# GF Plan Team Meetings, November 12-15ᵗʰ, 2024

**Report from the Joint Meeting of the Groundfish Plan Team**

November 12, 2024

**BSAI Groundfish Plan Team Members:**

| | | | |
|---|---|---|---|
| Steve Barbeaux | AFSC REFM (co-chair) | Kirstin Holsman | AFSC REFM |
| Kalei Shotwell | AFSC REFM (co-chair) | Andy Kingham | AFSC FMA |
| Cindy Tribuzio | AFSC ABL (vice chair) | Beth Matta | AFSC REFM |
| Diana Stram | NPFMC (coordinator) | Andrew Seitz | UAF |
| Lukas DeFilippo | AFSC ABL/EMA | Jane Sullivan | AFSC ABL |
| Allan Hicks | IPHC | Steven Whitney | NMFS AKRO |
| Lisa Hillier | WDFW | | |

**GOA Groundfish Plan Team Members:**

| | | | |
|---|---|---|---|
| Jim Ianelli | AFSC REFM (co-chair) | Pete Hulson | AFSC ABL |
| Chris Lunsford | AFSC ABL (co-chair) | Sandra Lowe | AFSC REFM |
| Sara Cleaver | NPFMC (coordinator) | Nat Nichols | ADF&G |
| Abby Jahn | NMFS AKRO | Jan Rumble | ADF&G |
| Craig Faunce | AFSC FMA | Paul Spencer | AFSC REFM |
| Lisa Hillier | WDFW | Ben Williams | AFSC ABL |
| Sophia Wassermann | AFSC RACE | James Thorson | AFSC REFM |

# Joint Plan Team meeting overview and agenda

Overview
Date: November 12th
Place: Seattle and online

**Agenda for Joint Teams**
Economic SAFE
Sablefish    (+ESP)
Ecosystem Components
        Forage Fish
        Grenadiers

# Economic SAFE Report

Highlighted a general decrease in the value of most stocks in 2023 primarily attributed to price declines.

Nowcasts, utilizing data through October 2024, have been reintroduced into the SAFE

## Joint Team:

- raised questions about ability to incorporate labor costs in future SAFEs

- Meeting participants noted that prices have continued to decline in 2024 beyond what is reflected in the SAFE report.

# Sablefish Ecosystem and Socioeconomic Profile (ESP)

## Ecosystem (ABC Information):

- Overall average (YOY ↔, juv ↓, adult ↓)

- Surface temps cooler, less transport

- Adequate prey, increased YOY size

- Decreased nearshore CPUE, possibly large 2022 year class

- Good adult condition, less competition/predation

## Socioeconomic (TAC Information):

- 2024 data, small/large sizes <, middle sizes >

- Prices reach historic low ($1.53/#), larger fish price < faster

- % TAC low in 2024 except BSea, Wyak, ex-vessel value 4 yr low

- Shift in top community participants

# Sablefish ESP

- Kalei Shotwell presented the report card for the sablefish ESP provided as an appendix D available here

No feedback on ecosystem indicators from Teams

Table 3D.2: First stage ecosystem indicator analysis for sablefish, including indicator title and the indicator status of the last five years. The indicator status is designated with text, (greater than = "high", less than = "low", or within 1 standard deviation = "neutral" of the long-term mean). Fill color of the cell is based on the proposed sign of the overall relationship between the indicator and the stock (blue or italicized text = good conditions for the stock, red or bold text = poor conditions, white = average conditions). A gray fill and text = "NA" will appear if there were no data for that year.
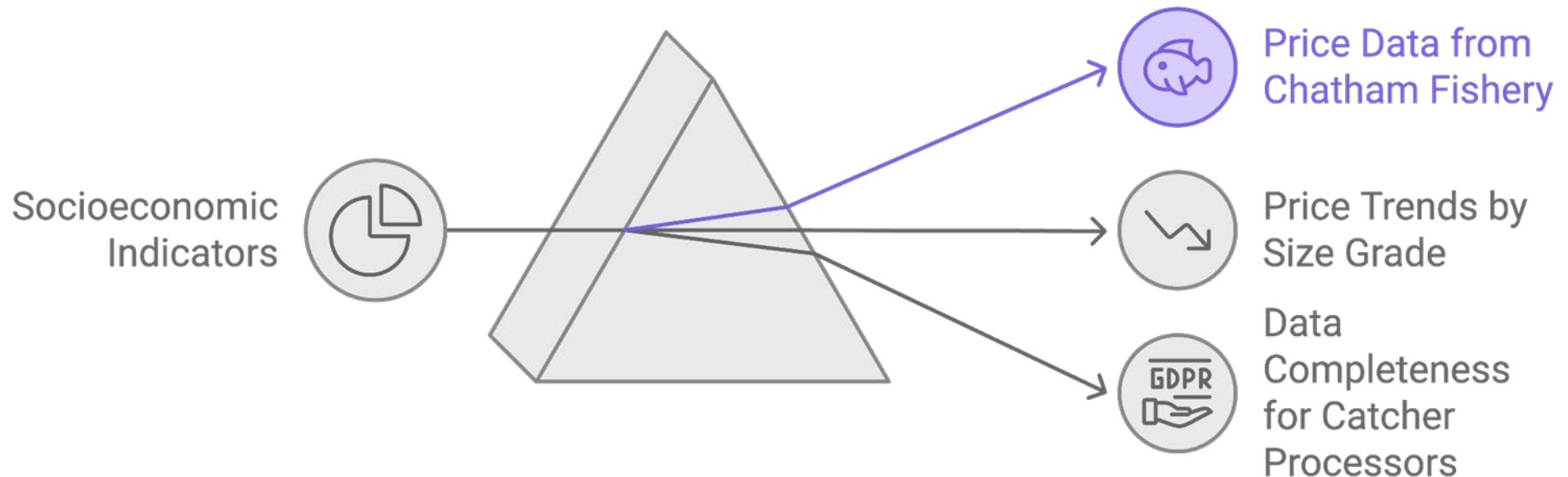
| Indicator category | Indicator | 2020 Status | 2021 Status | 2022 Status | 2023 Status | 2024 Status |
|---|---|---|---|---|---|---|
| Larval to YOY | Annual Heatwave GOA Model | neutral | neutral | neutral | neutral | neutral |
| | Spring Temperature Surface GOA Satellite | *high* | neutral | neutral | neutral | neutral |
| | * Spring Temperature Surface SEBS Satellite | *high* | neutral | neutral | neutral | neutral |
| | Annual Eddy Kinetic Energy Amchitka Satellite | neutral | neutral | *high* | *high* | neutral |
| | Annual Copepod Community Size EGOA Survey | neutral | neutral | neutral | neutral | NA |
| | Annual Copepod Community Size WGOA Survey | neutral | neutral | *low* | neutral | NA |
| | Annual Sablefish Size YOY Middleton Survey | neutral | **low** | neutral | **low** | neutral |
| Juvenile | * Summer Sablefish CPUE Juvenile Nearshore GOAAI Survey | *high* | *high* | *high* | neutral | neutral |
| | Summer Sablefish CPUE Juvenile GOA Survey | NA | neutral | NA | neutral | NA |
| | Annual Small Sablefish Incidental Hauls EBS Fishery | *high* | neutral | neutral | *high* | neutral |
| Adult | Summer Temperature 250m GOA Survey | neutral | neutral | **high** | neutral | NA |
| | Summer Sablefish Condition Female Age4 GOA Survey | neutral | *high* | **low** | *high* | NA |
| | Summer Sablefish Condition Female Adult GOA Survey | neutral | neutral | **low** | *high* | NA |
| | Annual Sablefish Incidental Catch Arrowtooth Target GOA Fishery | neutral | neutral | neutral | neutral | neutral |

# Sablefish ESP

- Kalei Shotwell presented the report card for the sablefish ESP provided as an appendix D available here

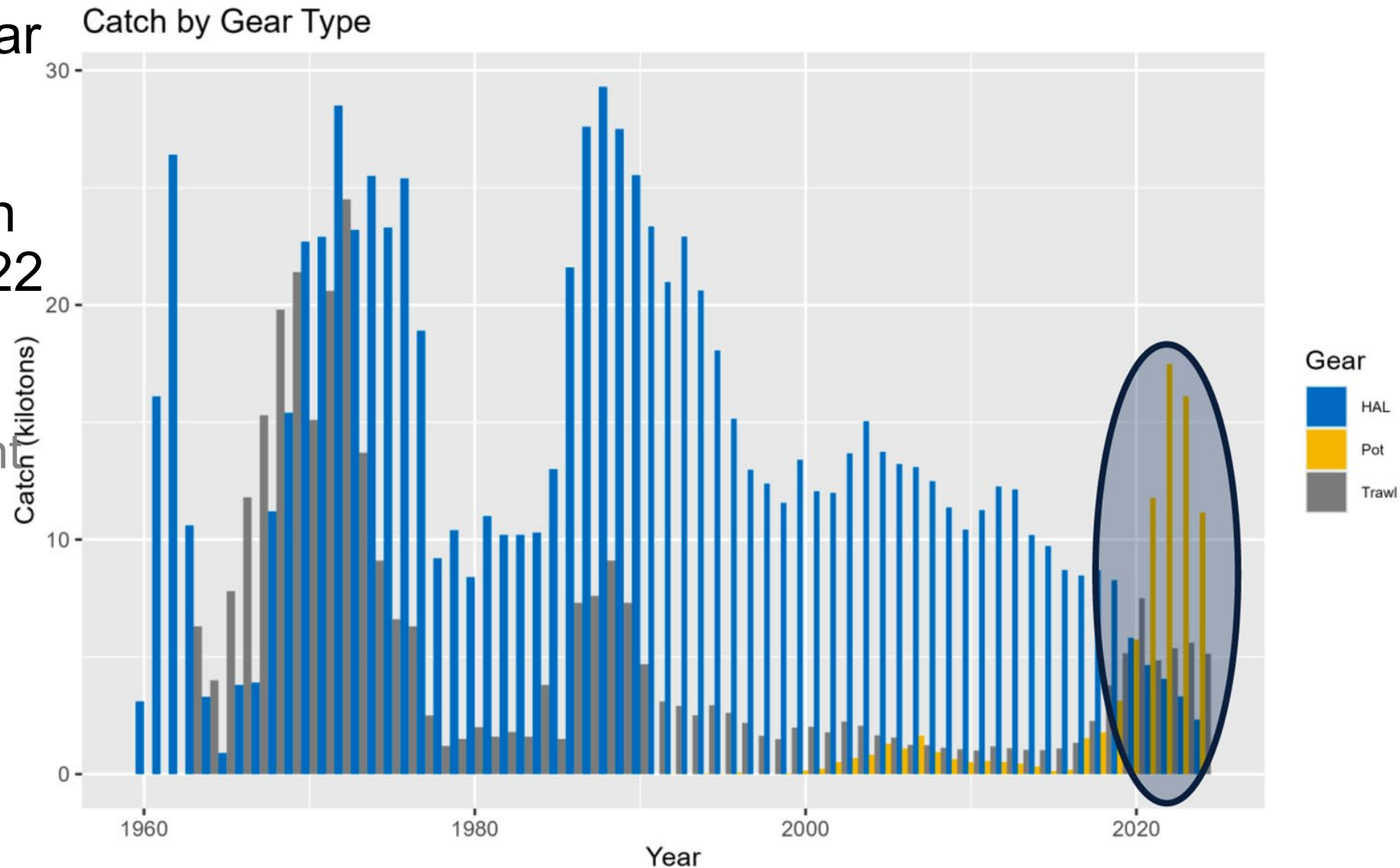No feedback on ecosystem indicators from Teams

For socioeconomic indicators:

Socioeconomic Indicators

Price Data from Chatham Fishery

Price Trends by Size Grade

Data Completeness for Catcher Processors

Increase in pot gear catch

Whale depredation constant since 2022
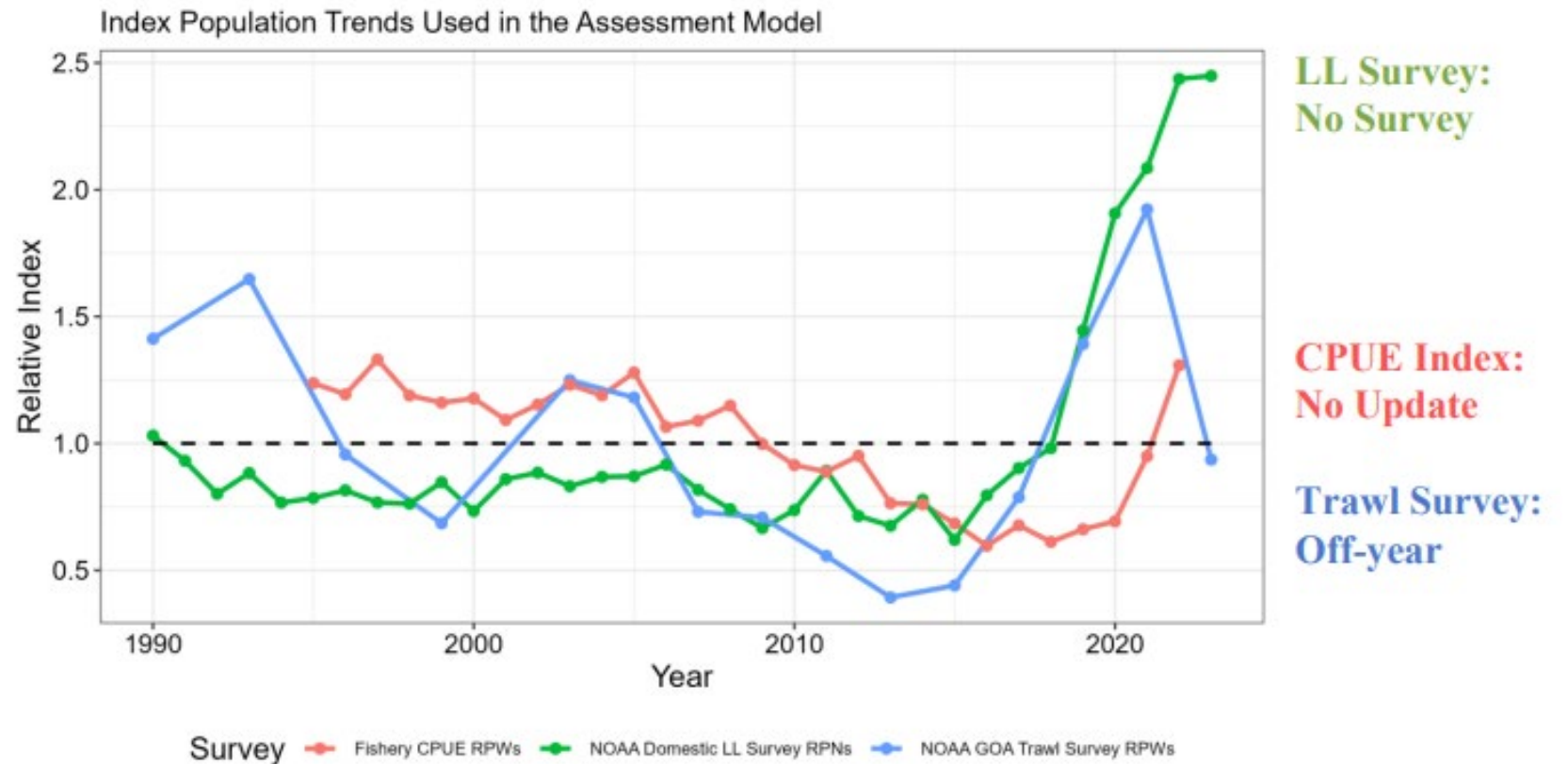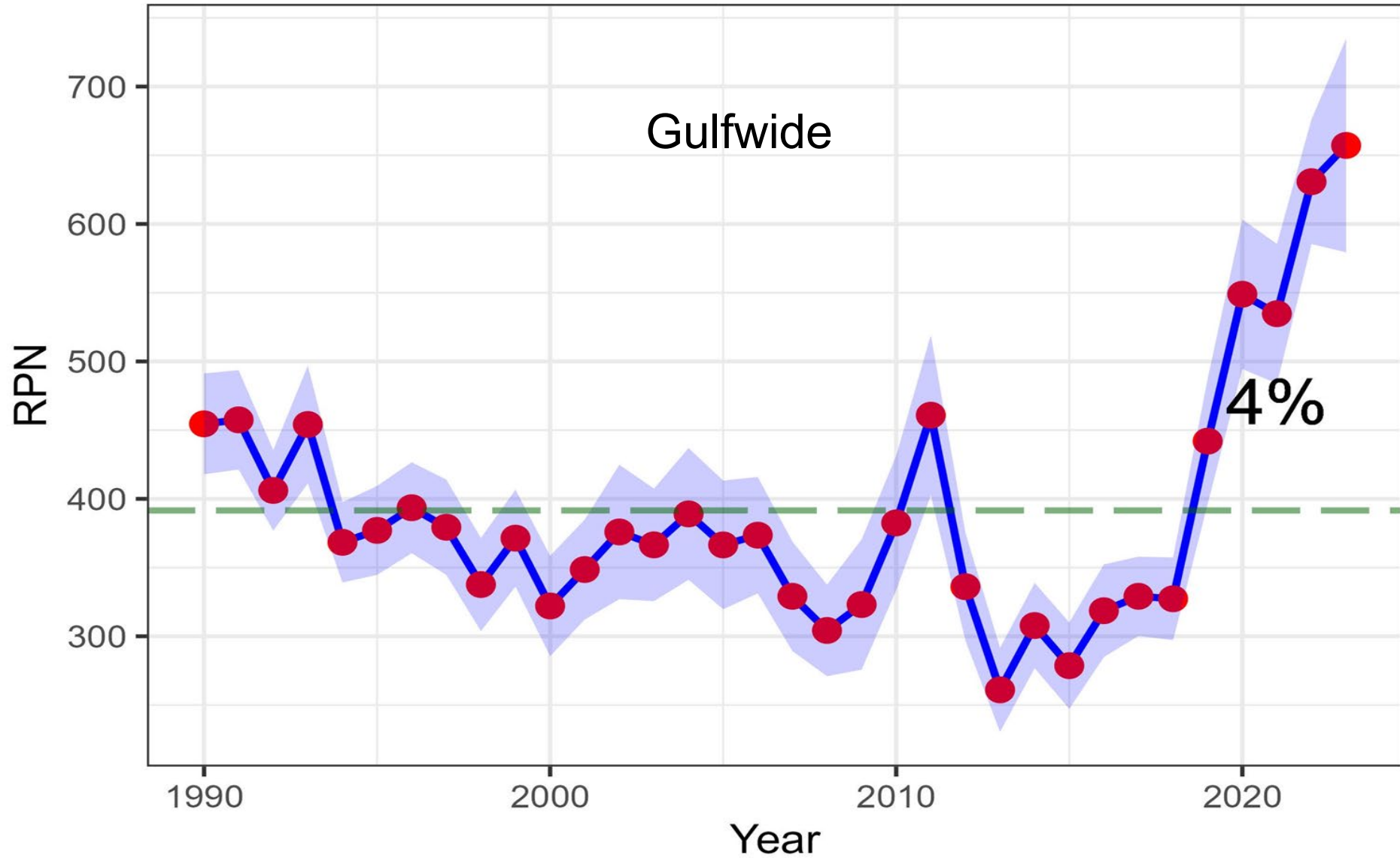
Last operational full sablefish assessment (2021)



Catch by Gear Type

## Indices

- No longline survey in 2024
    - 2023 value slightly higher than 2022



Index Population Trends Used in the Assessment Model

LL Survey: No Survey

CPUE Index: No Update

Trawl Survey: Off-year

Survey — Fishery CPUE RPWs — NOAA Domestic LL Survey RPNs — NOAA GOA Trawl Survey RPWs

Longline survey through 2023

Longline survey through 2023



Central

10%

West

-10%

East

7%

Longline survey
through 2023

Aleutian Islands

4%

Bering Sea

-8%
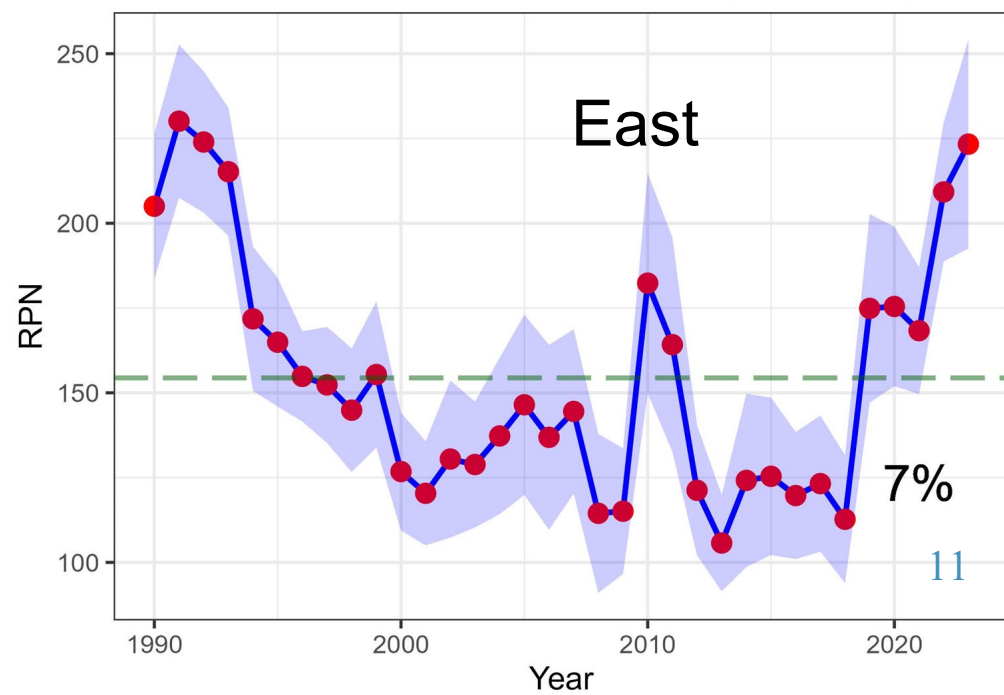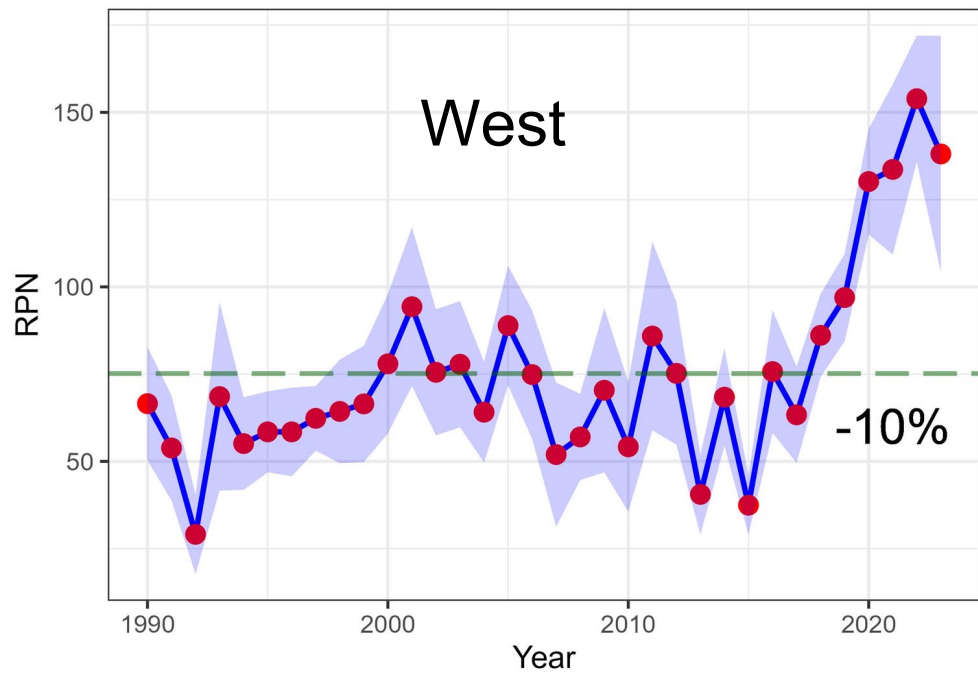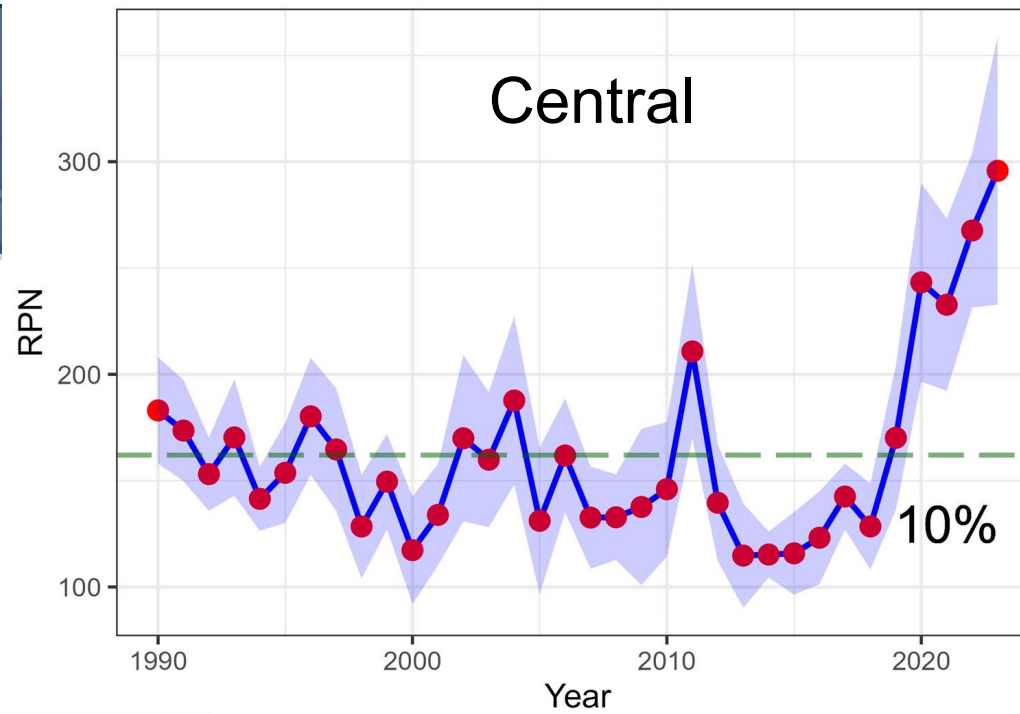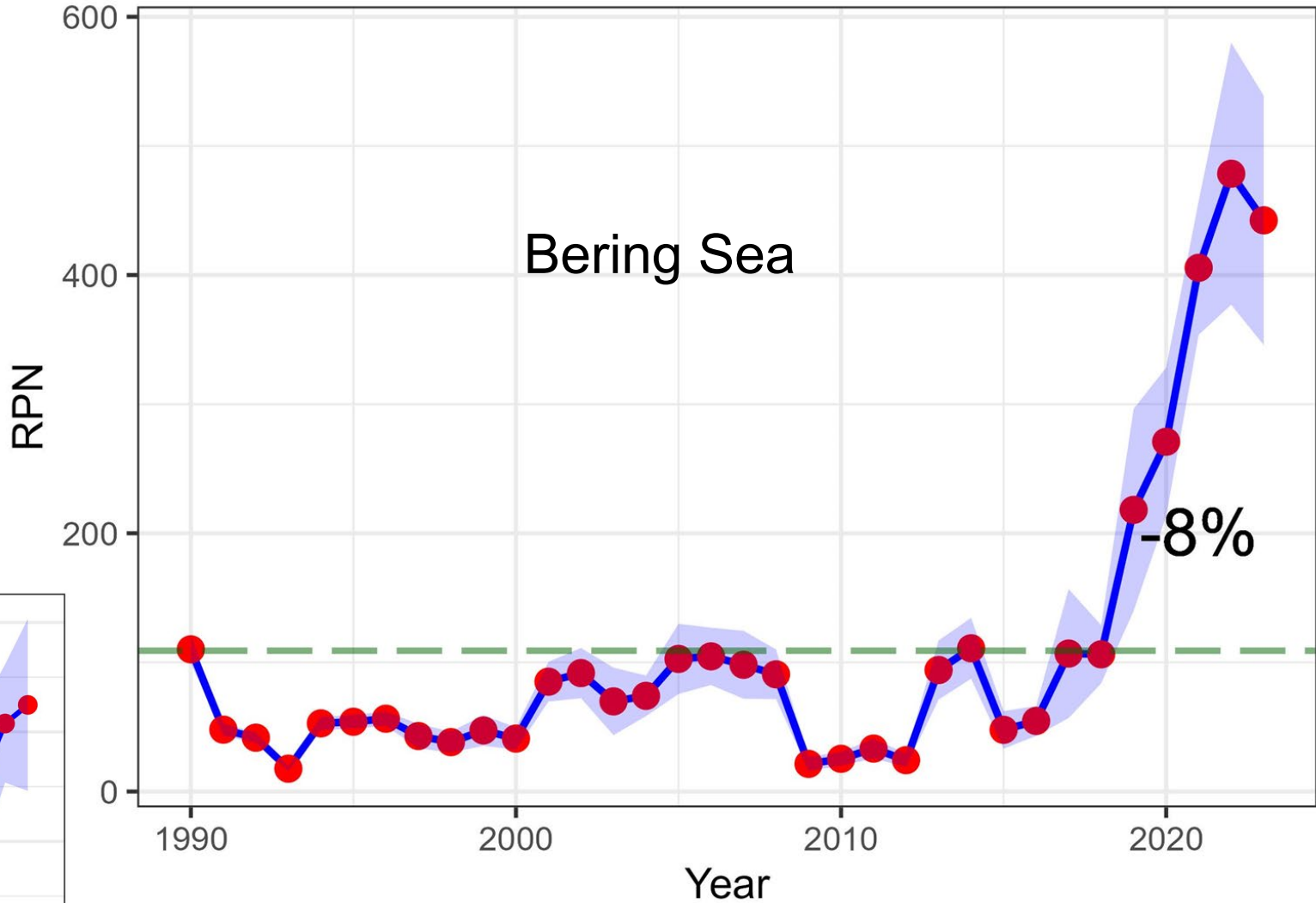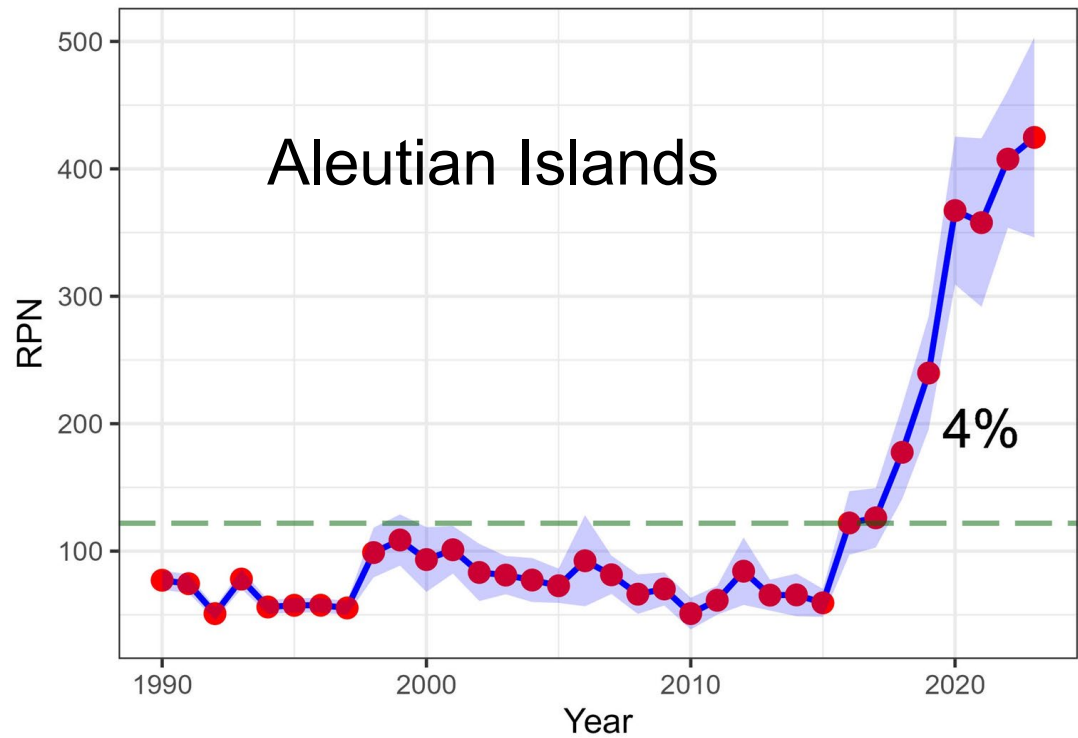
# Sablefish Summary

- Transition to pot gear (> 80% of fixed gear catch)
- Influx of small fish
    - Decreasing economic value and flooded markets
    - Total biomass growth slowed, but SSB increasing faster

Catch = ABC will reverse SSB trend as recruitment reverts to average

SSB projection to 2025 indicate ~81% Made up of 2014-2021 year-classes

# Sablefish models

Update assessment(+) with minor changes to data and parametrization compared to *21.12*

- *Model 23.1* removed the 1984 and 1987 trawl survey data
- *Model 23.2* incorporated non-commercial catch (SSC)
- *Model 23.3* minor parametrization updates including:
  - Implemented Methot and Taylor (2011) bias correction
  - Allowed further selectivity parameter sharing to improve stability
  - Removed unnecessarily estimated fishing mortality parameters
- *Model 23.4* implemented the combined gear, standardized CPUE index (Cheng et al., 2023)
- *Model 23.5* **(recommended)** : included updates, applied Francis reweighting, jitter analysis

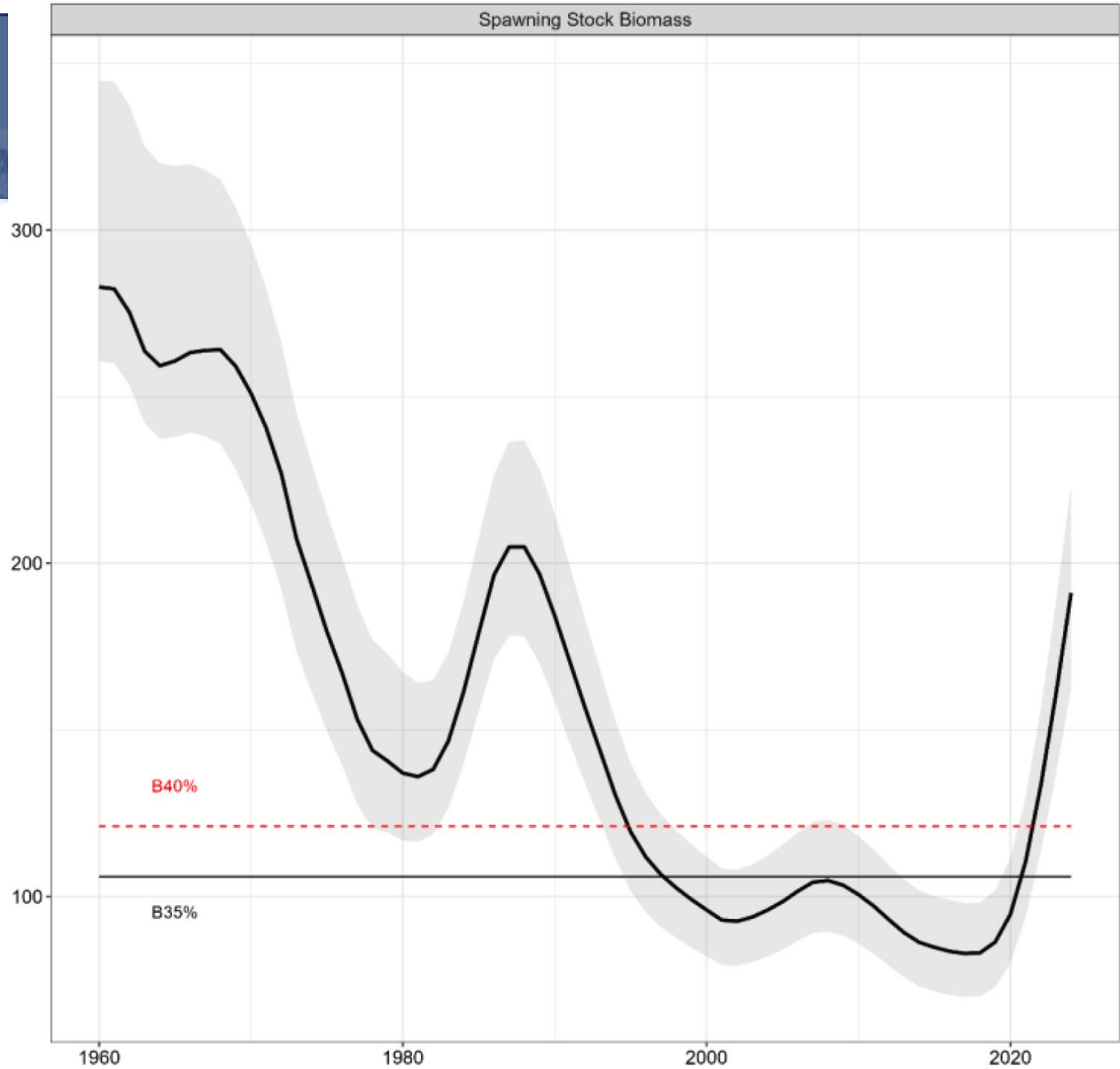*No major impacts or changes in data fits*

# Sablefish



Population and Catch Trends
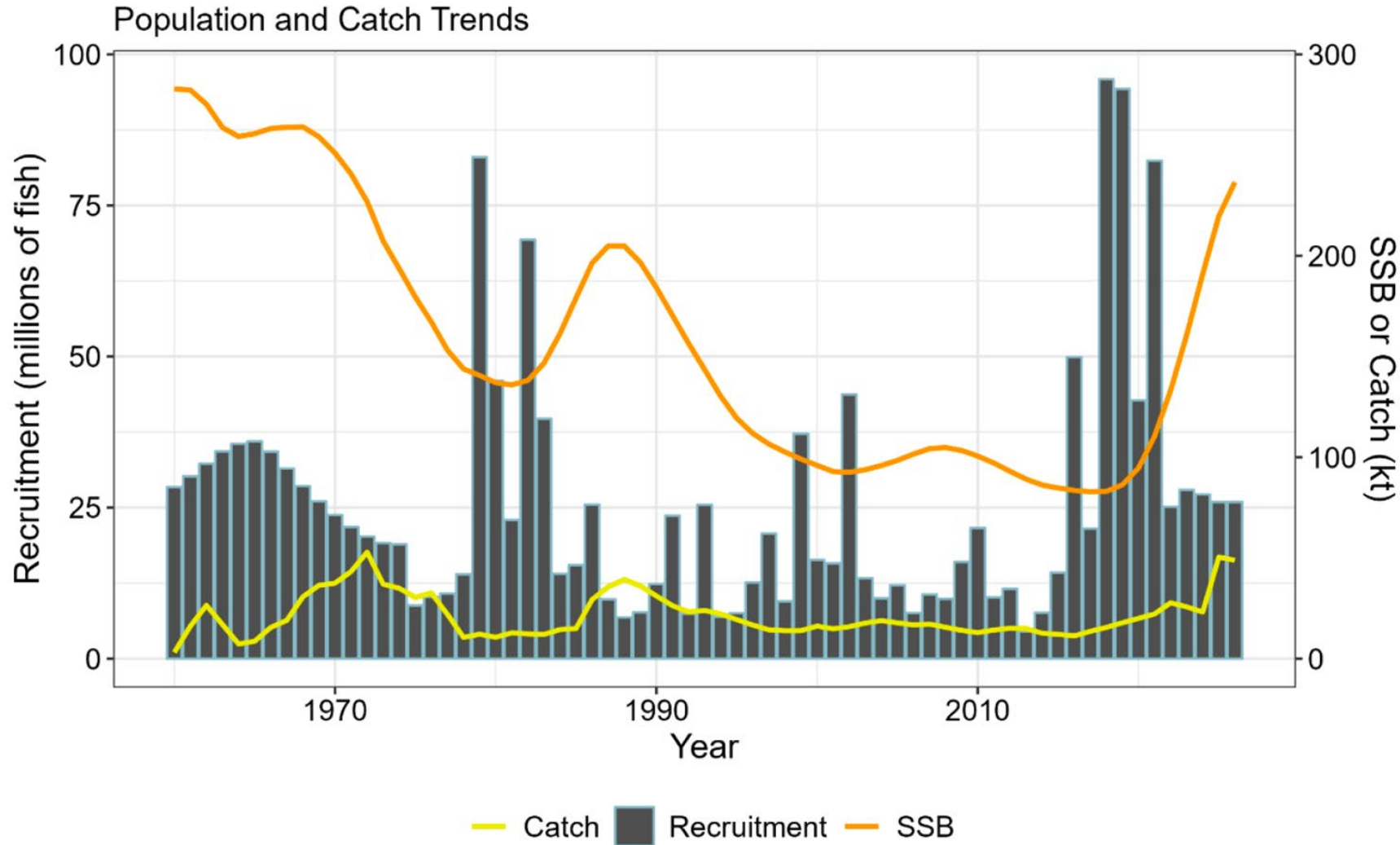
## Recruitment

Fishing mortality remains at low levels ( < FABC)

2016, 2017, and 2019 year classes are 3 of the largest on record.

# Sablefish

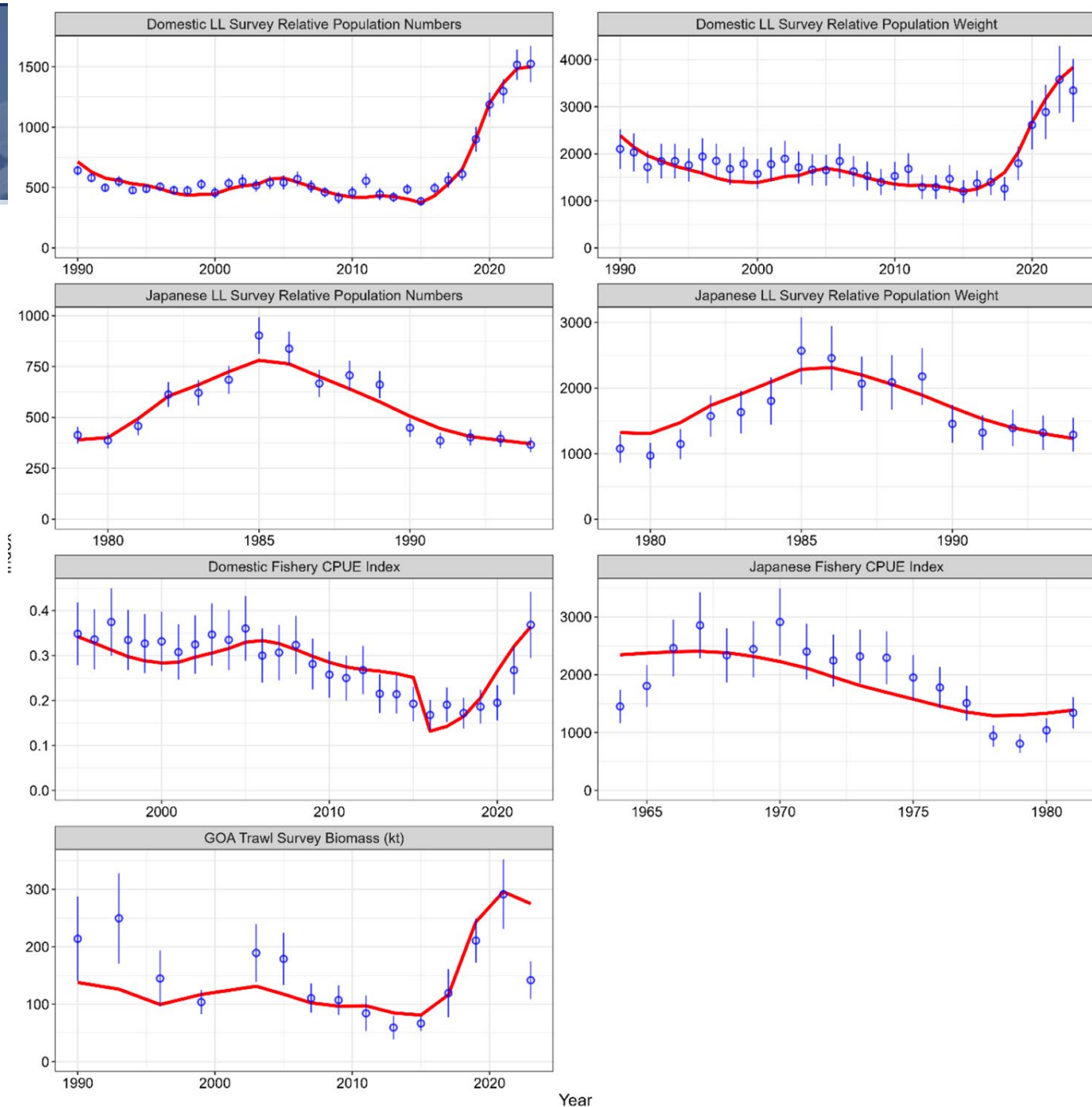- Spawning biomass
  - At B63% in 2024
  - Projected to be at B73% by 2025

Spawning Stock Biomass

# Sablefish fits

The Teams recommended that the author perform a runs test of randomness to test autocorrelation in the fits to the indices.

Wrt fishery CPUE: "The Teams recommended exploring ways to update the standardized fishery CPUE index using only observer data."

# Sablefish fits

The Teams recommended the author explore the potential impact of time-varying selectivity, either by directly modeling it as a time-varying process or by mitigating its impact on other parameters, such as by exploring changes in the set of ages over which the age-length comps are fitted.

The Teams recommended exploration of data-weighting methods that can be estimated jointly with changes in the variance of the time-varying selectivity parameters.



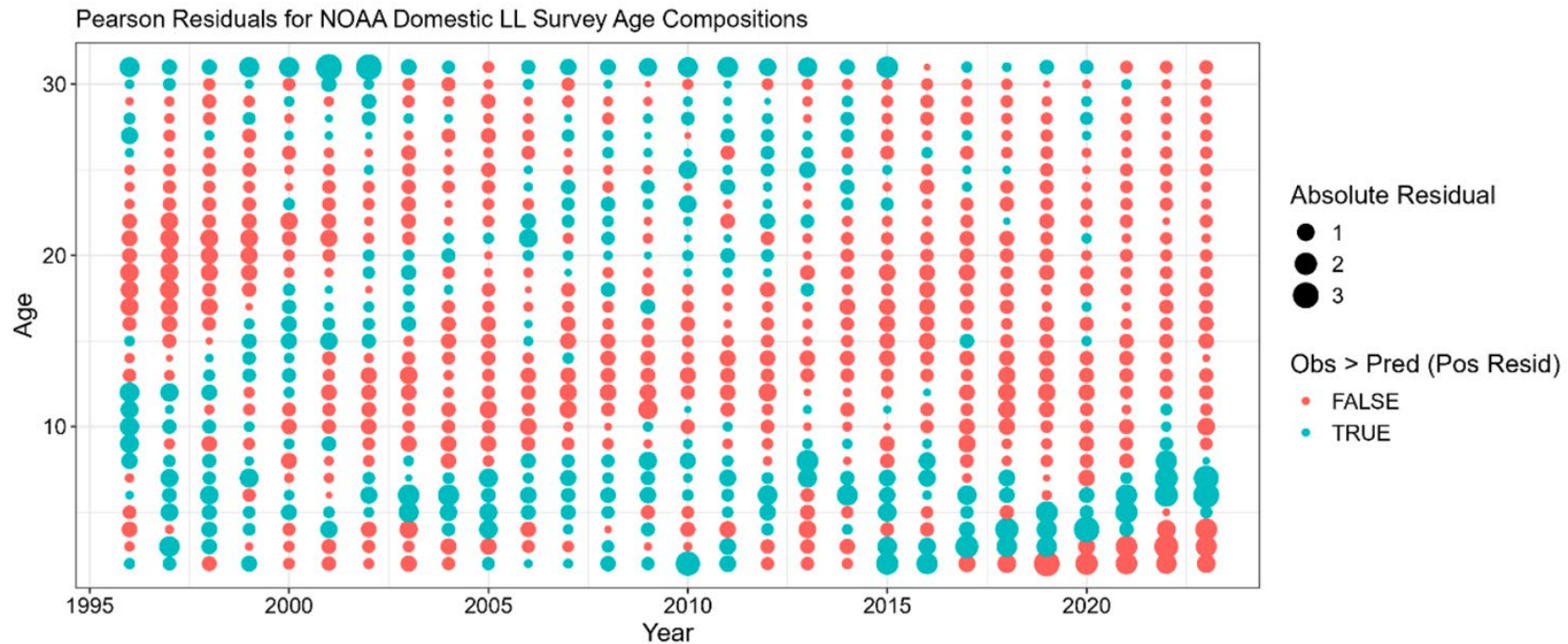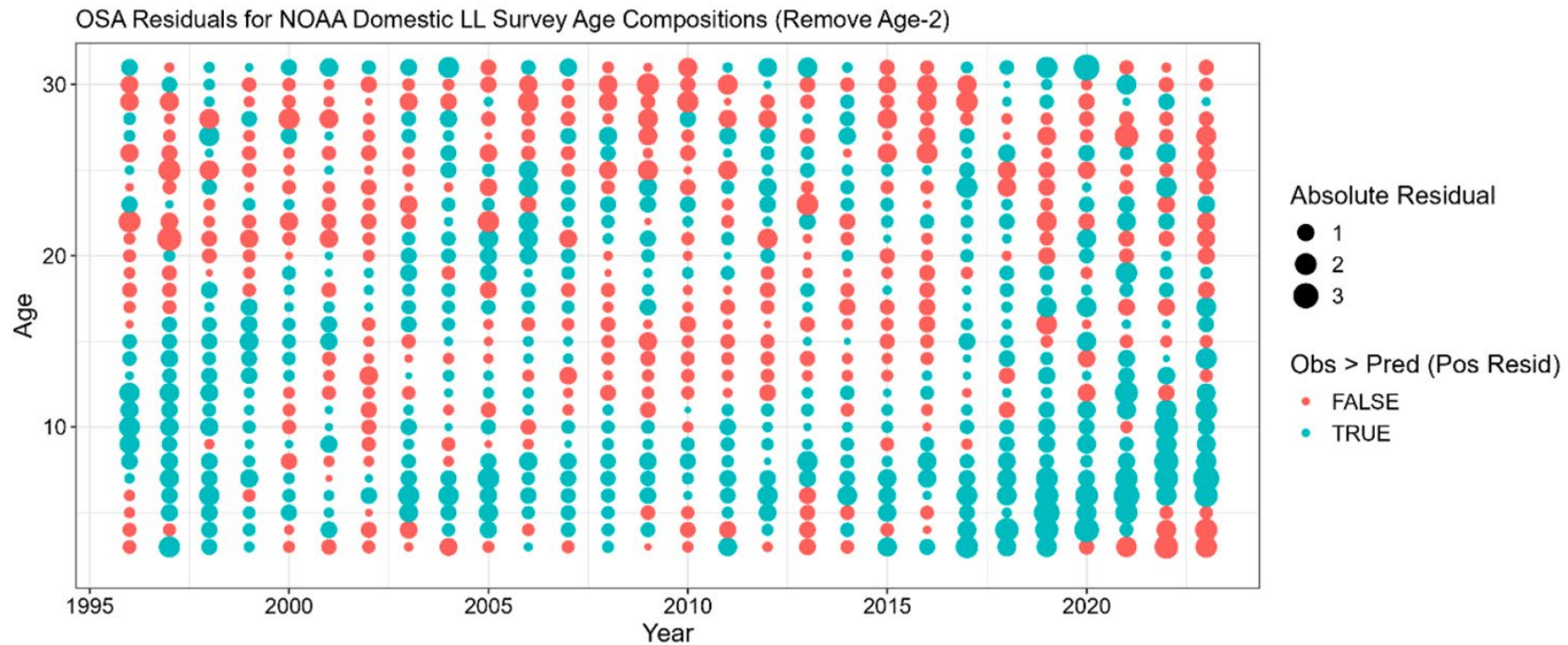Fixed Gear Fishery Aggregated Age Compositions
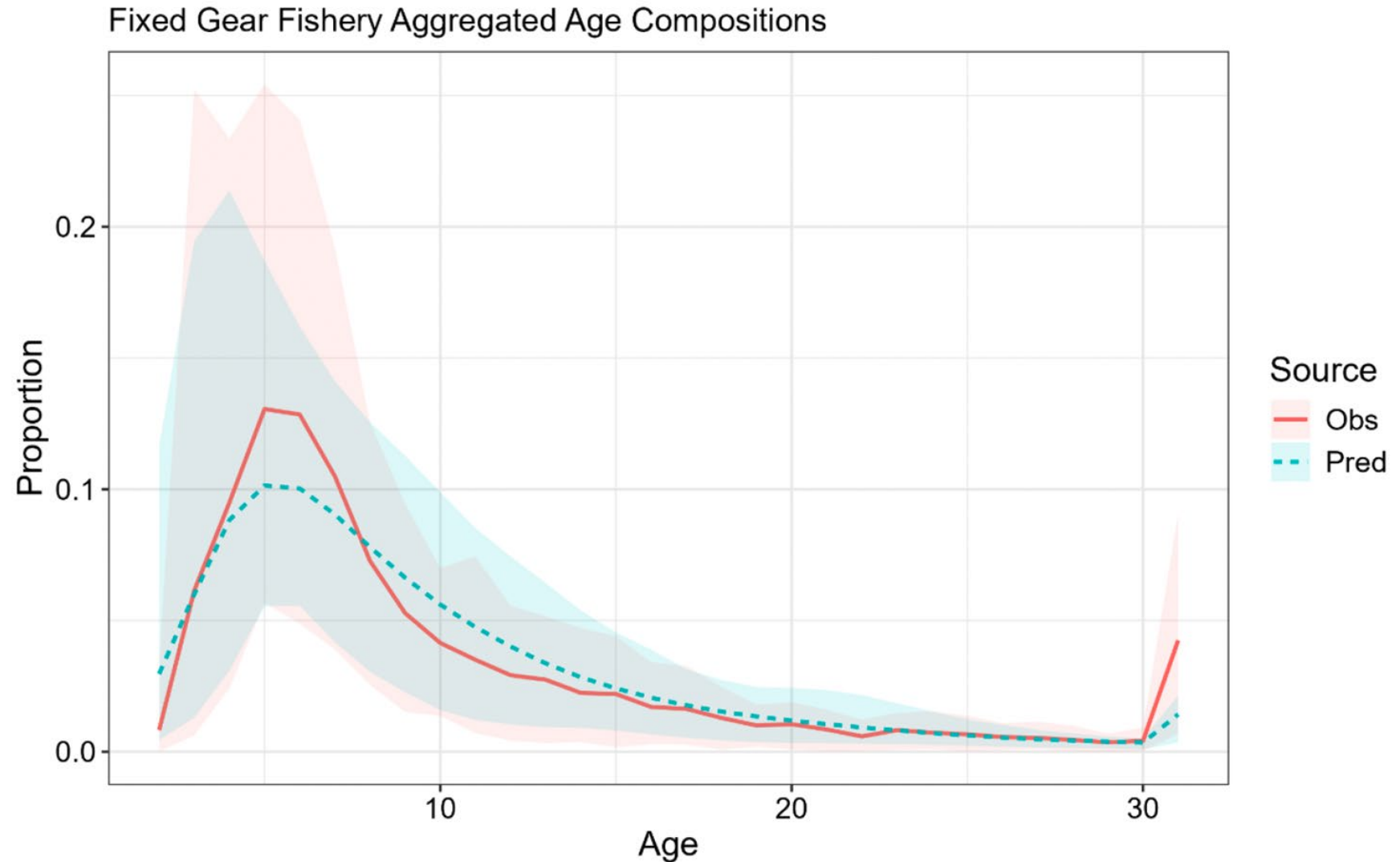
# Sablefish

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The Teams recommended exploration of data-weighting methods that can be estimated jointly with changes in the variance of the time-varying selectivity parameters.



OSA Residuals for NOAA Domestic LL Survey Age Compositions (Remove Age-2)



Pearson Residuals for NOAA Domestic LL Survey Age Compositions

# Sablefish OFL and ABCs

- **2025 ABC = 50,111 t**
  - +3 kt more than 2024

- Less than half of 2024 ABC will be caught

| Year | 2024 | | | | 2025 | | 2026 | |
|------|------|------|------|------|------|------|------|------|
| Region | $OFL_w$ | $ABC_w$ | TAC | Catch* | $OFL_w$ | $ABC_w$** | $OFL_w$ | $ABC_w$** |
| BS | -- | 11,450 | 7,996 | 3,940 | -- | 13,898 | -- | 13,723 |
| AI | -- | 13,100 | 8,440 | 1,266 | -- | 12,175 | -- | 12,022 |
| GOA | -- | 22,596 | 22,596 | 13,406 | -- | 24,038 | -- | 23,737 |
| WGOA | -- | 4,699 | 4,699 | 2,101 | -- | 4,996 | -- | 4,934 |
| CGOA | -- | 9,651 | 9,651 | 5,655 | -- | 10,257 | -- | 10,128 |
| **WYAK | -- | 2,926 | 2,926 | 2,172 | -- | 3,125 | -- | 3,086 |
| **EY/SEO | -- | 5,320 | 5,320 | 3,478 | -- | 5,660 | -- | 5,589 |
| Total | 55,084 | 47,146 | 39,032 | 18,612 | 58,532 | 50,111 | 57,797 | 49,482 |

*As of October 10, 2024
**After 95:5 trawl split and whale depredation

# 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. walleye pollock, 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 |

NOAA FISHERIES

# Alaska Forage Fish Database

- Fisheries Surveys

  - Surface trawl

  - Midwater trawl

  - Bottom trawl

  - Nearshore sampling
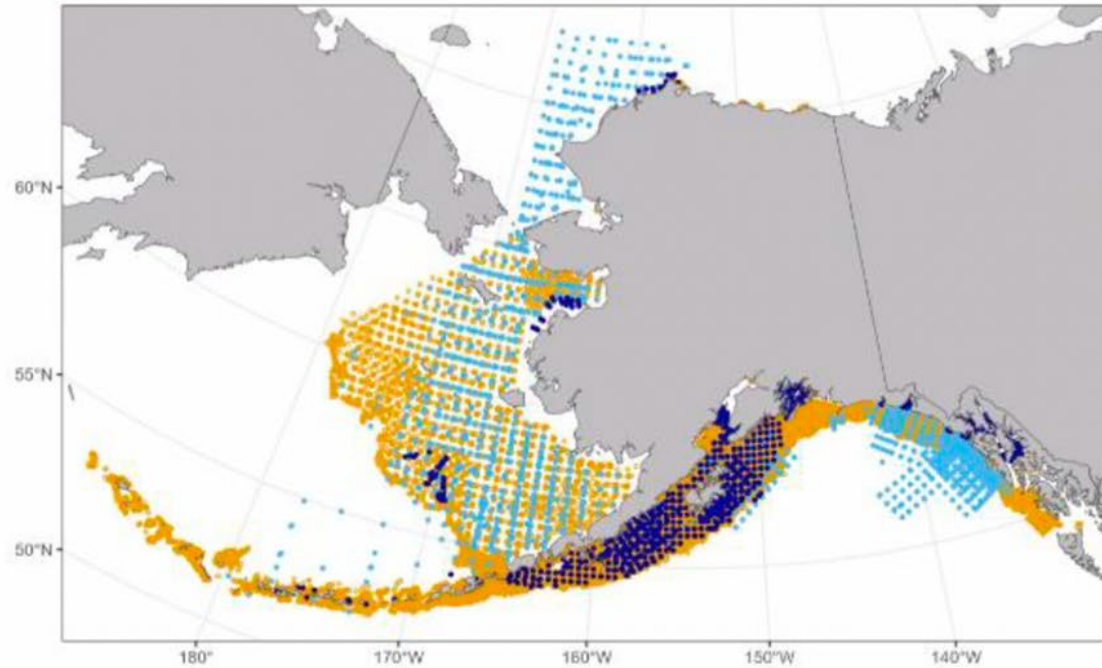
- Predator Diets

  - Groundfish (pollock, Pcod, ATF, halibut)

  - Seabirds (surface & divers)

- Forage Species:

  - Pacific capelin

  - Pacific herring

  - Sand lance
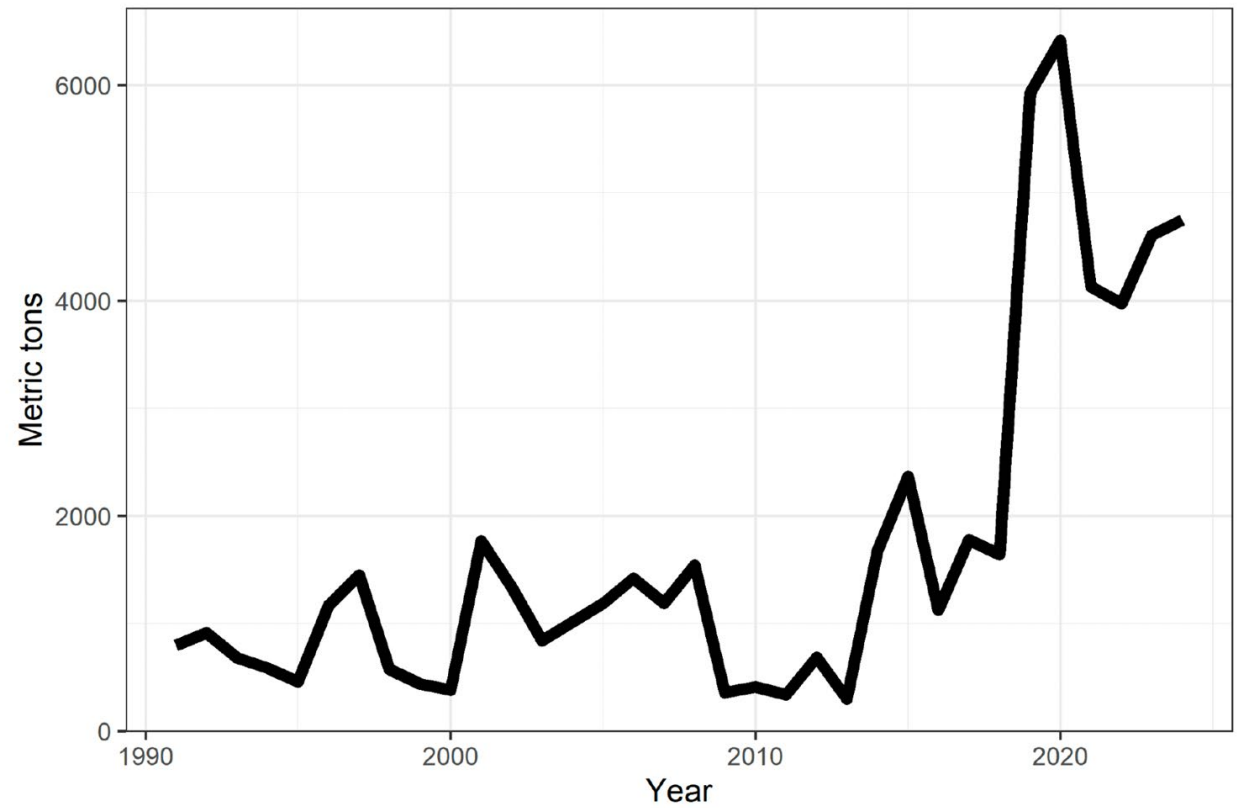
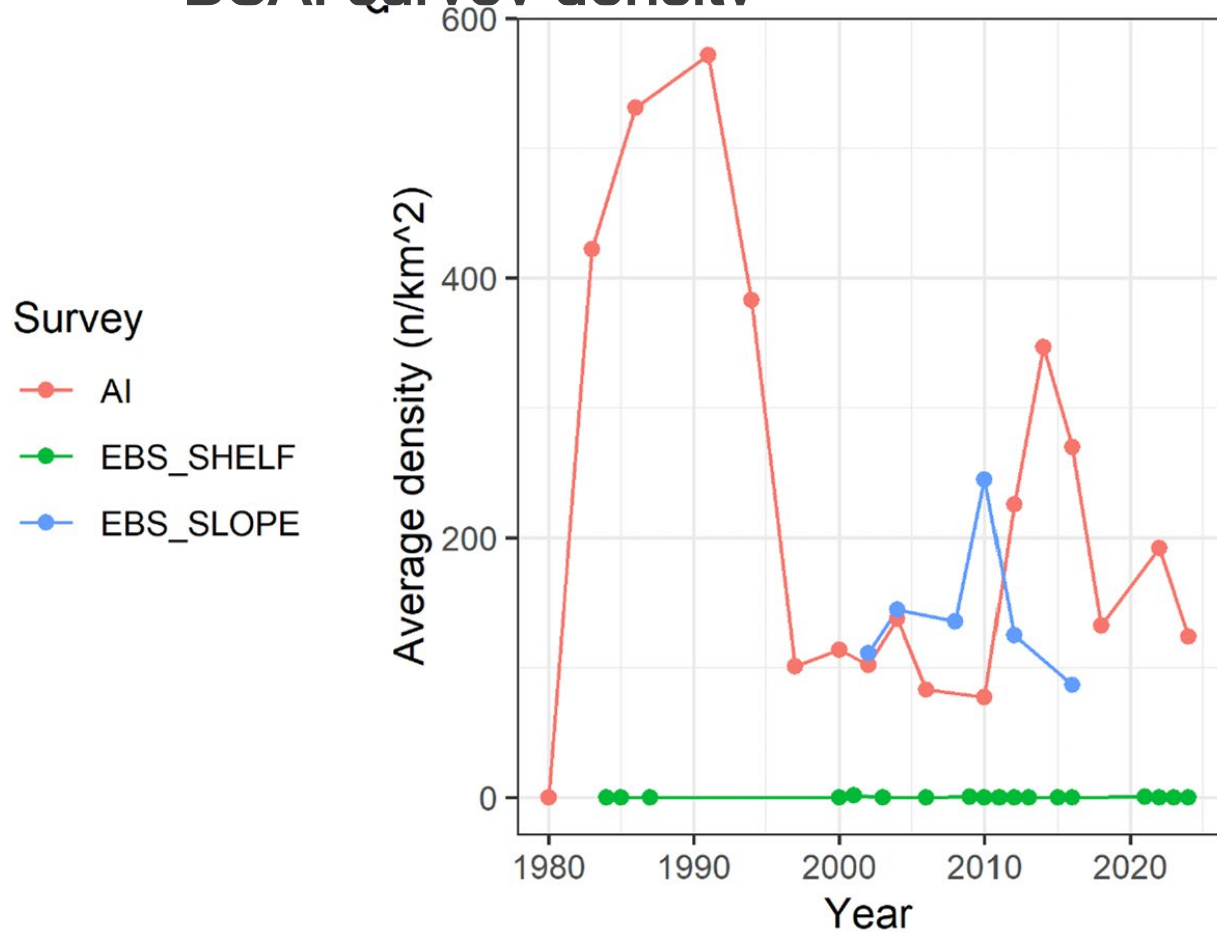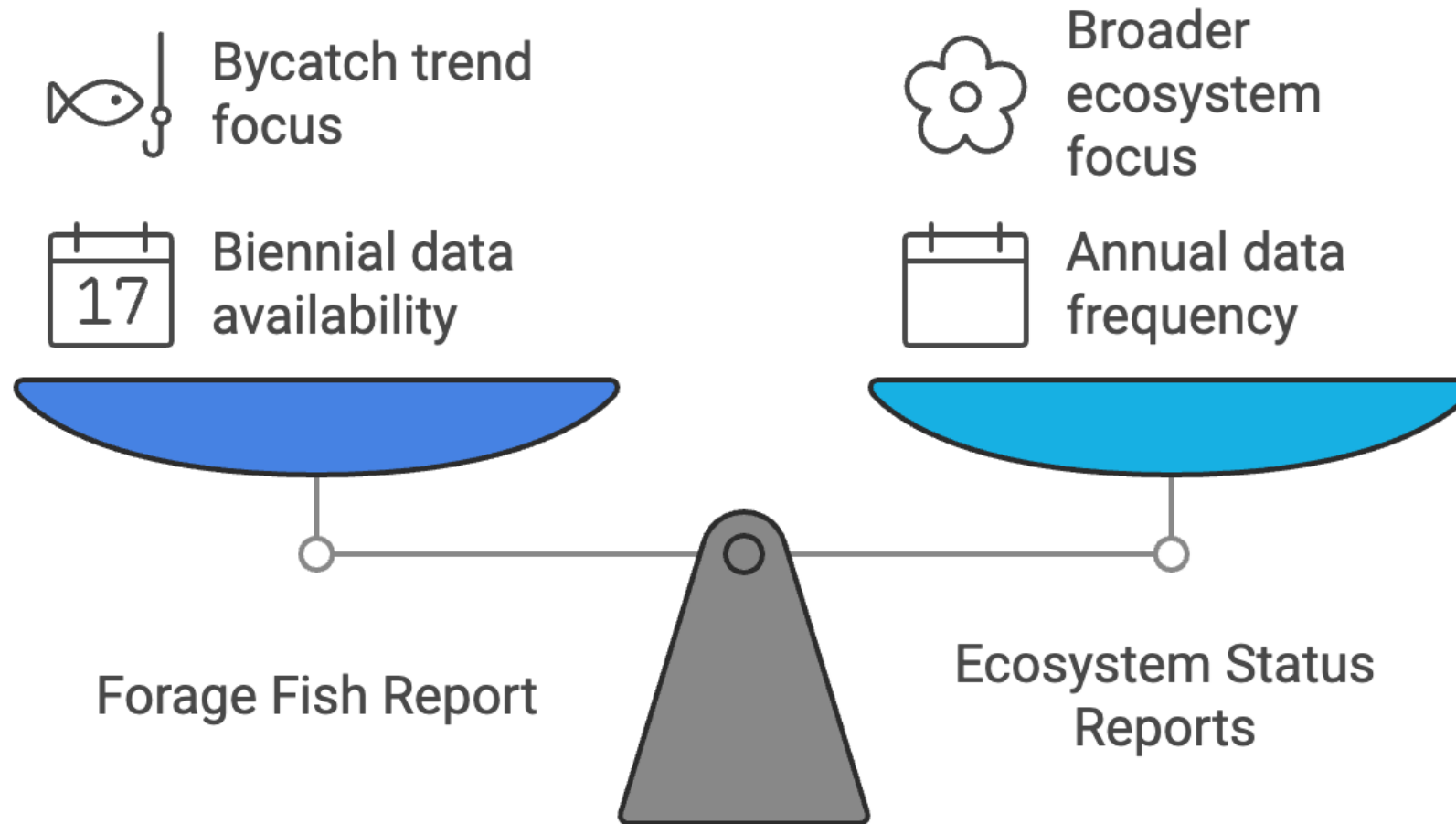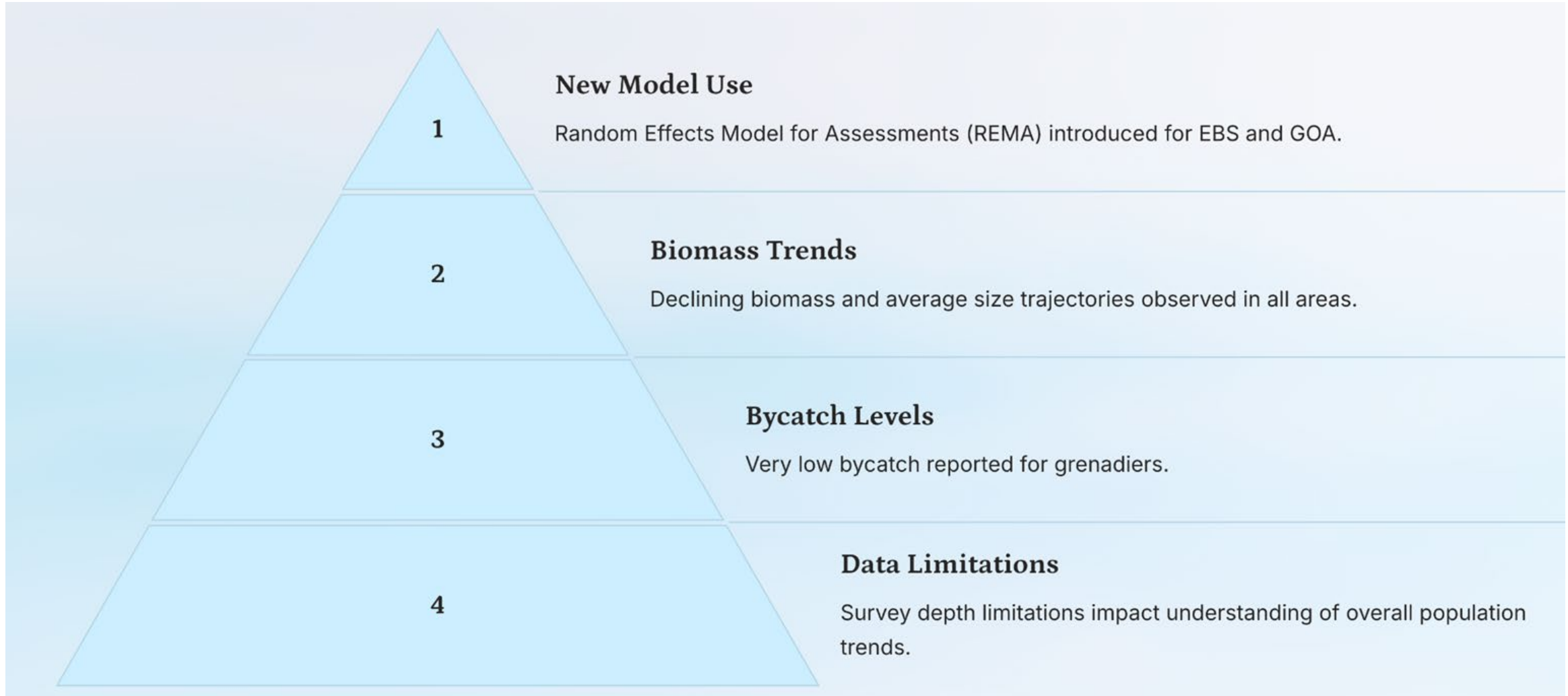# Forage fish–squid example (BSAI)

## BSAI survey density



Figure 27: Incidental catches of squid in federal fisheries in the BSAI.

# Forage fish Plan Team discussions

Bycatch trend focus

Broader ecosystem focus

Biennial data availability
17

Annual data frequency

Forage Fish Report

Ecosystem Status Reports

Balancing Report Frequencies and Focuses

# Grenadiers

**1**    **New Model Use**
Random Effects Model for Assessments (REMA) introduced for EBS and GOA.

**2**    **Biomass Trends**
Declining biomass and average size trajectories observed in all areas.

**3**    **Bycatch Levels**
Very low bycatch reported for grenadiers.

**4**    **Data Limitations**
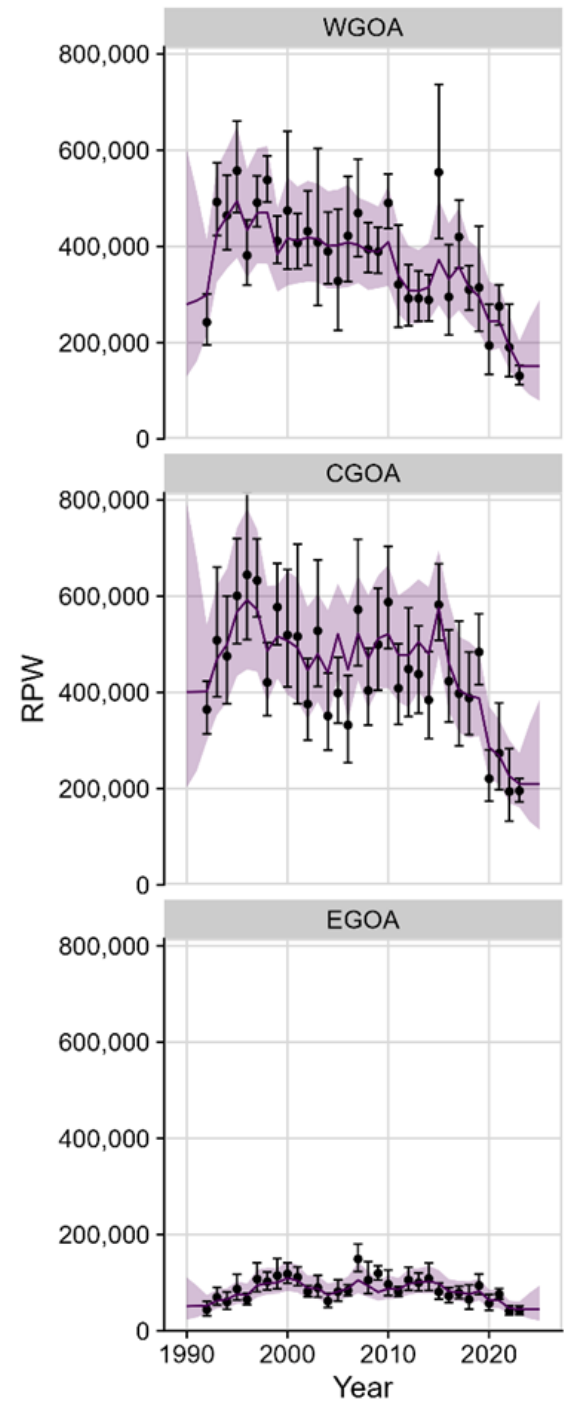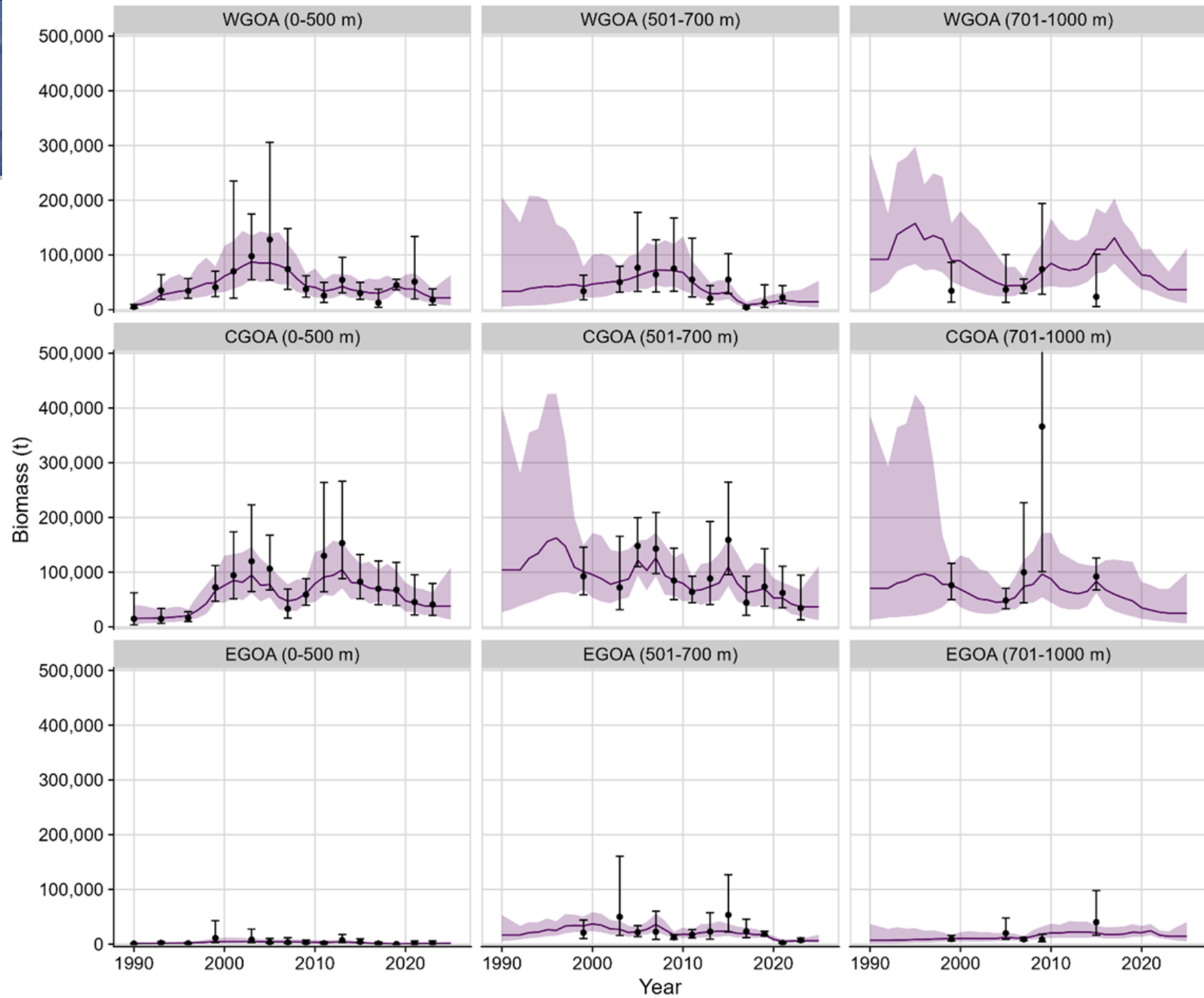Survey depth limitations impact understanding of overall population trends.

*Typo in Team report, most recent was 2020, not 2000*
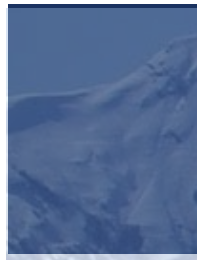
GOA Grenadiers

# Grenadiers

Appropriately examined

    Data sparse

Lack of any conservation concern given current knowledge

# Thanks!