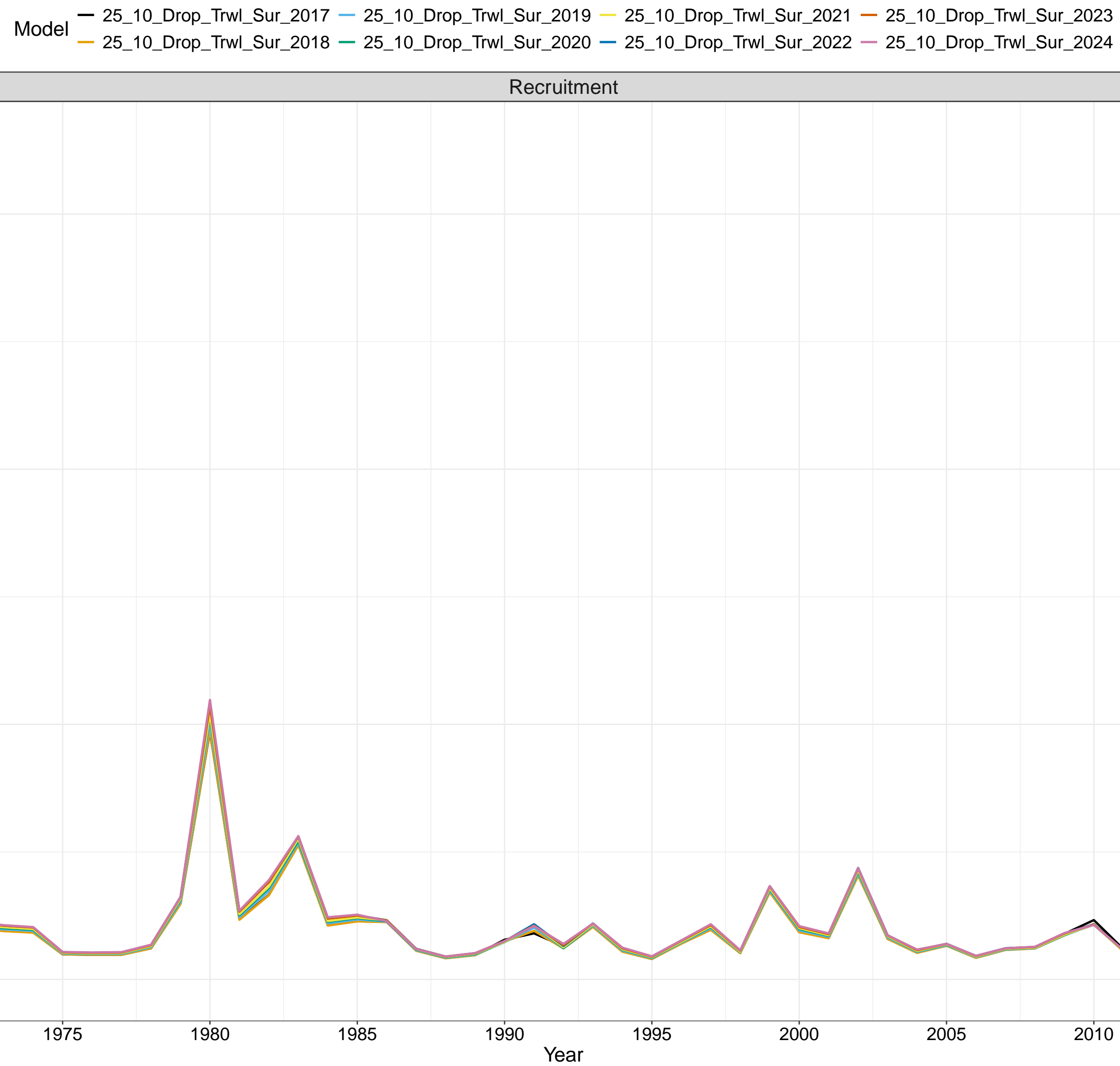


# Fishing Mortality

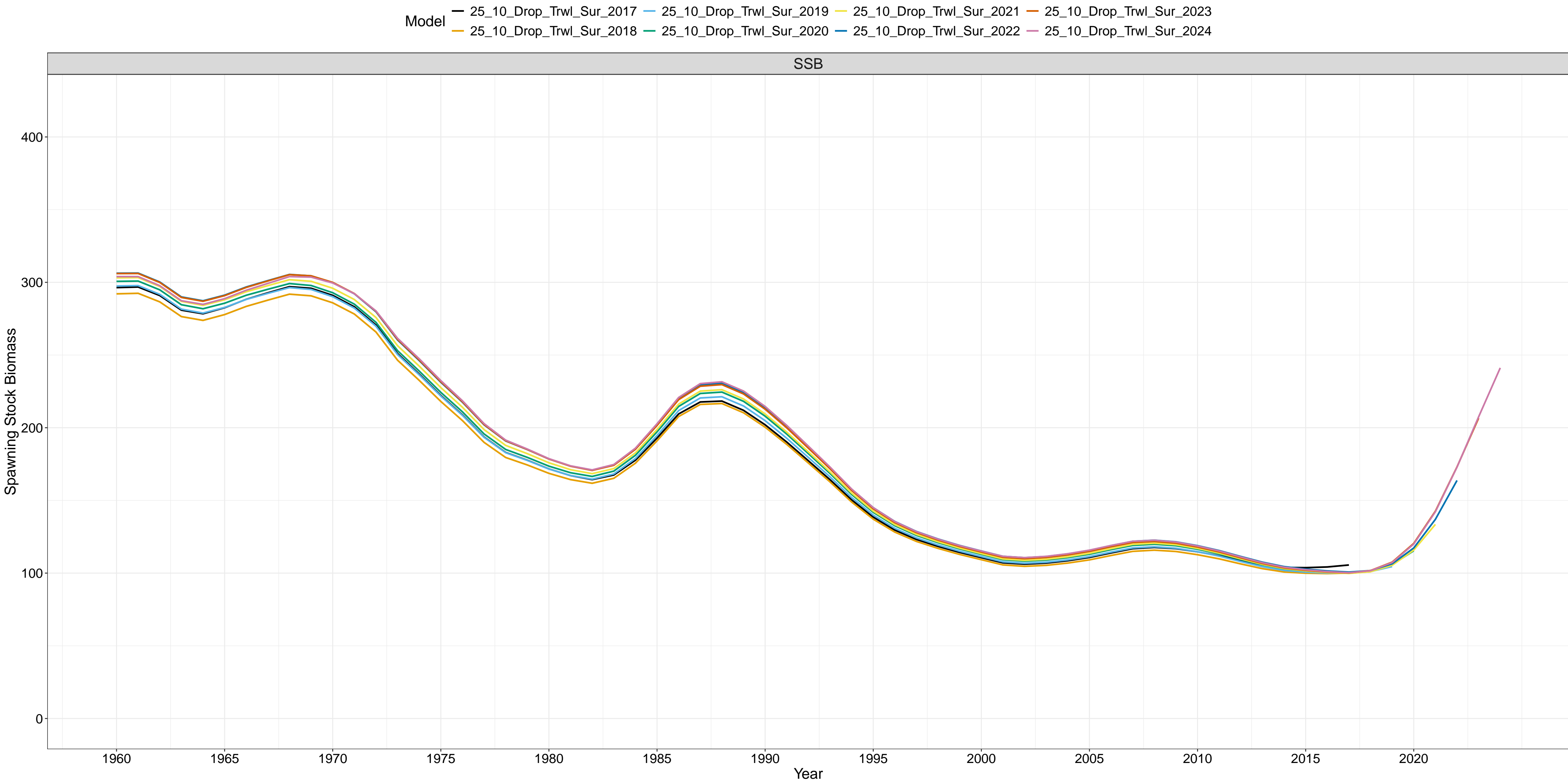
Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024



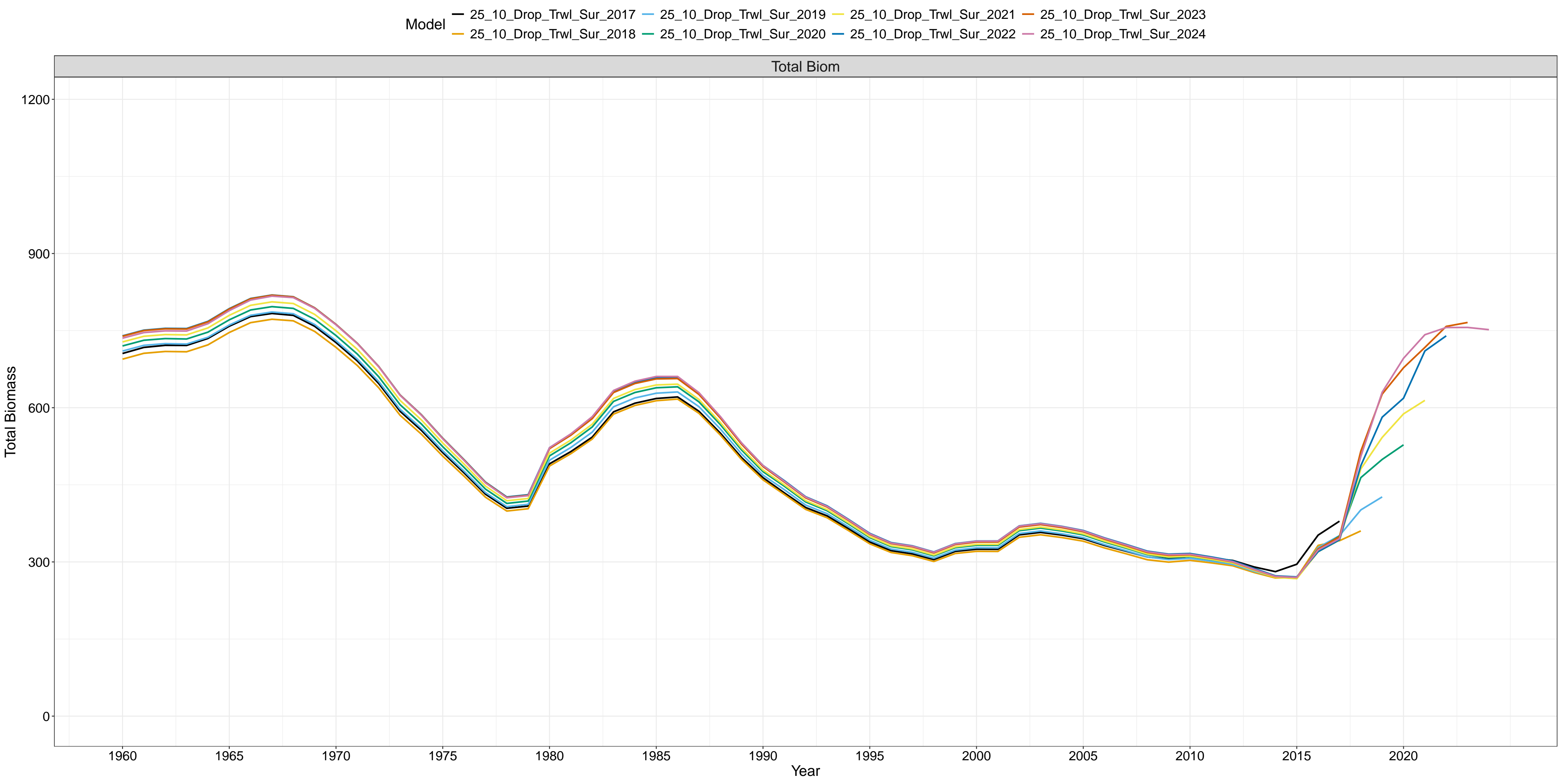
## Recruitment



## SSB



Biomass

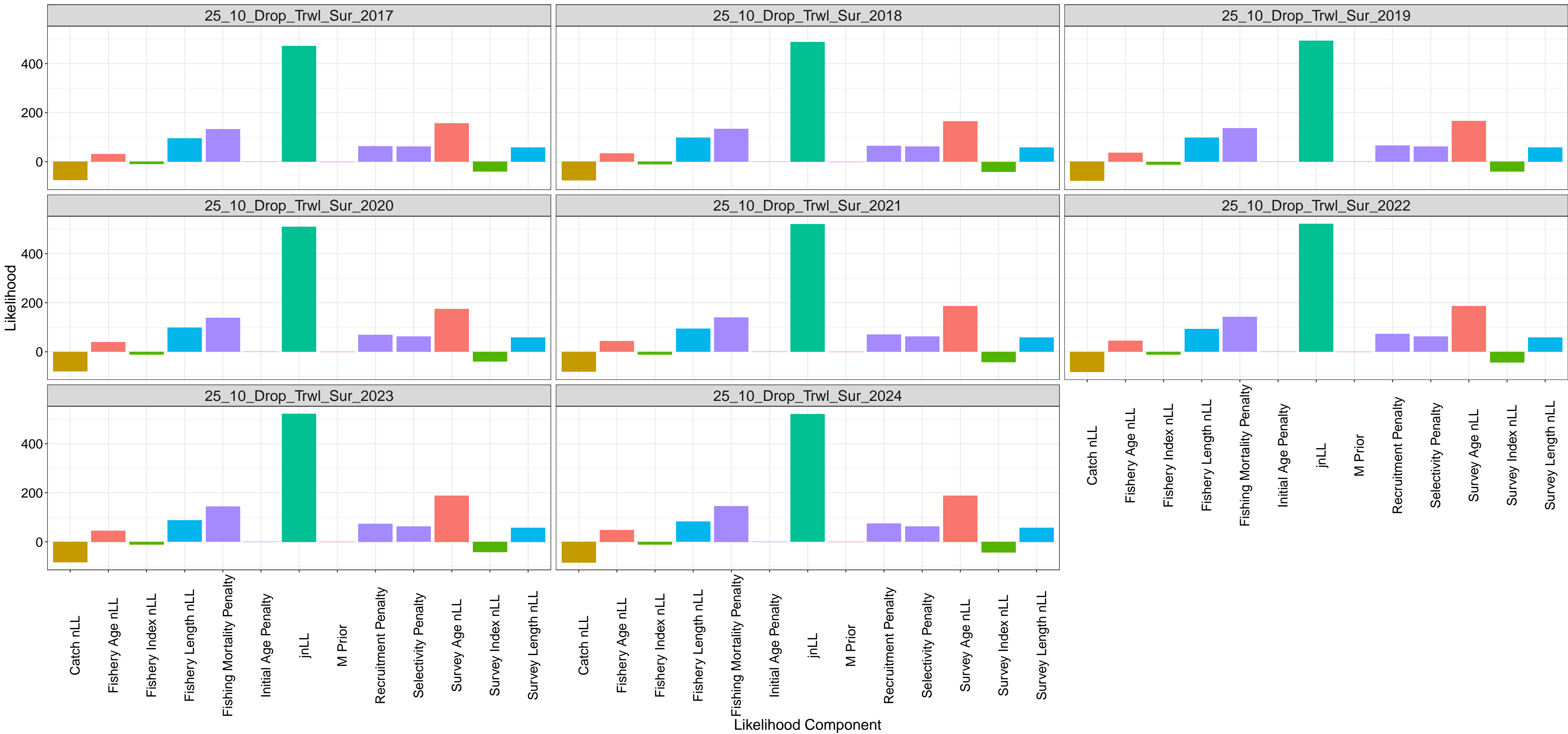


	Model	Region	Terminal_SSB	Terminal_F	Catch_Advice	B_Ref_Pt	F_Ref_Pt	B_over_B_Ref	F_over_F_Ref
1	25_10_Drop_Trwl_Sur_2024	1	241.1688	0.03880675	53.56695	129.4799	0.09093	1.86260	0.42678
2	25_10_Drop_Trwl_Sur_2023	1	206.5808	0.04288351	53.76452	128.4952	0.08954	1.60769	0.47891
3	25_10_Drop_Trwl_Sur_2022	1	163.7471	0.05049141	50.80096	123.4195	0.08816	1.32675	0.57271
4	25_10_Drop_Trwl_Sur_2021	1	133.5197	0.04963962	40.81451	120.8363	0.08757	1.10496	0.56686
5	25_10_Drop_Trwl_Sur_2020	1	115.3881	0.05314875	34.64559	117.4533	0.08936	0.98242	0.59475
6	25_10_Drop_Trwl_Sur_2019	1	104.5045	0.06001275	27.00937	107.1726	0.08841	0.97510	0.67884
7	25_10_Drop_Trwl_Sur_2018	1	100.9675	0.05888720	22.06824	107.8116	0.08798	0.93652	0.66935
8	25_10_Drop_Trwl_Sur_2017	1	105.5893	0.05540710	24.25781	103.7163	0.09116	1.01806	0.60780

	Model	jnLL	M Prior	Recruitment Penalty	Selectivity Penalty	Catch nLL	Fishing Mortality Penalty	Survey Index nLL	Fishery Index nLL	Initial Age Penalty	Survey Age nLL	Fishery Age nLL	Survey Length nLL	Fishery Length nLL
1	25_10_Drop_Trwl_Sur_2024	520.1376	−0.3317710	74.71358	61.92076	−84.48594	145.6547	−43.49581	−10.919497	0.1927378	188.4512	48.43536	57.46386	82.53831
2	25_10_Drop_Trwl_Sur_2023	522.3067	−0.4129151	73.69628	62.10408	−83.14116	143.7309	−42.63956	−10.802776	0.1888680	188.6295	45.45123	57.68039	87.82183
3	25_10_Drop_Trwl_Sur_2022	521.1685	−0.4217615	72.80401	62.23431	−81.81978	141.8660	−43.49710	−11.533758	0.1834770	186.3630	44.84177	57.82192	92.32646
4	25_10_Drop_Trwl_Sur_2021	519.9470	−0.6239435	70.39484	62.28894	−80.46260	140.0613	−41.86012	−11.454097	0.1795125	185.8000	43.22381	58.01705	94.38226
5	25_10_Drop_Trwl_Sur_2020	510.1543	−0.7327768	68.51367	62.39078	−79.12787	138.3281	−39.82277	−11.202977	0.1770199	174.9391	39.70904	58.16882	98.81416
6	25_10_Drop_Trwl_Sur_2019	493.7312	−0.8543660	66.29062	62.35049	−77.77548	136.3153	−40.19675	−11.682441	0.1807114	166.1947	36.76399	58.17180	97.97262
7	25_10_Drop_Trwl_Sur_2018	487.5701	−1.0002220	65.06519	62.24250	−76.40752	134.3386	−41.27795	−11.032124	0.1838902	164.7364	34.09957	58.27037	98.35146
8	25_10_Drop_Trwl_Sur_2017	471.8778	−0.9837500	63.83071	62.14957	−75.10362	132.4792	−40.79947	−9.998281	0.1955201	156.4746	30.77610	57.86258	94.99457

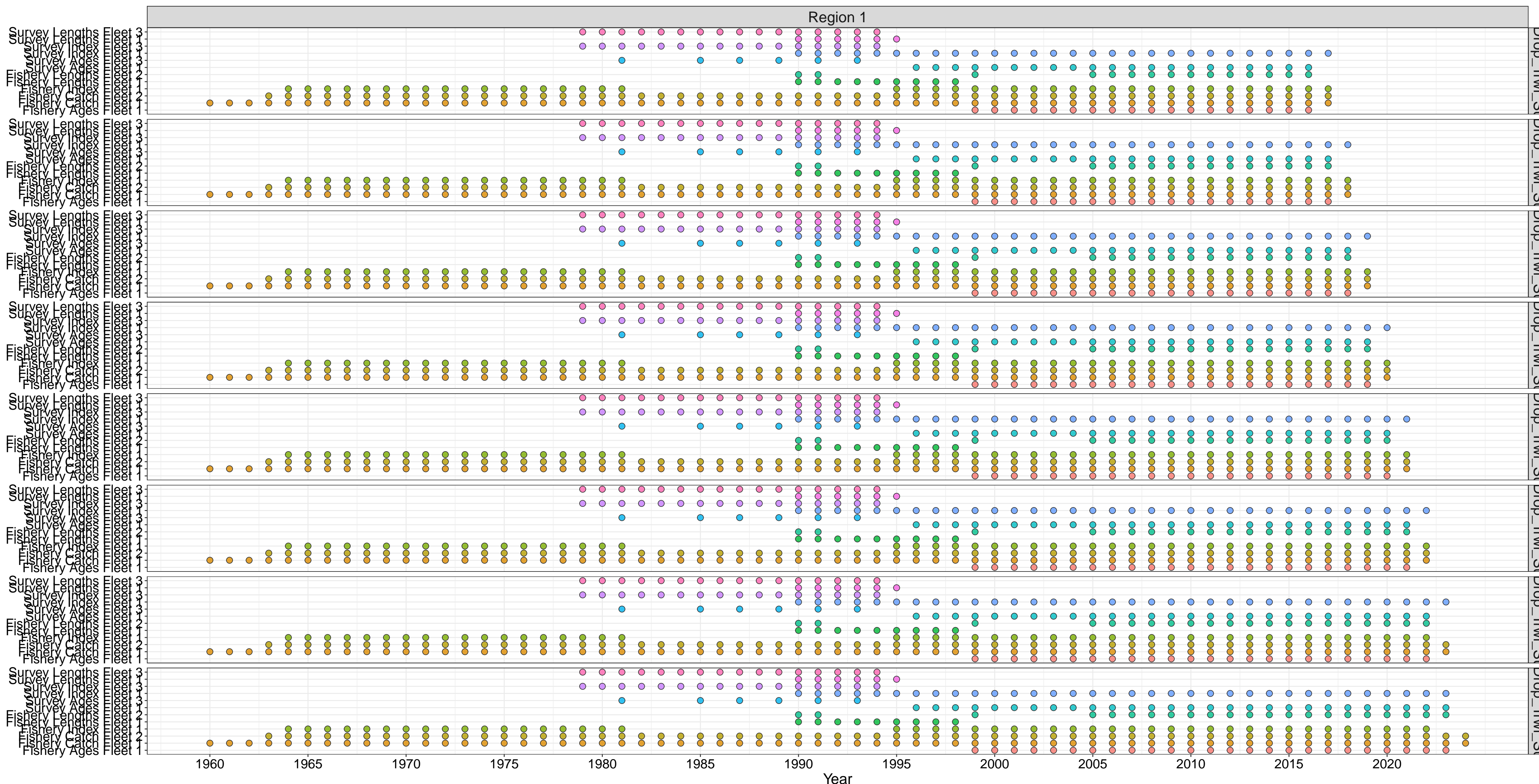
# Negative Log-Likelihood

Type  
Age Catch Index jnLL Length Penalty Prior



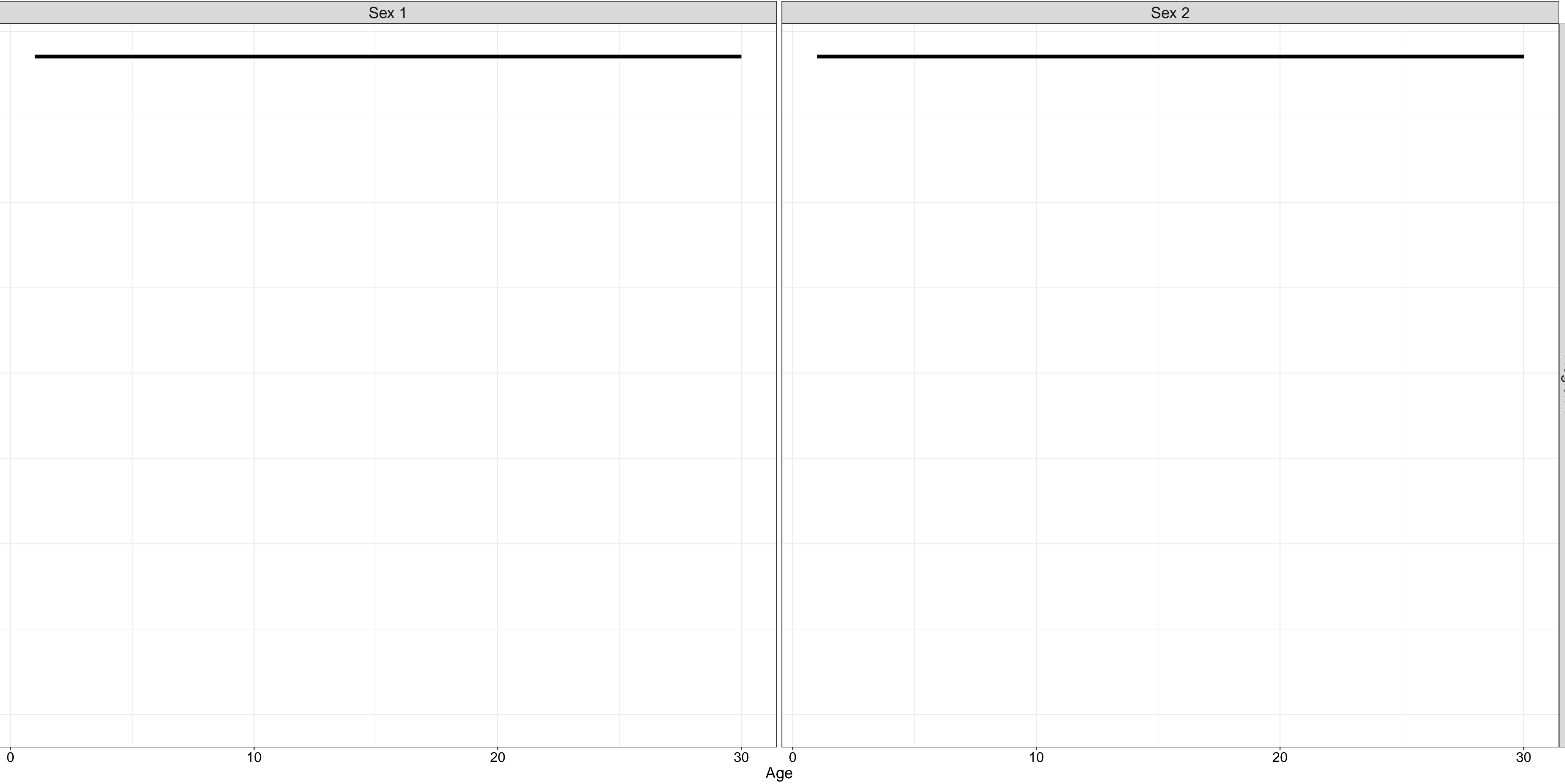


Data



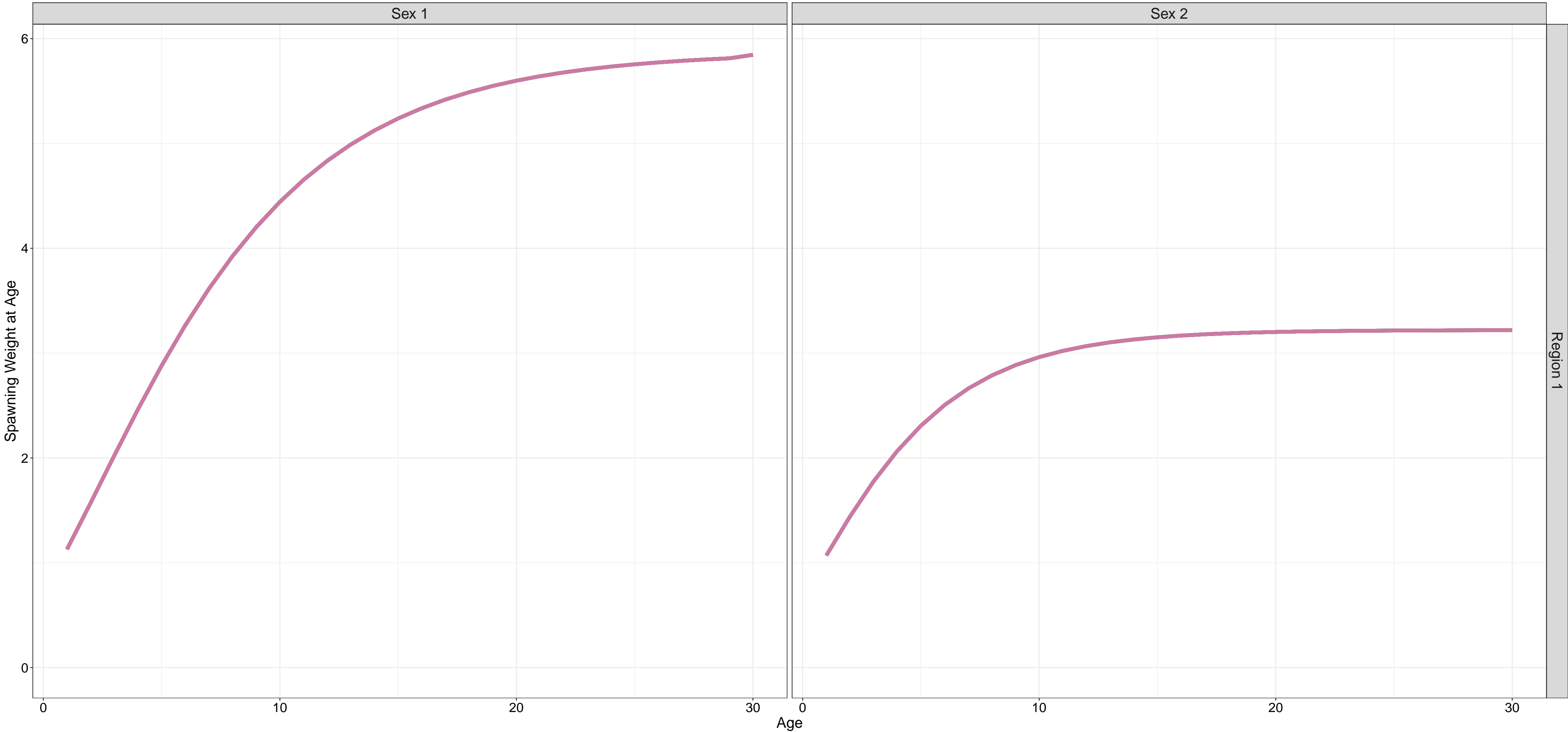
Natural Mortality

Model 25\_10\_Drop\_Trwl\_Sur\_2024



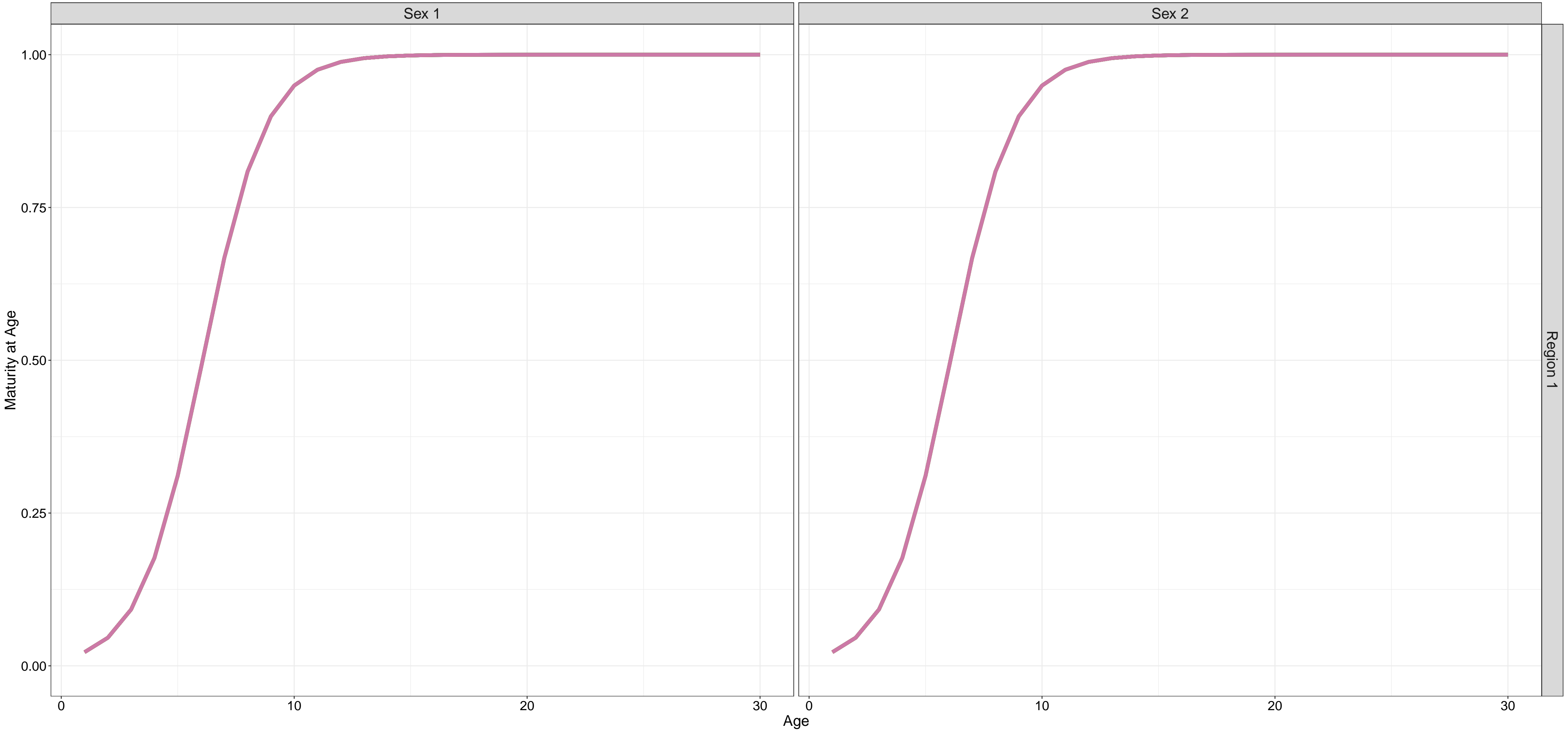
# Weight-at-Age

Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024



Maturity

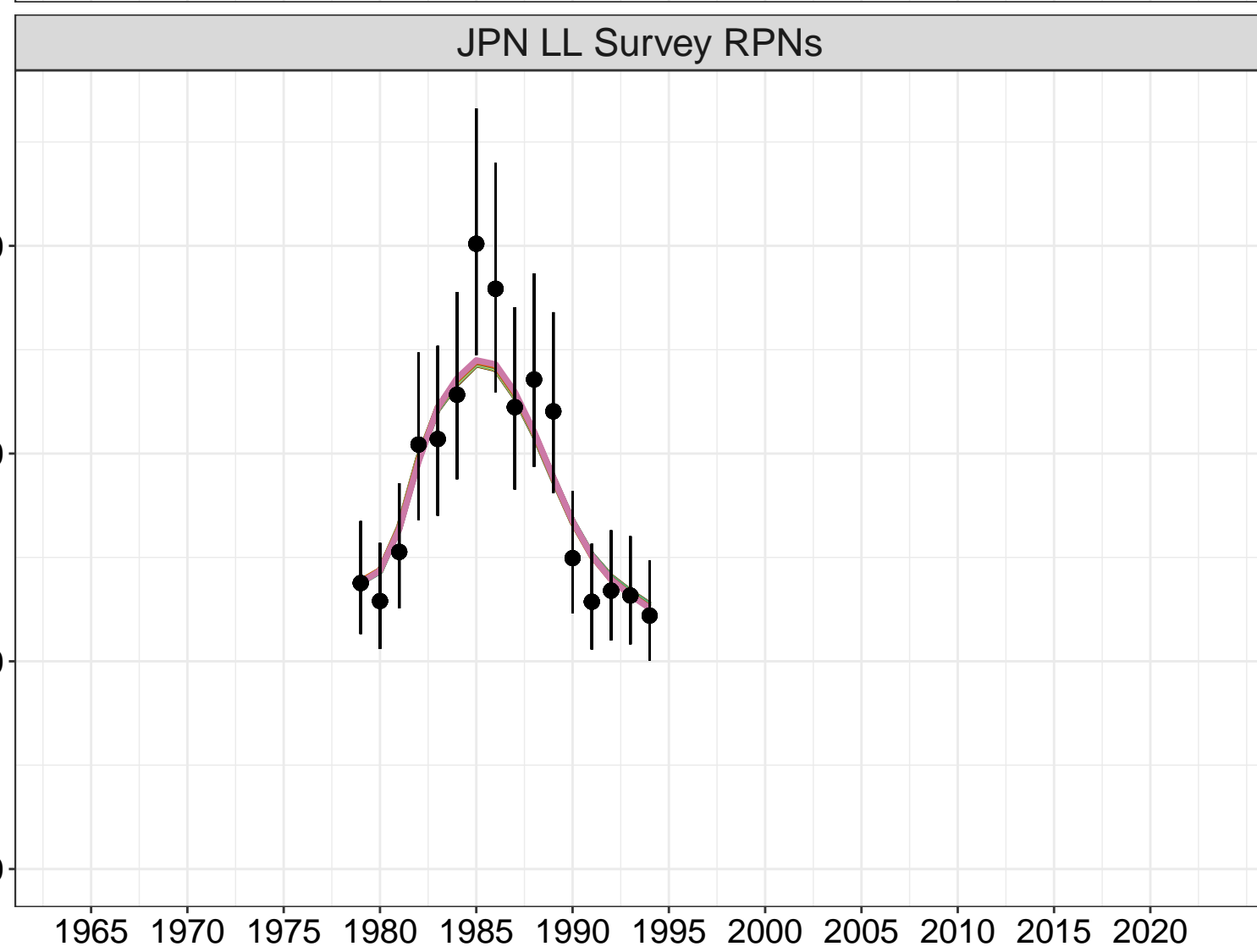
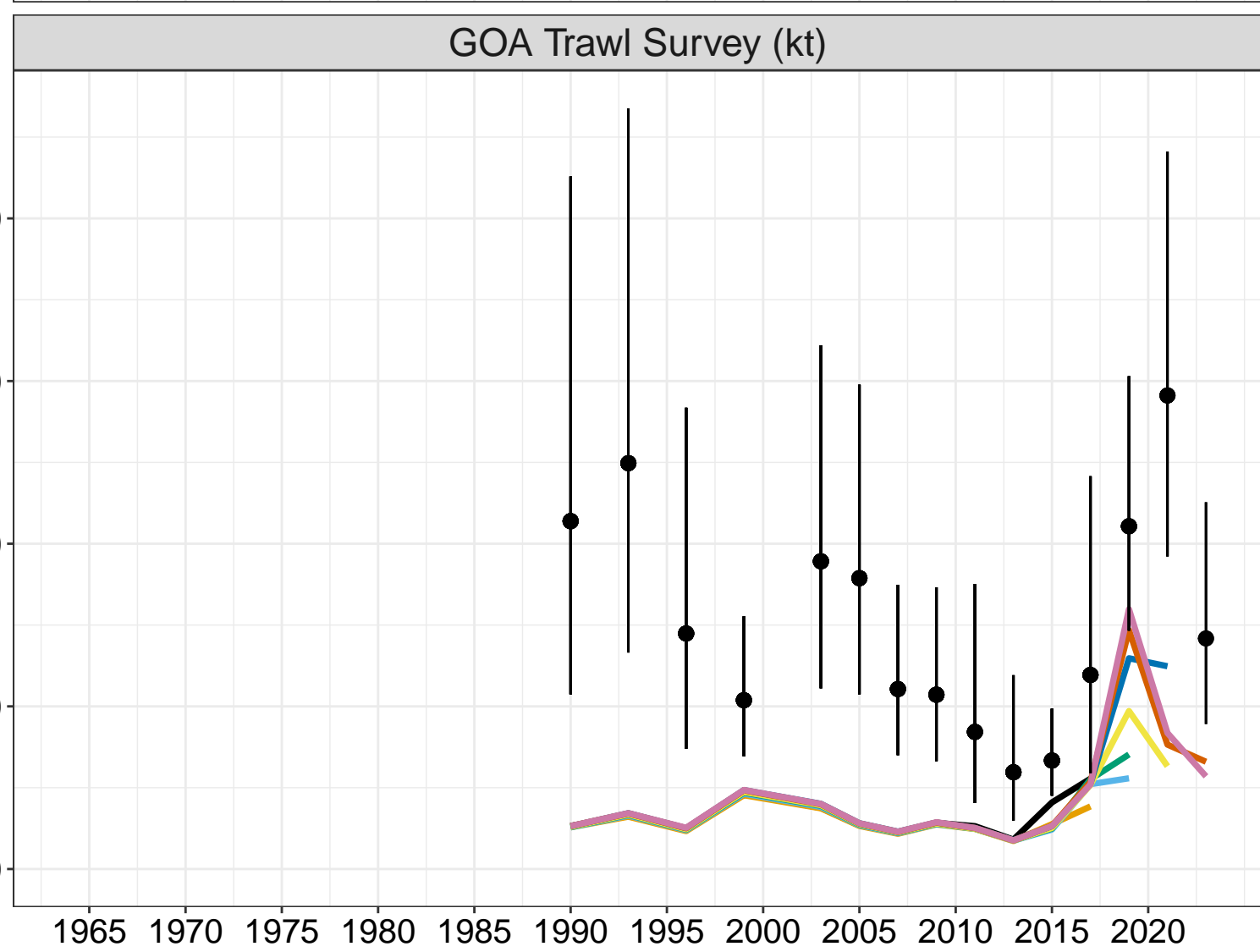
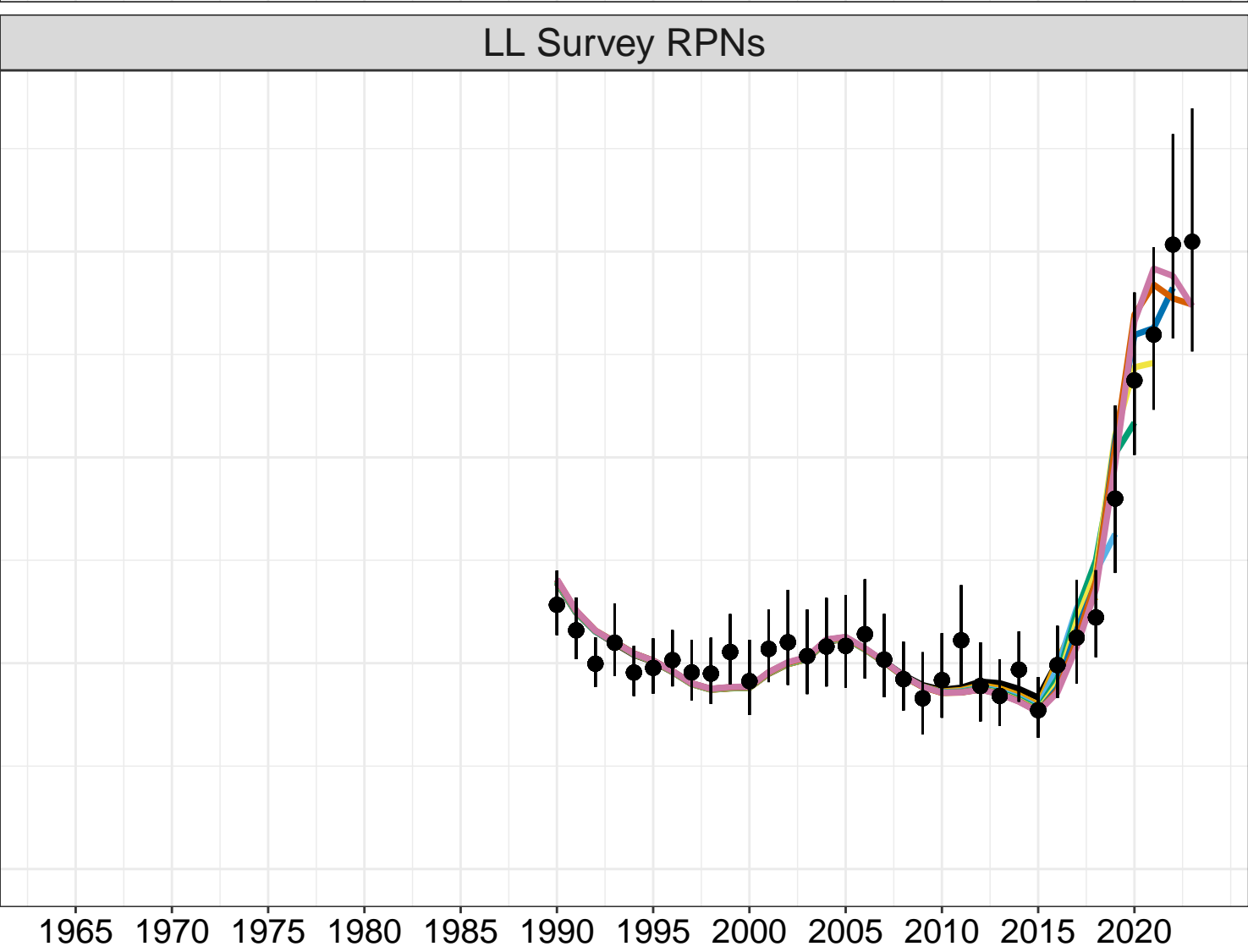
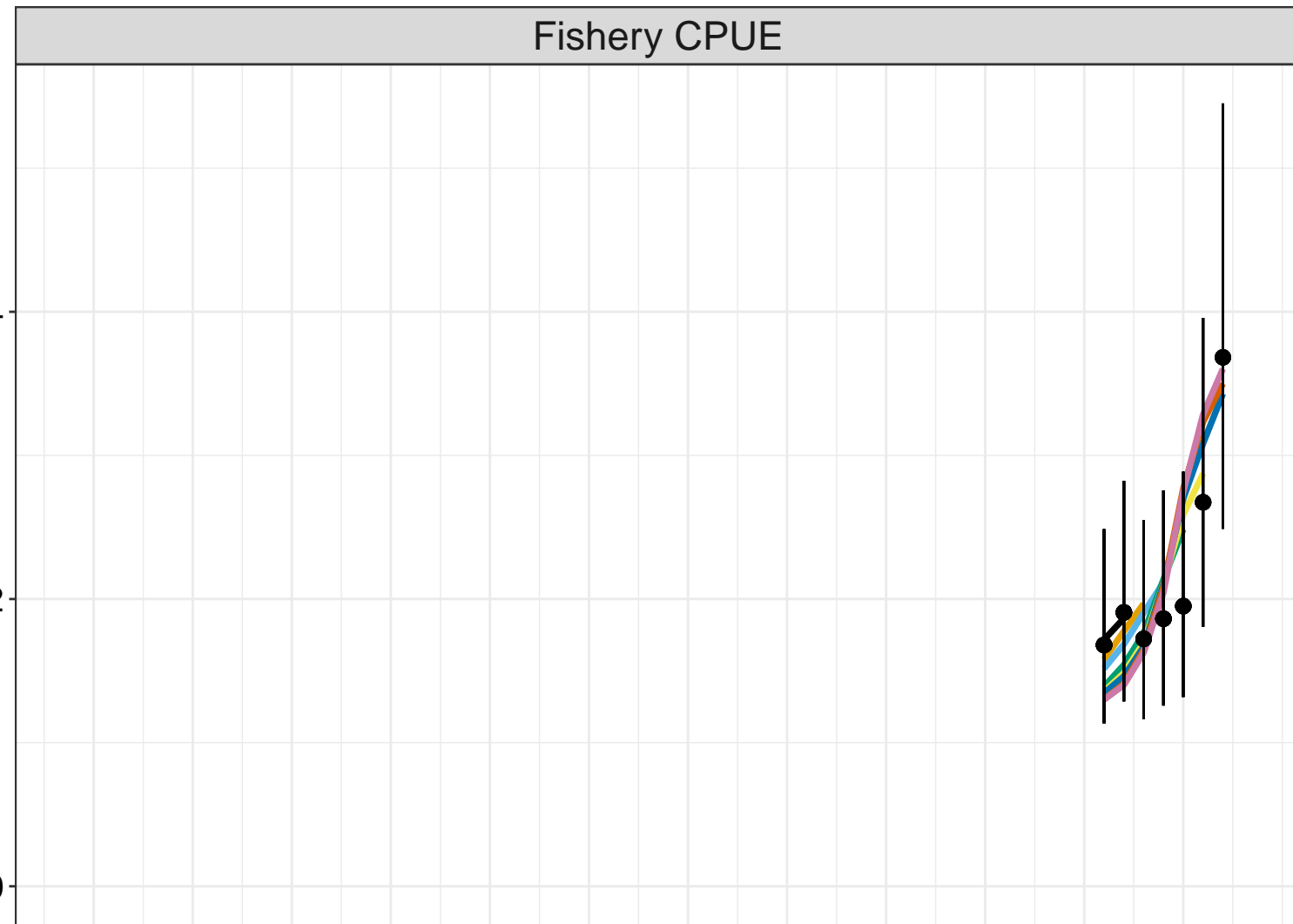
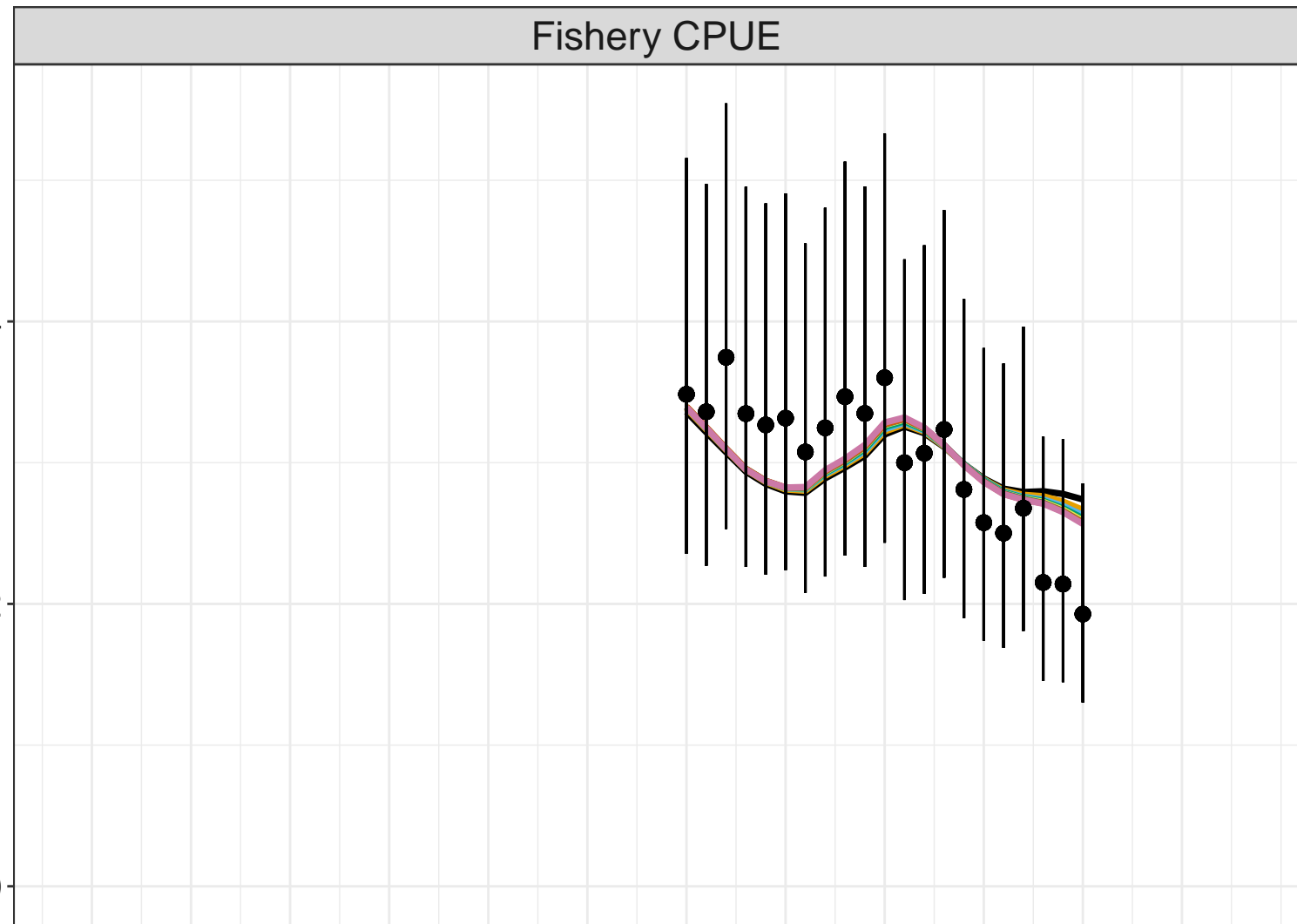
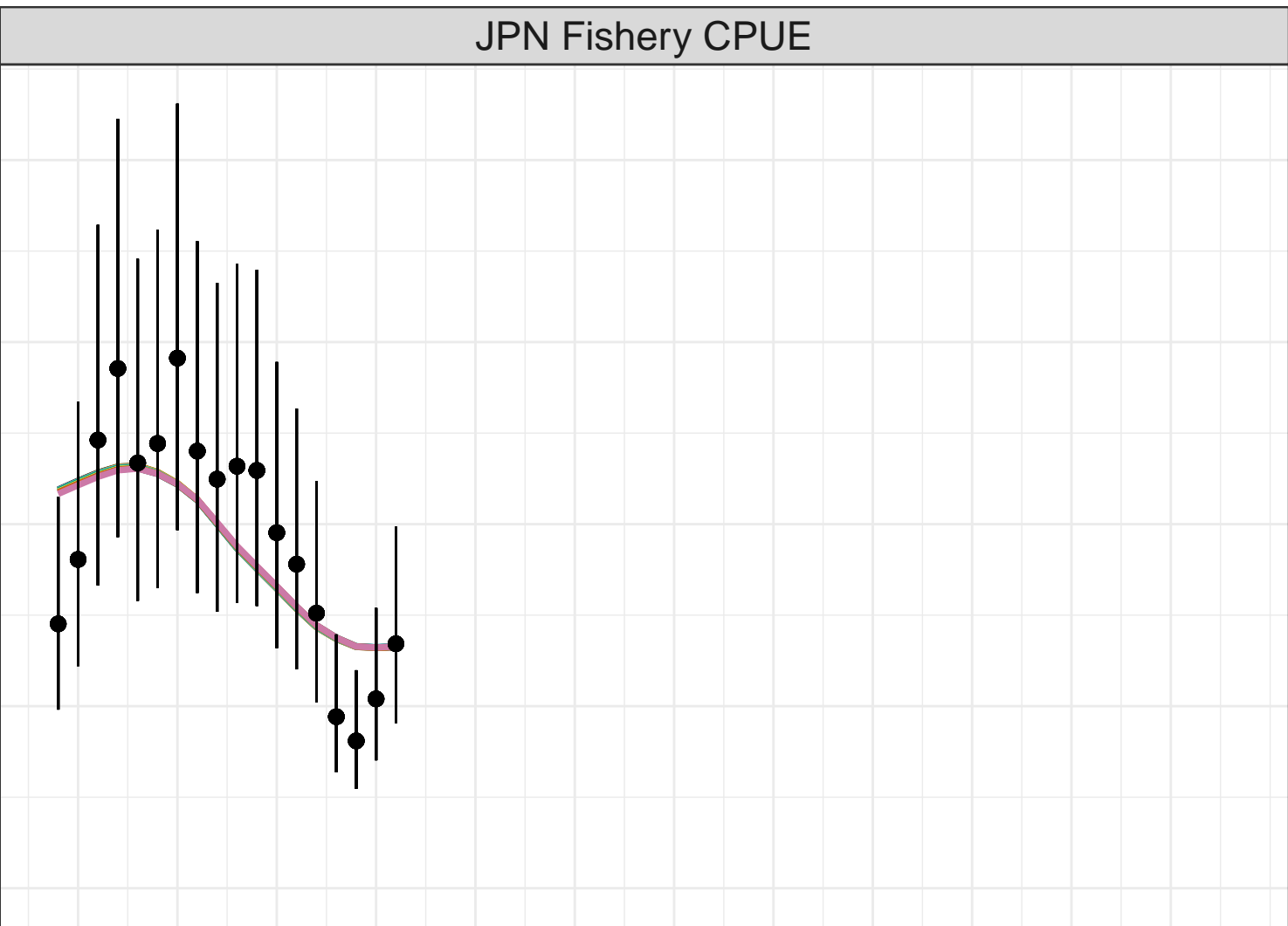
Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024



Index Fits

Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024

Index



Year

Catch

- Model
- 25\_10\_Drop\_Trwl\_Sur\_2017

25\_10\_Drop\_Trwl\_Sur\_2019

25\_10\_Drop\_Trwl\_Sur\_2021

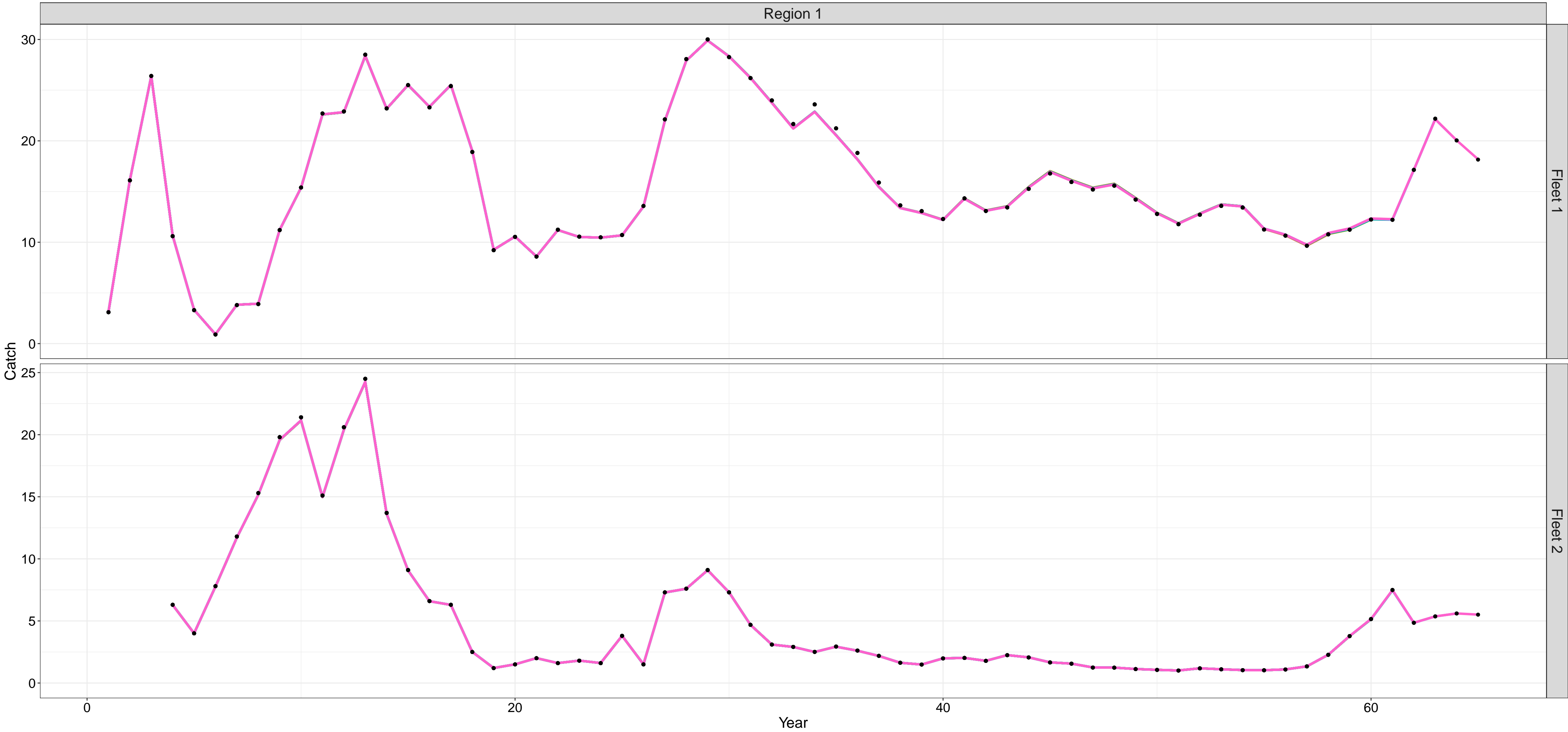
25\_10\_Drop\_Trwl\_Sur\_2023

25\_10\_Drop\_Trwl\_Sur\_2018

25\_10\_Drop\_Trwl\_Sur\_2020

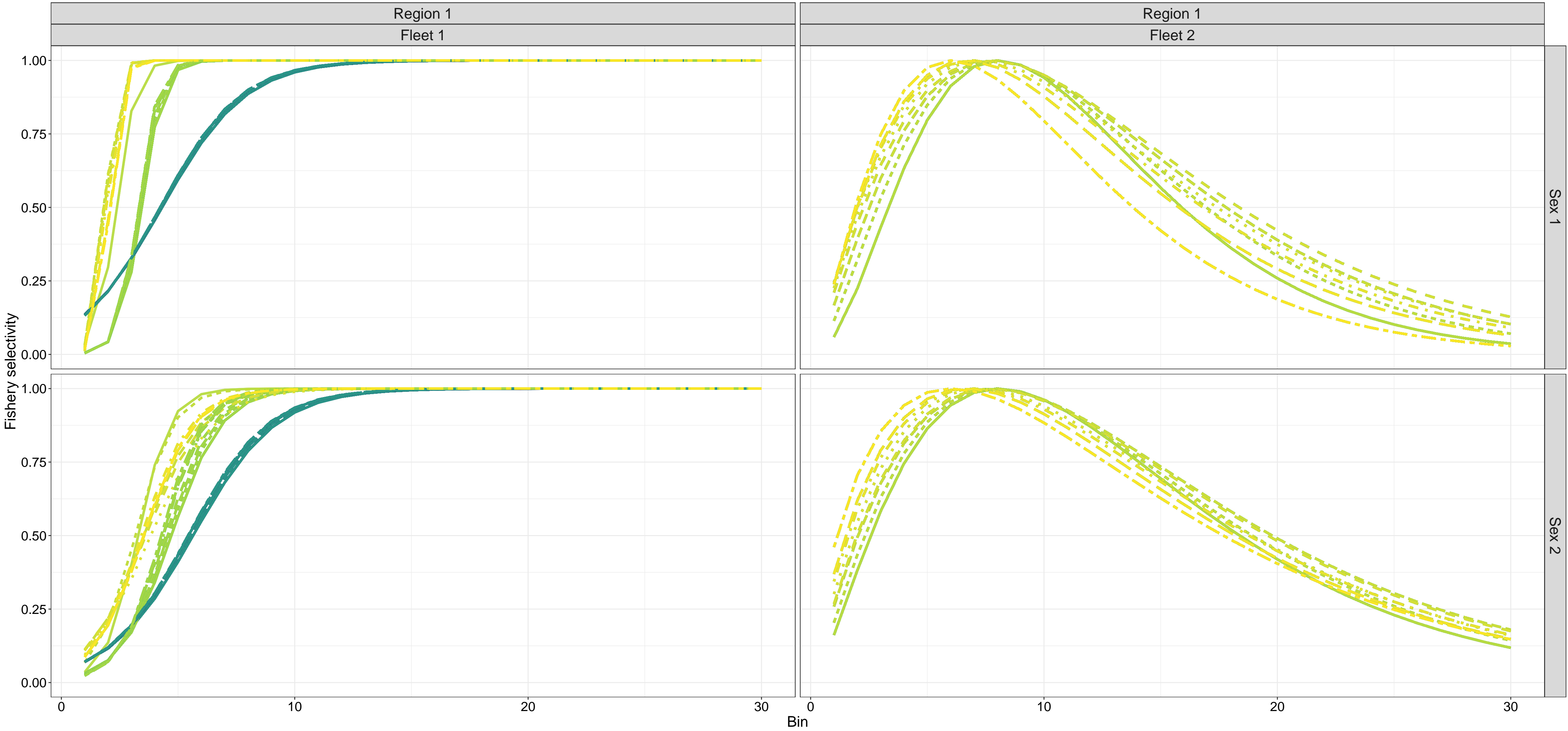
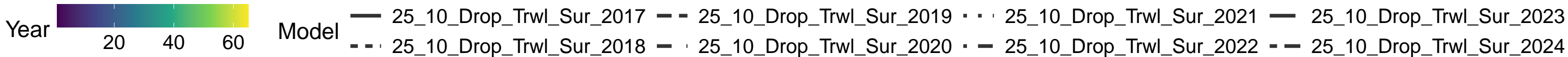
25\_10\_Drop\_Trwl\_Sur\_2022

25\_10\_Drop\_Trwl\_Sur\_2024

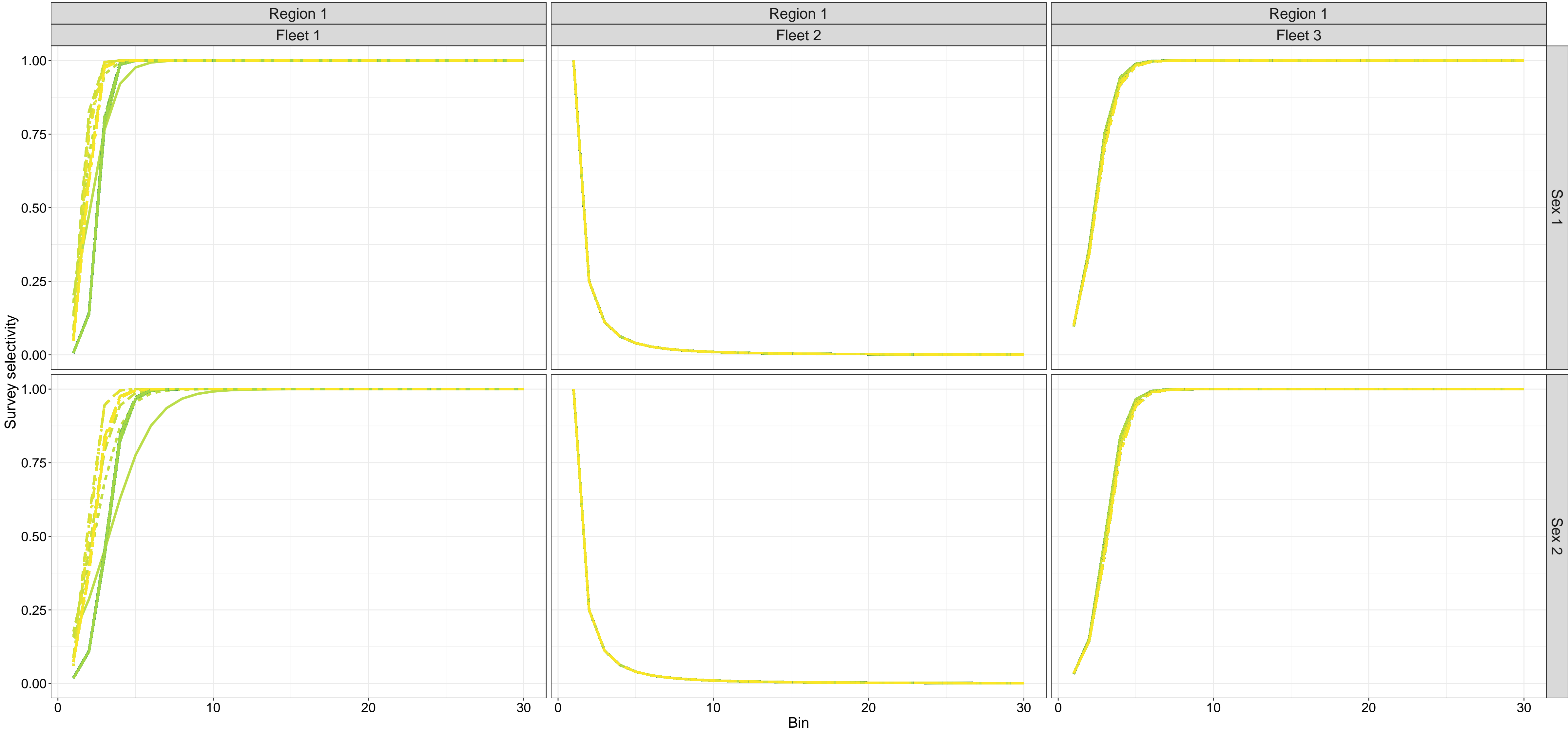
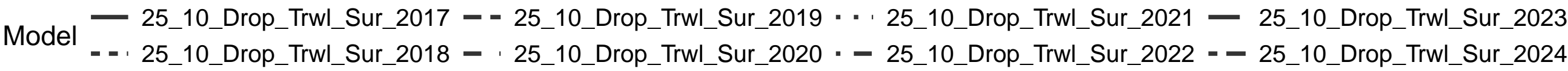




Fishery Selectivity



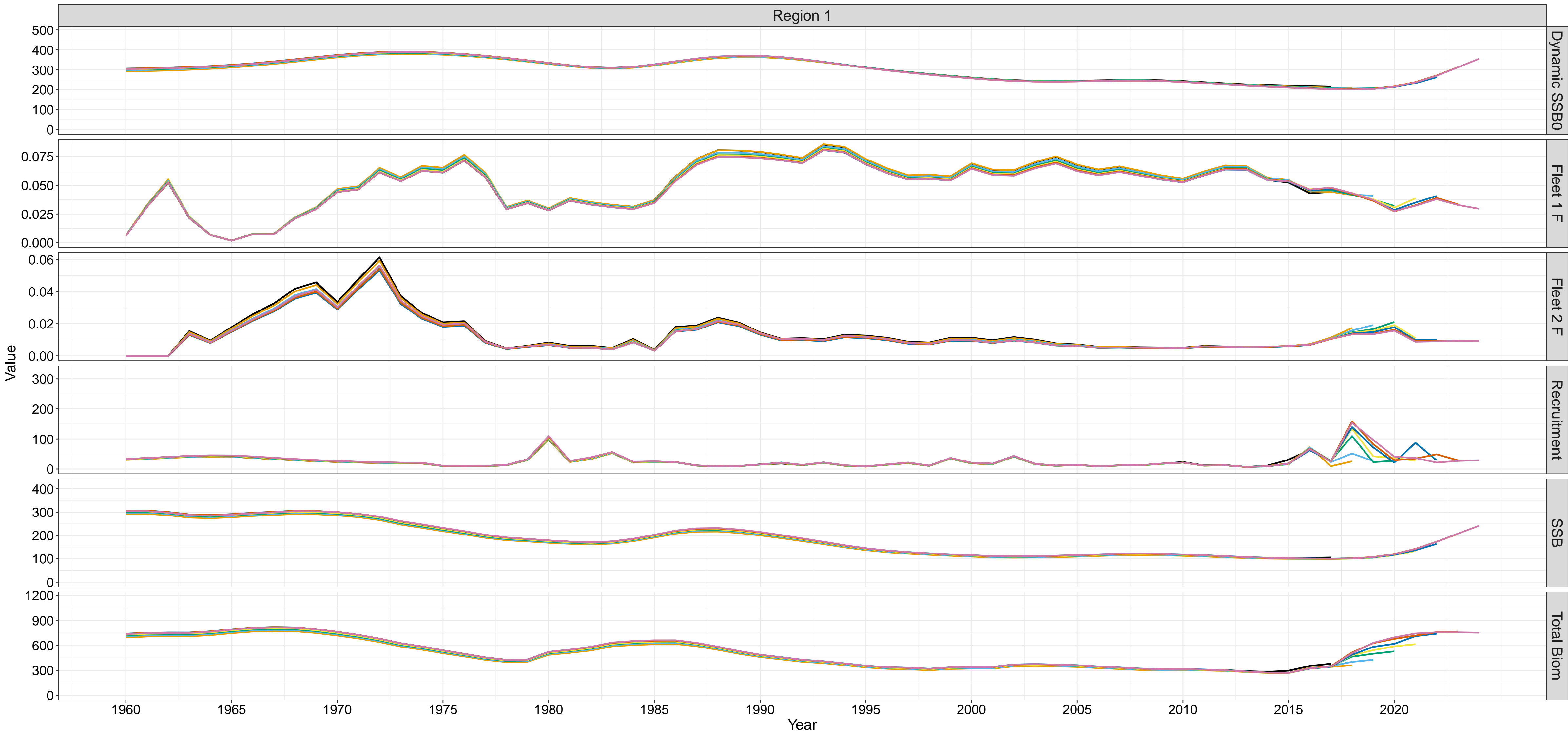
Survey Selectivity





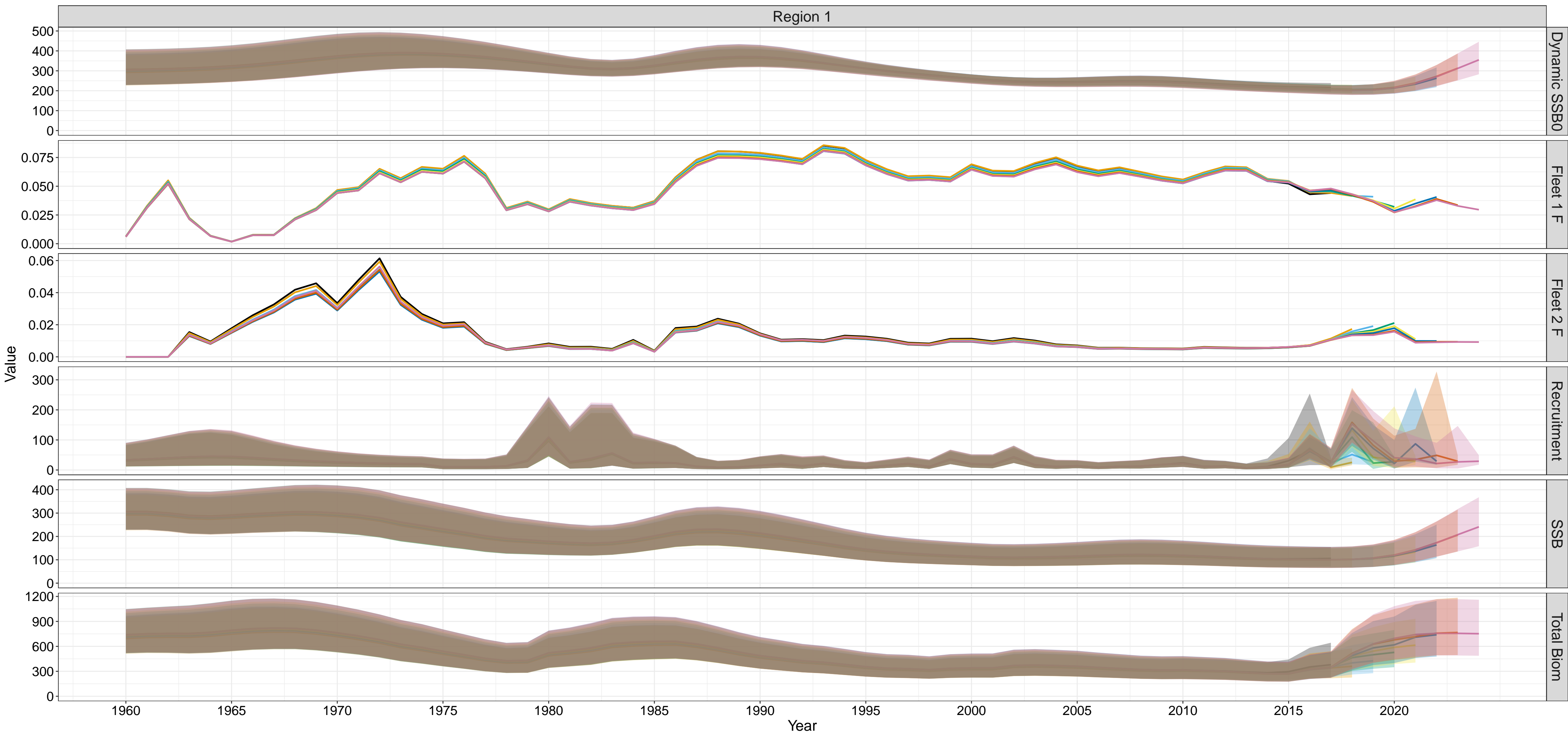
# Time Series Plots

Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024



# Time Series Plots

Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024

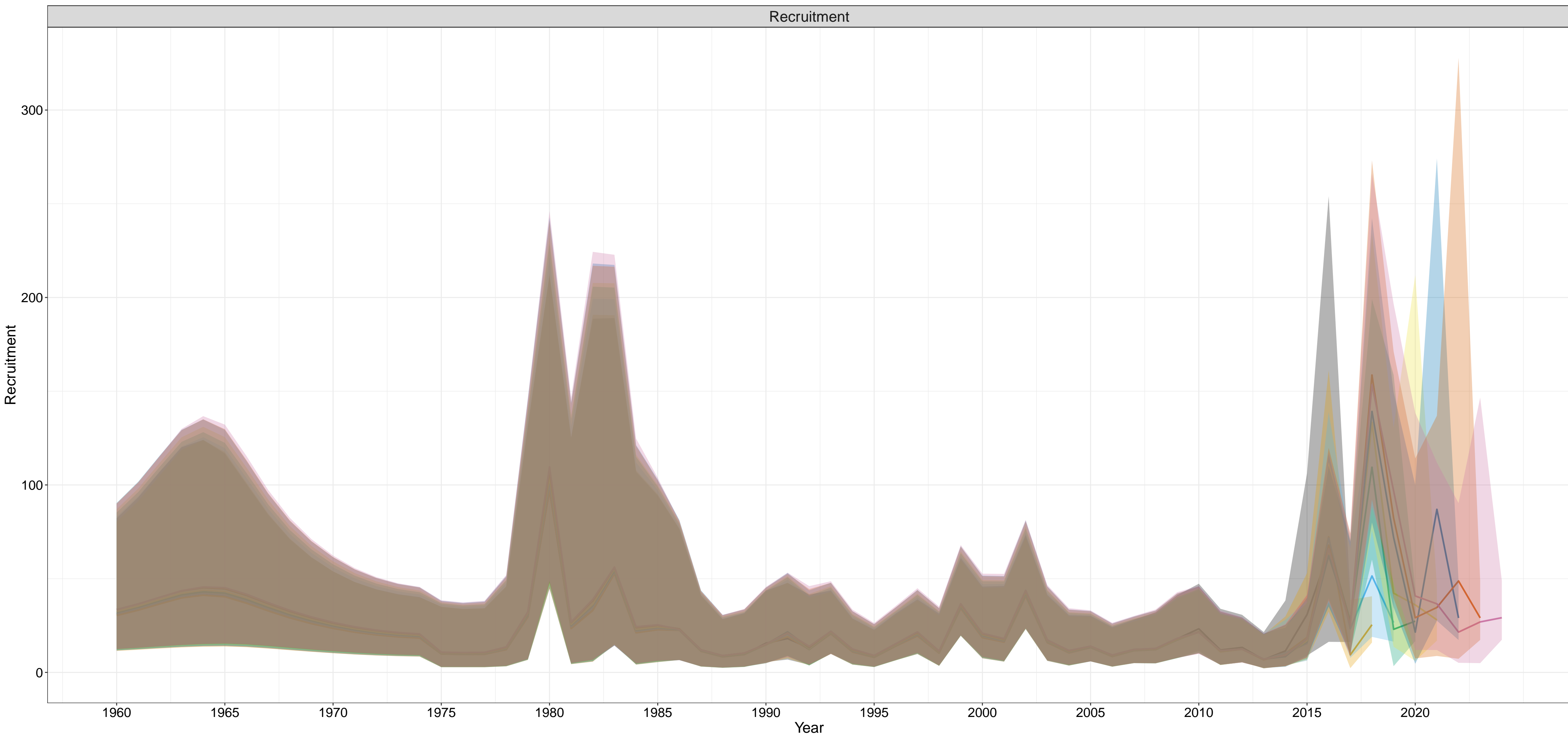
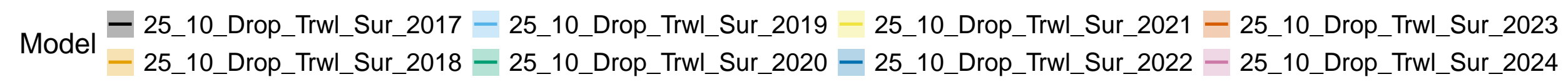


# Fishing Mortality

Model 25\_10\_Drop\_Trwl\_Sur\_2017 25\_10\_Drop\_Trwl\_Sur\_2019 25\_10\_Drop\_Trwl\_Sur\_2021 25\_10\_Drop\_Trwl\_Sur\_2023  
25\_10\_Drop\_Trwl\_Sur\_2018 25\_10\_Drop\_Trwl\_Sur\_2020 25\_10\_Drop\_Trwl\_Sur\_2022 25\_10\_Drop\_Trwl\_Sur\_2024



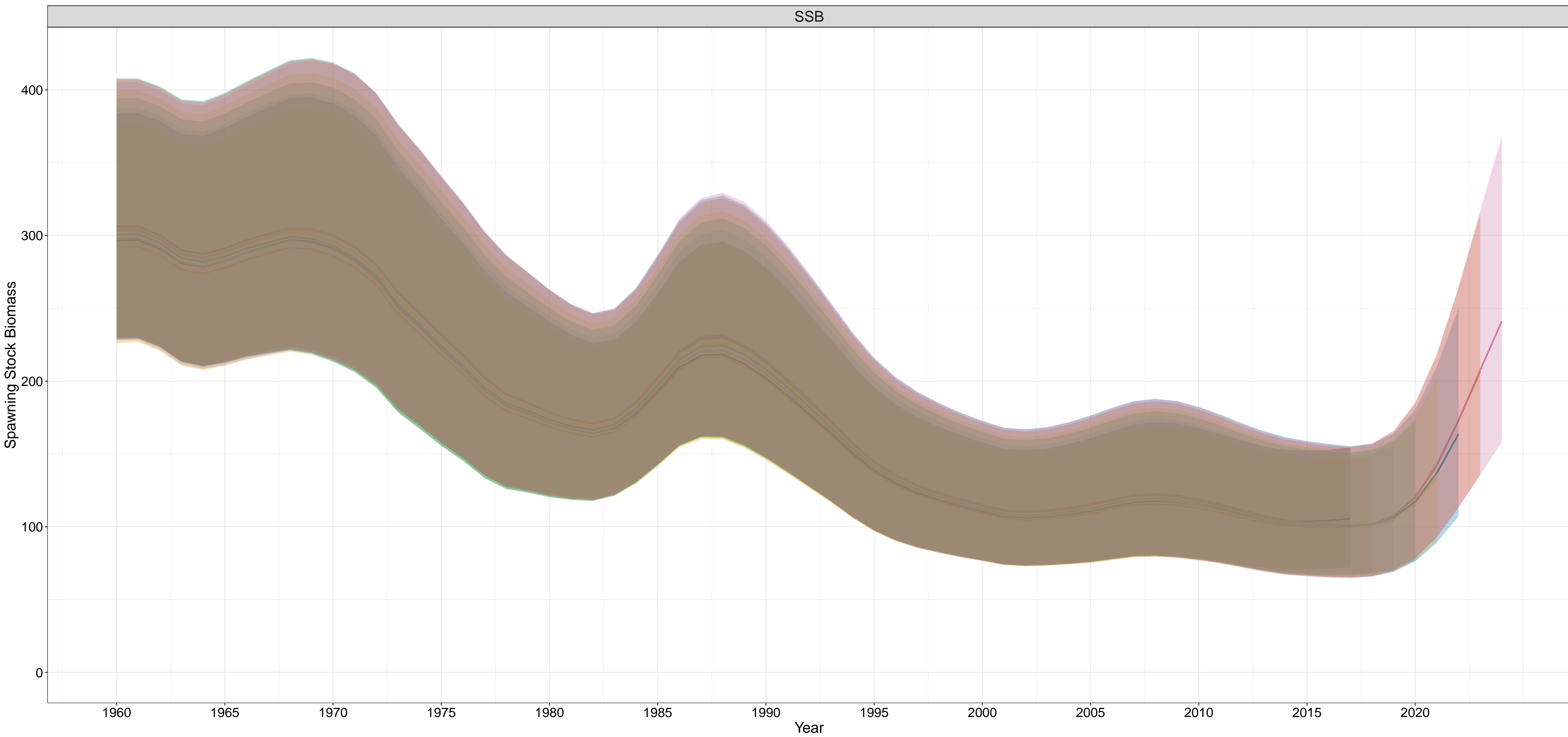
## Recruitment



# SSB

Model

25_10_Drop_Trwl_Sur_2017	25_10_Drop_Trwl_Sur_2019	25_10_Drop_Trwl_Sur_2021	25_10_Drop_Trwl_Sur_2023
25_10_Drop_Trwl_Sur_2018	25_10_Drop_Trwl_Sur_2020	25_10_Drop_Trwl_Sur_2022	25_10_Drop_Trwl_Sur_2024





## Biomass

