



**NOAA
FISHERIES**

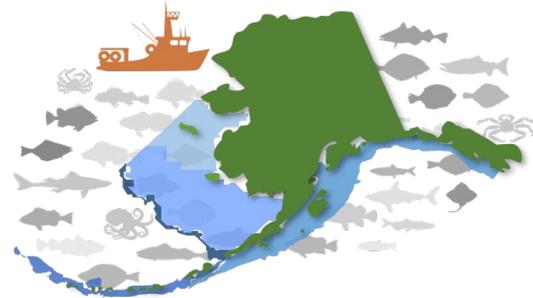


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Results of the 2025 Eastern and Northern Bering Sea Bottom Trawl Survey

Groundfish Plan Team Meeting
September 17, 2025



NOAA FISHERIES

A Few of the Survey Team Members!



Additional Staffing Support

MACE - Midwater Assessment and Conservation Engineering

FMA - Fisheries Monitoring and Assessment Division

SSMA - Status of Stocks and Multispecies Assessment

EcoFOCI - Ecosystems & Fisheries-Oceanography Coordinated Investigations

Alaska Regional Office

Outline

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



Survey Charter Vessels



FV Alaska Knight

2010 - present

15th year



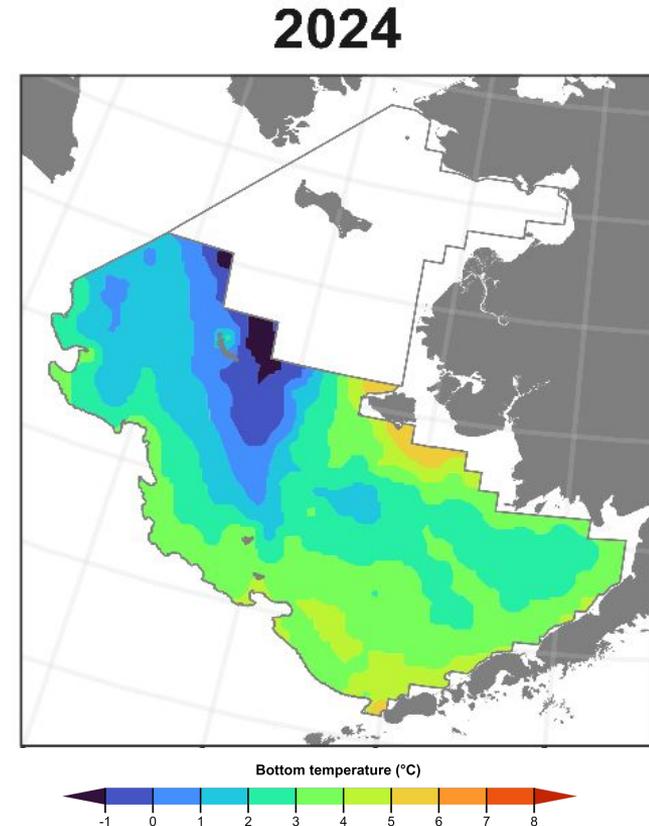
FV Northwest Explorer

2023 - present

3rd year

Recap of the 2024 survey year

- Bottom temperatures were near average and slightly warmer than 2023
- Survey temps indicate cold pool extent was near time series average and 12.7% smaller than 2023
- Fish biomass in EBS increased from 2023 for most species, especially that of walleye pollock (+74%), Bering flounder (+52%), arrowtooth flounder (+26%), flathead sole (+22%), and Kamchatka flounder (+14%)
- No scheduled NBS survey (allowed for survey modernization studies)



2025 Bering Sea Survey Season

Eastern Bering Sea (EBS):

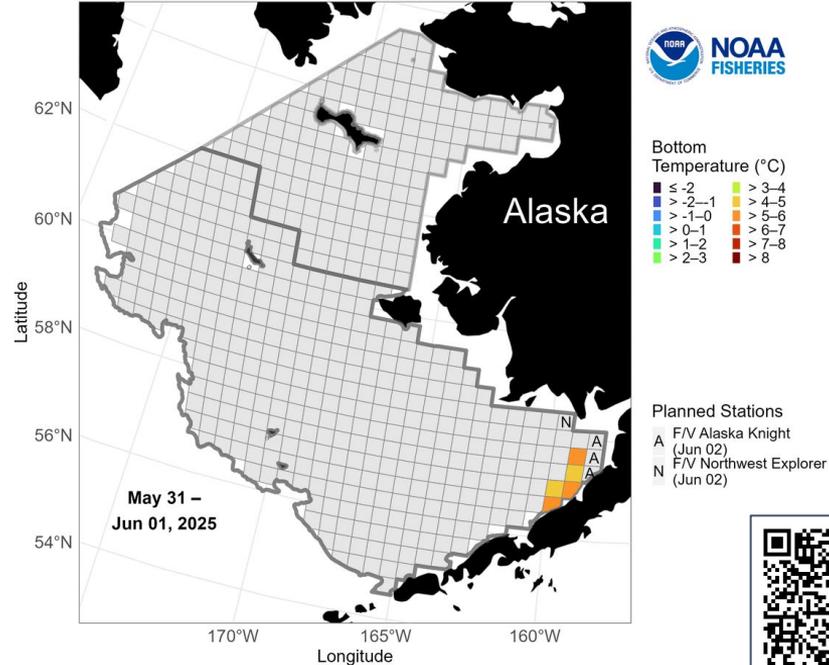
- 43rd year of survey
1982-2025
- May 31 - July 26, 2025
- 350/350 stations sampled

Northern Bering Sea (NBS):

- 7 years
2010, 2017, 2019, 2021, 2022,
2023, and 2025
- July 27 - Aug 17, 2025
- 137/144 stations sampled

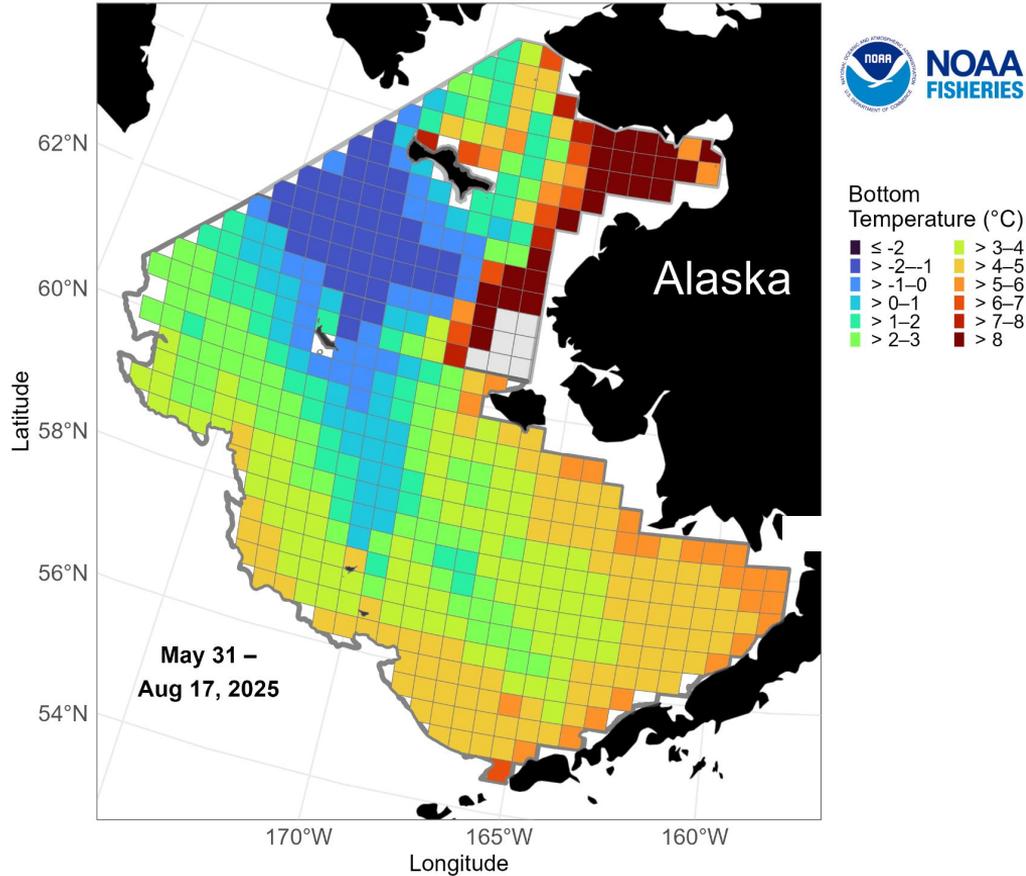
2025 Bottom Temperature (°C)

NOAA Fisheries Bering Sea Bottom Trawl Survey

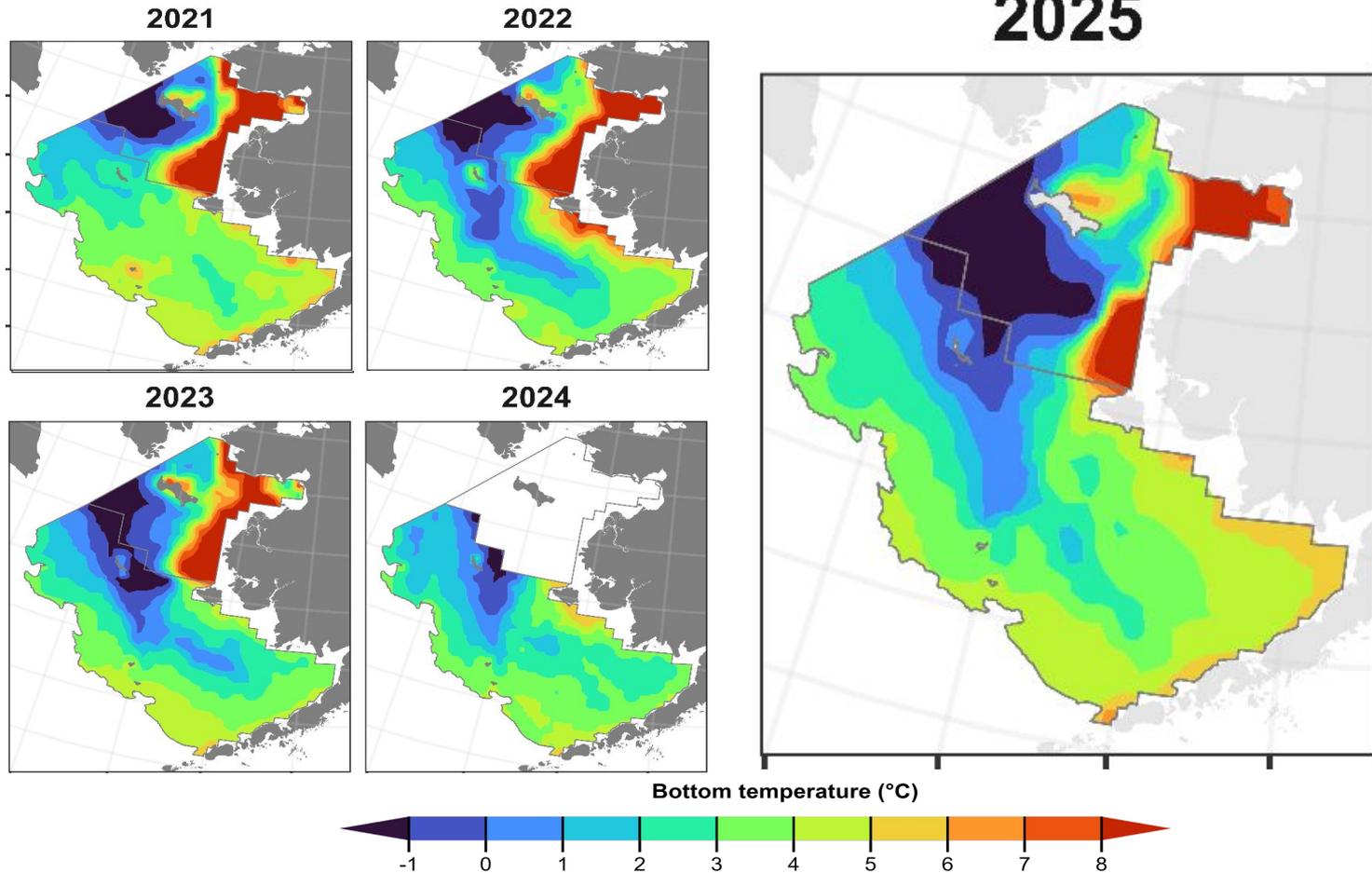


2025 Bottom Temperature (°C)

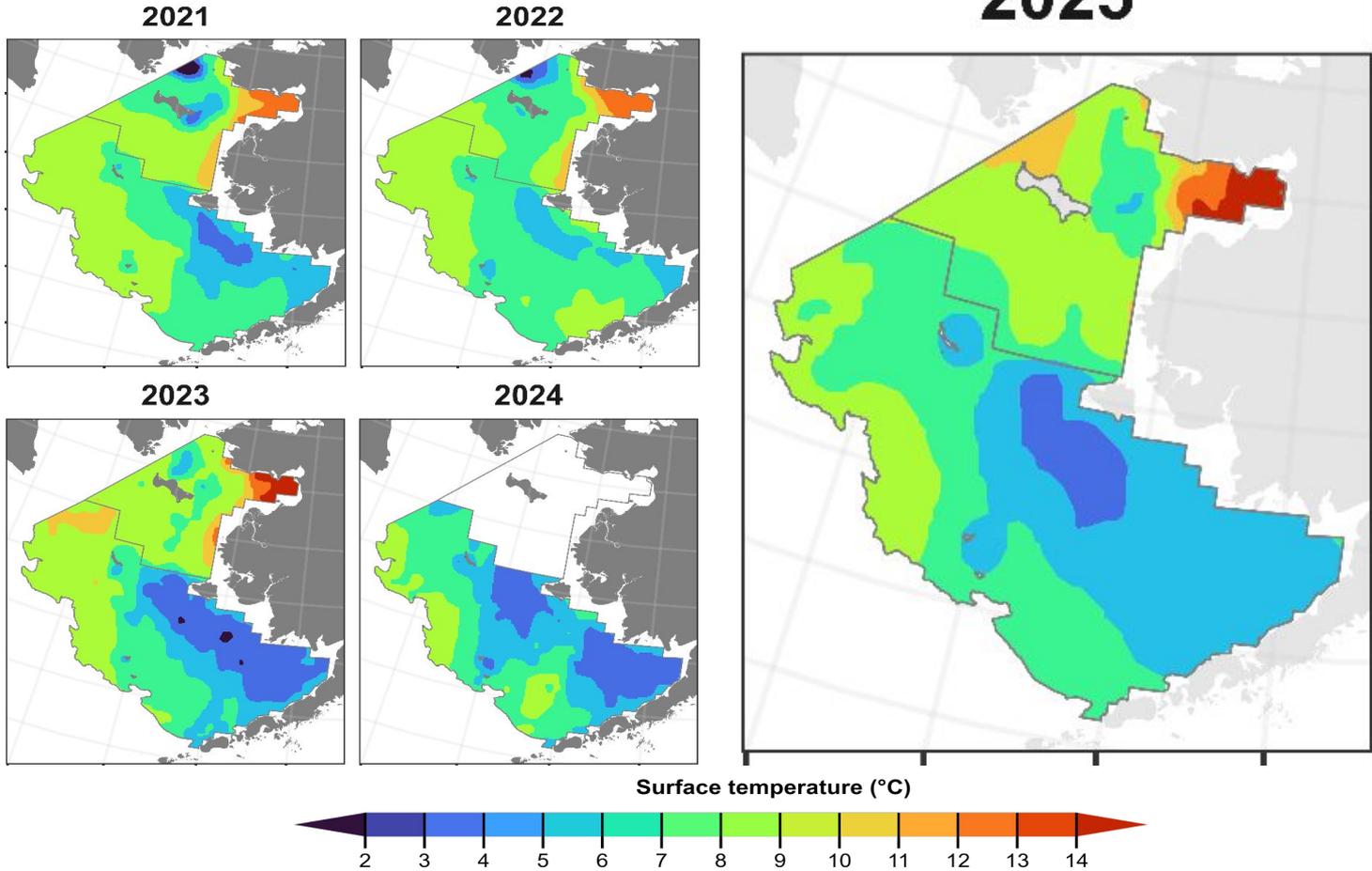
NOAA Fisheries Bering Sea Bottom Trawl Survey



Bottom Temperatures

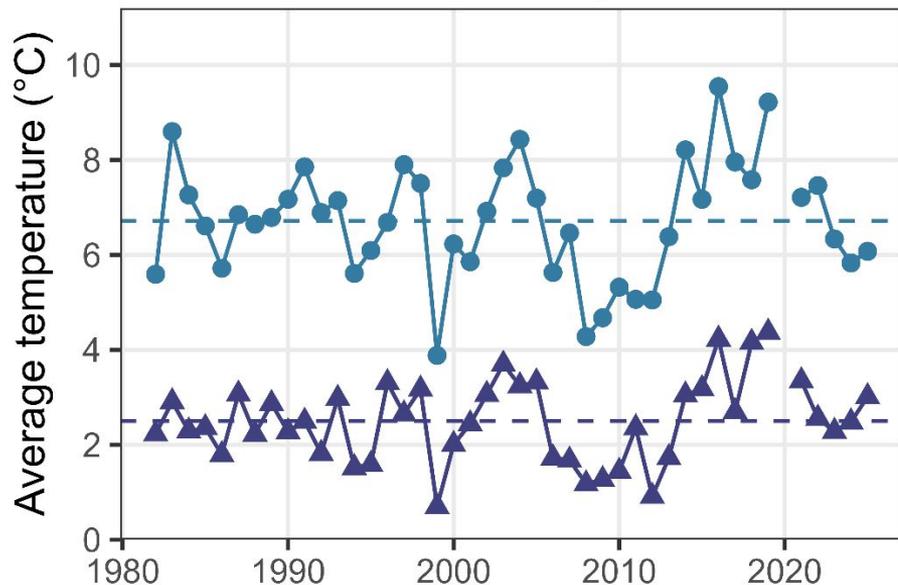


Surface Temperatures

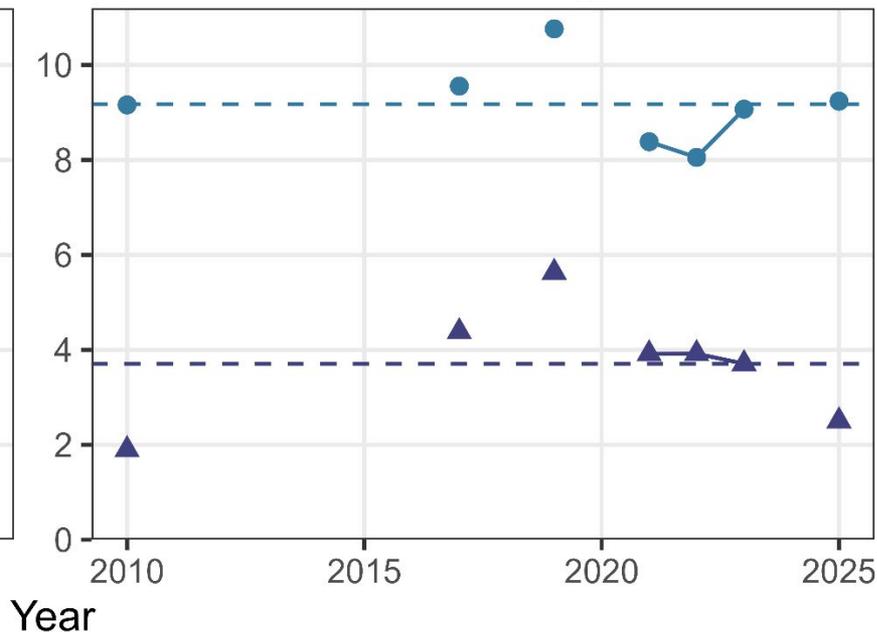


Annual Mean Temperature

Eastern Bering Sea



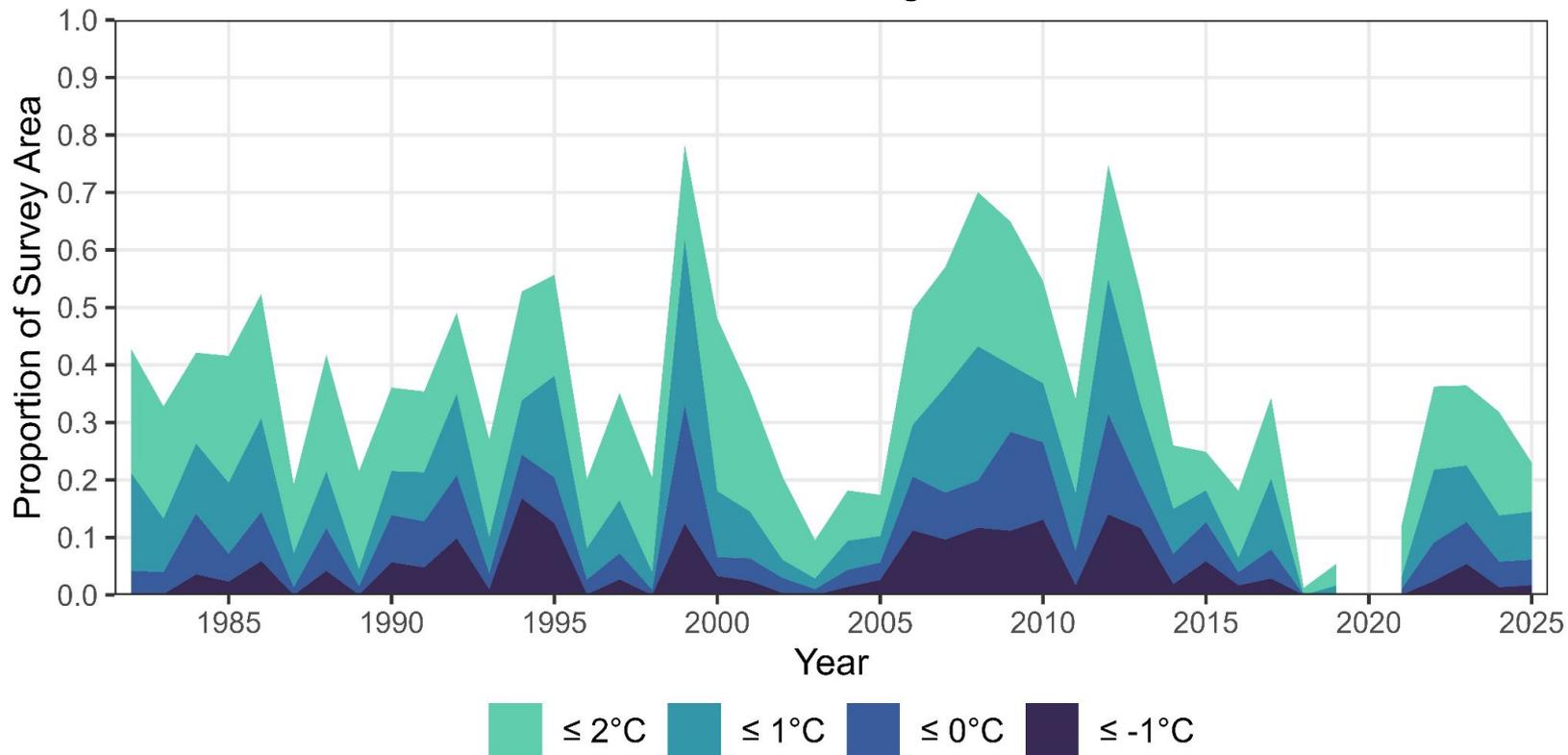
Northern Bering Sea



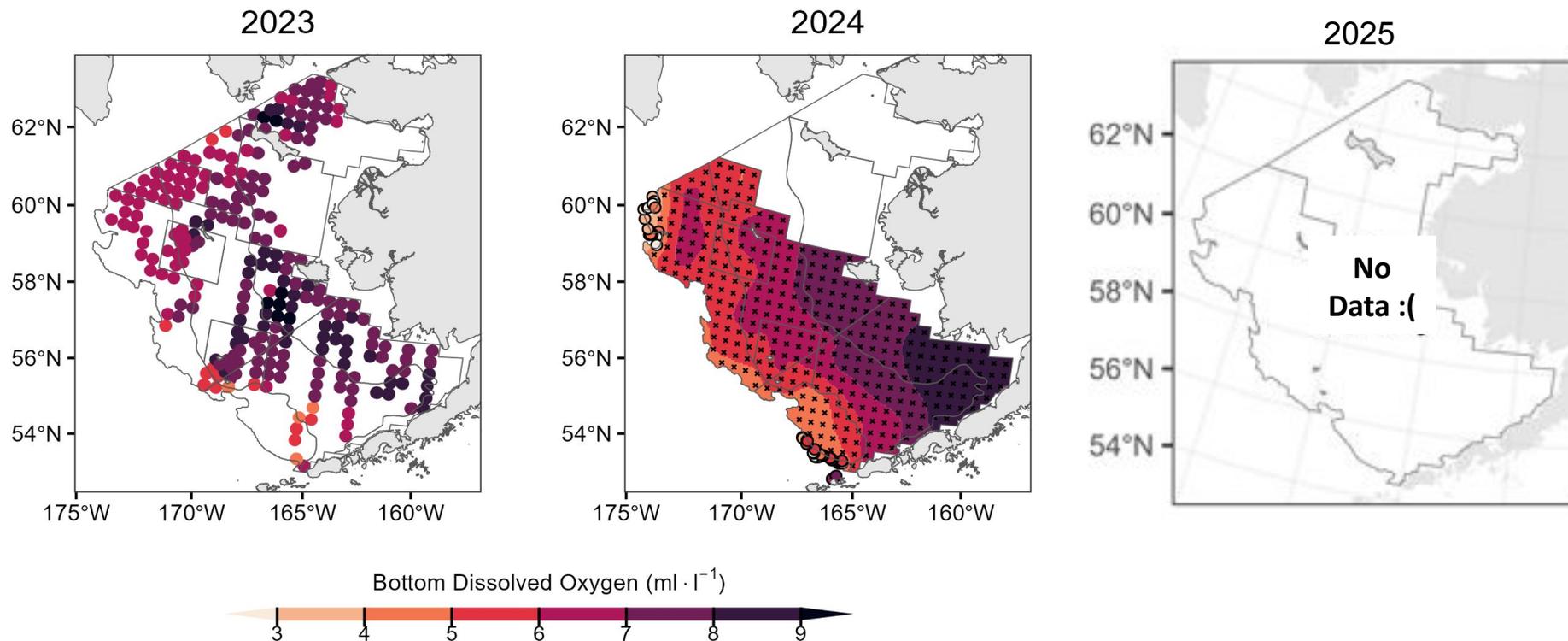
● Surface ▲ Bottom

Cold Pool Area

Eastern Bering Sea



No CTD or Dissolved Oxygen data for 2025



Length Measurement Samples

Common name	EBS	NBS
Alaska plaice	7,592	6,646
Alaska skate	3,427	381
Arrowtooth flounder	7,460	-
Bering flounder	1,871	2,591
Flathead sole	14,530	4
Kamchatka flounder	1,384	-
Northern rock sole	19,270	1,815
Pacific cod	11,249	1,265
Pacific halibut	2,505	233
Plain sculpin	2,515	1,240
Saffron cod	130	2,281
Sakhalin sole	16	1,176
Walleye pollock	30,862	8,311
Yellowfin sole	16,068	9,306
Other taxa* (N _{EBS} : 33, N _{NBS} : 10)	5,291	1,989
TOTAL	124,170	37,237

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

2025 Age Structures and Stomach Samples

Common name*	EBS	NBS
Alaska plaice	370	201
Arrowtooth flounder	440	-
Flathead sole	647	2
Greenland turbot	43	-
Kamchatka flounder	594	-
Northern rock sole	833	-
Pacific cod	1,403	319
Yellowfin sole	563	374
Walleye pollock	1,639	452
TOTAL	6,532	1,348

Common name	EBS	NBS
Arctic cod	4	52
Arrowtooth flounder	509	-
Flathead sole	656	-
Great sculpin	241	81
Kamchatka flounder	102	-
Pacific cod	1,047	292
Pacific halibut*	446	77
Saffron cod	11	186
Walleye pollock	1,392	573
TOTAL	4,408	1,261

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

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

2025 Bering Sea Scientific Projects

Food Webs

- Lamprey movements and trophic ecology
- Prowfish stomach scans
- Stable Isoscapes mapping

Environmental Monitoring

- ES80 and wire marking training
- Harmful algal blooms

Observer

- Crab bycatch study
- Observer crab specimens
- Observer fish specimens

Operational

- IPHC collection
- Voucher Collection
- Outreach collections

Species Distribution

- Red king crab tagging
- Eider benthic grab samples
- Mollusk distribution and taxonomy

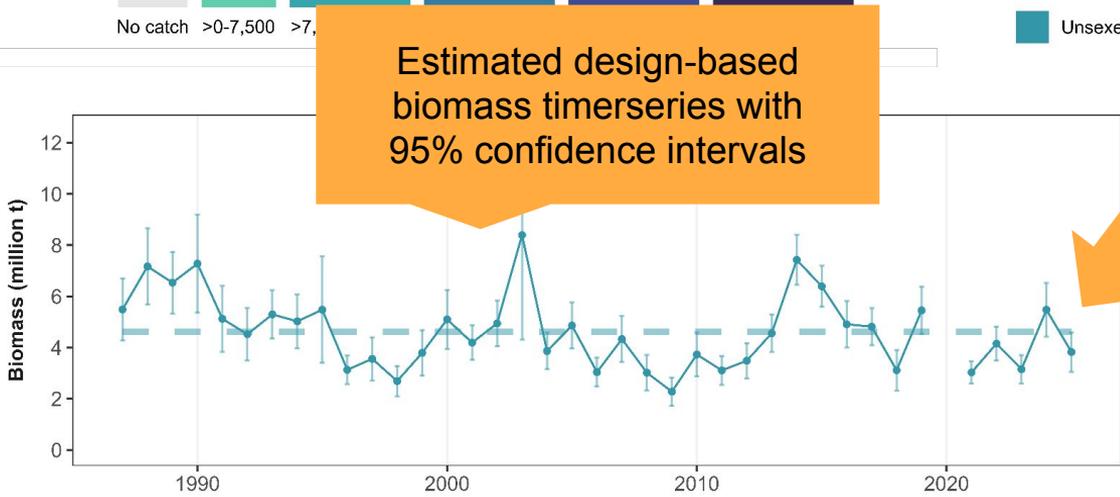
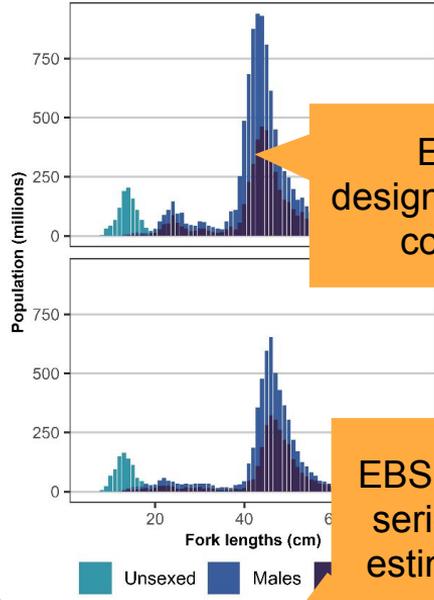
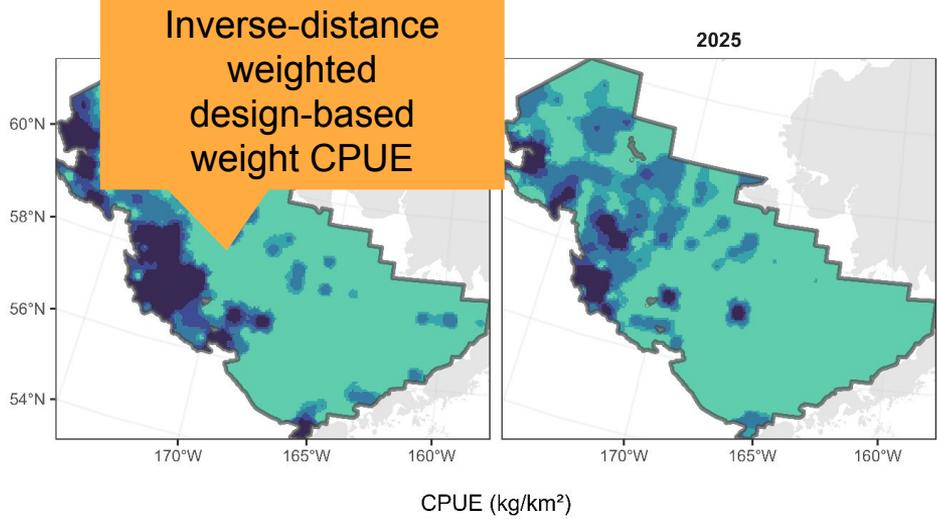
Organism Condition

- Crab ocean acidification collection
- Yellowfin sole EFH
- Snow crab condition
- Arctic and saffron cod age and growth
- Juvenile Pacific cod condition
- Visual maturity
- Snow crab bitter crab sampling

Genetics

- Shark genetics and age structure sampling
- Pacific sand lance genomics
- Genetic sampling of EBS king crab
- US EEZ Fish DNA Library
- Molecular ecology DNA collection

A Species of Interest

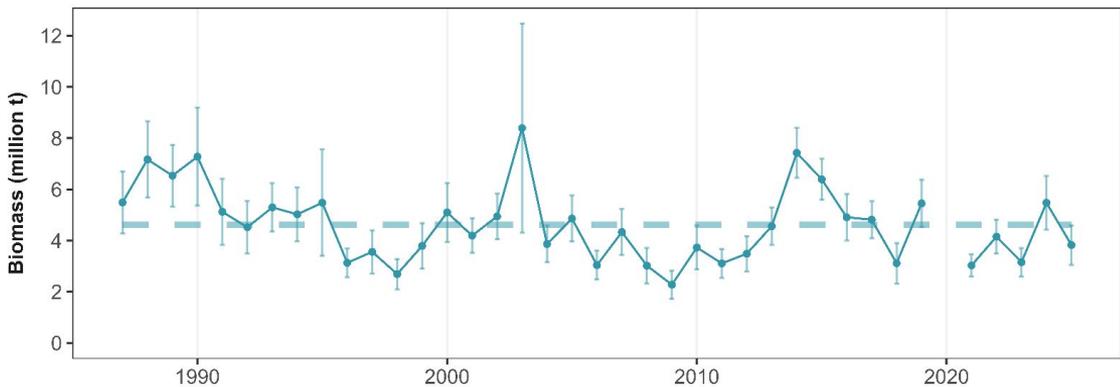
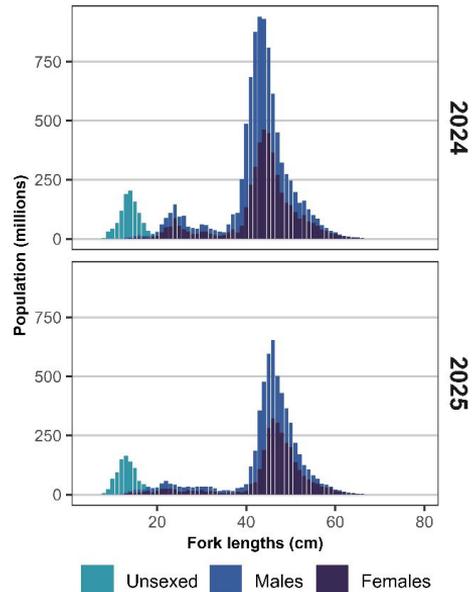
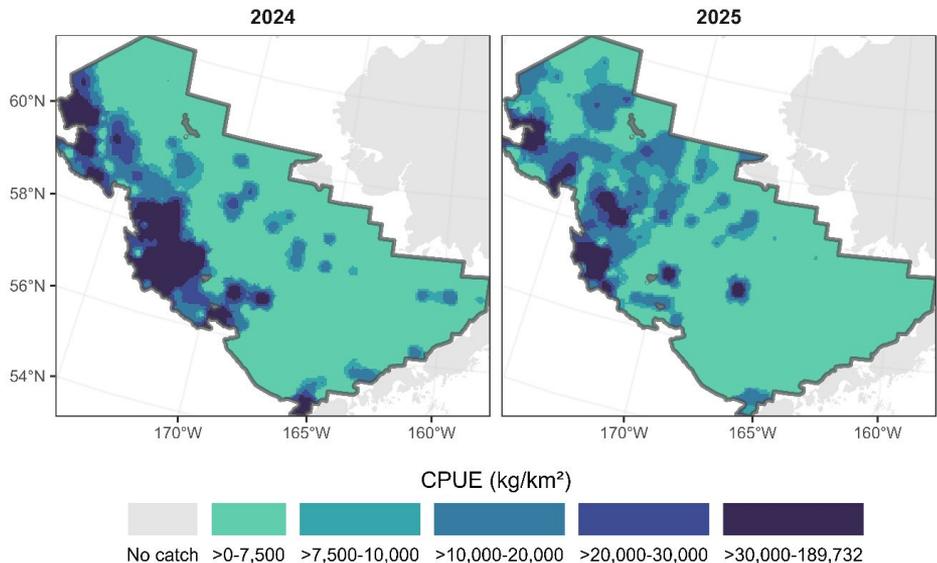


EBS Biomass
Mean: 4.6 M
2025: 3.8 M (-30%)

Comparison to 2024



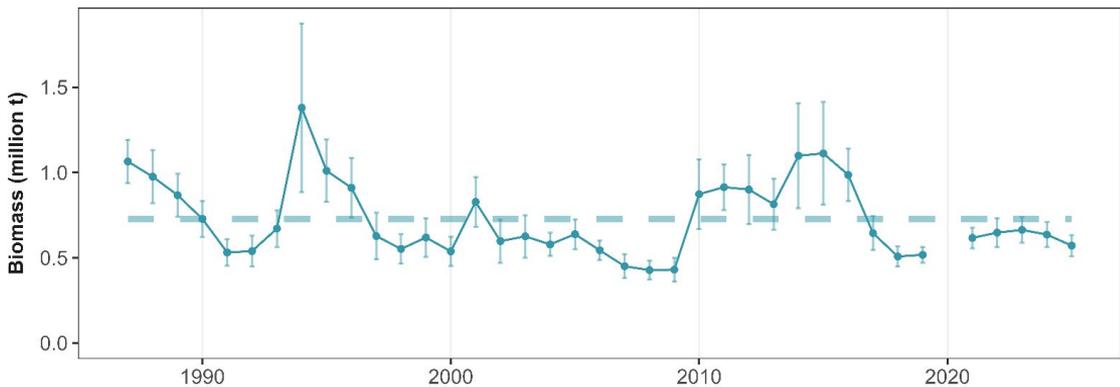
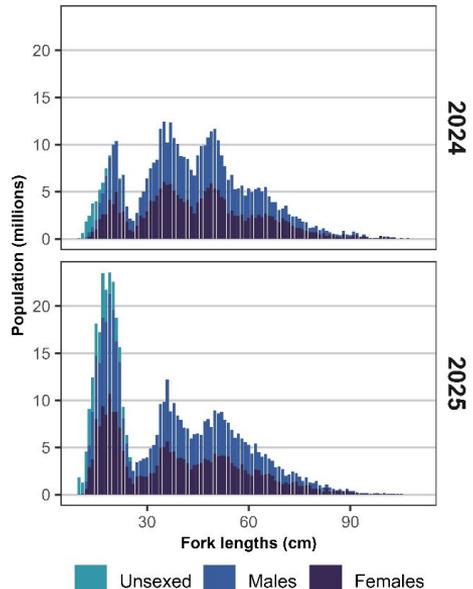
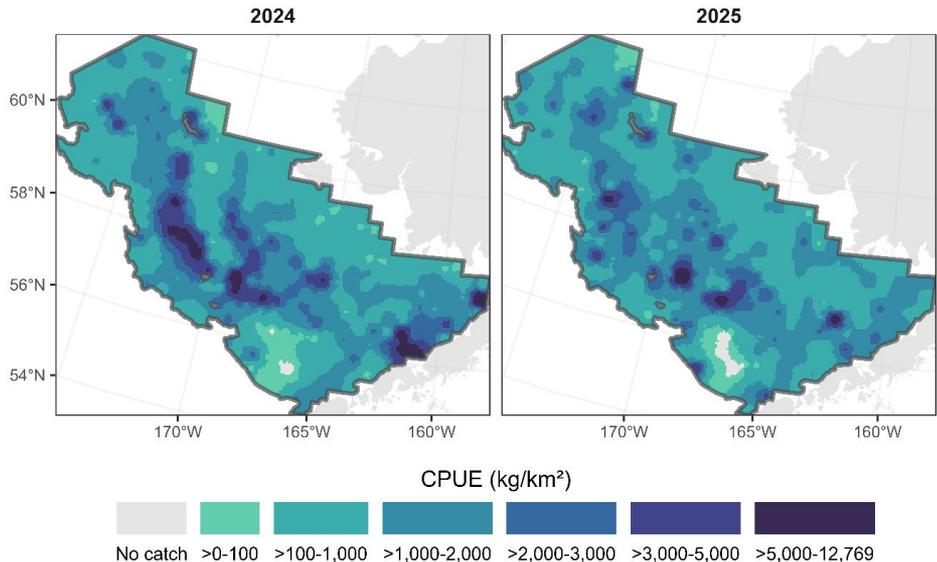
Walleye Pollock



EBS Biomass
Mean: 4.6 M
2025: 3.8 M (-30%)



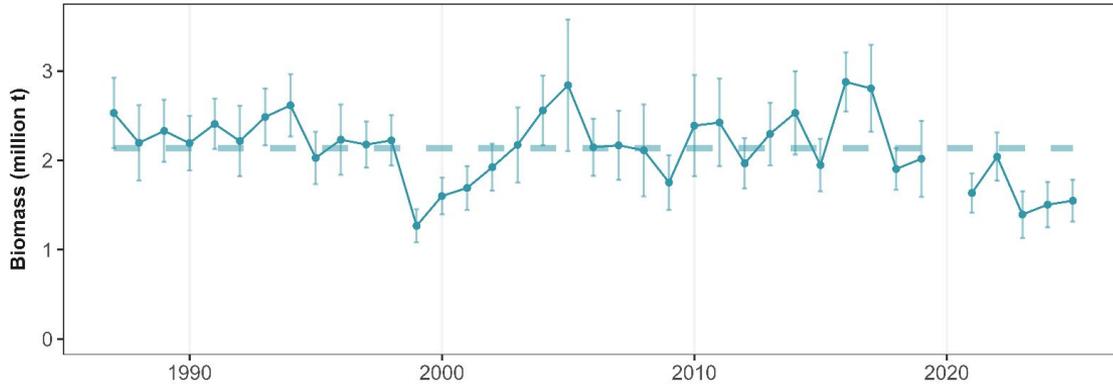
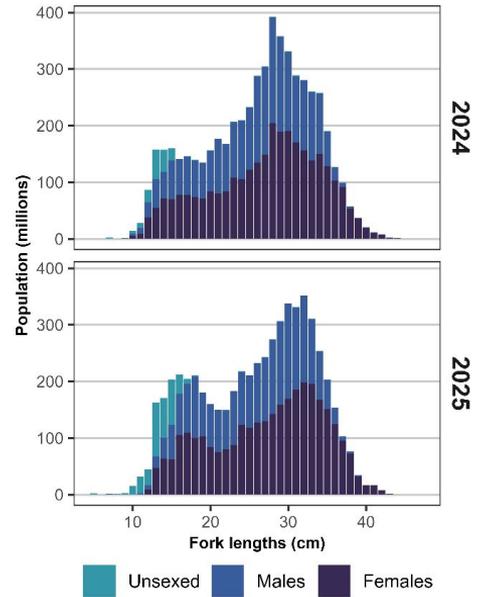
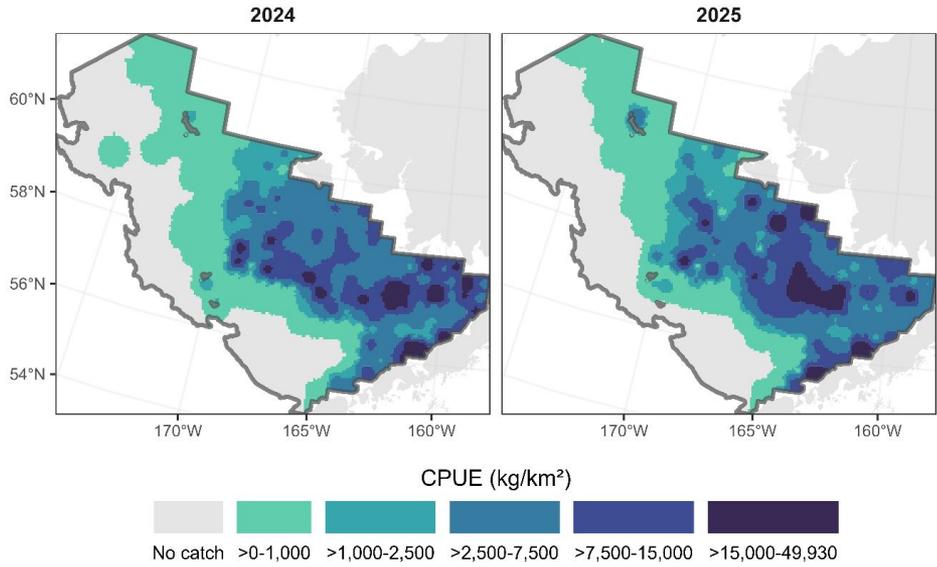
Pacific Cod



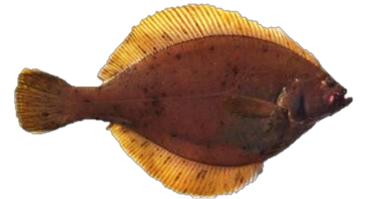
EBS Biomass
Mean: 700 K
2025: 570 K (-10%)



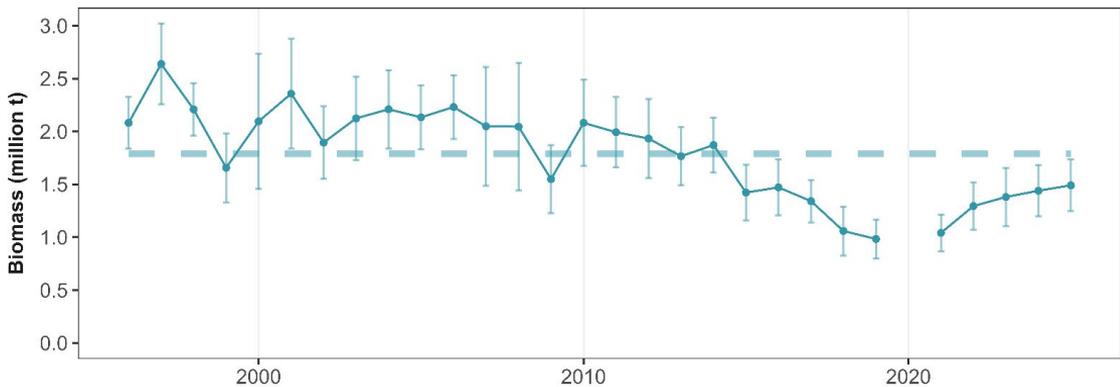
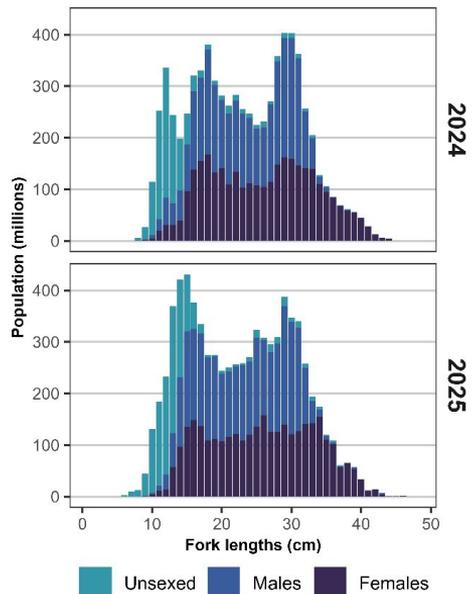
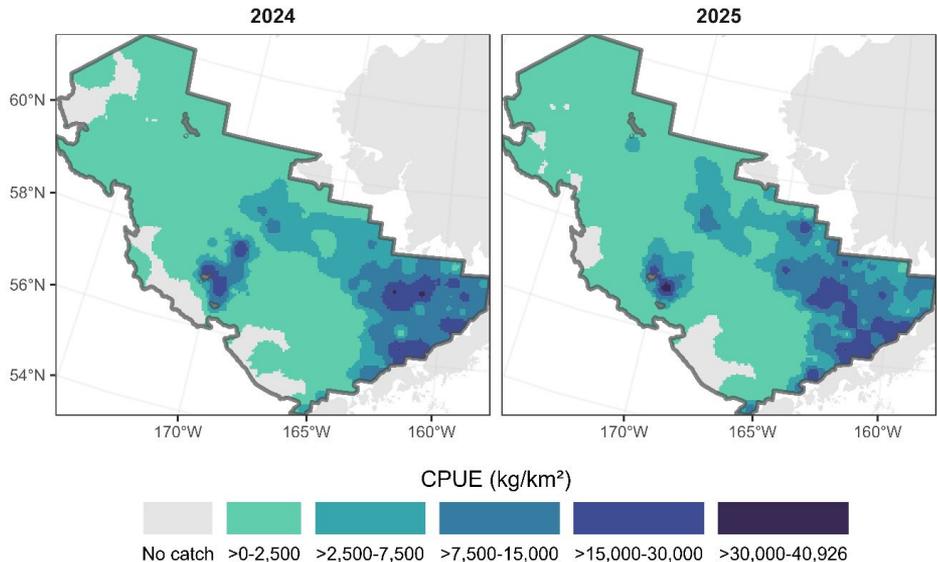
Yellowfin Sole



EBS Biomass
Mean: 2.1 M
2025: 1.5 M (+3%)



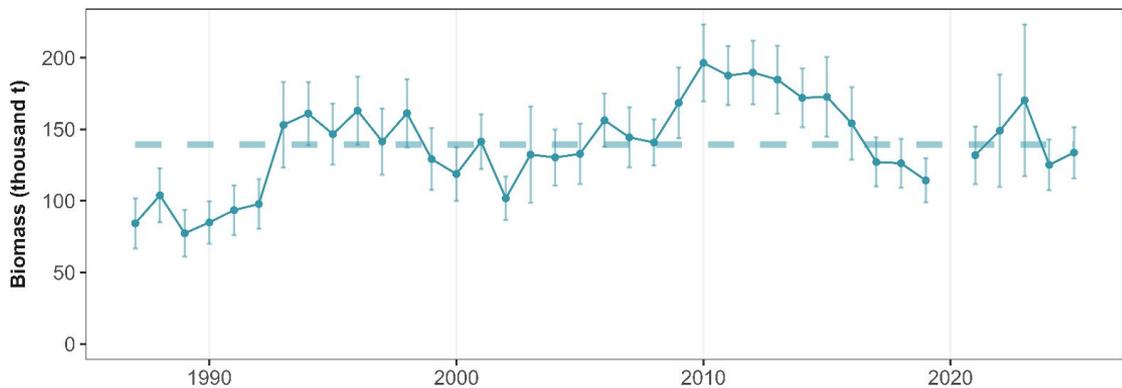
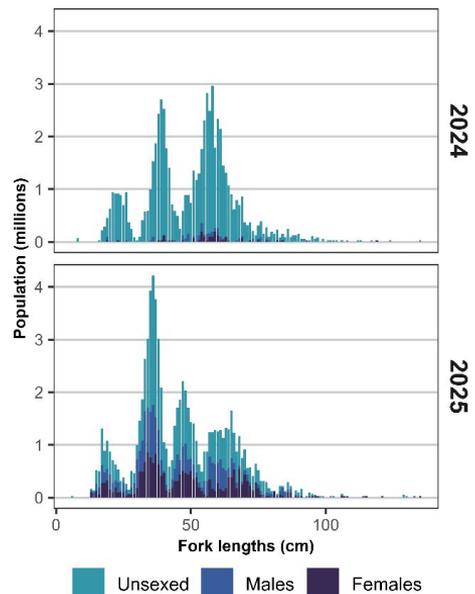
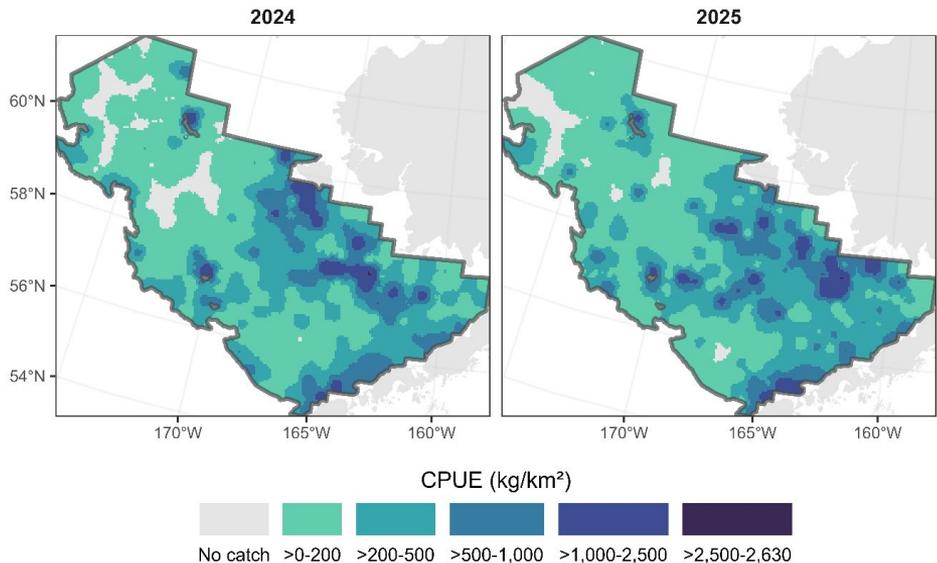
Northern Rock Sole



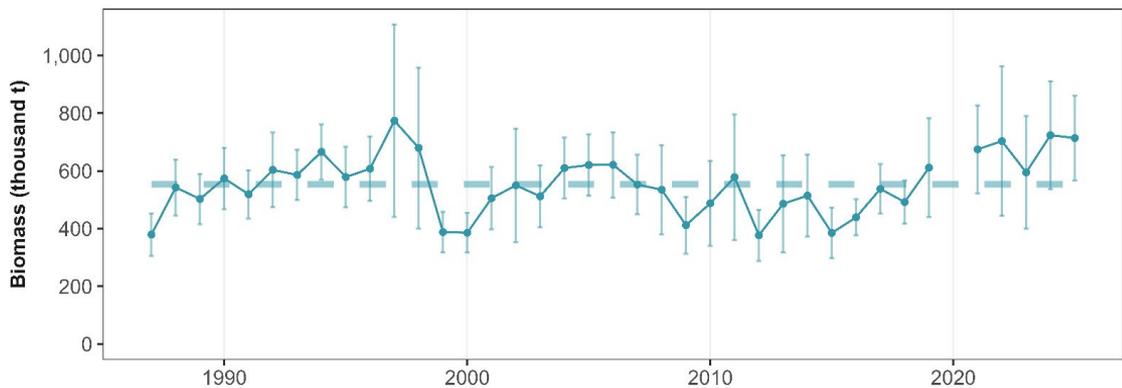
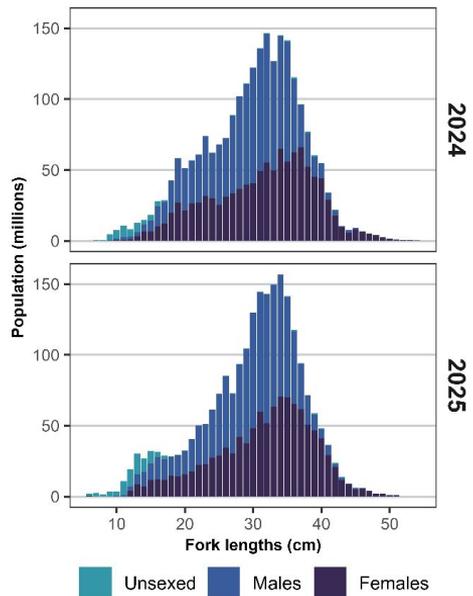
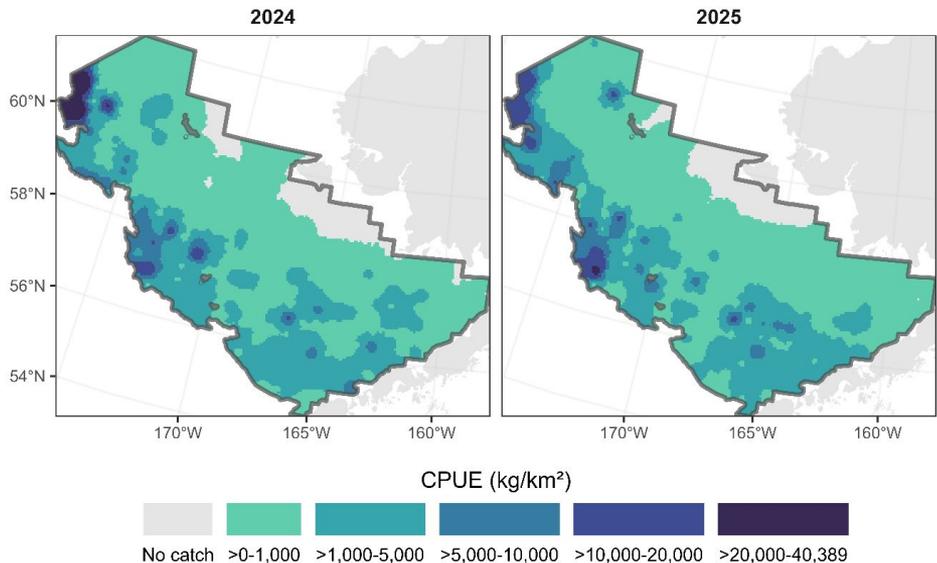
EBS Biomass
Mean: 1.8 M
2025: 1.5 M (+4%)



Pacific Halibut



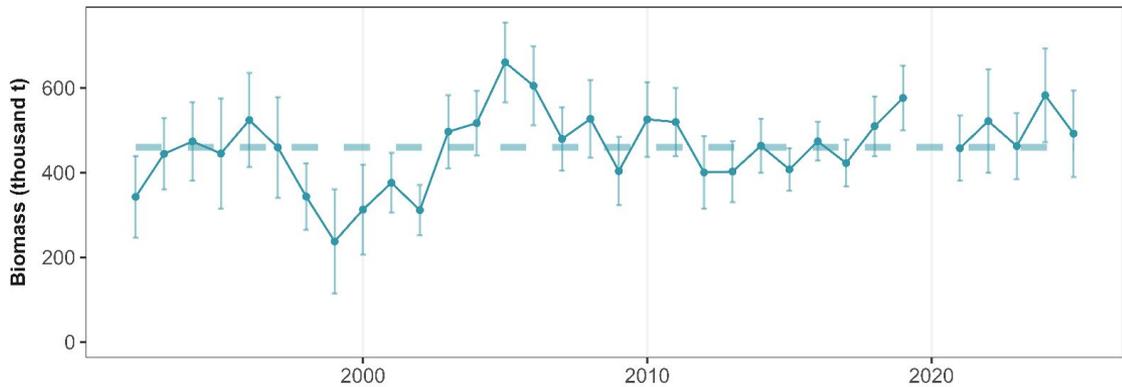
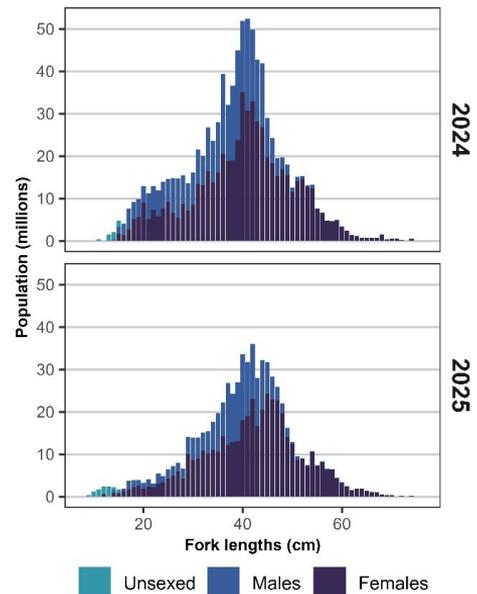
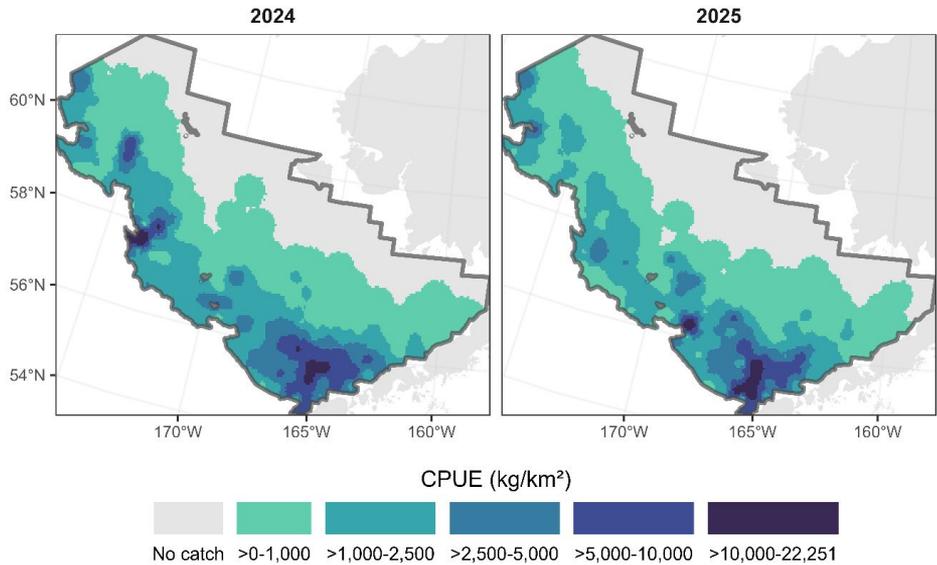
Flathead Sole



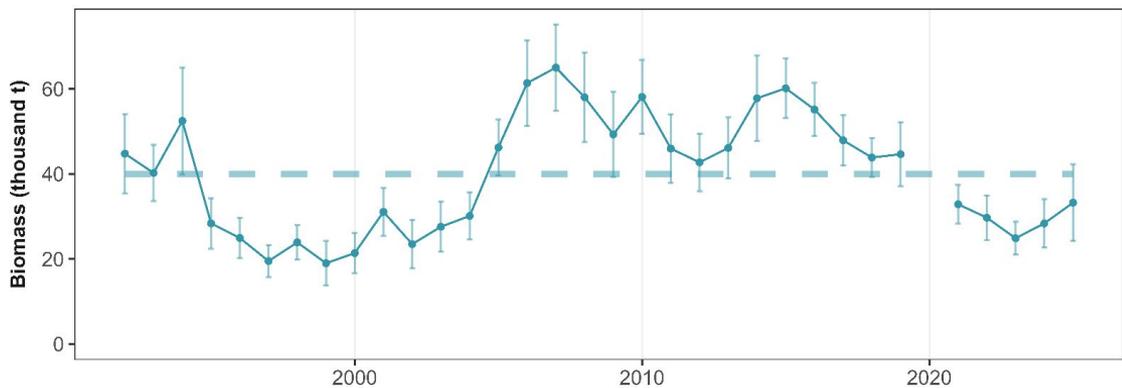
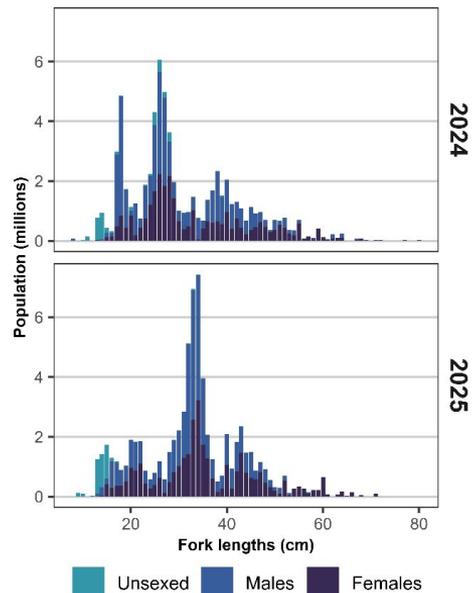
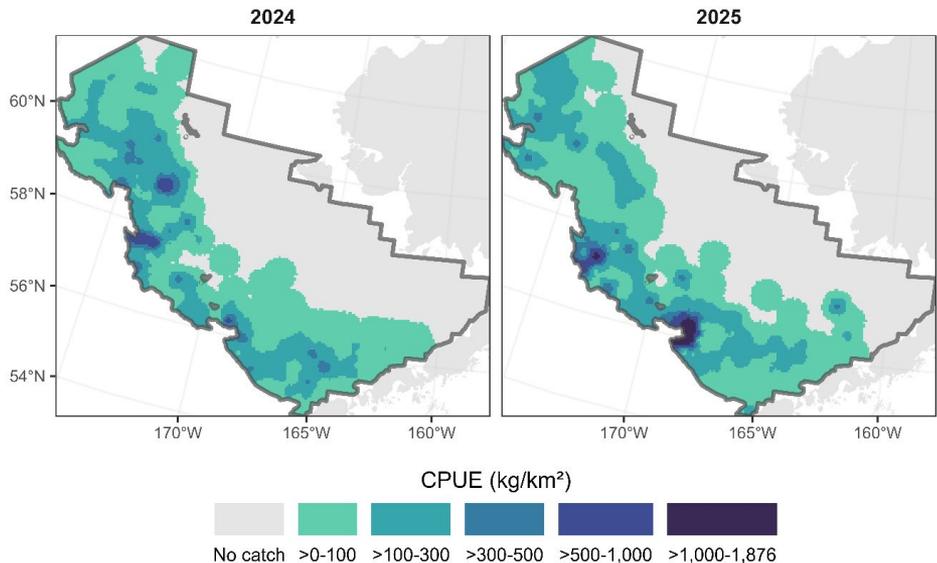
EBS Biomass
 Mean: 553 K
 2025: 714 K (-1%)



Arrowtooth Flounder



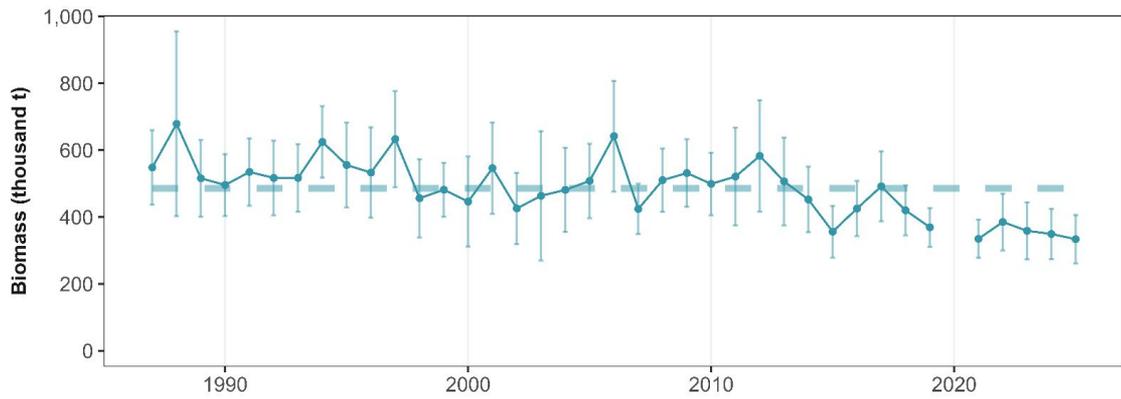
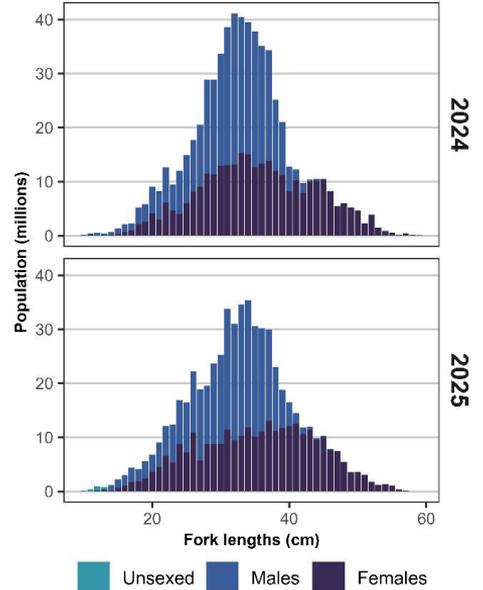
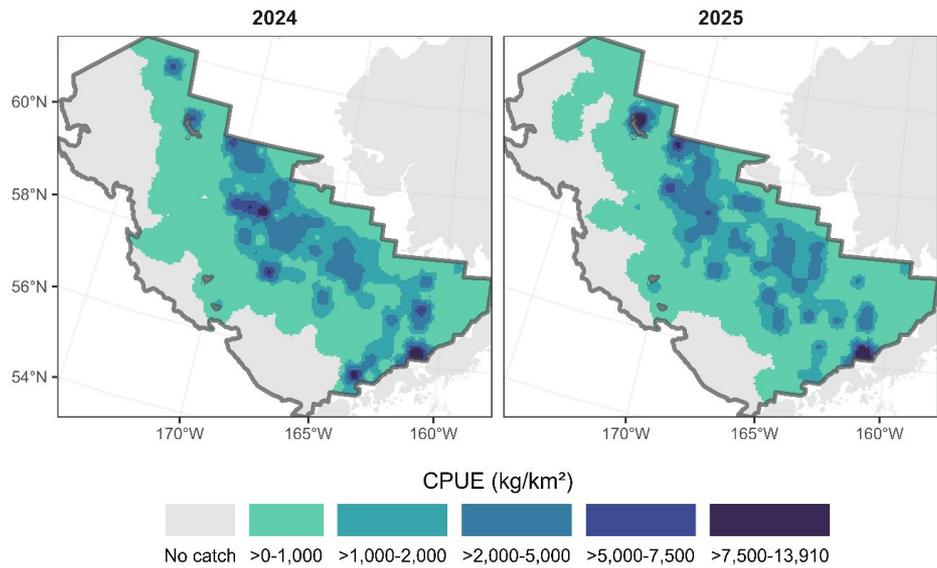
Kamchatka Flounder



EBS Biomass
Mean: 40 K
2025: 33.2 K (+17%)



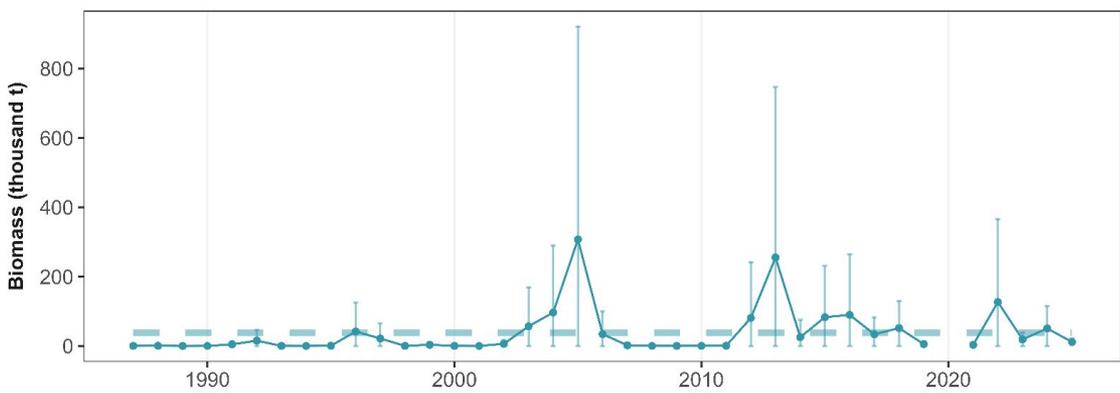
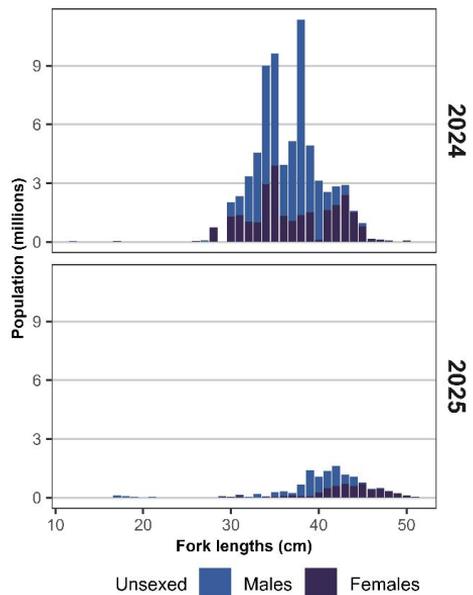
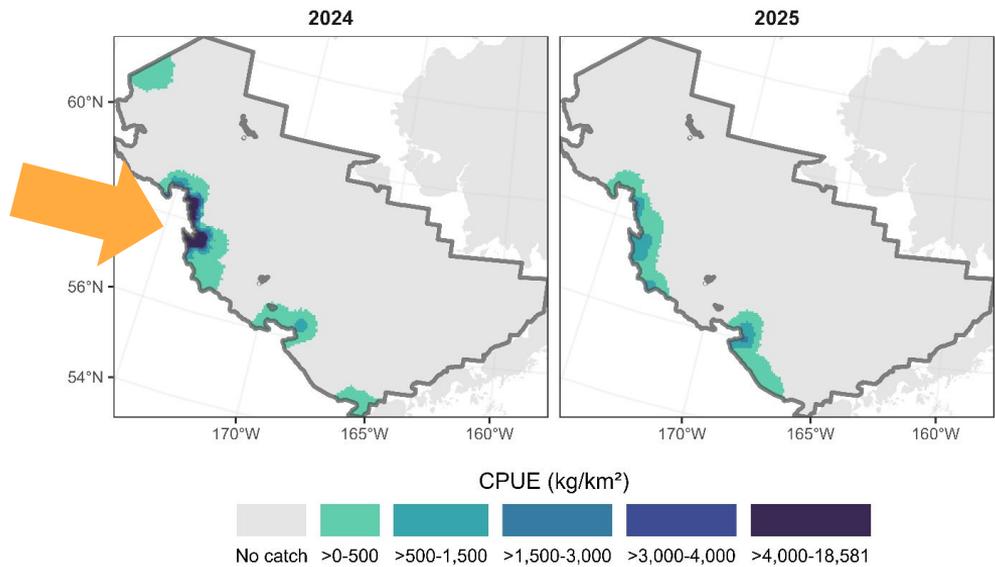
Alaska Plaice



EBS Biomass
Mean: 486 K
2025: 334 K (-5%)



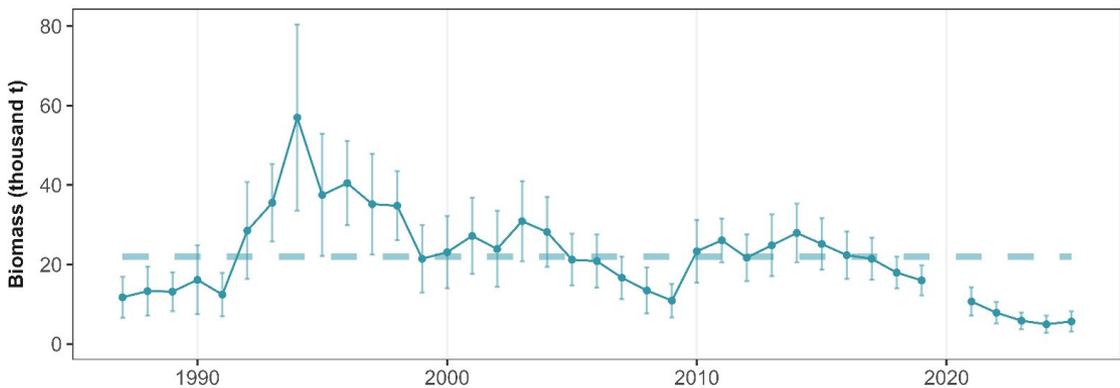
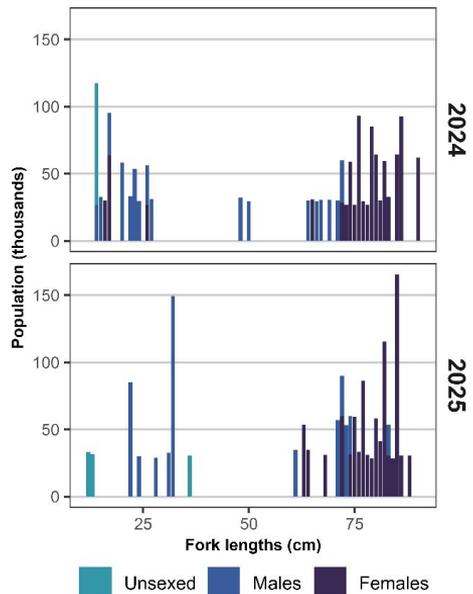
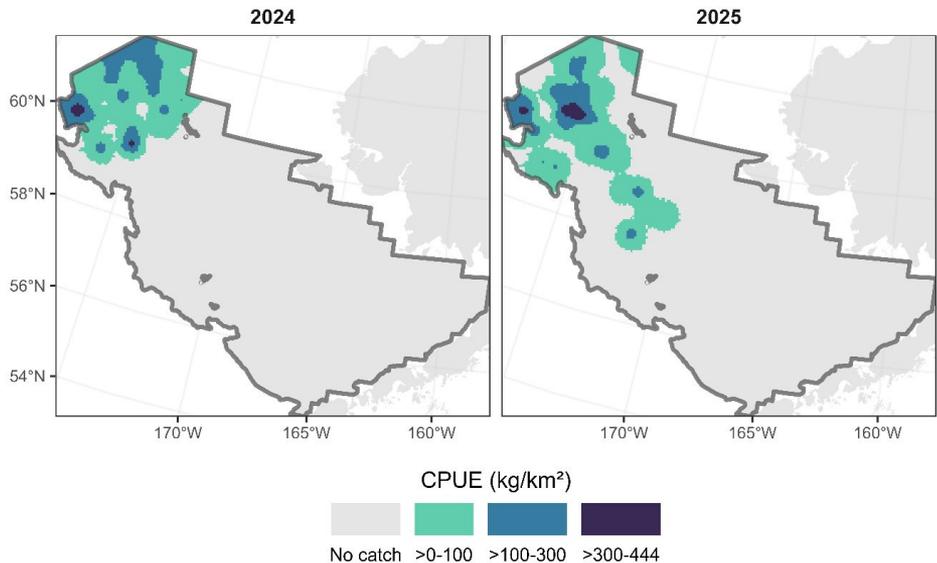
Pacific Ocean Perch



EBS Biomass
Mean: 37.6 K
2025: 11.7 K (-77%)



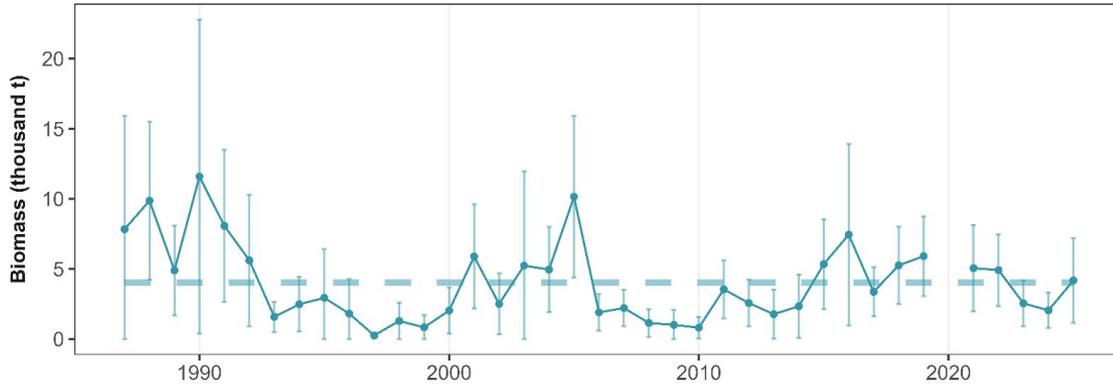
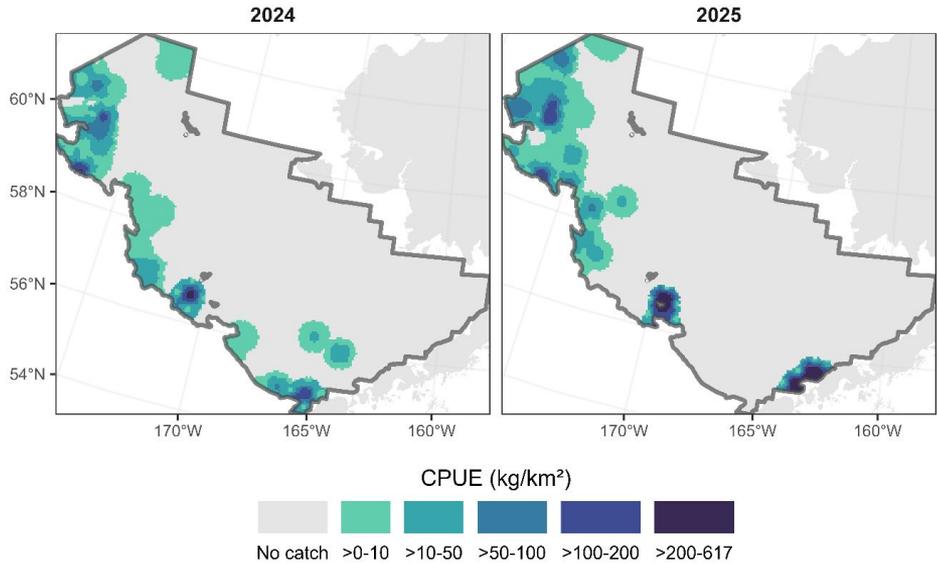
Greenland Turbot



EBS Biomass
Mean: 22 K
2025: 5.7 K (+14%)



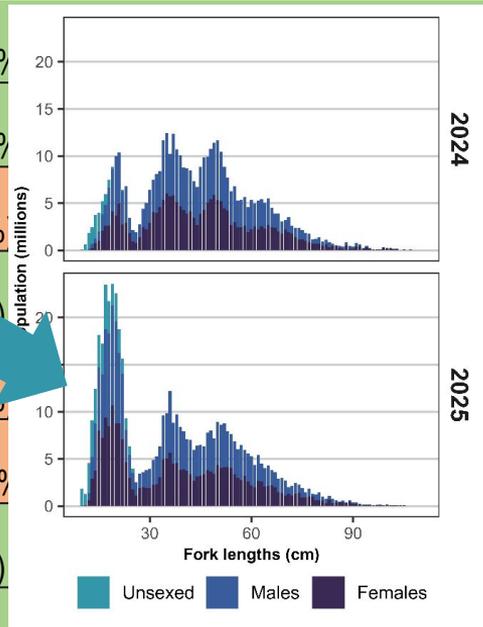
Octopuses



EBS Biomass
Mean: 4 K
2025: 4.2 K (+104%;
71 to 121 individ.)

2024 vs 2025 Observed Trends

Common name	Year	Biomass (mt)	Population (x1,000)
walleye pollock	2024	5,476,067	10,307,932
	2025	3,825,362 (-30%)	6,575,619 (-36%)
Pacific cod	2024	635,840	436,530
	2025	570,986 (-10%)	516,669 (18%)
yellowfin sole	2024	1,503,618	
	2025	1,548,142 (3%)	
northern rock sole	2024	1,439,739	
	2025	1,490,955 (4%)	
flathead sole	2024	723,996	
	2025	714,106 (-1%)	
Bering flounder	2024	12,511,000	
	2025	12,511,000 (0%)	
Alaska plaice	2024	349,579	
	2025	333,810 (-5%)	
arrowtooth flounder	2024	582,469	
	2025	491,918 (-16%)	
Kamchatka flounder	2024	28,362	
	2025	33,231 (17%)	
Pacific halibut	2024	125,145	
	2025	133,705 (7%)	80,524 (24%)
Alaska skate	2024	407,133	102,931
	2025	399,887 (-2%)	113,374 (10%)
Pacific ocean perch	2024	50,664	71,612
	2025	11,741 (-77%)	12,420 (-83%)

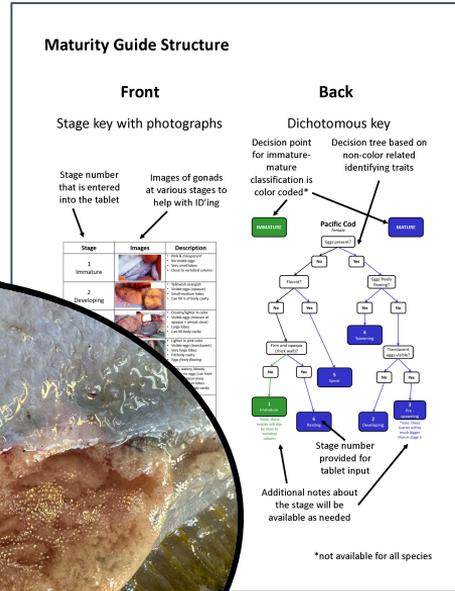


Scientific Collections: Benthic Grabs

- NBS study, requested by USFWS, to assess benthic marine invertebrate community
- Region of interest overlaps spectacled eider wintering critical habitat area
- Location: South of St. Lawrence Island
- 10 stations (4 grabs at each)



Scientific Collections: Fish Maturity



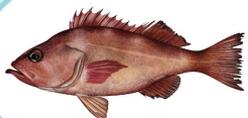
- Study to help establish a procedure for collecting visual maturity observations of select species during survey operations
- Target species in Bering Sea were Pacific cod, walleye pollock, and yellowfin sole
- EBS = 2482 maturities collected
NBS = 593 maturities collected

Female yellowfin sole with hydrated eggs

Contact: Emily Slesinger, Susanne McDermott

Updated Identification Tools

A WORKING FIELD GUIDE TO TRAWL-CAUGHT FISHES



2024

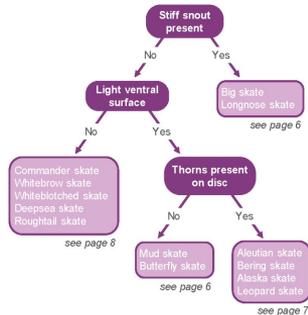
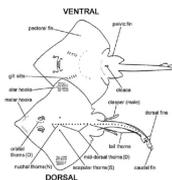


NOAA FISHERIES

Alaska Fisheries Science Center
Resource Assessment and
Conservation Engineering

SKATES

- Dorso-ventrally depressed body
- Enlarged pectoral fins



SKATES

SOFT SNOOT SKATES

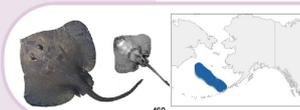
- Flexible snout
- DARK ventral surface
- Thorns PRESENT on disc



Roughtail Skate *Bathyraja trachura*

Plum brown to black dorsally, ventral side plum brown to black; mouth and cloaca whitish; tail length shorter than precaudal length; scapular and orbital thorns absent; 0-3 nuchal thorns present; dorsal thorns absent; tail thorns present; dorsal surface covered in fine denticles; ventral side smooth

RANGE: Bering Sea; California; Japan
DEPTH: 490-1504m SIZE: 85cm



Commander Skate *Bathyraja lindbergi*

Gray brown to black dorsally, ventral side gray to black, darker around pectoral and pelvic fin margins, white around mouth and nostrils; orbital and scapular thorns absent; mid-dorsal thorns present and continuous from scapular region to dorsal fins; enlarged claspers in males; few scattered dorsal denticles

RANGE: Bering Sea; Japan
DEPTH: 160-950m SIZE: 93cm



Whiteblotched Skate *Bathyraja maculata*

Gray with scattered white or cream blotches dorsally; ventral side blotchy gray; no scapular or orbital thorns; tail thorns present; more than one strong nuchal thorn present; no mid-dorsal thorns; dorsal surface covered with denticles; ventral surfaces smooth

RANGE: Aleutian Islands to Bering Sea; Russia
DEPTH: 190-570m SIZE: 120cm



Whitebrow Skate *Bathyraja minipinnosa*

Gray brown to dark brown dorsally; ventral side brown or lighter; lips white; interorbital region generally white with white margins to orbits; orbital and scapular thorns absent; tail thorns present; several nuchal thorns present; mid-dorsal row of thorns discontinuous; minute fine denticles on dorsal side of disk

RANGE: Bering Sea; Japan
DEPTH: 160-1420m SIZE: 82cm



Deepsea Skate *Bathyraja abyssicola*

Gray brown dorsally, ventral side gray brown; mouth and cloaca whitish; may have white blotches on ventral surface; snout elongate and pointed; tail length longer than precaudal length; scapular and orbital thorns absent; tail thorns present; 0-3 nuchal thorns present; mid-dorsal row of thorns present or absent; dorsal and ventral sides of disc and posterior portion of tail covered in fine denticles

RANGE: Bering Sea; California; Japan
DEPTH: 362-2904m SIZE: 140cm



8

5

Contact: Sarah Friedman, Thaddaeus Buser



NOAA FISHERIES



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NEWS

Life at Sea on a Fisheries Survey with Chris Anderson

July 30, 2025

NOAA fishery biologists provide critical support for sustainable fisheries and science from deck to desk.

[Feature Story](#) | Alaska



On deck of the *PV Northwest Explorer* during the annual Groundfish Bottom Trawl Survey, Chris Anderson holds up a walleye pollock and a Pacific cod, which represent two of Alaska's largest fisheries. Credit: NOAA Fisheries

A Career Anchored in Science

Chris Anderson is no stranger to the open ocean. His journey with [NOAA Fisheries Alaska Fisheries Science Center](#) began 15 years ago as a [North Pacific fisheries observer](#), providing fisheries-dependent data from commercial catches. Today, he is a fishery biologist conducting

More Information

- > [Bottom Trawl Survey Temperature and Progress Maps](#)
- > [2025 Alaska Fisheries Science Center Field Season and Program Updates](#)
- > [Groundfish Assessment Program](#)
- > [Alaska Fish Research Surveys](#)

Recent News

FEATURE STORY

Workshop Targets High-Tech Ways to Assess Endangered Whale Health

Alaska, New England/Mid-Atlantic, Southeast, West Coast



FEATURE STORY

2022 and 2023 Combined Report of Marine Mammal Strandings in the United States

Alaska, New England/Mid-Atlantic, Pacific Islands, Southeast, West Coast, National



FEATURE STORY

NOAA Announces Confirmed



What's life like at sea?



NOAA FISHERIES

<https://www.fisheries.noaa.gov/feature-story/life-sea-fisheries-survey-chris-anderson>

NEWS

Modernizing Fisheries Survey Science: Advancing NOAA's Fisheries-Independent Data Collection

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On deck at the D1 Northwest, employees display the annual Groundfish Bottom Trawl Survey. Chris Anderson holds up a

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FEATURE STORY

2022 and 2023 Combined Report



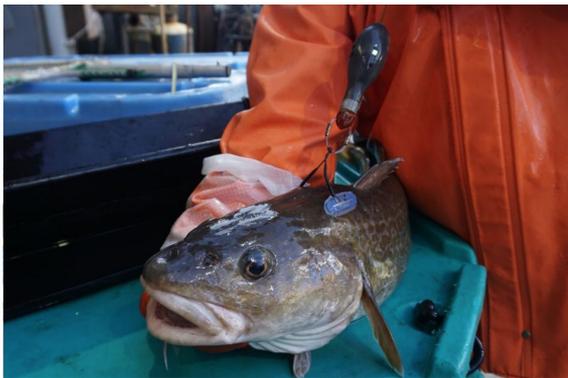
Survey Modernization



NEWS

Following the Fish: Satellite Tagging Reveals Cod Migration Patterns to Inform Fisheries Management

Feature Story | Alaska



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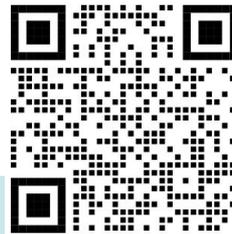


FEATURE STORY

2022 and 2023 Combined Report



Pacific Cod Tagging *Coming soon!*



2025 Summary

- Water temps slightly warmer than 2024, cold pool smaller
- Environmental data limited for 2025
- Biomass estimates for most fish species similar to last year for EBS
- Cod: overall biomass estimate lower, but a lot of small fish
- Crab biomass estimates all higher than 2024
- EBS data accessible in GAP_PRODUCTS tables and AKFIN; NBS data should be finalized very soon



Thank you!



Questions?

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