2025 Gulf of Alaska Biennial Bottom Trawl Survey

NOAA FISHERIES

Groundfish Plan Team Meeting

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Survey purpose

To collect standardized and fishery-independent time series of:

- Relative abundance
- Distribution
- Age and biological condition

There are 16 managed species or species groups in the Gulf of Alaska presented here.

2025 GOA bottom trawl survey

The 2025 GOA bottom trawl survey took place between May 25th through August 3rd 2025. The previous GOA survey was in 2023.

We visited **457** stations and completed **431** successful hauls across the two survey vessels. The expectation for future GOA surveys should be 450 stations.

The number of charter days was similar to previous years but expected completion rate was reduced, leading to completion of ~17% fewer stations

Survey charter vessels

F/V Alaska Provider

2013-2016, 2021-Present

8 yrs of charter

Cpt Paulo da Cruz, first year on GOA survey

F/V Ocean Explorer

2010-2012, 2017-present

10 yrs of charter experience

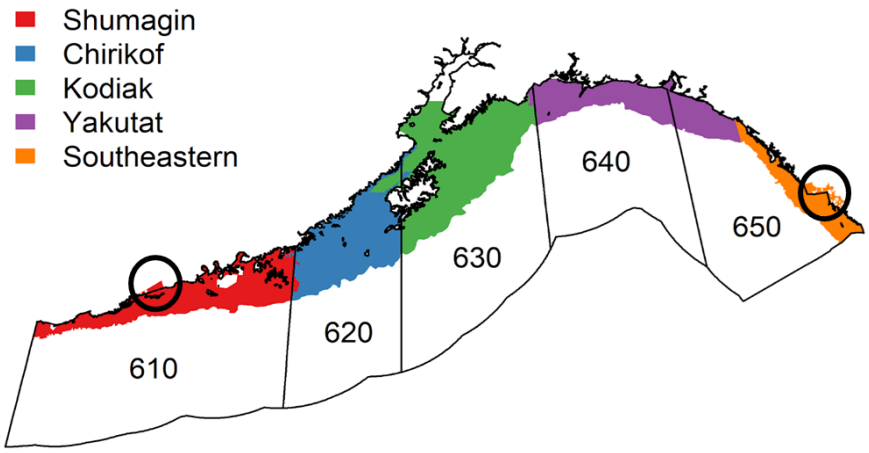
Cpt Dan Carney, >20 yrs experience on survey

Survey design

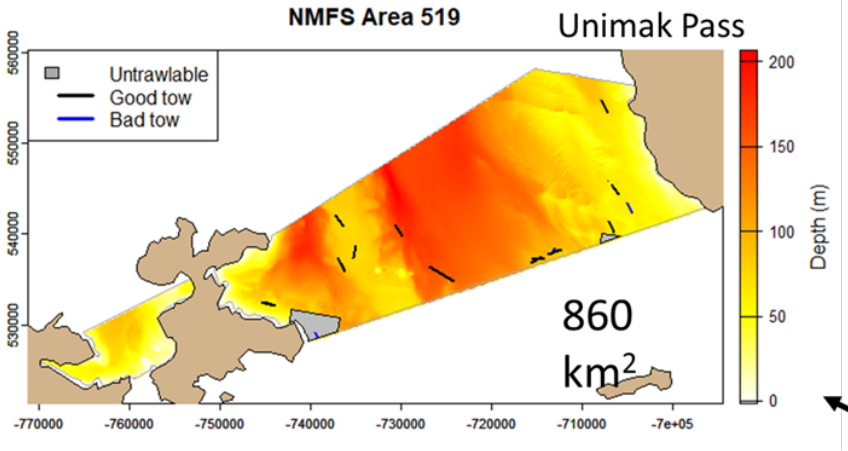
- New stratified random survey as of 2025
- 28 strata defined by NMFS Area and depth zone
- Station allocation based on stratum area and the abundance and variance of 15 representative species
- 15 minute trawls (usually about 1.5 km distance)
- *Poly Nor 'Eastern* net with rollers & bobbins

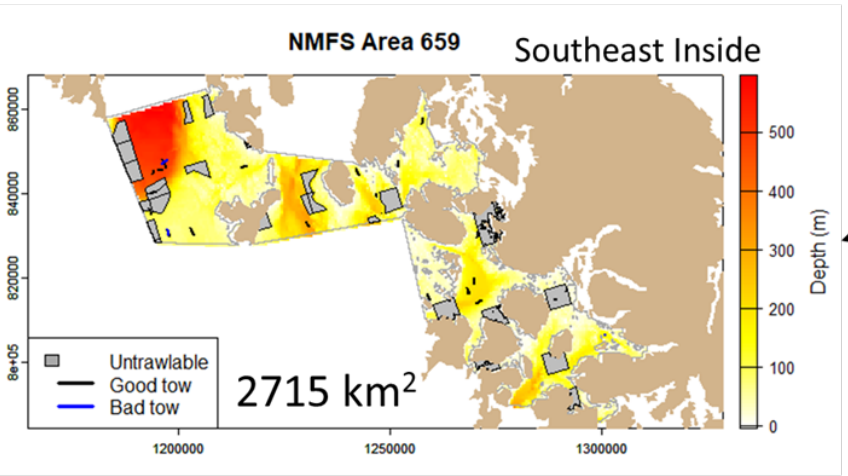
GOA Survey Footprint Change

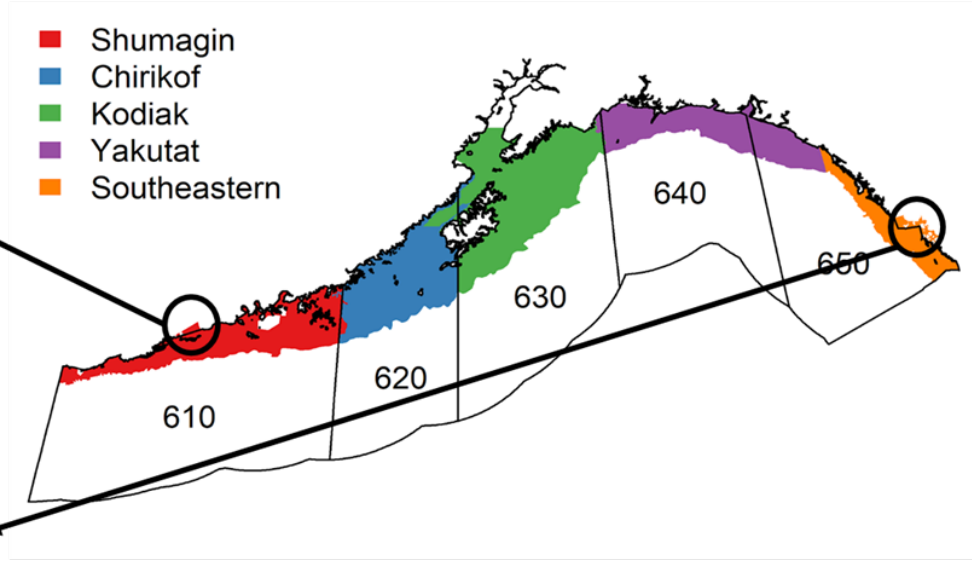
- The new GOA strata are aligned with NMFS Sampling Districts (numbered polygons)
- Historical GOA strata were aligned with INPFC Districts (colored shapes)



GOA Survey Footprint Change







Percent reduction of historic GOA survey sampling areas:
Across entire GOA, ~ 1.4% reduction of area
In the Western GOA regulatory area, ~1.3% reduction
In the Eastern GOA regulatory area, ~3.2% reduction

GOA Survey Footprint Change

- Trimmed stratum areas outside of NMFS areas 610 – 650
  - *Updated stratum area records in GAP_PRODUCTS.AREA with DESIGN_YEAR = 2024 (previously used DESIGN_YEAR = 1984)*
  - *2025: Uses DESIGN_YEAR = 2025*
  - *Useful lookup table: SURVEY_DESIGN*

- Excised stations outside of NMFS areas 610 – 650
  - *HAUL_TYPE change from 3 (Standard) -> 24 (Outside of Survey Area)*

- Tables in GAP_PRODUCTS/AKFIN with recalculated indices/comps were updated May 2025

Data status

- GOA data are finalized as of **September 1st**

- CPUE, Biomass, Size/Age Composition
  - GAP_PRODUCTS[1], AKFIN[2] and FOSS[3]
  - Calculated via the gapindex[4] R package
  - Ages as of July 9th, 2025

- GAP data request repo[5]: non-standard data requests

1 - https://afsc-gap-products.github.io/gap_products/
2 - https://akfin.psmfc.org/
3 - https://www.fisheries.noaa.gov/foss/f?p=215:28
4 - https://github.com/afsc-gap-products/gapindex
5 - https://github.com/afsc-gap-products/data-requests

GAP Products Documentation

gapindex R package

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Special projects and collections

Special projects and collections

Acoustics
ES 80 acoustic data collection

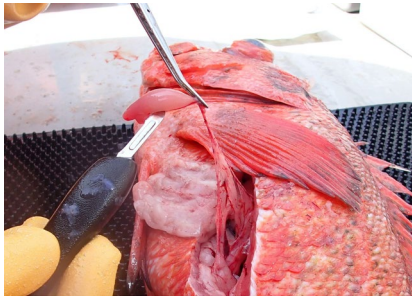
Environmental Monitoring
Harmful algal bloom (HAB) toxins in Alaskan food web
Measuring light intensity and dissolved oxygen
Validation of trawlability predictions
eDNA Collection
GAP CatCam Project

Population Genetics
Northern and dusky Epigenetic Aging collections
POP Genetics and morphometrics
Shark genetics and age structure (sleeper/salmon)
Elasmobranch Stress Physiology

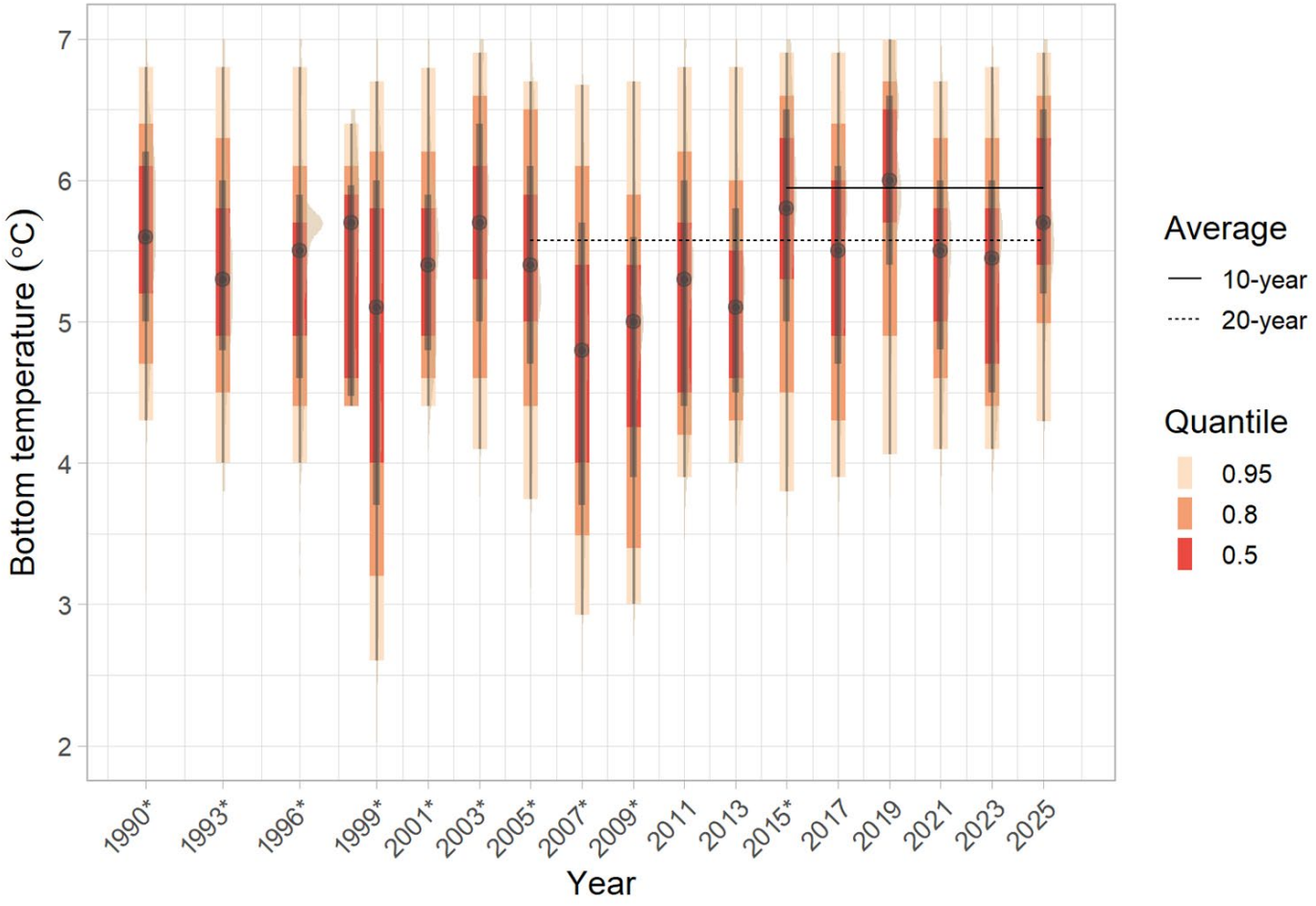
Feeding Habits
arrowtooth flounder, Pacific cod, Pacific Halibut, Pacific ocean perch, pollock, sablefish, flathead sole, shortspine thornyhead

Miscellaneous
IPHC Pacific halibut data collection
Visual maturity collection
In-house training resources and outreach collection

Specimen Collection
Coral collections
Sponge collection
Mollusk collection
NWFSC + UW voucher collection
Observer fish and crab training specimens
Juvenile prowfish
Age 1 pollock
Mesopelagic fish collection
Fossilized coral collection
Sand lance collection
Lamprey collection
Fish collection for EEZ fish DNA library

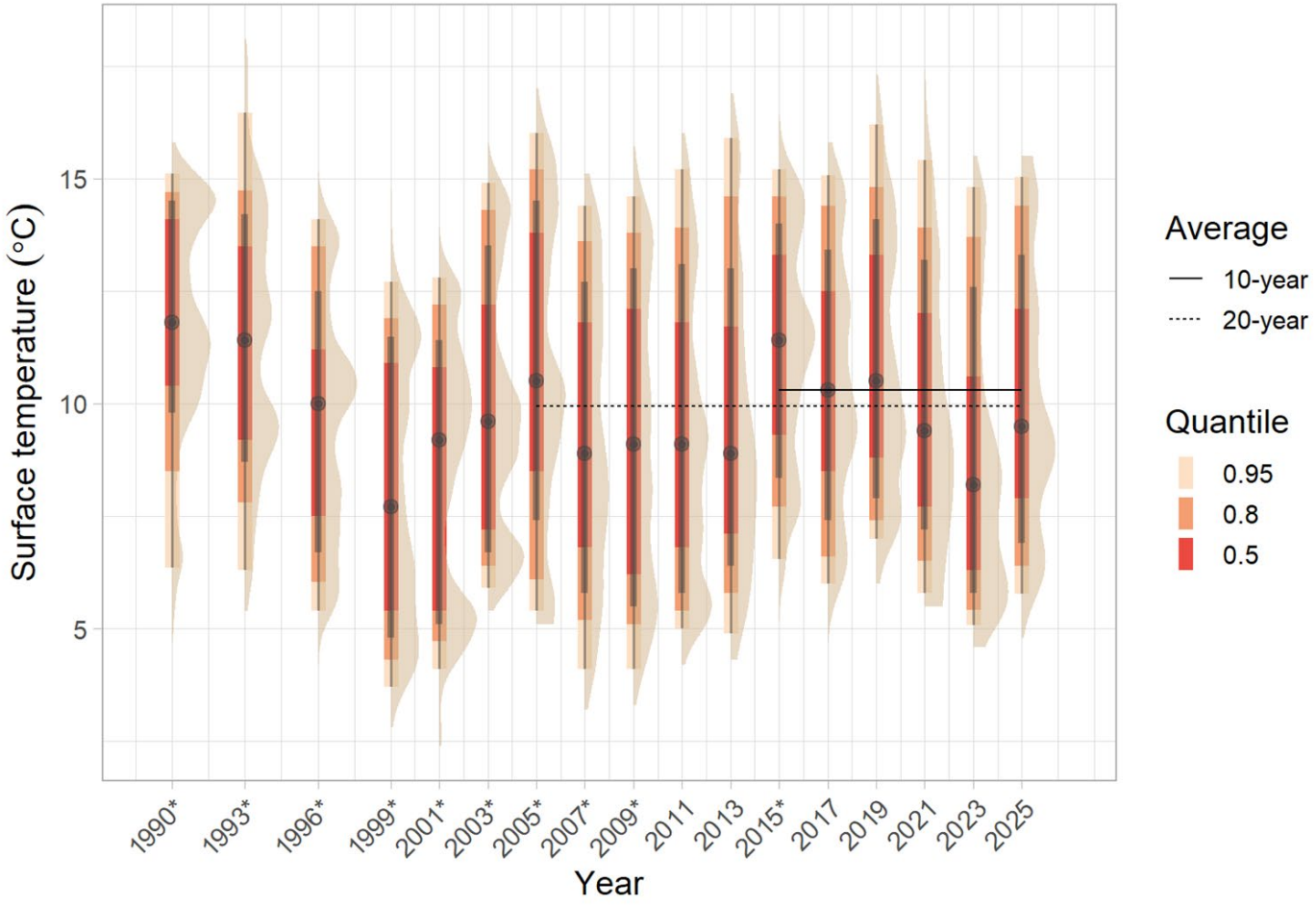


Bottom temperature (°C)



* indicates years with 3 or more boats

Surface temperature (°C)

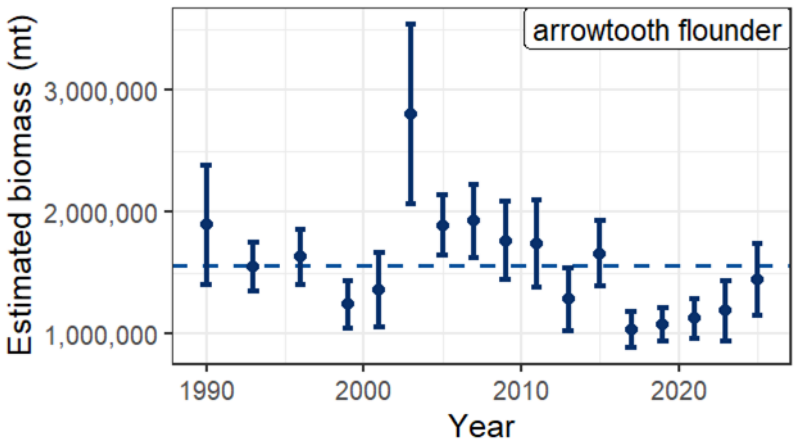


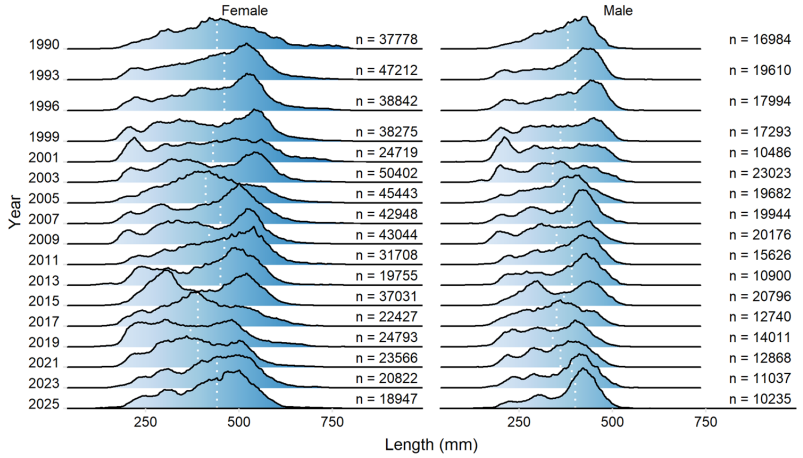
* indicates years with 3 or more boats

Biomass trends

Arrowtooth flounder (*Atheresthes stomias*)

- Biomass estimate in 2025: ~1443000 mt
- +21.8% from 2023





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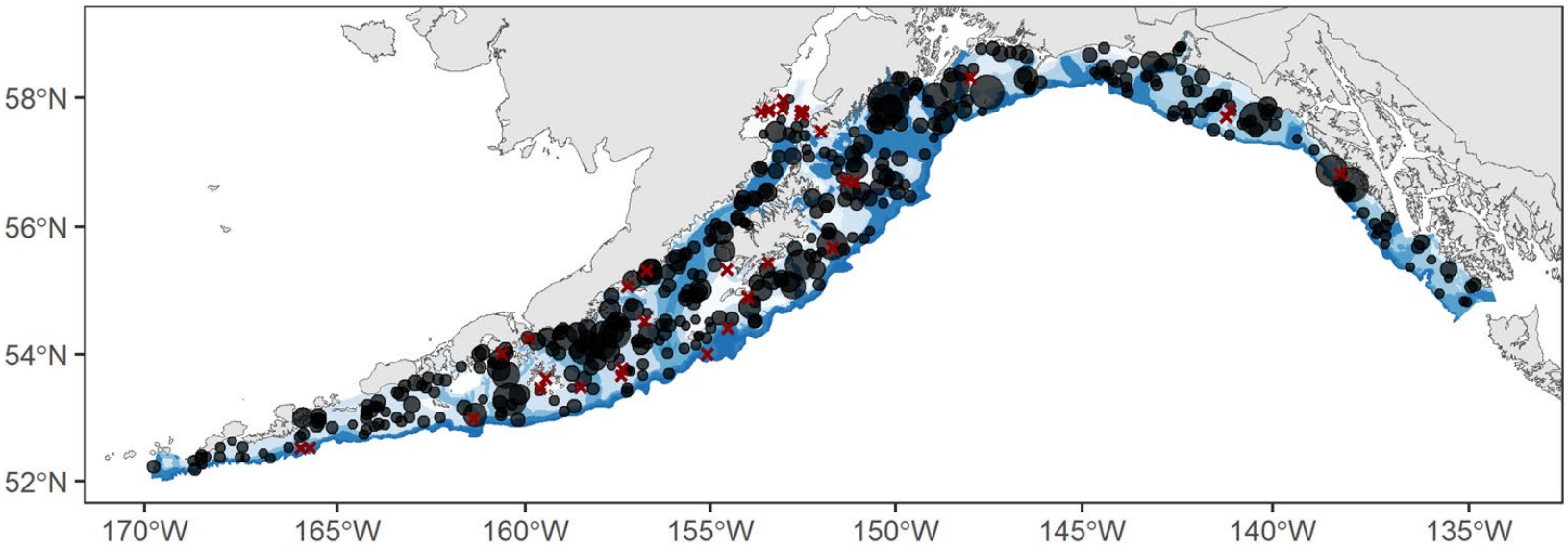
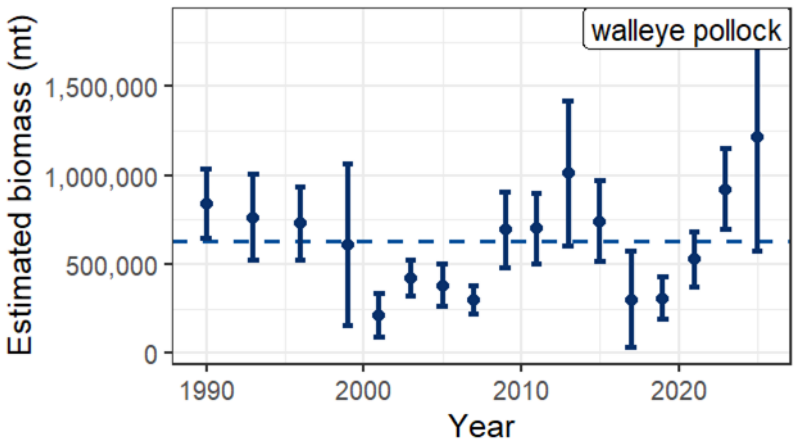
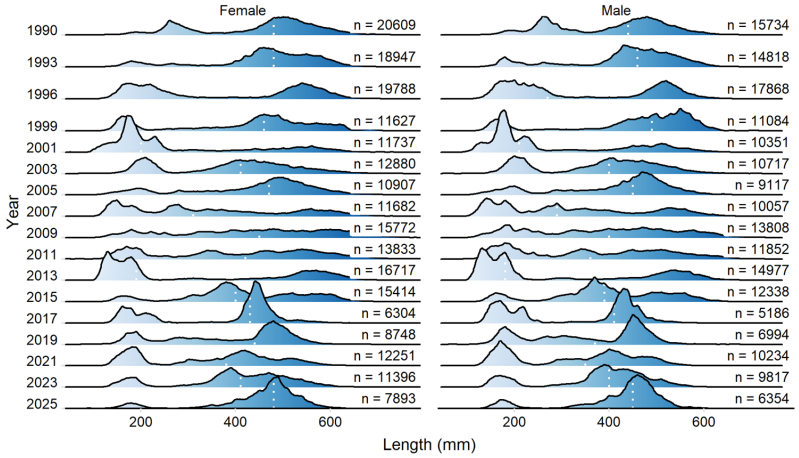


Walleye pollock (*Gadus chalcogrammus*)

- Biomass estimate in 2025: ~1214000 mt
- +32.1% from 2023





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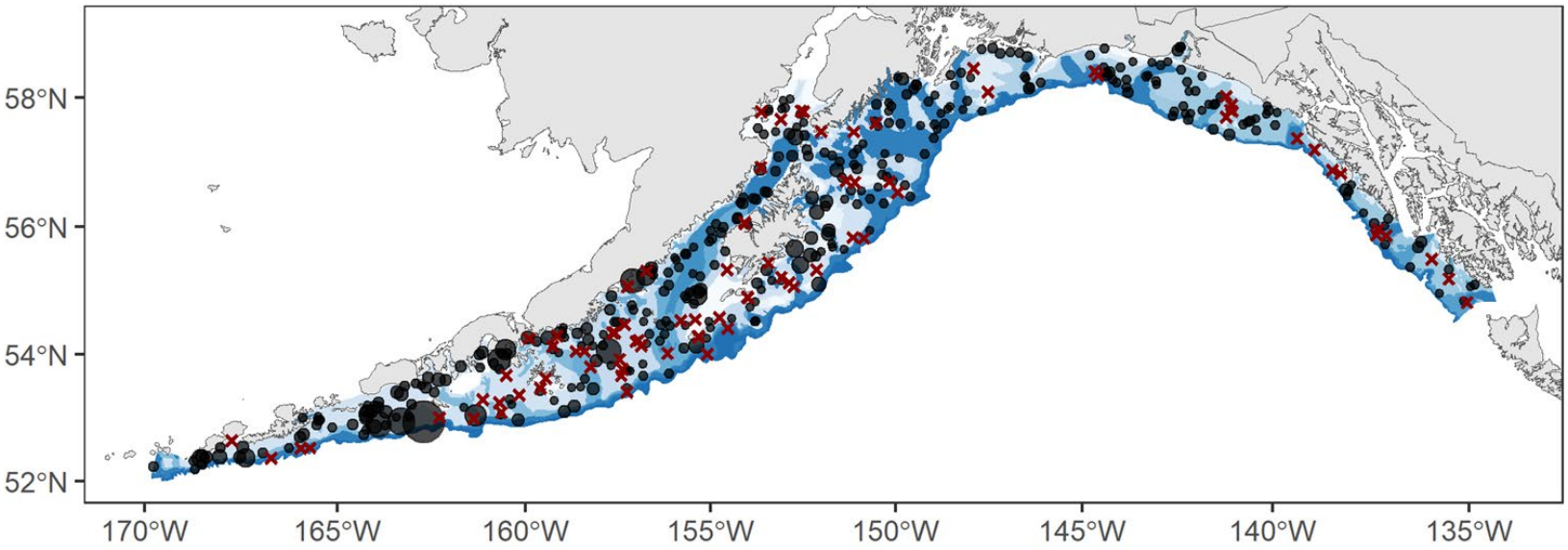
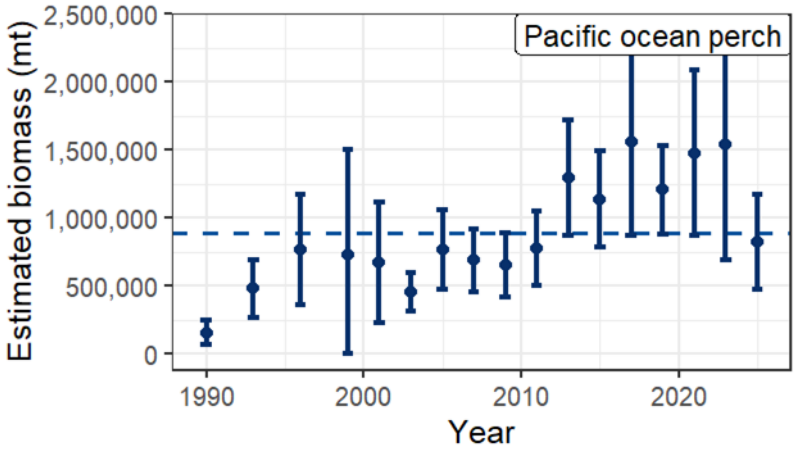
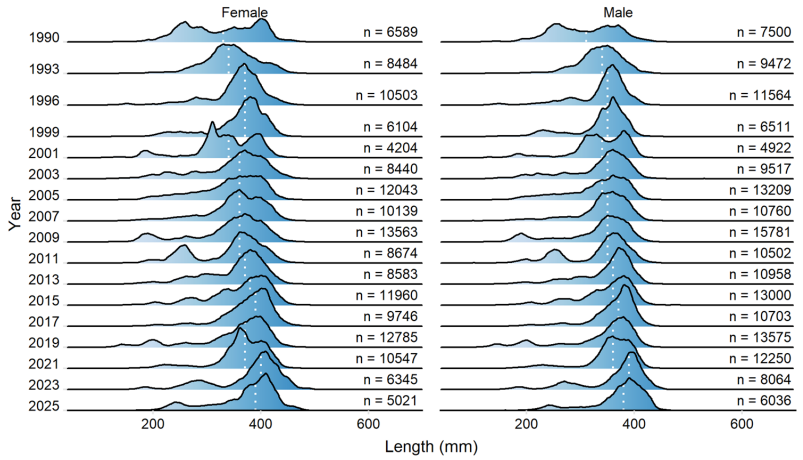


Pacific ocean perch (*Sebastes alutus*)

- Biomass estimate in 2025: ~824000 mt
- -46.4% from 2023 ⬇





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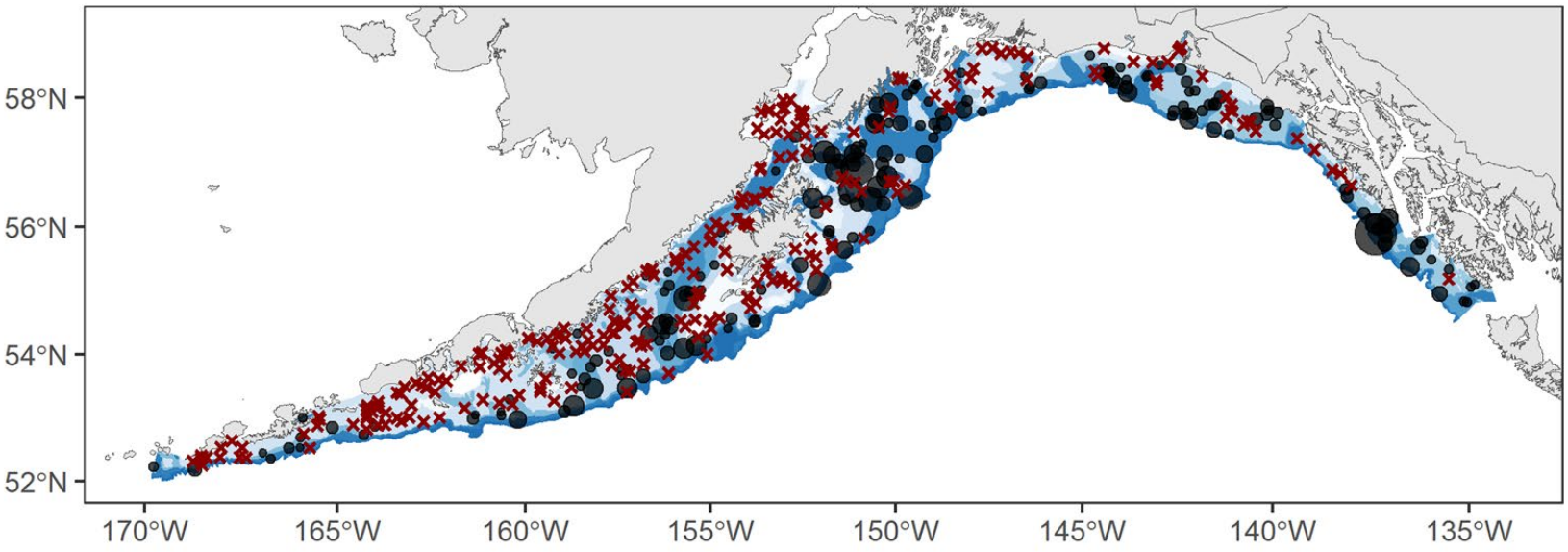
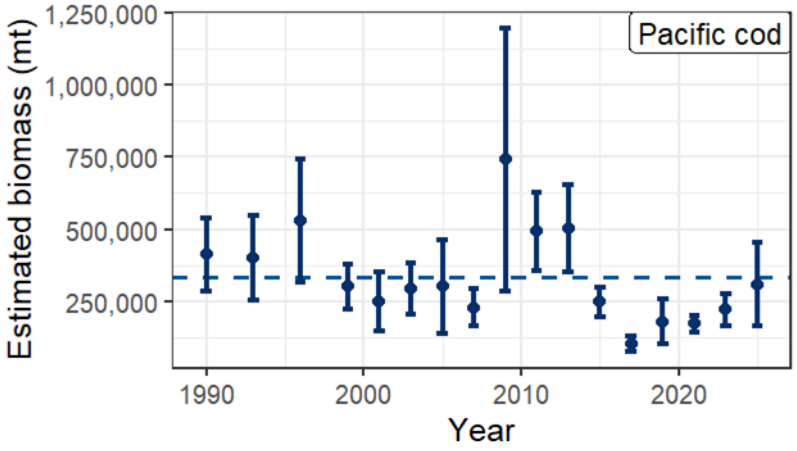
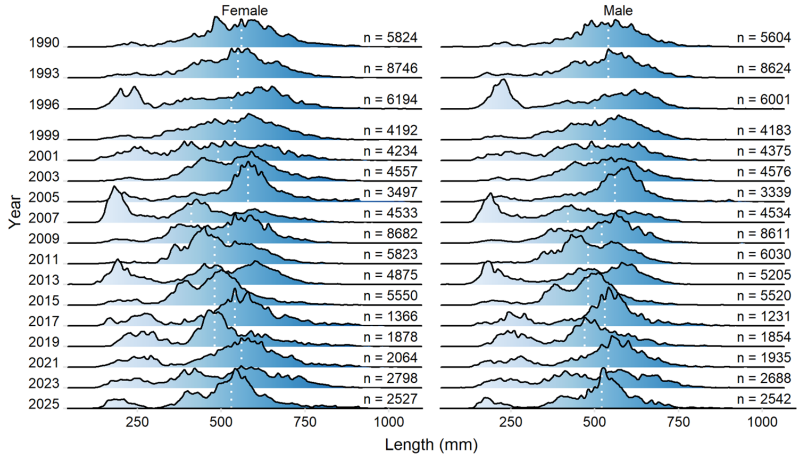


Pacific cod (*Gadus macrocephalus*)

- Biomass estimate in 2025: ~310000 mt
- +39.2% from 2023





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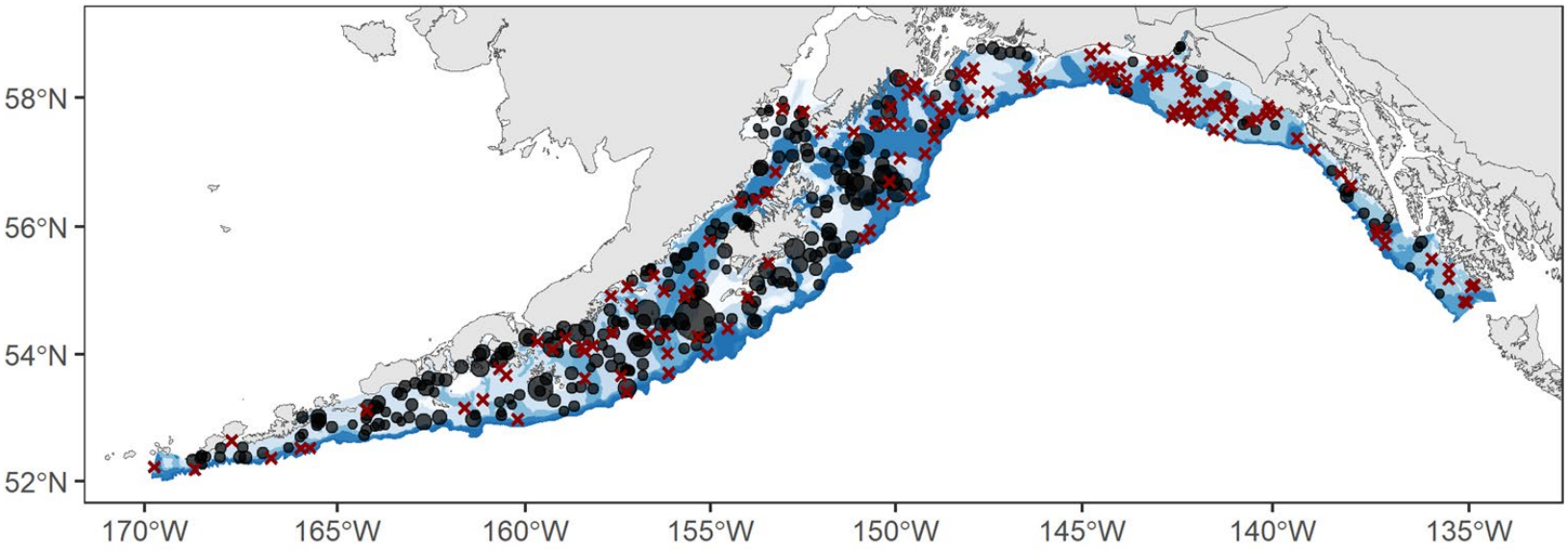
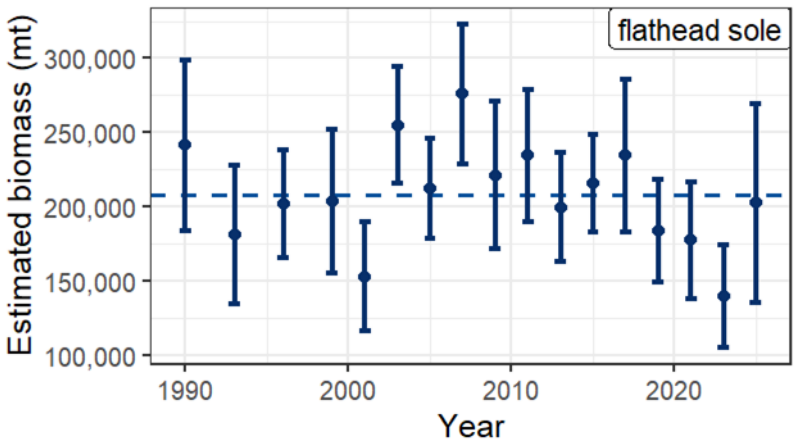
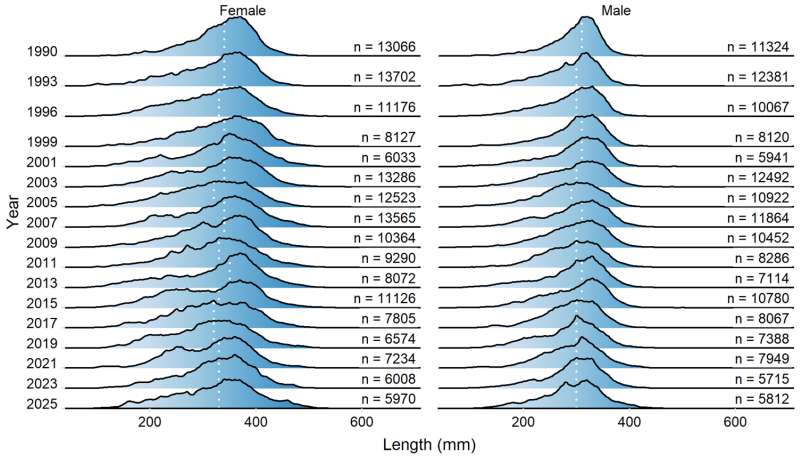
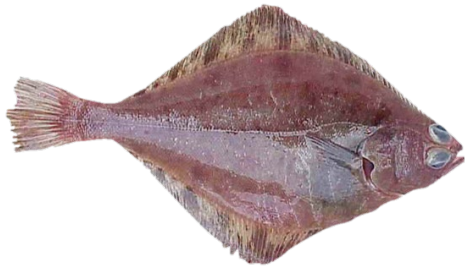


Flathead sole (*Hippoglossoides elassodon*)

- Biomass estimate in 2025: ~203000 mt
- +44.7% from 2023







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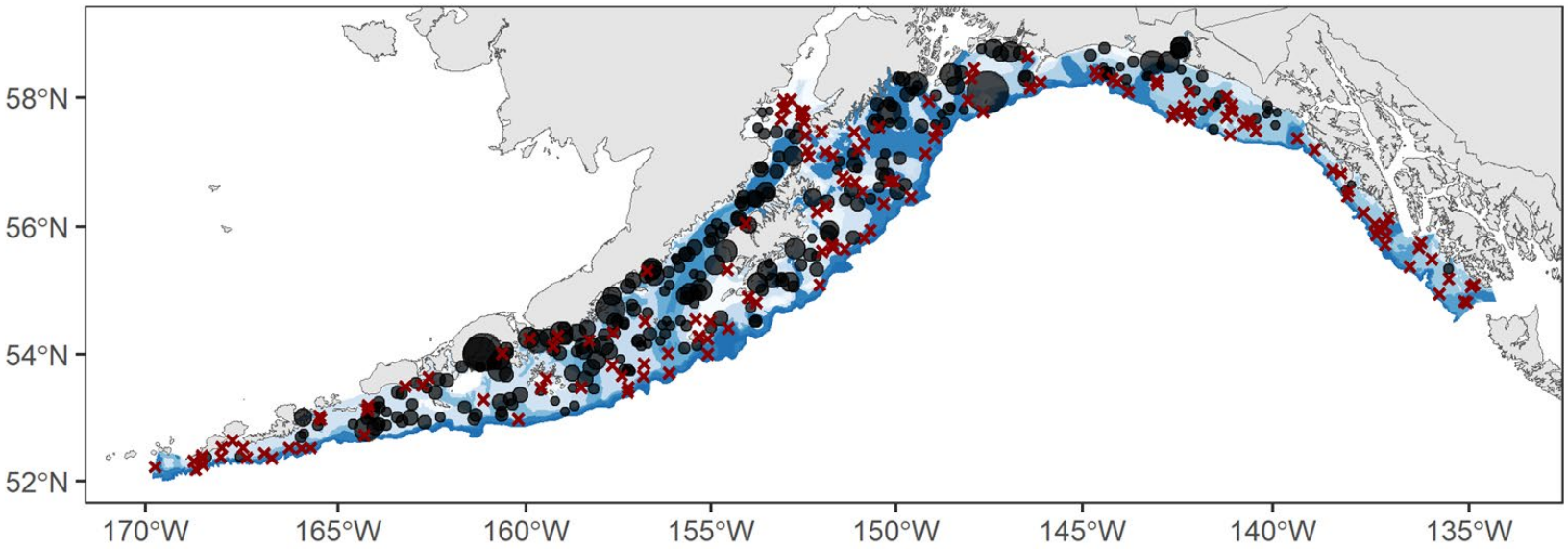
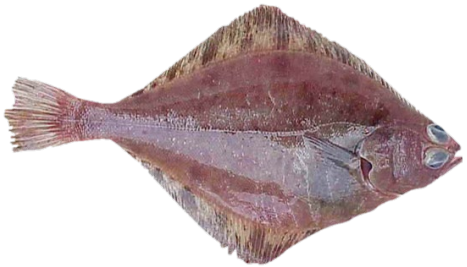
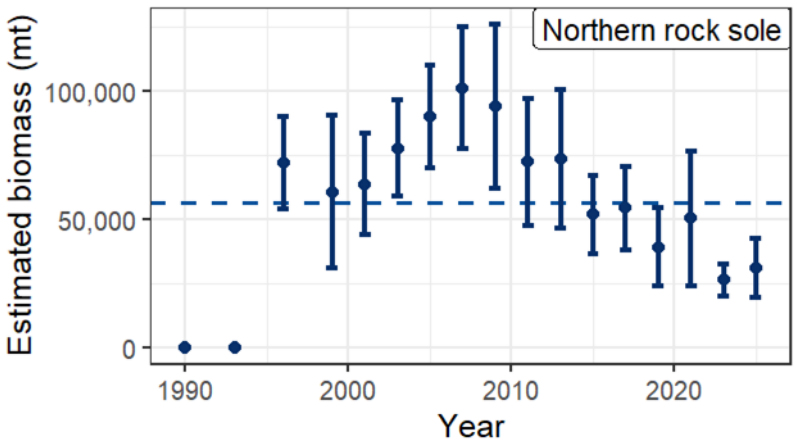
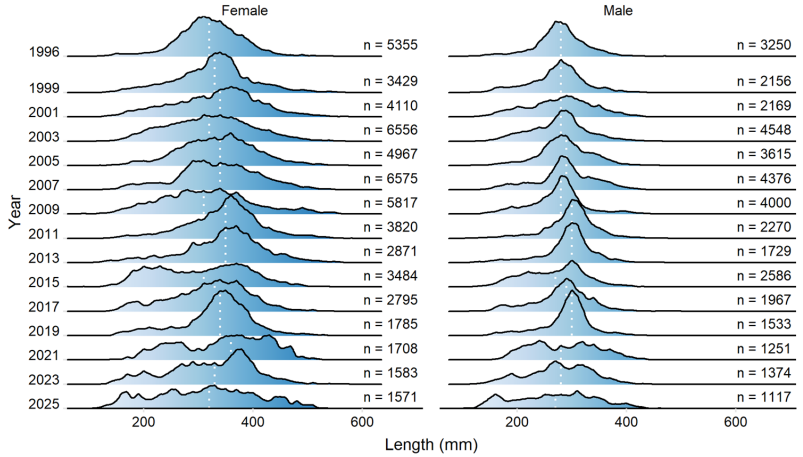




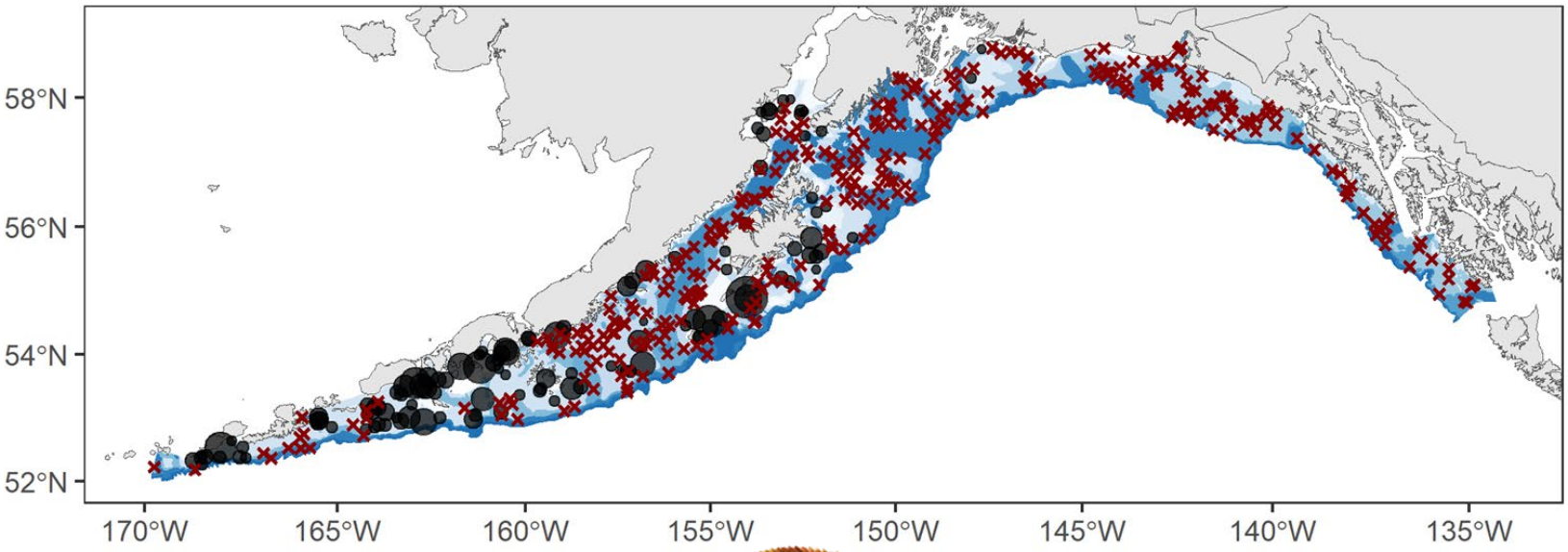
Northern rock sole (*Lepidopsetta polyxystra*)

- Biomass estimate in 2025: ~31000 mt
- +17.6% from 2023



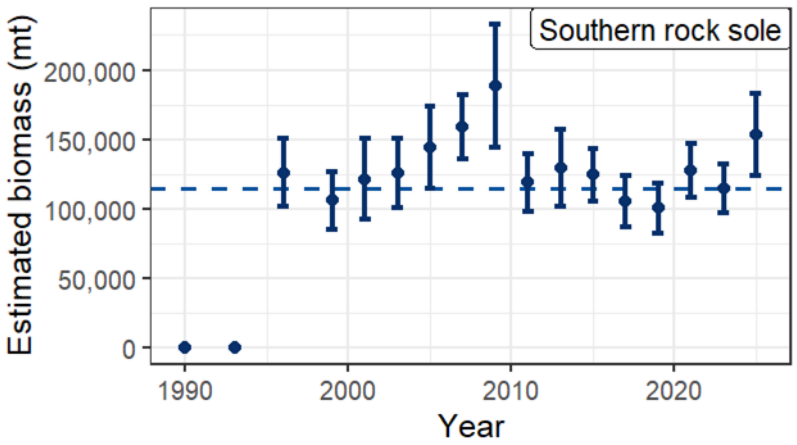


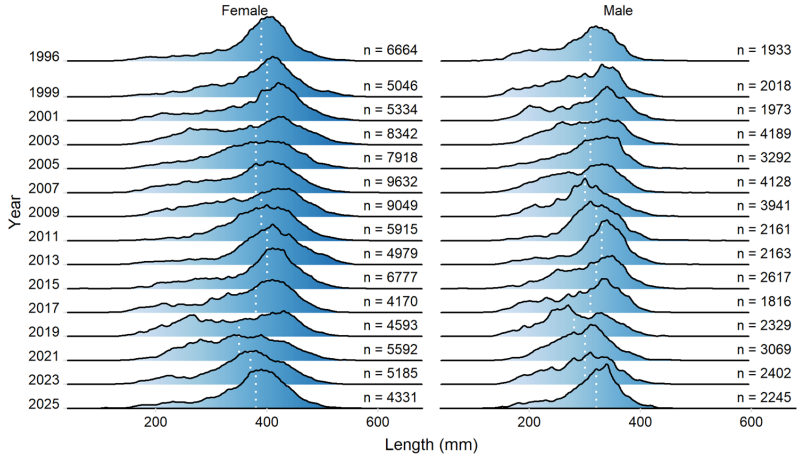
Northern rock sole (*Lepidopsetta polyxystra*)



Southern rock sole (*Lepidopsetta bilineata*)

- Biomass estimate in 2025: ~153000 mt
- +33.9% from 2023





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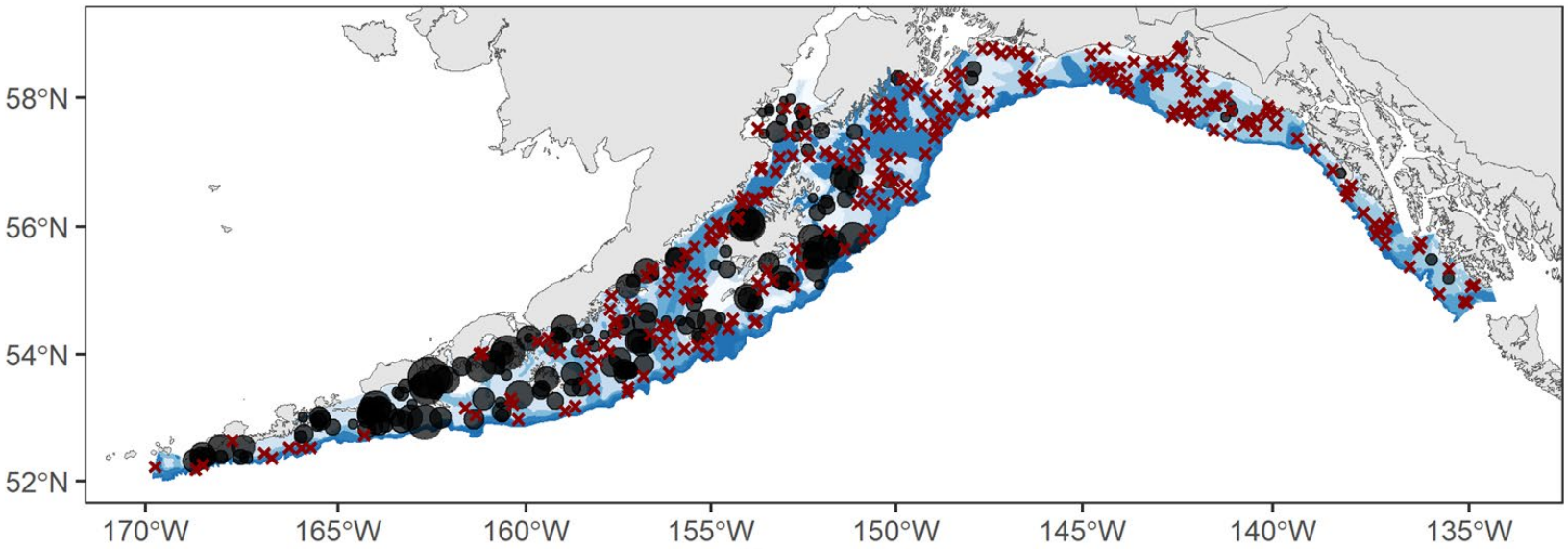
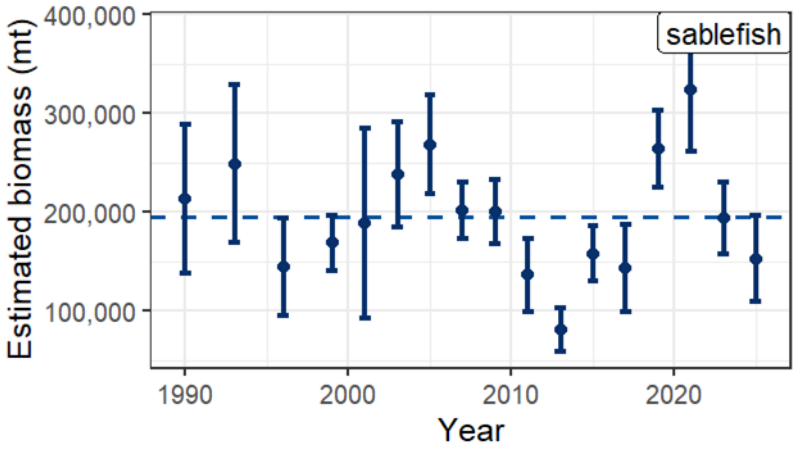
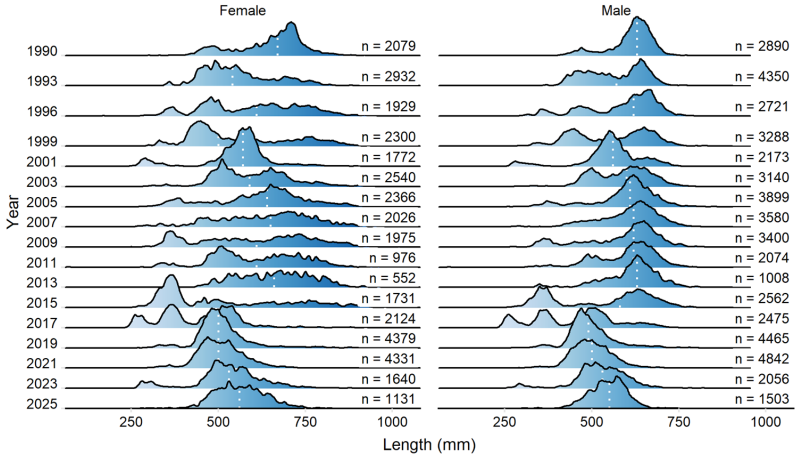


Sablefish (*Anoplopoma fimbria*)

- Biomass estimate in 2025: ~153000 mt
- -21.3% from 2023





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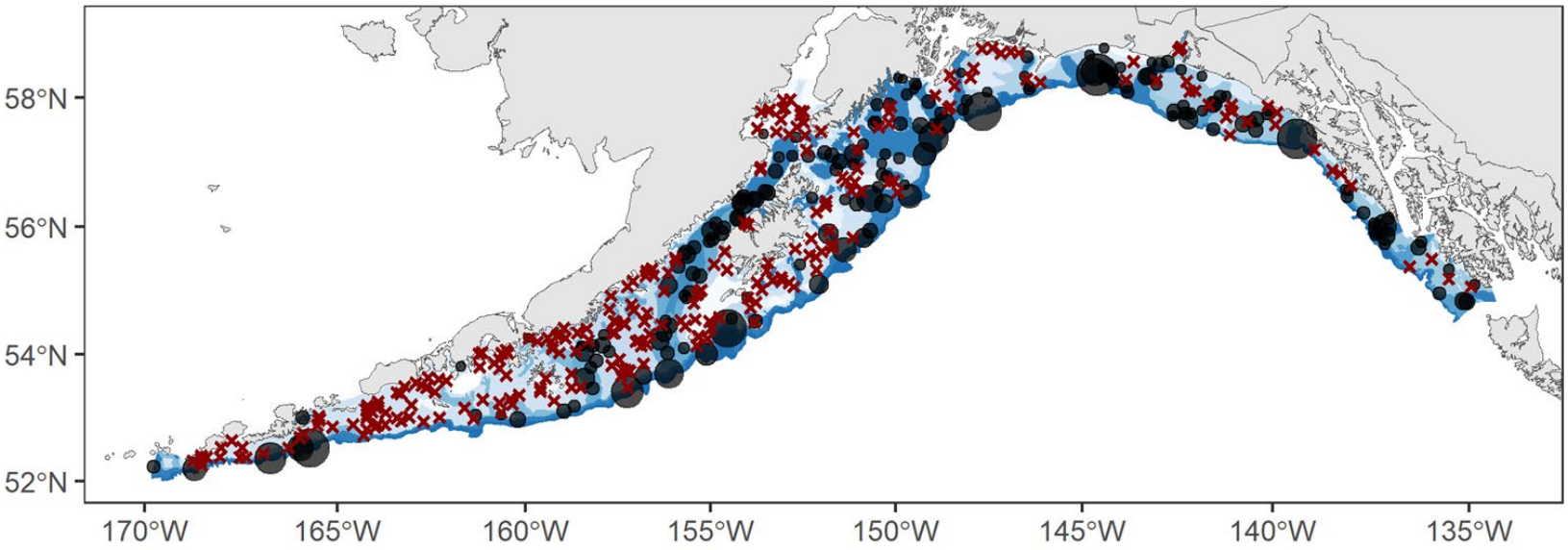
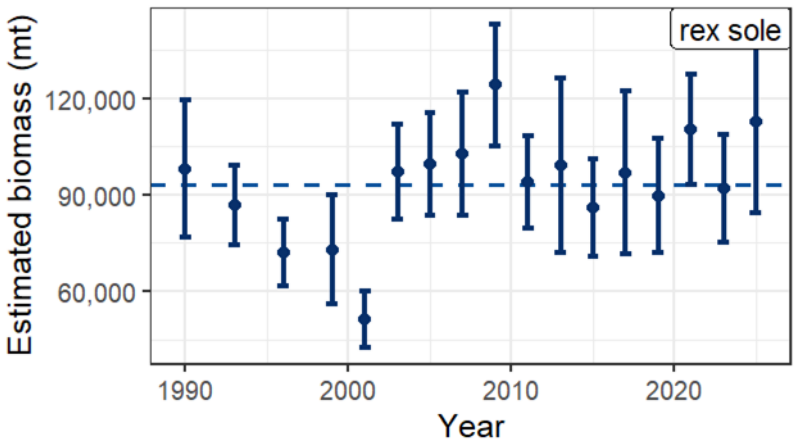
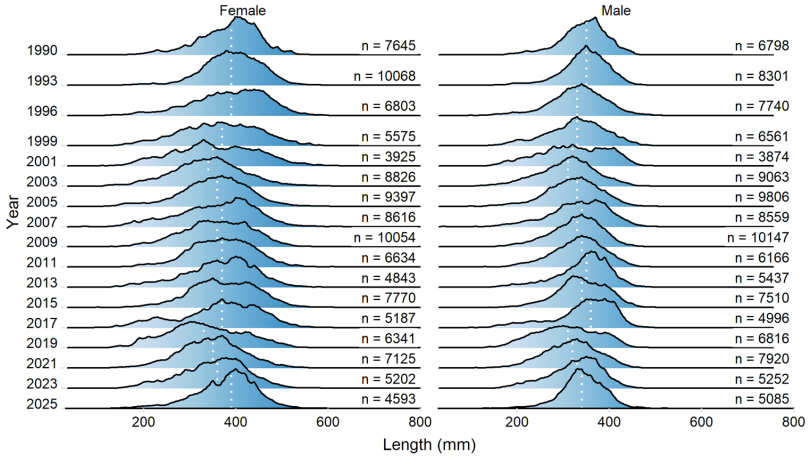


Rex sole (*Glyptocephalus zachirus*)

- Biomass estimate in 2025: ~113000 mt
- +22.6% from 2023





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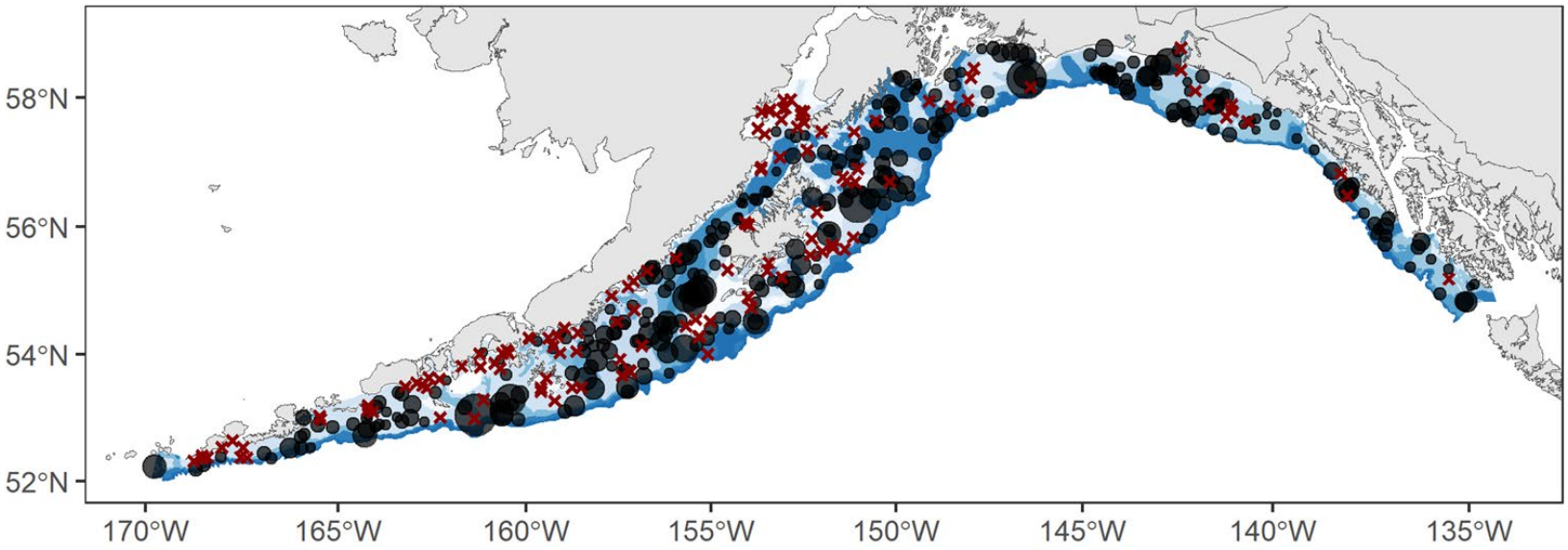
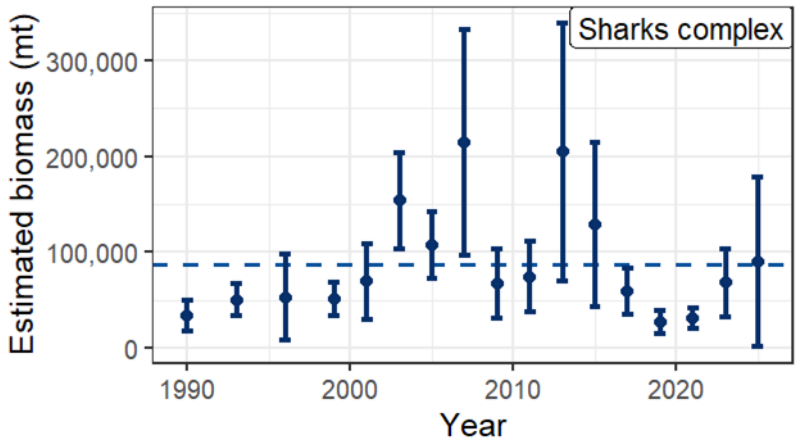


Sharks complex (*various*)

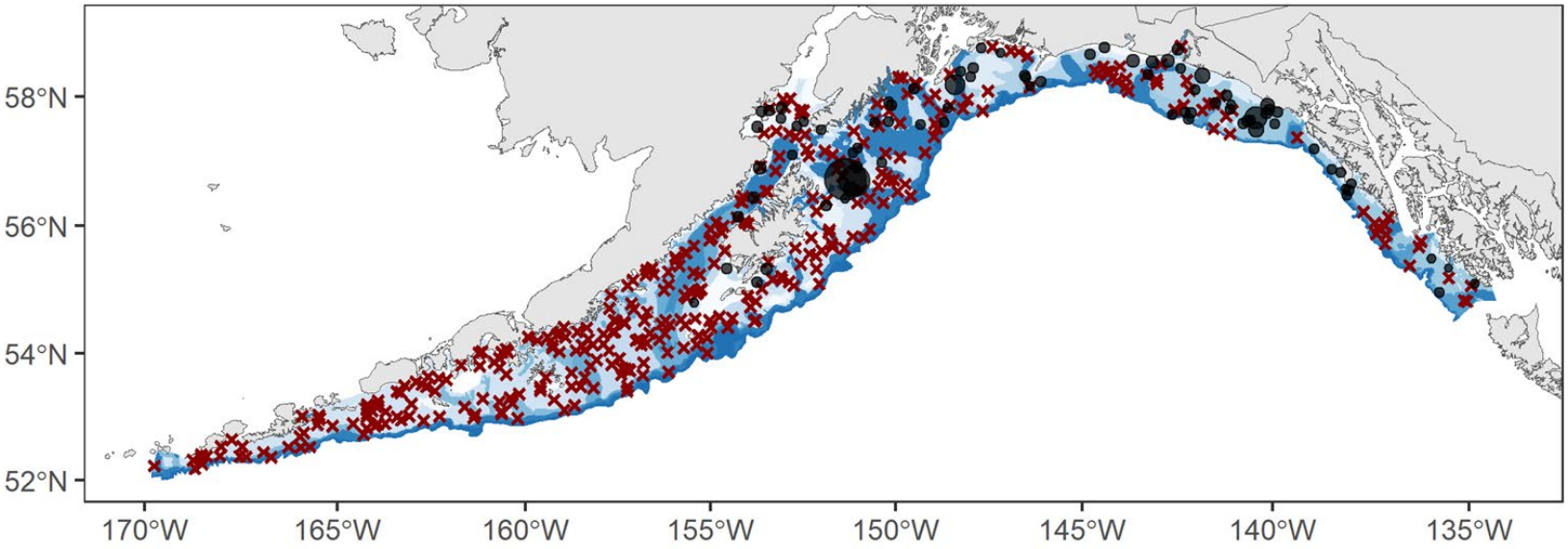
- Biomass estimate in 2025: ~90000 mt
- +32.6% from 2023



This complex includes:

spiny dogfish, salmon shark, Pacific sleeper shark*

Sharks complex (*various*)

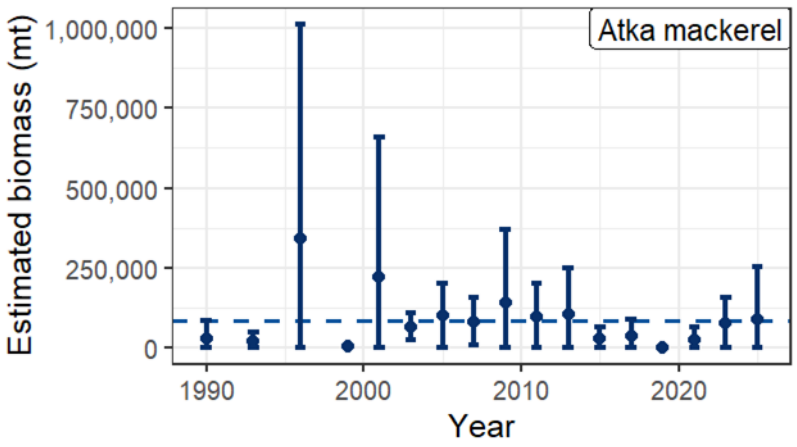


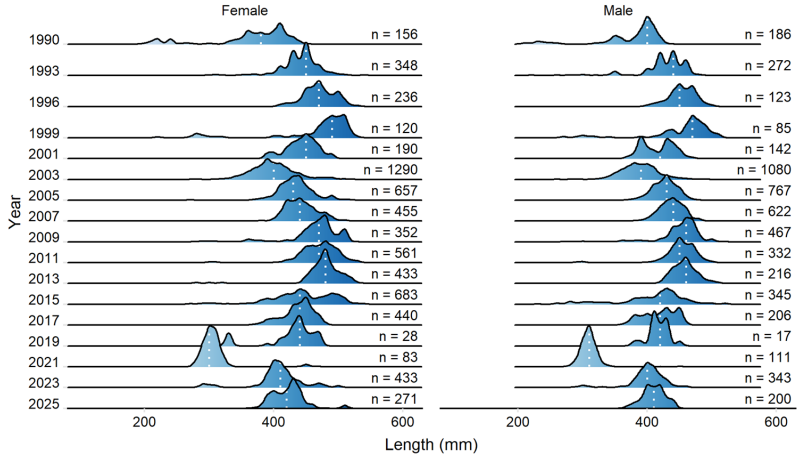
This complex includes:

spiny dogfish, salmon shark, Pacific sleeper shark*

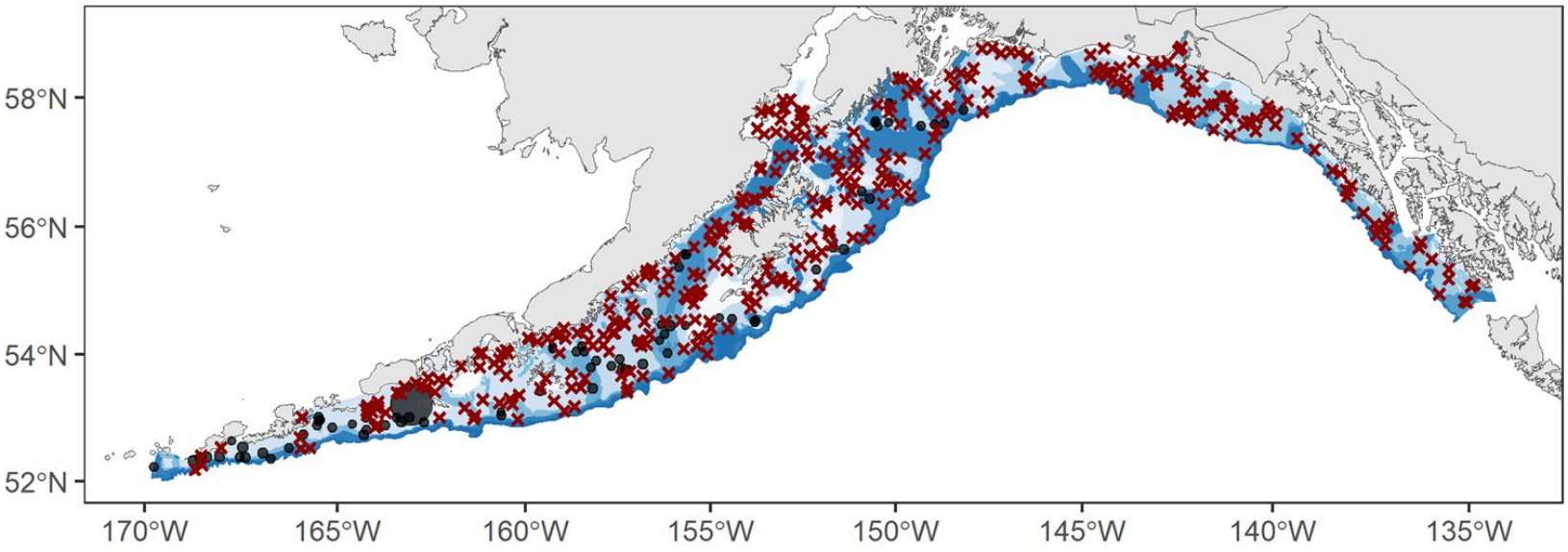
Atka mackerel (*Pleurogrammus monopterygius*)

- Biomass estimate in 2025: ~89000 mt
- +16.3% from 2023



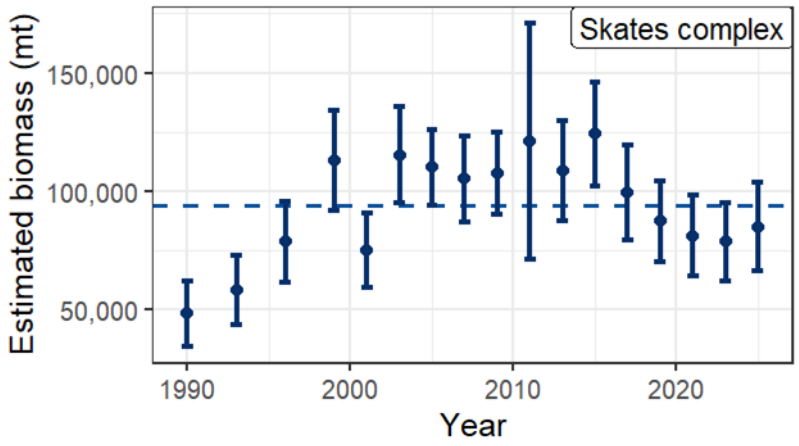


Atka mackerel (*Pleurogrammus monopterygius*)



Skates complex (*various*)

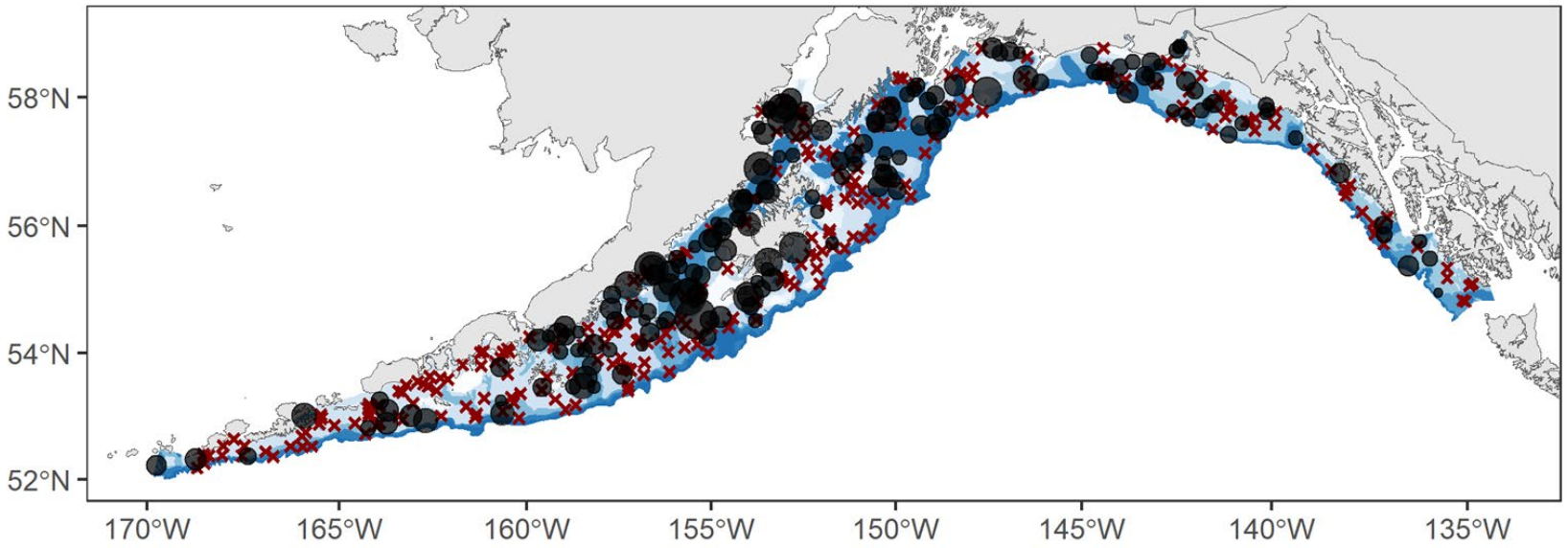
- Biomass estimate in 2025: ~85000 mt
- +8.0% from 2023 ⟺



This complex includes:

longnose skate, big skate, Aleutian skate, Alaska skate, Bering skate, whiteblotched skate, mud skate, skate unid.*, deepsea skate*, roughtail skate*, commander skate*, butterfly skate*, whitebrow skate*

Skates complex (*various*)

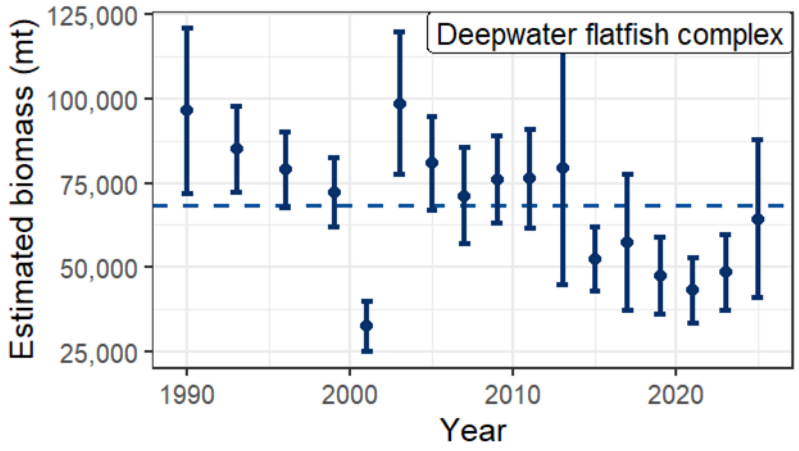


This complex includes:

longnose skate, big skate, Aleutian skate, Alaska skate, Bering skate, whiteblotched skate, mud skate, skate unid.*, deepsea skate*, roughtail skate*, commander skate*, butterfly skate*, whitebrow skate*

Deepwater flatfish complex (*various*)

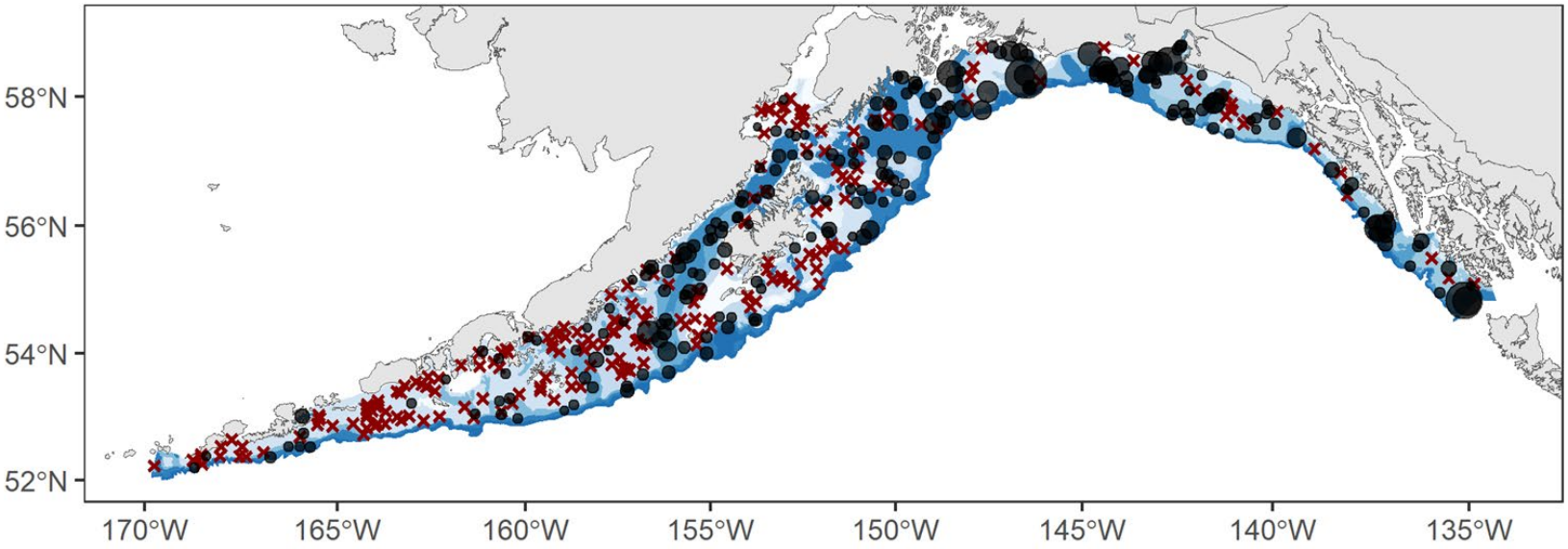
- Biomass estimate in 2025: ~64000 mt
- +32.7% from 2023



This complex includes:

Dover sole, Kamchatka flounder, Greenland turbot*, deepsea sole*

Deepwater flatfish complex (*various*)

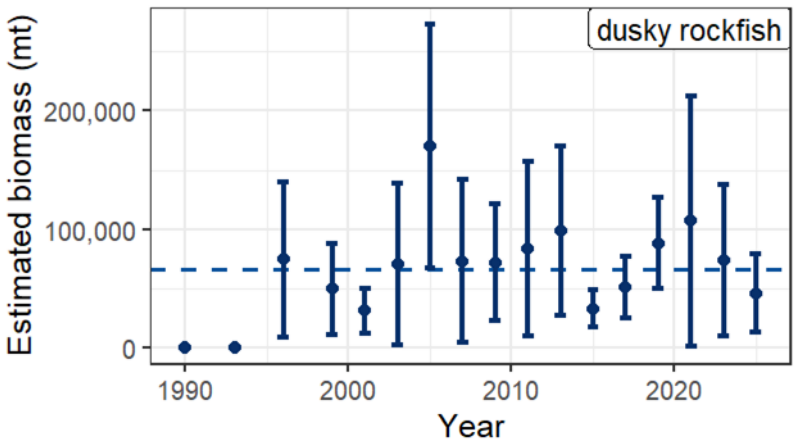


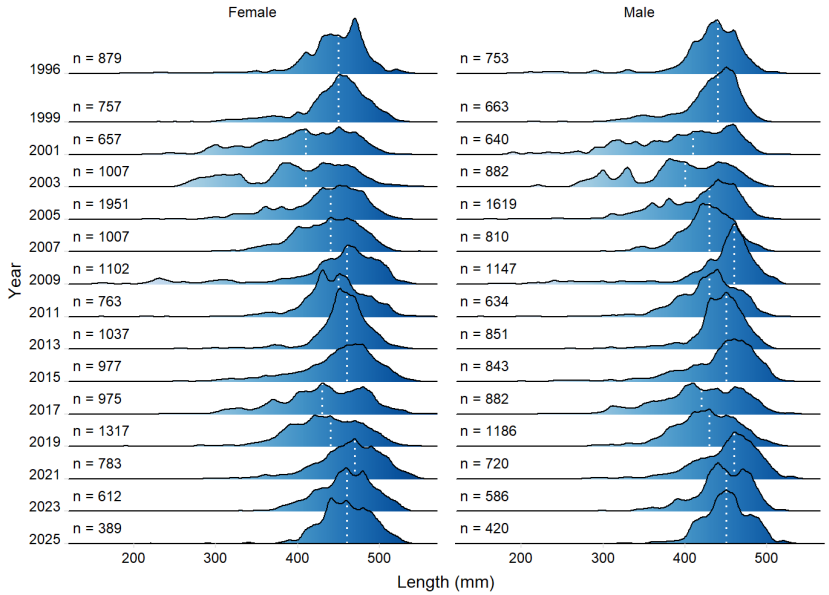
This complex includes:

Dover sole, Kamchatka flounder, Greenland turbot*, deepsea sole*

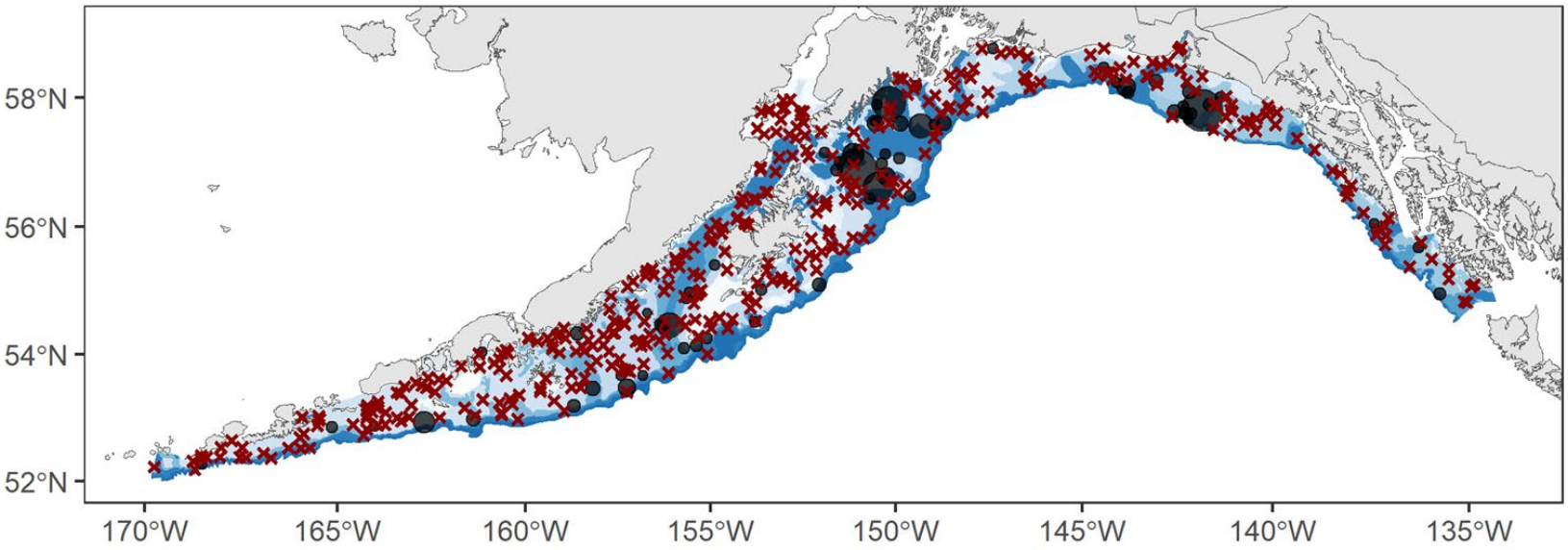
Dusky rockfish (*Sebastes variabilis*)

- Biomass estimate in 2025: ~46000 mt
- -37.5% from 2023



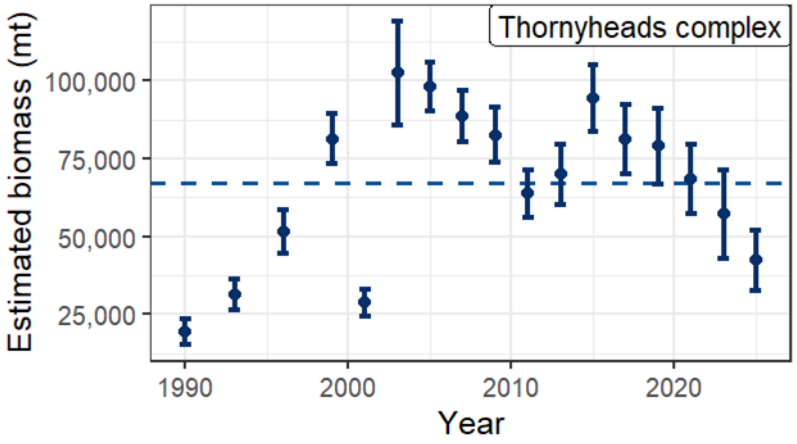


Dusky rockfish (*Sebastes variabilis*)



Thornyheads complex

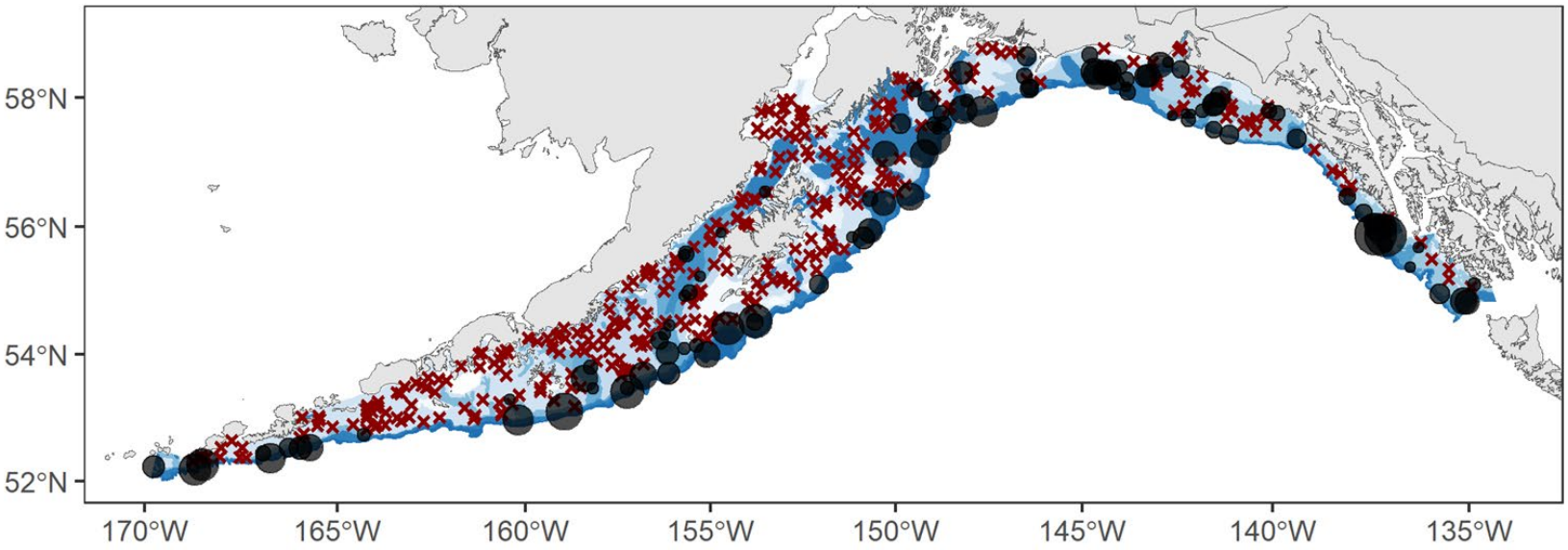
- Biomass estimate in 2025: ~42000 mt
- -25.9% from 2023



This complex includes:

shortspine thornyhead, broadfin thornyhead*, longspine thornyhead*

Thornyheads complex

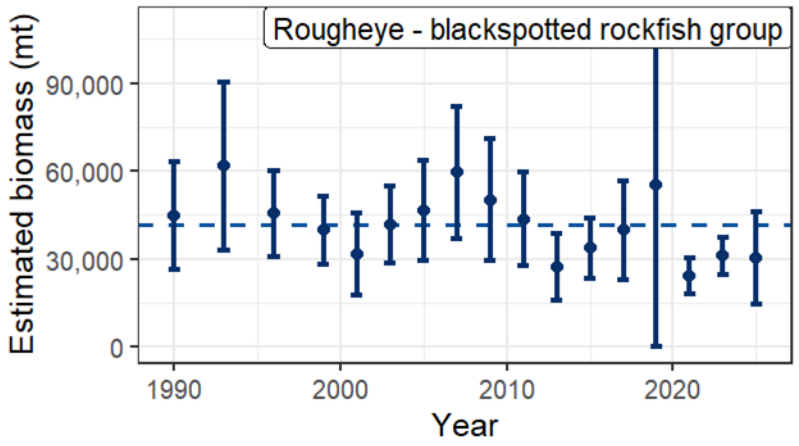


This complex includes:

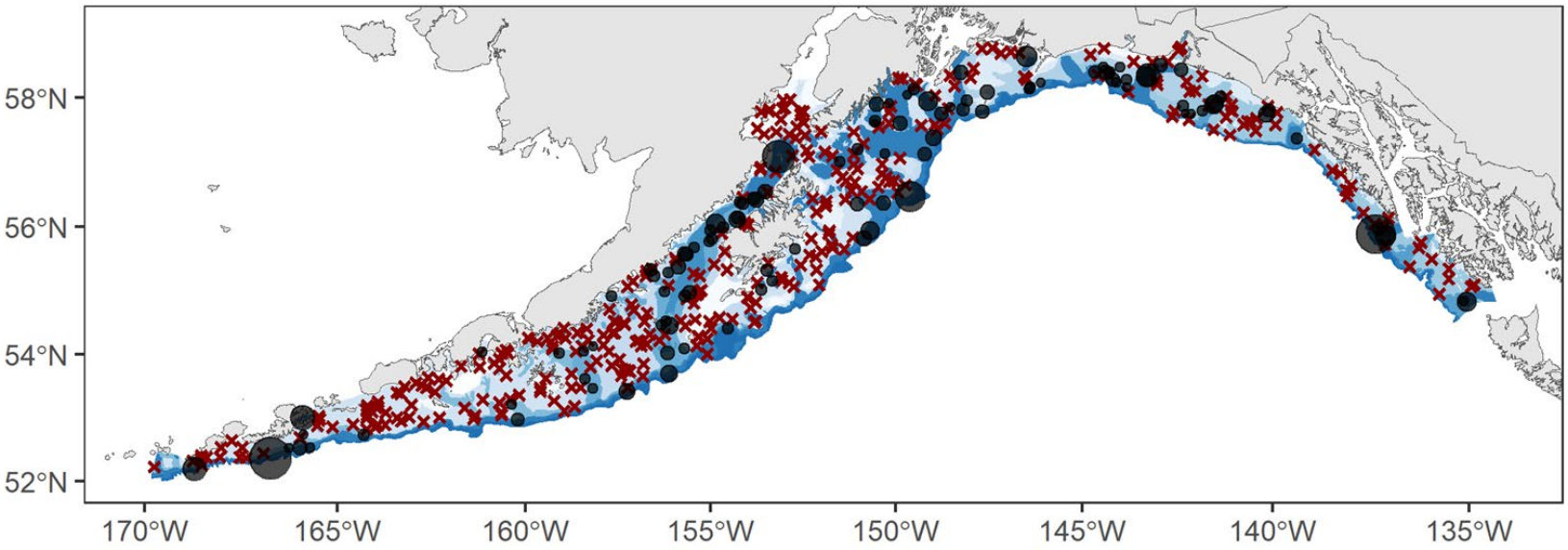
shortspine thornyhead, broadfin thornyhead*, longspine thornyhead*

Rougheye - blackspotted rockfish (*Sebastes aleutianus* and *S. melanosticus*)

- Biomass estimate in 2025: ~30000 mt
- -2.3% from 2023 ⟺

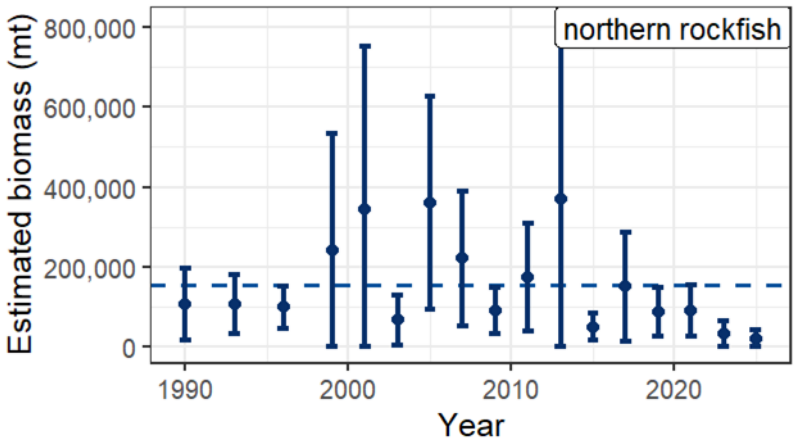


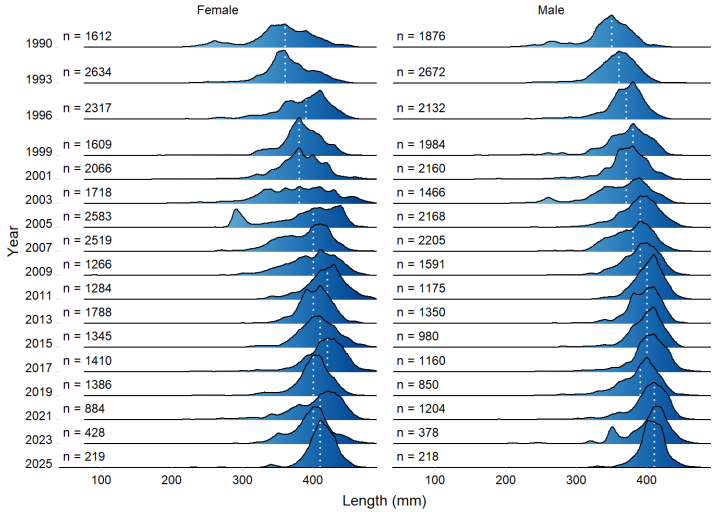
Rougheye - blackspotted rockfish (*Sebastes aleutianus* and *S. melanosticus*)



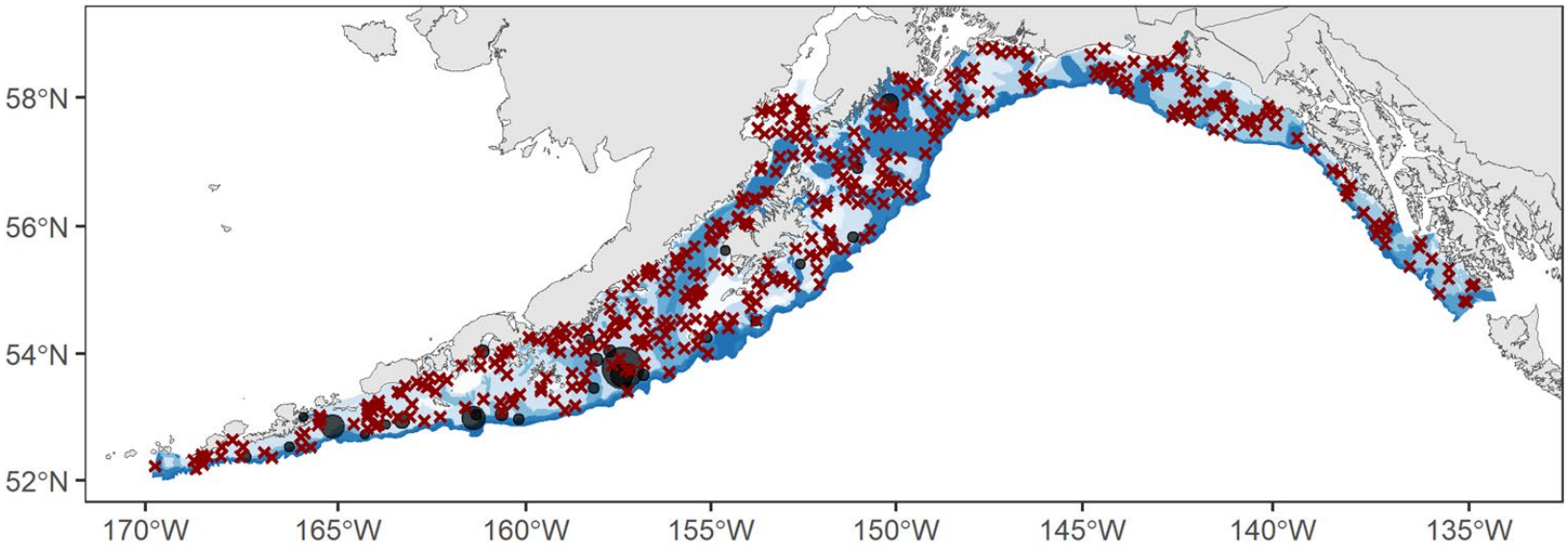
Northern rockfish (*Sebastes polyspinis*)

- Biomass estimate in 2025: ~20000 mt
- -38.1% from 2023



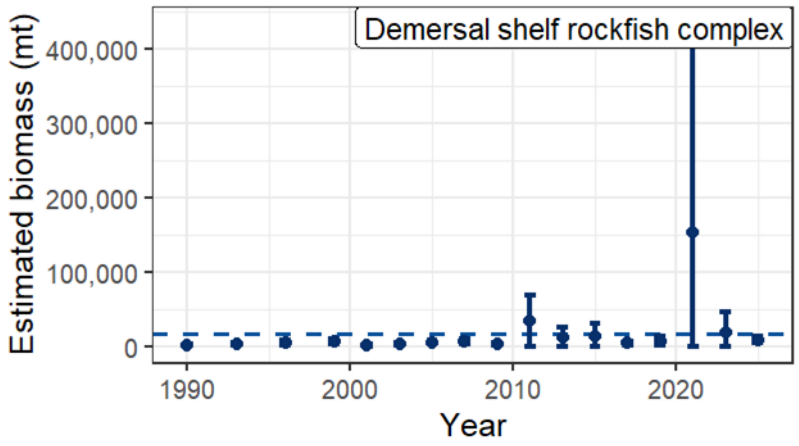


Northern rockfish (*Sebastes polyspinis*)



Demersal shelf rockfish complex (*various*)

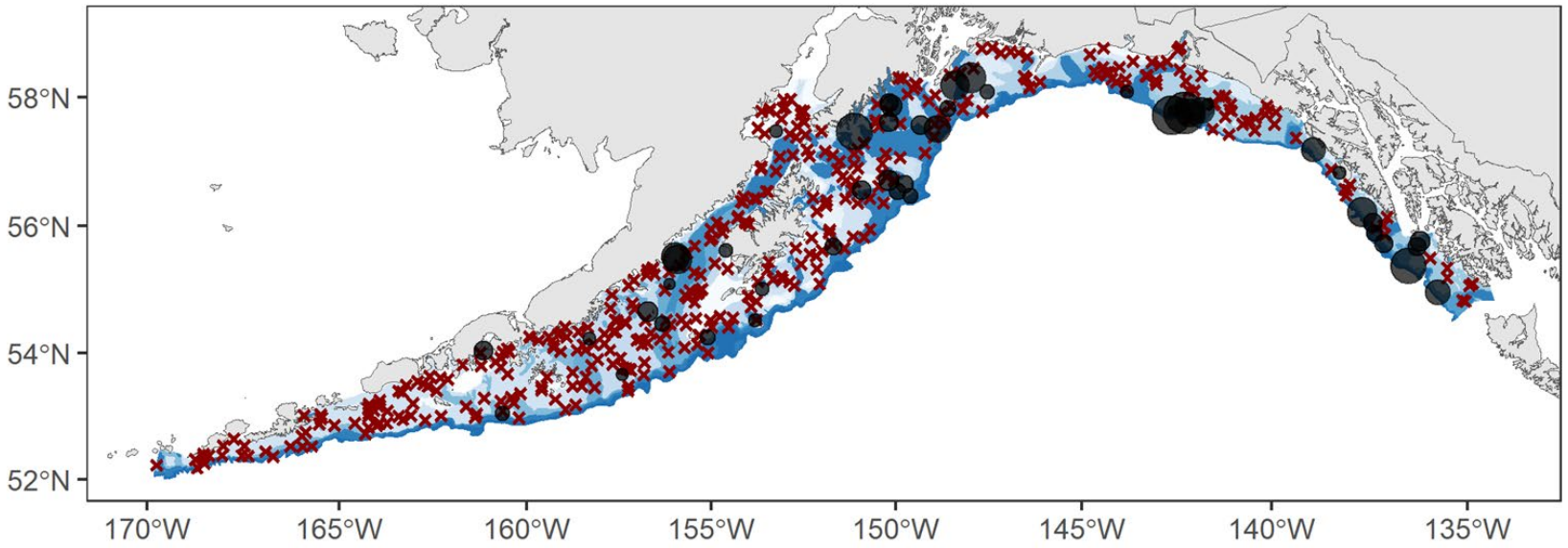
- Biomass estimate in 2025: ~9000 mt
- -53.2% from 2023



This complex includes:

yelloweye rockfish, quillback rockfish, rosethorn rockfish, canary rockfish, copper rockfish*, tiger rockfish*

Demersal shelf rockfish complex (*various*)



This complex includes:

yelloweye rockfish, quillback rockfish, rosethorn rockfish, canary rockfish, copper rockfish*, tiger rockfish*.

Summary

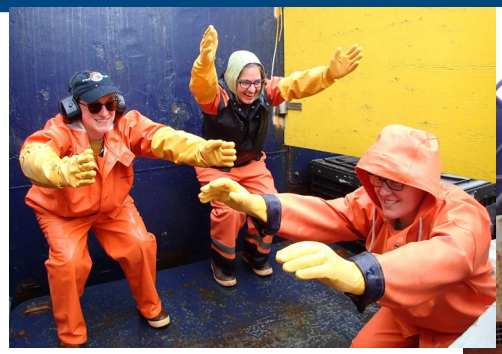
- Survey data final before September Plan Team
- In general, flatfish biomass increased and rockfish biomass decreased
- Pollock, Pacific cod, and Atka mackerel all increased
- Average surface and bottom temperatures similar to 2023

Summary

Species or complex	Biomass in 2023 (mt)	Biomass in 2025 (mt)	Percent change
Flatfishes			
arrowtooth flounder	1,184,806	1,442,691	+21.8
Pacific halibut	432,709	297,182	-31.3
flathead sole	139,969	202,537	+44.7
Southern rock sole	114,397	153,181	+33.9
Deepwater flatfish complex	48,444	64,282	+32.7
Northern rock sole	26,310	30,929	+17.6
Miscellaneous			
Thornyheads complex	57,157	42,328	-25.9
Rockfishes			
Pacific ocean perch	1,537,683	824,335	-46.4
Other rockfish complex	110,351	123,133	+11.6
dusky rockfish	73,492	45,913	-37.5
Rougheye - blackspotted rockfish group	30,968	30,269	-2.3
northern rockfish	31,748	19,653	-38.1
rougheye rockfish	23,337	18,647	-20.1
Demersal shelf rockfish complex	19,013	8,891	-53.2

Species or complex	Biomass in 2023 (mt)	Biomass in 2025 (mt)	Percent change
Roundfishes			
walleye pollock	918,846	1,213,755	+32.1
Pacific cod	222,473	309,761	+39.2
sablefish	194,026	152,655	-21.3
Atka mackerel	76,627	89,117	+16.3
Sharks			
Sharks complex	67,601	89,624	+32.6
Skates			
Skates complex	78,449	84,758	+8

Thank you!



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John Brogan
Kim Ledger
Katie D'Amelio
Jon Short