

**NOAA
FISHERIES**



Pacific Ocean Perch GOA Plan Team

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NOAA FISHERIES

Stock Overview

GOA Pacific Ocean Perch (*Sebastes alutus*)

Tier

3a

Area

GOA (mostly central & western)

Status

Not overfished/not overfishing

**Assessment
Type**

Operational Update

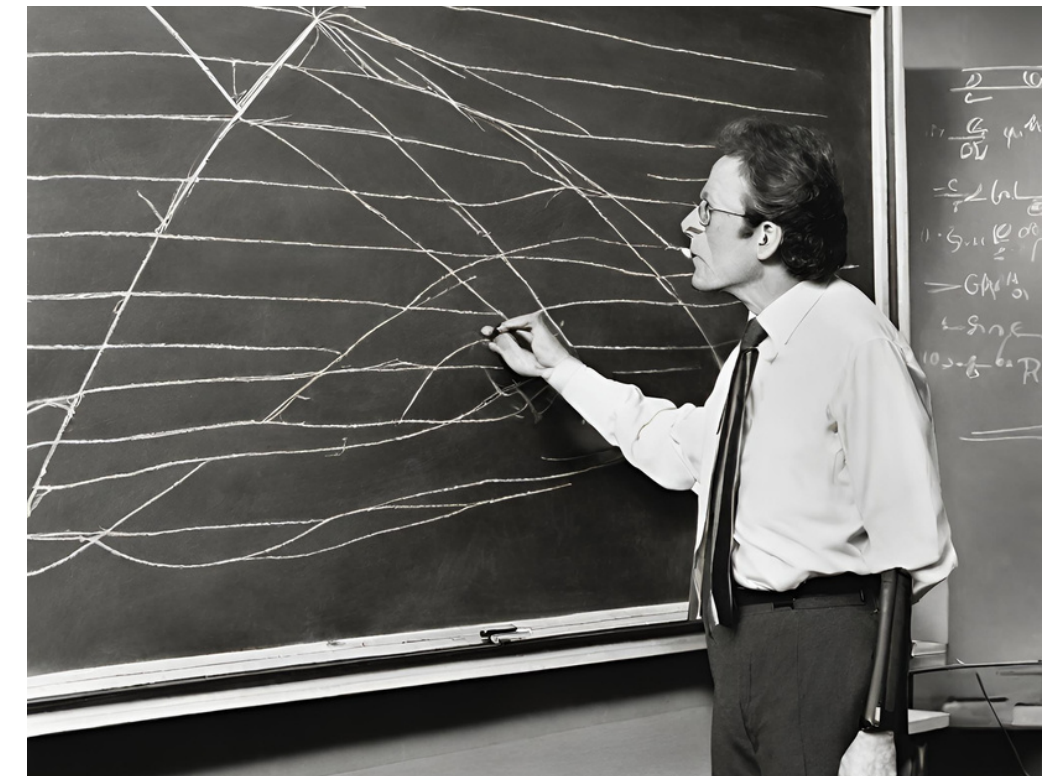
SSC/CIE Comments



Explore Selex



Explore M



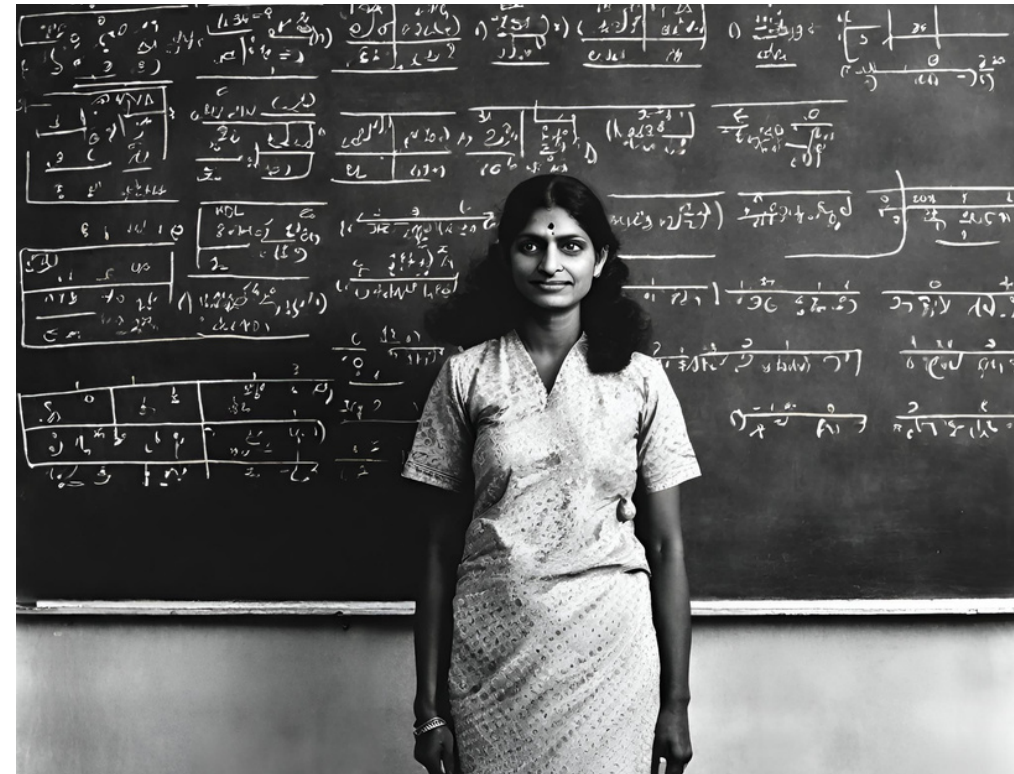
Think about...

Compositional data weights
Design vs. Model-Based
Surveys
Weight-at-age inputs

highlighting reproducibility



afscassess package(s)



**standalone
2023_analysis.R**

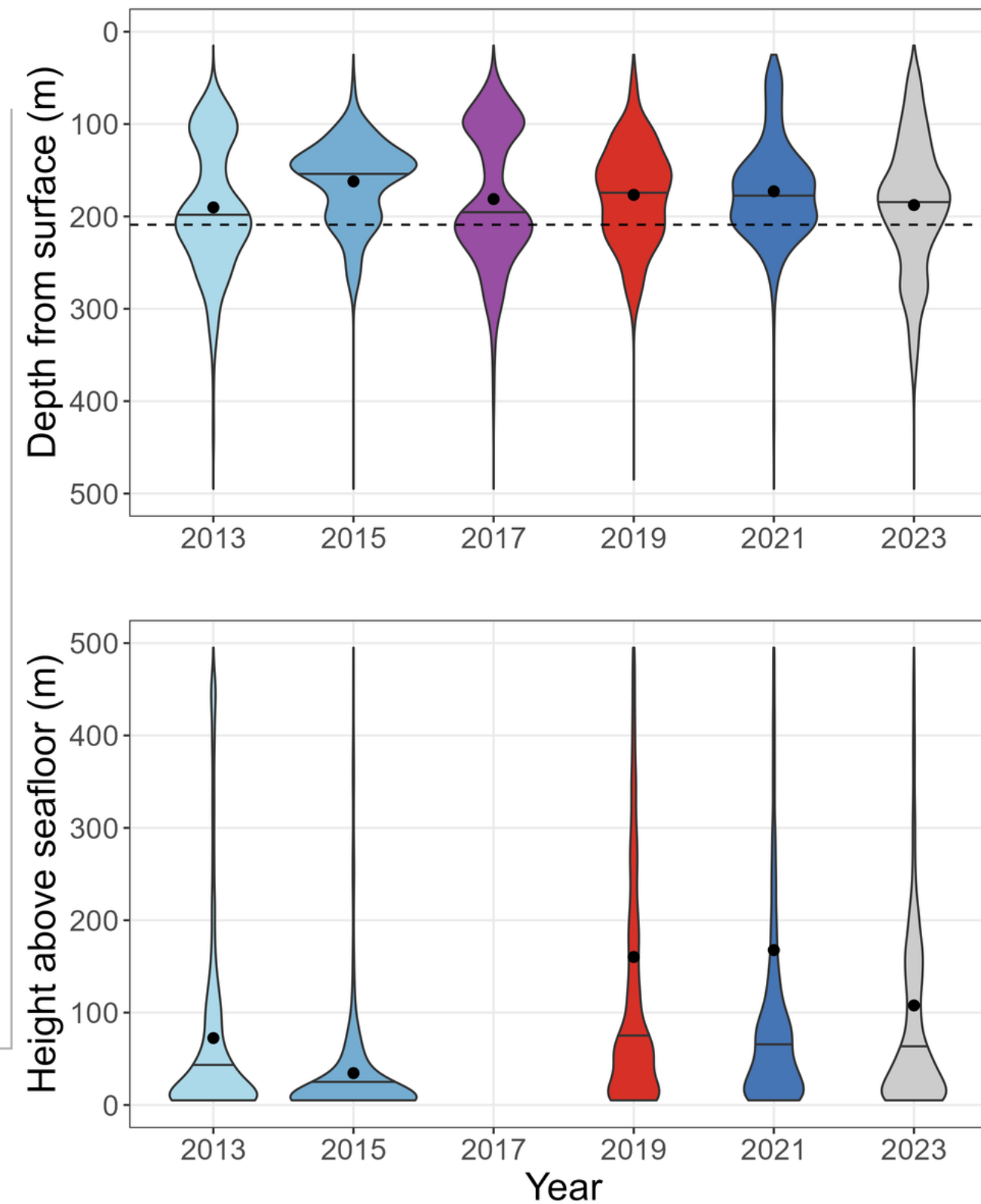
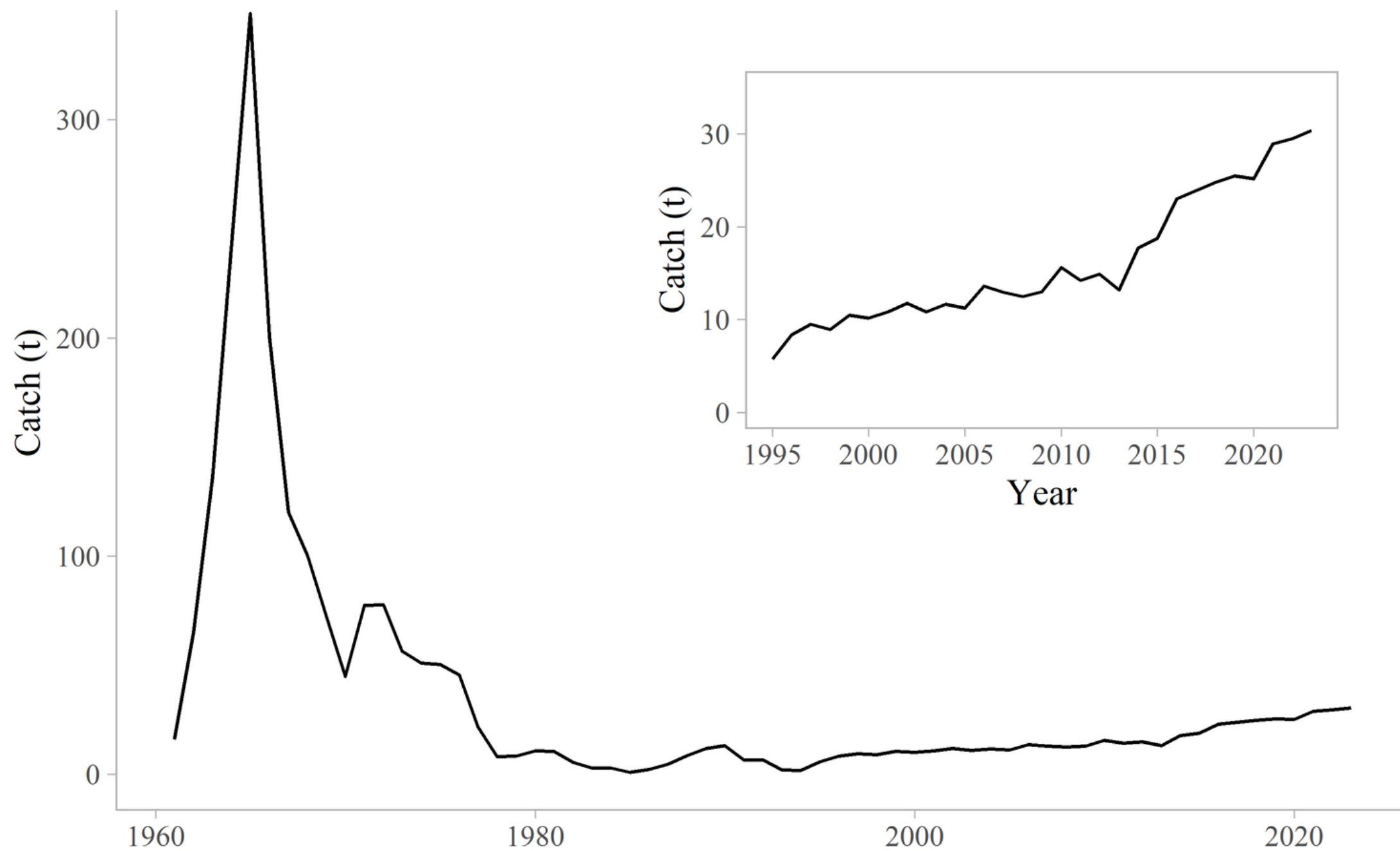


templated .Rmd

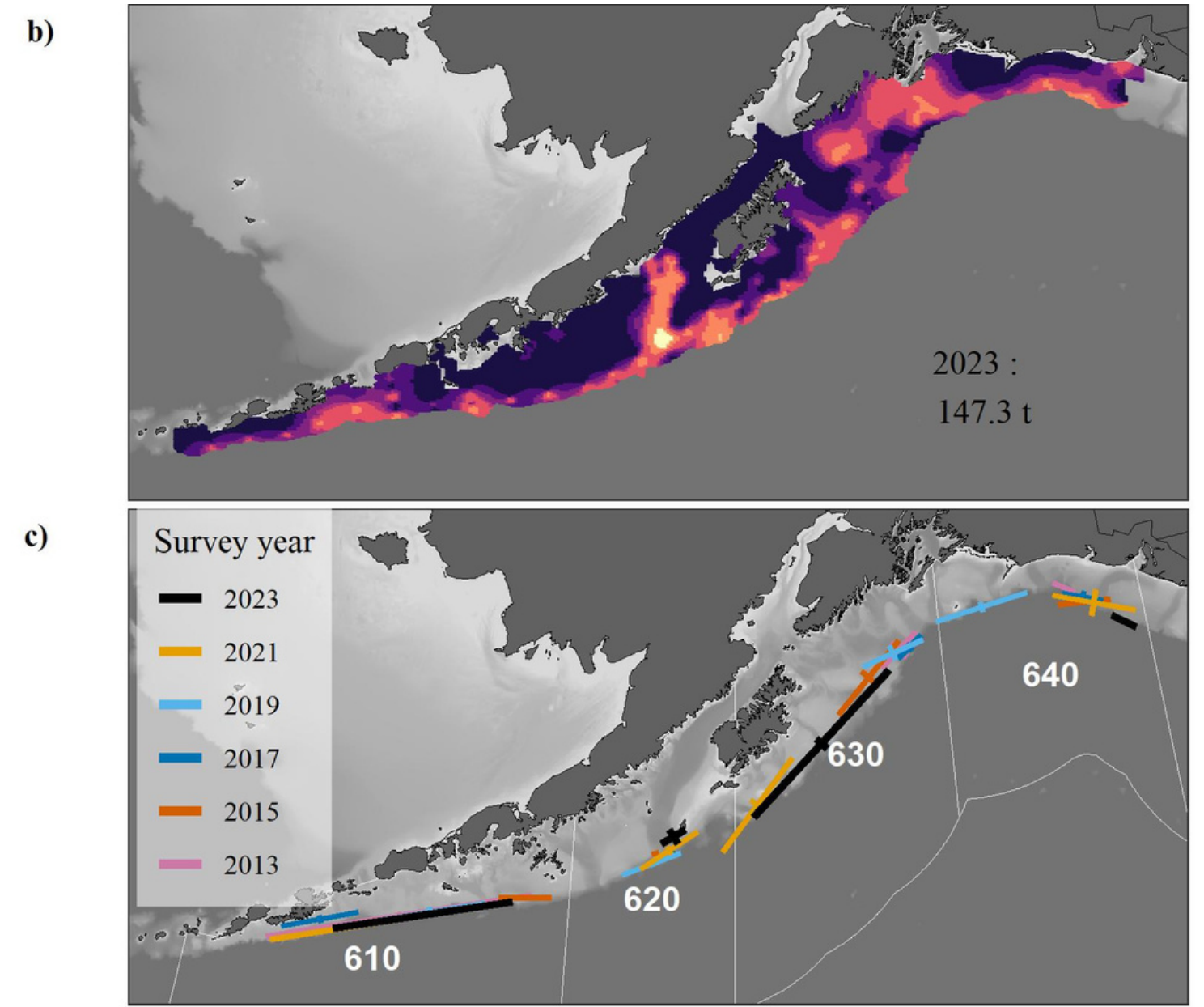
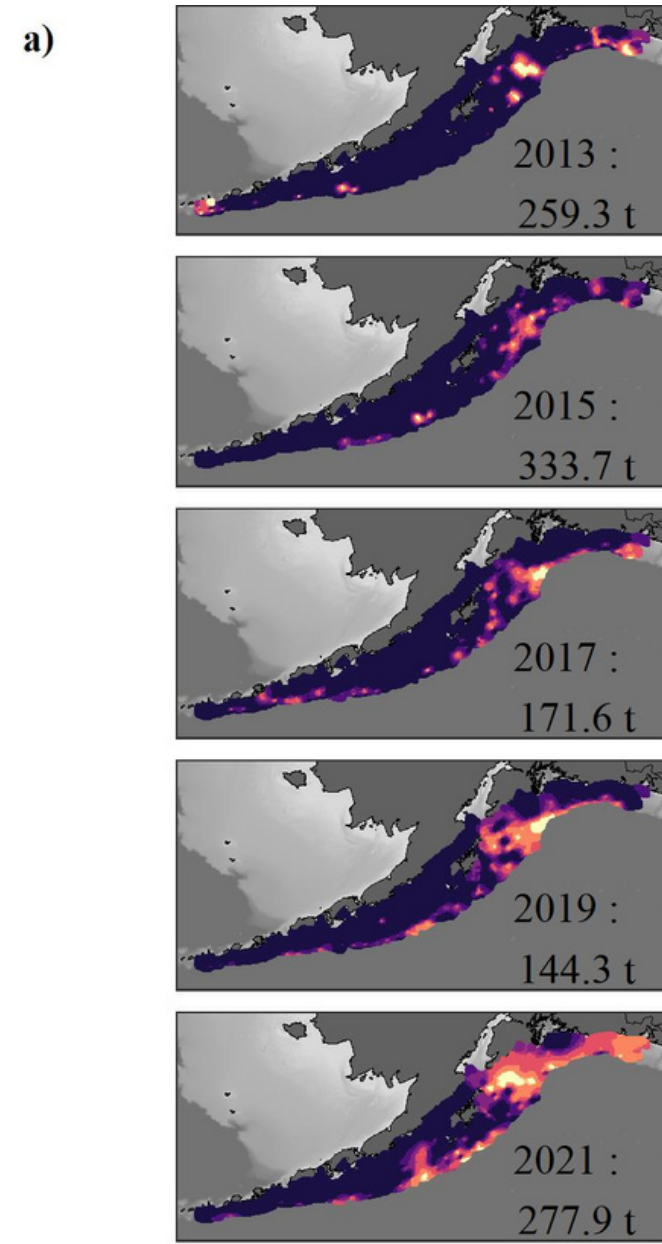
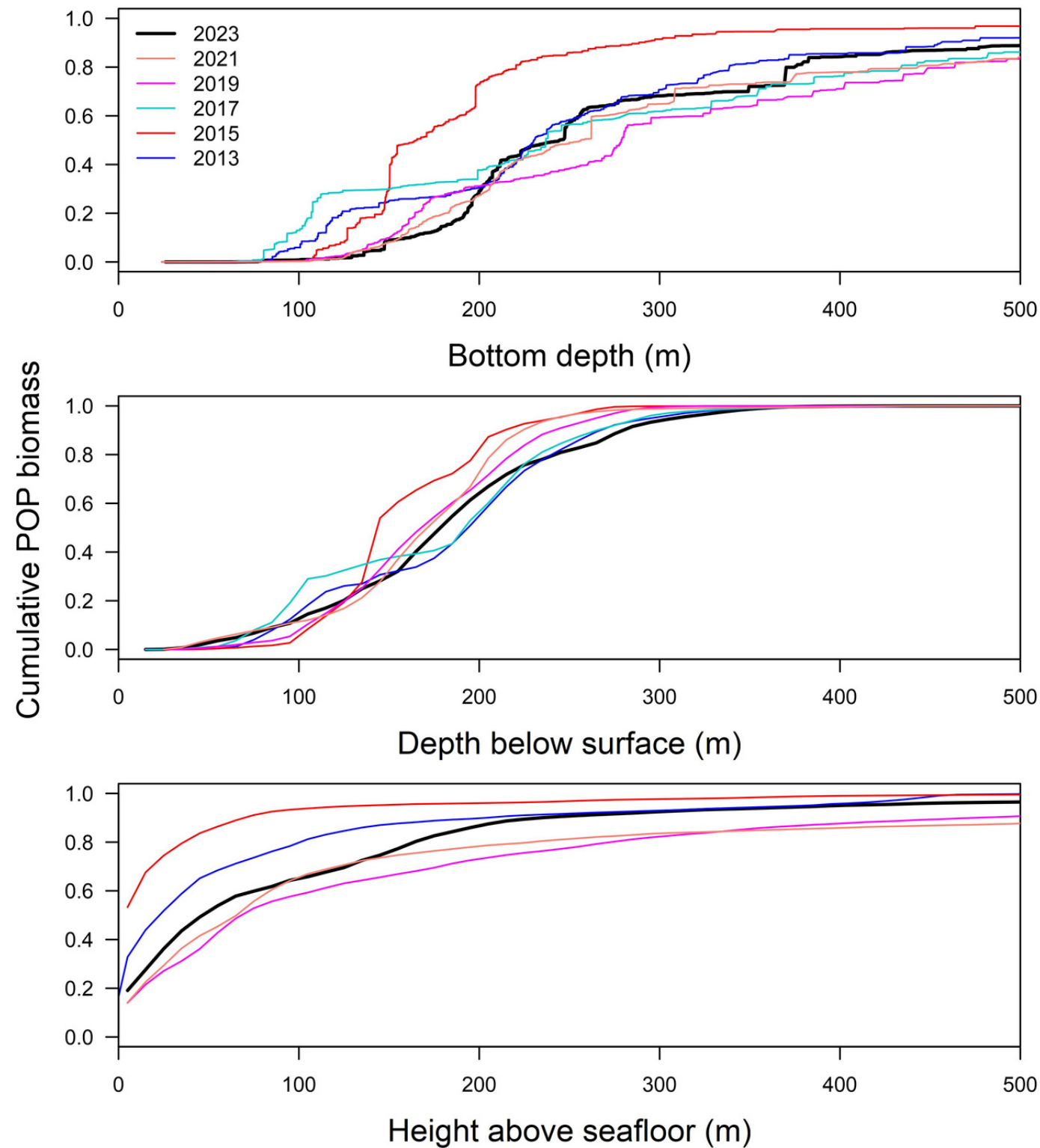
Data Summary

Source	Data	Years
U.S. trawl fishery	Catch biomass	1977-2023
	Catch length composition	1963-1977, 1991-1997
	Catch age composition	1990, 1998-2002, 2004, 2005, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022
GOA bottom trawl survey	Survey biomass (design-based)	1990-1999 (triennial), 2001-2023 (biennial)
	Survey age composition	1990, 1993, 1996, 1999, 2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017, 2019, 2021

Catches - low but rising

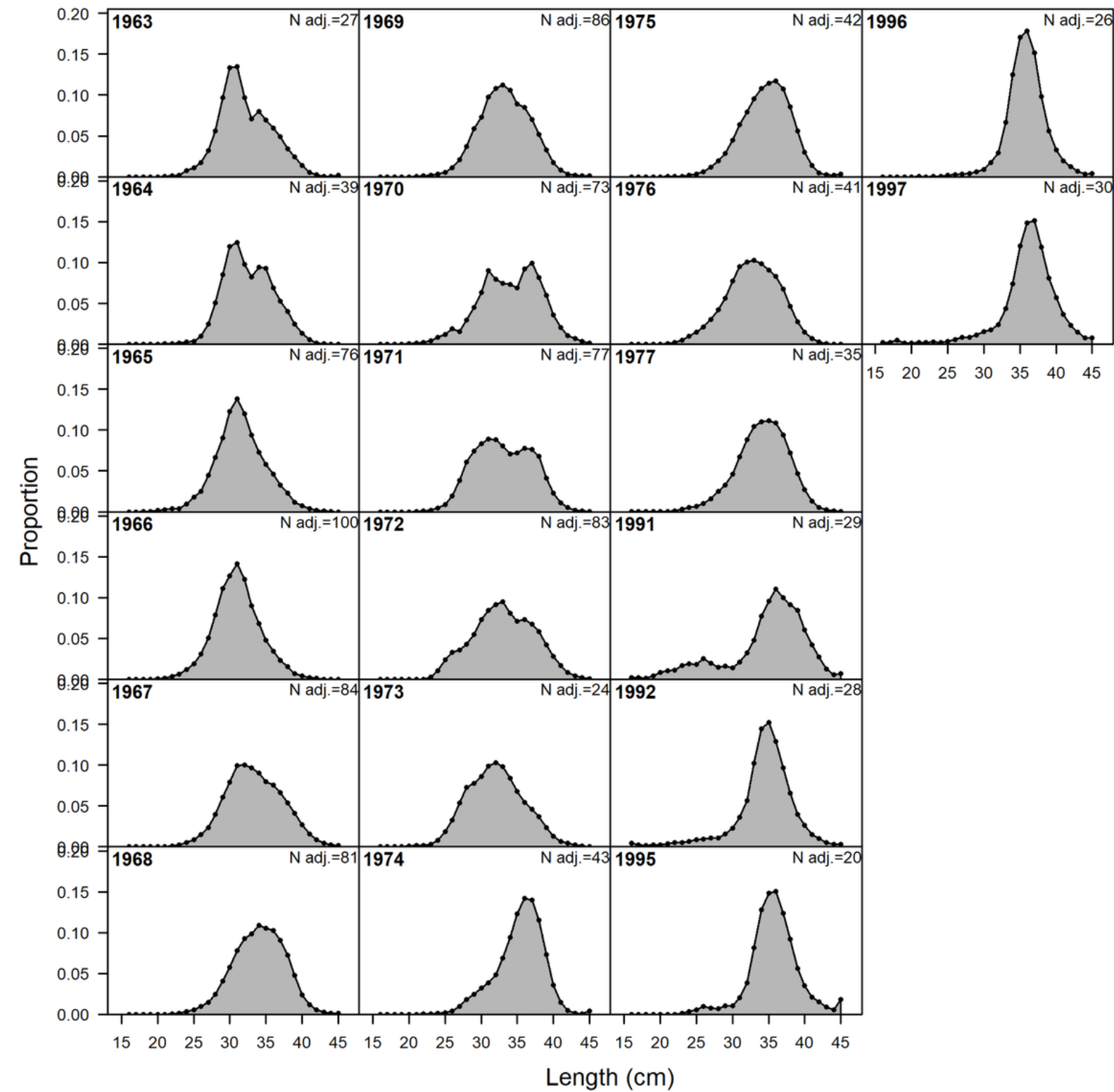


Acoustic Trawl Survey*

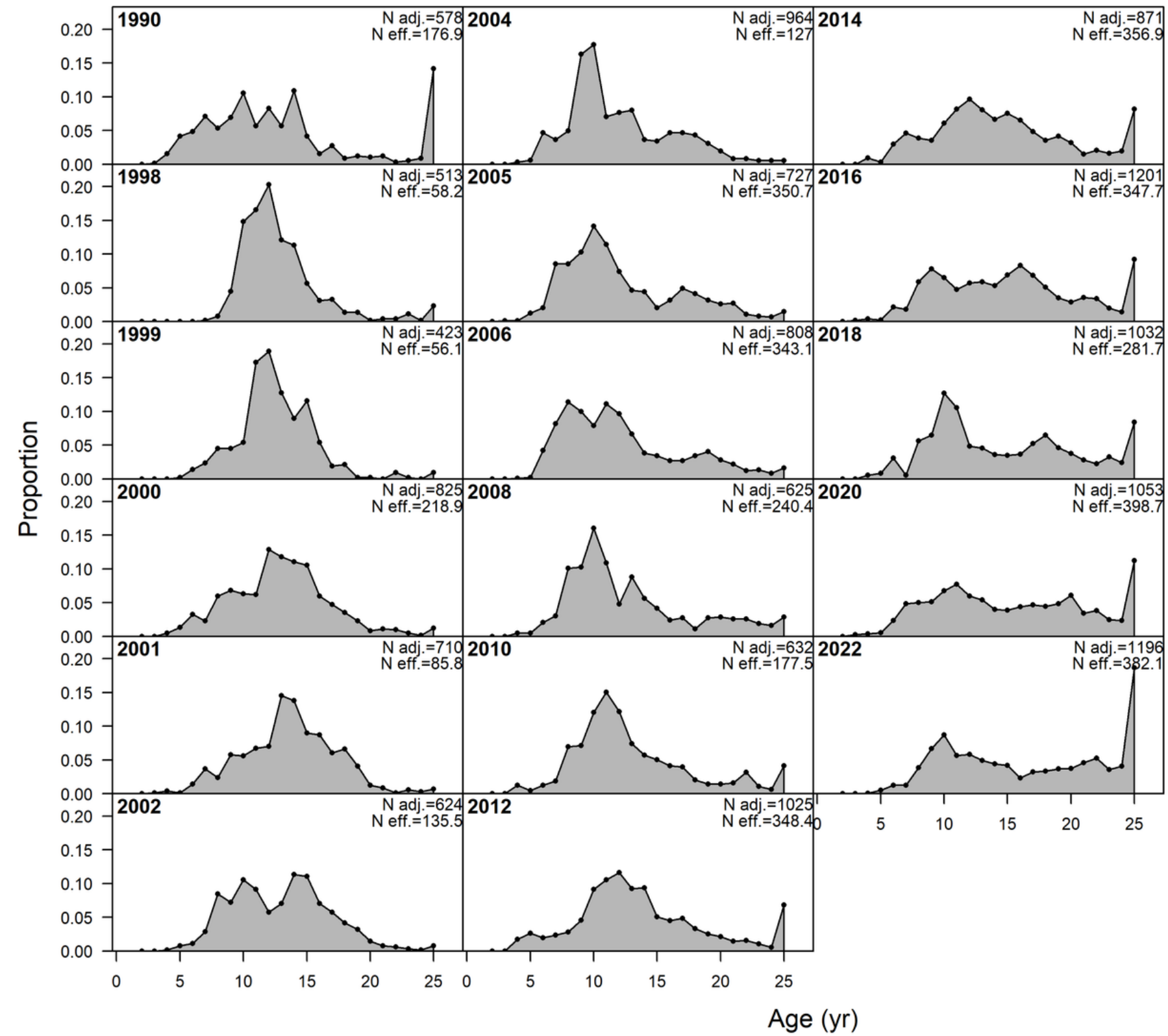


Biomass (kg) ■ < 10 ■ 10-100 ■ 100-500 ■ 500-1,000 ■ 1,000-10,000 ■ 10,000-100,000 ■ 100,000-125,000 ■ > 125,000

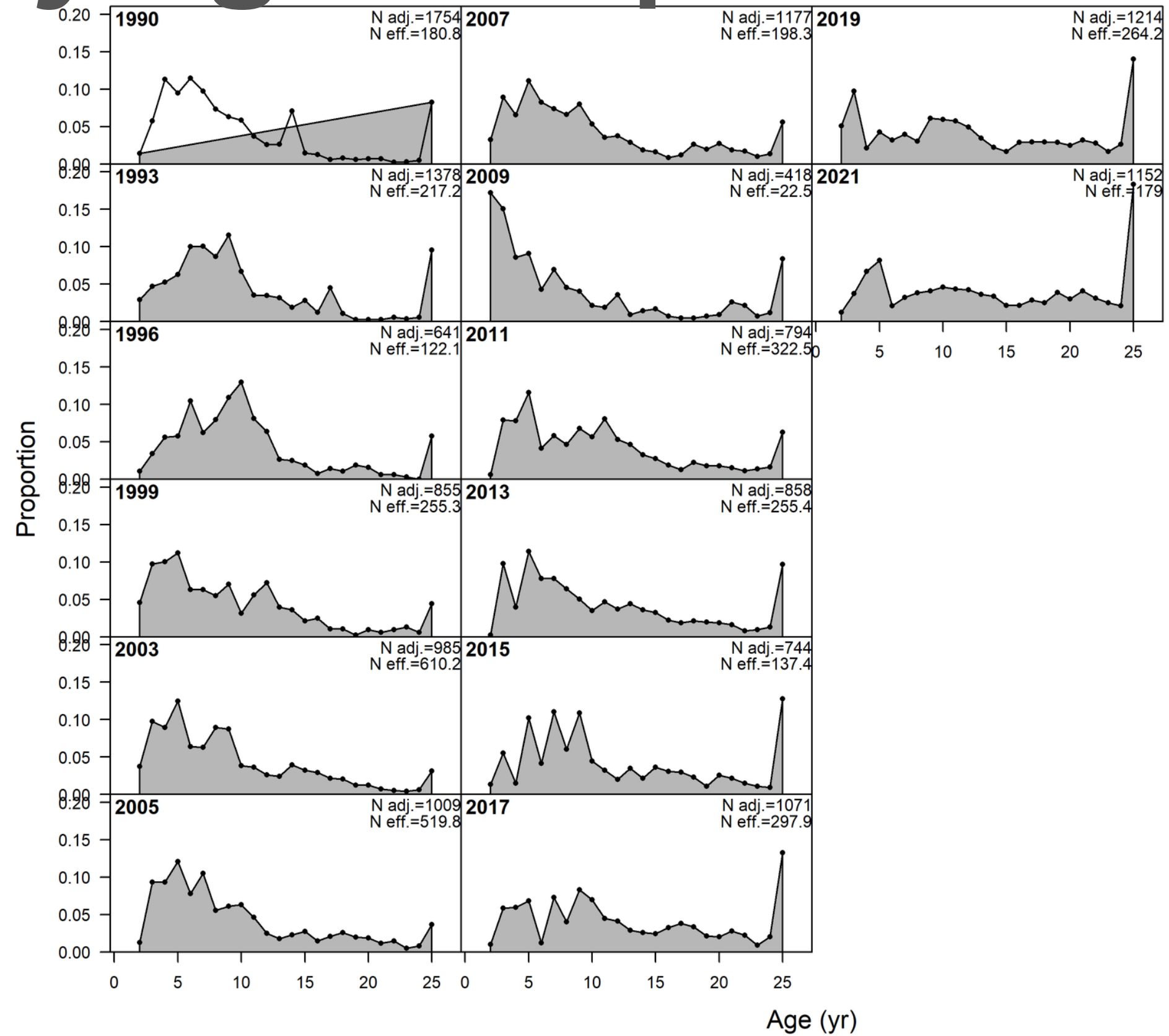
Fishery Length Composition Data



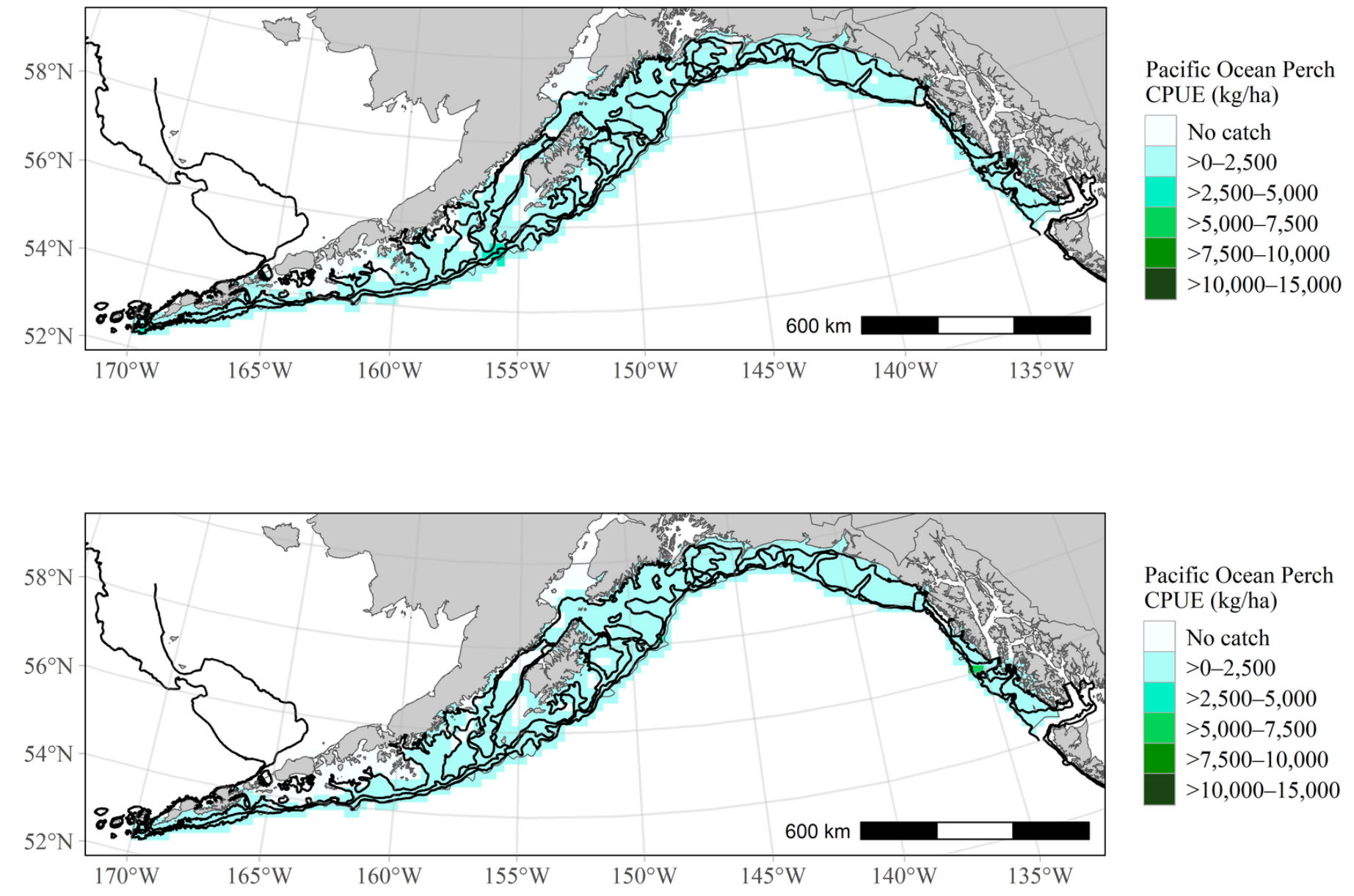
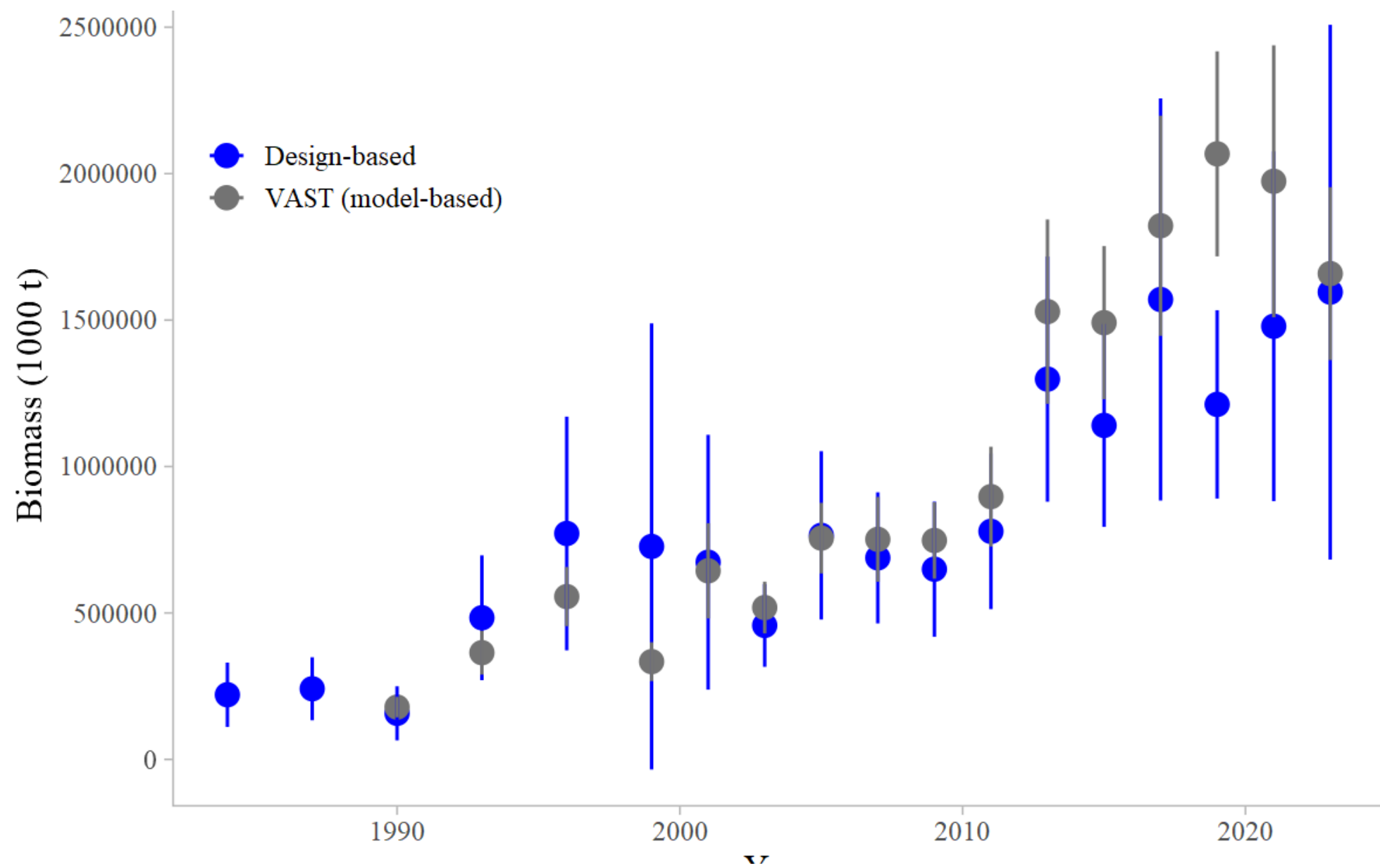
Fishery Age Composition Data



Survey Age Composition Data



GOA Trawl Survey Data



Model Summary

No changes
from 2021
(Hulson et. al)

Software

Bespoke ADMB Model

General

Single-sex, age
structured (29+)
Logistic maturity, fit to
data
Time blocked fishery
selex

Approach

Operational update
Size-age matrices
updated
Time on SS explorations

Model Results

Model fits

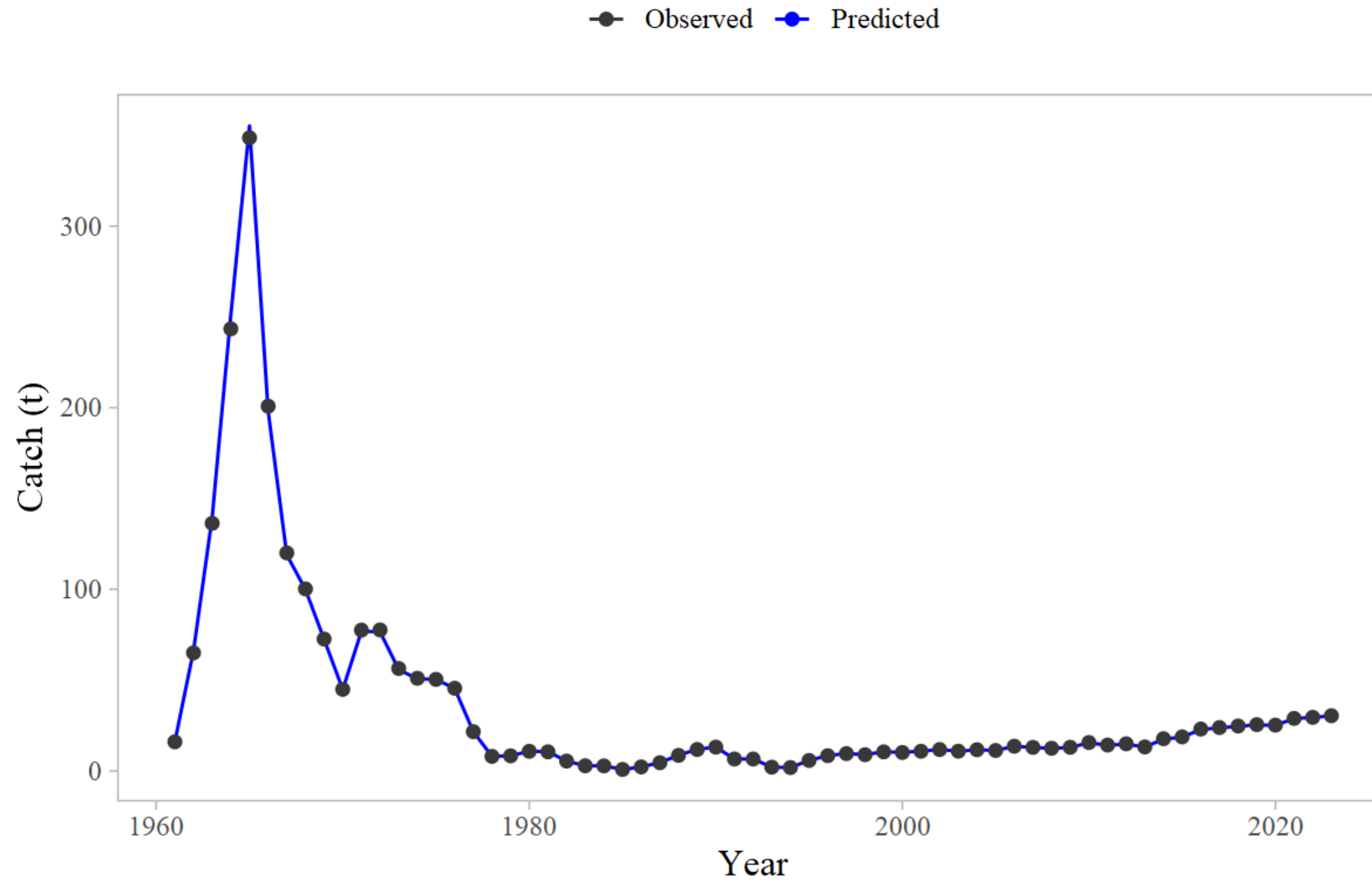
Parameters & Derived Quants

Retrospectives, sensitivities

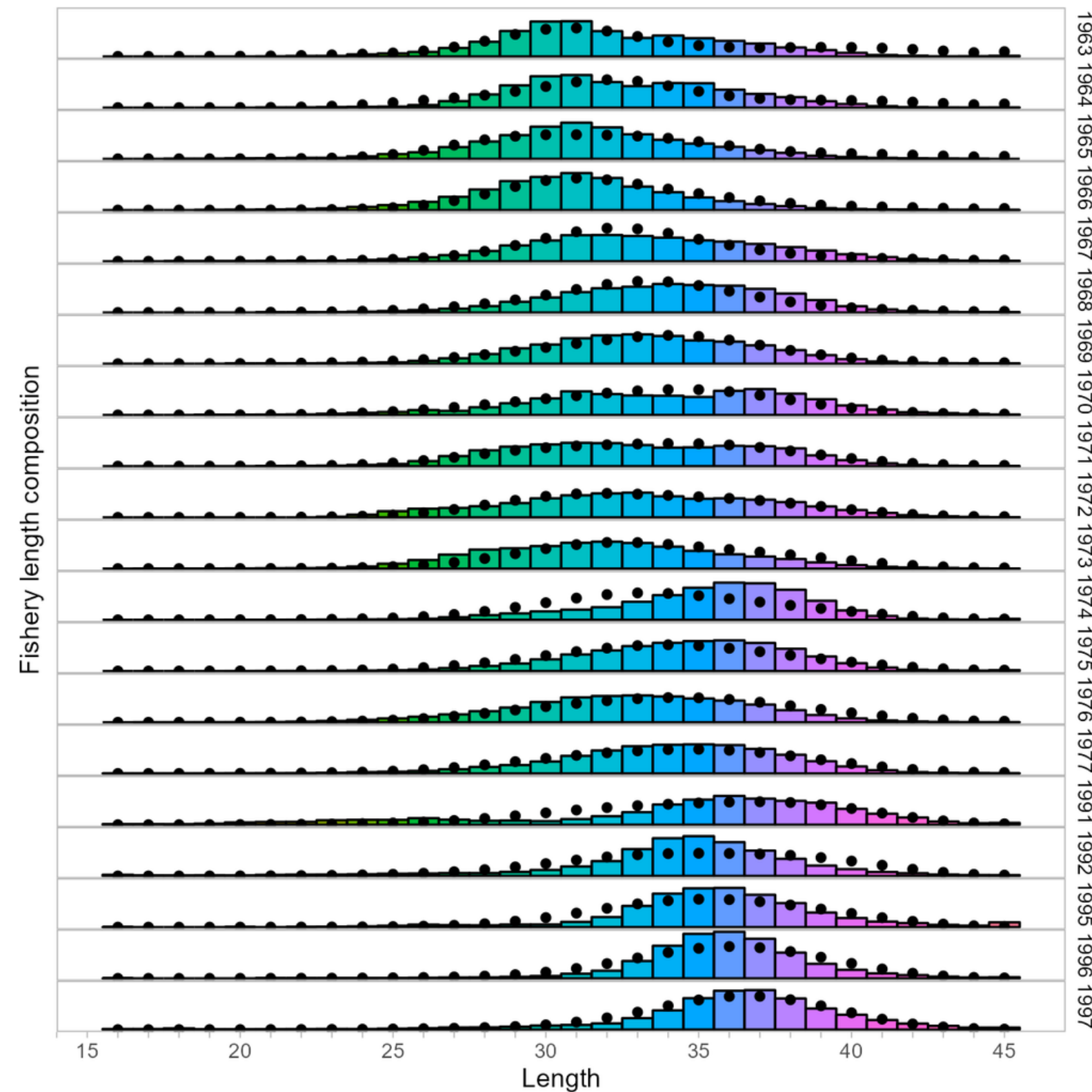
Projections &
Risk Table

Gaps/Research

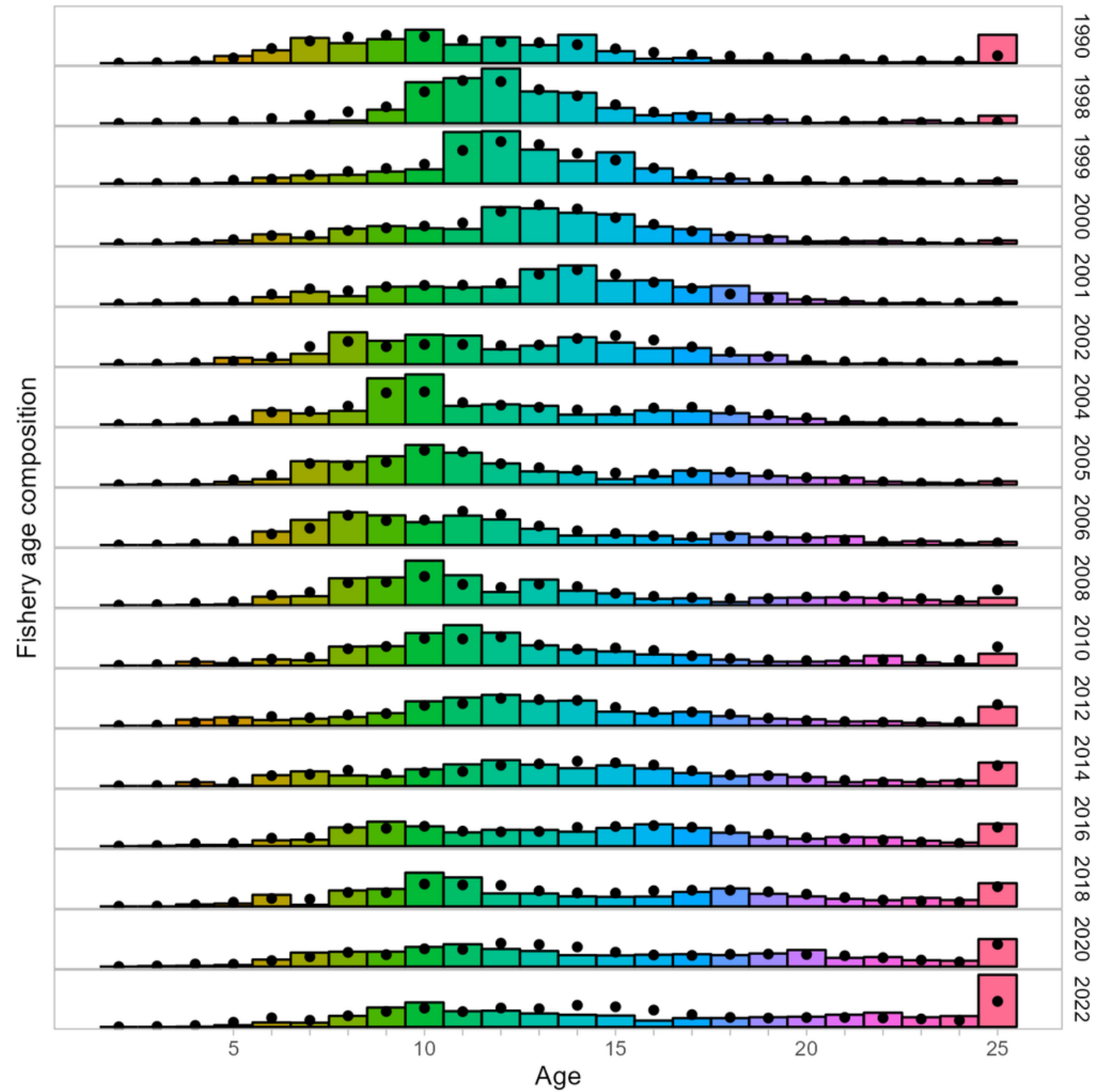
Model Fit: Catches



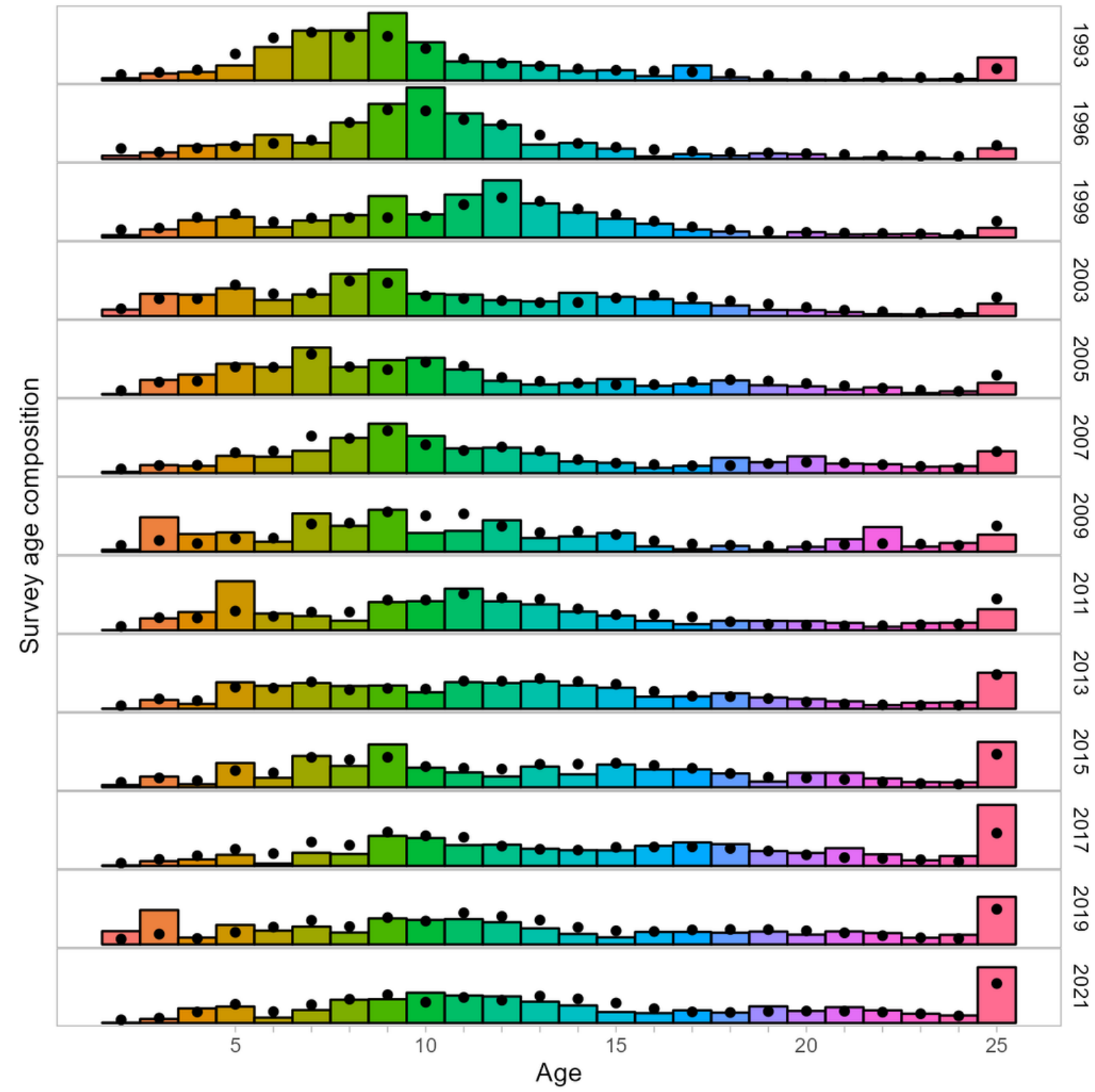
Model Fit: Fishery Lengths



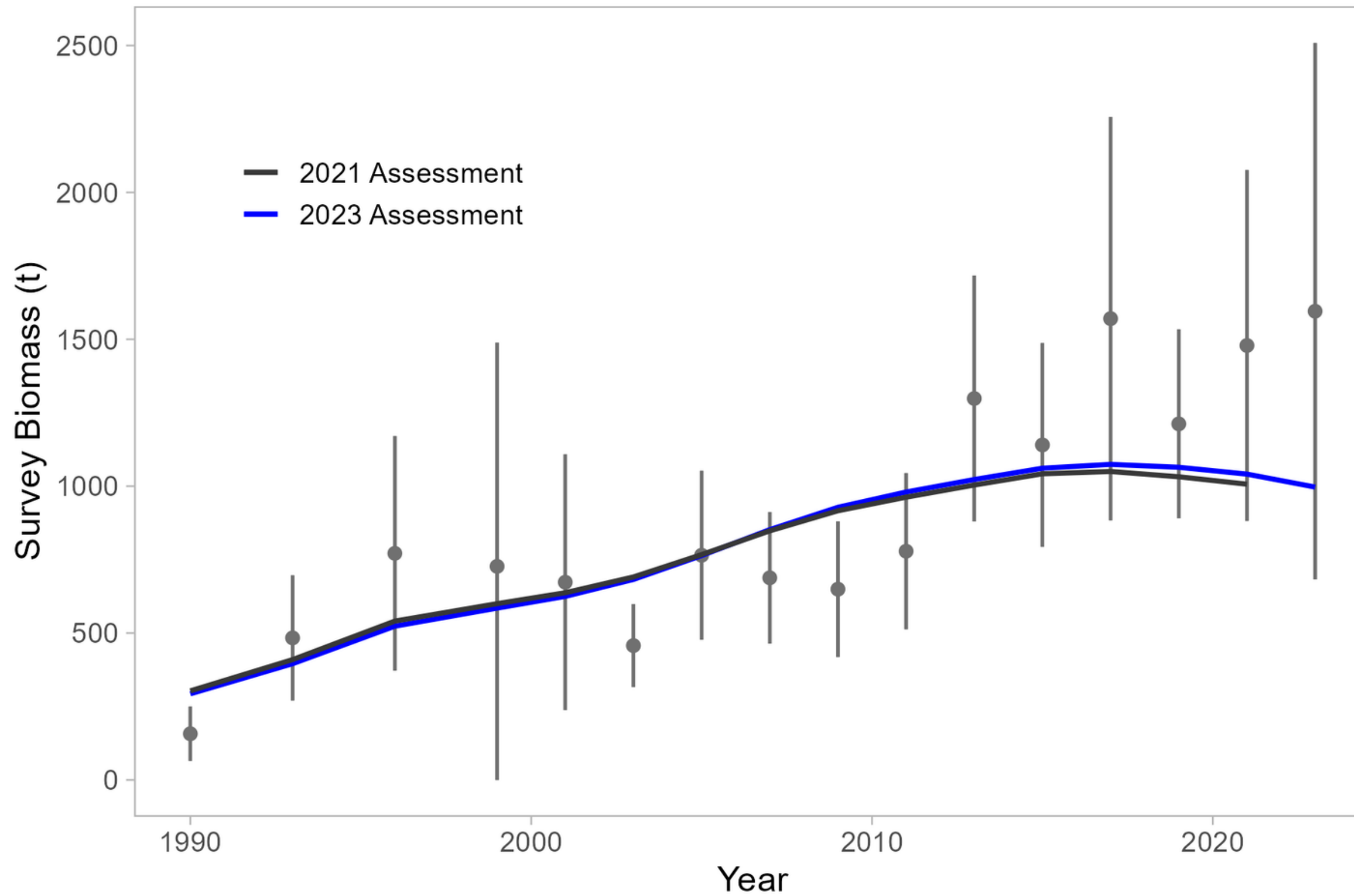
Model Fit: Fishery Ages



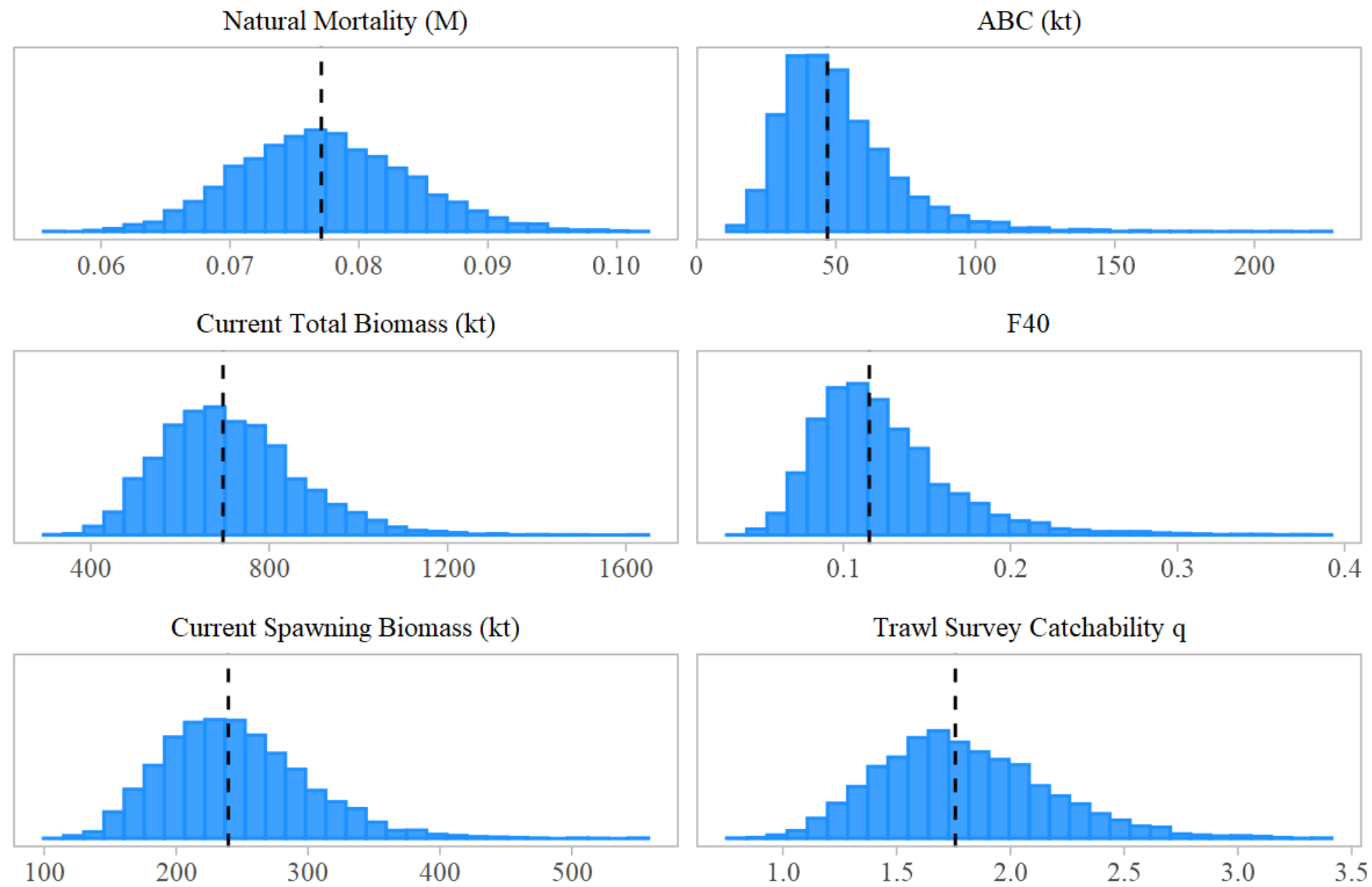
Model Fit: Survey Ages



Model Fit: Survey Biomass

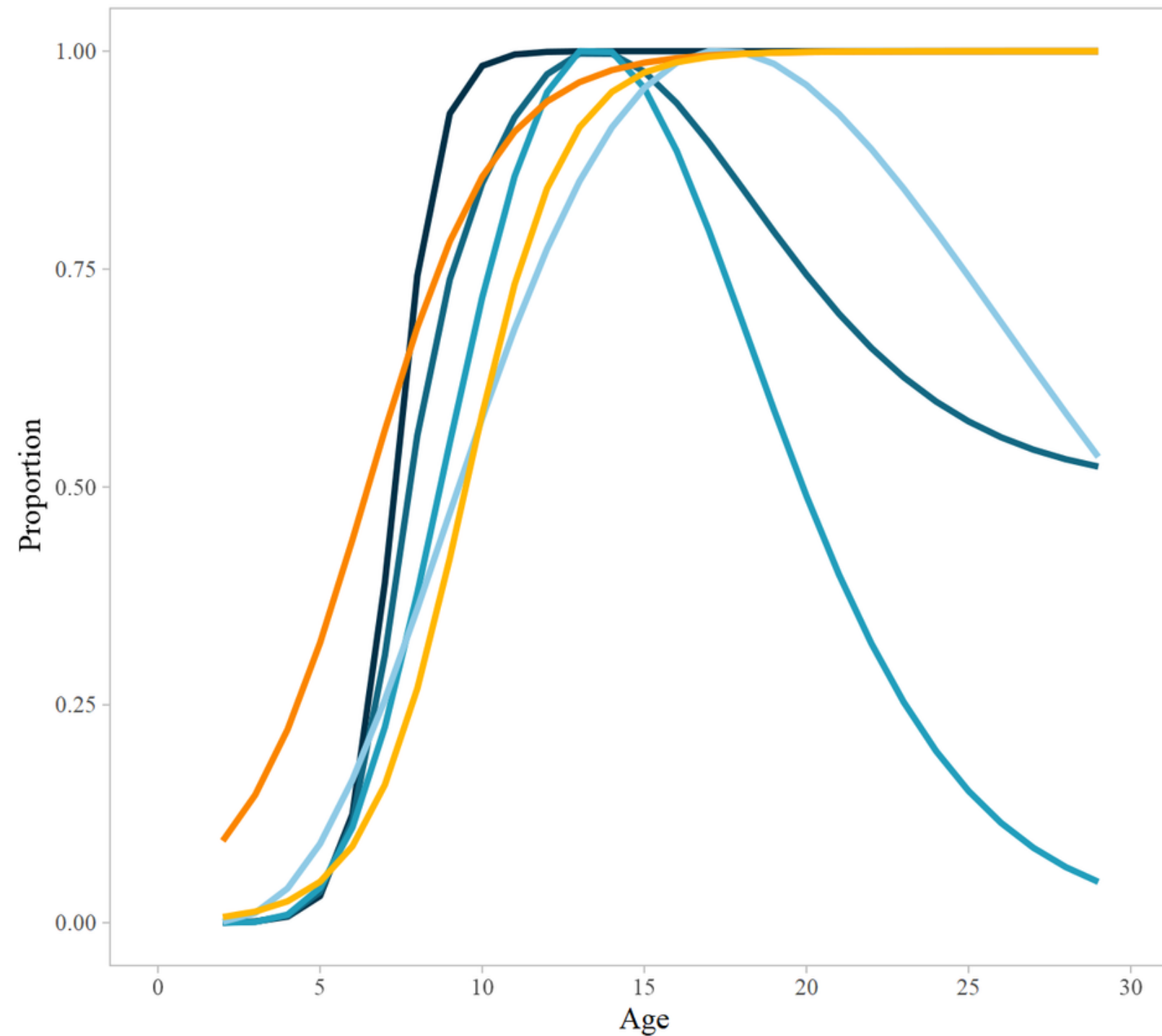


Key Parameters

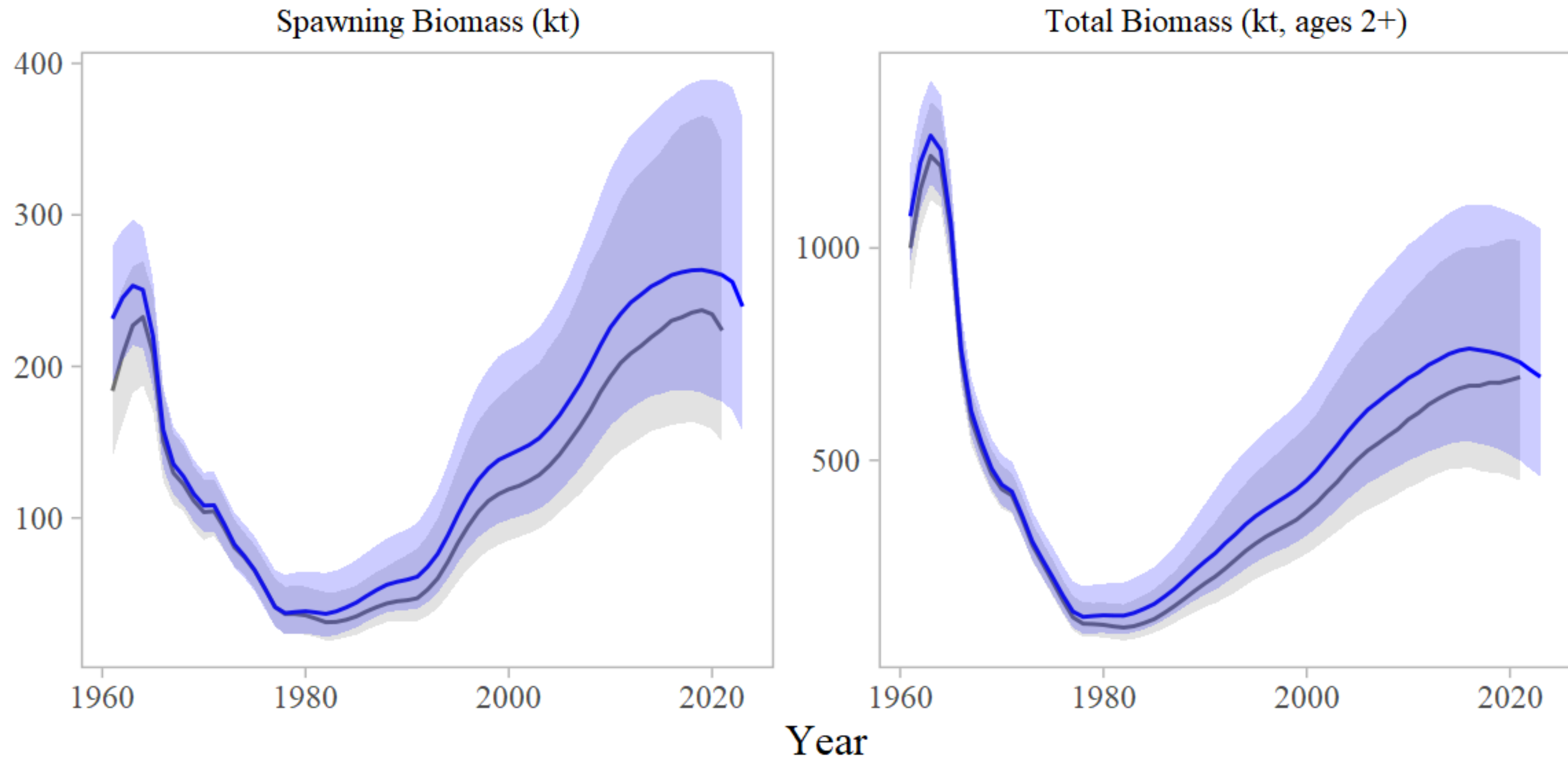


Selectivity Curves

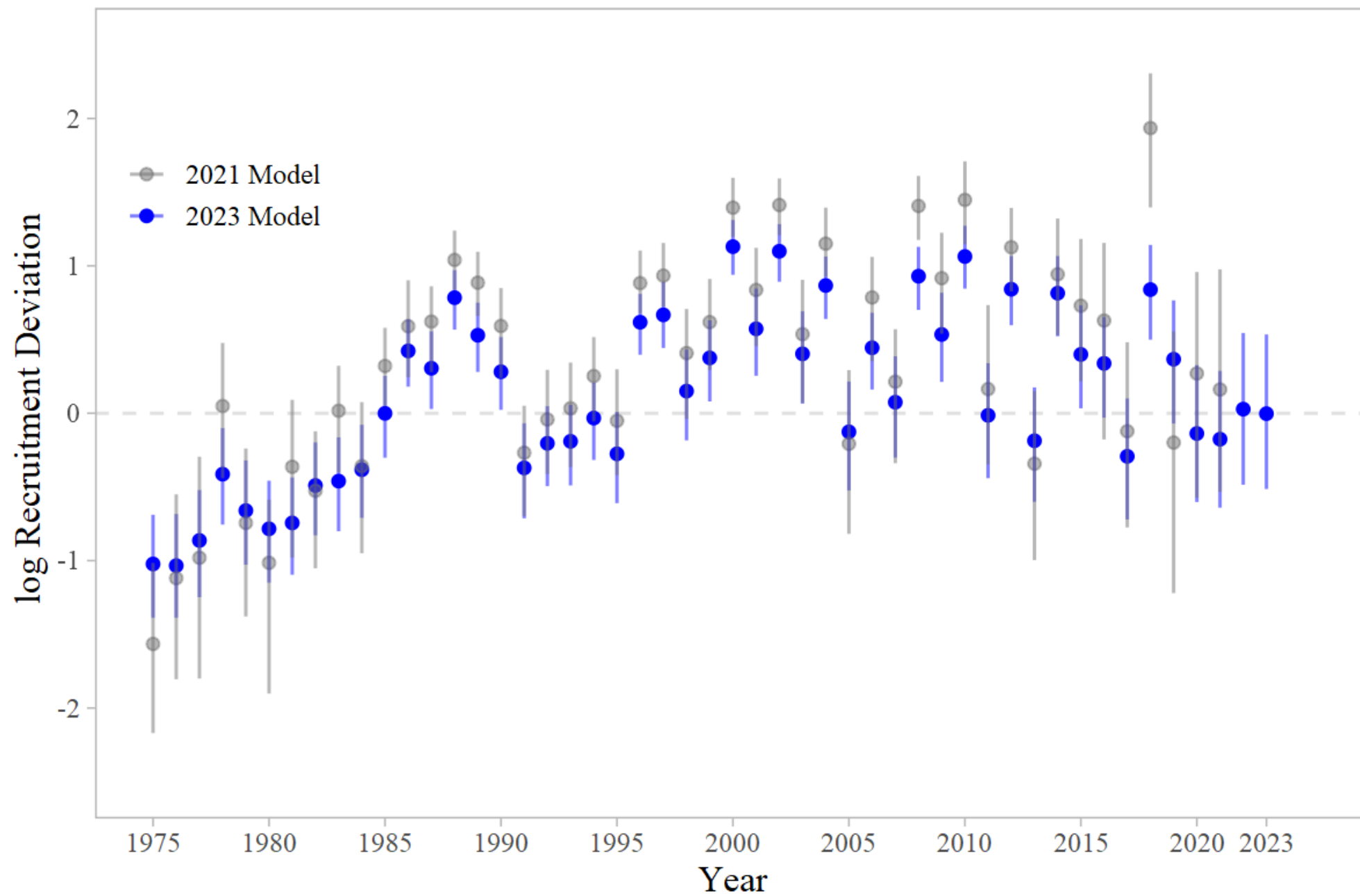
— Fishery 1967-1976 — Fishery 1996-2006 — Survey
— Fishery 1977-1995 — Fishery 2007-2023 — Maturity



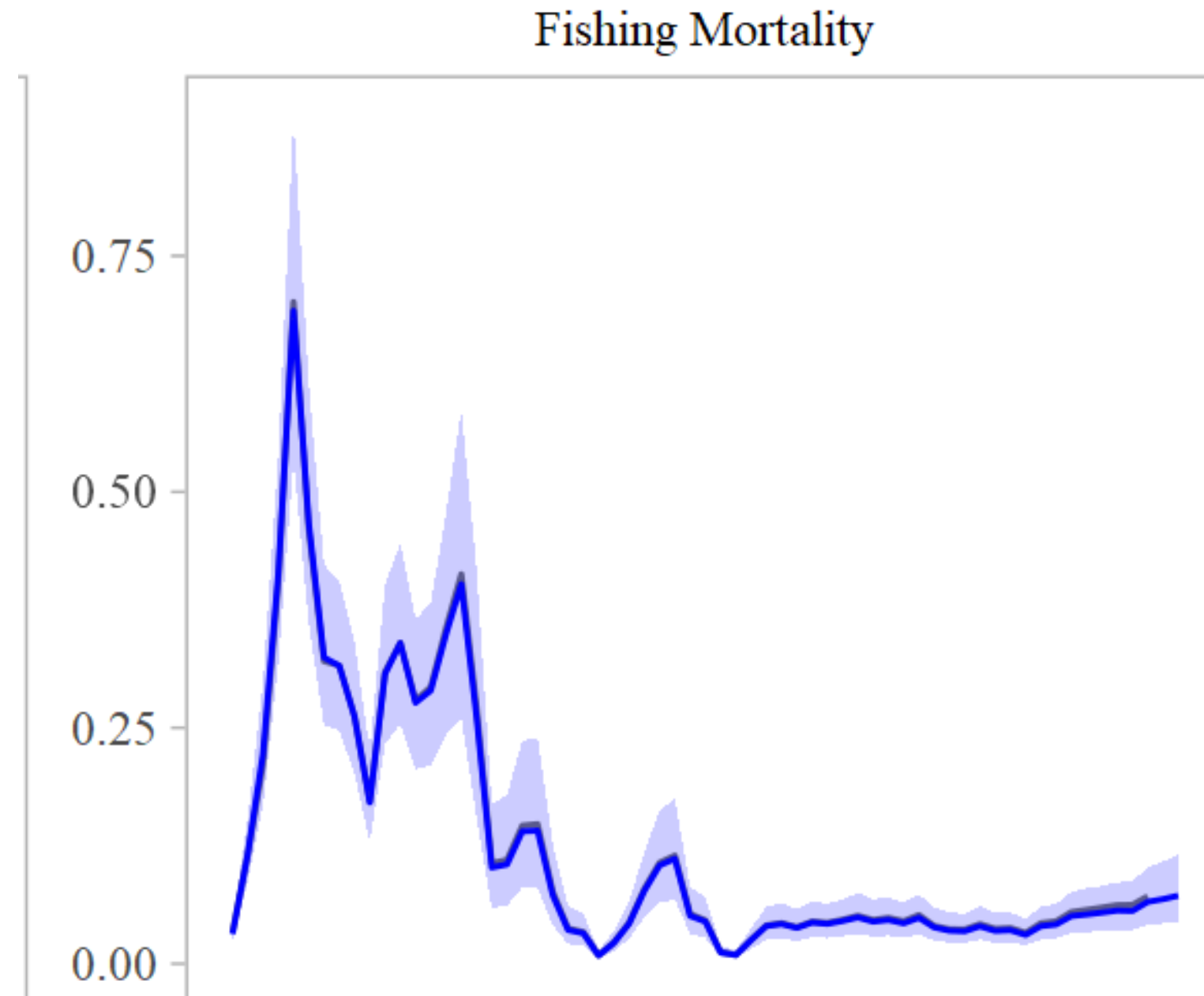
Time Series: SSB & Total Biomass



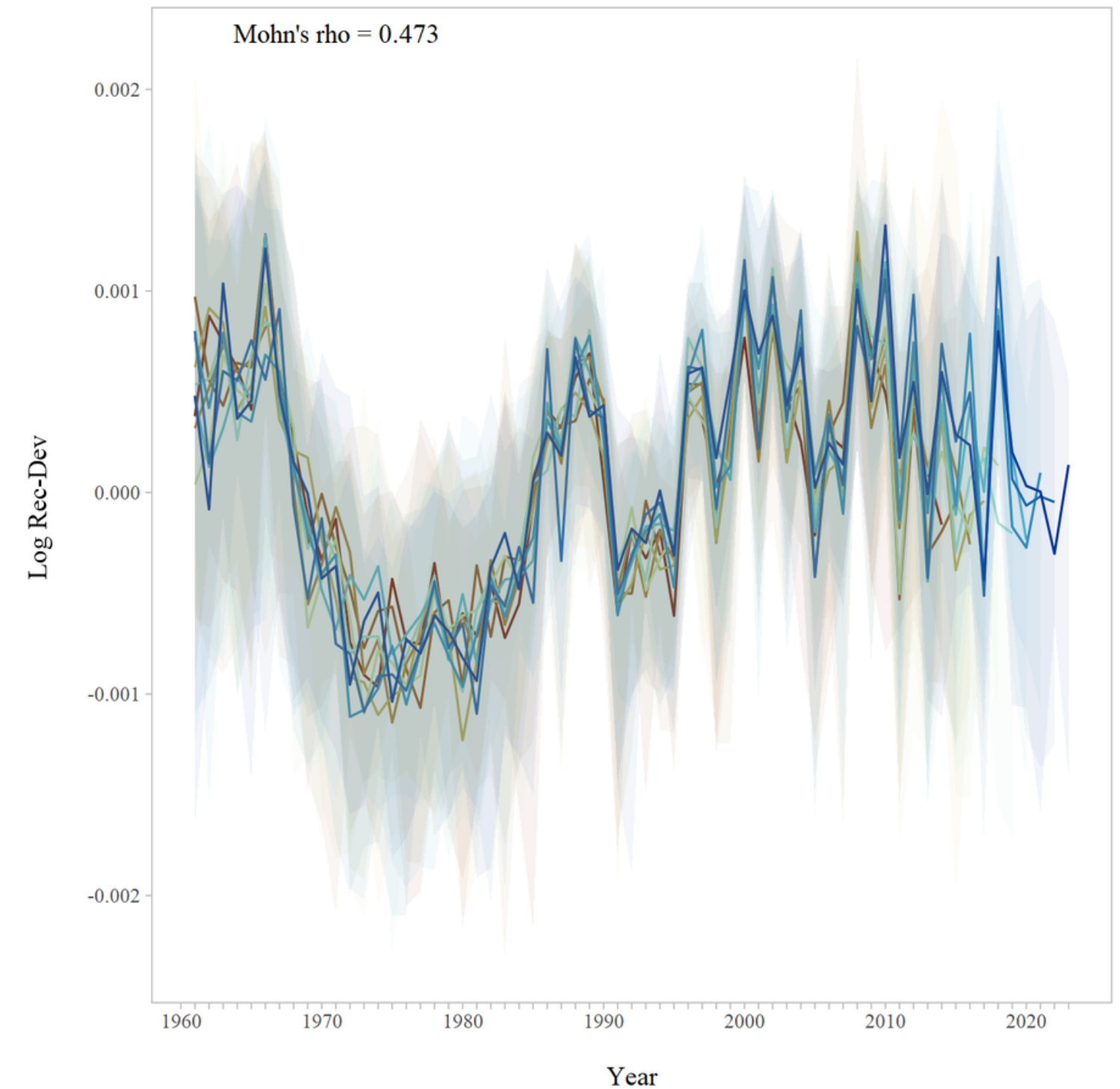
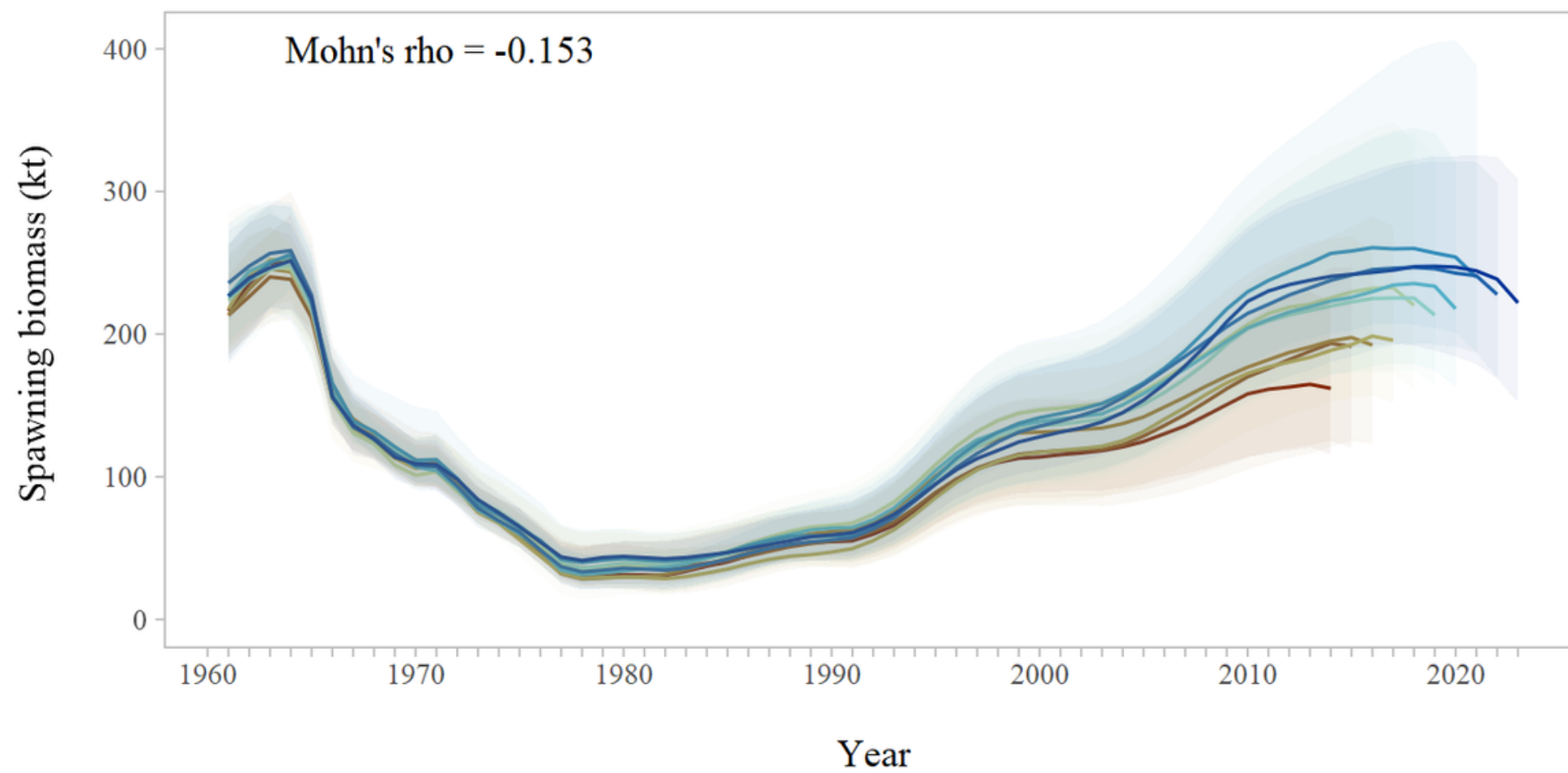
Time Series: Recruitment



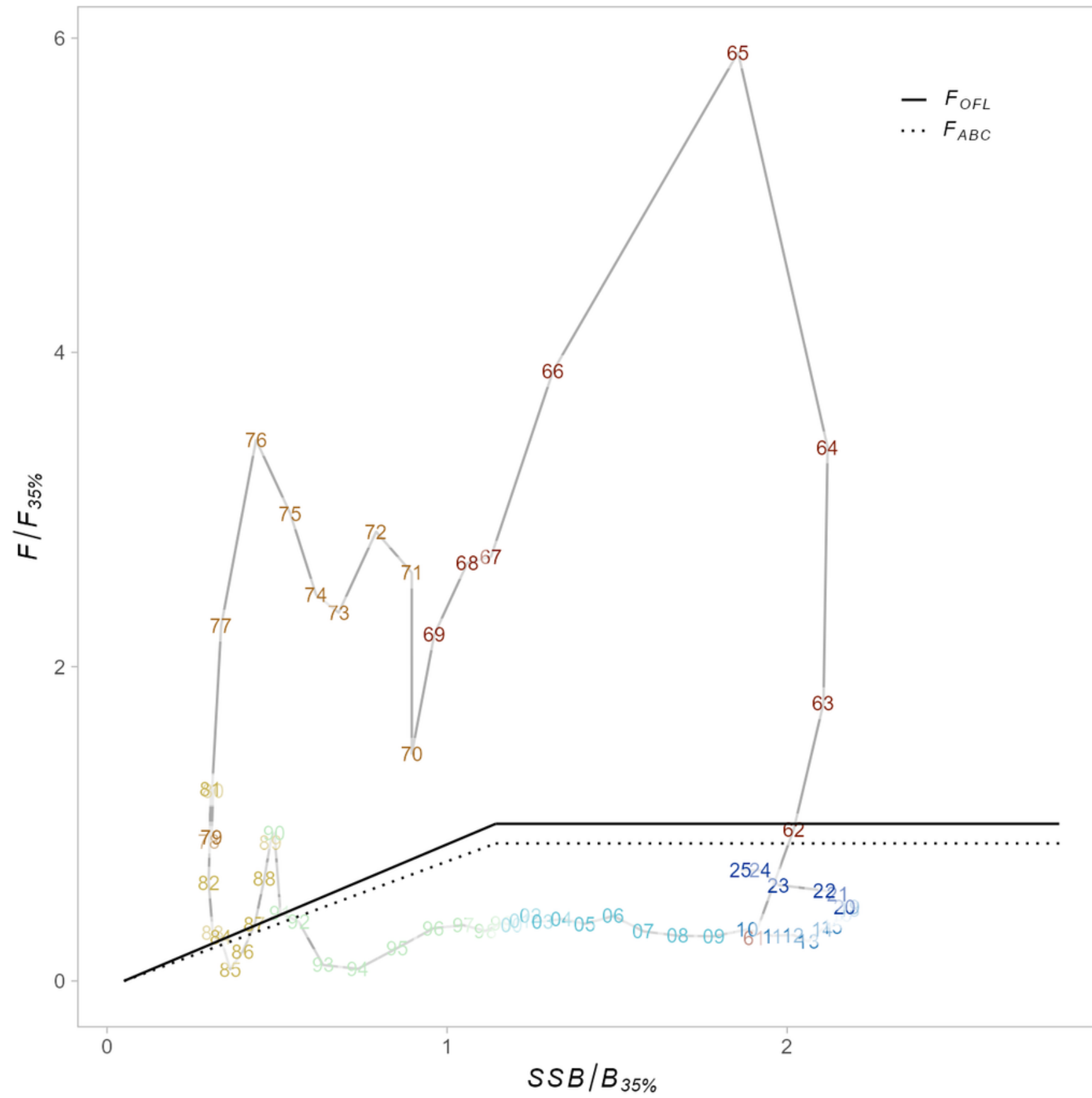
Time Series: Fishing Mortality



10-year Retrospectives



Phase Plane



Risk Table



Assessment

Level 2

strong, negative retro



PopDy & Fishery

Level 2

above-avg. recruitment,
underfit surveys

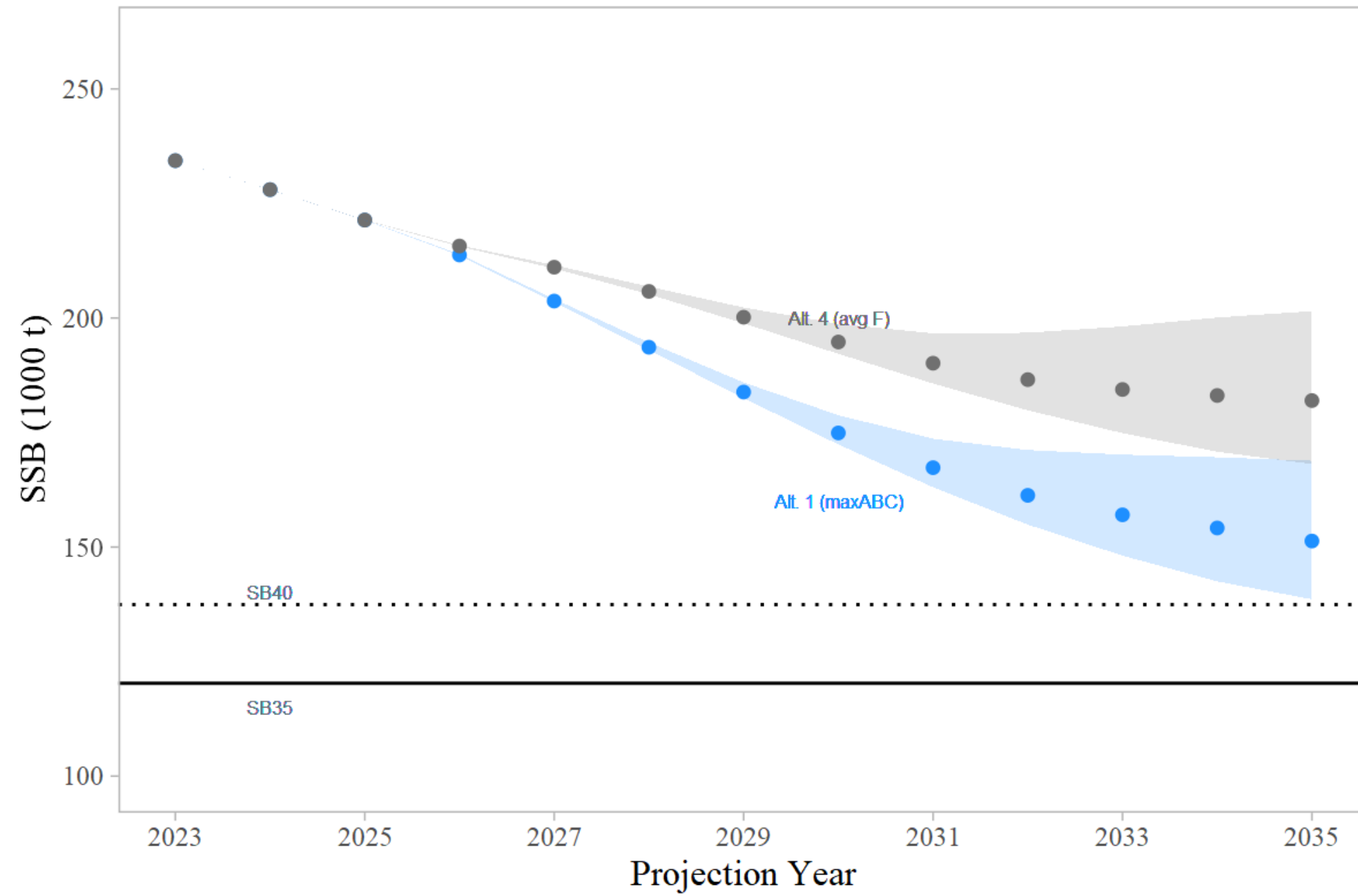


Environment

Level 1

moderate thermal conditions

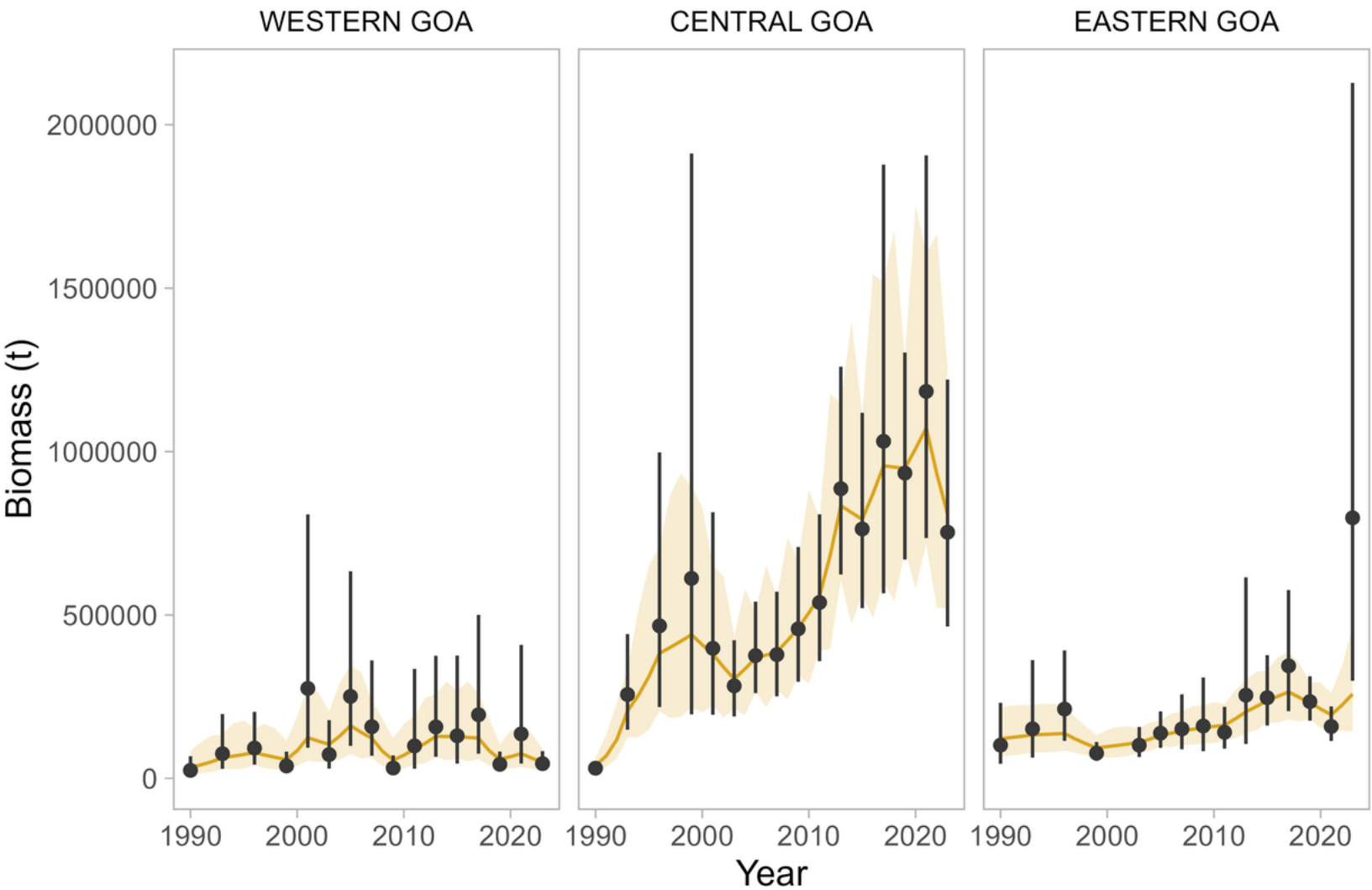
Projection



Harvest Recommendation

Quantity/Status	As estimated or specified <i>last</i> year for:		As estimated or recommended <i>this</i> year for:	
	2023	2024	2024*	2025*
M (natural mortality)	0.075	0.075	0.074	0.074
Tier	3a	3a	3a	3a
Projected total (age 2+) biomass (t)	636,129	621,249	650,027	628,753
Projected female spawning biomass (t)	210,795	205,713	228,030	221,384
$B_{100\%}$	331,917	331,917	343,618	343,618
$B_{40\%}$	132,767	132,767	137,447	137,447
$B_{35\%}$	116,171	116,171	120,266	120,266
F_{OFL}	0.12	0.12	0.12	0.12
$maxF_{ABC}$	0.10	0.10	0.10	0.10
F_{ABC}	0.10	0.10	0.10	0.10
OFL (t)	44,302	43,117	47,466	45,835
$maxABC$ (t)	37,193	36,196	39,719	38,354
ABC (t)	37,193	39,196	39,719	38,354
Status	As determined <i>last</i> year for:		As determined <i>this</i> year for:	
	2022	2023	2023	2024
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

Apportionment



REMA-derived apportionment (%)		4.5	72.4	23.1		100
Year	Quantity	Western	Central	W. Yakutat	E. Yakutat/SEO	Total
2024	ABC (t)	1,787	28,757	2,110	7,065	39,719
2025	ABC (t)	1,726	27,768	2,038	6,822	38,354
2024	OFL (t)	39,023			8,443	47,466
2025	OFL (t)	37,682			8,153	45,835

Data Gaps & Future Research

- Transition to SS Model
- Deeper exploration of selex & data weighting



Thank you
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