2026 Alaska Forage Fish Ecosystem Report

BSAI & GOA

J Vollenweider, C Szuwalski, L Domke

Purpose Statement

The majority of the SSC discussion focused on determining the main goal of the forage report, which would then help clarify what data and species groups to include in thereport. The SSC agrees with the JGPT recommendation that the report begin with a statement of purpose.

Additionally, the SSC recommends that this report focus only on the forage fish species explicitly stated in theGOA and BSAI groundfish FMPs and that all included metrics/indicators/analyses help determine whetherthere are any conservation concerns for those species groups.

- Not a formal stock assessment – Magnuson-Stevens Fishery Conservation and Management Act, Amendments 36 (BSAI) and 39 (GOA)
- Presentation of available data on trends in abundance and distribution of forage populations to preserve prey base for commercial target stocks, marine mammals & seabirds, and
- Description of forage species interactions in federal fisheries through bycatch

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Forage Fish

- Large, diverse group of >50 species
- State and federal management
- Motivation for forage group FMP: prevent fishing-related impacts to AK forage base
- Excluded: juv. Pacific cod, juv. salmon, krill



Scientific Name	Common Name
Mallotus villosus	capelin
Hypomesus pretiosus	surf smelt
Osmerus mordax	rainbow smelt
Thaleichthys pacificus	eulachon
Spirinchus thaleichthys	longfin smelt
Spirinchus starksi	night smelt
Protomyctophum thompsoni	bigeye lanternfish
Benthosema glaciale	glacier lanternfish
Tarletonbeania taylori	taillight lanternfish
Tarletonbeania crenularis	blue lanternfish
Diaphus theta	California headlightfish
Stenobrachius leucopsarus	northern lampfish
Stenobrachius nannochir	garnet lampfish
Lampanyctus jordani	brokenline lanternfish
Nannobrachium regale	pinpoint lampfish
Nannobrachium ritteri	broadfin lanternfish
Leuroglossus schmidti	northern smoothtongue
Lipolagus ochotensis	popeye blacksmelt
Pseudobathylagus milleri	stout blacksmelt
Bathylagus pacificus	slender blacksmelt
Ammodytes hexapterus	Arctic sand lance
Ammodytes personatus	Pacific sand lance
Trichodon trichodon	Pacific sandfish
Arctoscopus japonicus	sailfin sandfish
Apodichthys flavidus	penpoint gunnel
Rhodymenichthys dolichogaster	stippled gunnel
Pholis fasciata	banded gunnel
Pholis clemensi	longfin gunnel
Pholis laeta	crescent gunnel
Pholis schultzi	red gunnel
Eumesogrammus praecisus	fourline snakeblenny
Stichaeus punctatus	arctic shanny
Gymnoclinus cristulatus	trident prickleback
Chirolophis tarsodes	matcheek warbonnet
Chirolophis nugatory	mosshead warbonnet
Chirolophis decoratus	decorated warbonnet
Chirolophis snyderi	bearded warbonnet
Bryozoichthys lysimus	nutcracker prickleback
Bryozoichthys majorius	pearly prickleback
Lumpenella longirostris	longsnout prickleback

Scientific Name	Common Name
Poroclinus rothrocki	whitebarred prickleback
Anisarchus medius	stout eelblenny
Lumpenus fabricii	slender eelblenny
Lumpenus sagitta	snake prickleback
Acantholumpenus mackayi	blackline prickleback
Opisthocentrus ocellatus	ocellated blenny
Alectridium aurantiacum	lesser prickleback
Alectrias alectrolophus	stone cockscomb
Anoplarchus purpurescens	high cockscomb
Anoplarchus insignis	slender cockscomb
Phytichthys chirus	ribbon prickleback
Xiphister mucosus	rock prickleback
Xiphister atropurpureus	black prickleback
Sigmops gracilis	slender fangjaw
Cyclothone alba	white bristlemouth
Cyclothone signata	showy bristlemouth
Cyclothone atraria	black bristlemouth
Cyclothone pseudopallida	phantom bristlemouth
Cyclothone pallida	tan bristlemouth
Euphausia pacifica	krill



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Focal Species

Aydin et al. 2007

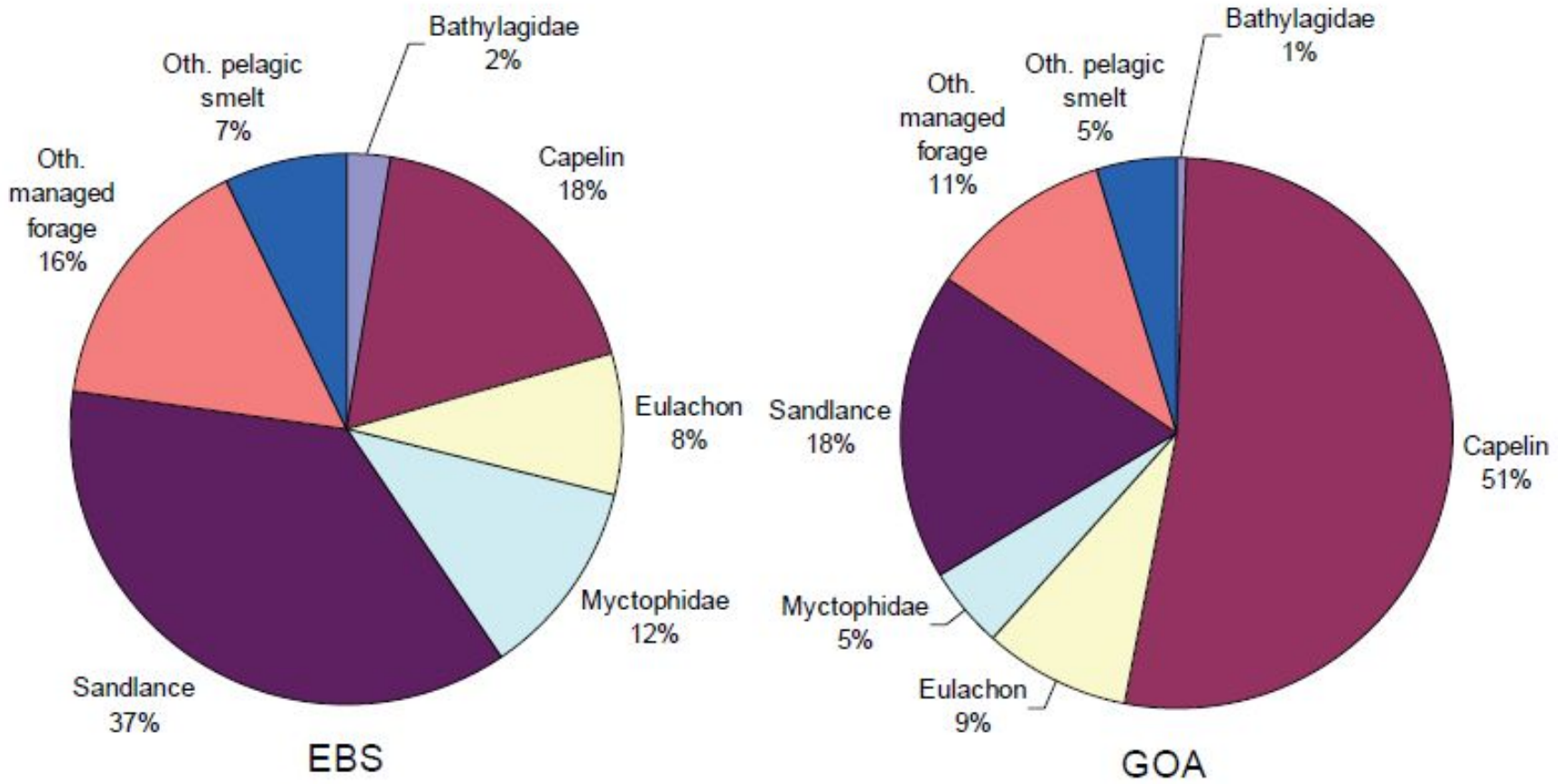

Figure 24. Consumption of "forage fish" management category in the Eastern Alaska (center), and Aleutian Islands (right).

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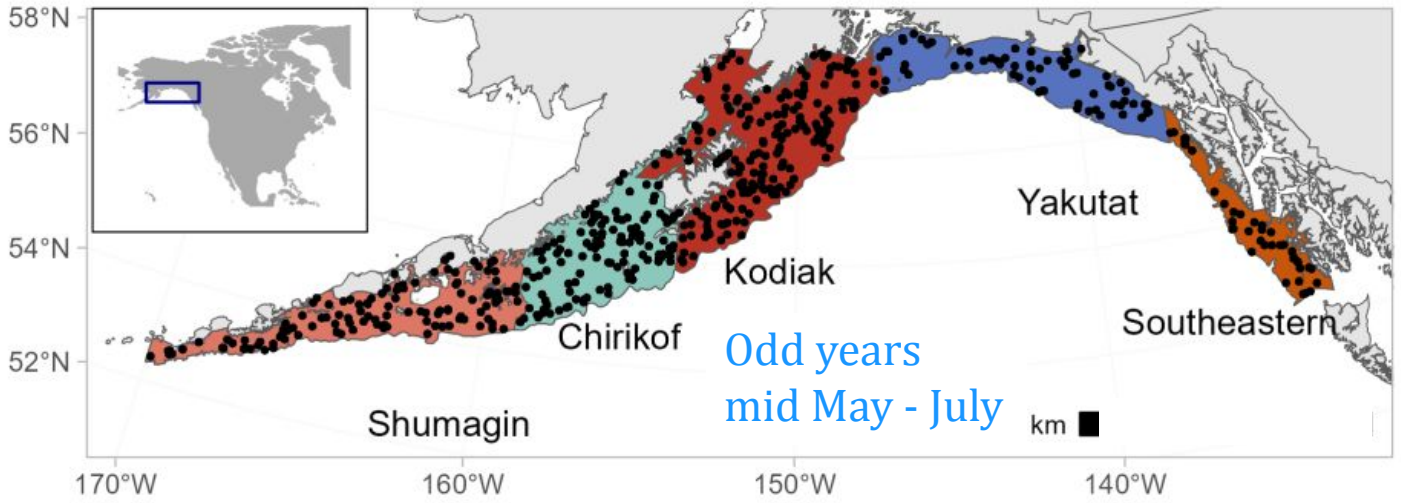
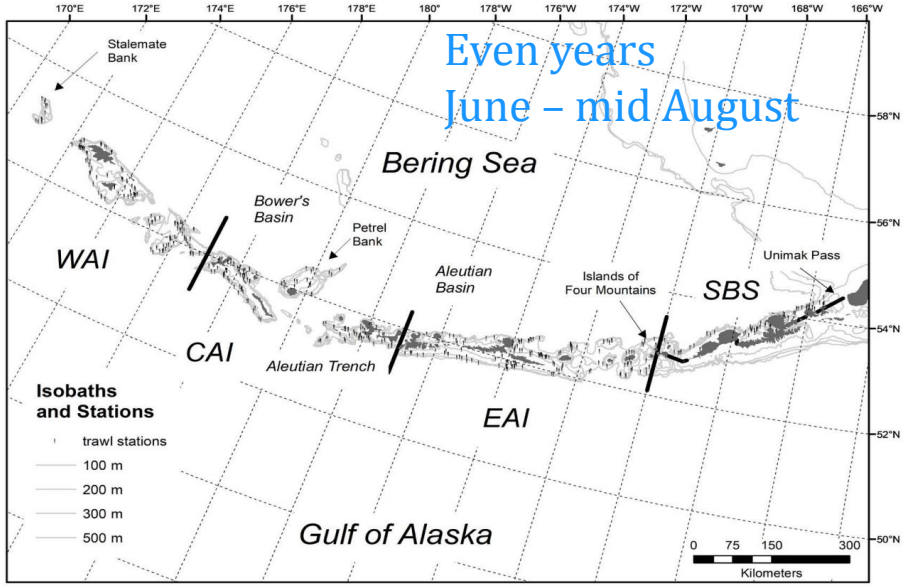
Data Sources

- NMFS Bottom Trawl Surveys
- Bering Sea Pelagic Trawl Surveys
- Incidental Catch in Federal Fisheries

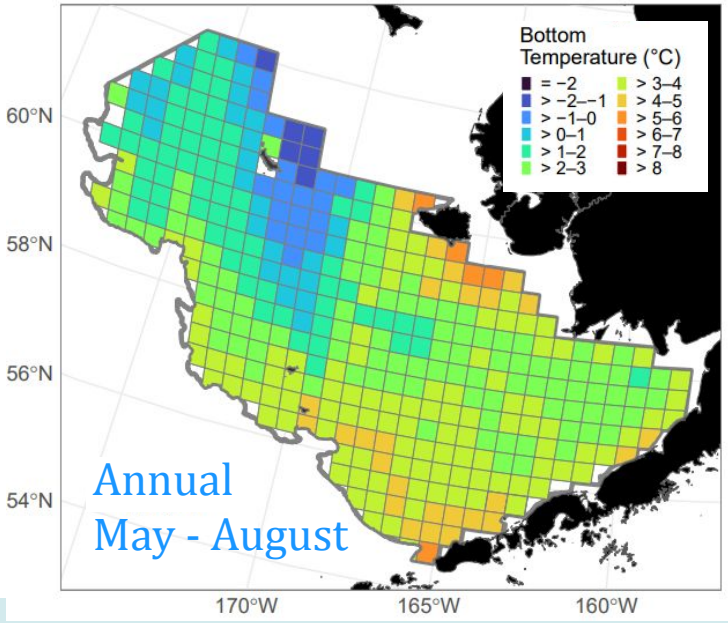
GOA Bottom Trawl Survey w/ INPFC Areas



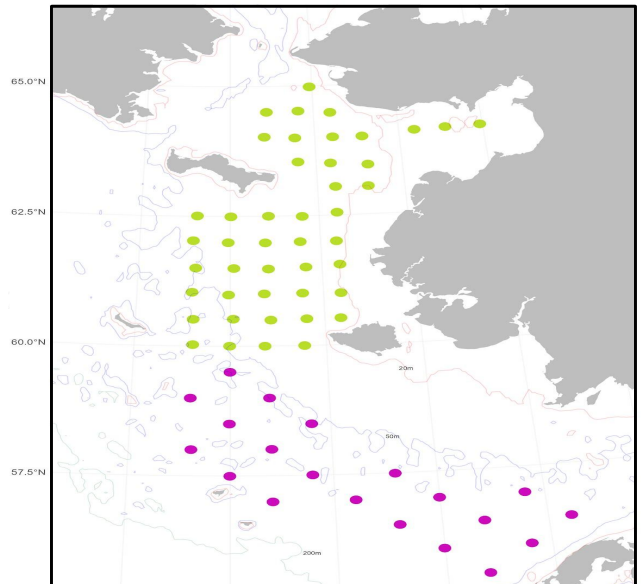
Aleutian Islands Bottom Trawl Survey w/ Survey Districts



Bering Sea Bottom Trawl Survey



Bering Sea Pelagic Trawl Survey

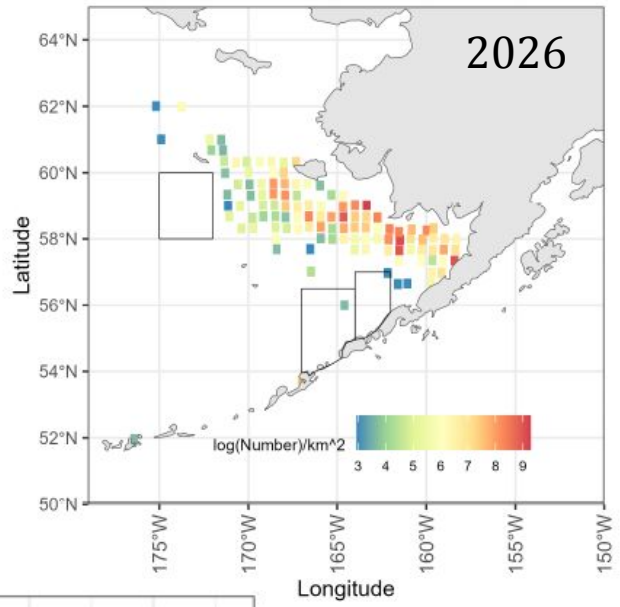


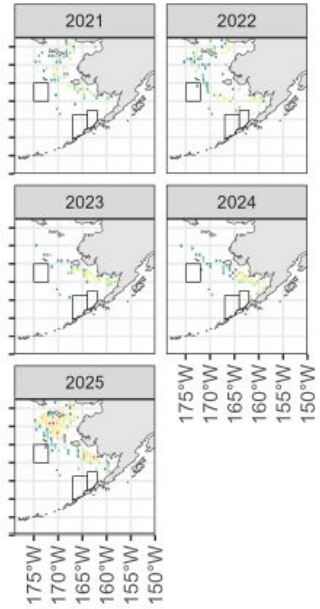
North: Annual, September
South: Even years, mid Aug-Sept

BSAI – Pacific Capelin

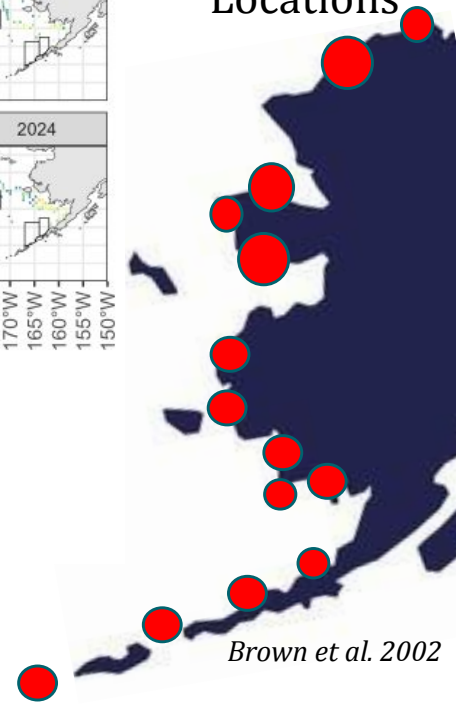


— North
— SEBS Shelf
— AI



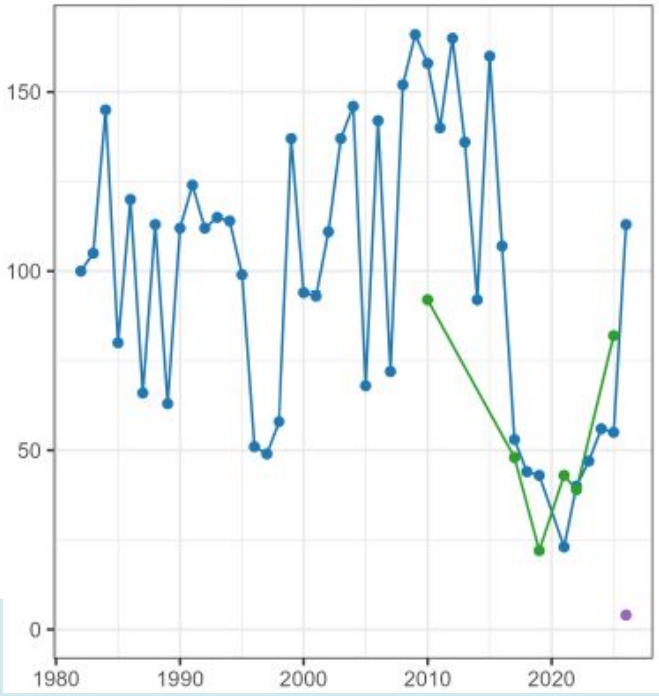


Spawning Locations

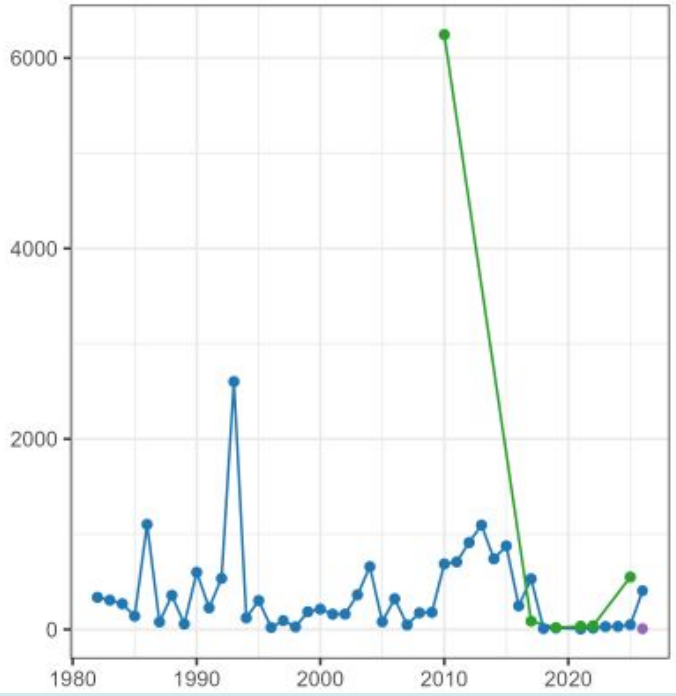


Brown et al. 2002

Prevalence (# stns)



Density (n/km^2)



- Distributed primarily in inner domain
- High interannual variability
- Prevalence & density rebounded since recent all-time lows

AGREE DISAGREE pelagic trawl surveys

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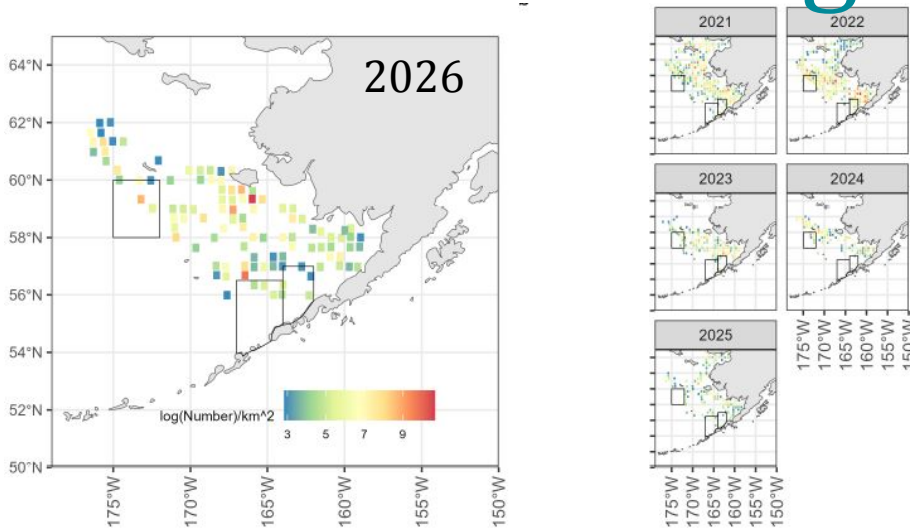
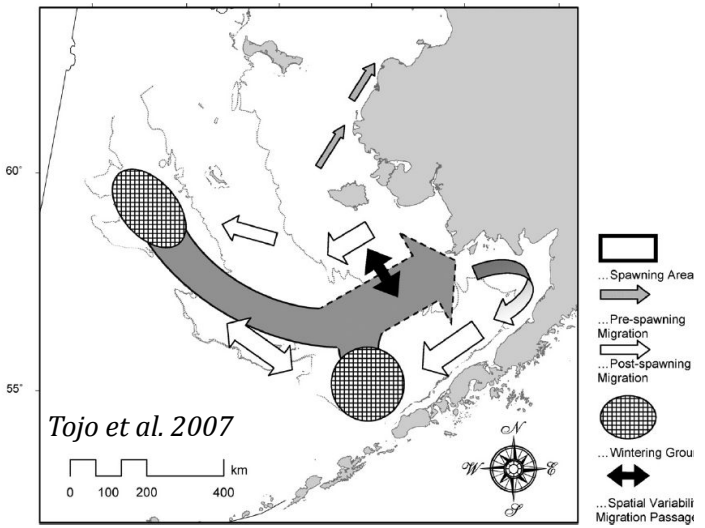
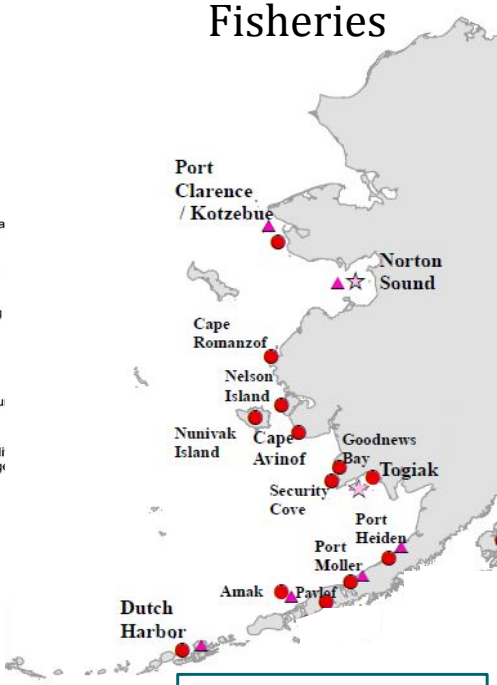
BSAI– Pacific Herring



Herring Migration Route

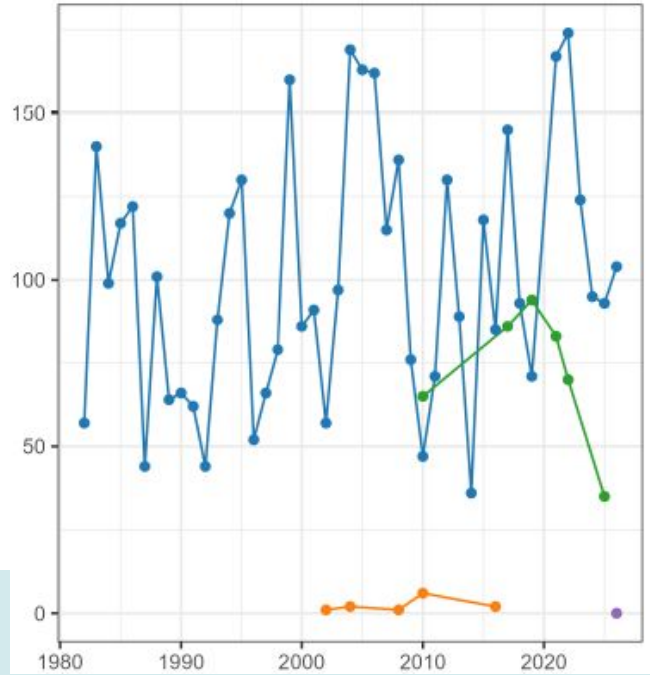


ADFG Commercial Fisheries

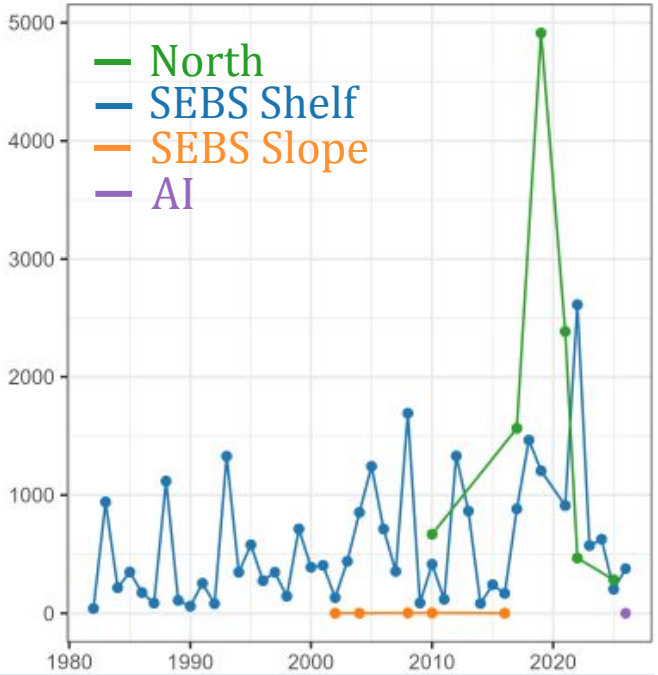




Prevalence (# stns)



Density (n/km^2)



- High interannual variability
- Prevalence & density near long-term mean



pelagic trawl survey



Togiak spawn biomass

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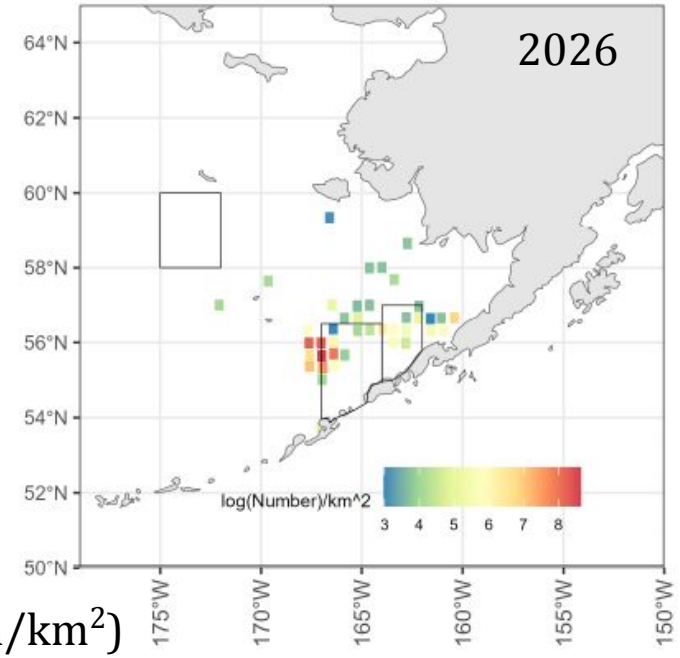
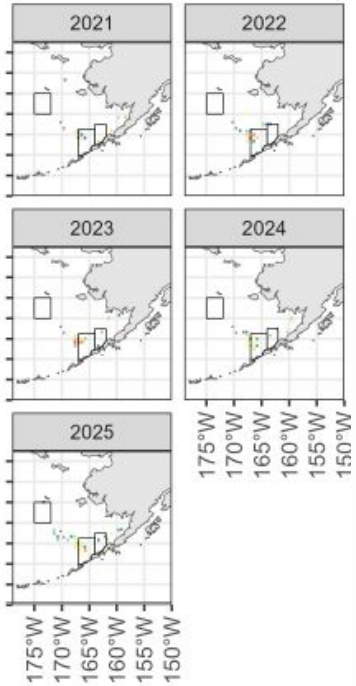
BSAI – Eulachon



- North
- SEBS Shelf
- SEBS Slope
- AI

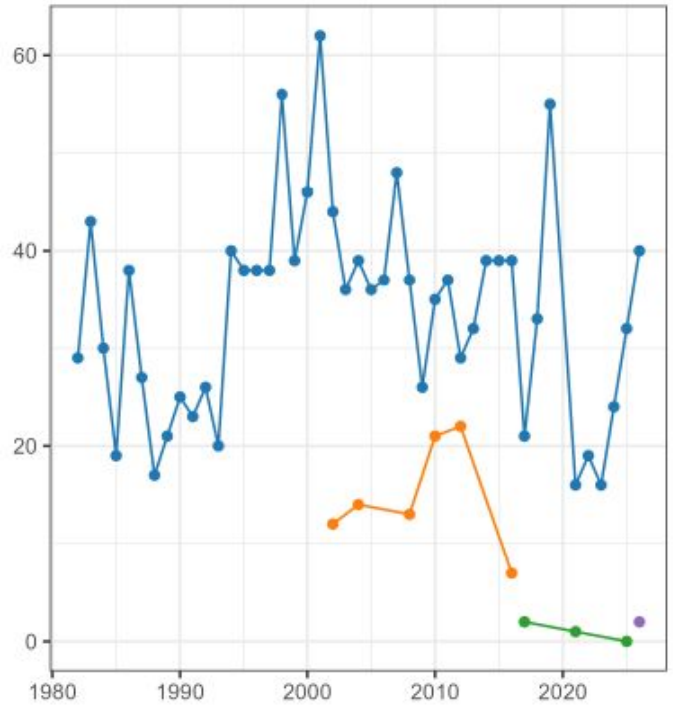




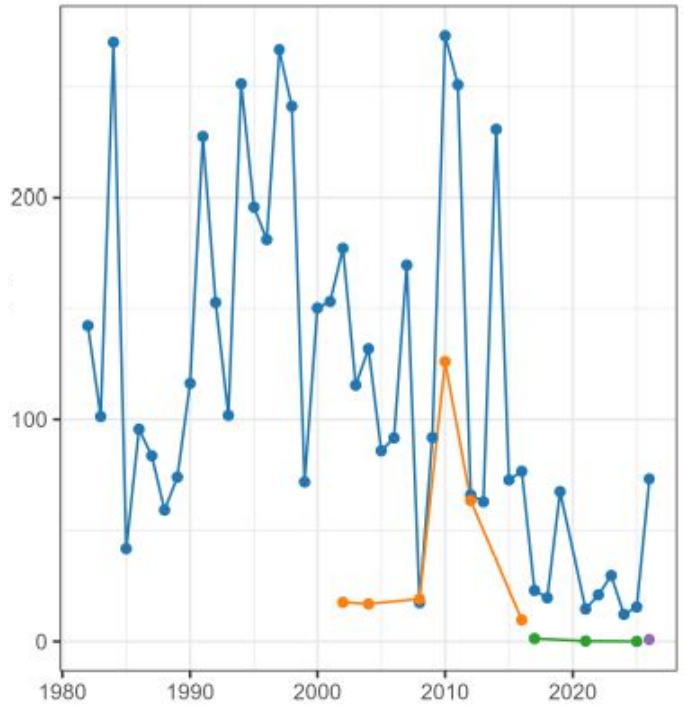
Spawning Locations



Prevalence (# stns)



Density (n/km^2)



- Distributed primarily in S portion of outer SEBS shelf
- High interannual variability
- Prevalence & density rebounded since recent all-time lows

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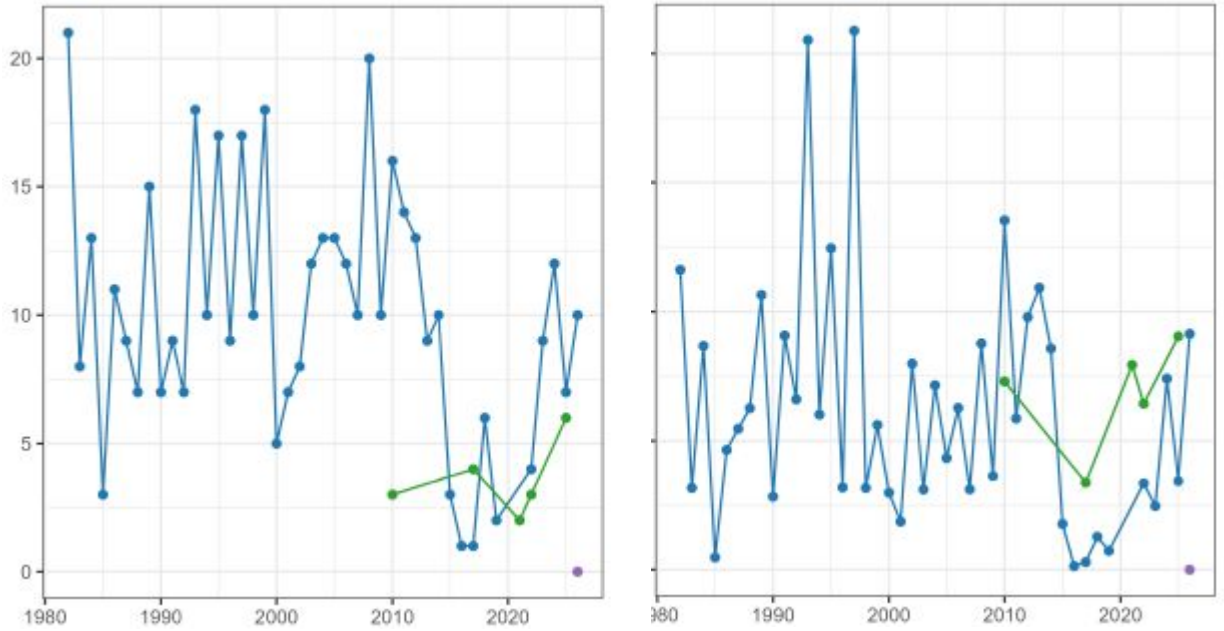
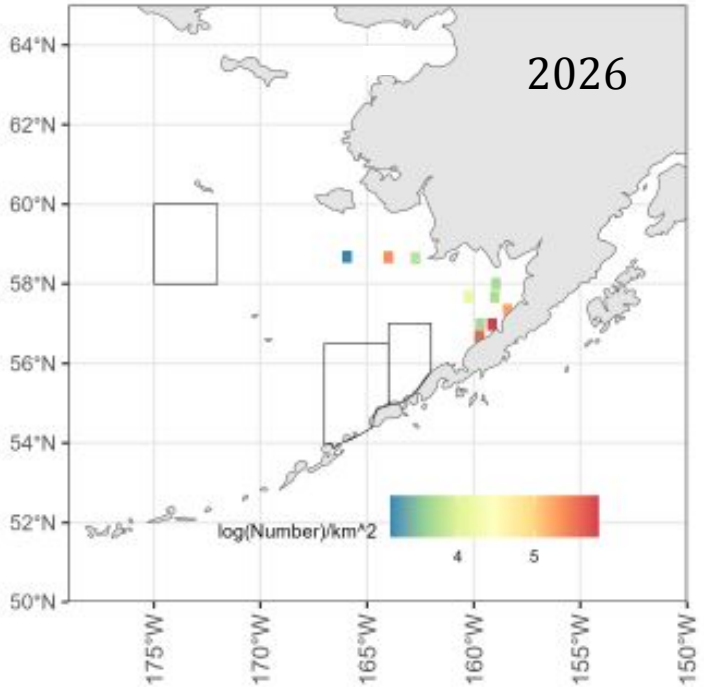
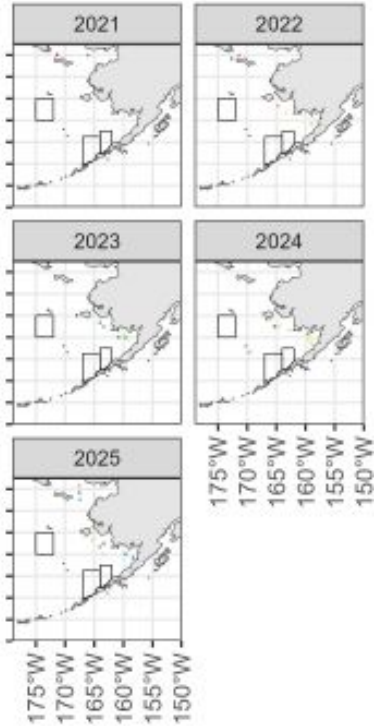
BSAI – Sand lance



North
SEBS Shelf
AI

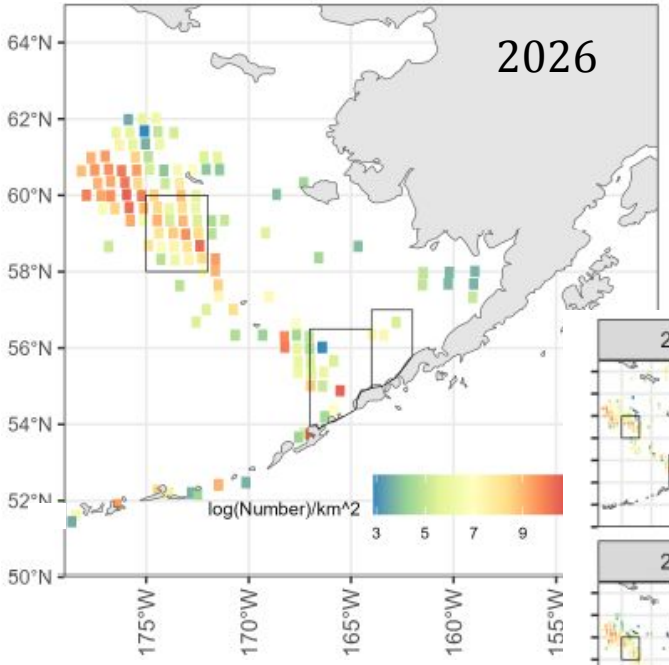


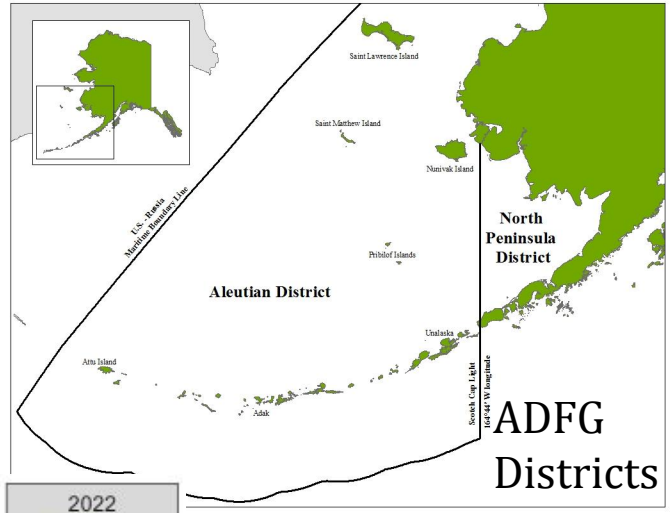


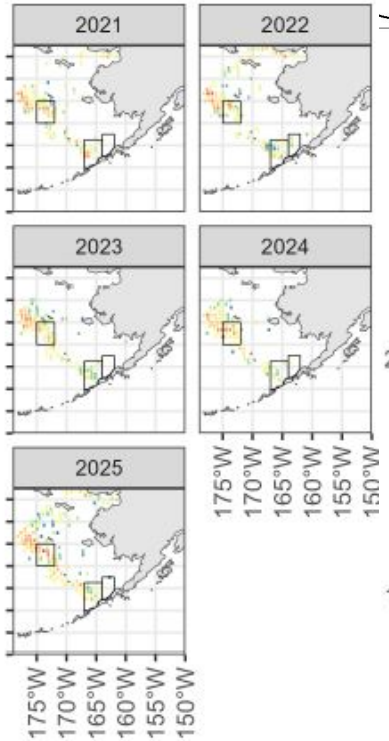


- Primarily inshore distribution and AI
- High interannual variability
- Prevalence & density rebounded since all-time lows in 2016

BSAI – Shrimp



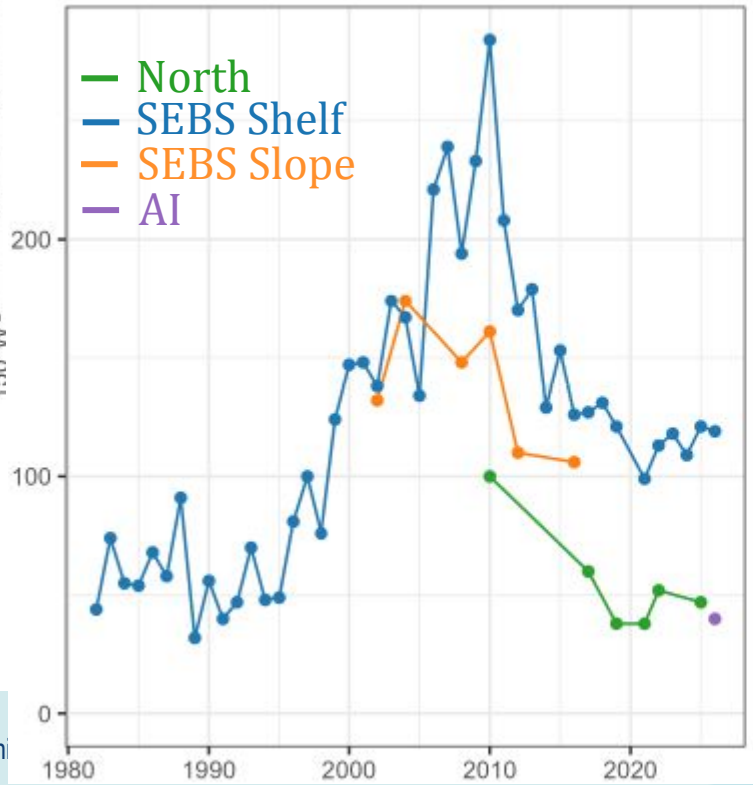




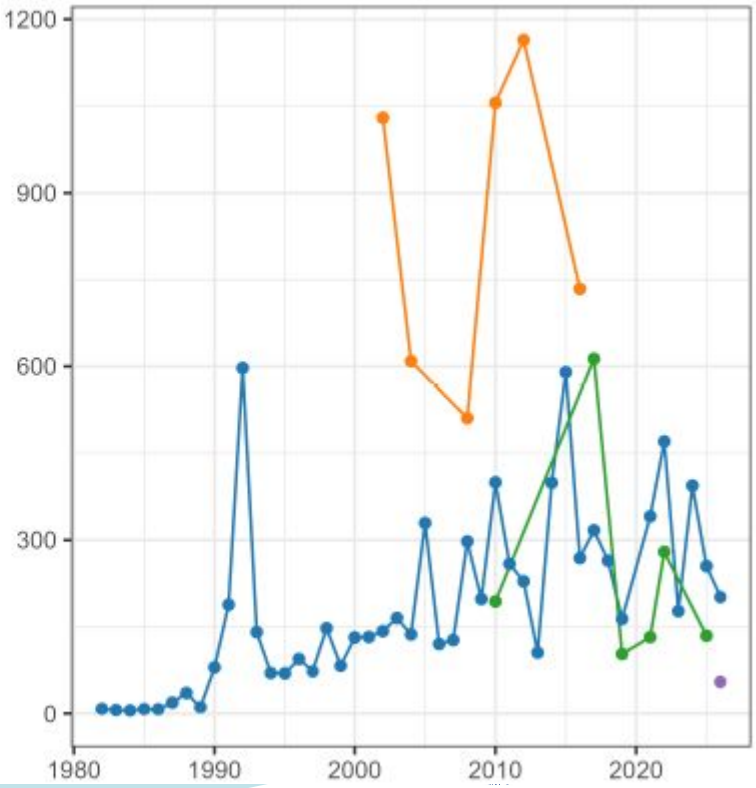


- Highest densities consistently in deep waters of outer domain
- 2025/2026 density and prevalence slightly above long-term average

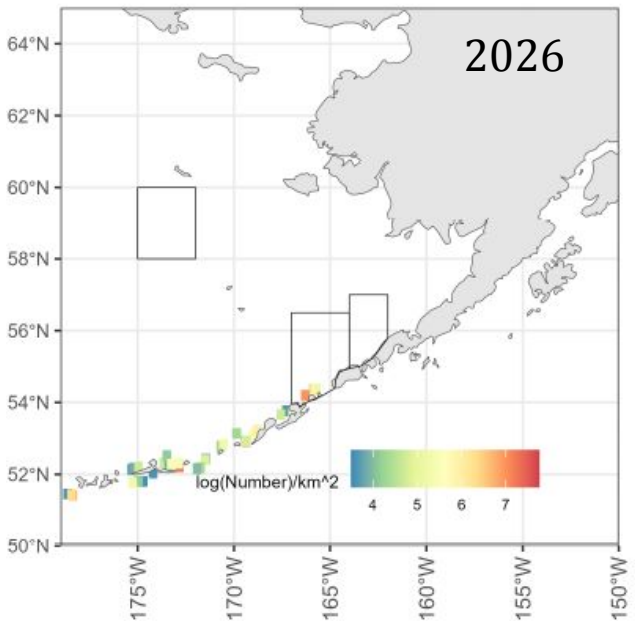
Prevalence (# stns)

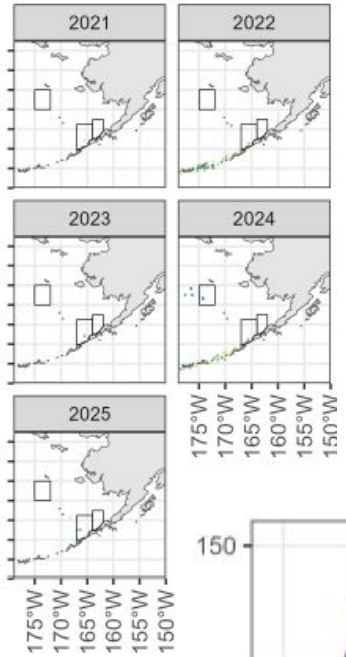


Density (n/km^2)



BSAI – Squid



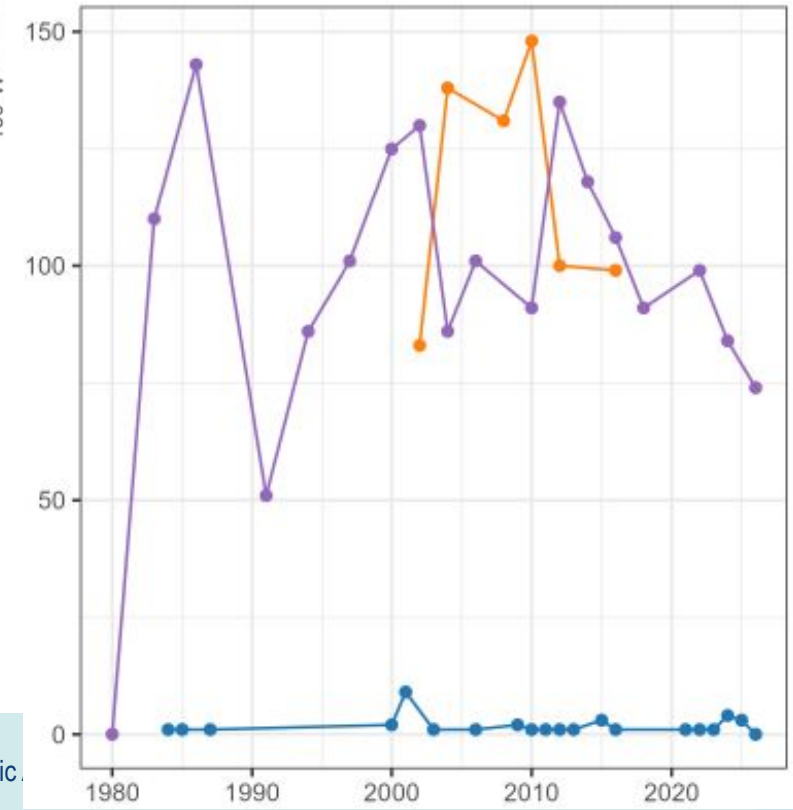




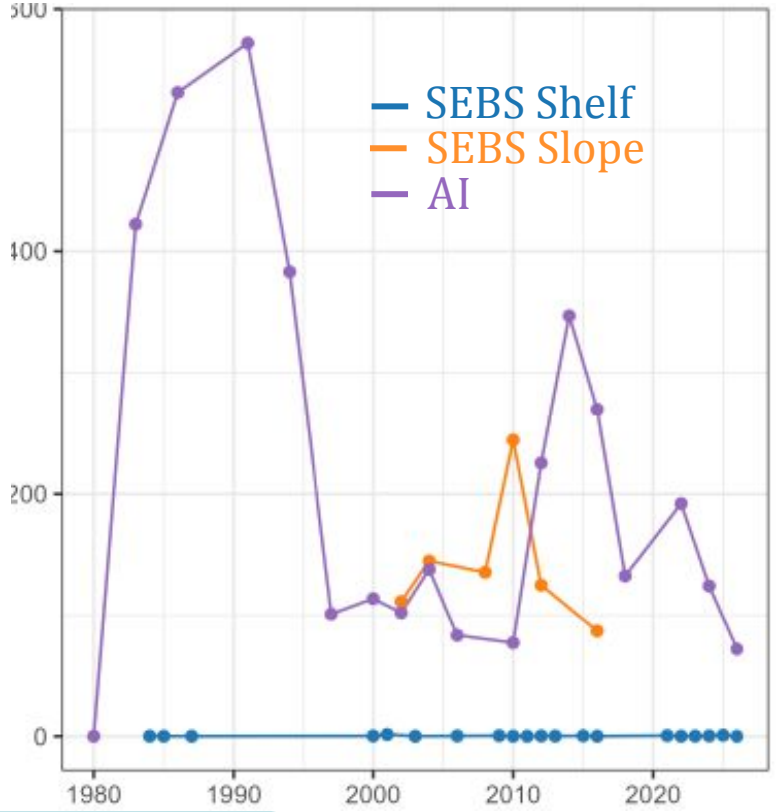
Magistrate armhook squid
(*Berryteuthis magister*)

- Consistently encountered in the AI
- Density and prevalence declined and are low

Prevalence (# stns)

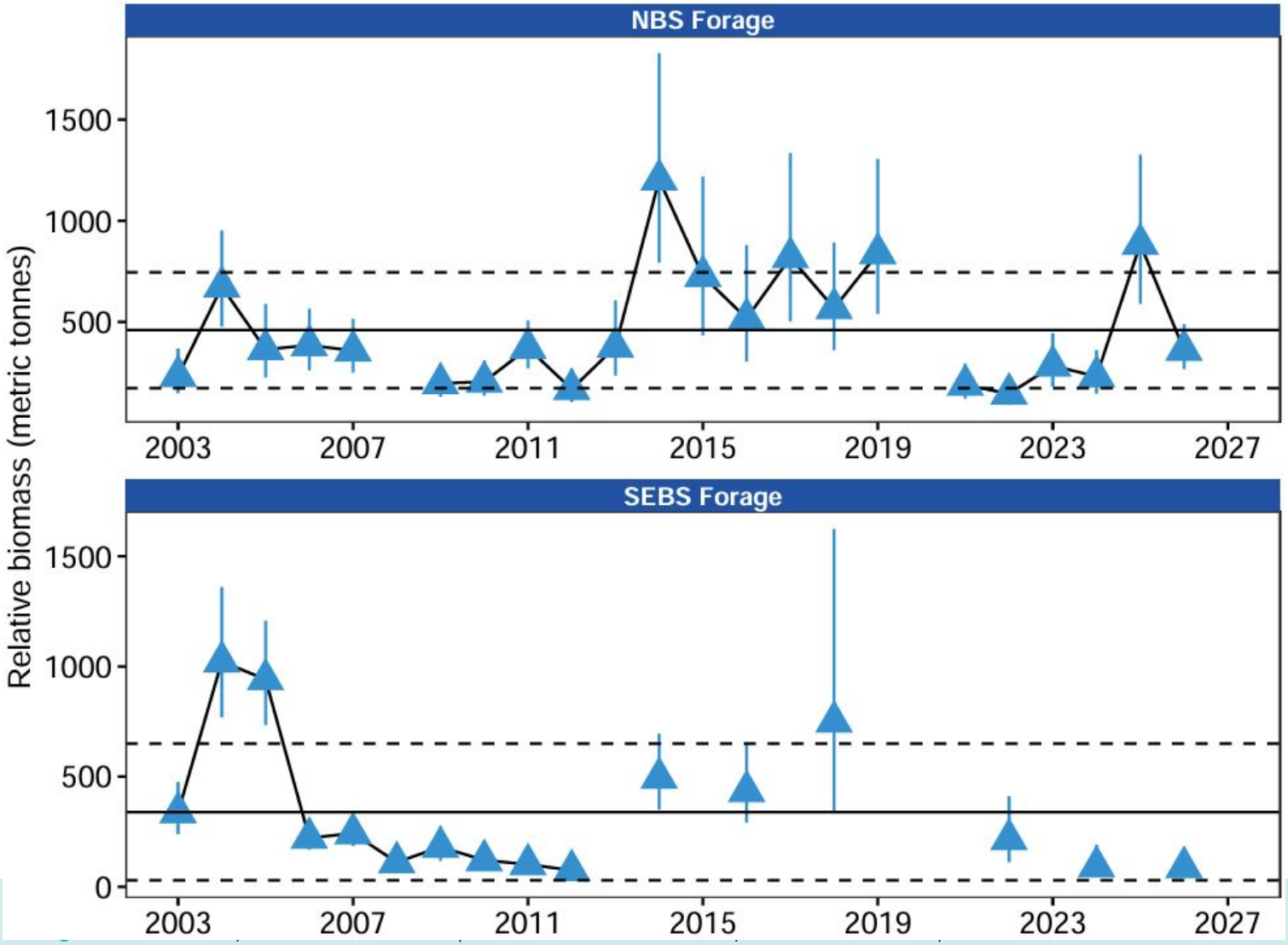


Density (n/km^2)



BS – Forage Fish Aggregate Index

Late Summer/Fall Pelagic Surveys



- Age-0 Pacific cod, age-0 pollock, capelin, herring, juv Chinook, sockeye, chum, coho, pink salmon, rainbow smelt, saffron cod
- NBS: slightly below average
- SEBS: low since 2024
- North
  - Cold: capelin
  - Warm: herring
- South
  - Warm: juv sockeye salmon and age 0 pollock

Domke et al.

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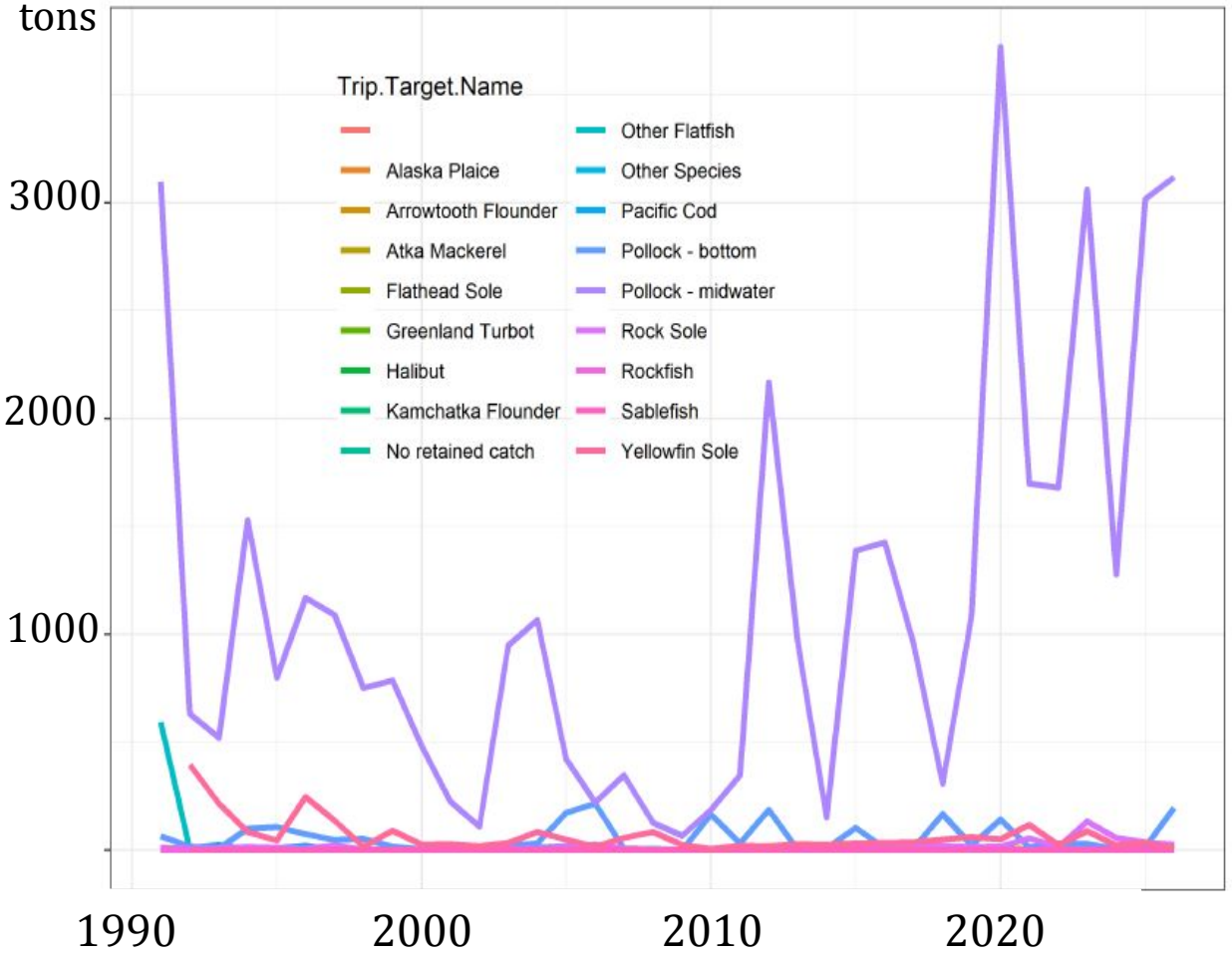
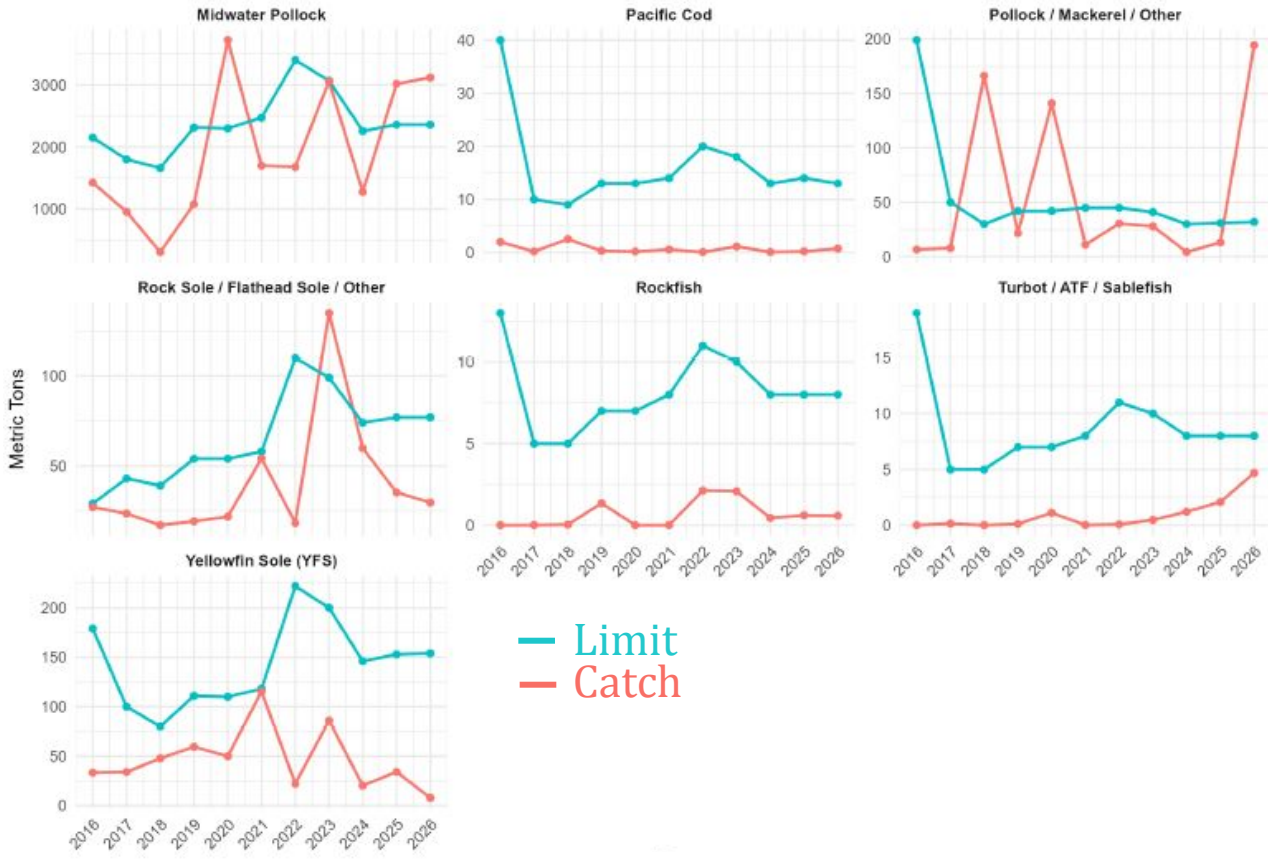
BSAI – Incidental Catch of Pacific Herring



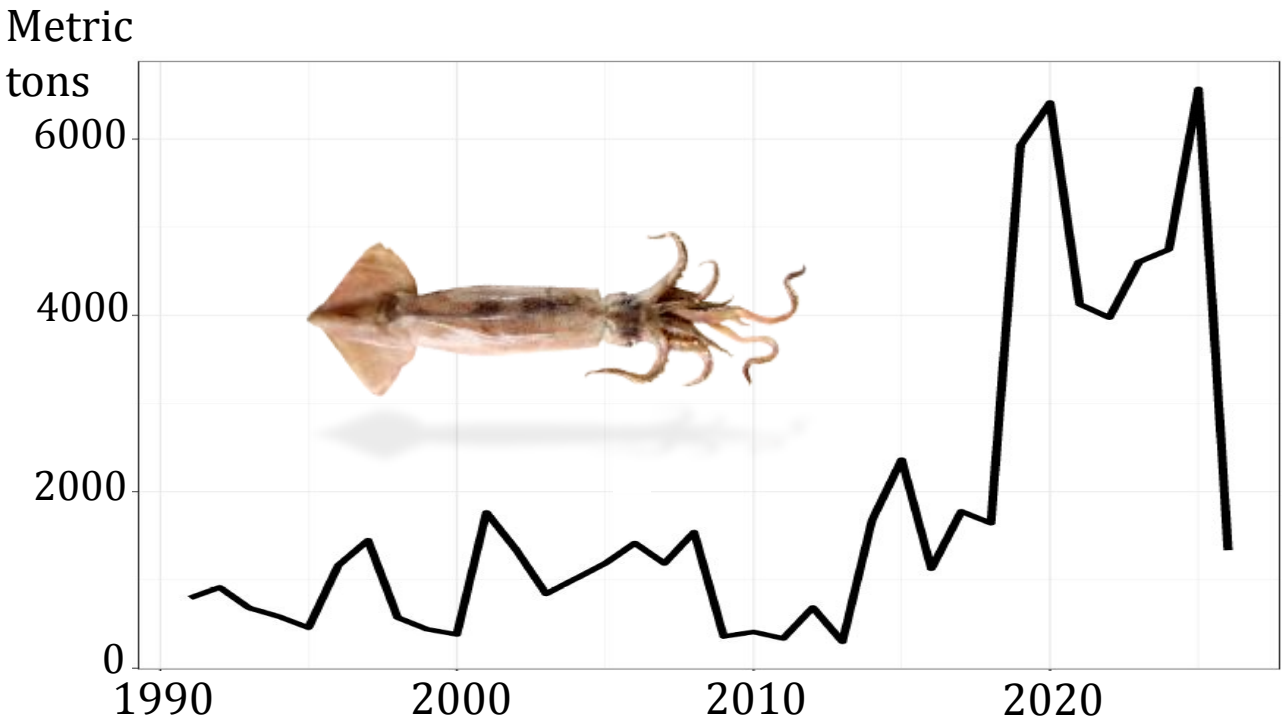
BSAI Prohibited Catch by Fishery

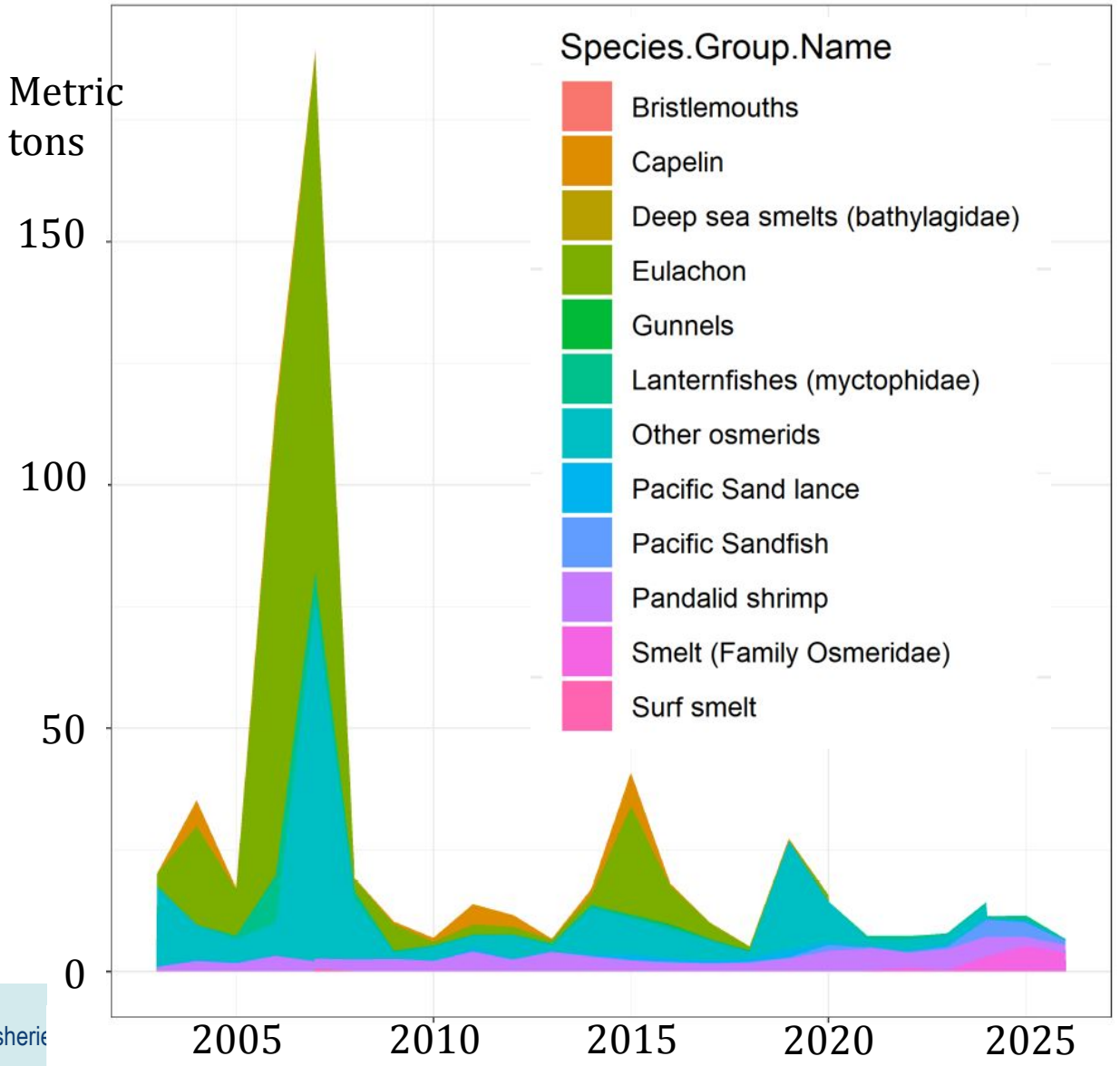


Catch vs. Limit by Fishery

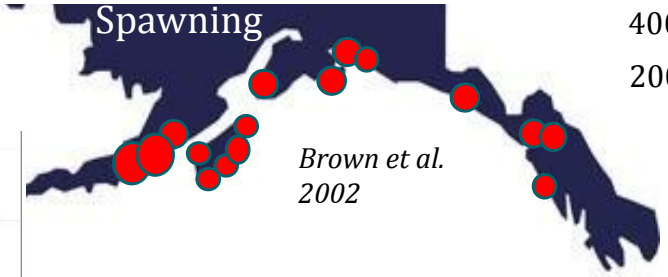


BSAI – Incidental Catch of Other Forage Species

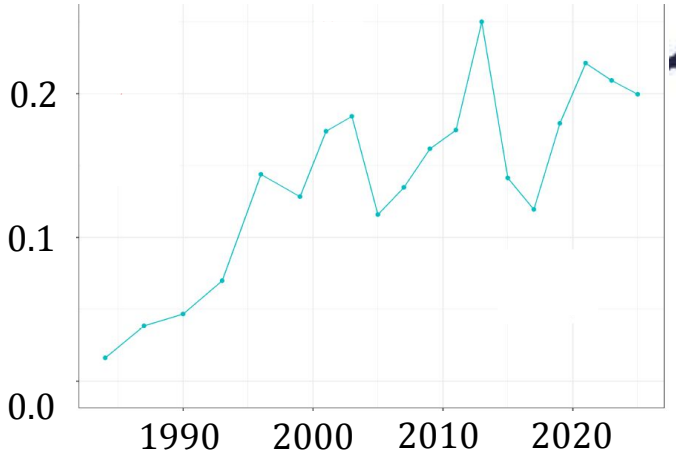




GOA – Pacific Capelin

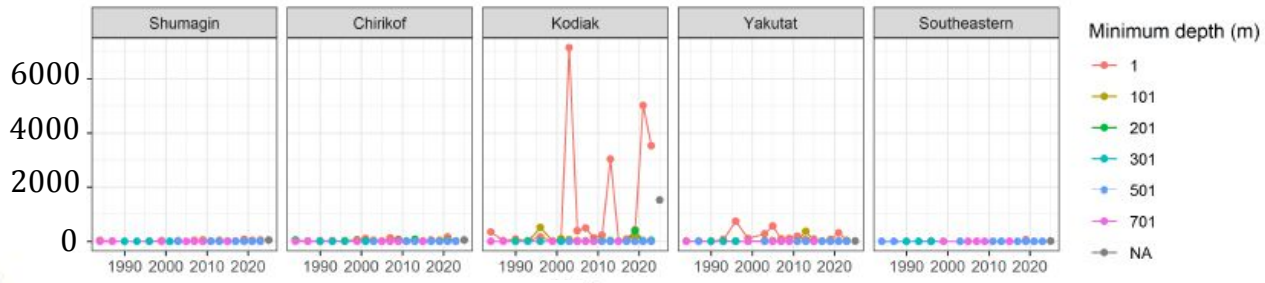


Prevalence

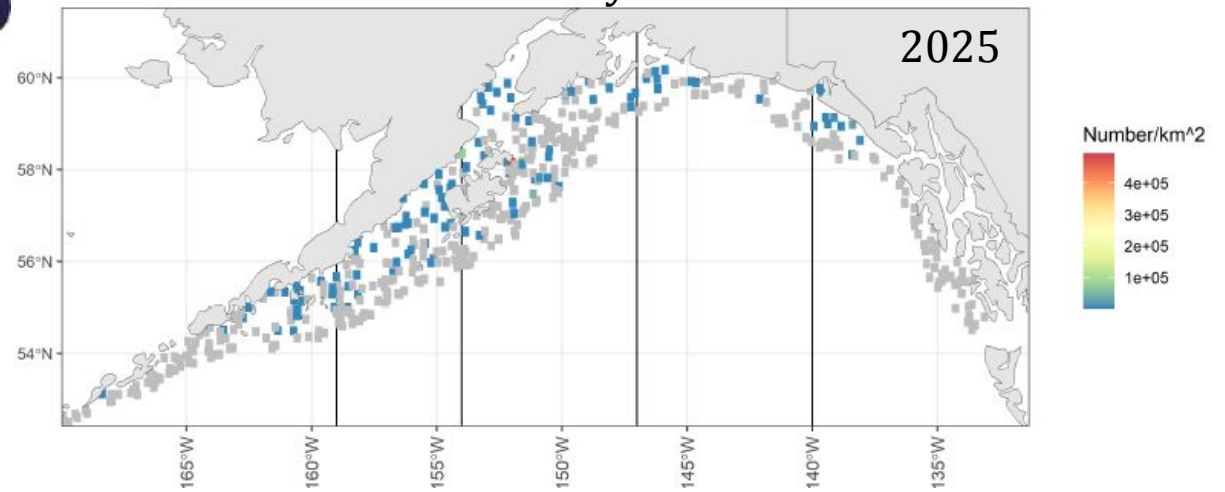


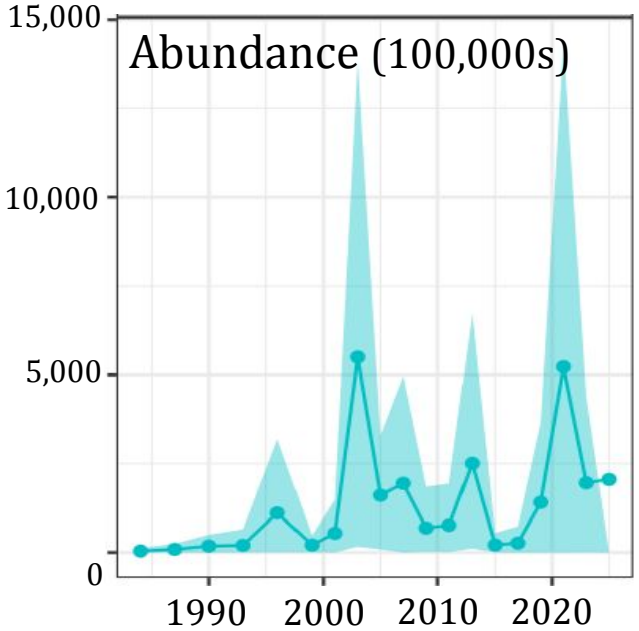


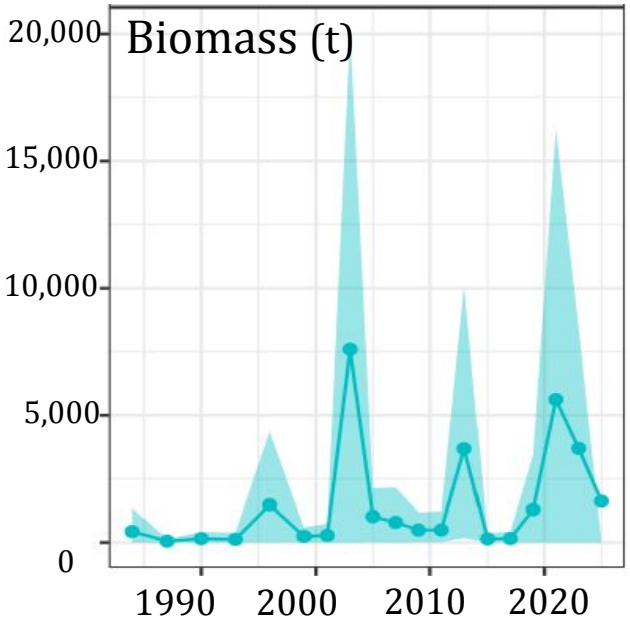
Biomass (t) in INFPC Areas by Depth



Density





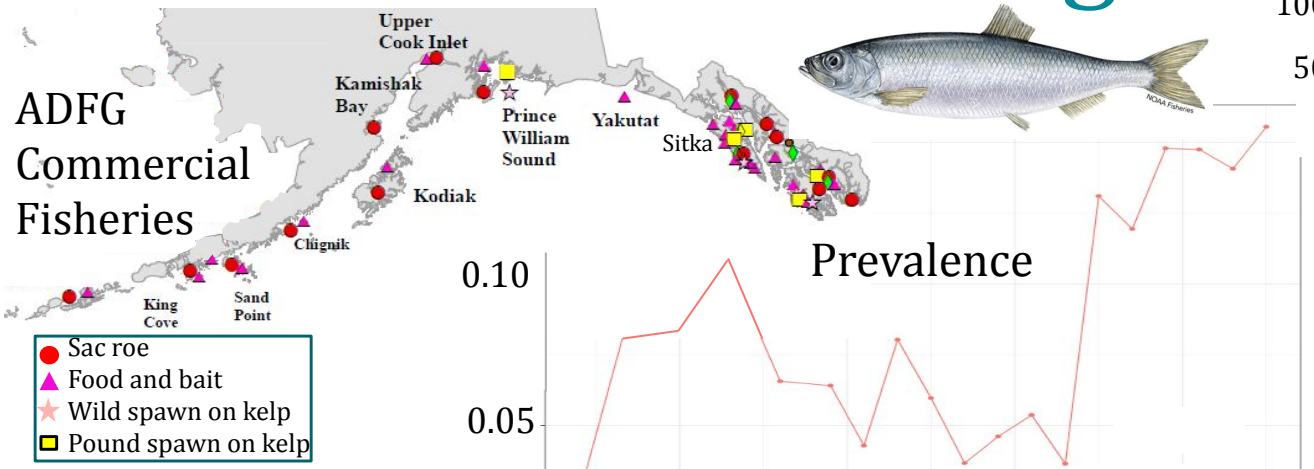


- Most abundant in Kodiak INFPC in shallow water
- Recovered since 2014-2016 heatwave

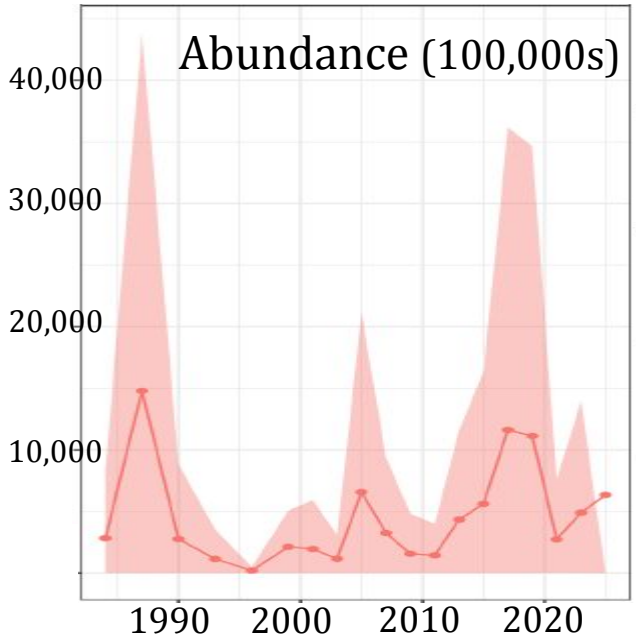
AGREE seabird diets

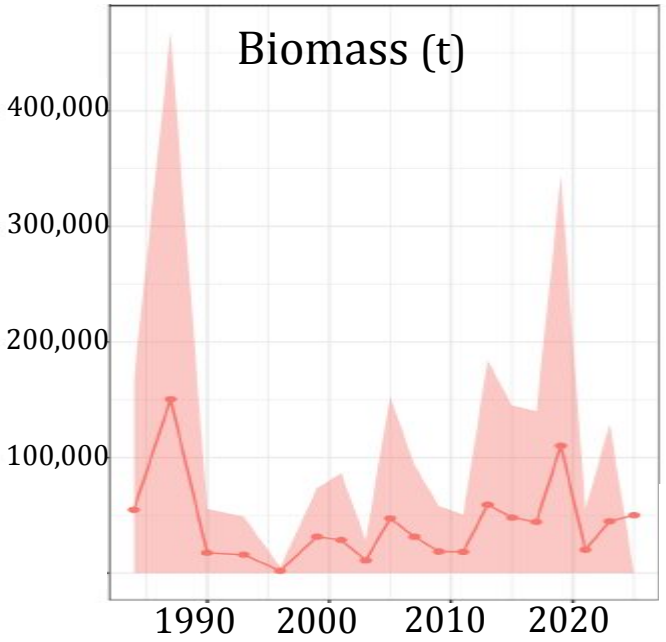
AGREE groundfish summer diets

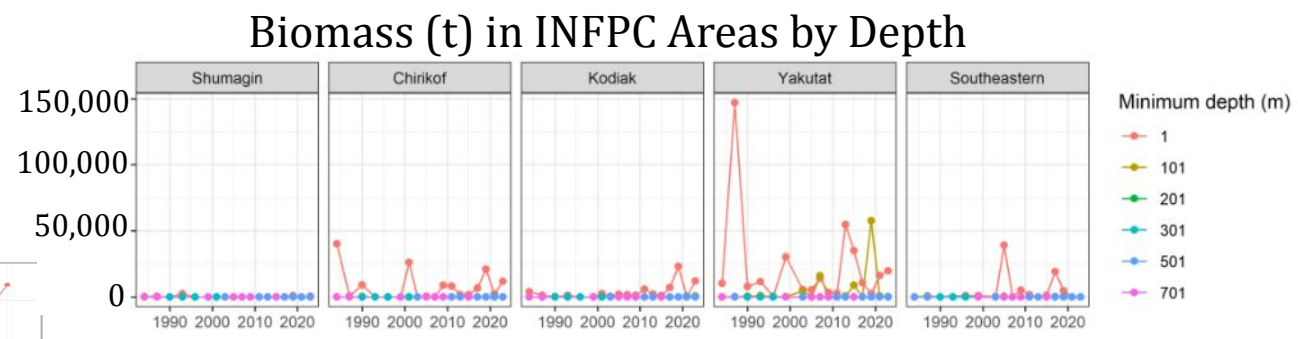
GOA – Pacific Herring

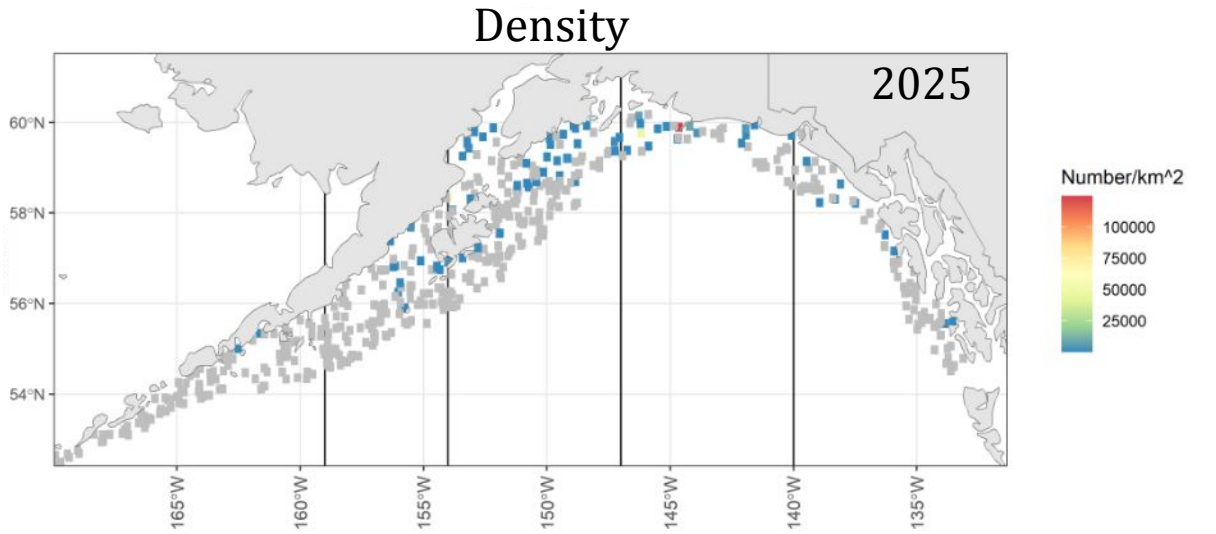


ADFG Commercial Fisheries









- Most abundant in Yakutat INFPC in shallow water
- Prevalence near record high
- Abundance and biomass average

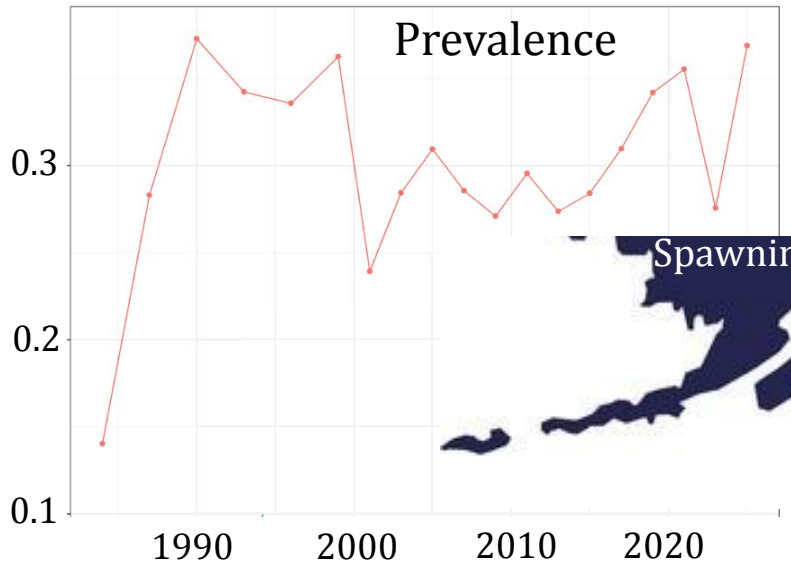


Craig mature biomass

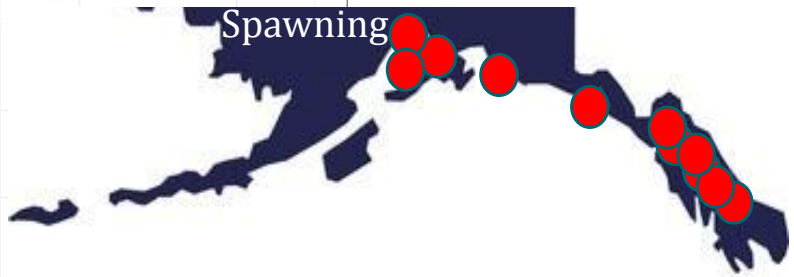
a mature biomass

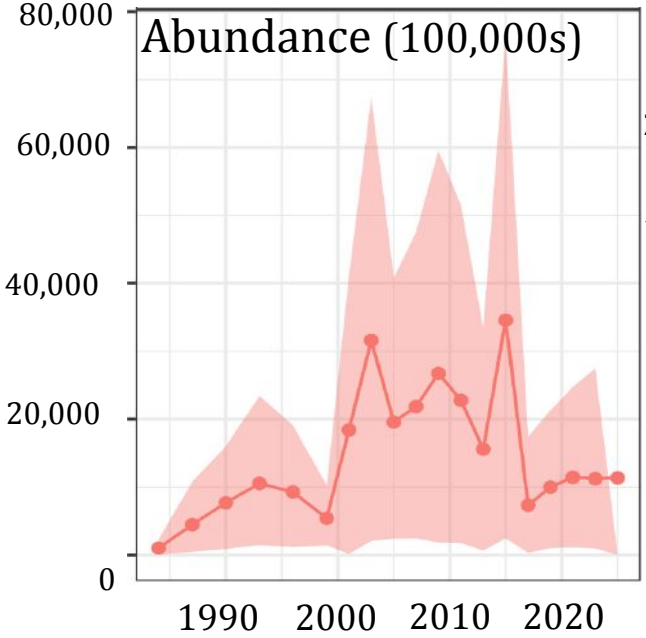
seabird diets

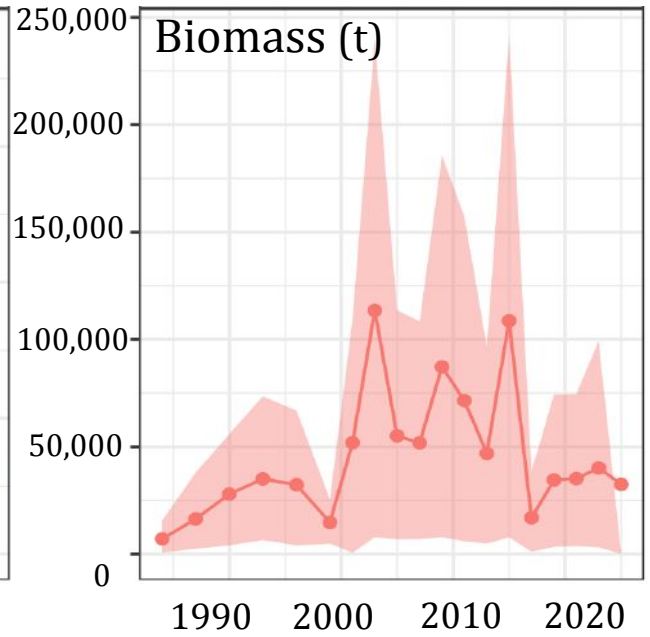
GOA – Eulachon

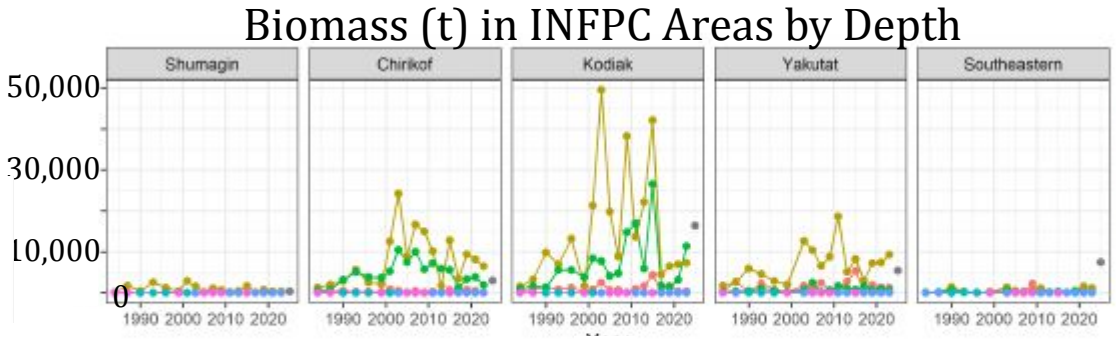


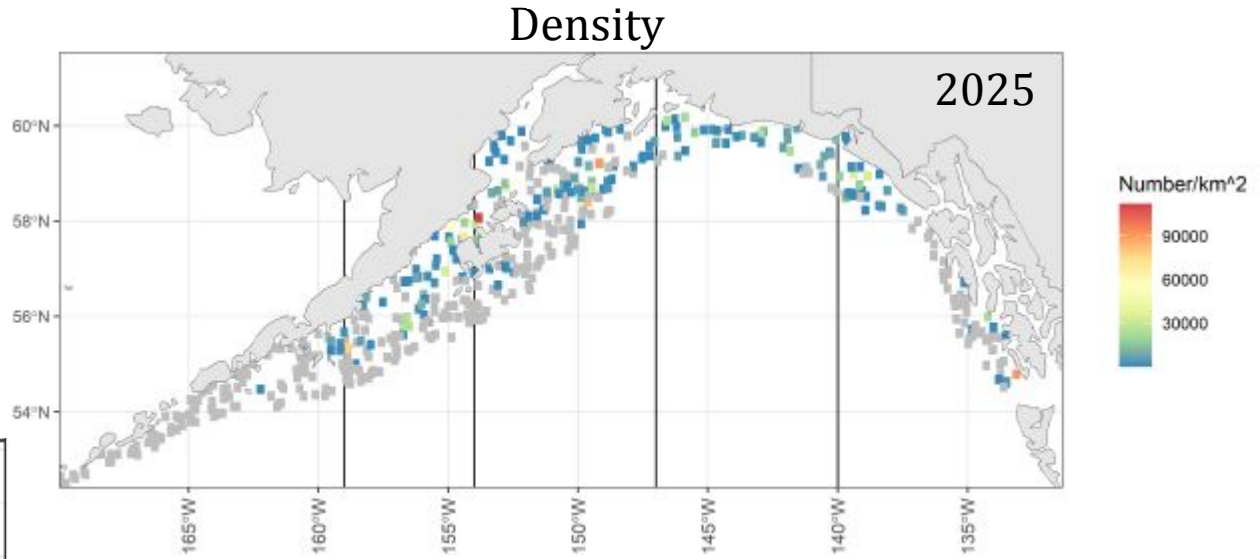








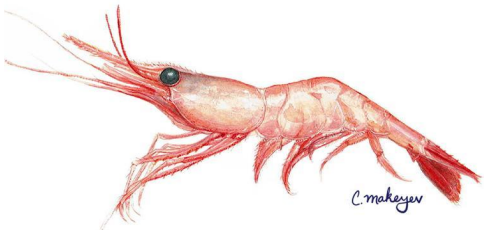




- Most abundant in Kodiak INFPC in 100-200m
- High prevalence, average abundance & biomass

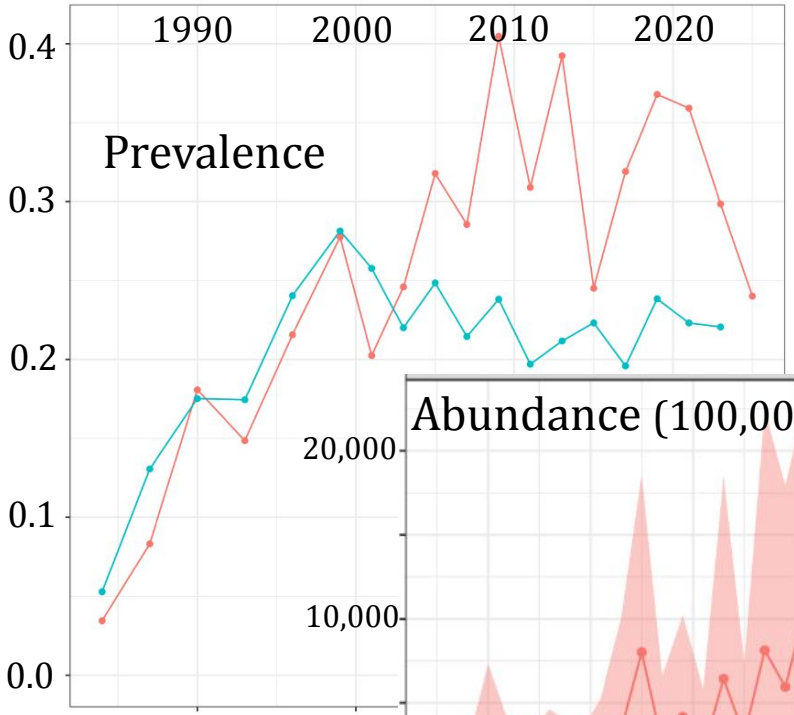
AGREE southeast AK watershed surveys

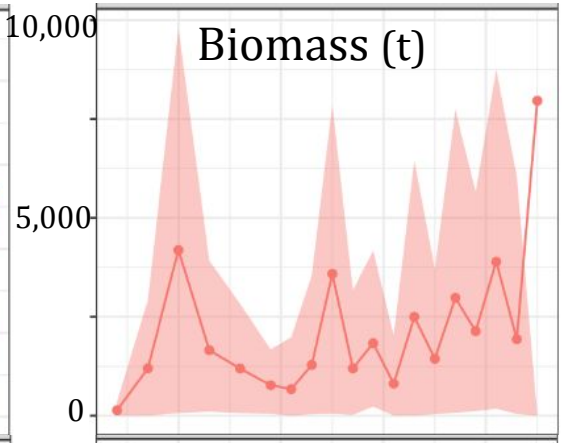
GOA – Shrimp

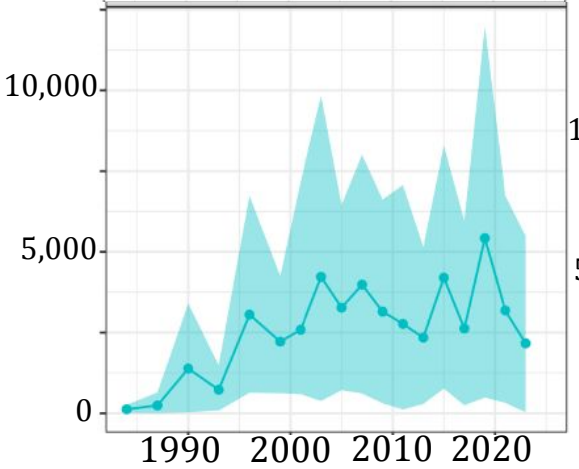


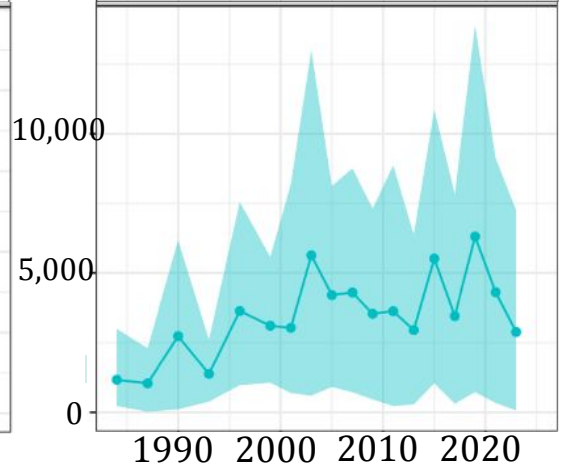
Shrimp unid.

Sidestripe shrimp
(Pandalopsis dispar)

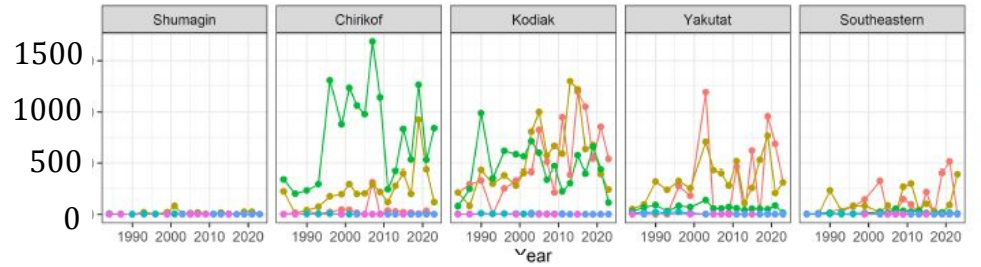




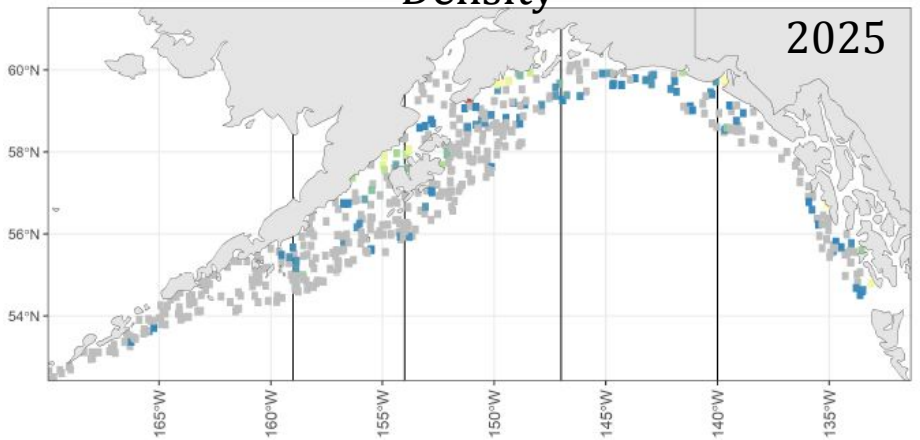




Sidestripe Shrimp Biomass (t) in INFPC Areas by Depth



Density

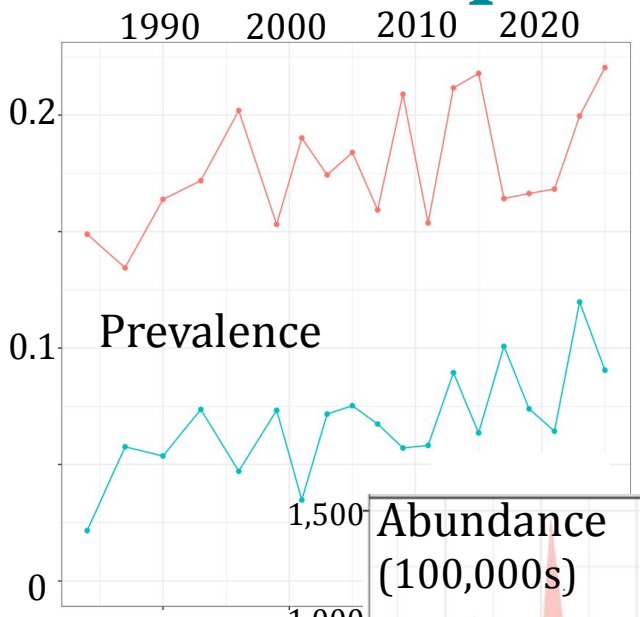


- Abundant throughout Gulf, <200m
- Prevalence remains relatively high
- Abundance and biomass are trending up

GOA – Squid

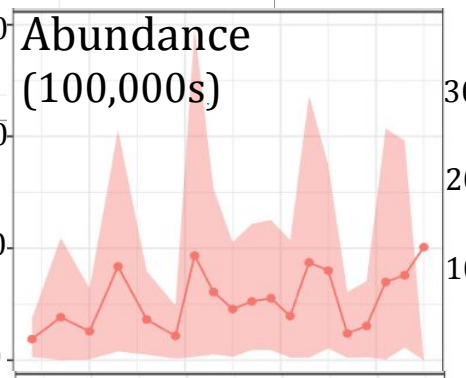


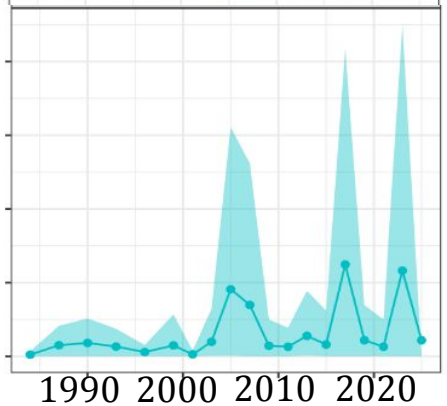
Magistrate Armook Squid
(*Berryteuthis magister*)

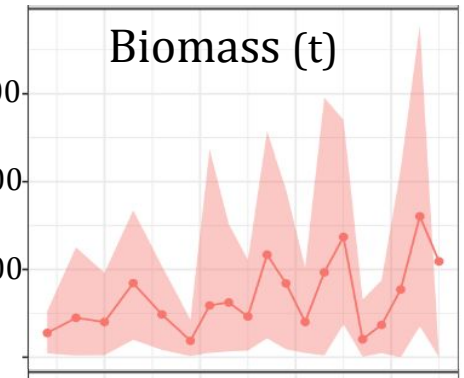


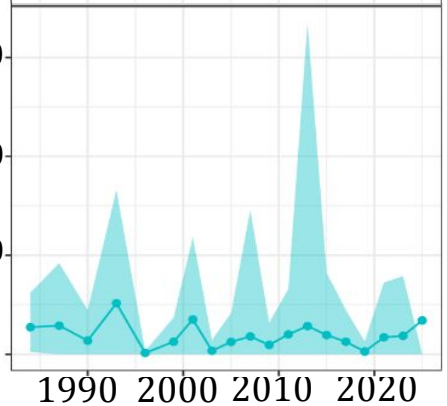
Magistrate Armhook

Squid unid.

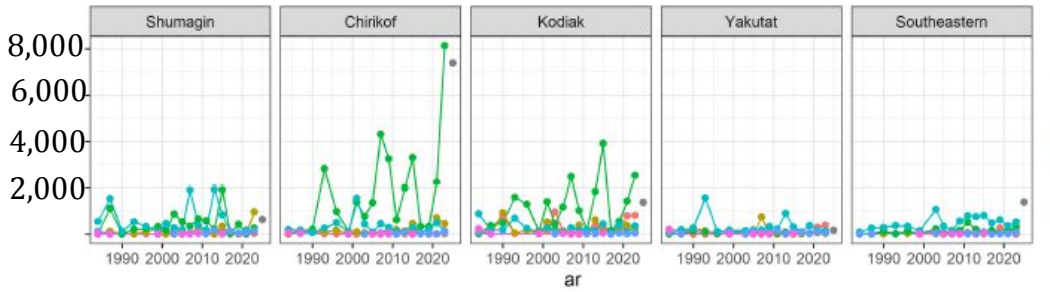




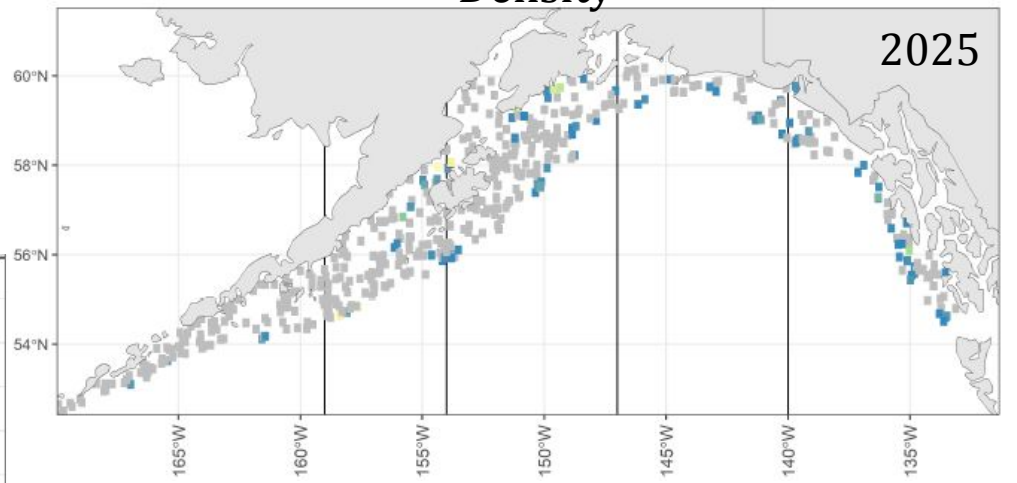




Magistrate Armhook Squid Biomass (t) in INFPC Areas by Depth



Density

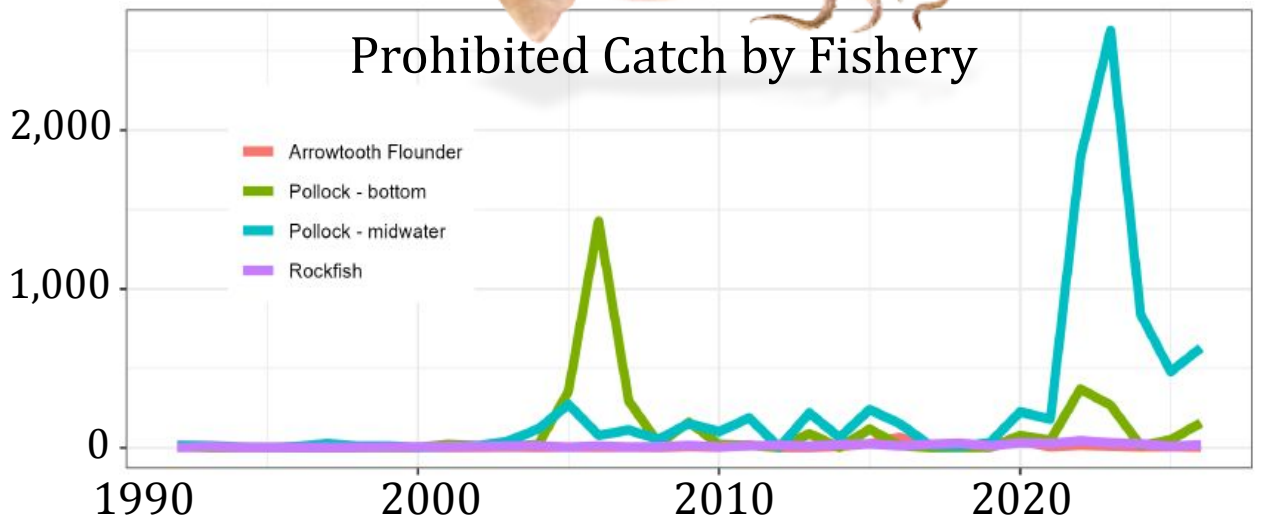


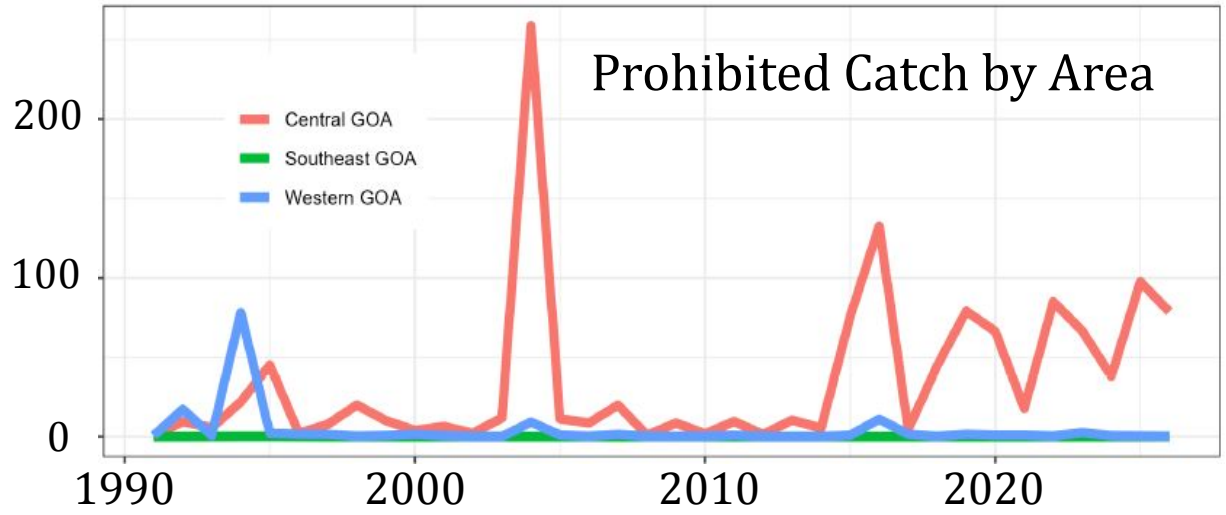
- Most abundant in western Gulf, 200-300m
- Prevalence trending up, at/near all-time high
- Abundance and biomass of Magistrate high, unid. Squid average

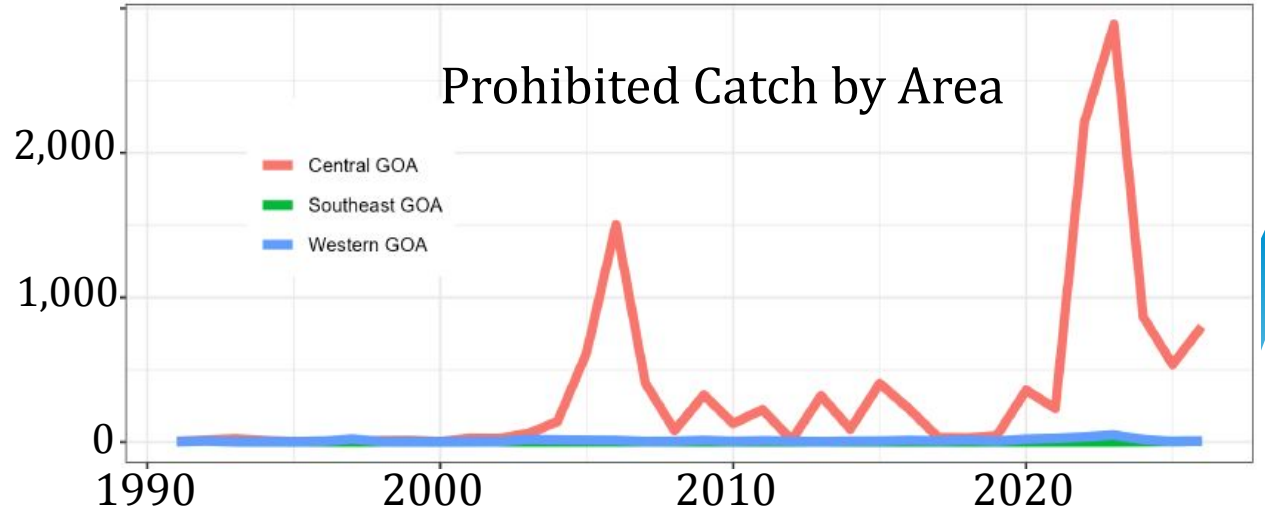
GOA – Incidental Catch of Pacific Herring & Squid







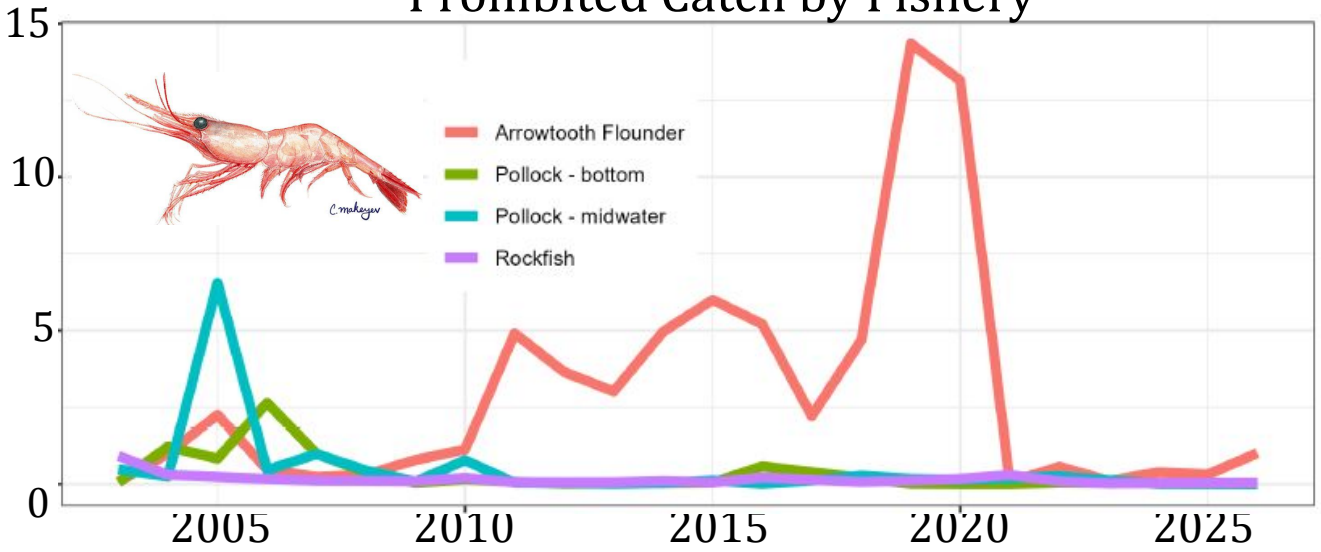




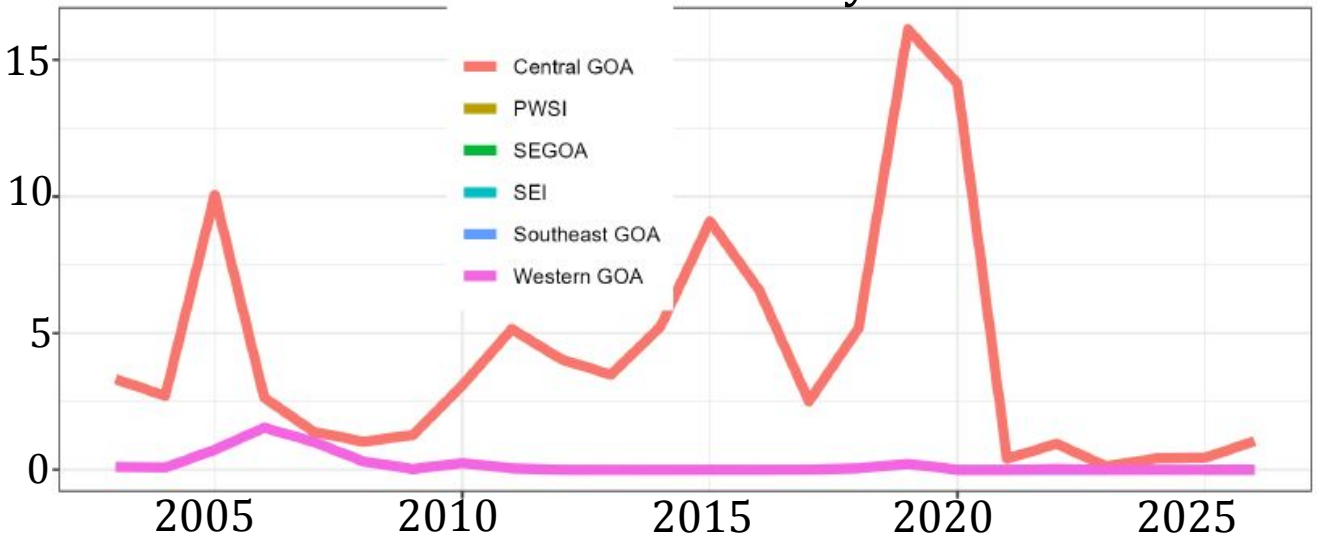
GOA – Incidental Catch of Other Forage Species

Metric tons

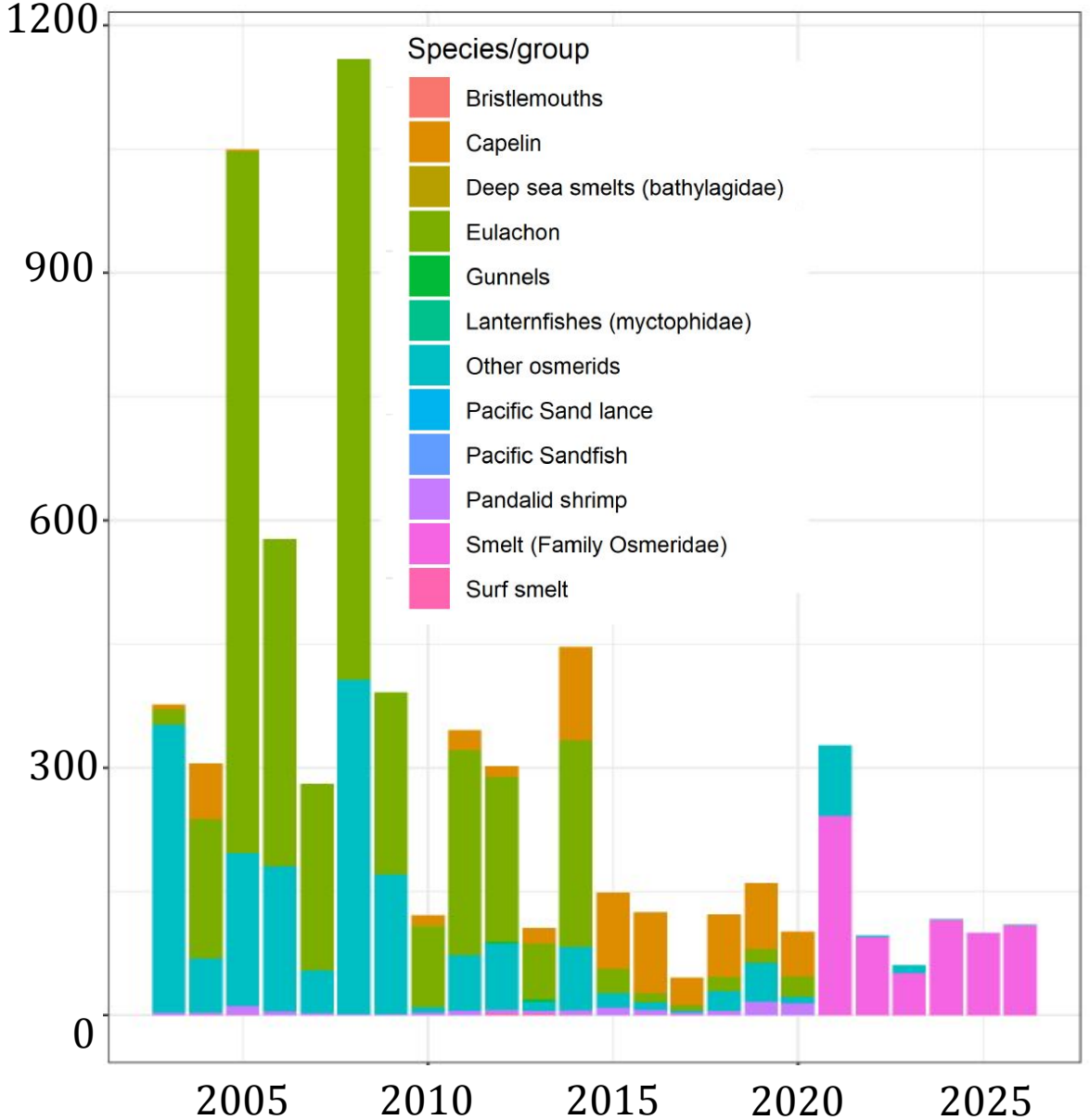
Prohibited Catch by Fishery



Prohibited Catch by Area



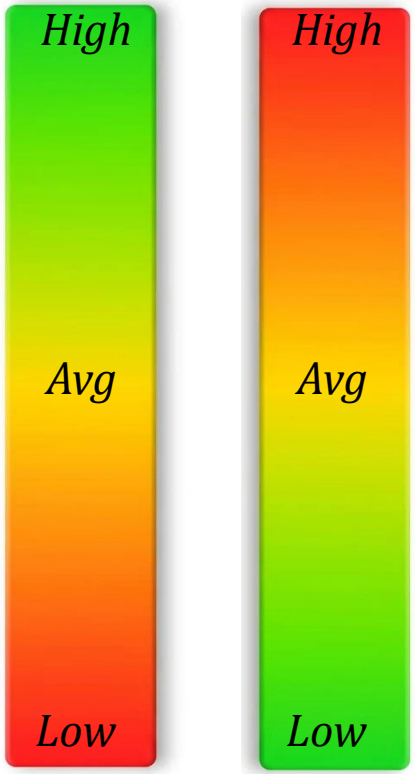
Metric tons

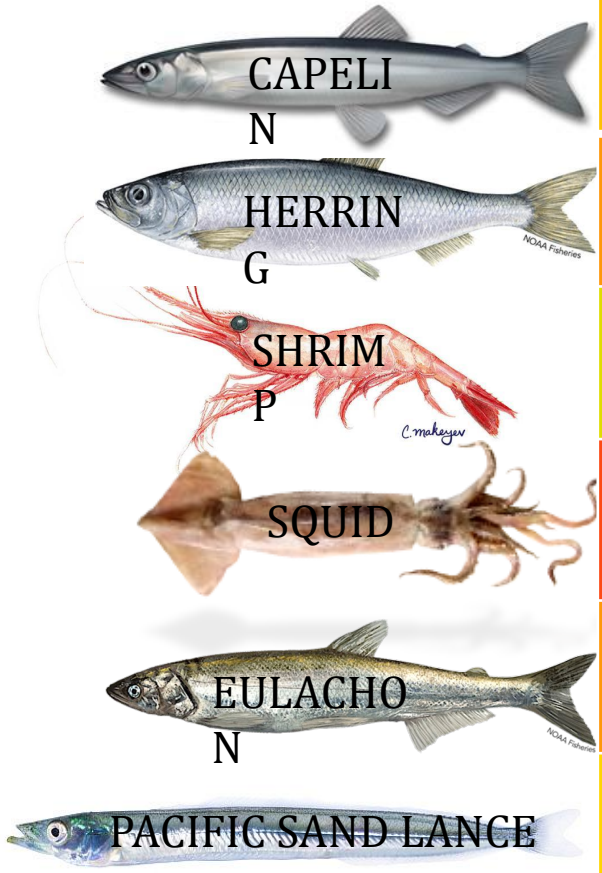


Summary

Population Status

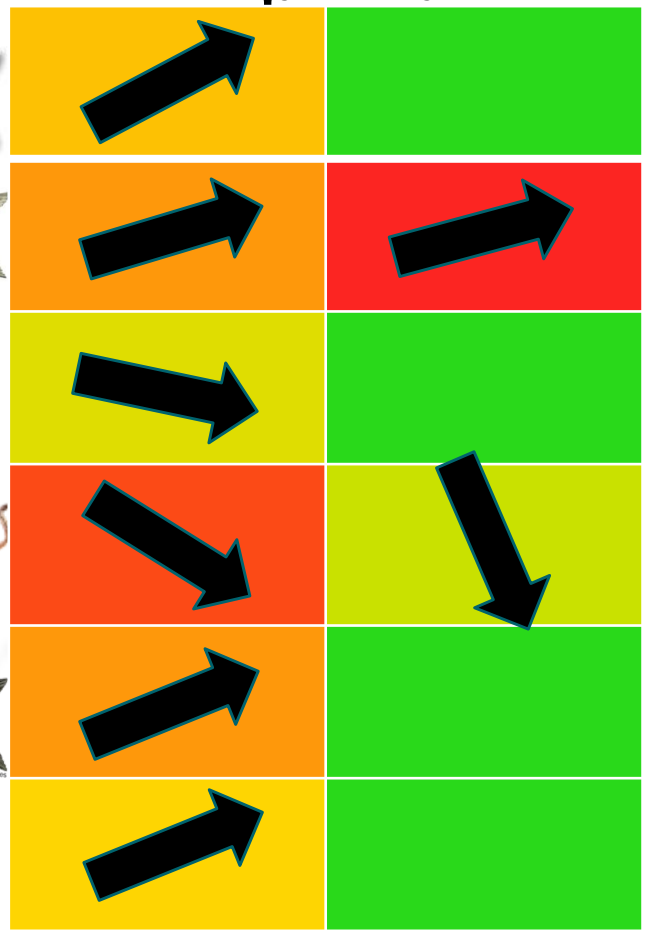
Bycatch





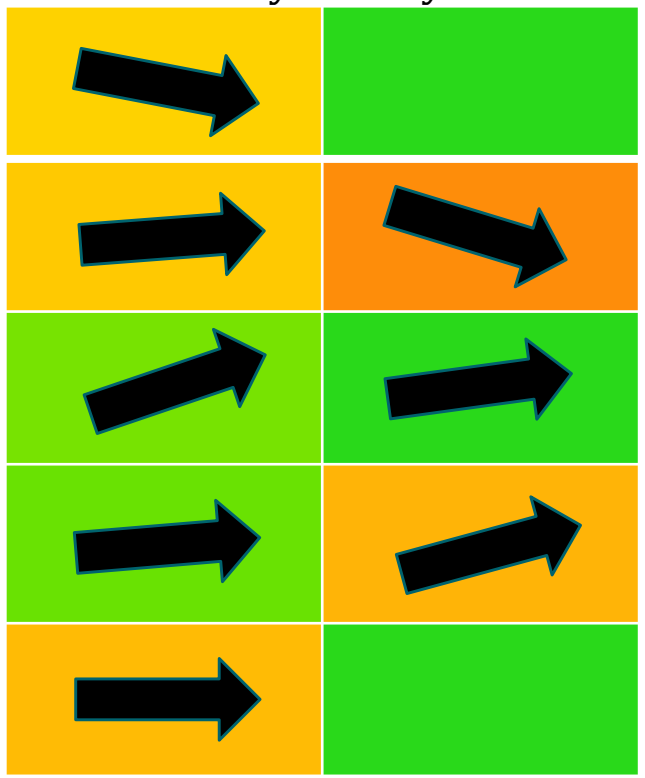
BSA

Trawl Survey | Bycatch



GOA

Trawl Survey | Bycatch

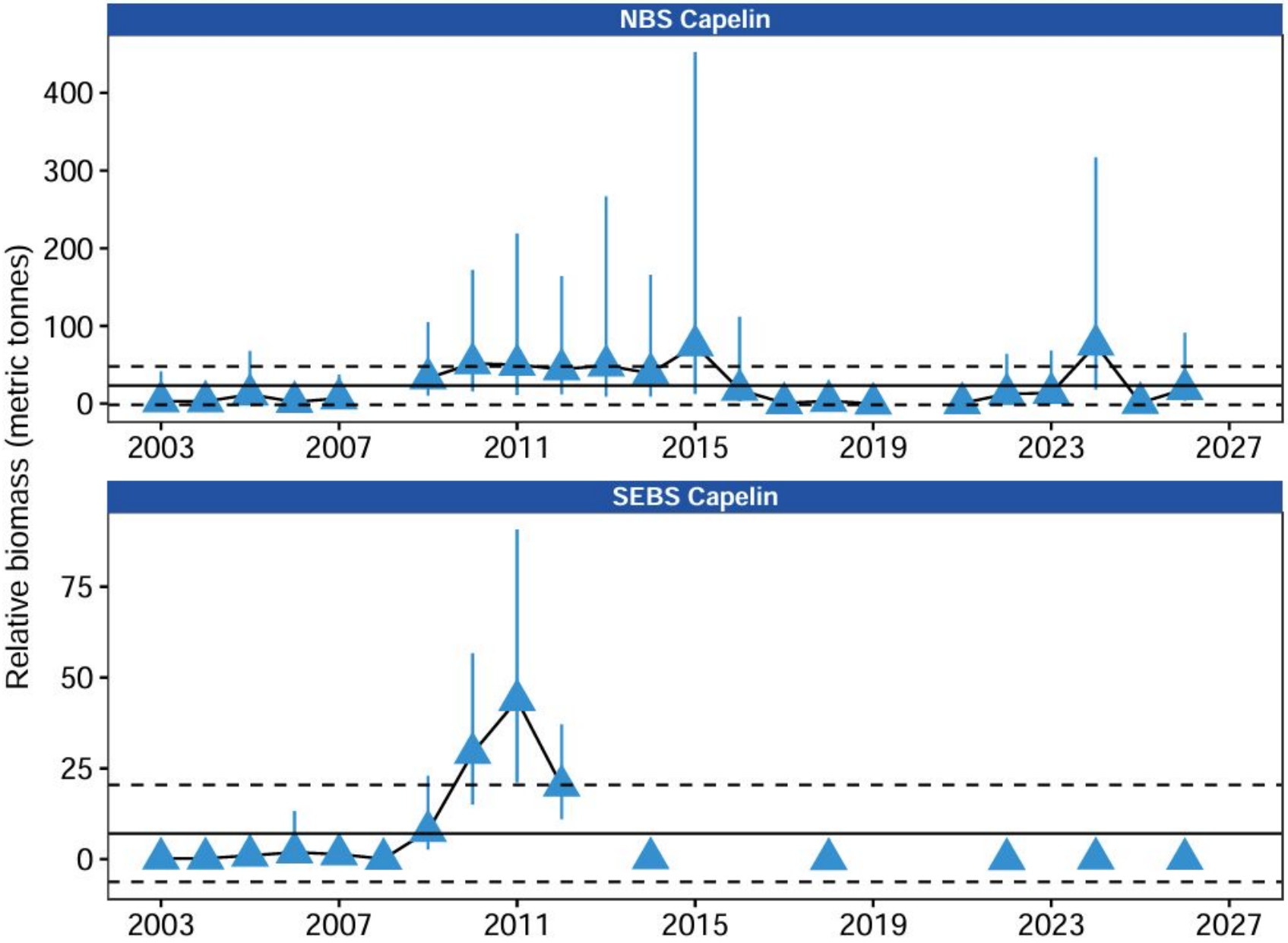


NOAA FISHERIES

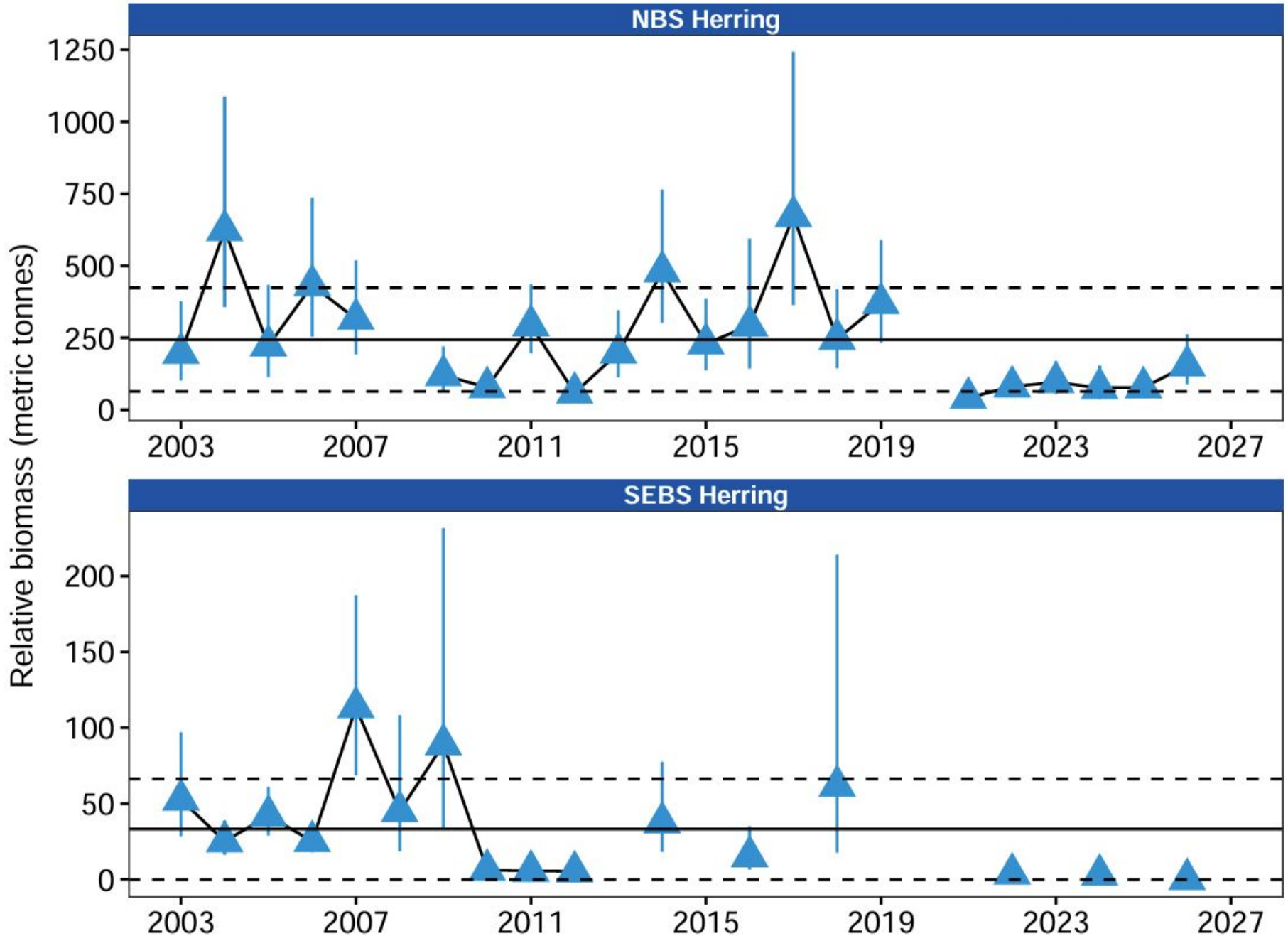
Thank you!

Acknowledgements: Rob Suryan, Ebett Siddon, Bridget Ferris, Alex Andrews

NOAA FISHERIES



NOAA FISHERIES


NBS Herring
1250
1000
750
500
250
0
2003
2007
2011
2015
2019
2023
2027
Relative biomass (metric tonnes)
SEBS Herring
200
150
100
50
0
2003
2007
2011
2015
2019
2023
2027