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2023 AFSC Longline Survey – Sept. Plan Team



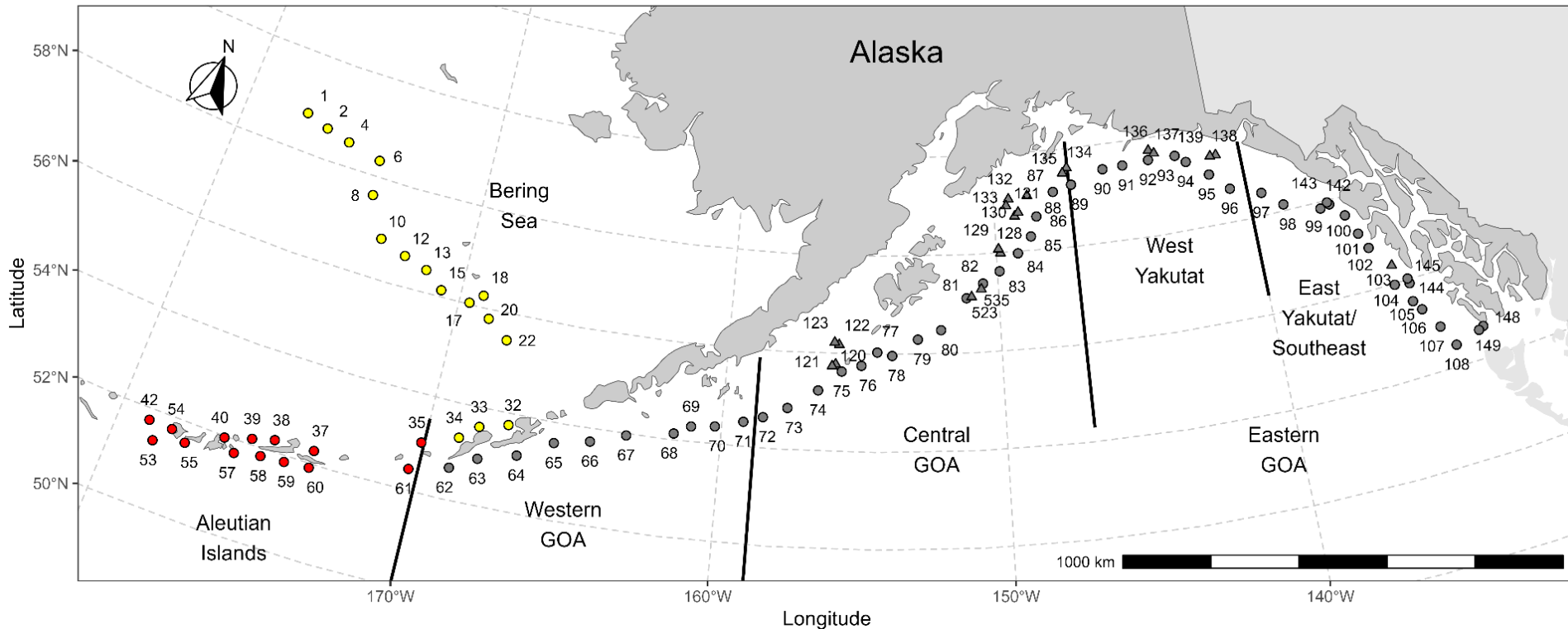
Kevin Siwicke, Pat Malecha, and Jane Sullivan
ABL/MESA

2023 Plan Team Update

- Updated Relative Population Numbers (RPNs)
- Lengths (Sablefish/P. Cod)
- Whale Interactions
- Subsurface Temperatures
- Experimental Slinky Pots (3-days)



Survey Geographic Coverage



- Bering Sea – odd years
- Aleutian Islands – even years
- GOA - annual

- 180 skates per day
- 45 hooks per skate
- Data depth stratified



Survey in Numbers

- 607,500 hooks fished in 75 days
 - 178,374 sablefish caught
- 3 experimental days (12,150 hooks and 360 pots)
- 3,568 sablefish otoliths collected (length/weight/sex)
- Tagged:
 - 5,985 sablefish
 - 189 shortspine thornyhead
 - 4 Greenland turbot
- Recaptured 47 tagged sablefish (36-NMFS, 10-Canadian, & 1-ADFG), and 1 SST (NMFS)
- 150 temperature-depth profiles
- Special Projects:
 - 140 eyes from sablefish for isotope analysis (Rogers)
 - Spiny dogfish spines, eyes (Tribuzio)
 - Genetics for stock structure and sex determination: 100-SR, 100-SST, and 200-RE/BS (Larson)
 - Age validation and Epigenetics: genetics, otoliths and eyes from 50-Sablefish, 50-SR, and 50-YE (Patterson/Portnoy)



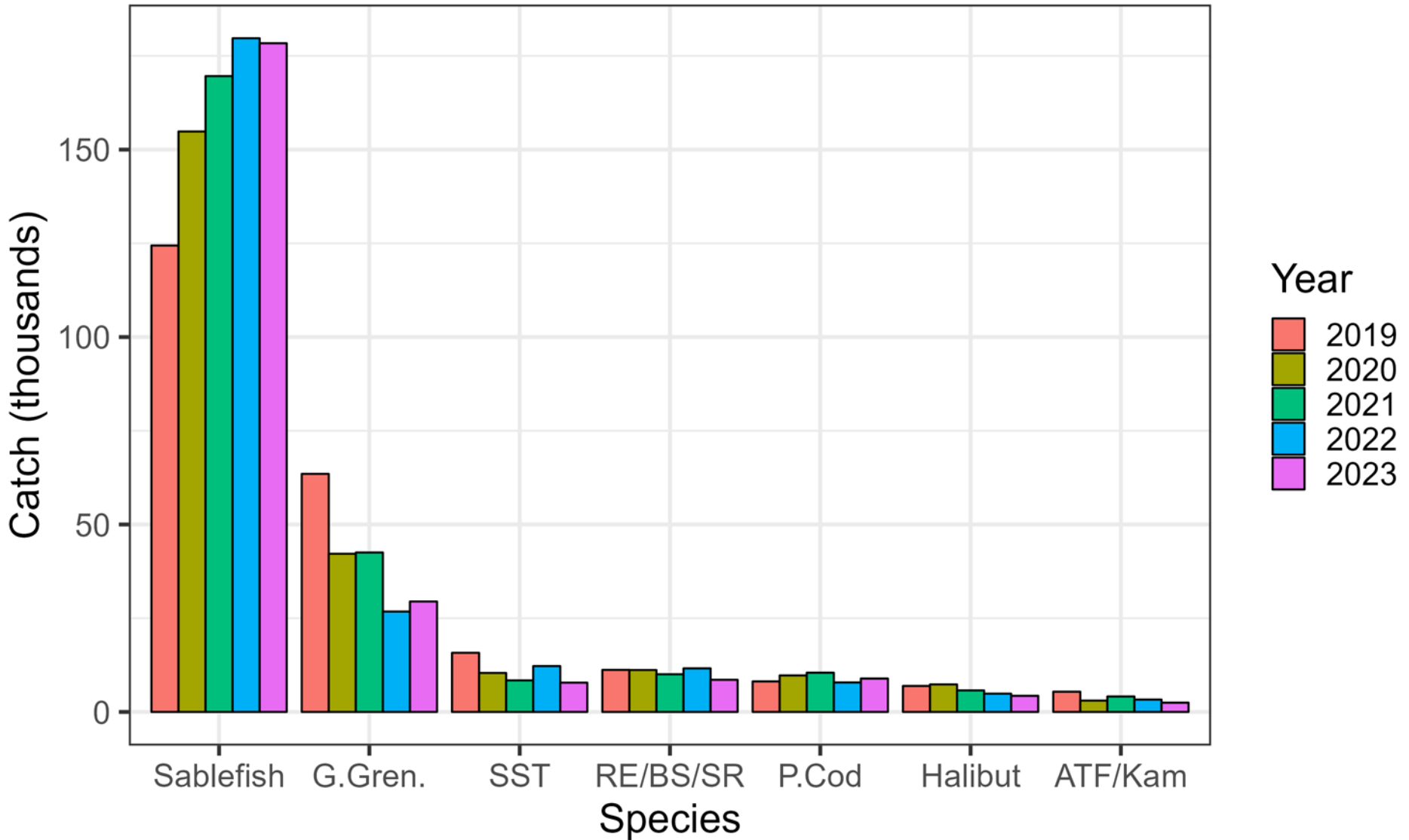
Species Lengths

Common name	Lengths collected
sablefish	67,824
shortspine thornyhead	6,918
giant grenadier	6,510
rougheye rockfish	4,407
shortraker rockfish	3,976
Pacific cod	3,361
arrowtooth flounder	1,652
redbanded rockfish	1,242
spiny dogfish	871
yelloweye rockfish	606
Pacific grenadier	564
Greenland turbot	374
Kamchatka flounder	241
rosethorn rockfish	59
dusky rockfish	19
Total	98,624



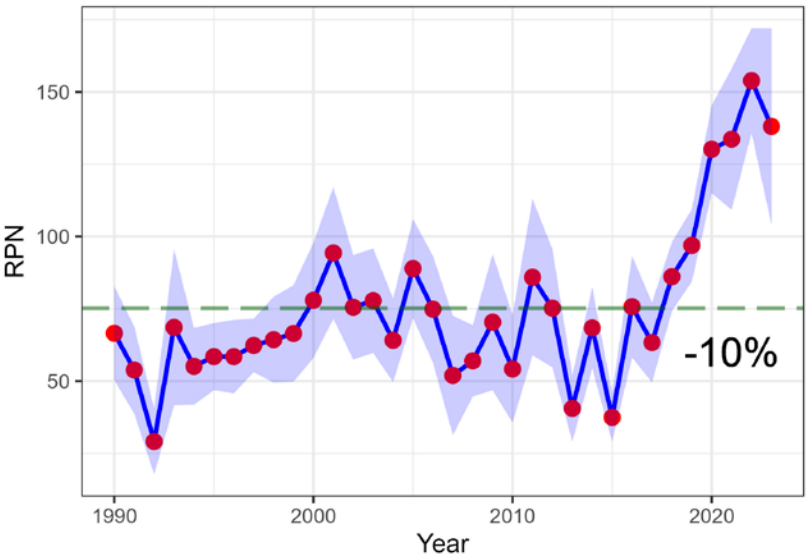
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Recent raw catches by species

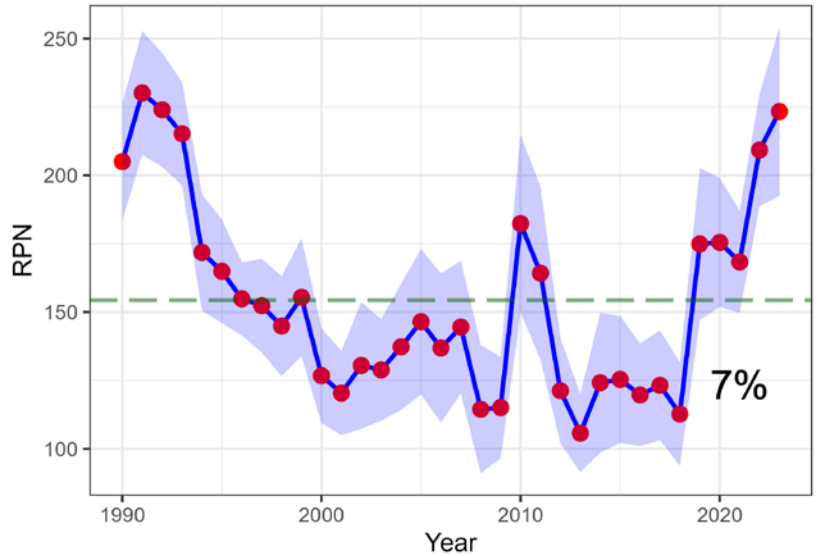


Sablefish: GOA

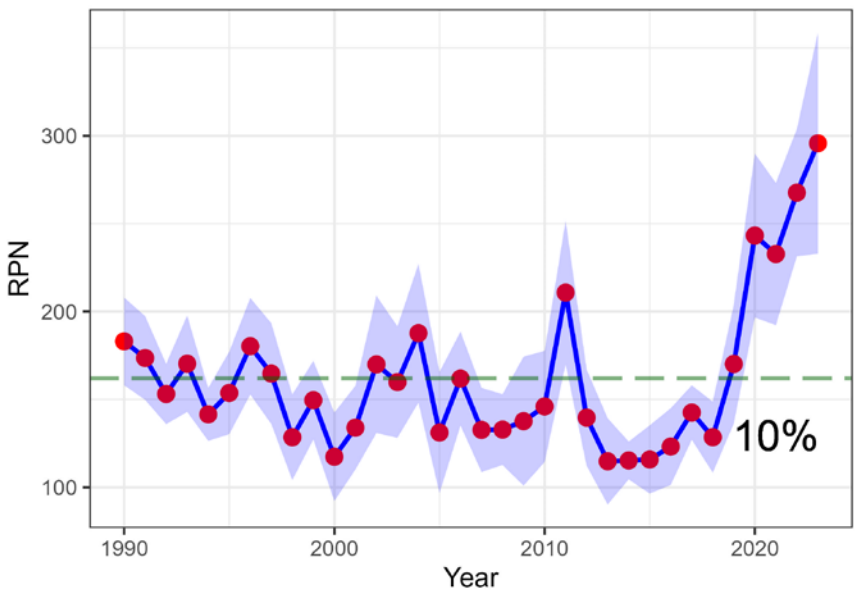
Western Gulf of Alaska Sablefish longline survey RPN



Eastern Gulf of Alaska Sablefish longline survey RPN:

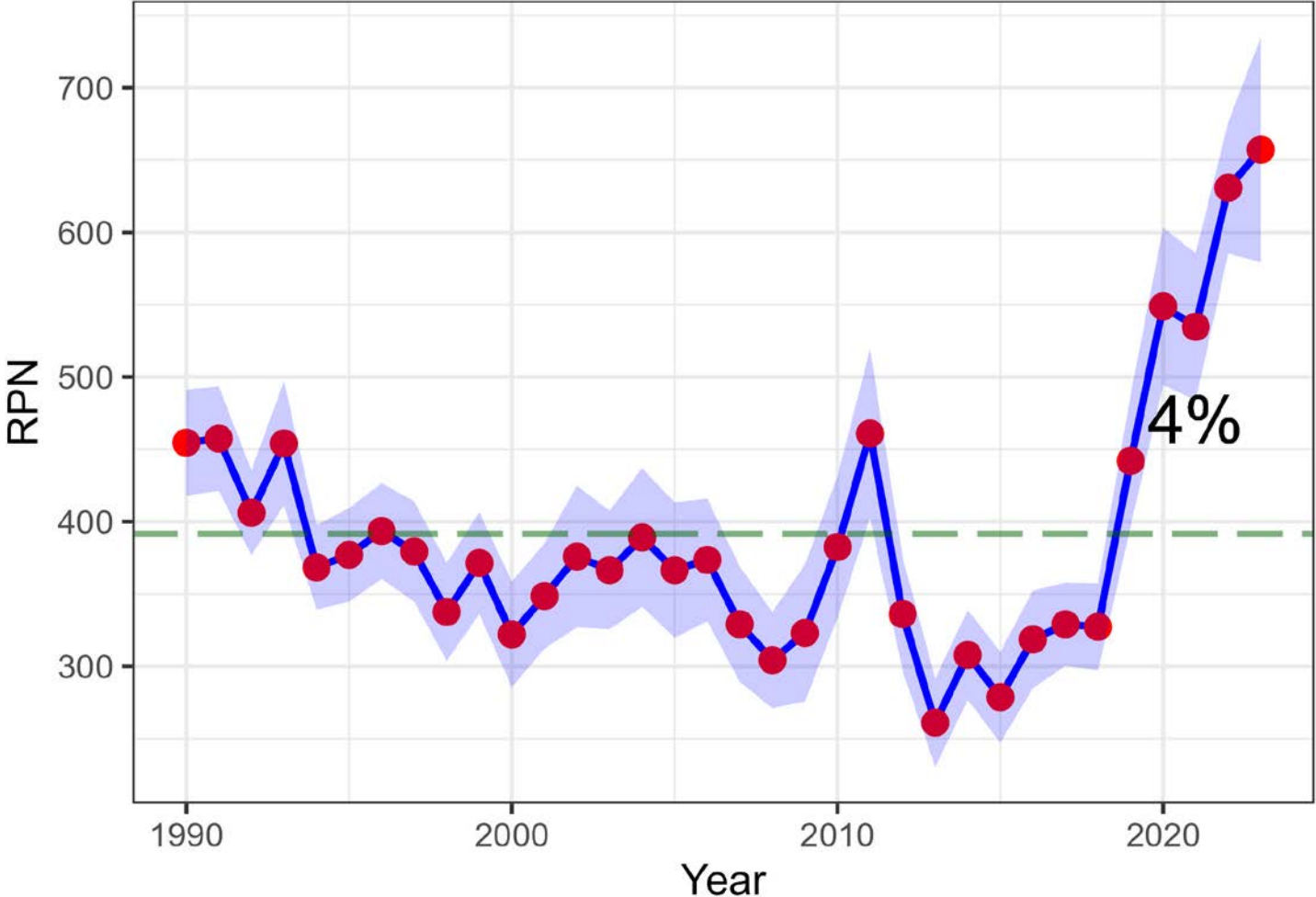


Central Gulf of Alaska Sablefish longline survey RPNs



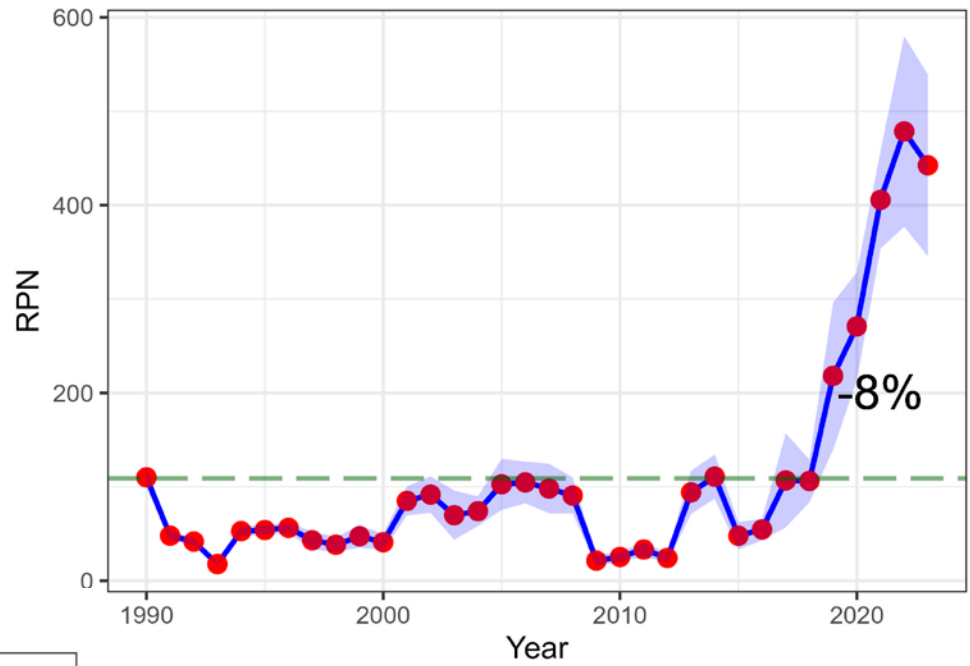
Sablefish: GOA

GOA Sablefish longline survey RPNs

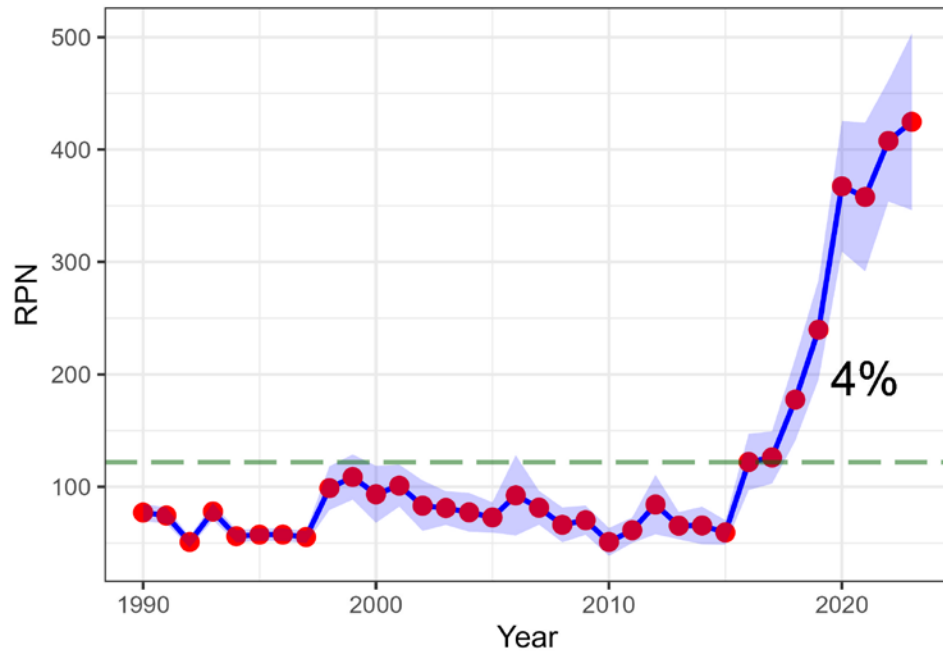


Sablefish: BSAI

Bering Sea Sablefish longline survey RPNs



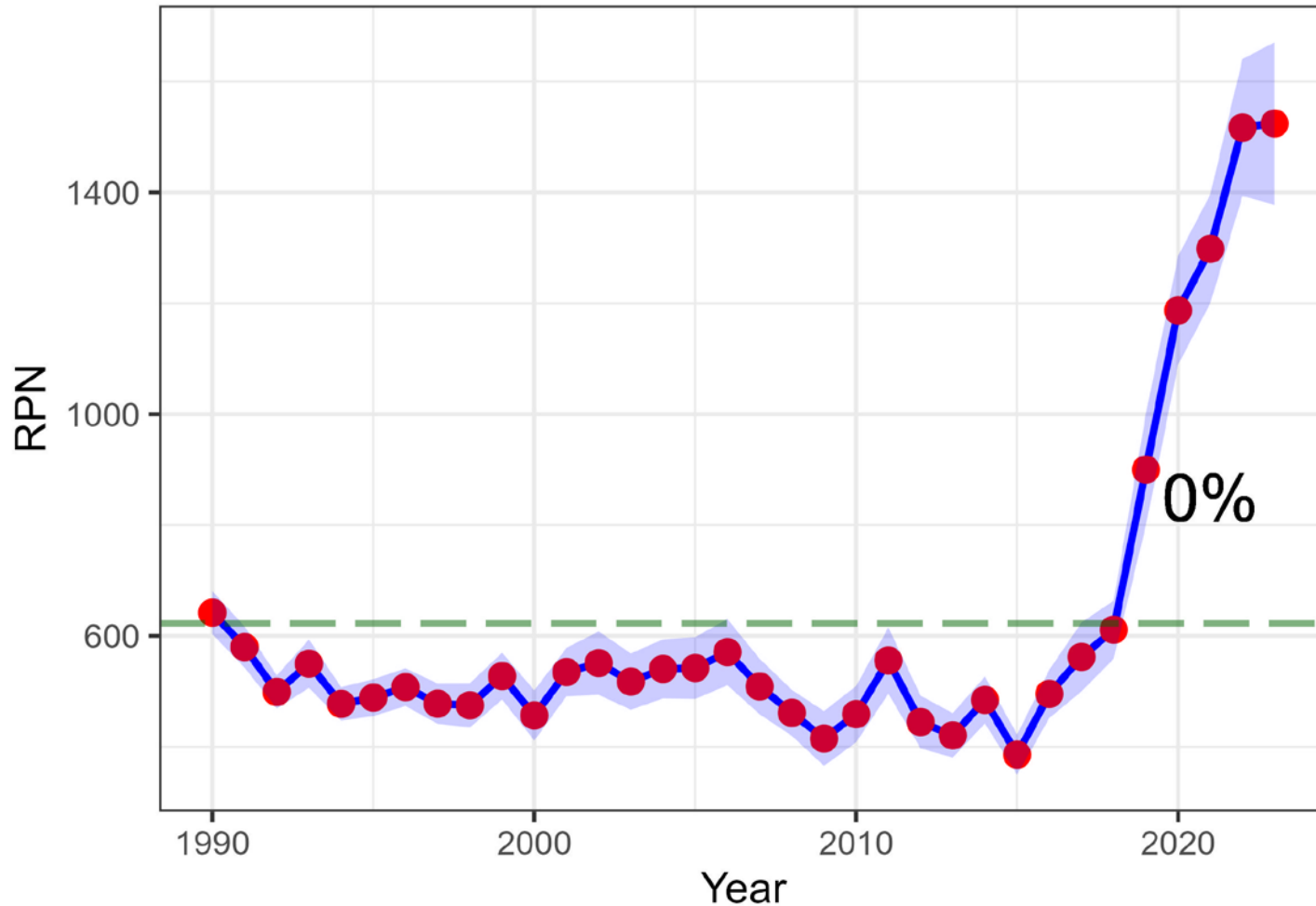
Aleutians Sablefish longline survey RPNs



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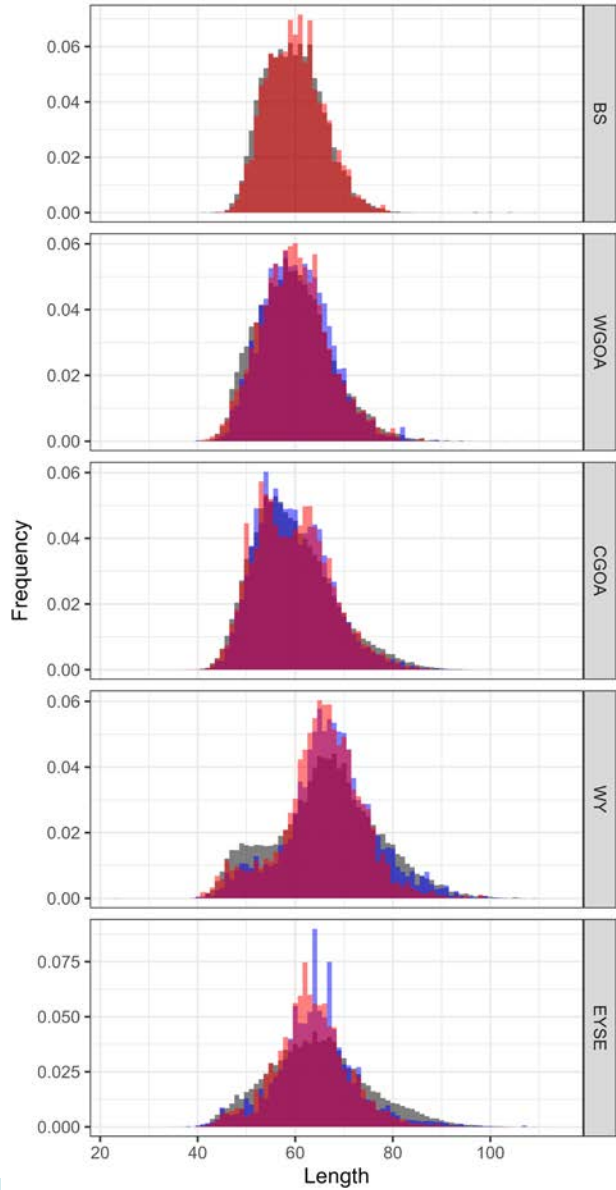
AK-wide: Sablefish

Alaska Sablefish longline survey RPNs

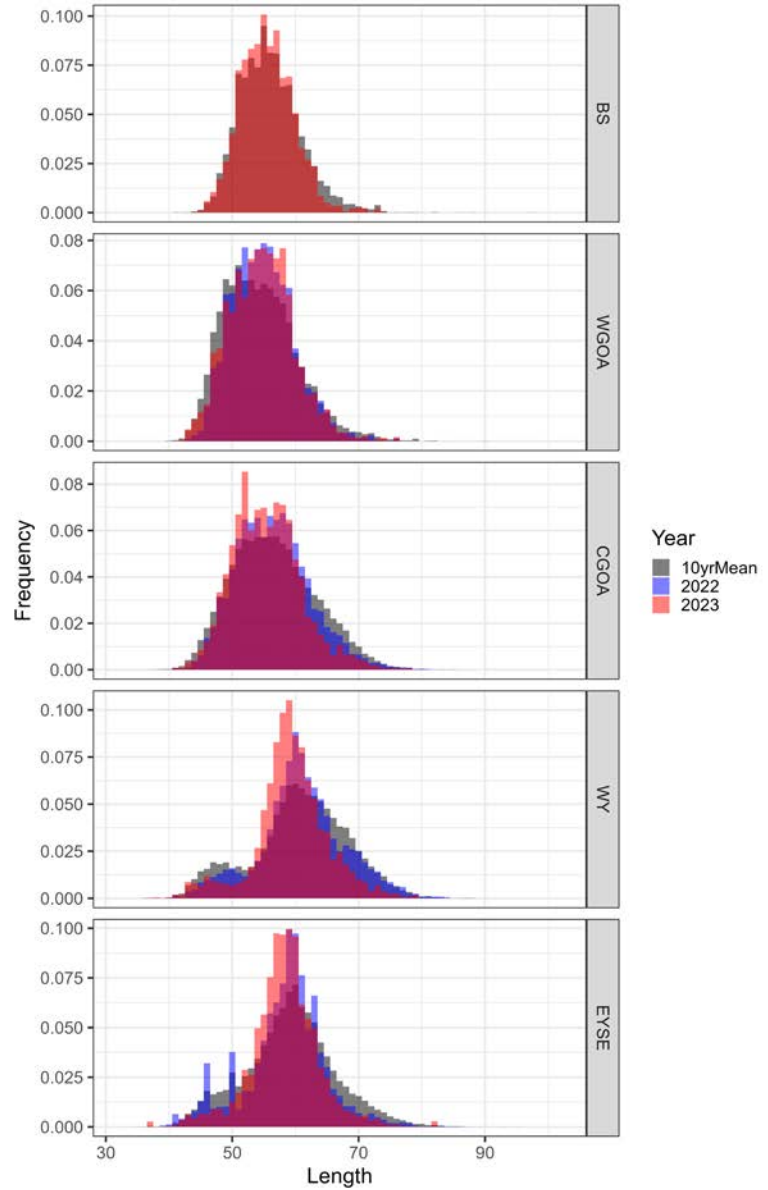


Sablefish Lengths

Recent female Sablefish length frequencies

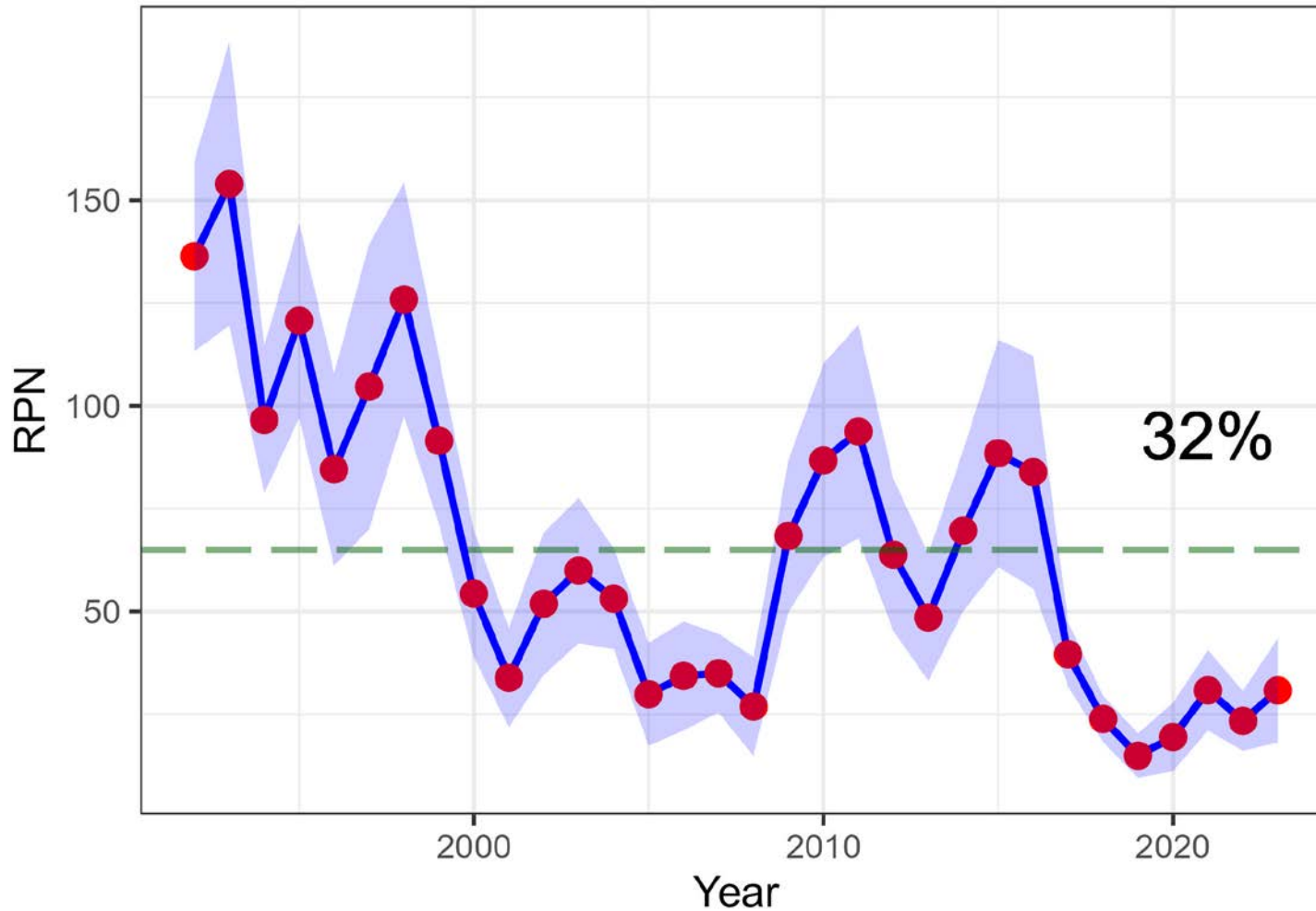


Recent male Sablefish length frequencies



GOA: P. Cod

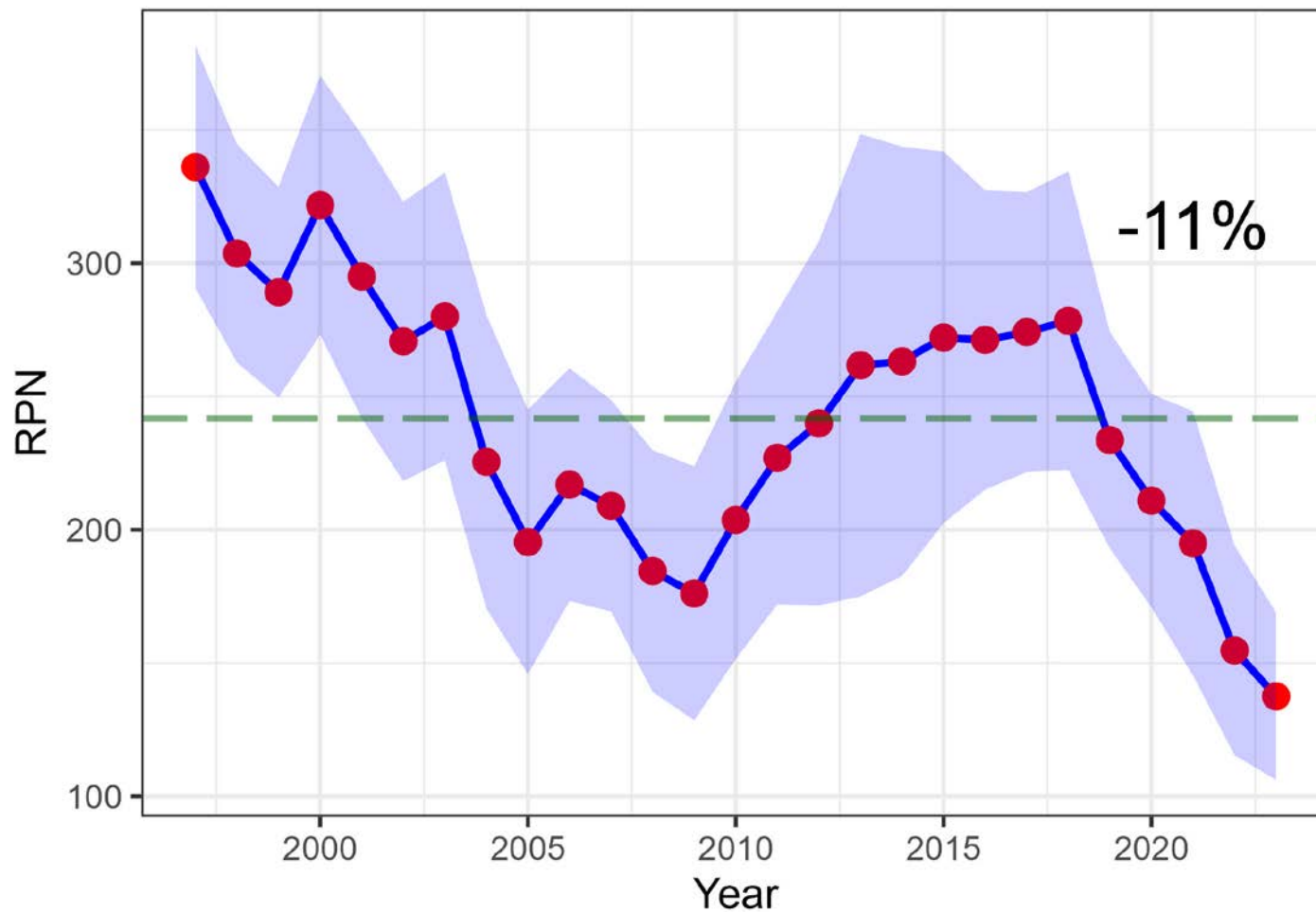
GOA Pacific cod longline survey RPNs



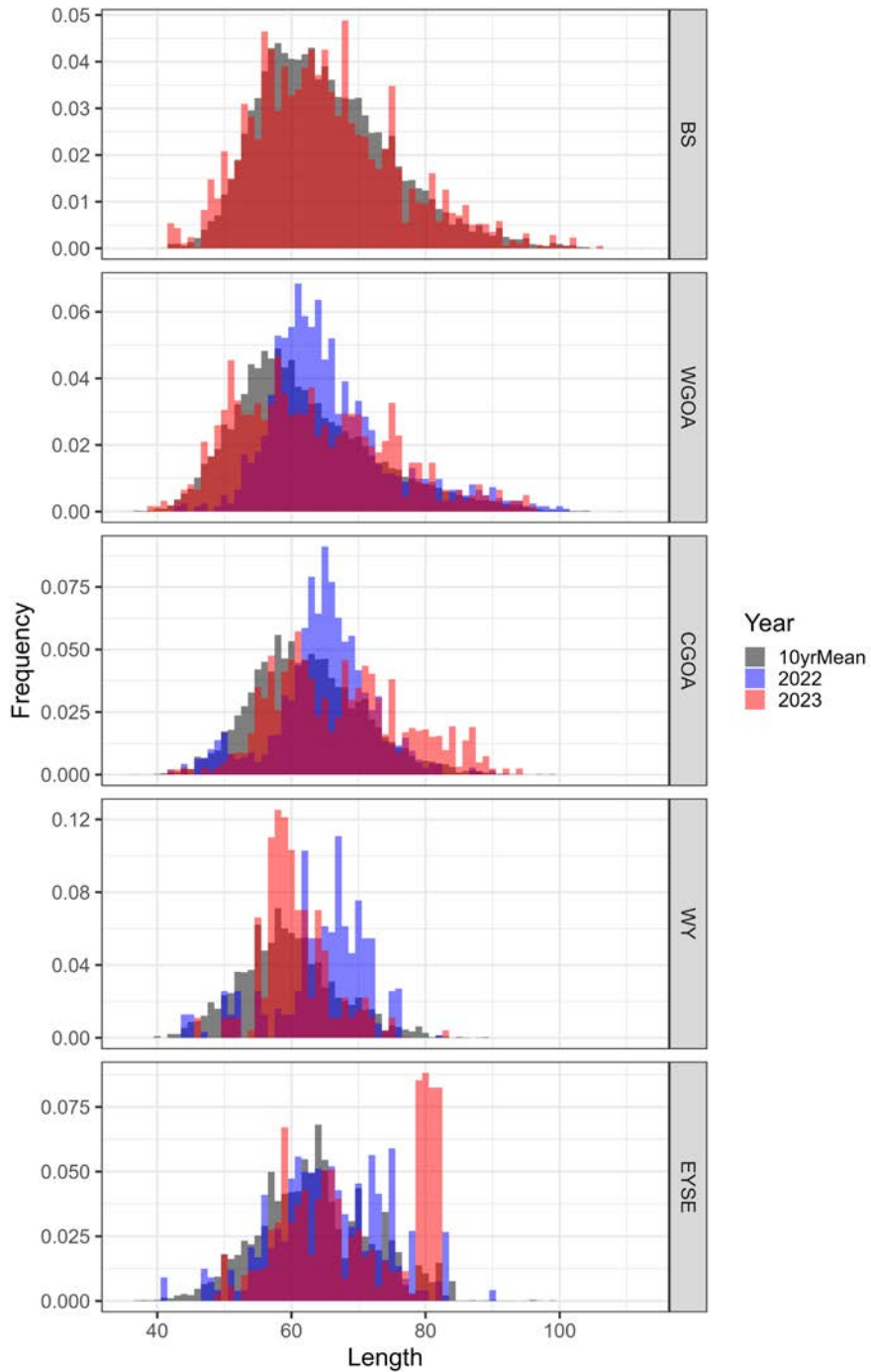
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BSAI: Pacific Cod

BSAI P. Cod lin. interp. longline survey RPNs



Recent P. cod length frequencies



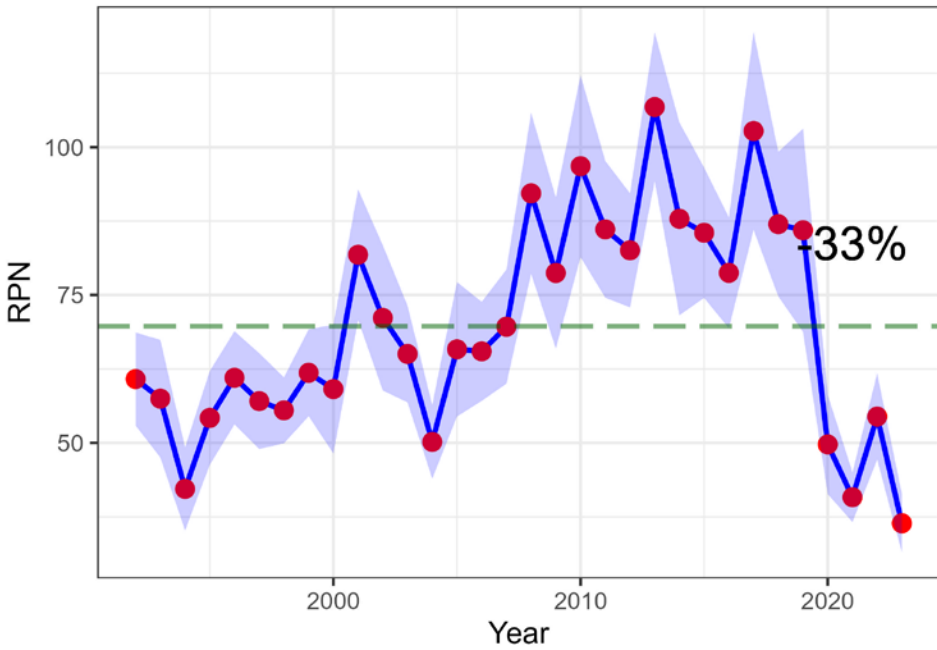
P. Cod Lengths

Year
10yrMean
2022
2023

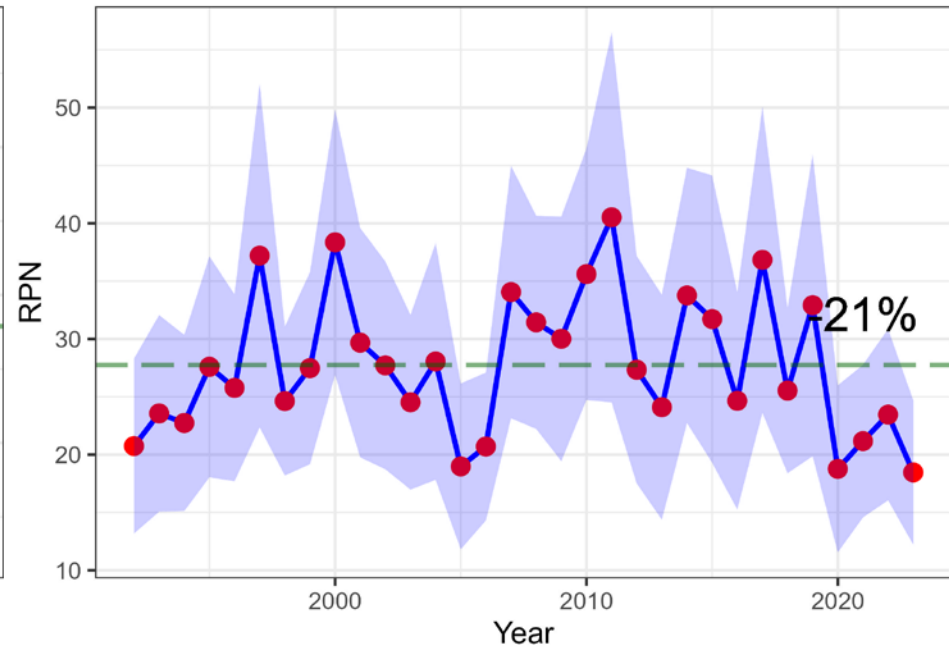


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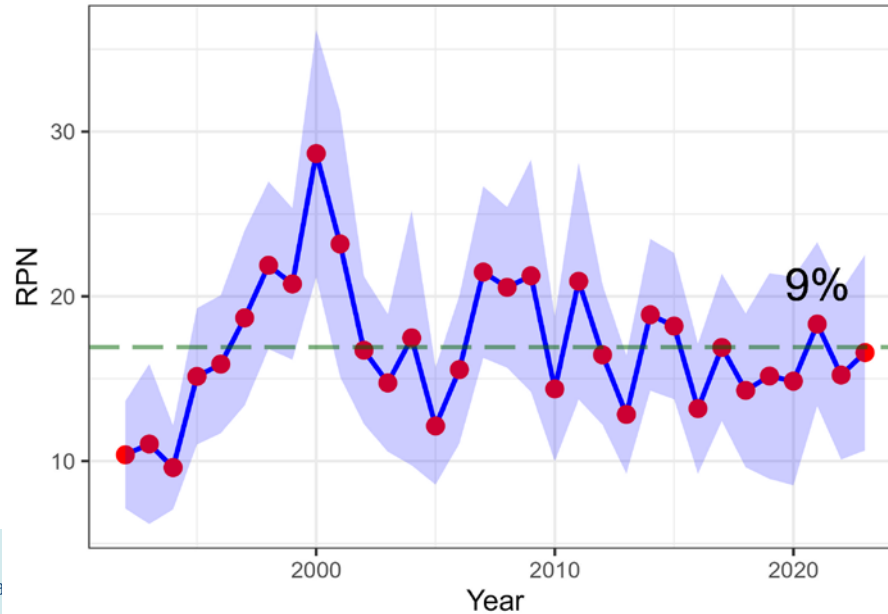
GOA Shortspine thornyhead longline survey RPNs



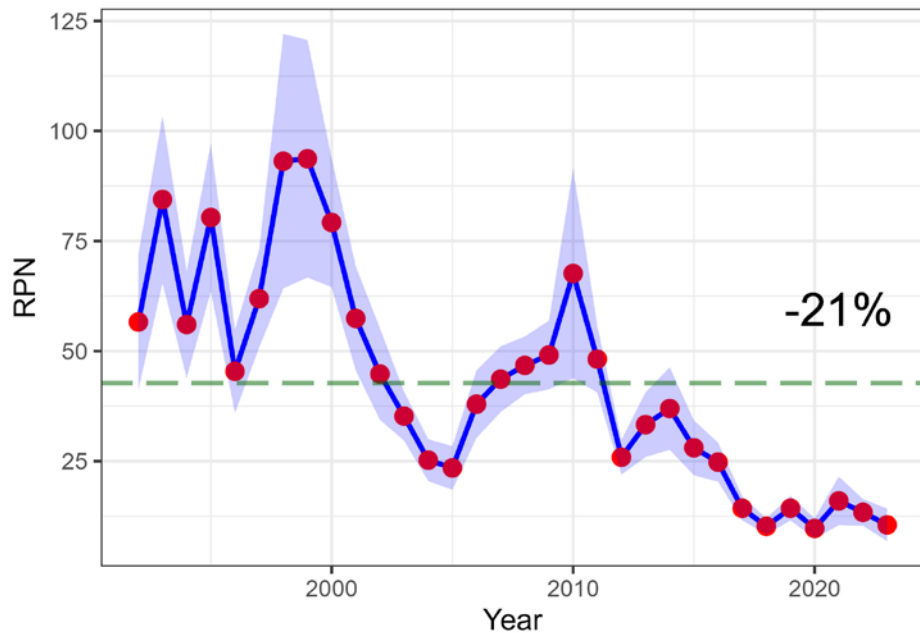
GOA Rougheye rockfish longline survey RPNs



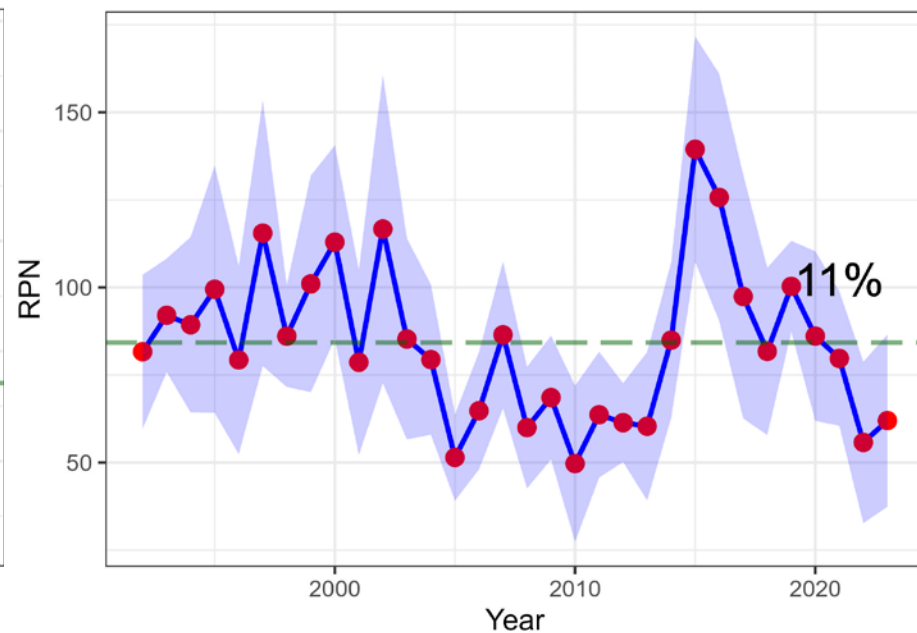
GOA Shorttraker rockfish longline survey RPNs



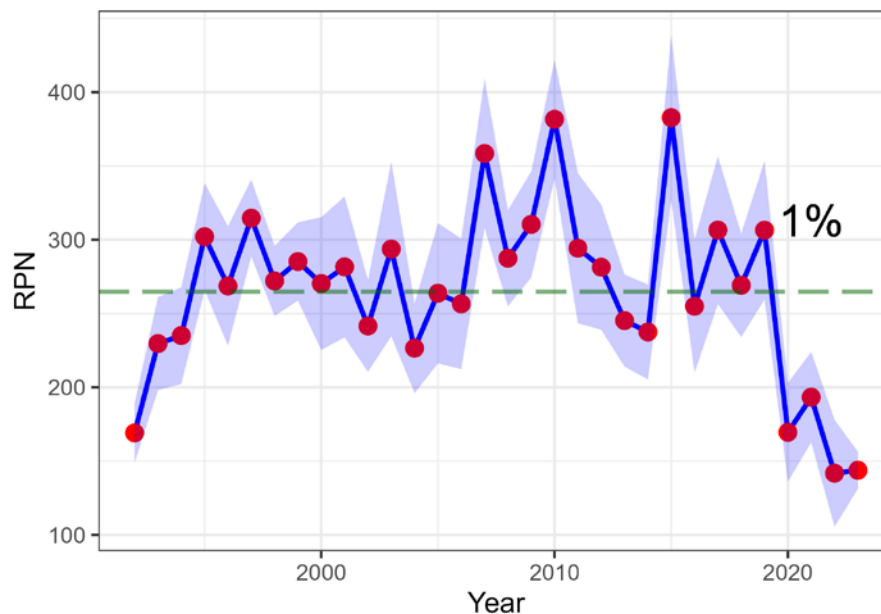
GOA KamATF longline survey RPNs



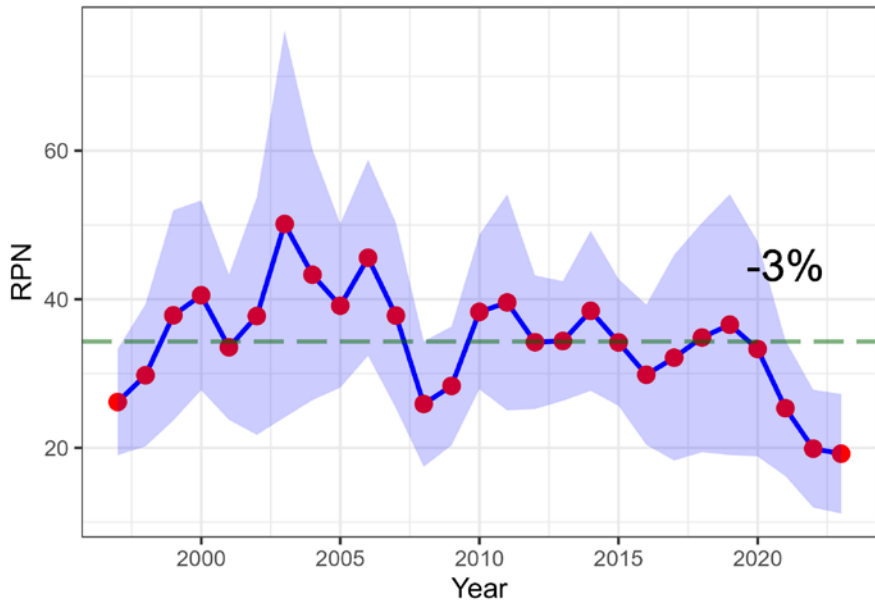
GOA Pacific halibut longline survey RPNs



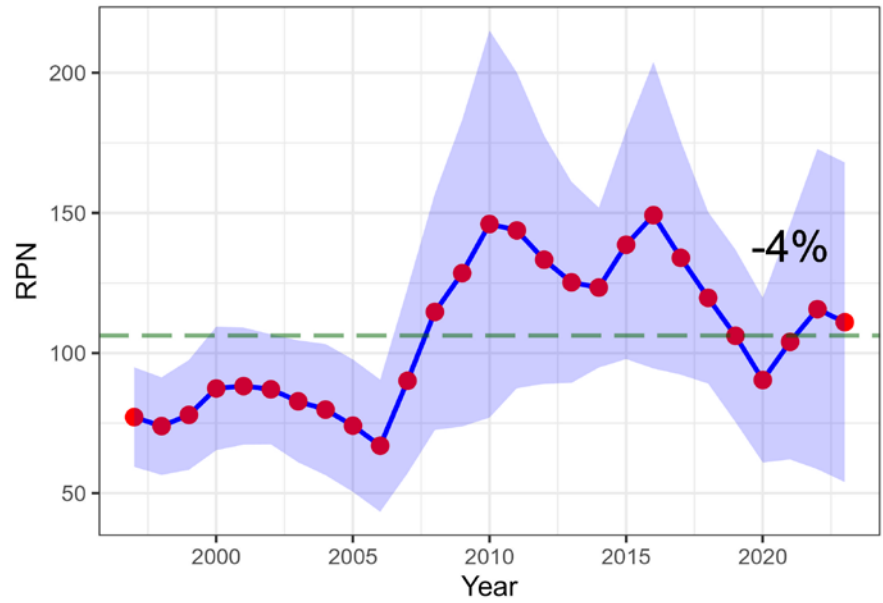
GOA Giant grenadier longline survey RPNs



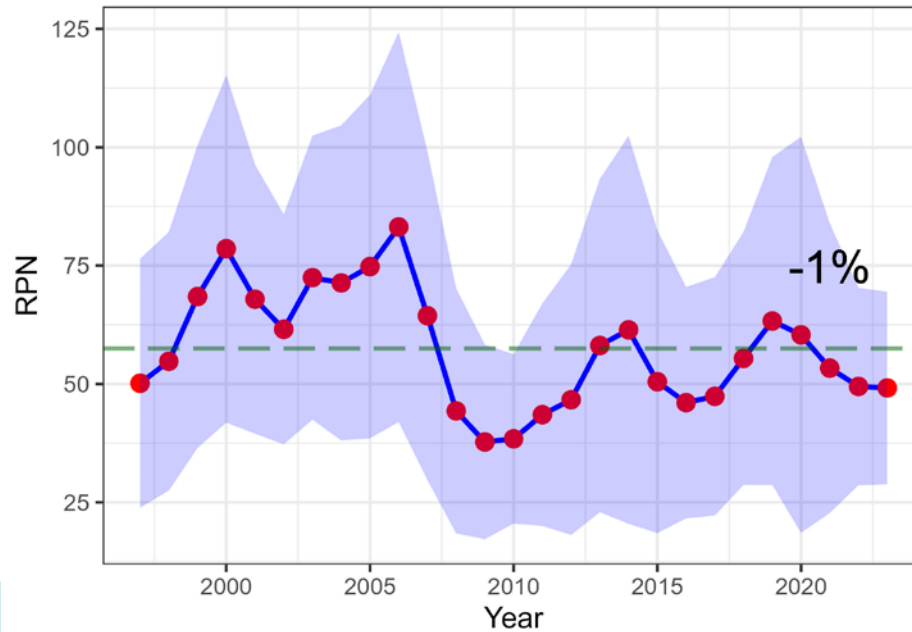
BSAI Shortraker lin. interp. longline survey RPNs



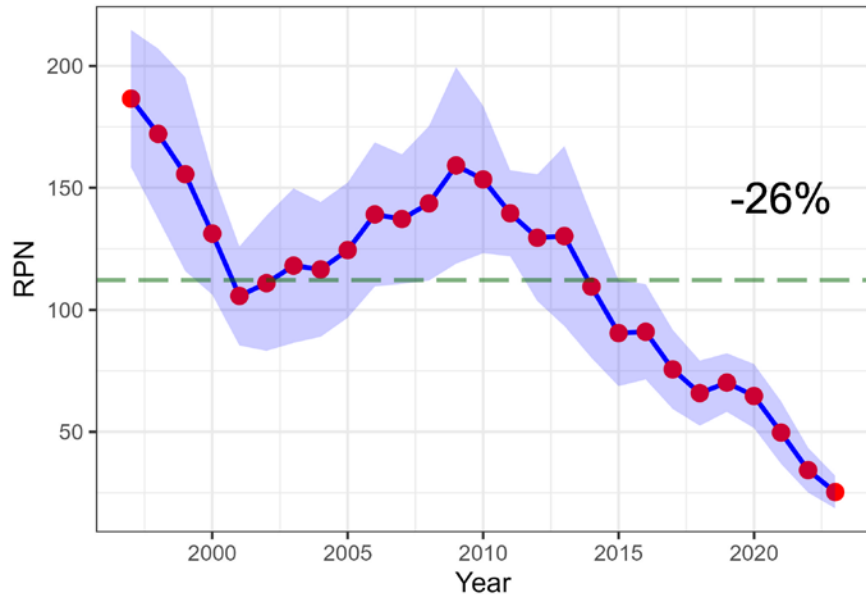
BSAI SST lin. interp. longline survey RPNs



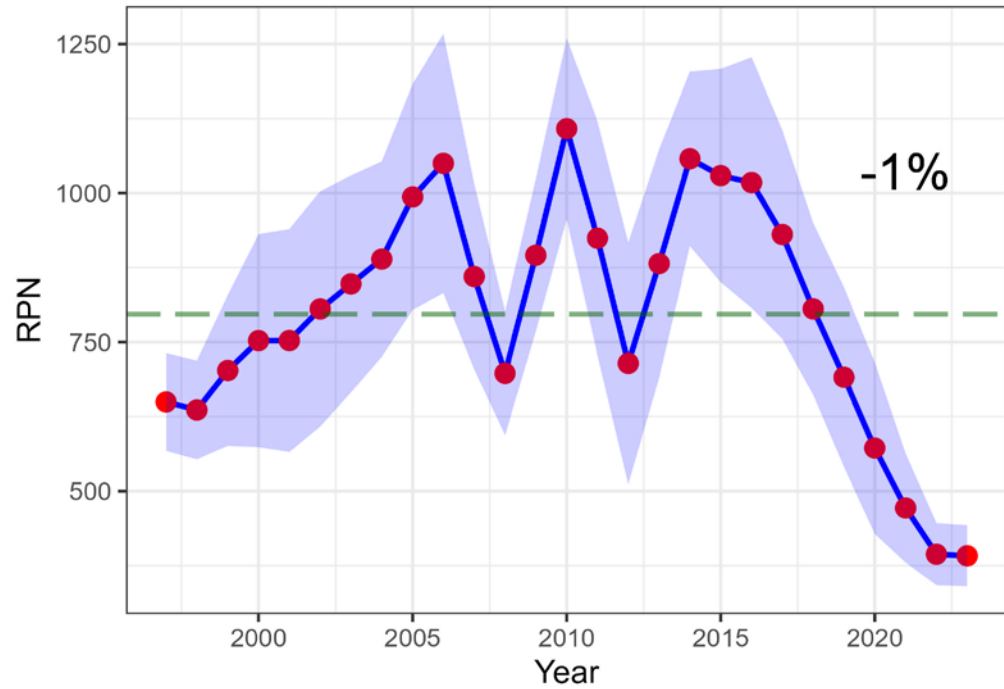
BSAI Rougheye lin. interp. longline survey RPNs



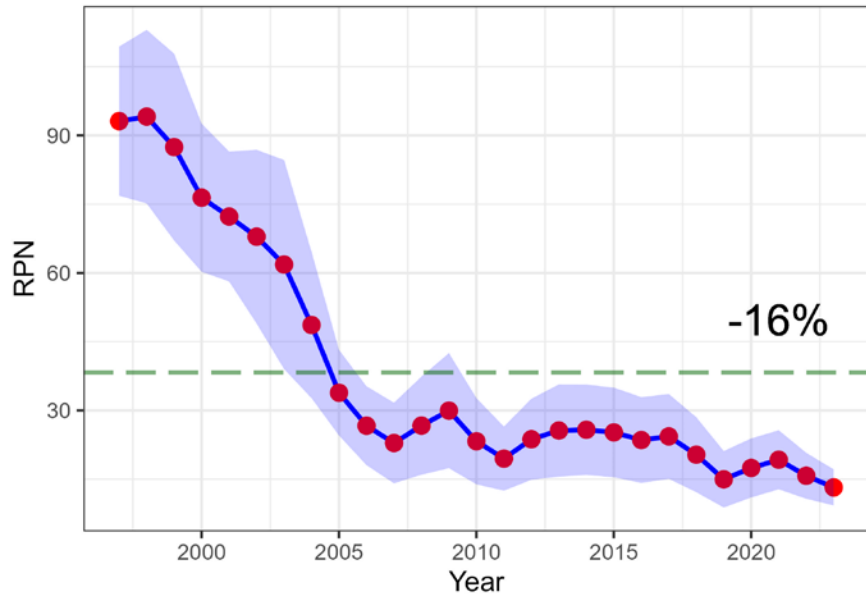
BSAI KamATF lin. interp. longline survey RPNs



BSAI G.Gren lin. interp. longline survey RPNs

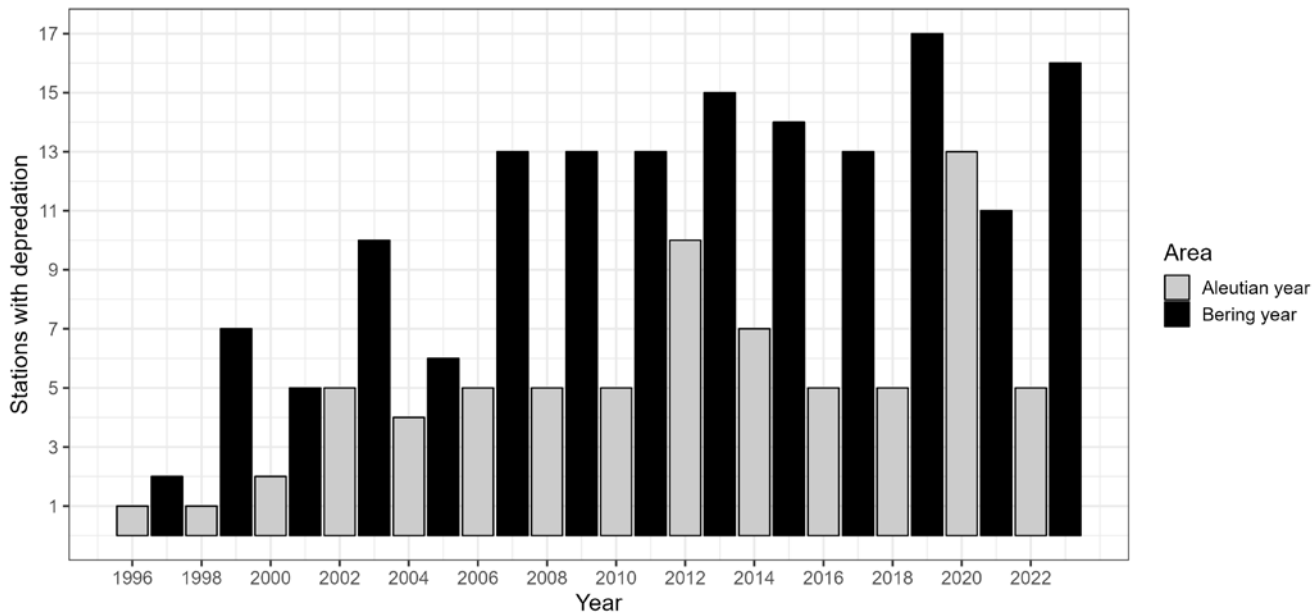


BSAI Turbot lin. interp. longline survey RPNs



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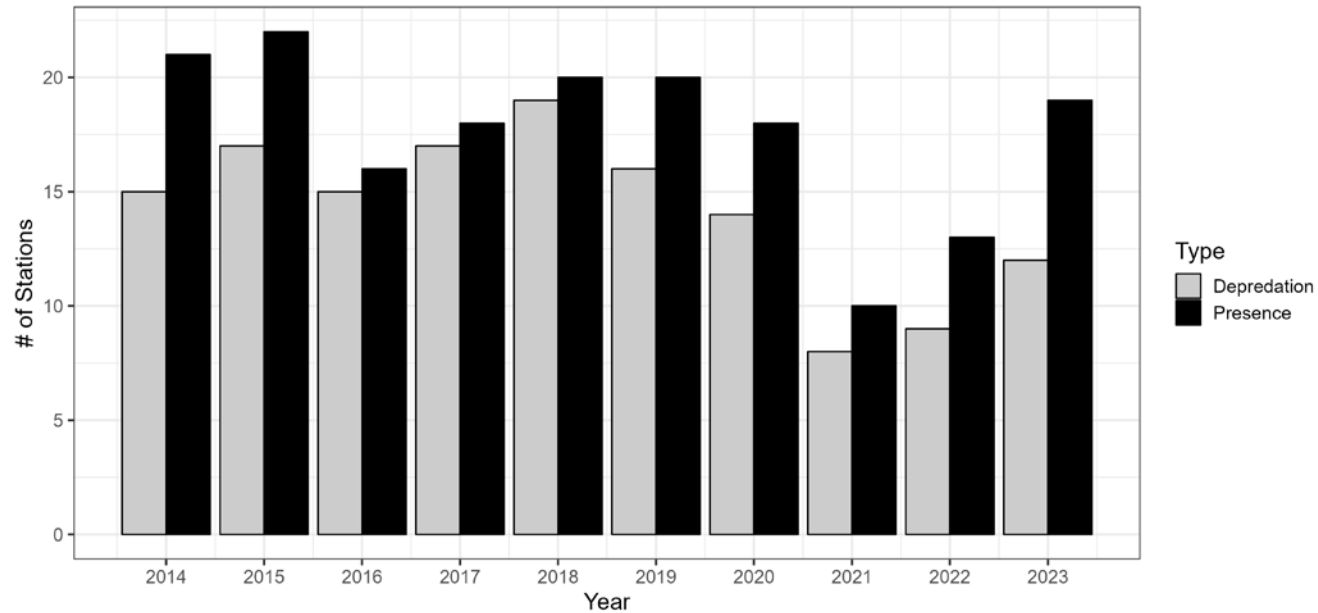
Killer whale depredation



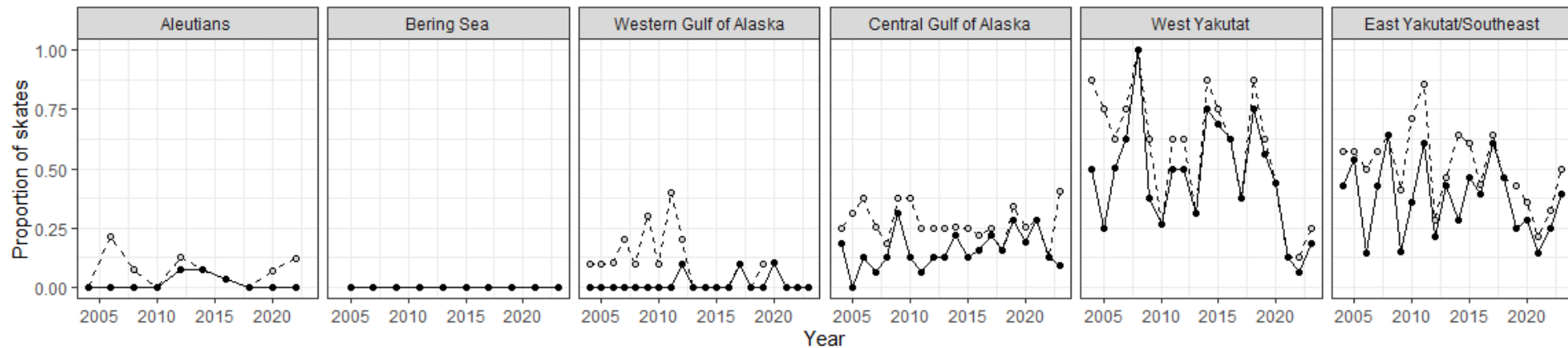
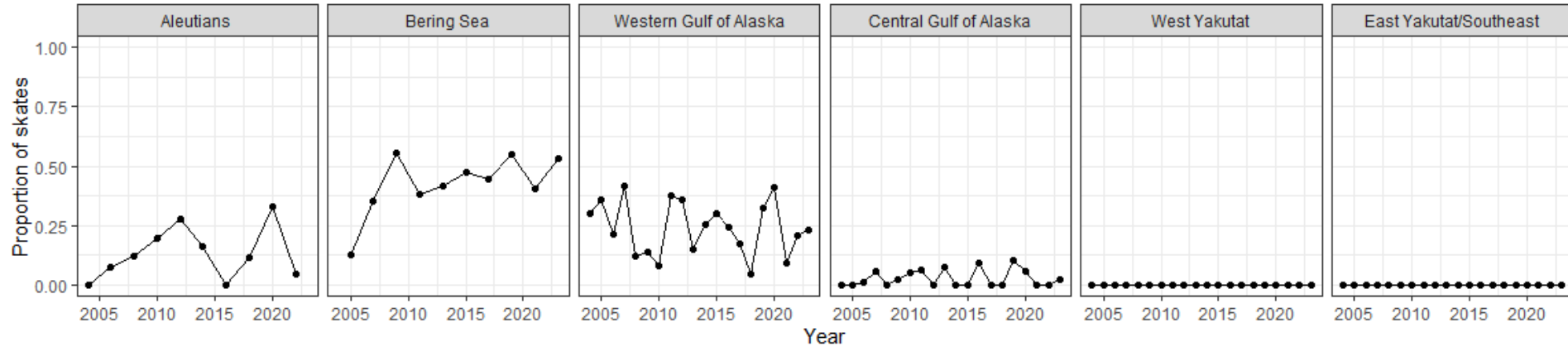
Whales



Sperm whale interactions

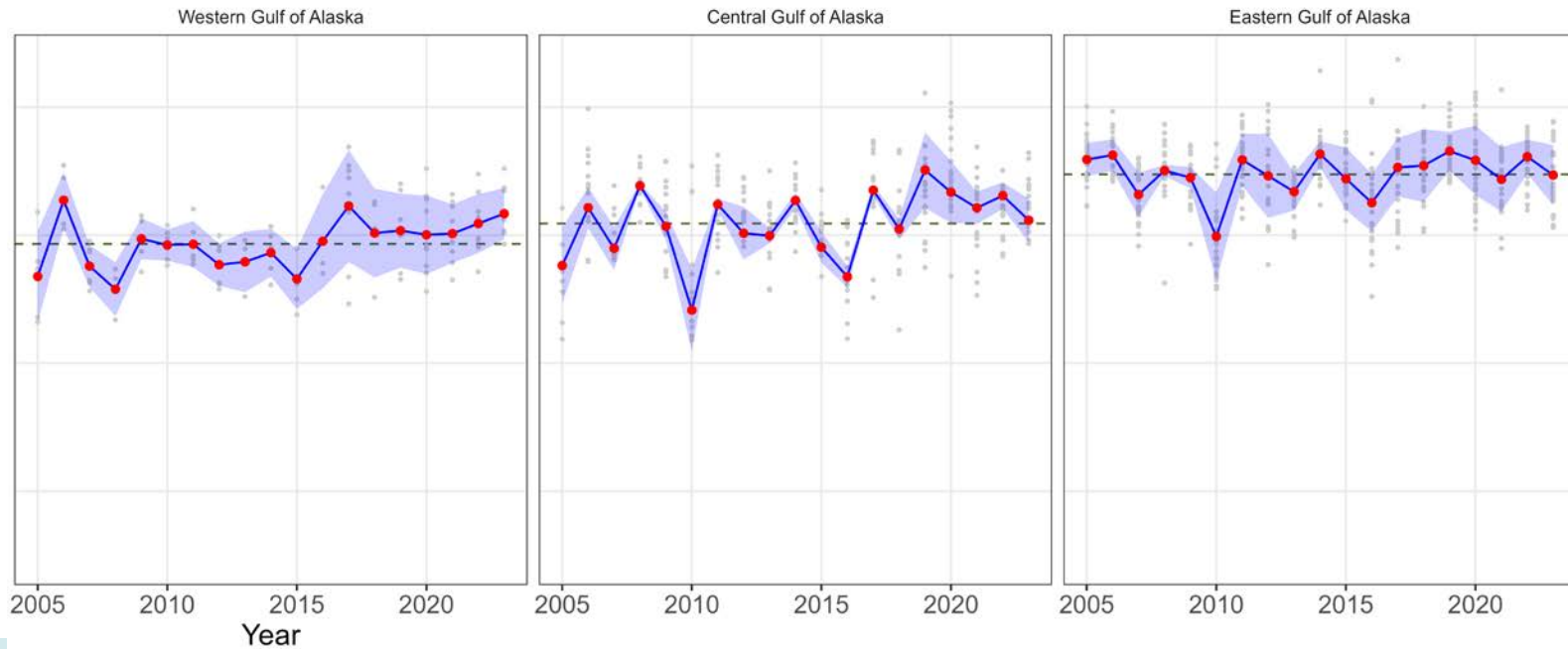


Top: Killer Whale Depredation



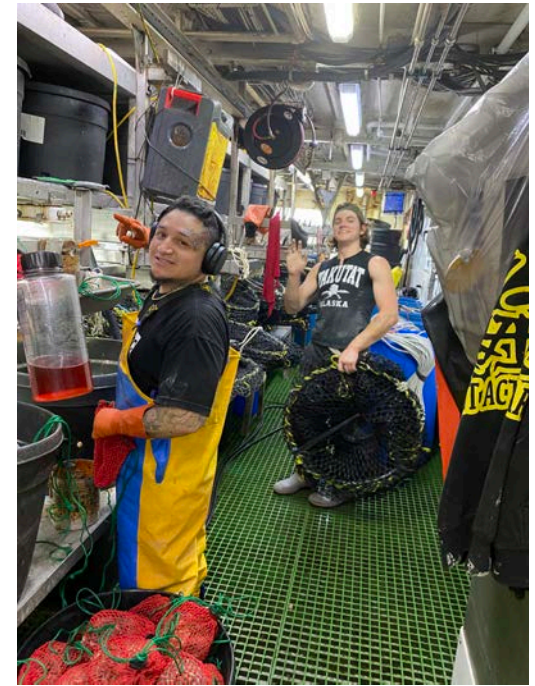
Bottom: Sperm Whale Presence (open) and Depredation (closed)

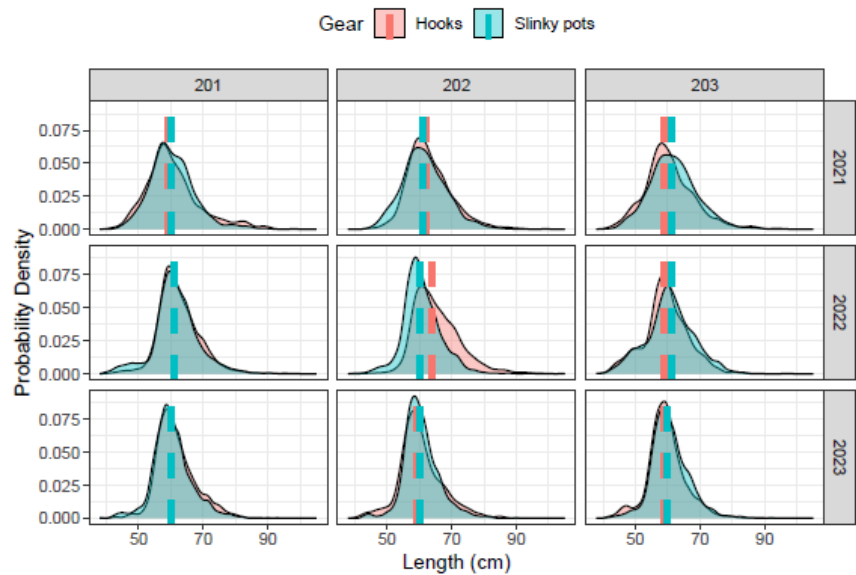
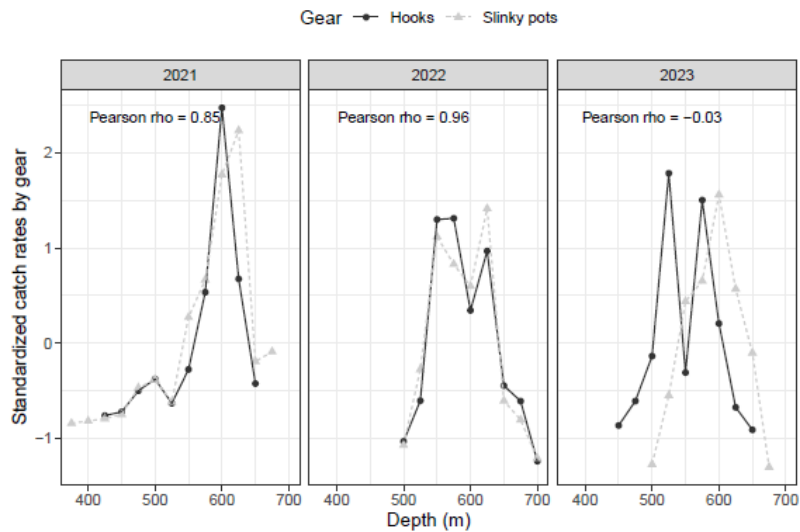
Subsurface Temperature (Area-weighted index ~250 m)



Year 3 of the Hook-and-line / Slinky Pot Comparison Experiment

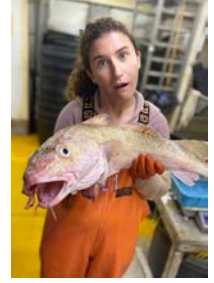
- Three days of fishing paired hook and pot sets in West Yakutat in July 2023
- Baseline data to understand sablefish catch rates, bycatch composition, and gear size-selectivity
- Fished with four 3.5” escape rings open





- Catch rate correlations fell apart in 2023
- Mismatch in depths fished
- Hooks and pots appear to catch comparable sizes of sablefish
- Some evidence of escape ring effect when small fish are present, but difficult to compare across years

Thank You!



- Contract Biologists: Maria McNaughton, Jessica Miller, and Eve Cullerton
- MESA field staff: Katy Echave, Andrew Dimond, Dan Goethel, Jane Sullivan, Pat Malecha, and Ben Williams
- Other field participants: Matt Cheng (UAF), Kelly Cates (AKRO), and Brenna Groom (AFSC)
- Data-wrangling: Cara Rodgveller
- FV Alaskan Leader captains, crew, and staff
- RACE Division assistance



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Questions?



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EXTRA SLIDE: Hooks (Bait vs. Empty vs. Catch)

