INTERNATIONAL PACIFIC HALIBUT COMMISSION

Data overview and stock assessment for Pacific halibut at the end of 2025

Agenda item: 5.2
IPHC-2025-IM101-10 Rev_1
(I. Stewart, A. Hicks, R. Webster & D. Wilson)

Summary of results

- Coastwide trends showed little change from 2024 to 2025
- Age data indicated that the 2016 and 2017 year-classes were important to both FISS and fishery catches
- 2025 assessment results indicate similar stock trend and scale as estimated in 2024
- The stock remains in a low productivity regime that began in 2006

Outline

Data sources

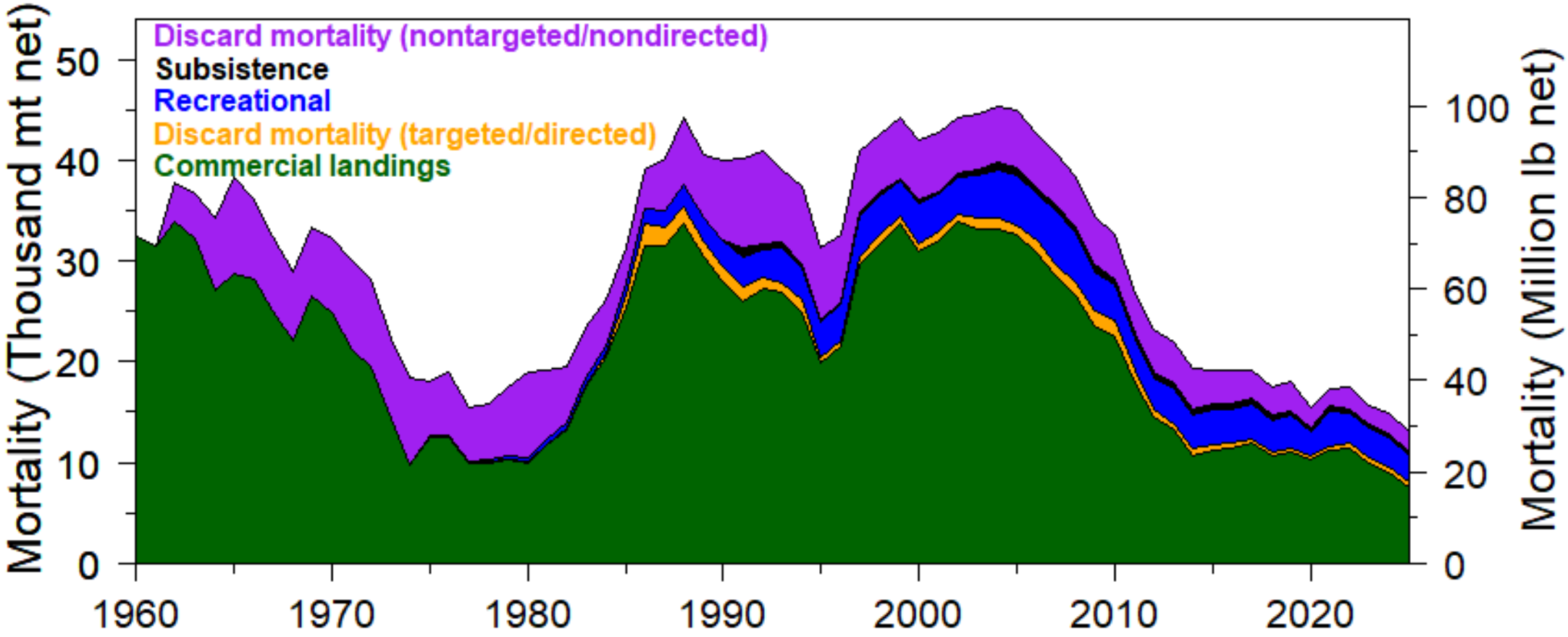
- Coastwide
- Regional
- Dashboards by Area

Modelling

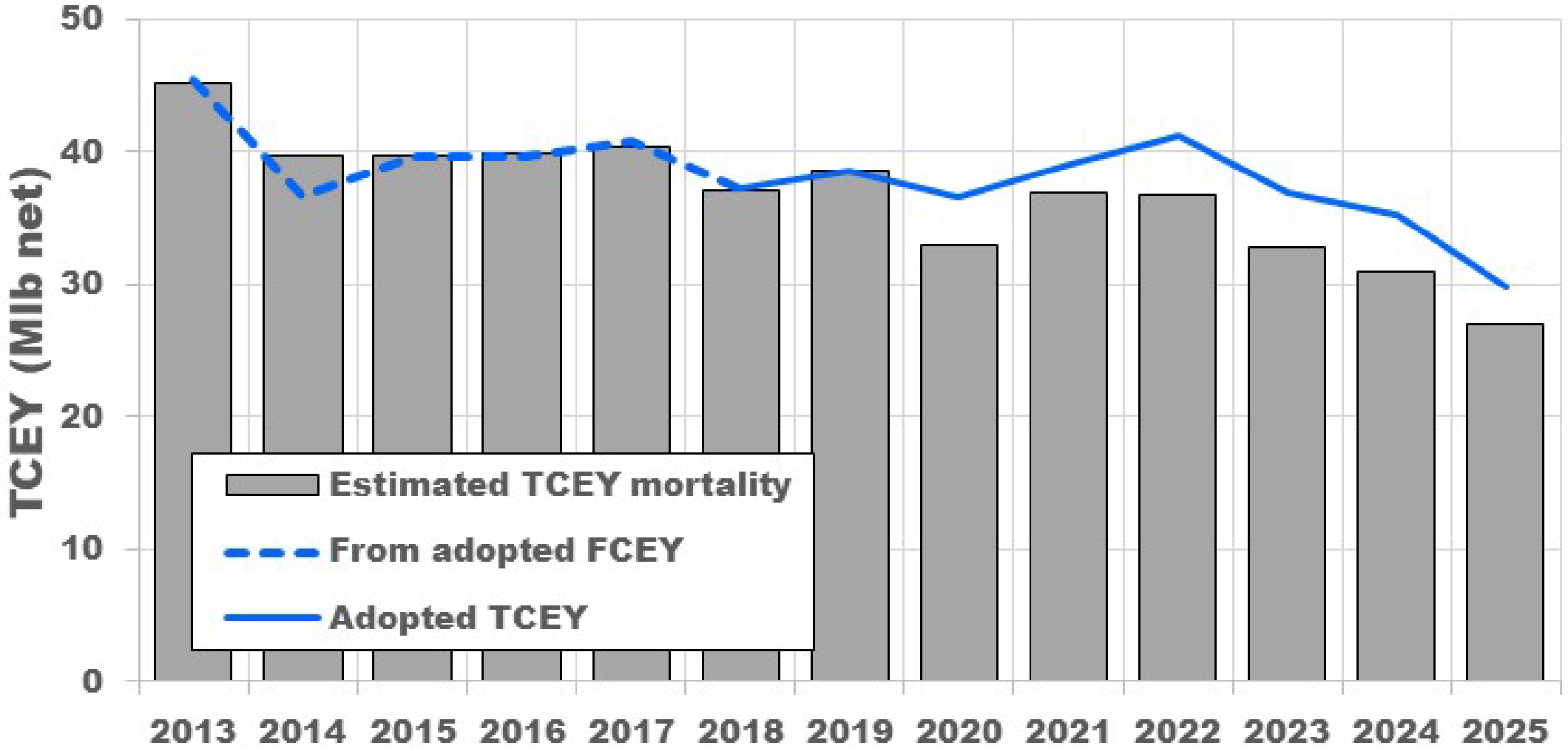
- Process
- Results
- Reference points

Stock projections and the harvest decision table follow in a separate presentation

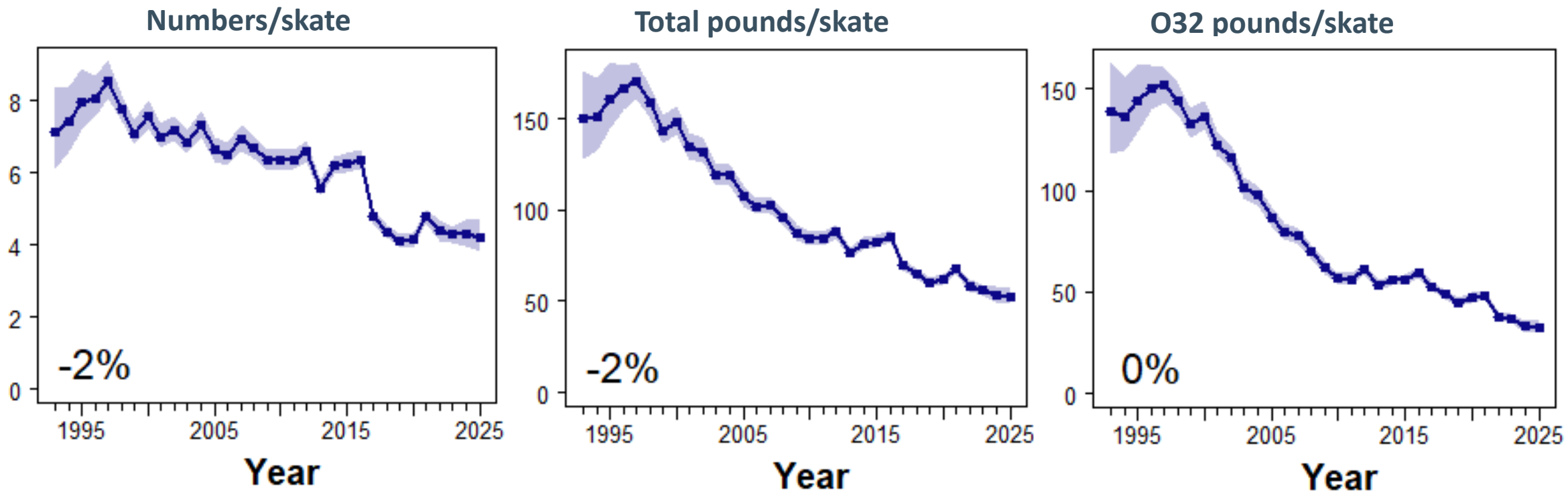
Coastwide historical mortality



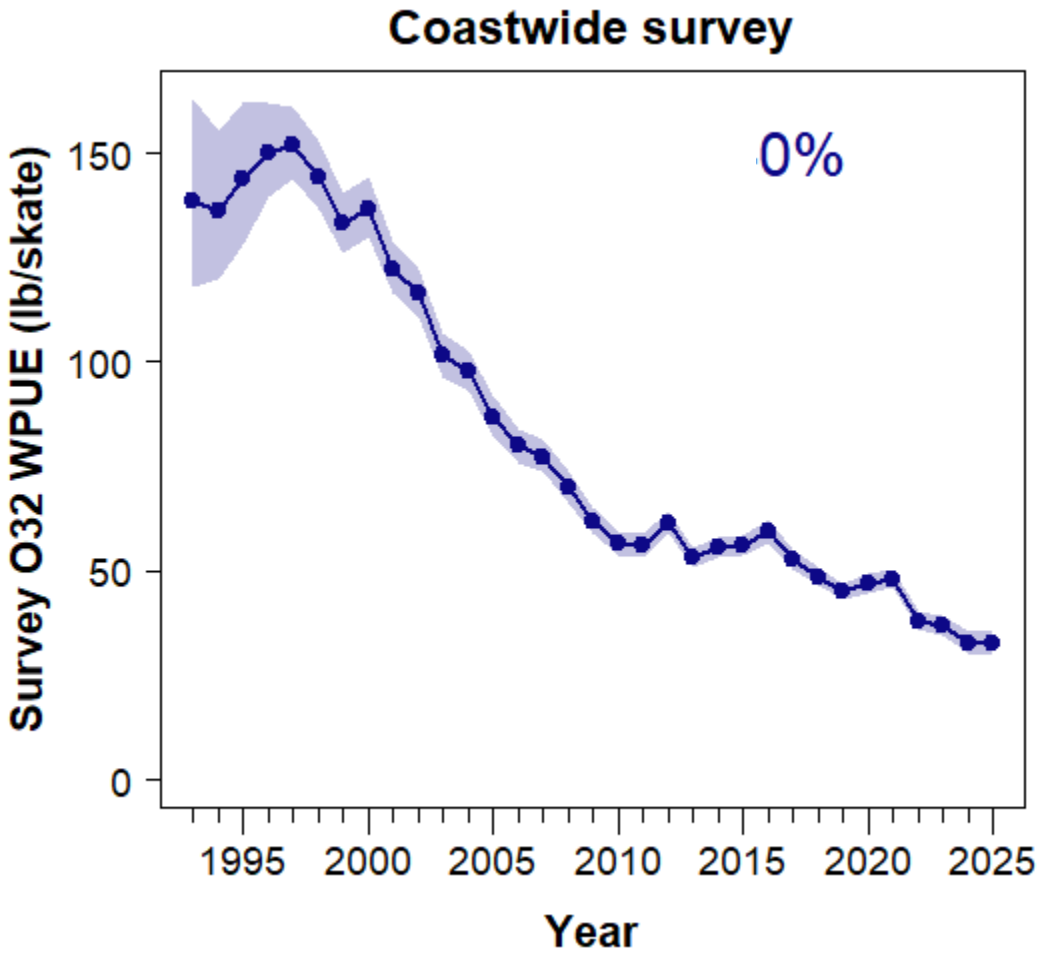
Recent coastwide TCEYs

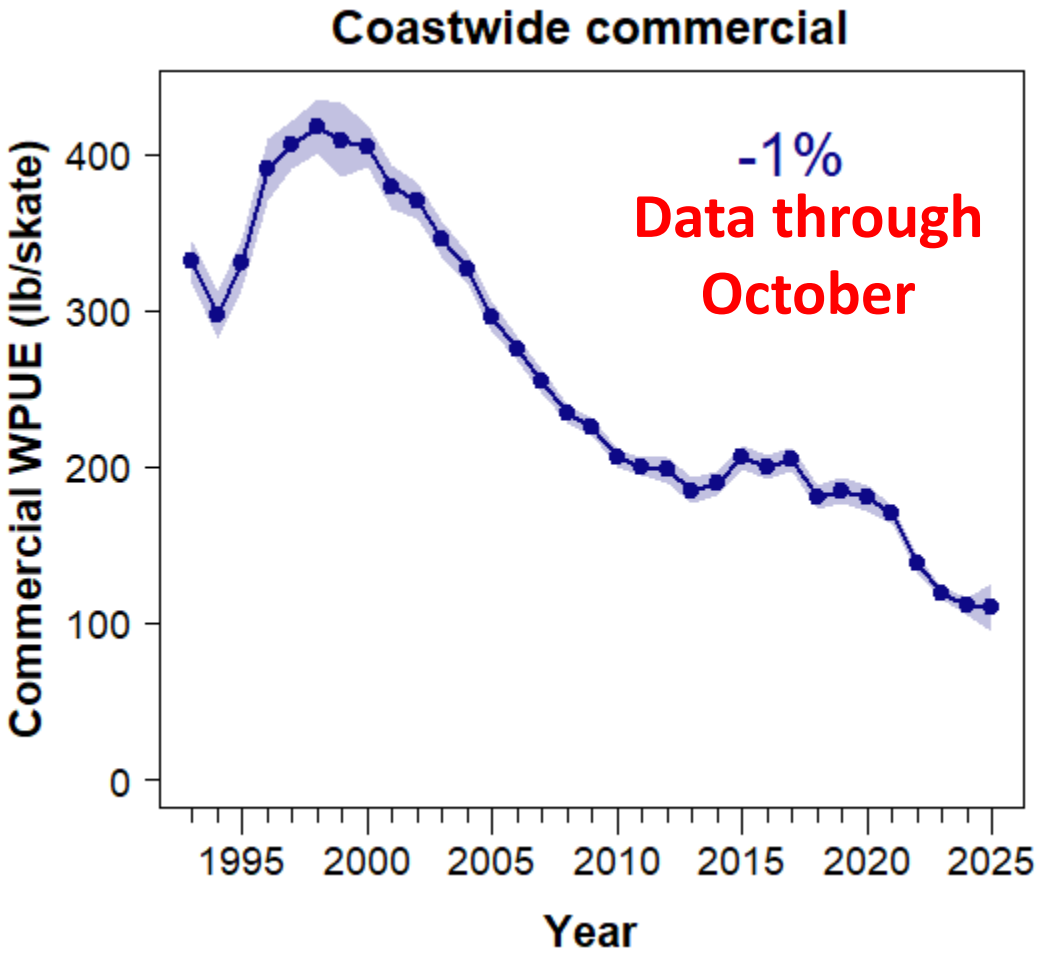


Coastwide FISS trends



O32 FISS and Fishery trends

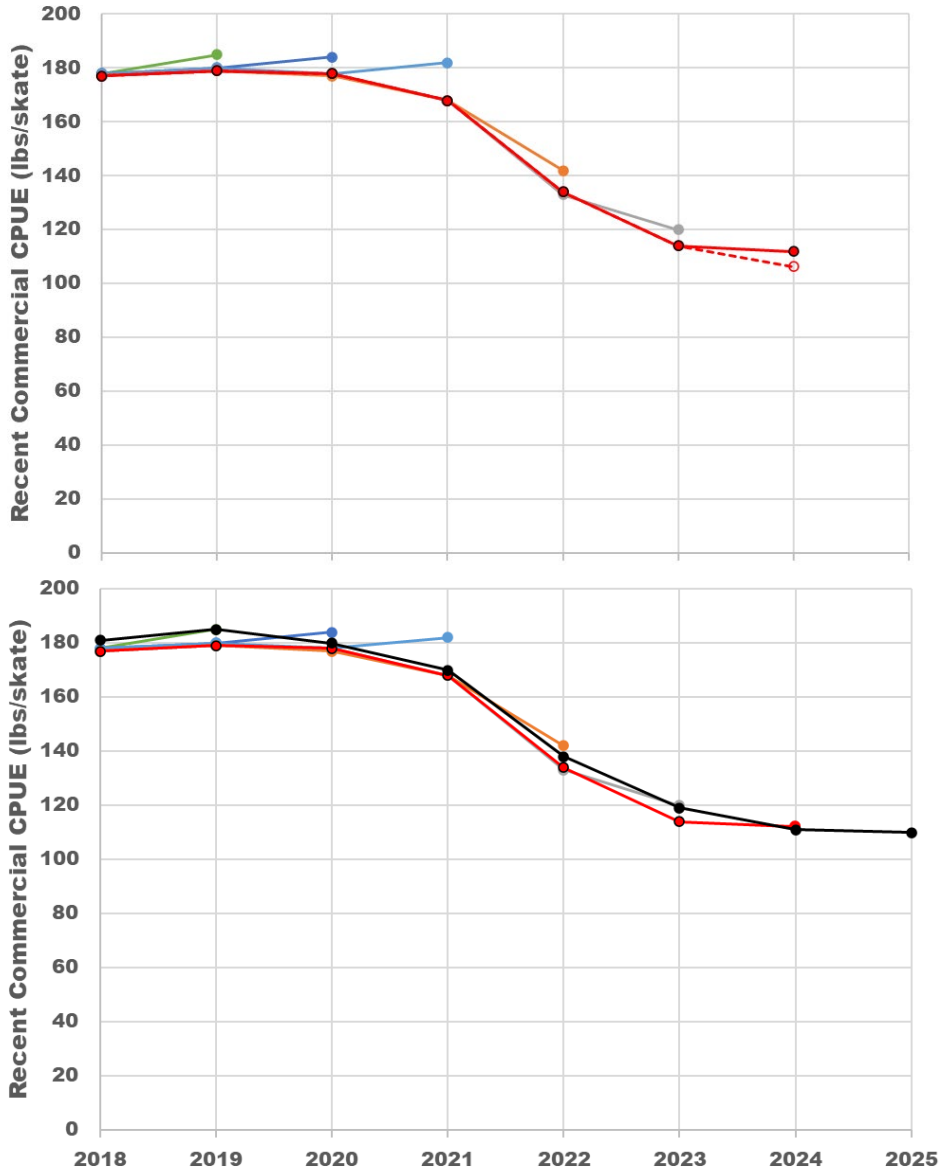




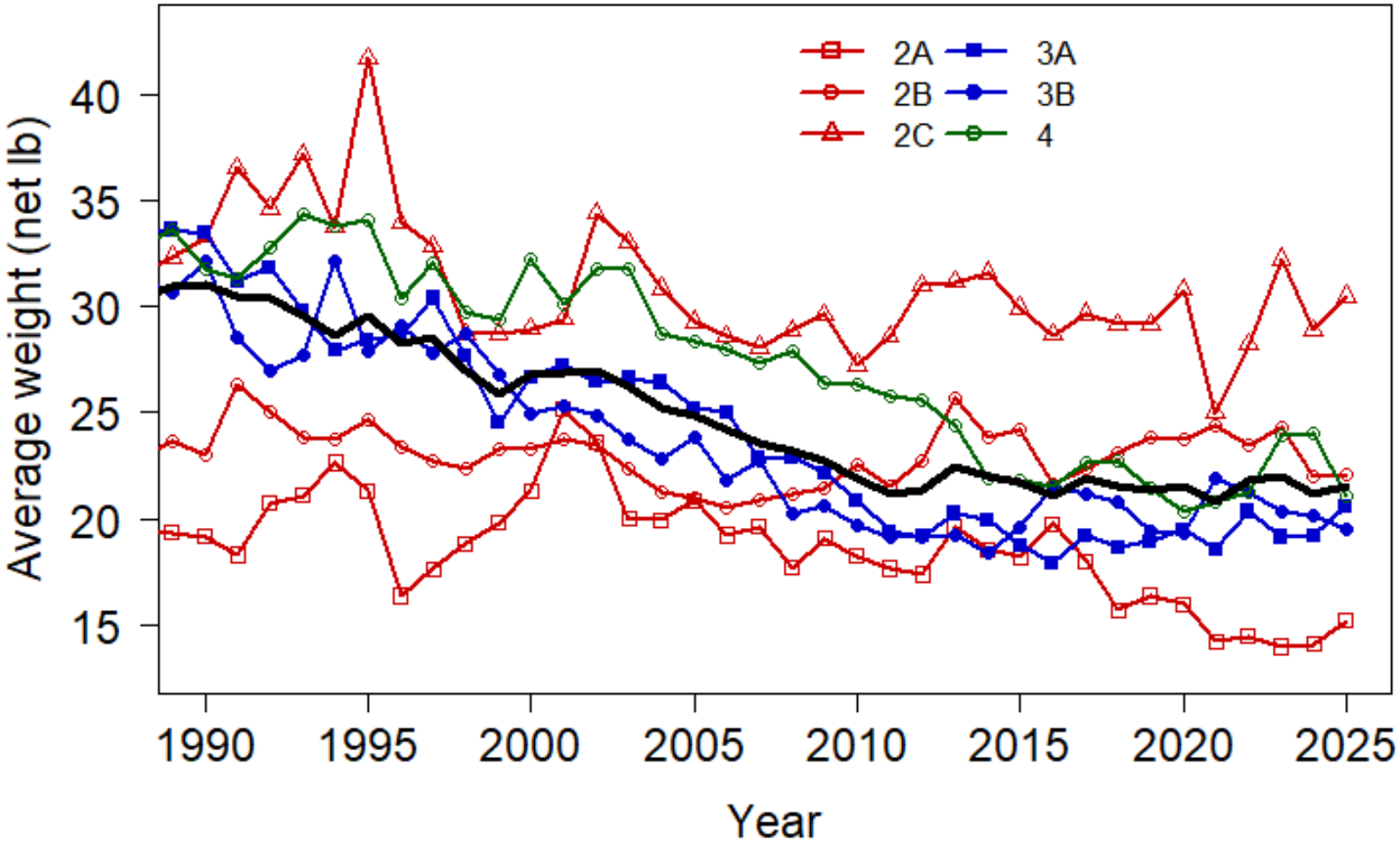
Updated fishery catch-rates

- Fishery catch rates estimated each year through 2024 have shown post-season revisions downward:

- 2025 estimates include updated hook-spacing relationship, additional historical records and extensive error-checking:

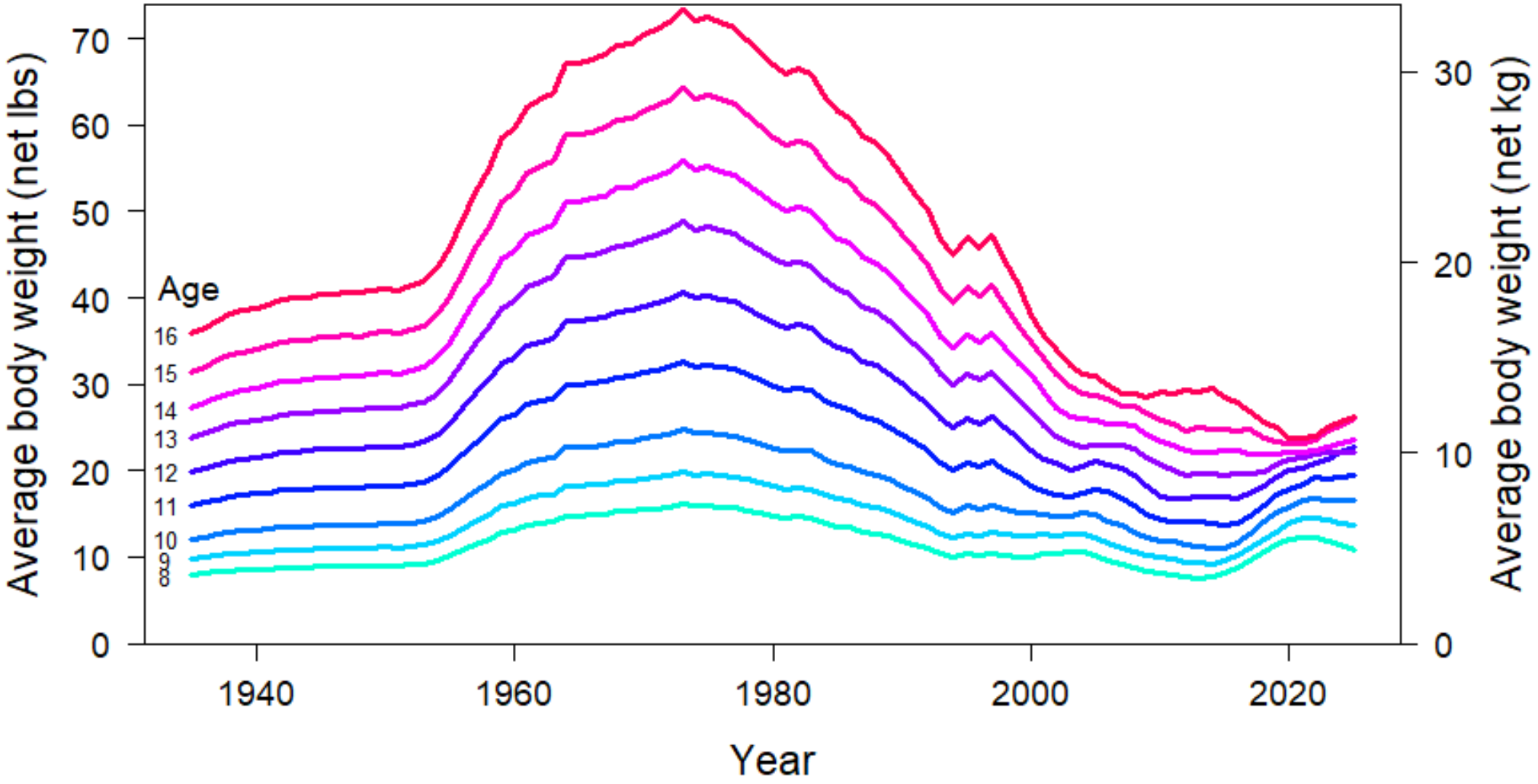


Average weight – landed fish



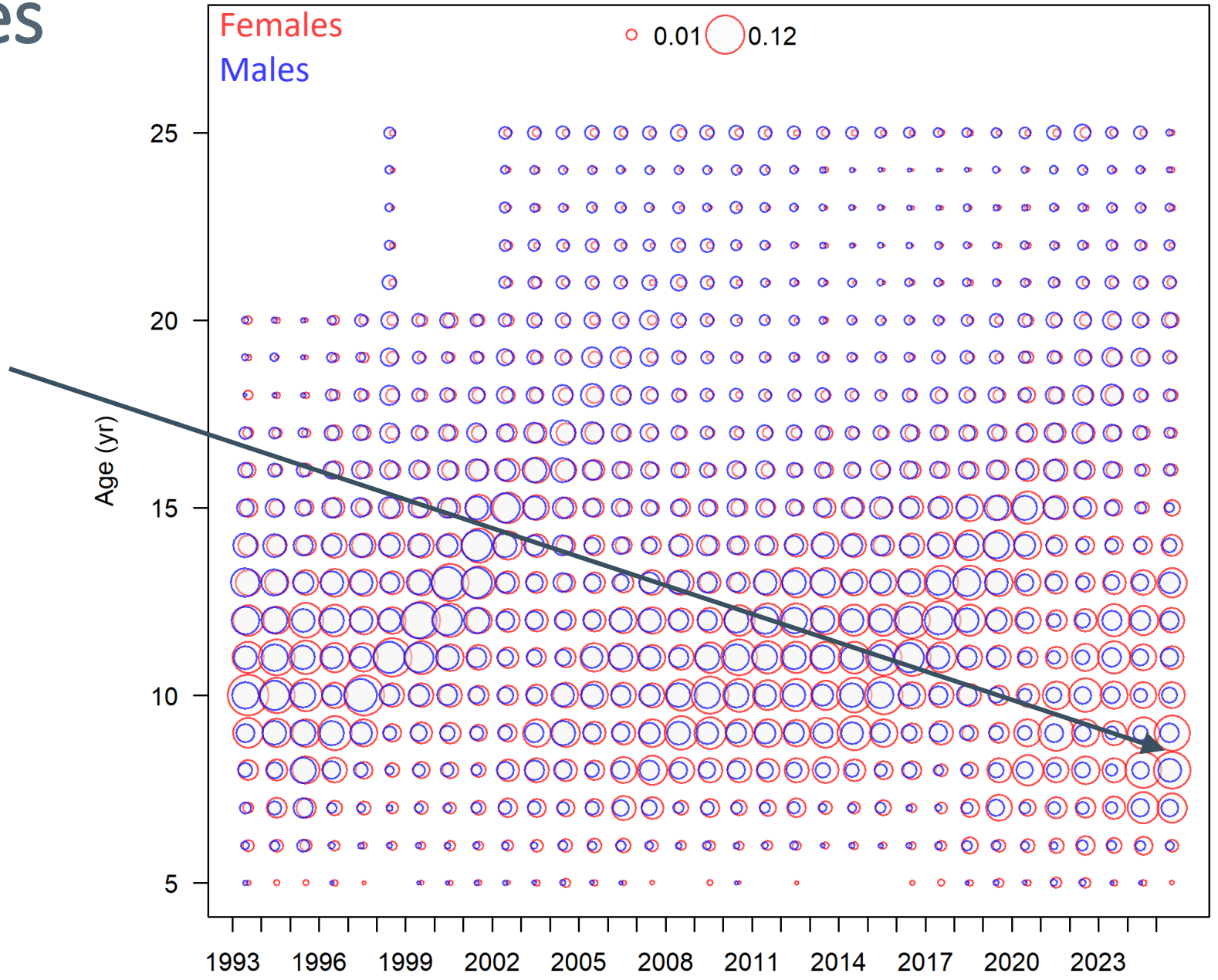
Coastwide

Coastwide female weight-at-age



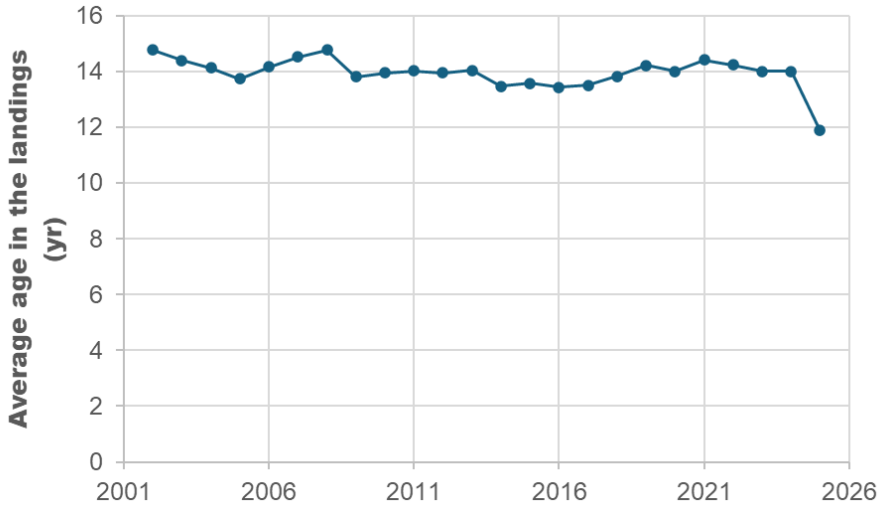
Coastwide FISS ages

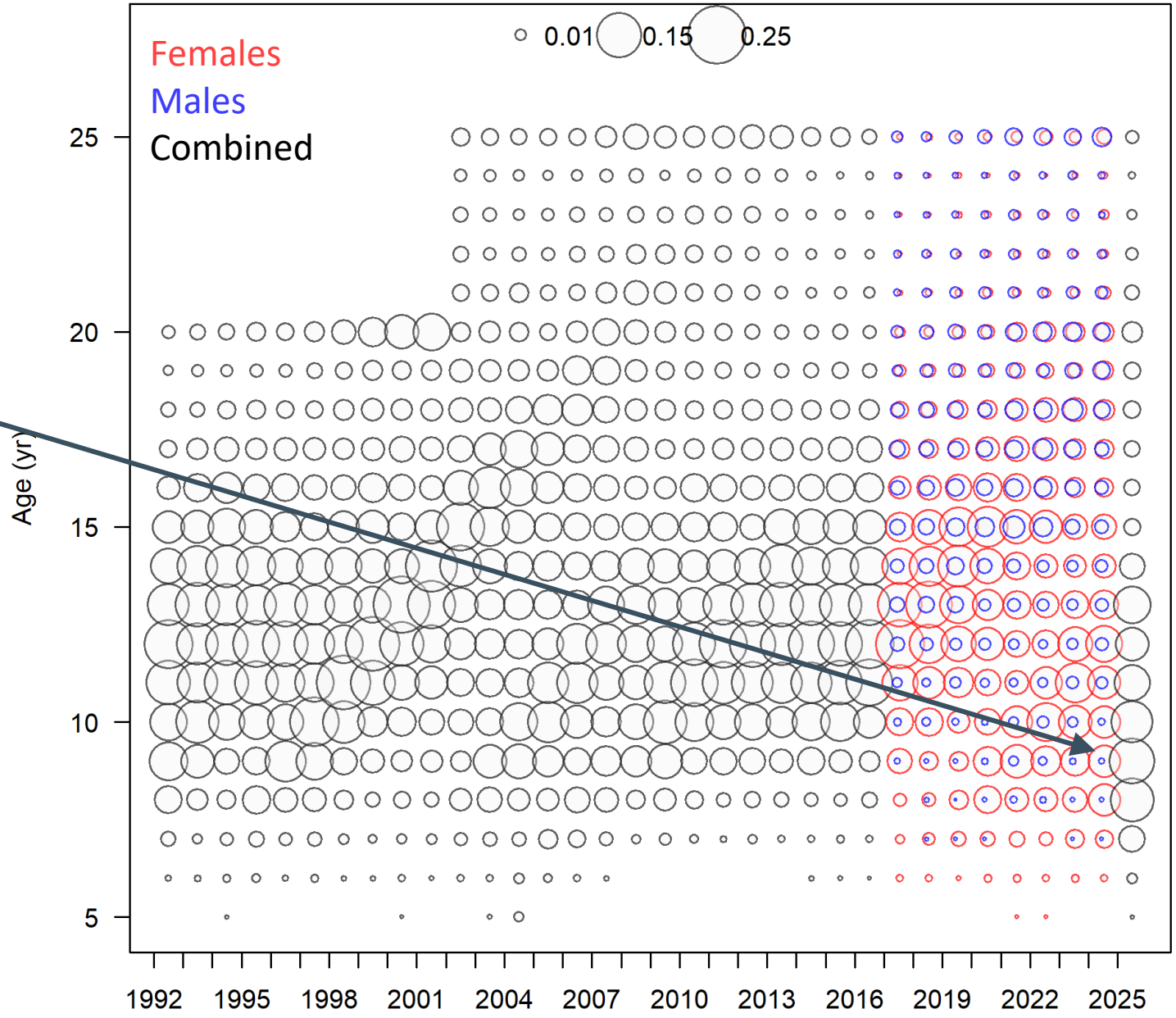
8 & 9 year-old fish
(2016 & 2017 year-classes)



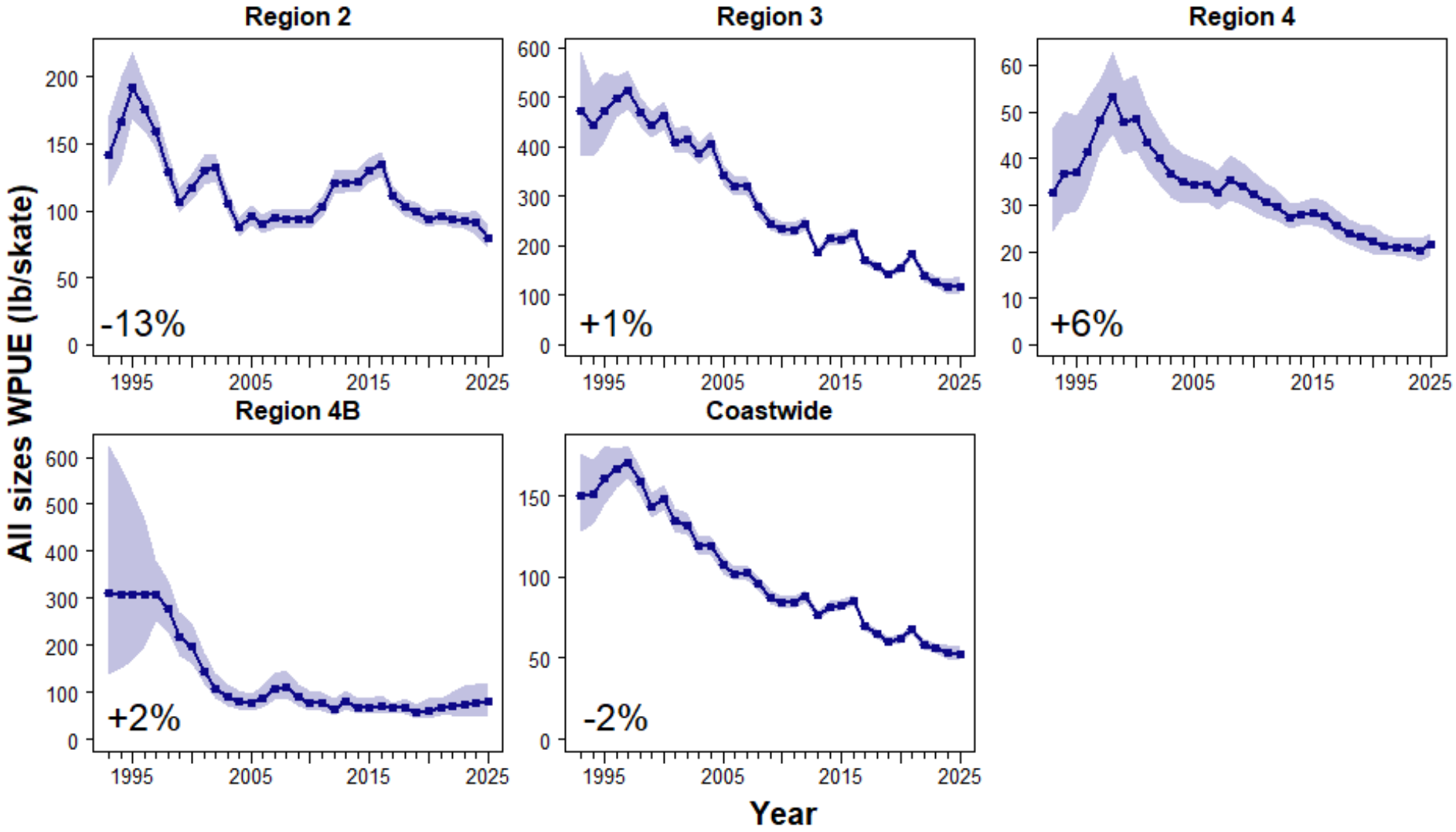
Coastwide fishery ages

More very young fish than in recent years

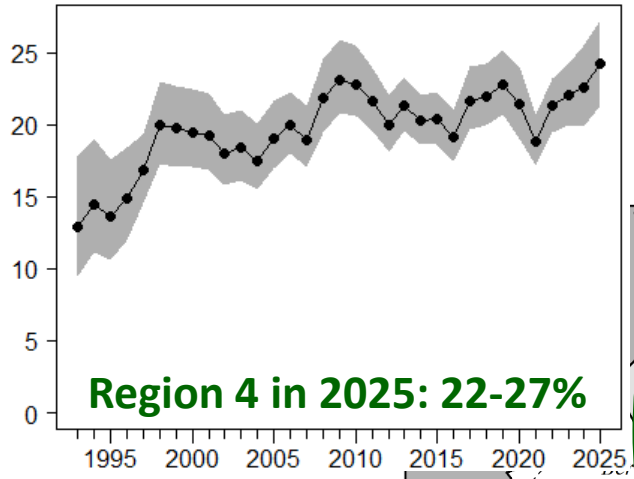


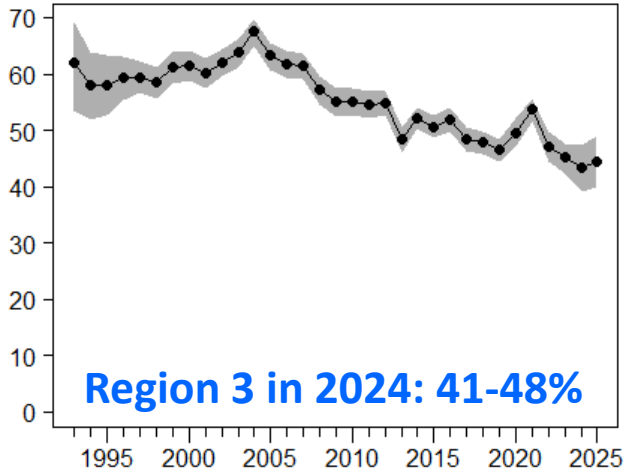


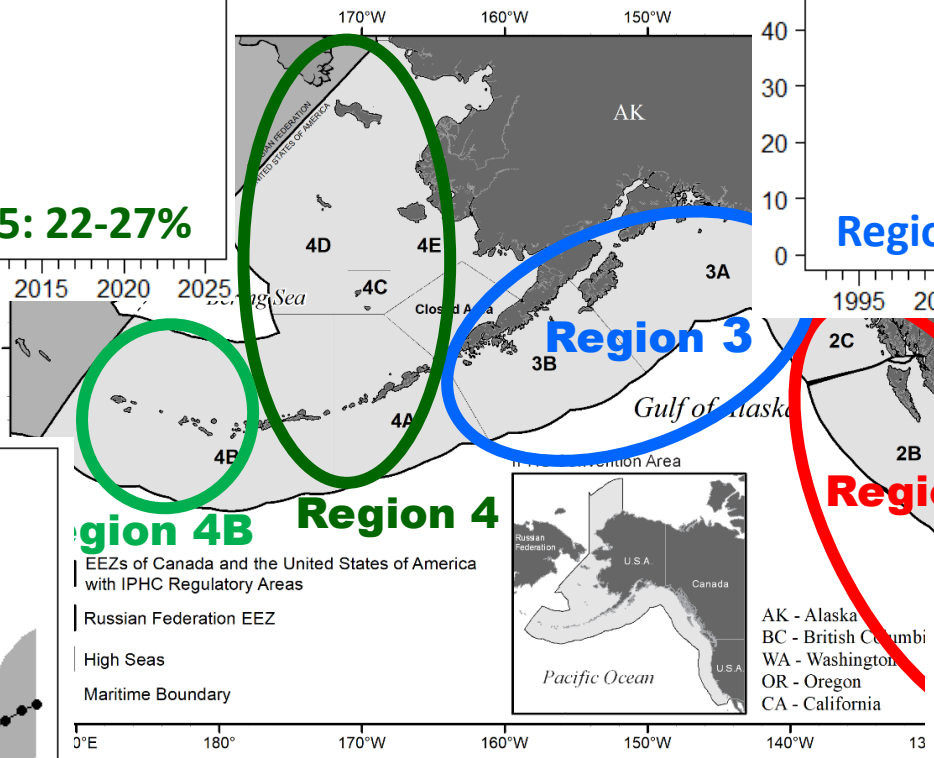
Regional survey trends (all sizes)

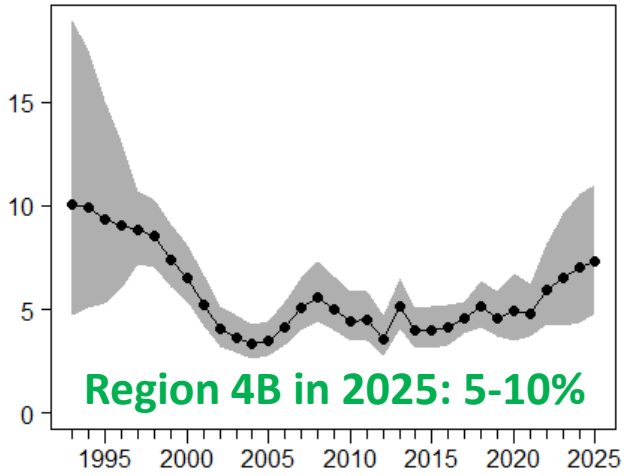


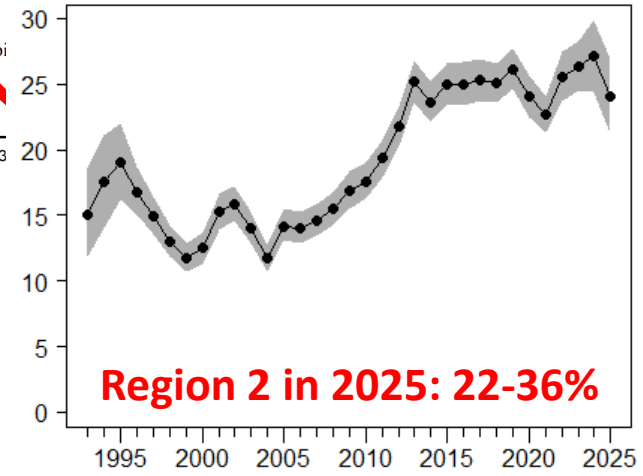
Regional stock distribution (all sizes)



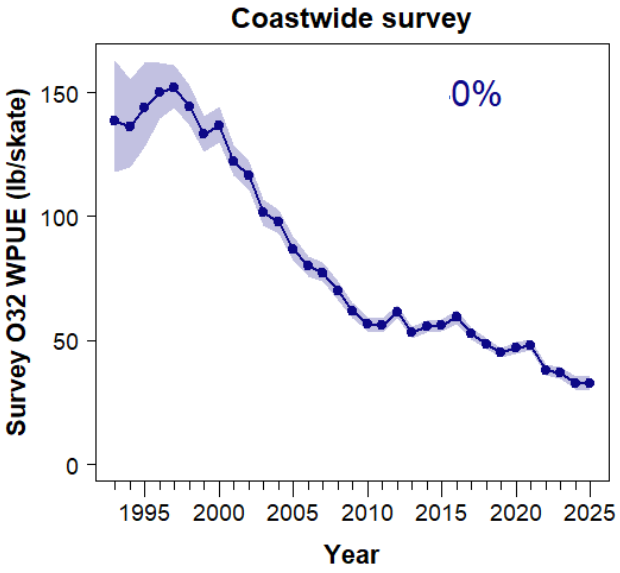


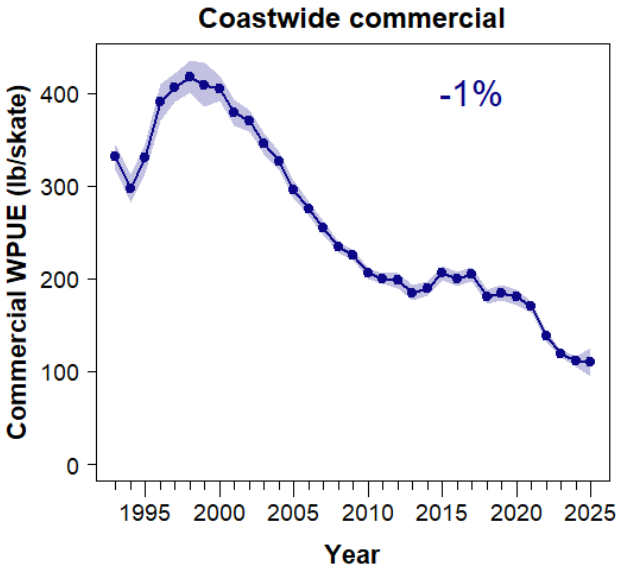


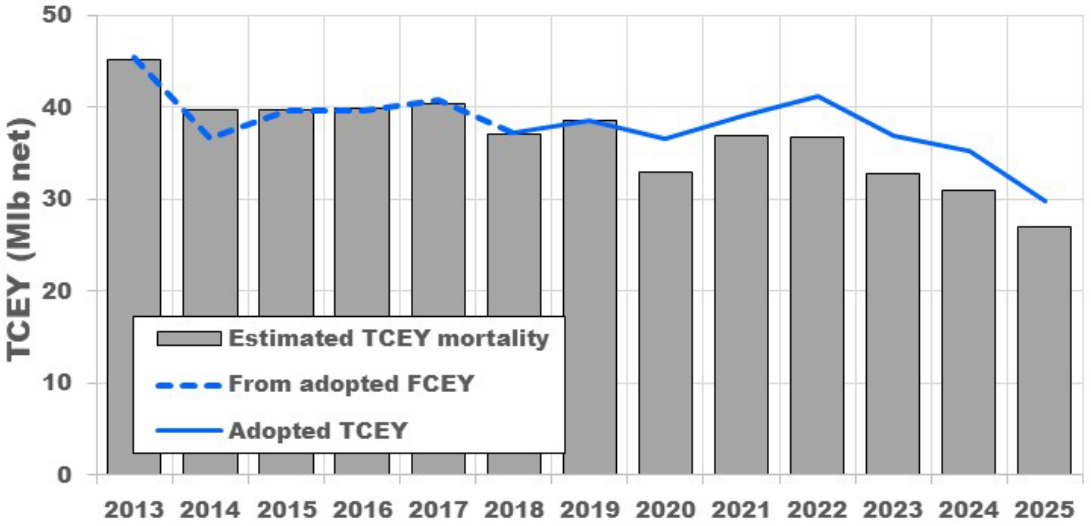


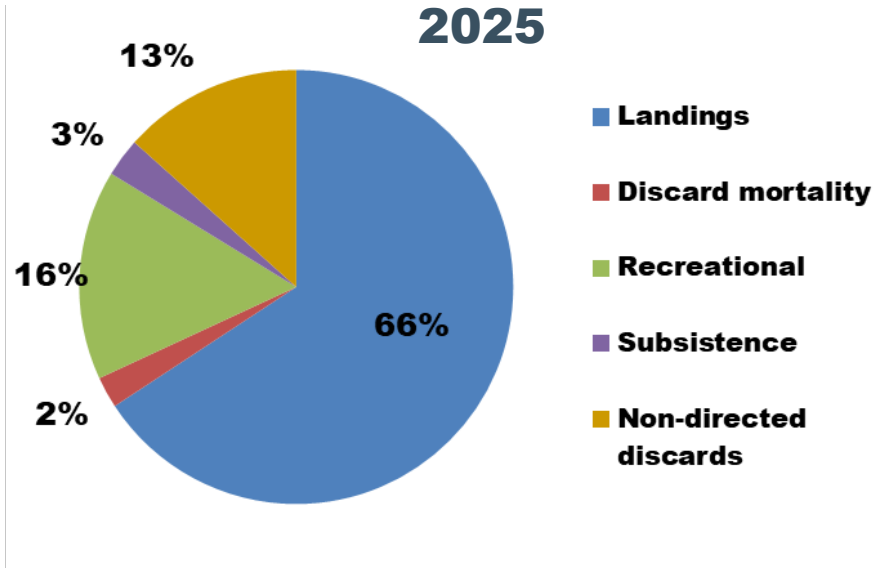


Coastwide dashboard

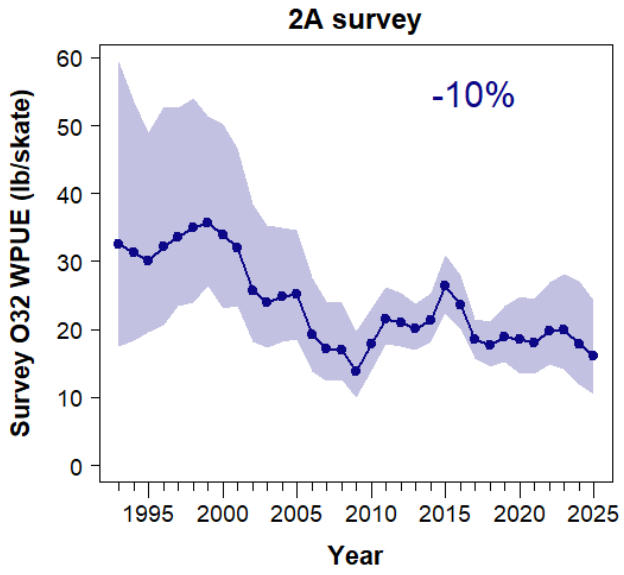


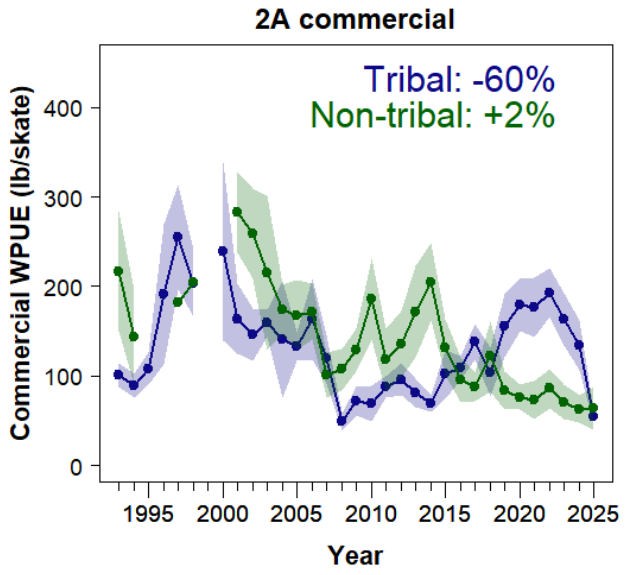


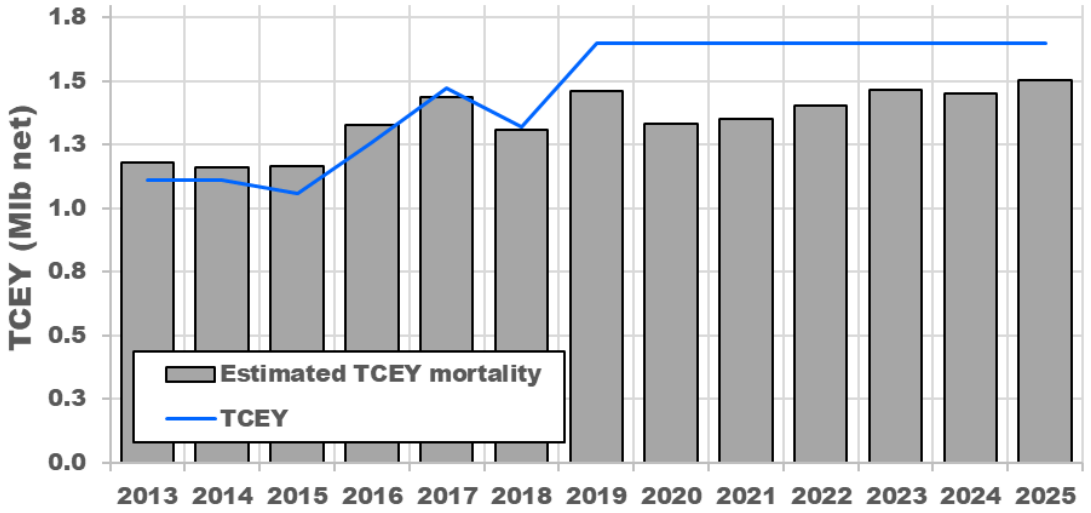


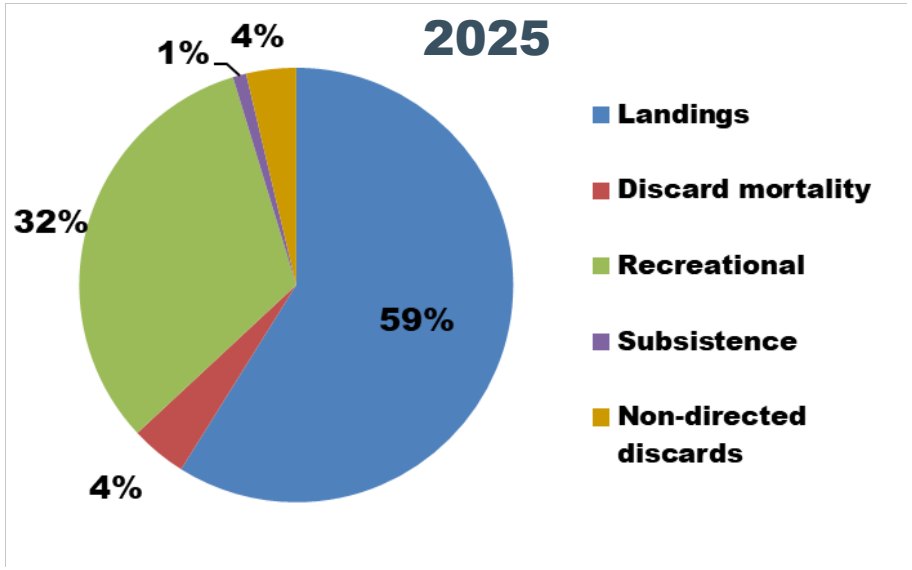


IPHC Regulatory Area 2A

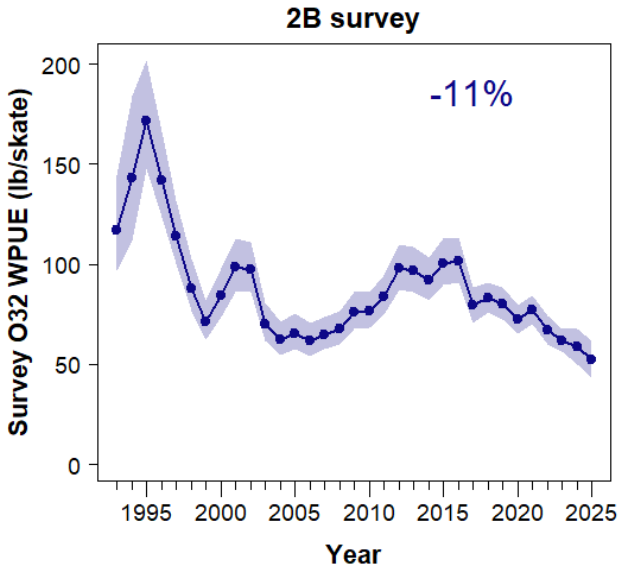


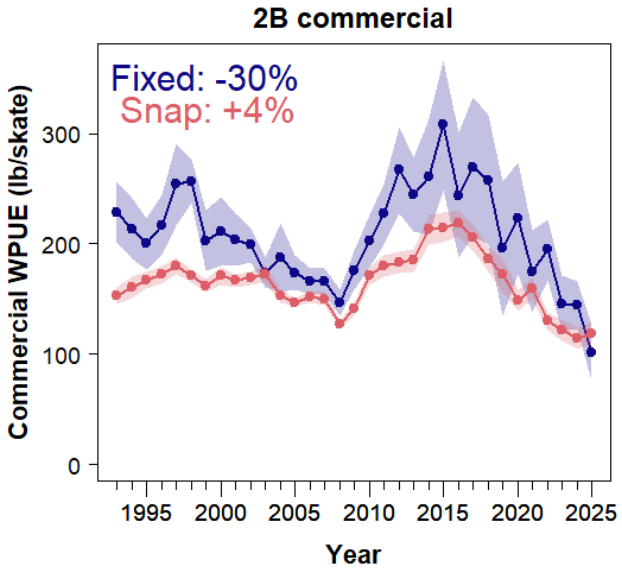


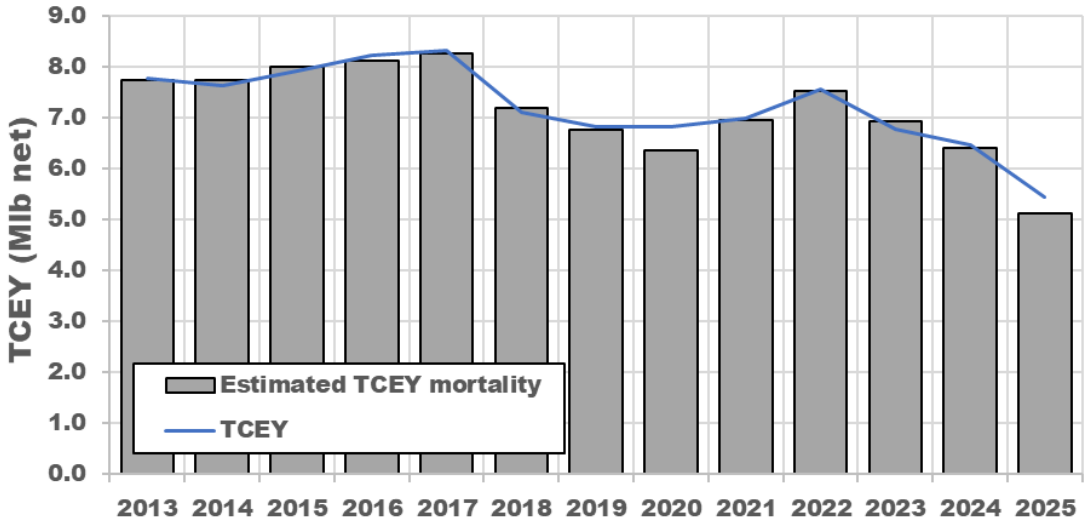


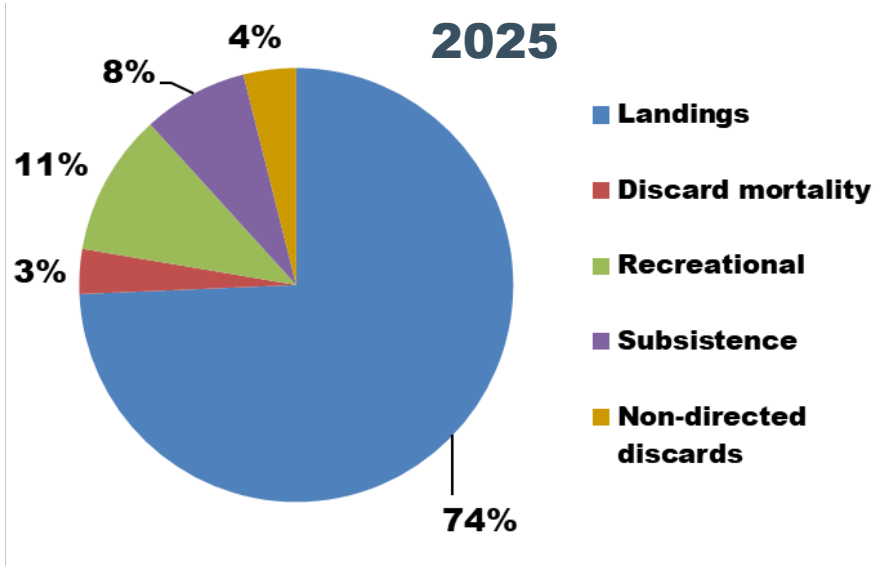


IPHC Regulatory Area 2B

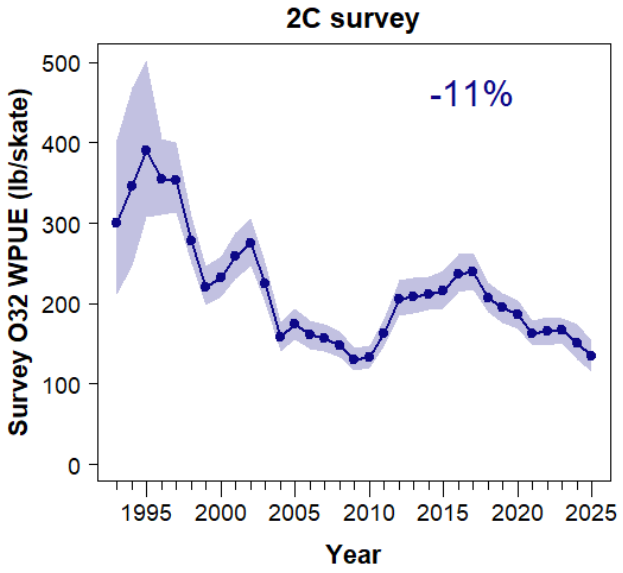


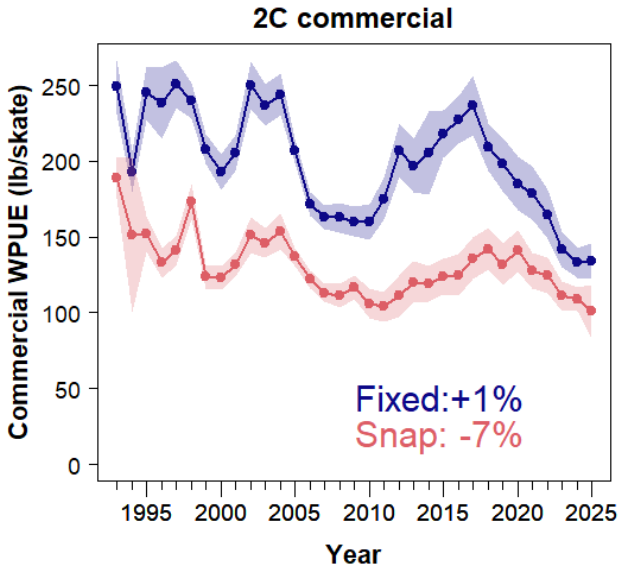


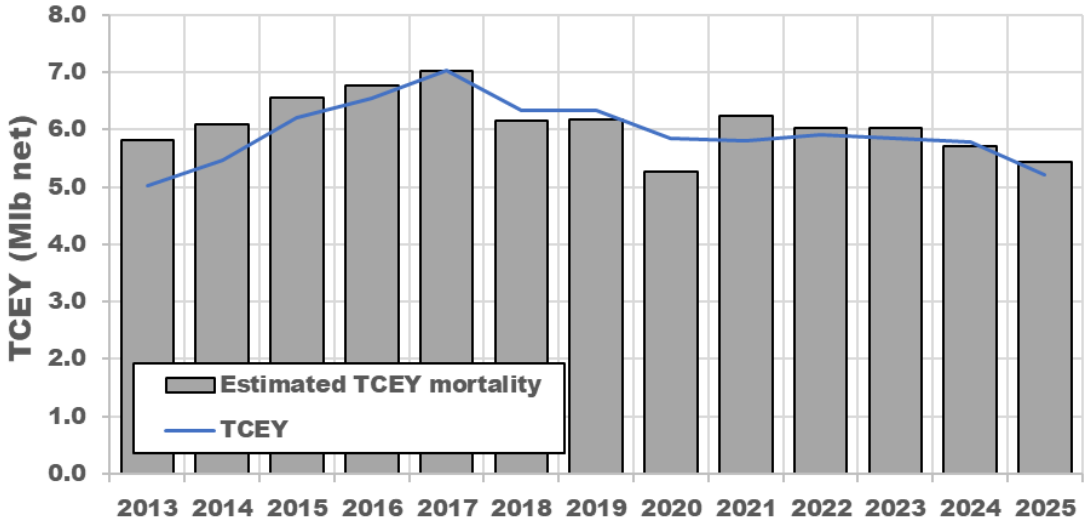


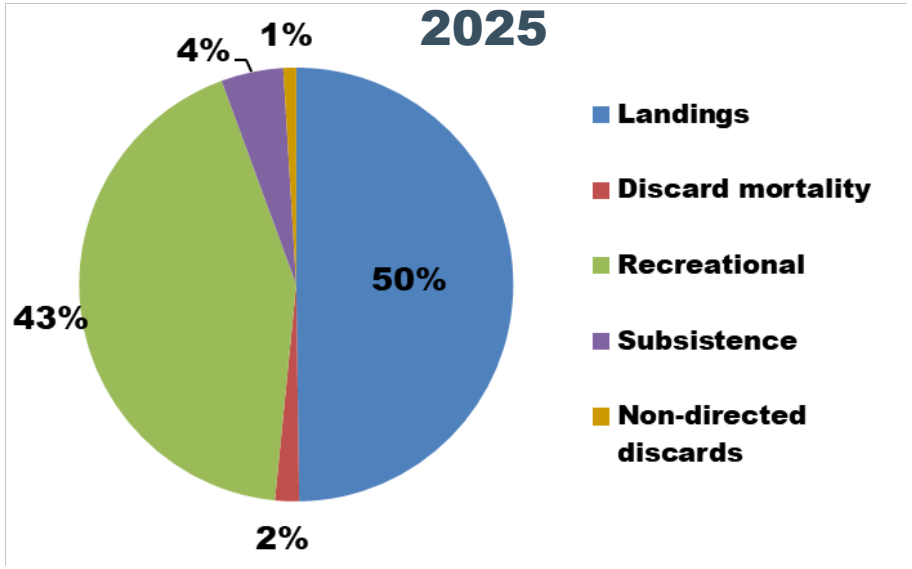


IPHC Regulatory Area 2C

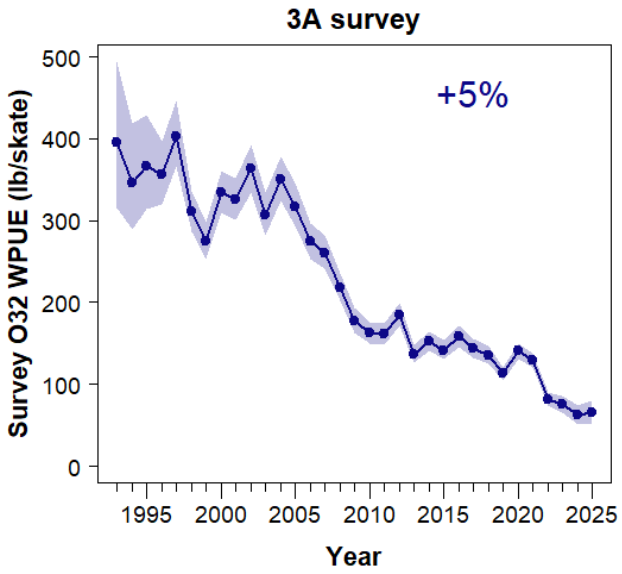


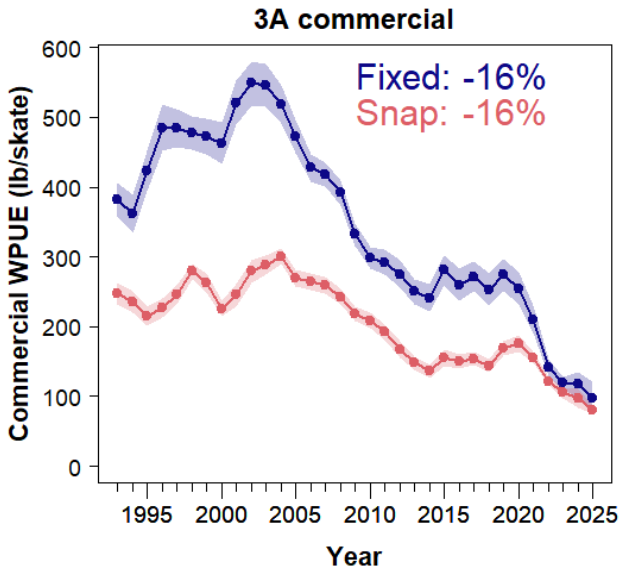


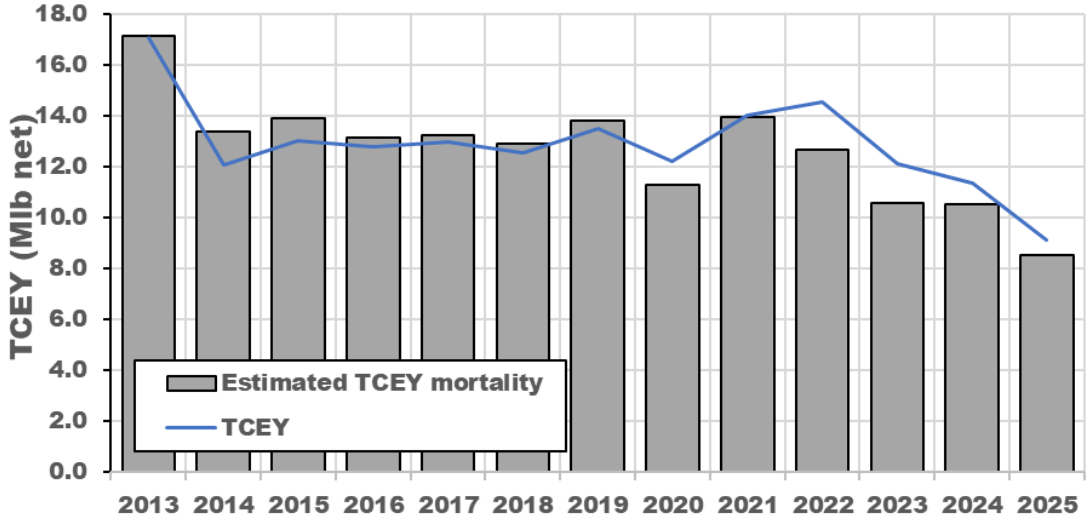


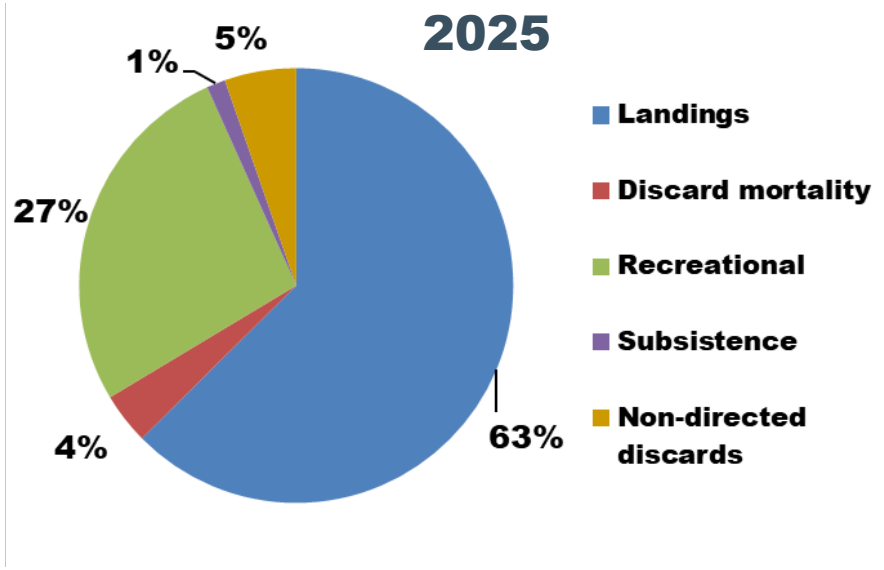


IPHC Regulatory Area 3A

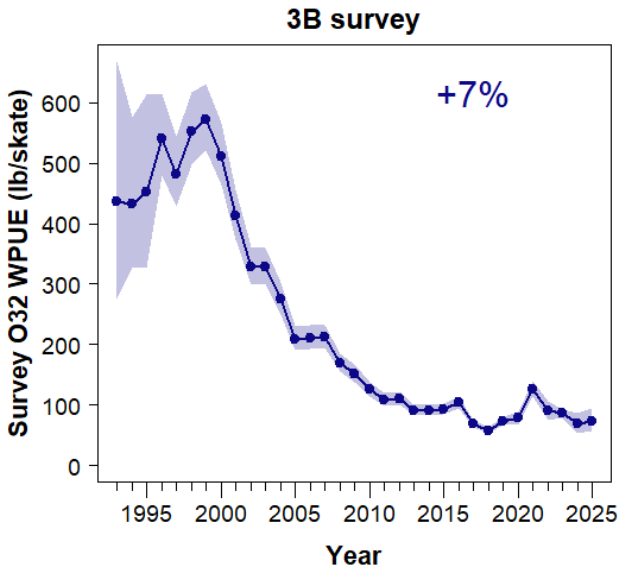


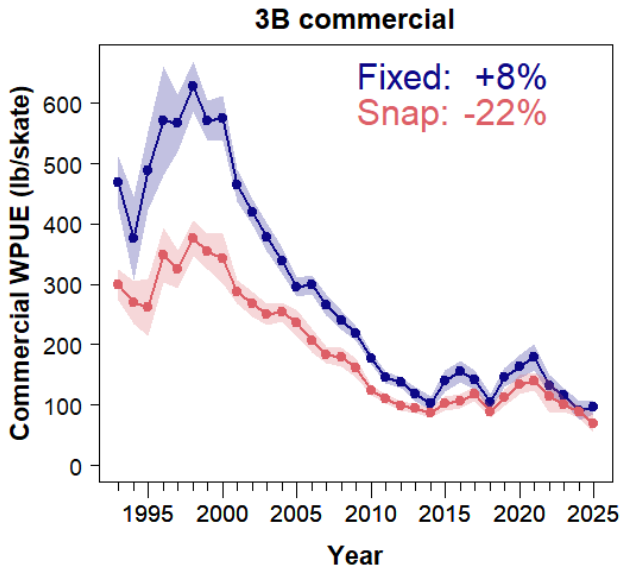


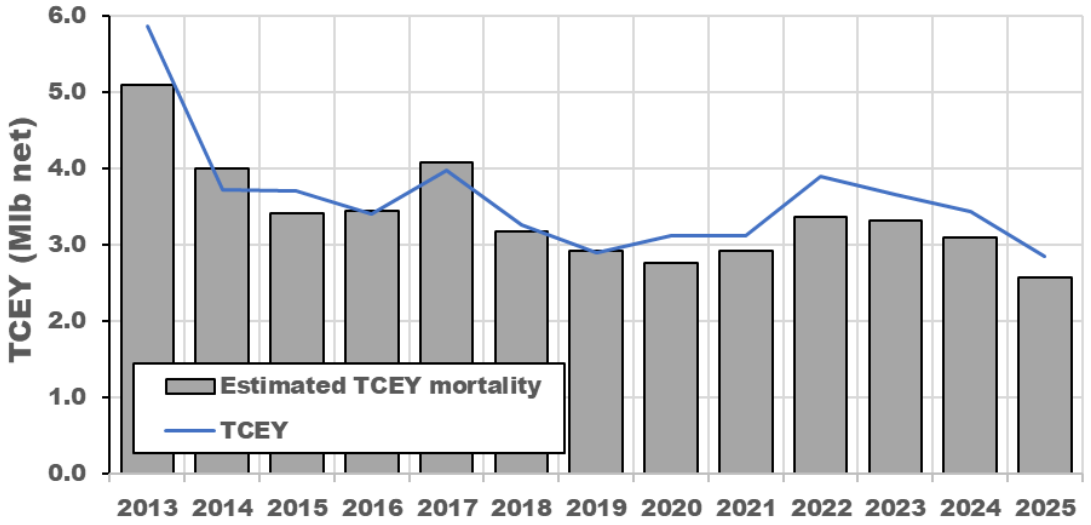


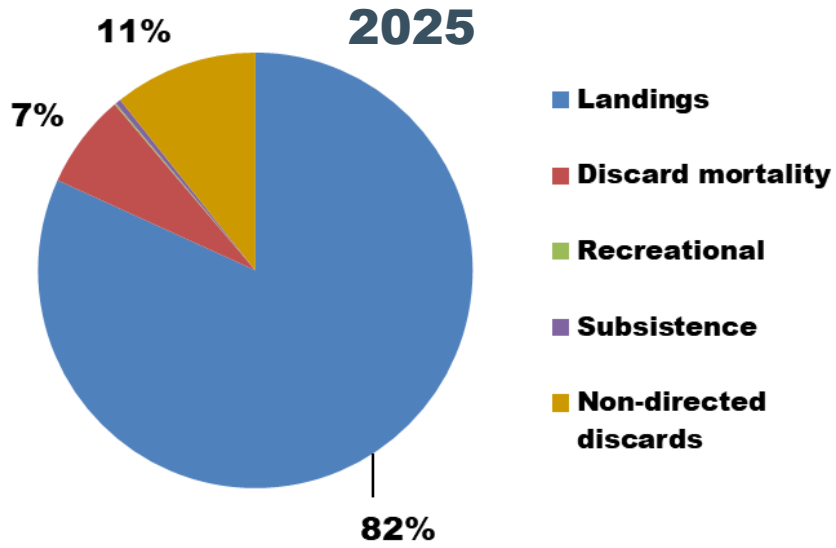


IPHC Regulatory Area 3B

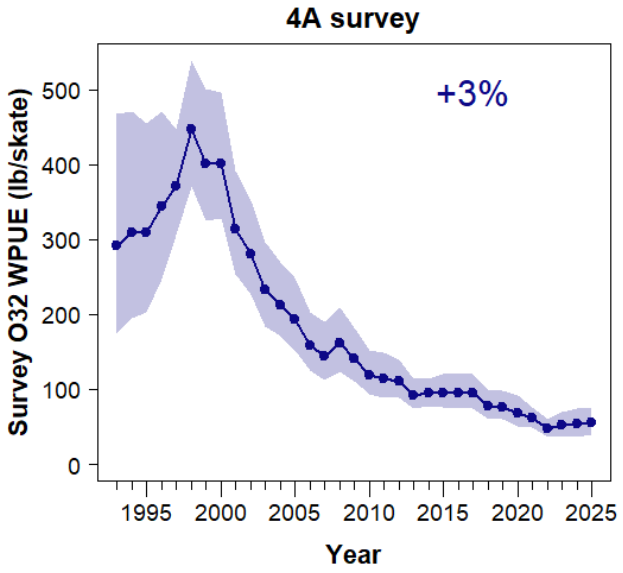


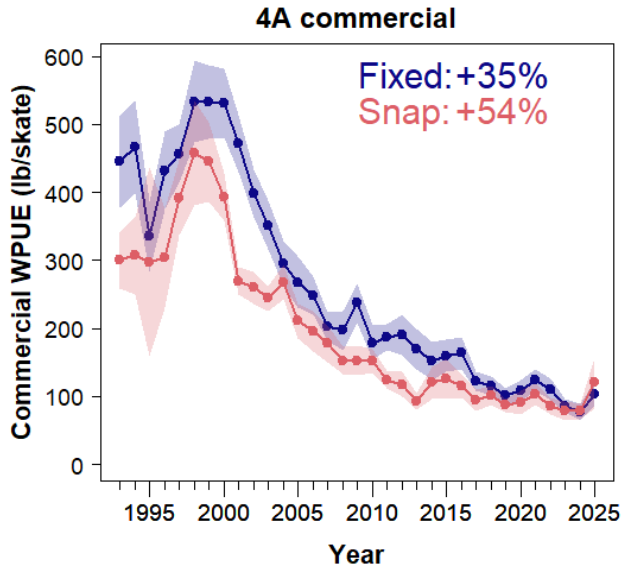


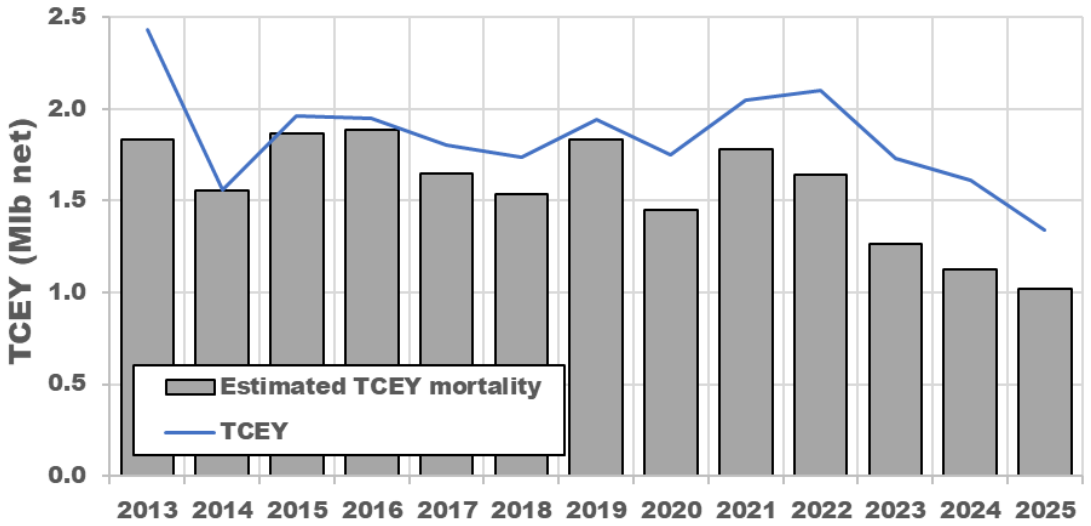


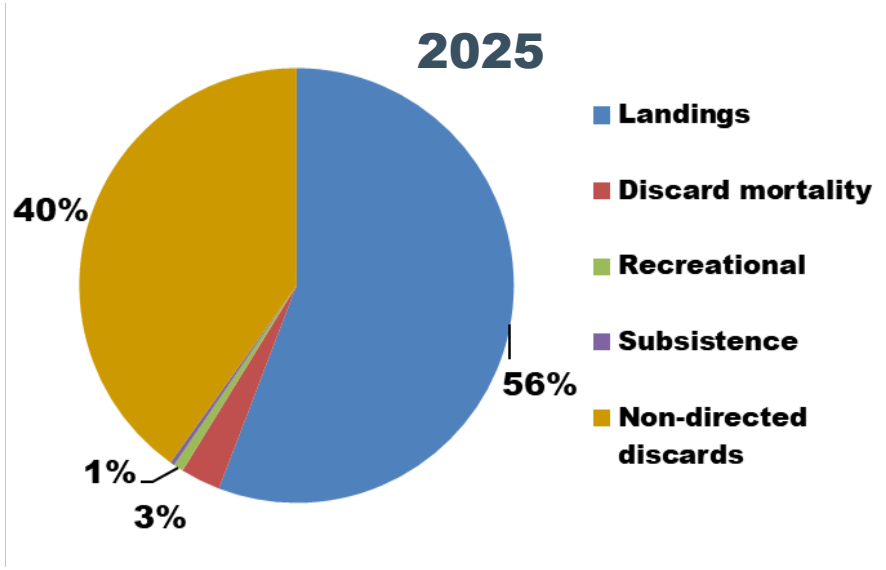


IPHC Regulatory Area 4A

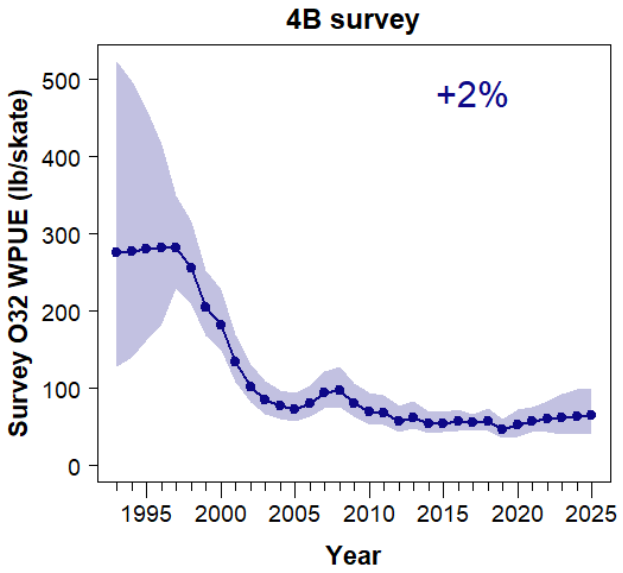


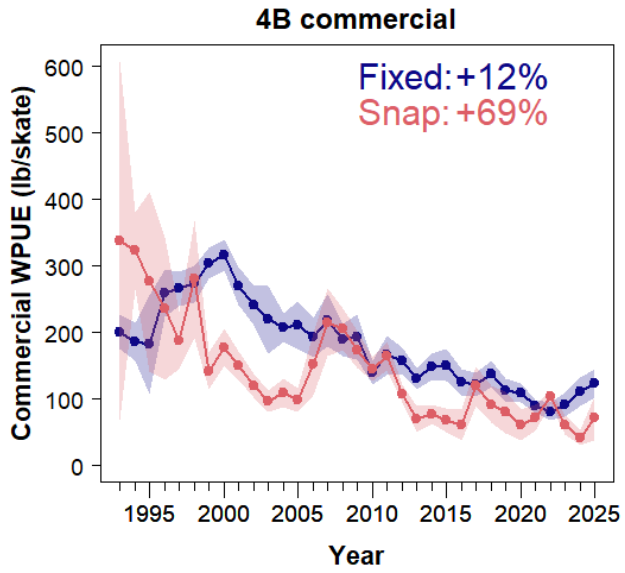


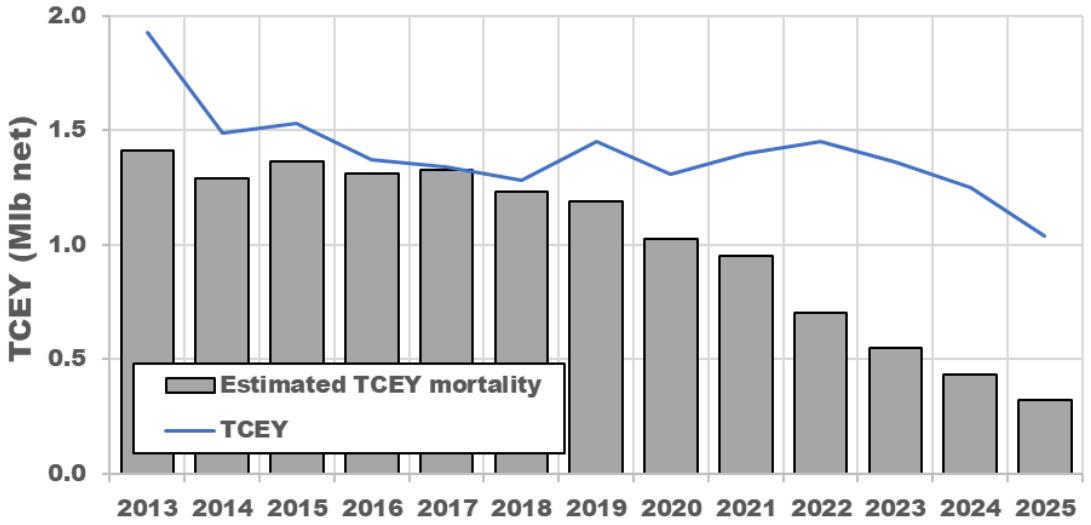


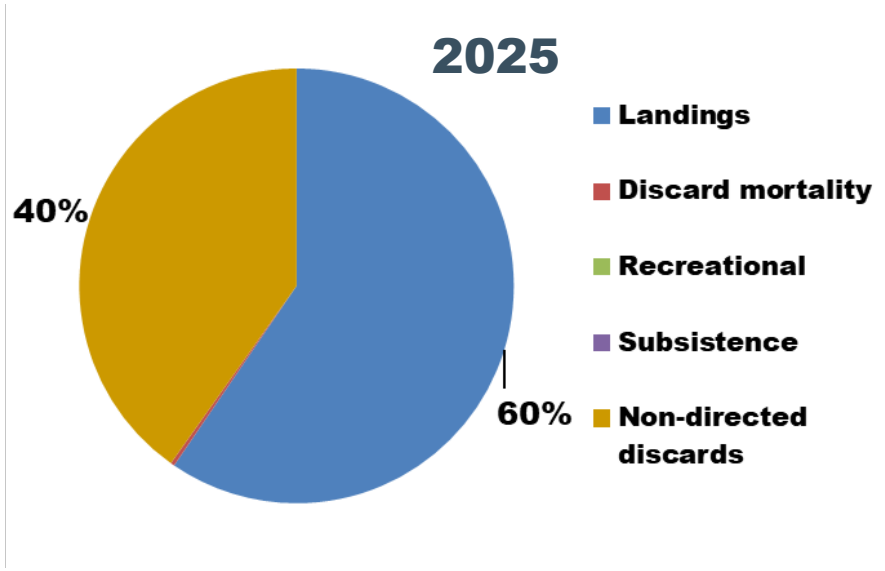


IPHC Regulatory Area 4B

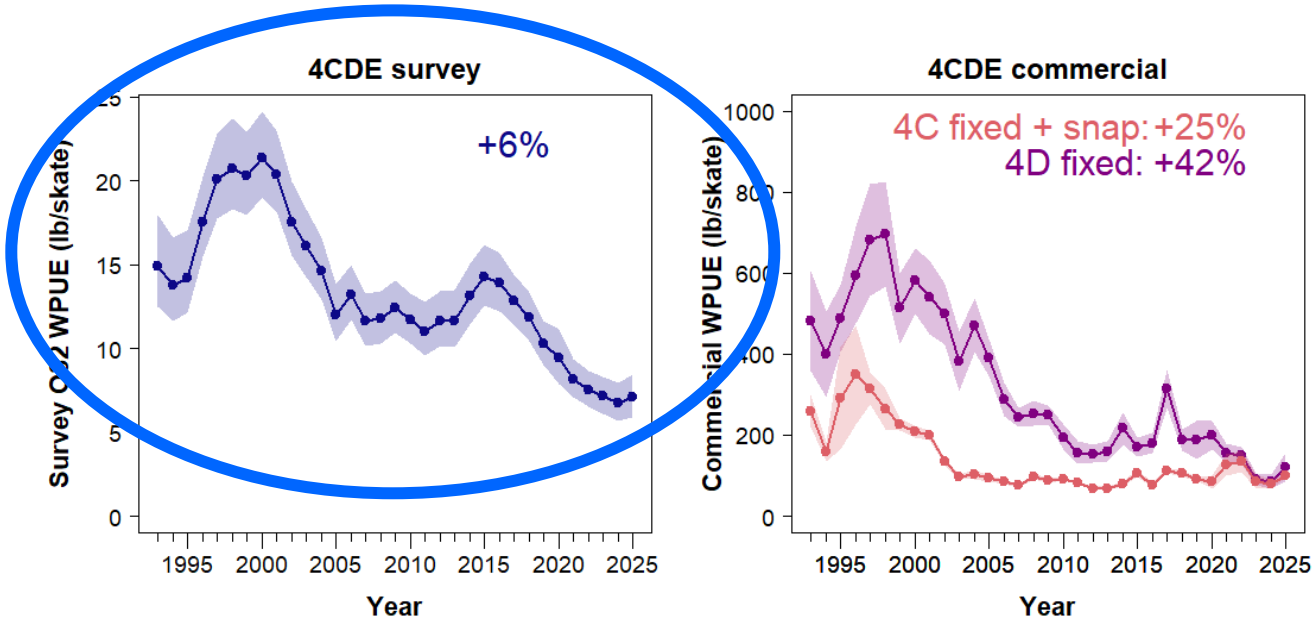


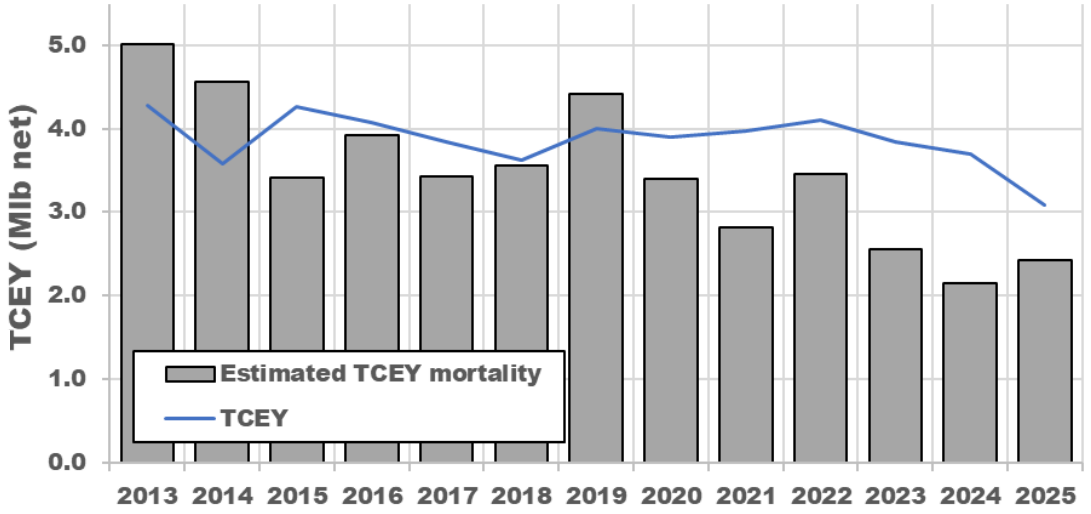


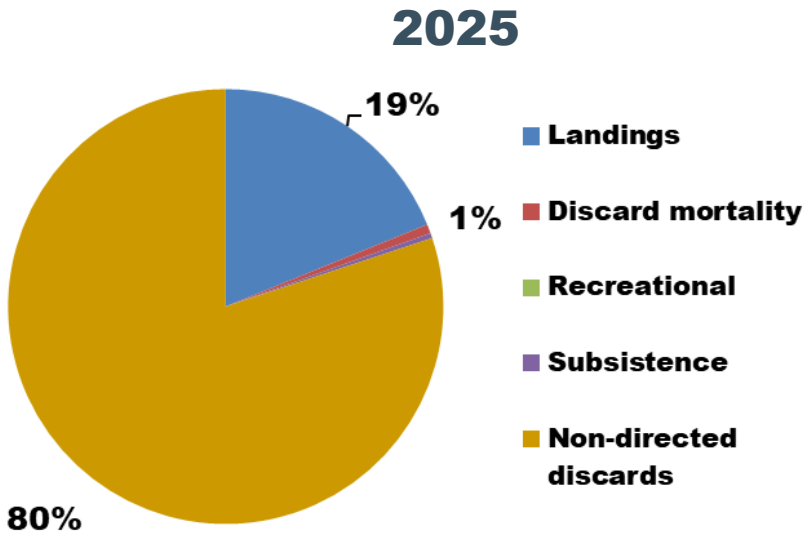




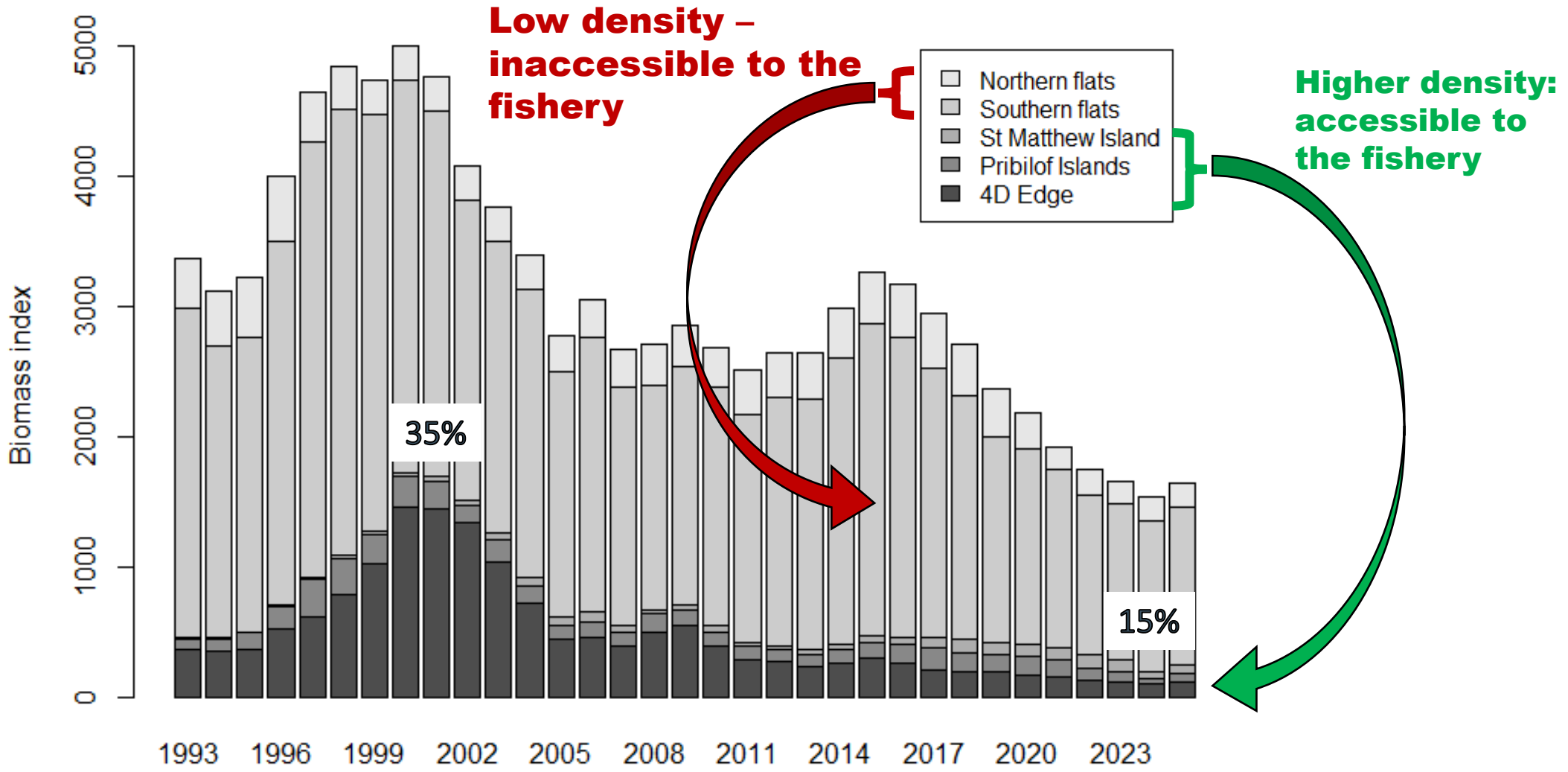
IPHC Regulatory Area 4CDE







IPHC Regulatory Area 4CDE – O32 biomass distribution



Outline

Data sources

- Coastwide
- Regional
- Dashboards by Area

Modelling

- Process
- Results
- Reference points

Stock assessment process

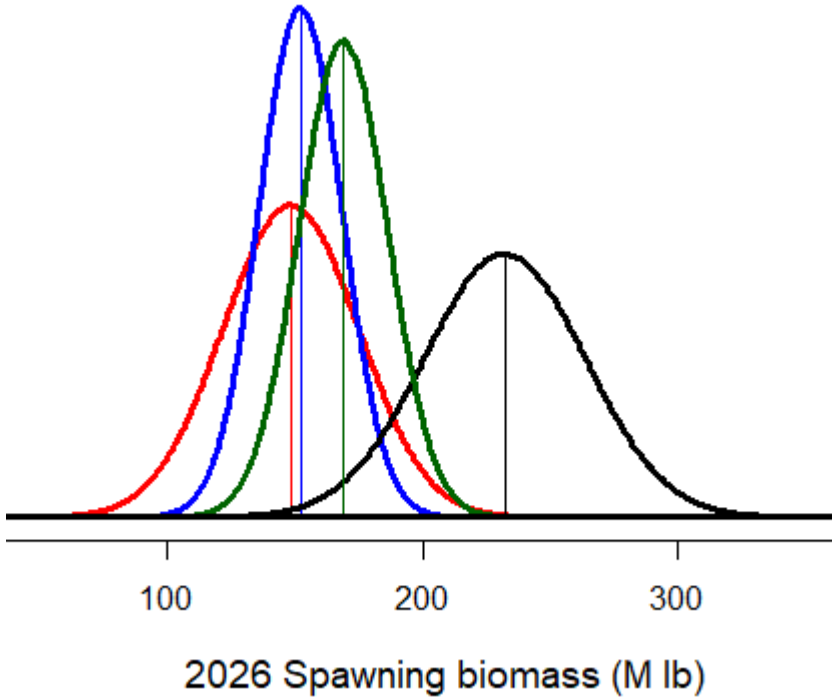
- Full assessments ~ every 3 years
  - 2015: Full assessment – formalized 4-model ensemble methods
  - 2019: Full assessment – included new commercial fishery sex-ratio data
  - 2022: Full assessment – improved treatment of natural mortality
- Updates in between - no major changes to treatment of data or model structure
- 2025: Full assessment
  - *SRB review in June and September*

Improvements in 2025

- Routine software updates
- Revised Pacific Decadal Oscillation relationship (covariate to recruitment)
- Improved treatment of input sample sizes (age data)
- Better propagation of uncertainty in selectivity
- Standard updating of process and observation error variances to achieve internal model consistency
- Updates to commercial CPUE time series (1981+) including additional data, revised hook-spacing relationship and extensive error checking
- **Updated maturity ogive reflecting histology-based estimates produced by the IPHC's Biological and Ecosystem Sciences Branch**

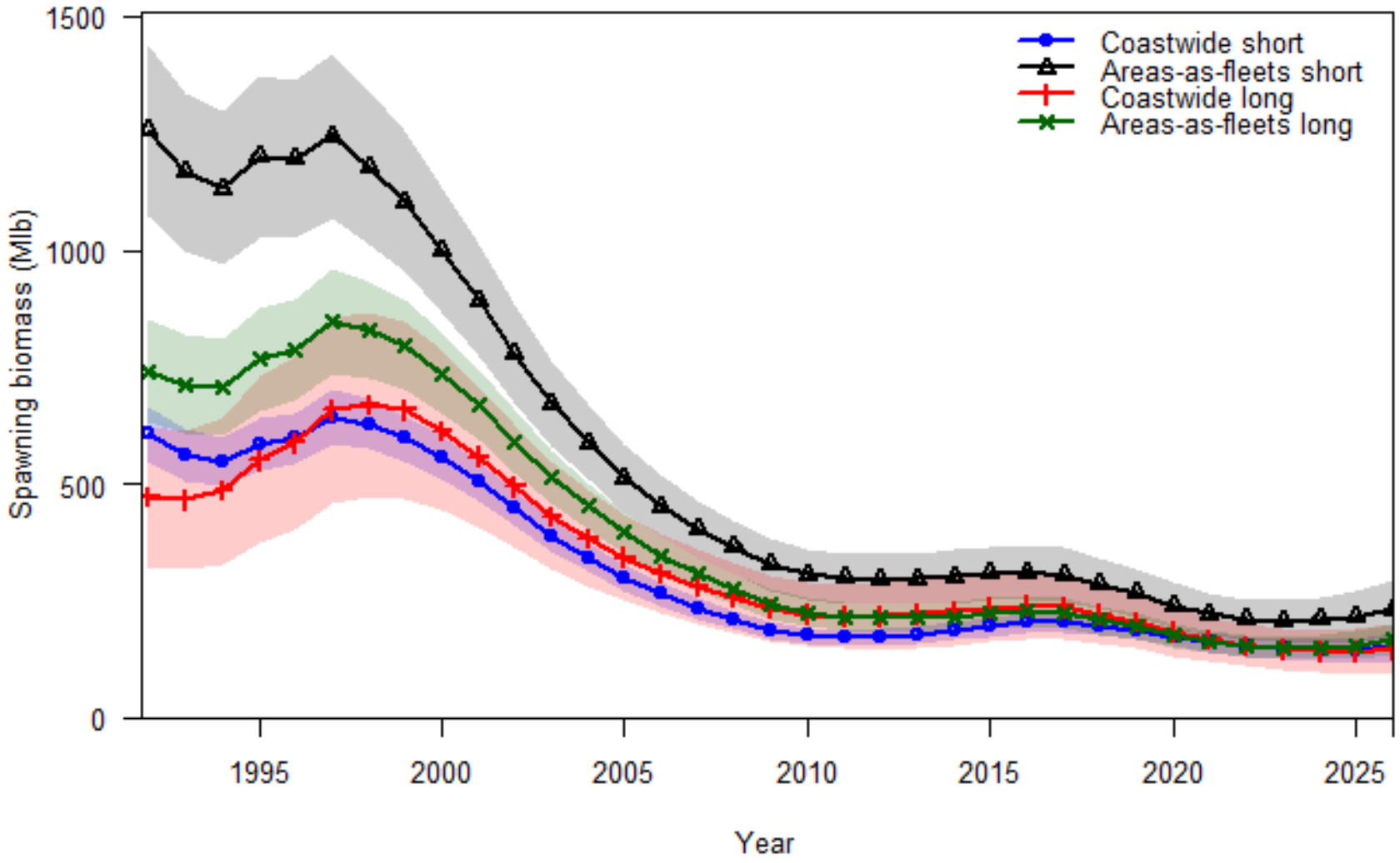
2025 stock assessment

- Same 4 models as in recent assessments:
  - Long and short time-series
  - Aggregated, separate data by Region
- Each responds differently to new data and represents a different hypothesis about how the population dynamics and observations are best represented
- Results are equally weighted and integrated into a single probability distribution

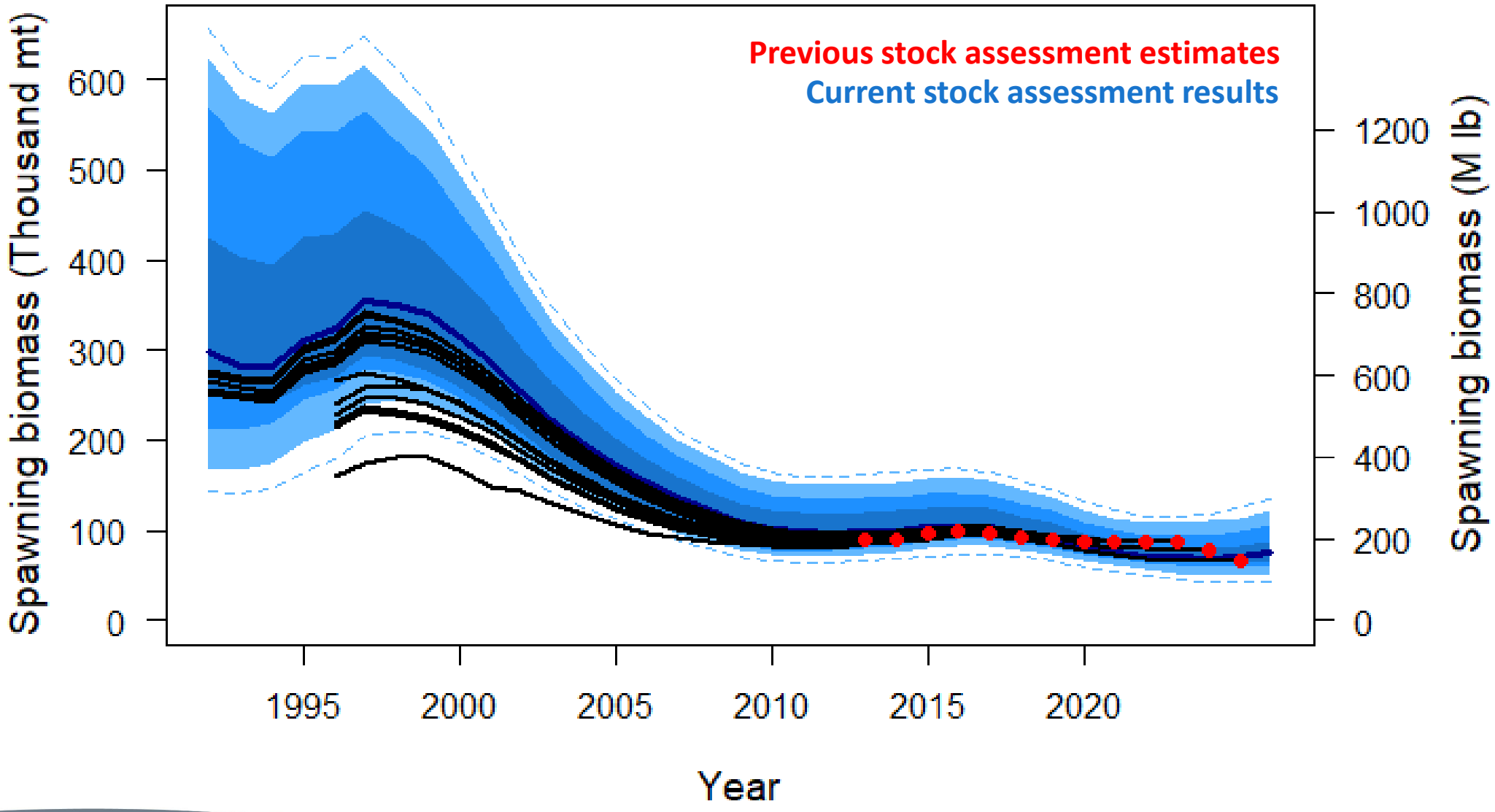


→ Unlike in 2023 and 2024 – the 2025 fishery data were largely consistent with FISS data when added to the stock assessment

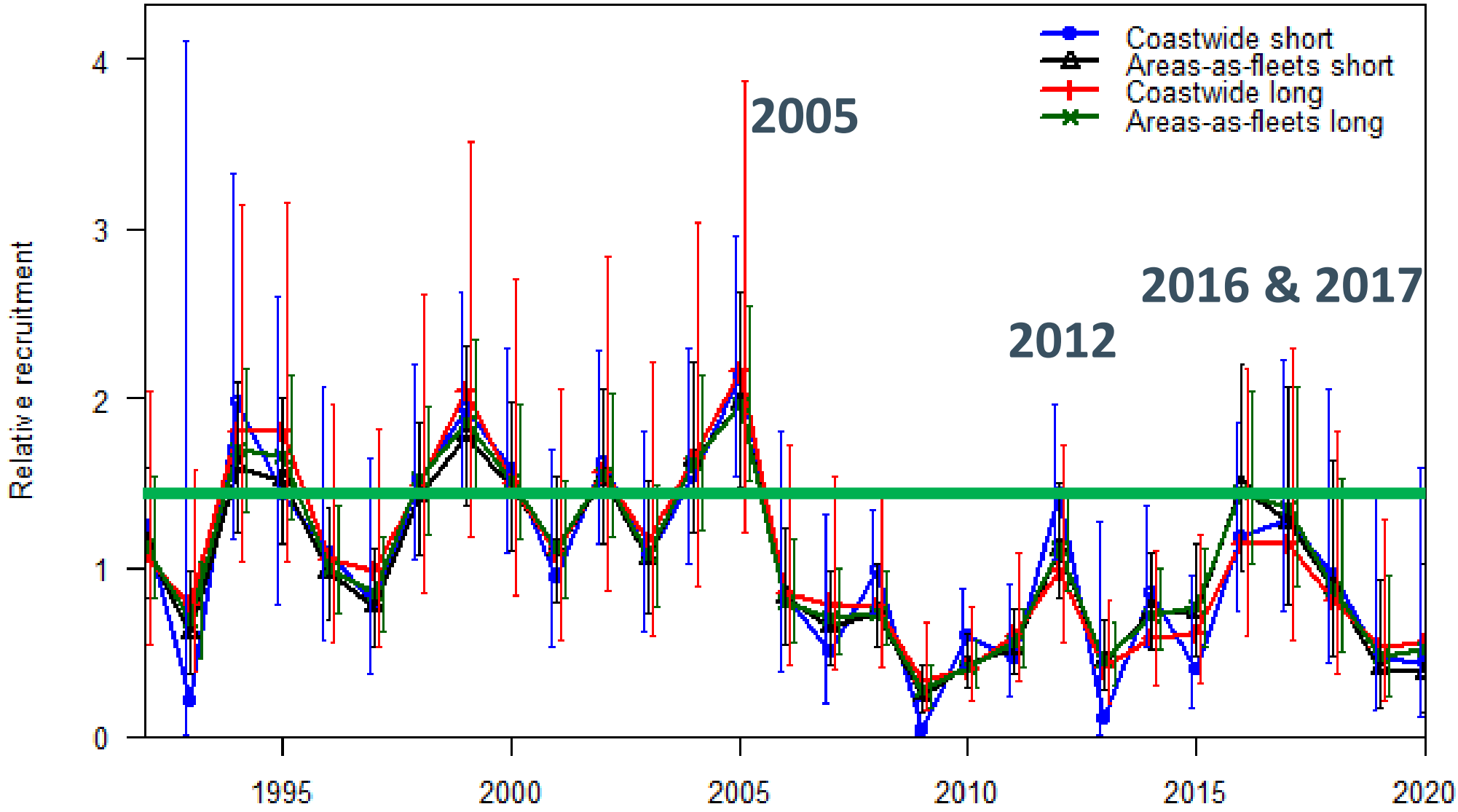
Spawning biomass from each of the four models



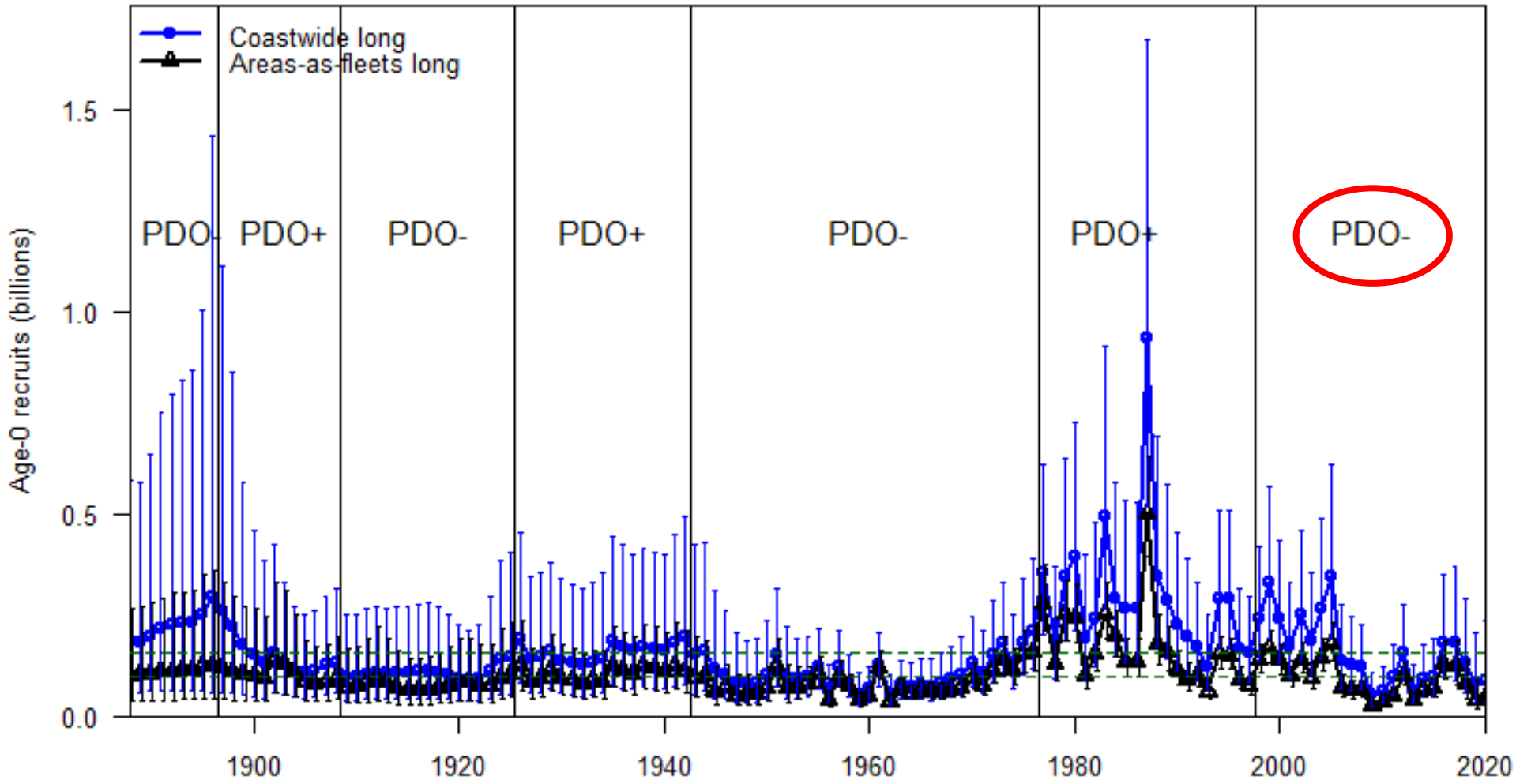
Comparison to previous assessments



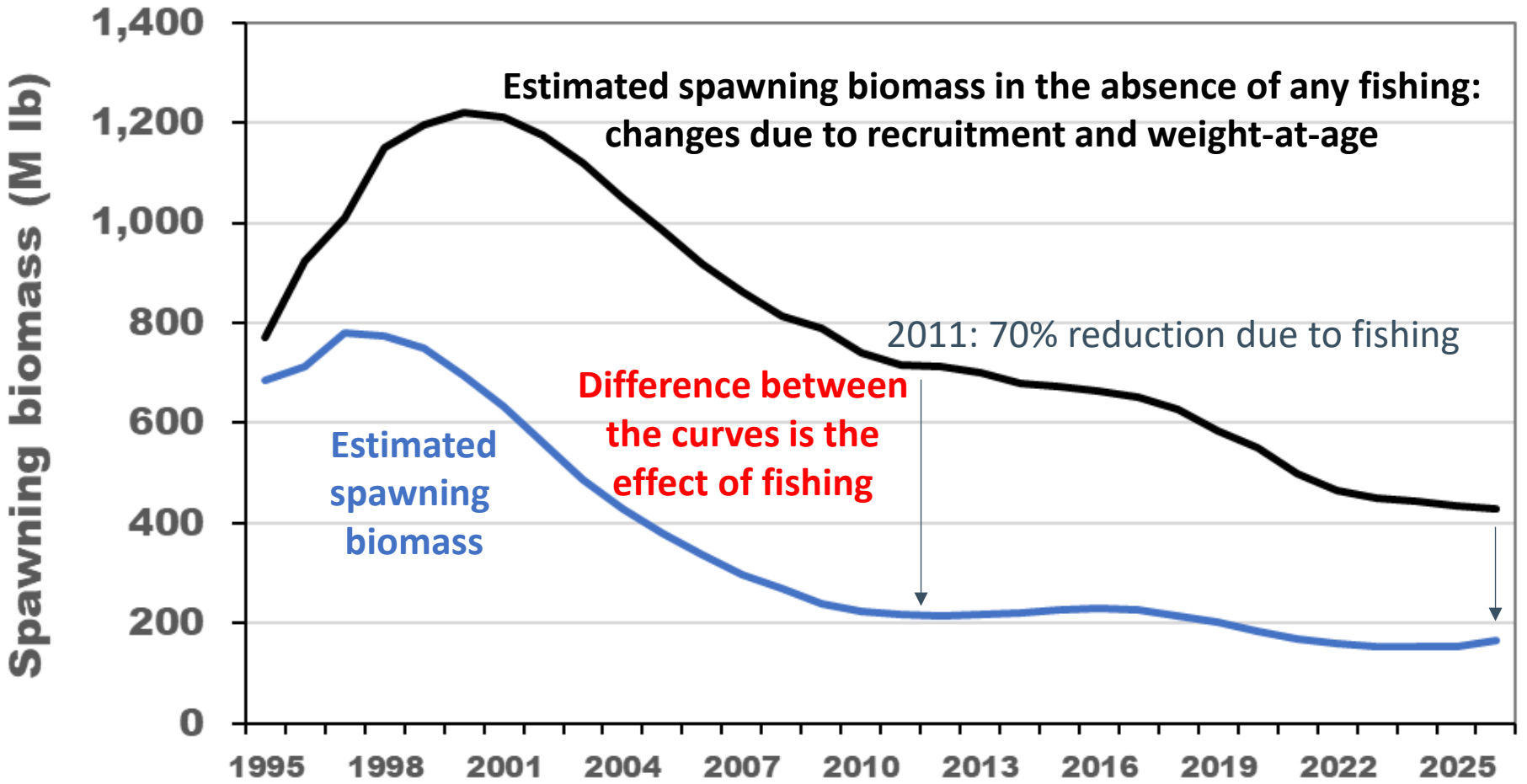
Recent relative recruitment estimates



Revised environmental index

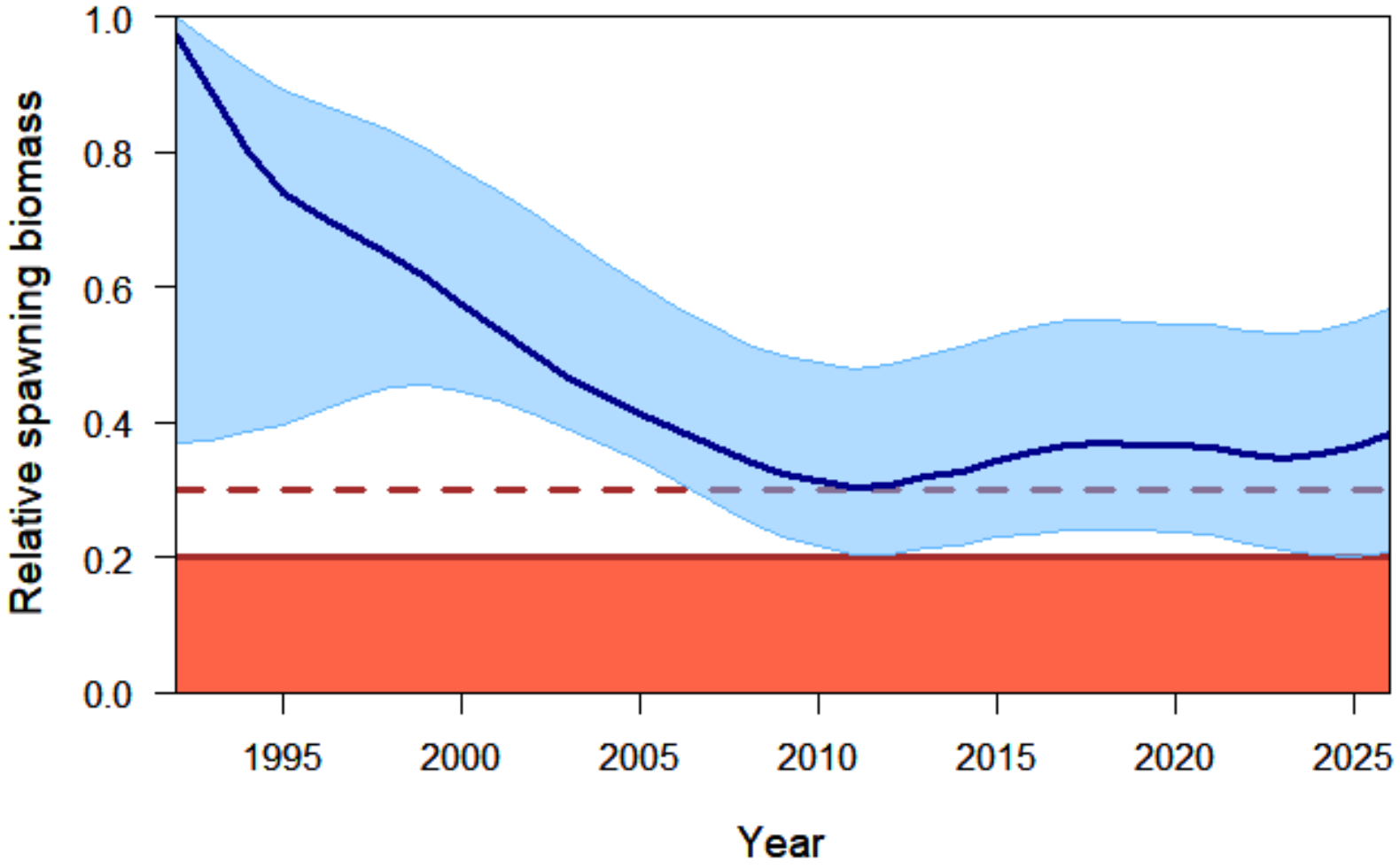


Stock status – measuring the effect of fishing



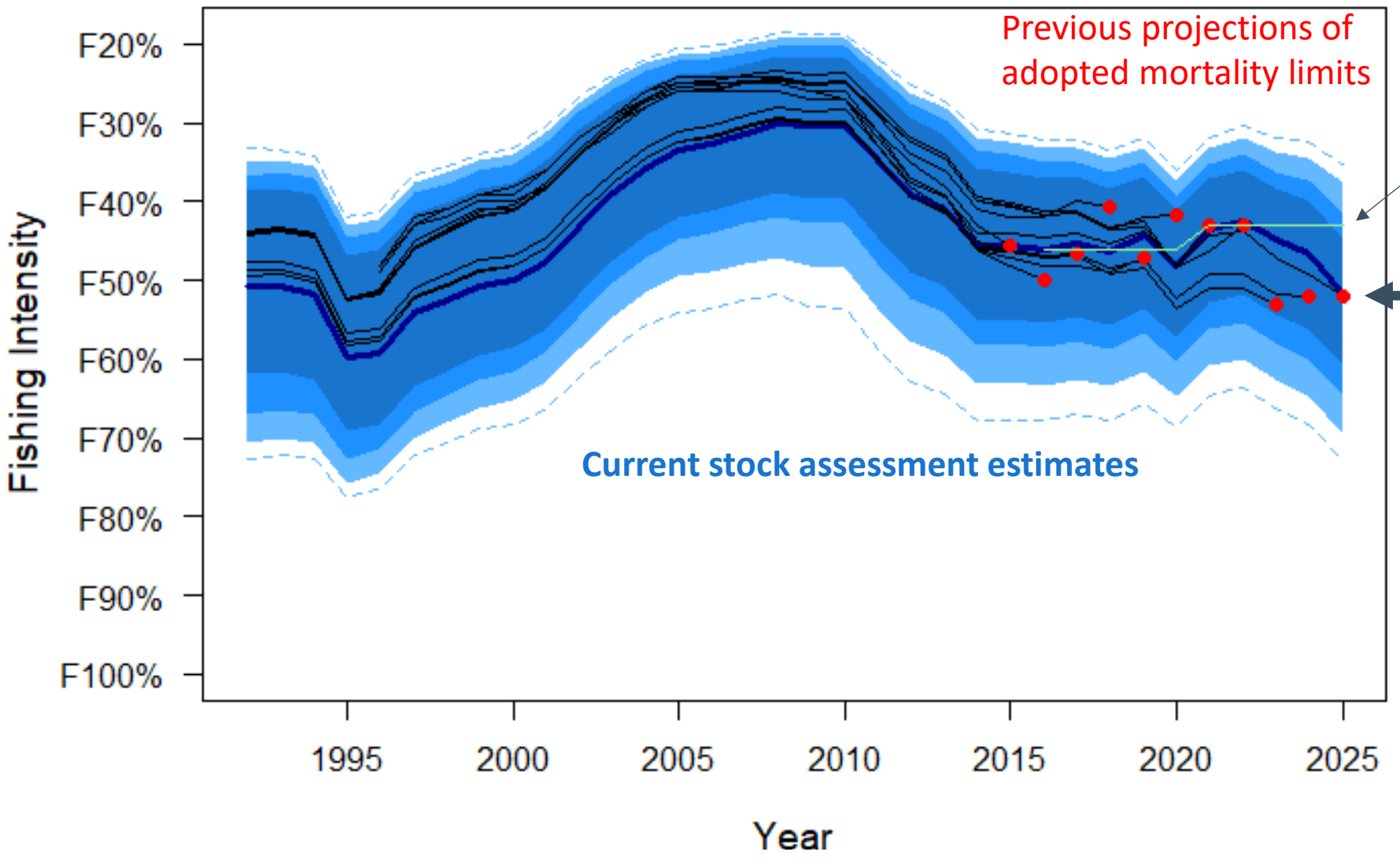
2026:
62% reduction due to fishing

Stock status – measuring the effect of fishing



Current status: 38%

Estimated fishing intensity



Reference levels ($F_{46\%}$, then $F_{43\%}$)

2025
$F_{52\%}$
(38-70%)

Stock assessment summary table

Indicators	Values	Trends	Status
BIOLOGICAL			
SPR_{2025}: **P(SPR<43%):** **P(SPR<limit):**	52% (38-70%) 19% LIMIT NOT SPECIFIED	FISHING INTENSITY REDUCED FROM 2024 TO 2025	FISHING INTENSITY BELOW REFERENCE LEVEL
SB_{2026} (MLBS): **SB_{2026}/SB_0:** **P(SB_{2026}<SB_{30}):** **P(SB_{2026}<SB_{20}):**	166 (113–272) Mlbs 38% (21-57%) 28% 1%	SB INCREASED 7% FROM 2025 TO 2026	NOT OVERFISHED
Biological stock distribution:	SEE TABLES AND FIGURES	REGION 3 INCREASED, REGION 2 DECREASED FROM 2024 TO 2025	REGION 4 AT THE HIGHEST OBSERVED PROPORTION
FISHERY CONTEXT			
Total mortality 2025: **Percent retained 2025:** **Average mortality 2021–25:**	28.80 Mlbs, 13,063 t 81% 34.58 Mlbs, 15,687 t	MORTALITY DECREASED FROM 2024 TO 2025	2025 WAS THE LOWEST MORTALITY 100 YEARS

Summary of results

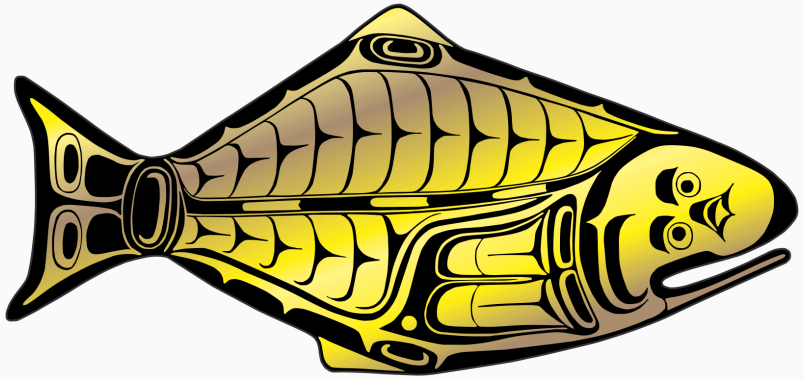
- Reduced mortality limits appear to have reached levels consistent with surplus production created by the 2012, 2016 and 2017 year-classes
- Fish and fishery indices remain at historically low levels
- The stock remains at a low productivity level due to low average weight-at-age and recruitment
- Despite low absolute spawning biomass, the stock is estimated to be above $B_{30\%}$ and the fishing intensity much lower than $F_{43\%}$

Recommendations

That the Commission:

1) **NOTE** paper IPHC-2025-IM101-10 Rev_1, which provides a summary of the data and the results of the 2025 stock assessment.

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

https://www.iphc.int/