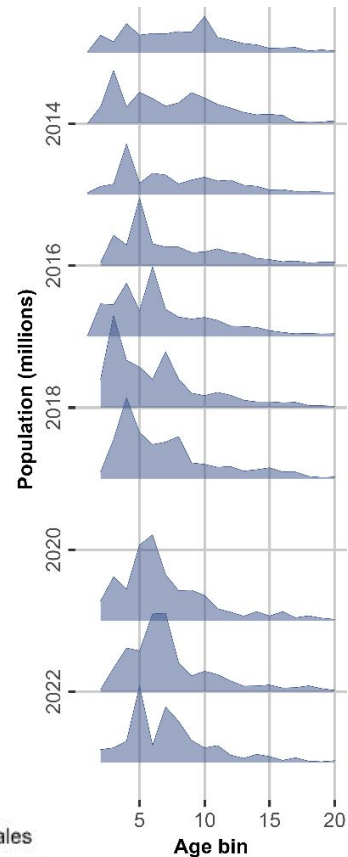
EBS Biomass Mean: 21.7 Kt | 2026: 10.2 Kt (+88%; 100 → 164 individuals)

*cut off at 15 y.o.

Flathead Sole

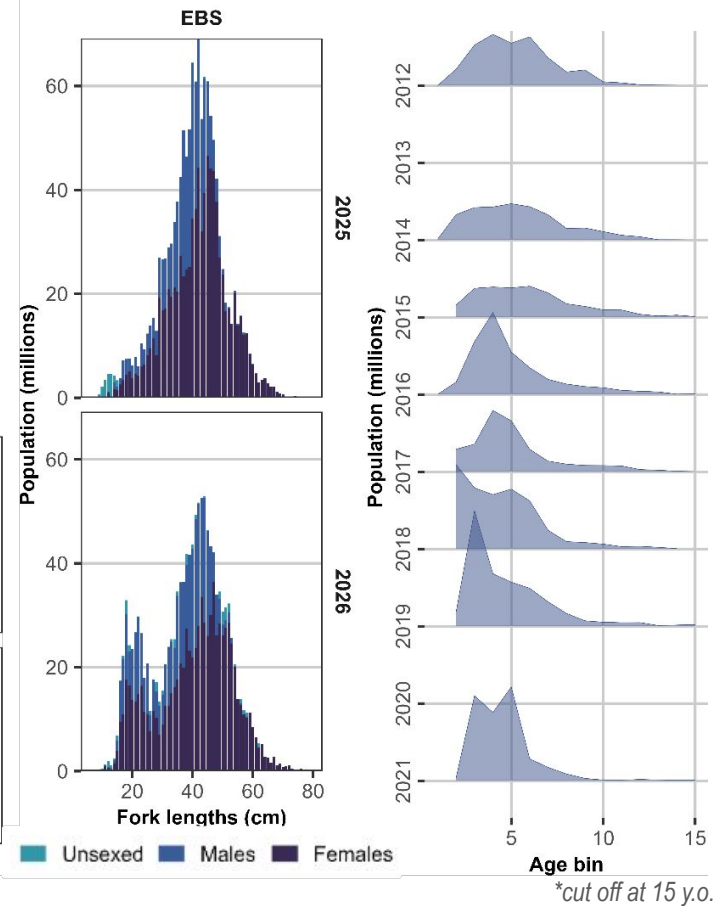
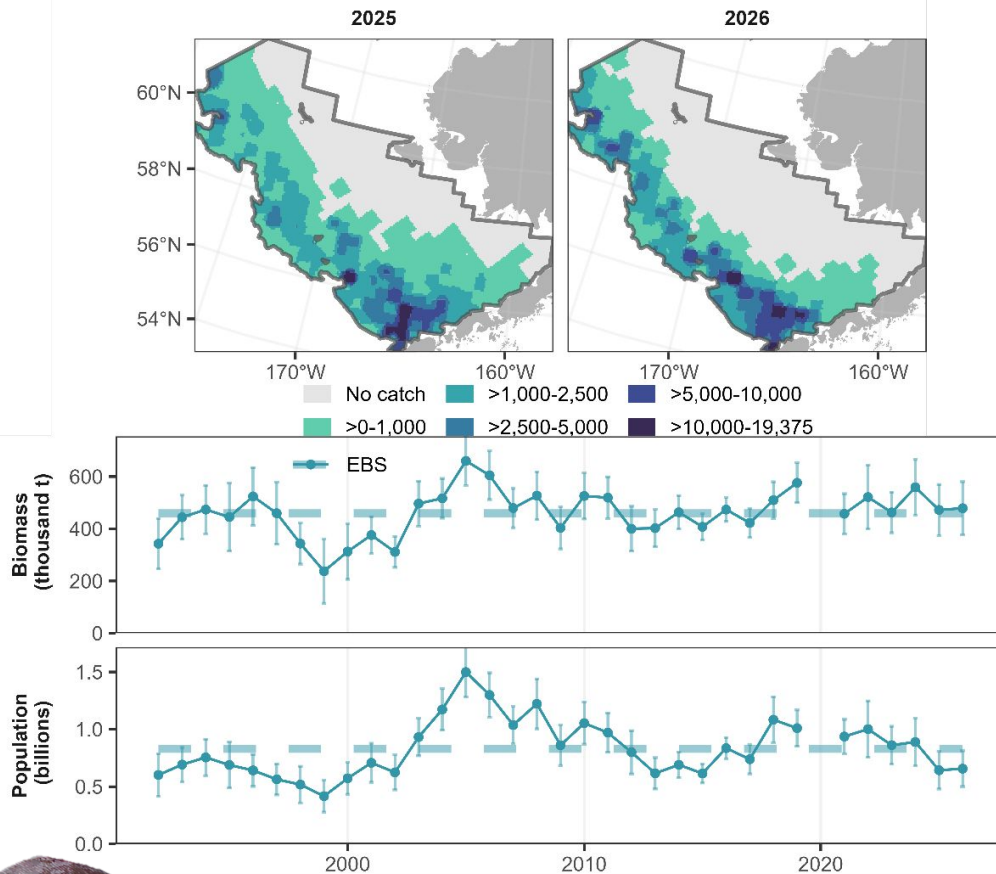


Unsexed Males Females



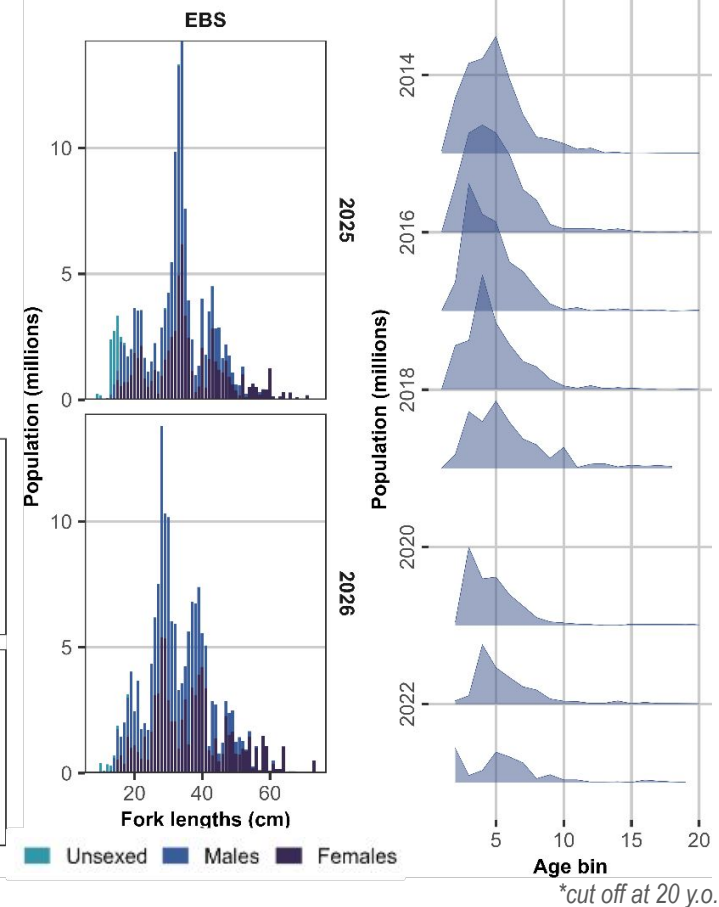
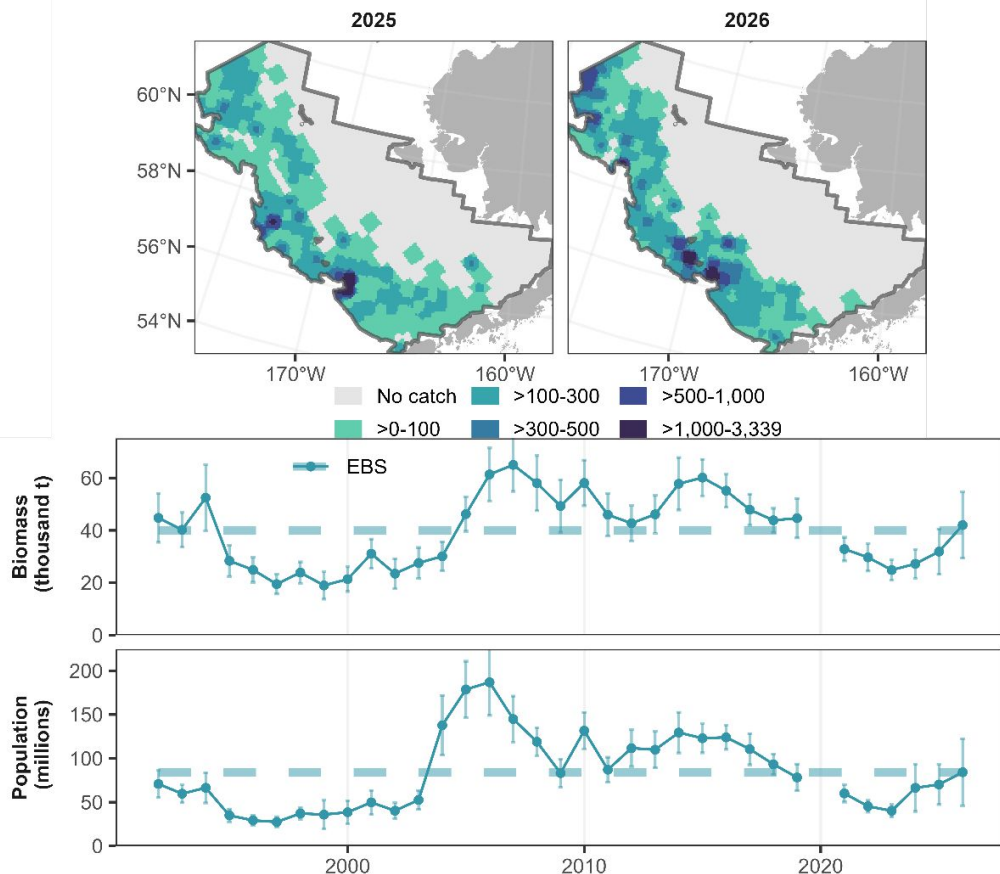
EBS Biomass Mean: 557.7 Kt | 2026: 783.7 Kt (+14%)

Arrowtooth Flounder



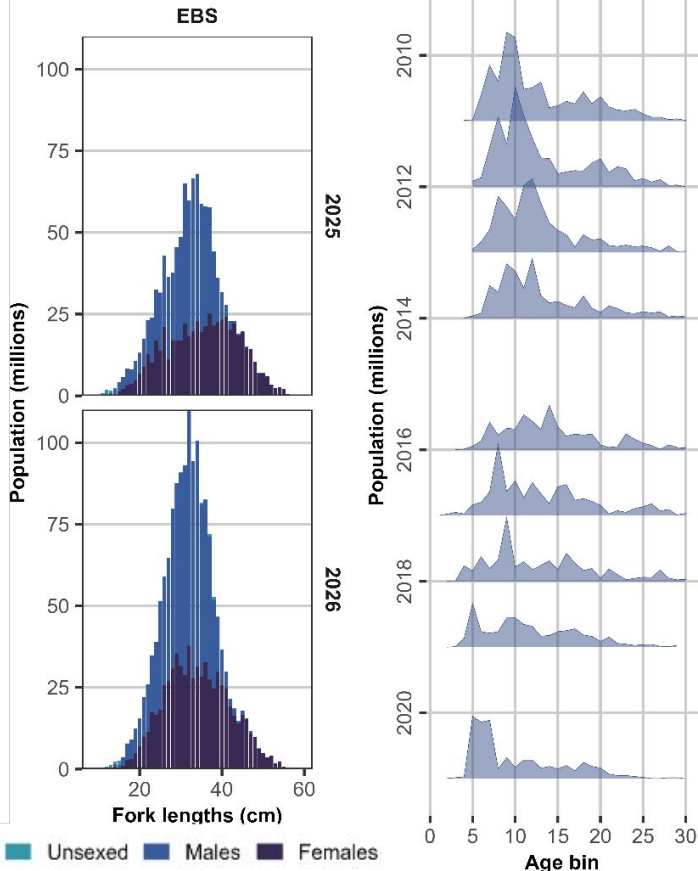
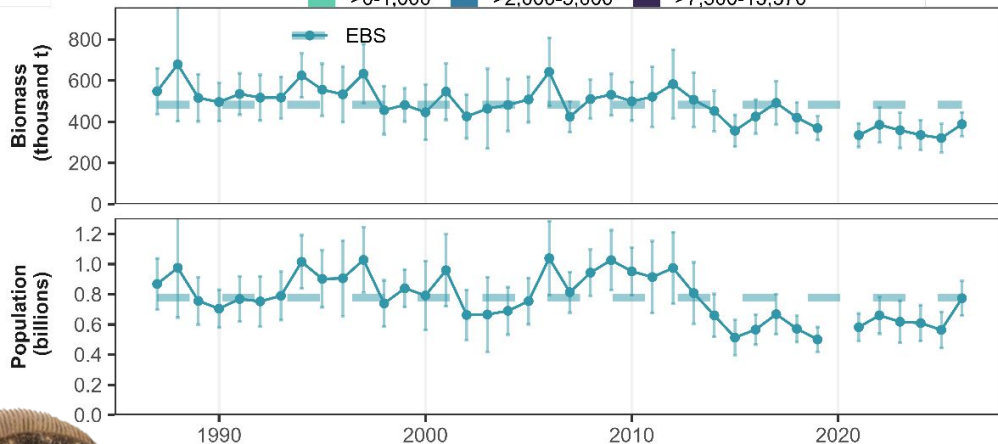
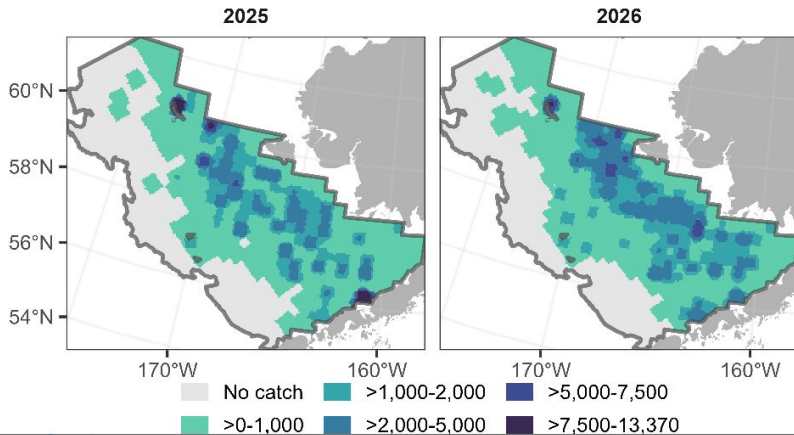
EBS Biomass Mean: 459.2 Kt | 2026: 478.7 Kt (+1%)

Kamchatka Flounder



EBS Biomass Mean: 39.9 Kt | 2026: 42.0 Kt (+32%)

Alaska Plaice

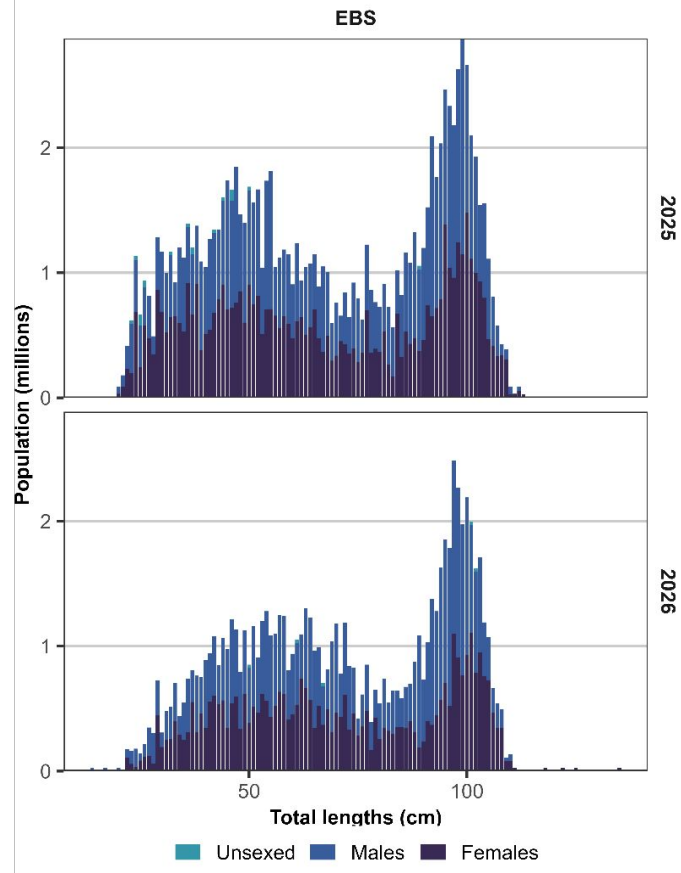
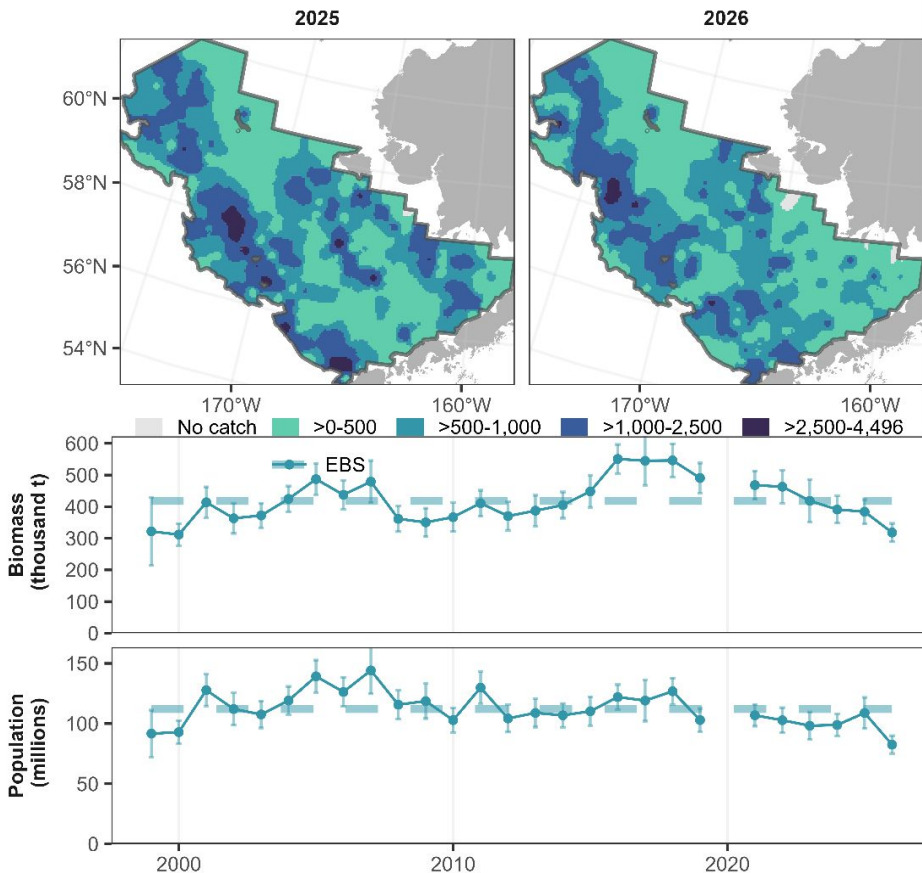


*cut off at 30 y.o.

EBS Biomass Mean: 482.7 Kt | 2026: 388.4 Kt (+21%)

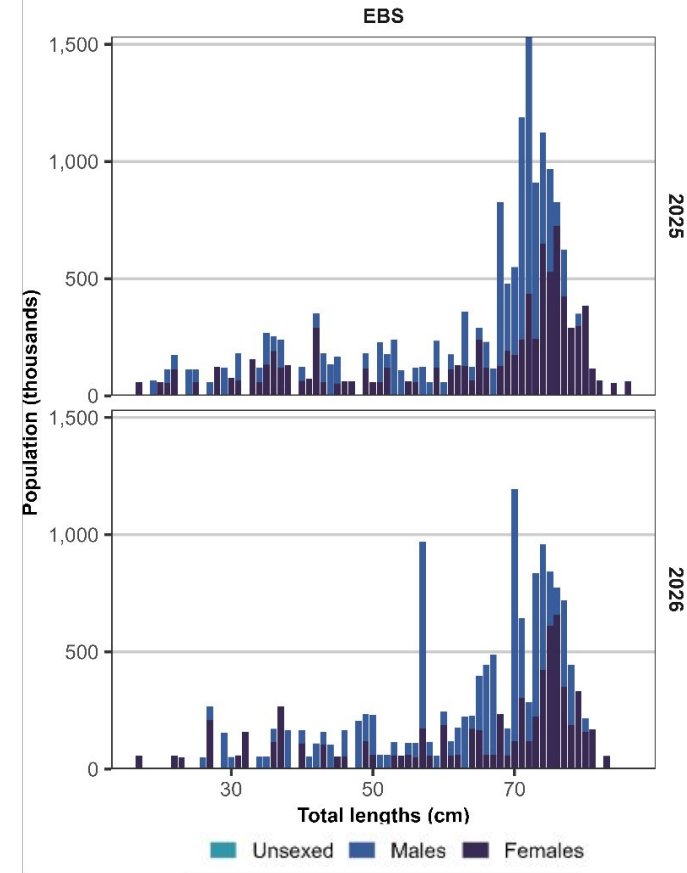
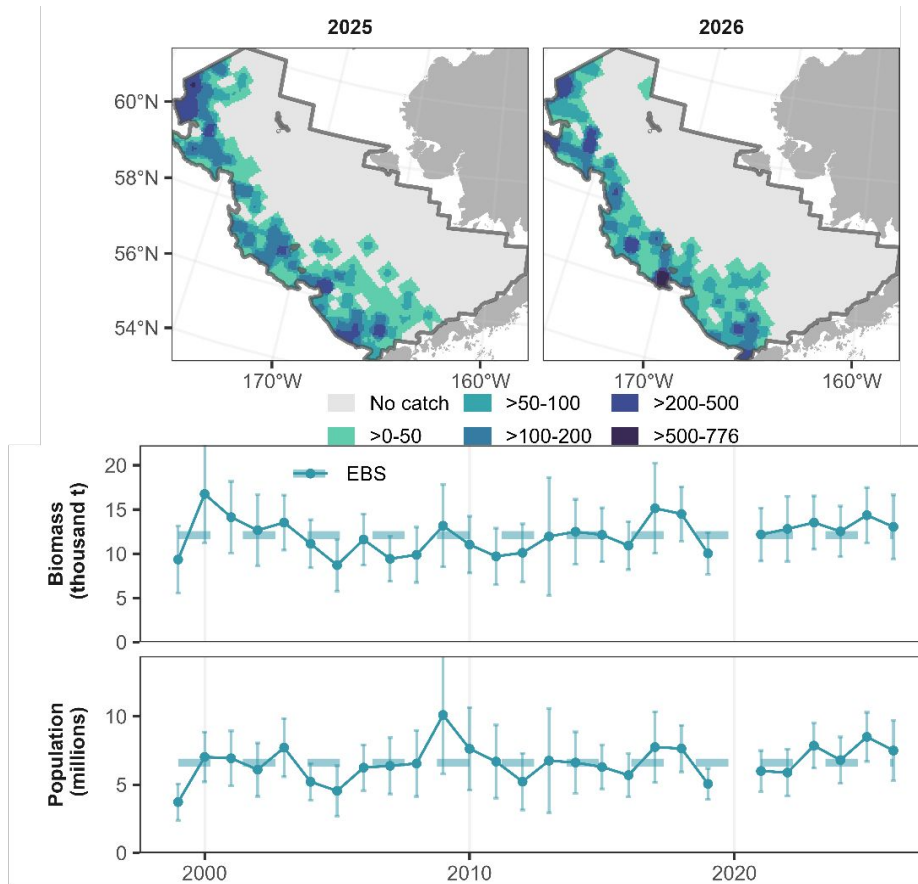


Alaska Skate



EBS Biomass Mean: 418 Kt | 2026: 318.3 Kt (-17%)

Bering Skate



EBS Biomass Mean: 12.1 Kt | 2026: 13.0 Kt (-9%; 546 → 502 individuals)



2025 vs 2026

Observed Trends

Common Name	x1000	2025	2026	% Change
Alaska plaice	Biomass	321	388	21
	Population	563,791	773,430	37
Alaska skate	Biomass	384	318	-17
	Population	108,901	82,574	-24
arrowtooth flounder	Biomass	472	479	1
	Population	643,019	656,696	2
Bering flounder	Biomass	12	11	-7
	Population	69,821	71,380	2
flathead sole	Biomass	686	784	14
	Population	2,187,918	2,568,110	17
Greenland turbot	Biomass	5	10	88
	Population	1,536	2,424	58
Kamchatka flounder	Biomass	32	42	32
	Population	70,129	84,194	20
northern rock sole	Biomass	1,433	1,818	27
	Population	7,506,132	10,708,073	43
Pacific cod	Biomass	548	622	13
	Population	496,520	391,636	-21
Pacific halibut	Biomass	129	123	-4
	Population	77,421	73,806	-5
Pacific ocean perch	Biomass	11	33	190
	Population	11,920	35,927	201
walleye pollock	Biomass	3,673	5,632	53
	Population	6,313,819	9,585,593	52
yellowfin sole	Biomass	1,489	1,618	9
	Population	5,553,541	7,467,100	34

2026 Bering Sea Scientific Projects

Food Webs

- Invertebrate prey species of ice seals
- Prowfish collection and stomach scans

Harmful Algal Bloom Monitoring



[Imaging FlowCytobot](#)

- Toxins in Alaskan food webs

Observer

- Observer fish specimens

Operational

- IPHC collection
- Voucher collection
- Outreach collections
- Smithsonian invertebrate collections

Organism Condition

- Yellowfin sole Essential Fish Habitat
- Arctic and saffron cod age and growth
- Juvenile Pacific cod condition
- Pacific cod and walleye pollock fish hepatosomatic condition



[Visual maturity](#)

Genetics

- Shark genetics and age structure sampling
- Pacific sand lance genomics
- Alaska and leopard skate genetics
- Sculpin genetics

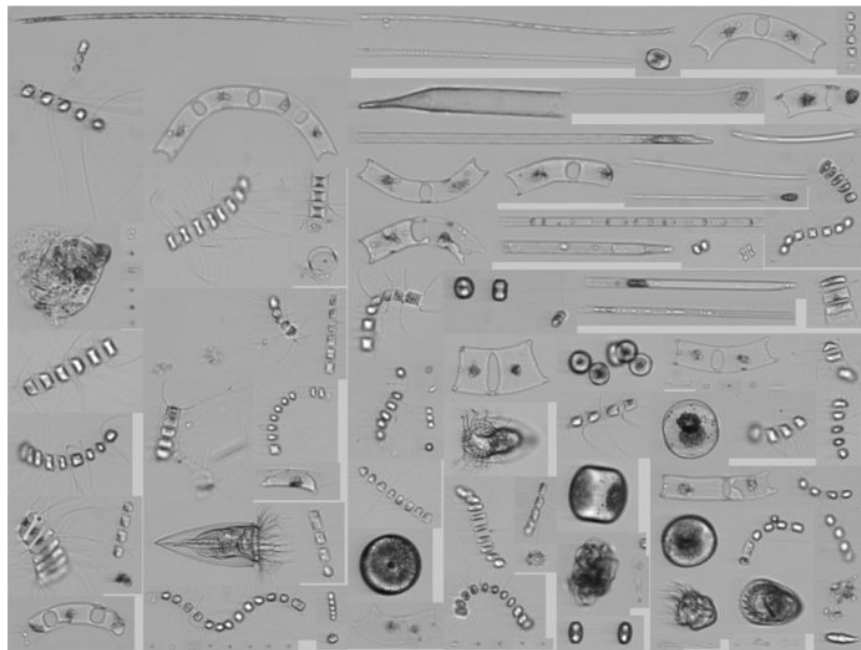


[Molecular ecology DNA library collection](#)

- Population genomics of Herring Saving Areas
- Pacific cod fin clips for epigenetic ageing



Scientific Collections: HABS Imaging FlowCytobot



Partnership with Alaska Ocean Observing System (AOOS)
to search for Harmful Algal Blooms in phytoplankton



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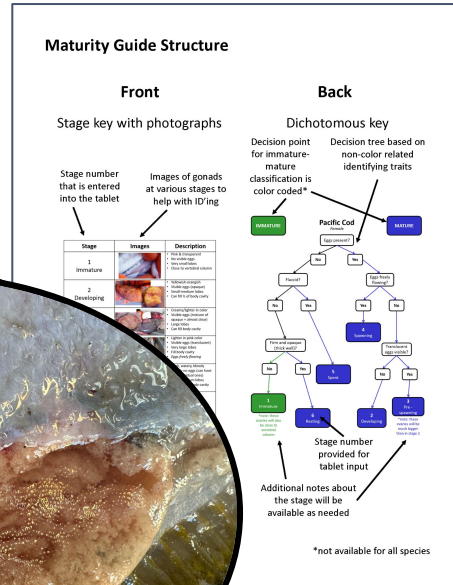
<https://ahab.aos.org/ifcb/>

Contact: Thomas Farrugia (AOOS)

Scientific Collections: Visual Fish Maturity



Female yellowfin sole with hydrated eggs

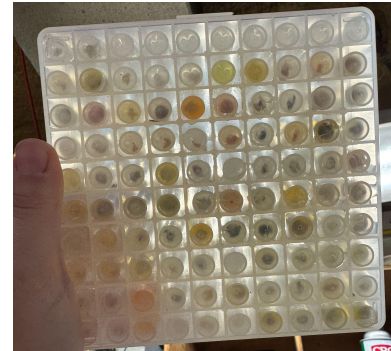


- Study to help establish a procedure for collecting visual maturity observations of select species during survey operations
- Target species in Bering Sea were Pacific cod, walleye pollock, yellowfin sole, and *newly* arrowtooth flounder
- EBS = 2,901 maturities collected

Scientific Collections: Smithsonian-PMEL Genetics & Voucher Reference Library Collection



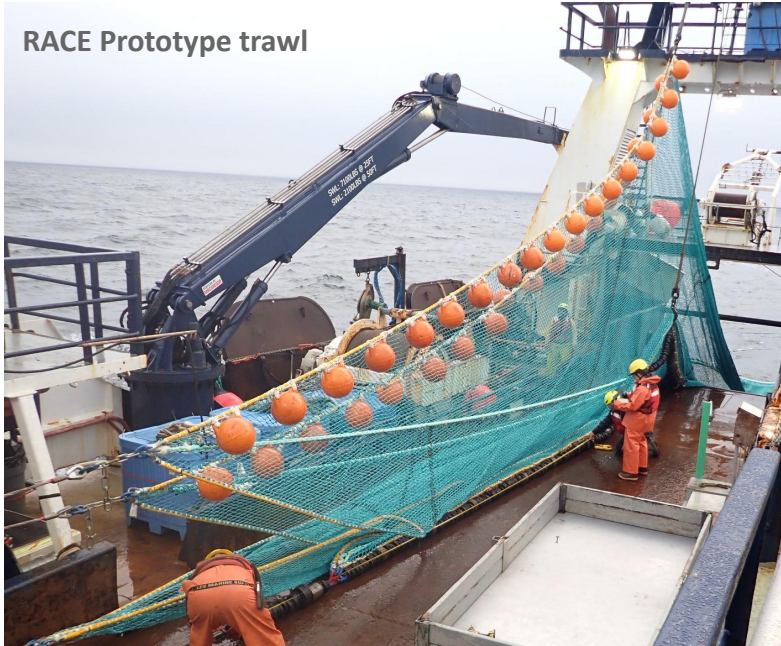
Expanded the availability of genetic reference sequences and high-quality, vouchered specimens for benthic invertebrates in the Bering Sea and Aleutian Islands.



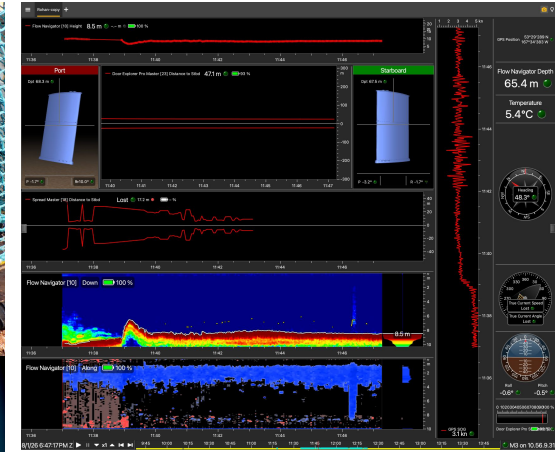
Survey Modernization

Initial sea trials and catch comparison (Leg 4)

RACE Prototype trawl



Trawl cameras

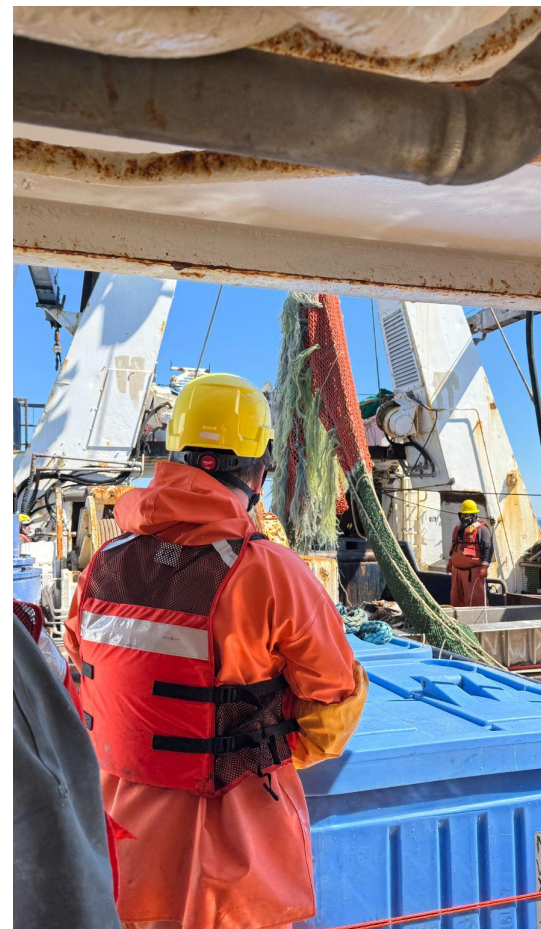


New data acquisition
systems
(Marport, Poseidon, TimeZero)



2026 Summary

- Water temps coldest since 2013, cold pool largest since 2012
- Biomass indices for most fish species stable or increasing
- Pollock biomass index remains volatile (+53%); Alaska skates declining
- EBS data now accessible in GAP_PRODUCTS tables and AKFIN (?)
- Survey modernization updates
 - Field work is underway for new prototype gear
 - New data acquisition systems running



Thank you!



Questions?

duane.stevenson@noaa.gov

afsc.gap.metadata@noaa.gov

