An skeleton assessment for Norton Sound red king crab in GMACS + Rmarkdown

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1. Stock: Norton Sound red king crab, *Paralithodes camtschaticus*.
2. Catches: trends and current levels
3. Stock Biomass:
4. Recruitment

5. Management

UPDATE MANAGEMENTTABLE.CSV IN REPO FOR NSRKC, THESE ARE CURRENTLY FOR OPILIO

Table 1: Historical status and catch specifications for snow crab (1,000t).

Year	MSST	Biomass (MMB)	TAC	Retained catch	Total catch	OFL	ABC
2015/2016	75.8	91.6	18.4	18.4	21.4	83.1	62.3
2016/2017	69.7	96.1	9.7	9.7	11	23.7	21.3
2017/2018	71.4	99.6	8.6	8.6	10.5	28.4	22.7
2018/2019	63	123.1	12.5	12.5	15.4	29.7	23.8
2019/2020	1193.5	167.3	0.6	0.6	1.5	54.9	43.9
2020/2021						1541.6	1233.3

Table 2: Historical status and catch specifications for snow crab (millions of lbs).

Year	MSST	Biomass (MMB)	TAC	Retained catch	Total catch	OFL	ABC
2015/2016	167.11	201.94	40.57	40.57	47.18	183.2	137.35
2016/2017	153.66	211.86	21.38	21.38	24.25	52.25	46.96
2017/2018	157.41	219.58	18.96	18.96	23.15	62.61	50.04
2018/2019	138.89	271.39	27.56	27.56	33.95	65.48	52.47
2019/2020	2631.21	368.83	1.32	1.32	3.31	121.03	96.78
2020/2021						3398.64	2718.96

6. Basis for the OFL

7. Probability Density Function of the OFL

8. Basis for ABC

A. Summary of Major Changes

1. Management: None
2. Input data:
3. Assessment methodology:
4. Assessment results

Notes: Tagging data contribution to the likelihood is massive.

B. Comments, responses, and assessment summary

C. Introduction

Distribution

Life history characteristics

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Reproduction

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Calculated OFLs and interpretation

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H. Data gaps and research priorities

Methodology

Data sources

Scientific uncertainty

I. Ecosystem considerations

Appendix A: Population dynamics

Table 3: Changes in management quantities for each scenario considered. Reported management quantities are derived from maximum likelihood estimates. THIS IS FOR DEMONSTRATION ONLY; NEEDS TO BE ADJUSTED FOR NSRKC.

Model	MMB	B35	F35	FOFL	OFL
NSRKC_Hamachan_growth	2624.72	2386.94	0.18	0.18	1541.60
NSRKC_const_est_molt_inc	1893.62	2721.11	0.18	0.11	770.31

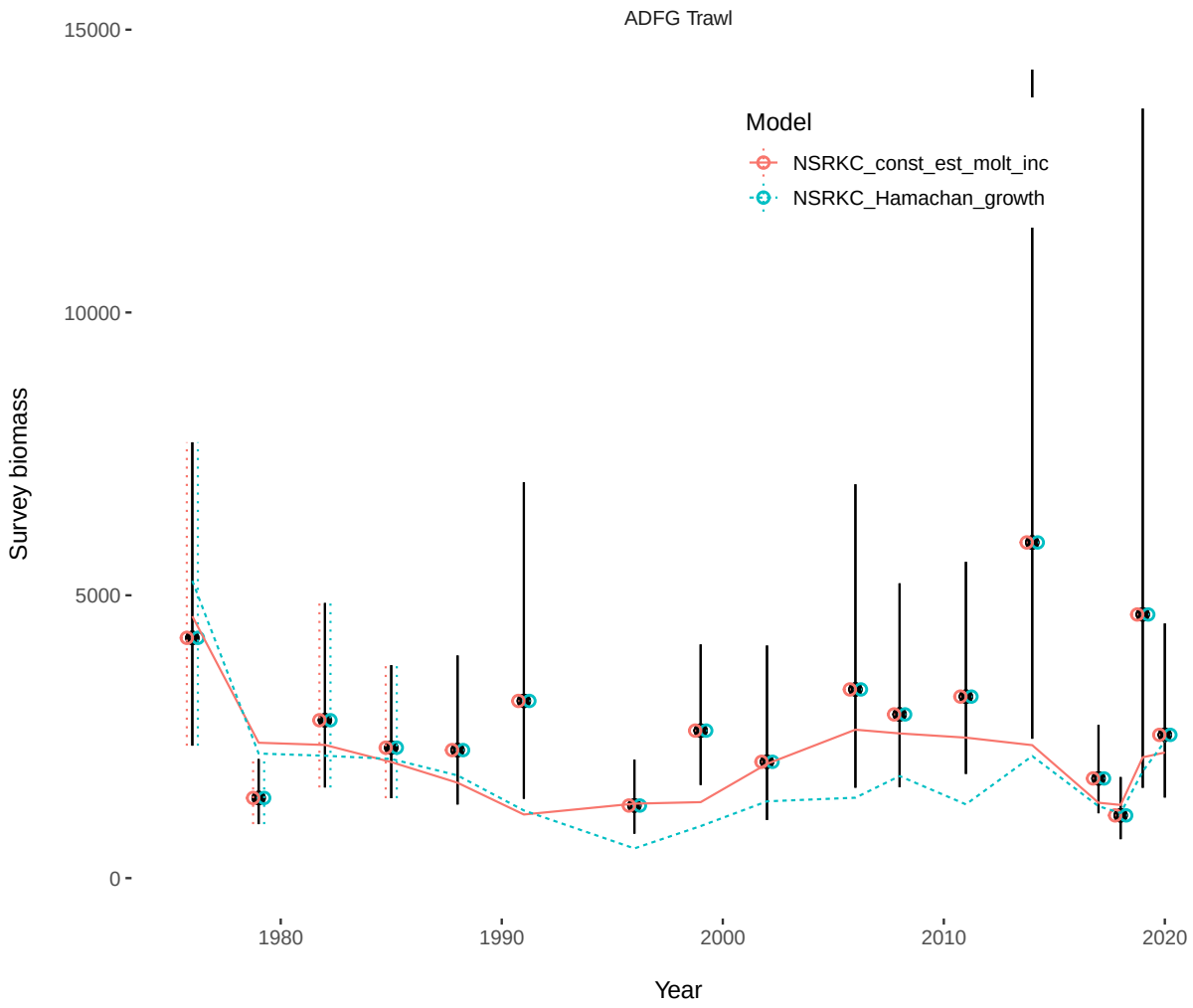

Figure 1: Model fits to the ADFG survey.

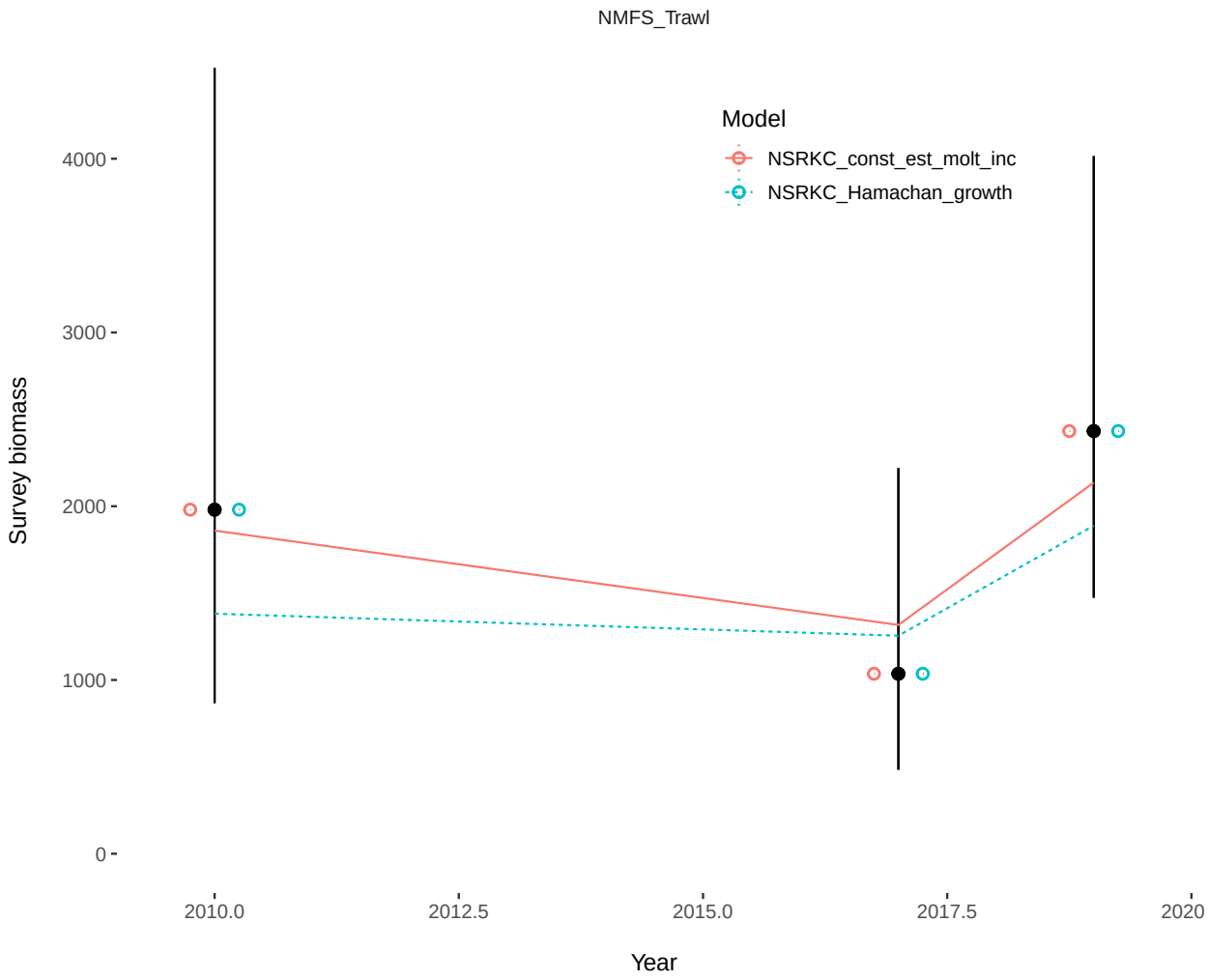

Figure 2: Model fits to the NMFS trawl survey.

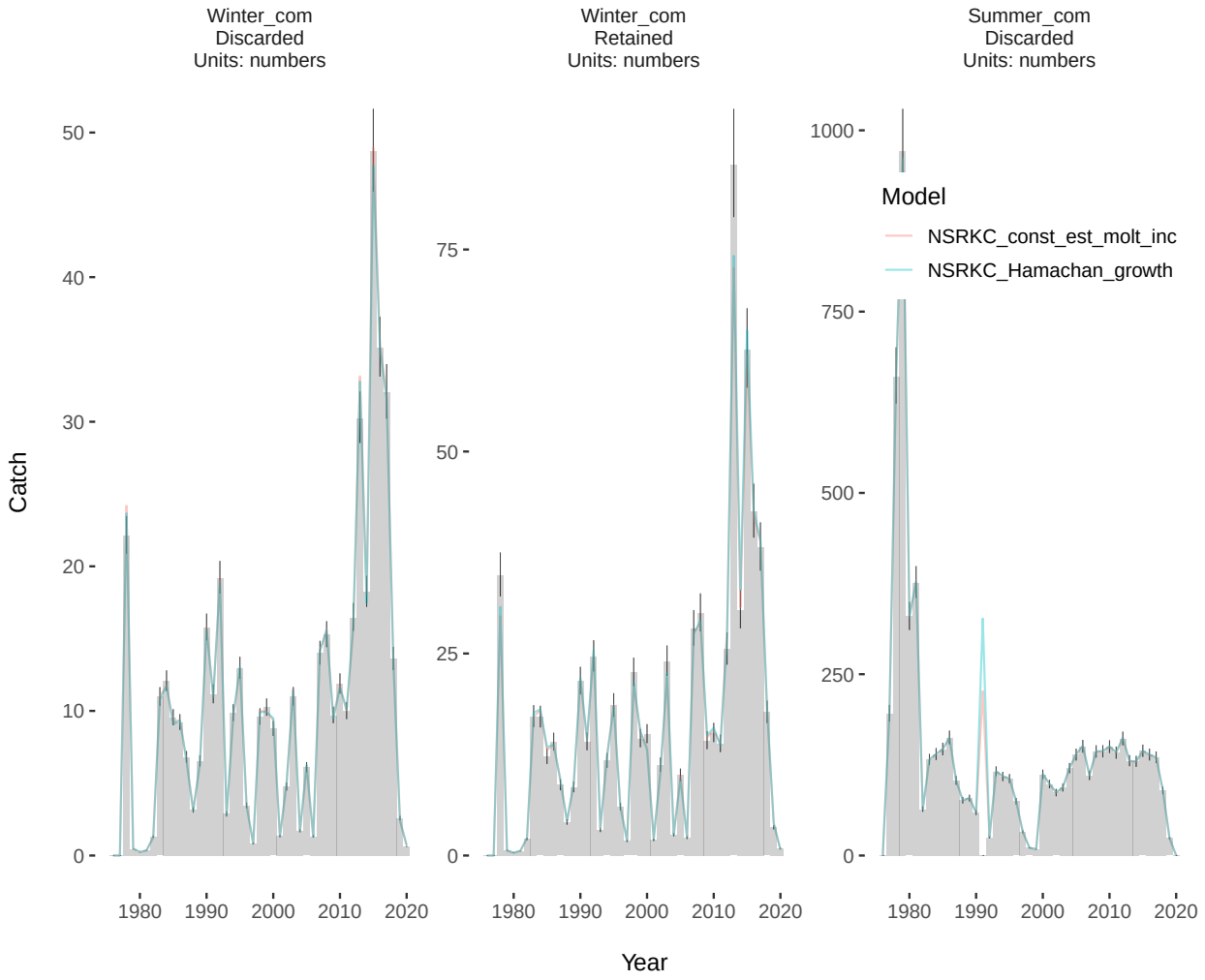

Figure 3: Model fits to the catch data.

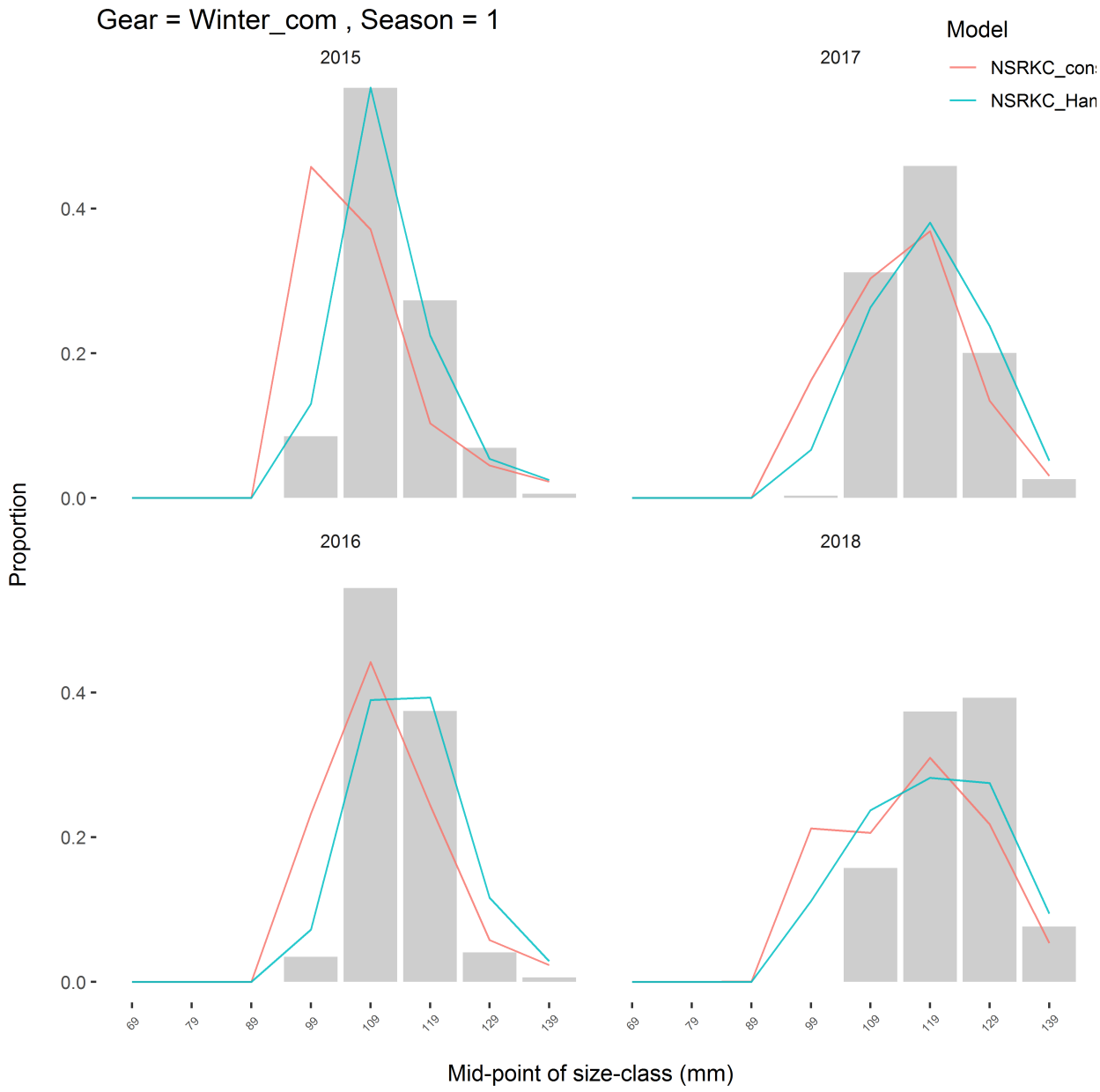

Figure 4: Model fits to the size composition data.

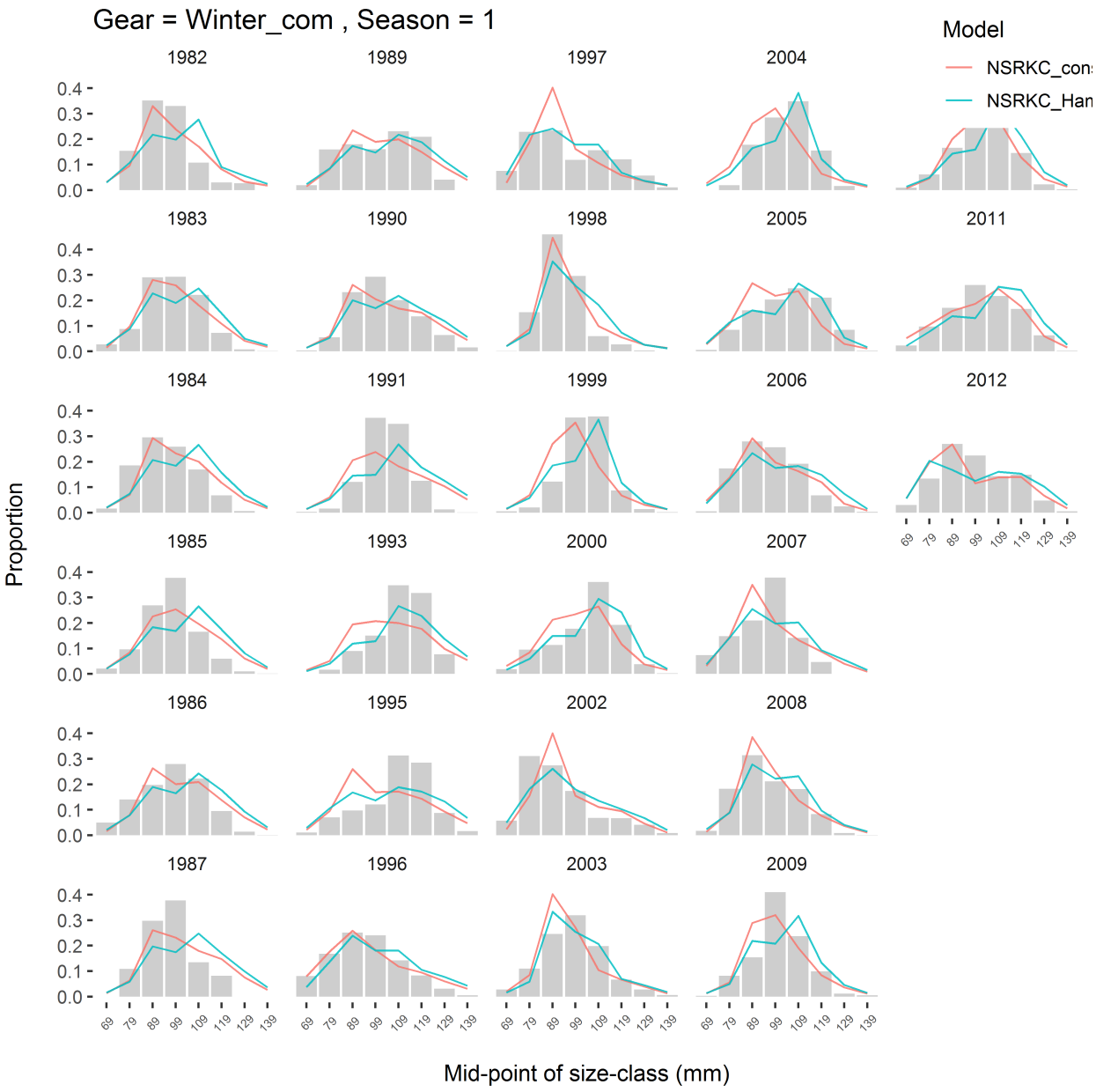

Figure 5: Model fits to the size composition data.

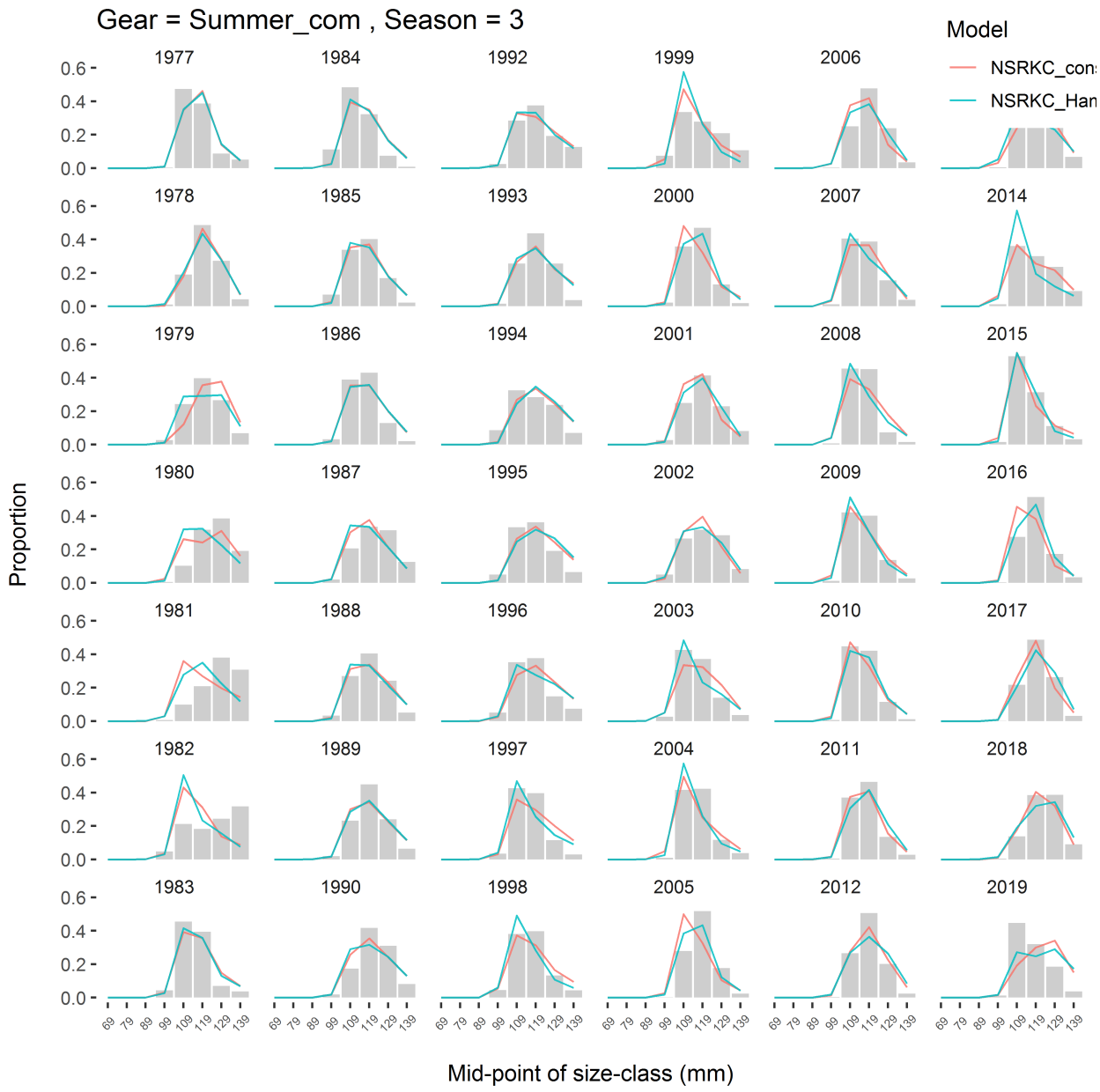

Figure 6: Model fits to the size composition data.

Figure 7: Model fits to the size composition data.

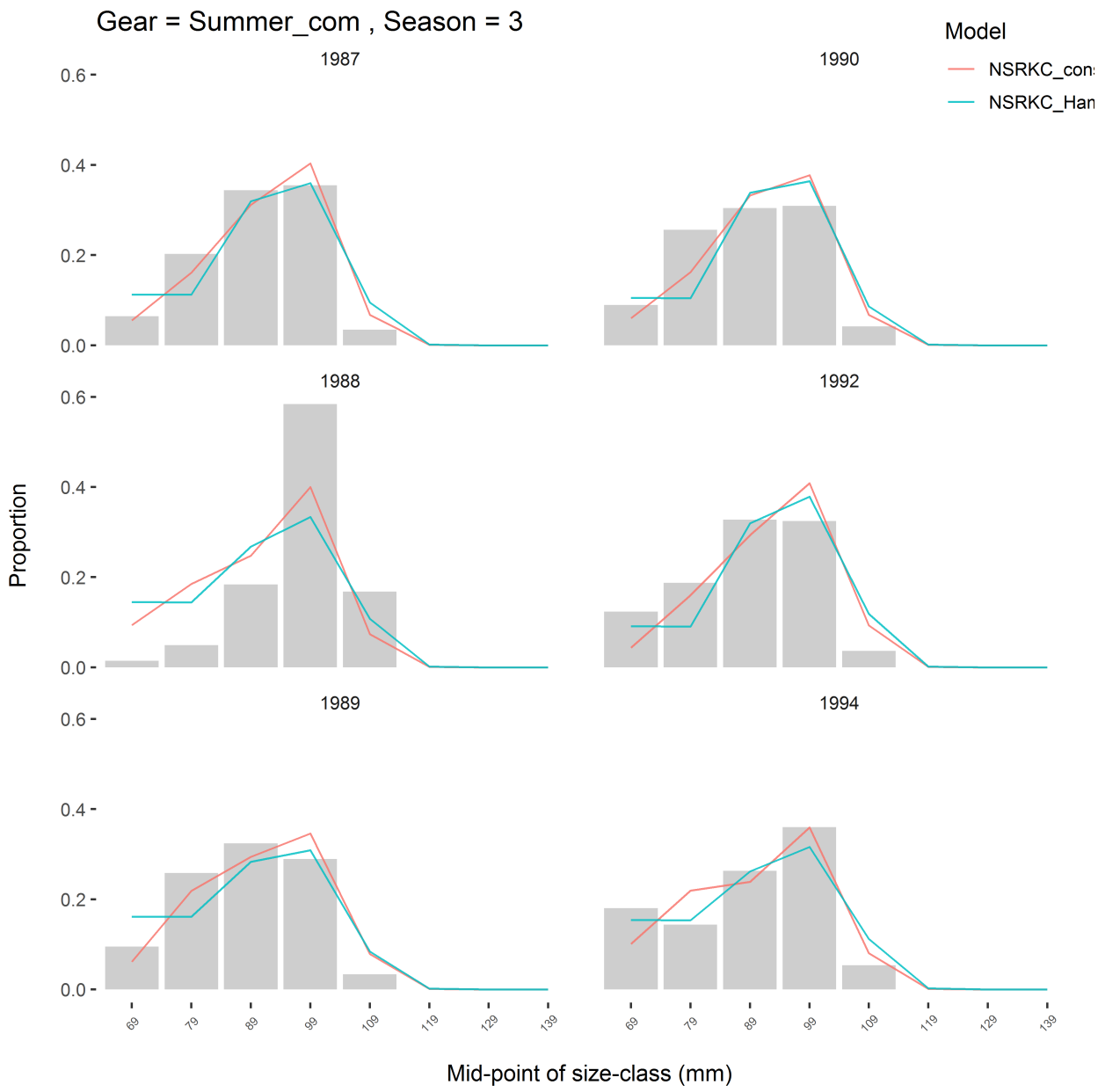

Figure 8: Model fits to the size composition data.

Figure 9: Model fits to the size composition data.

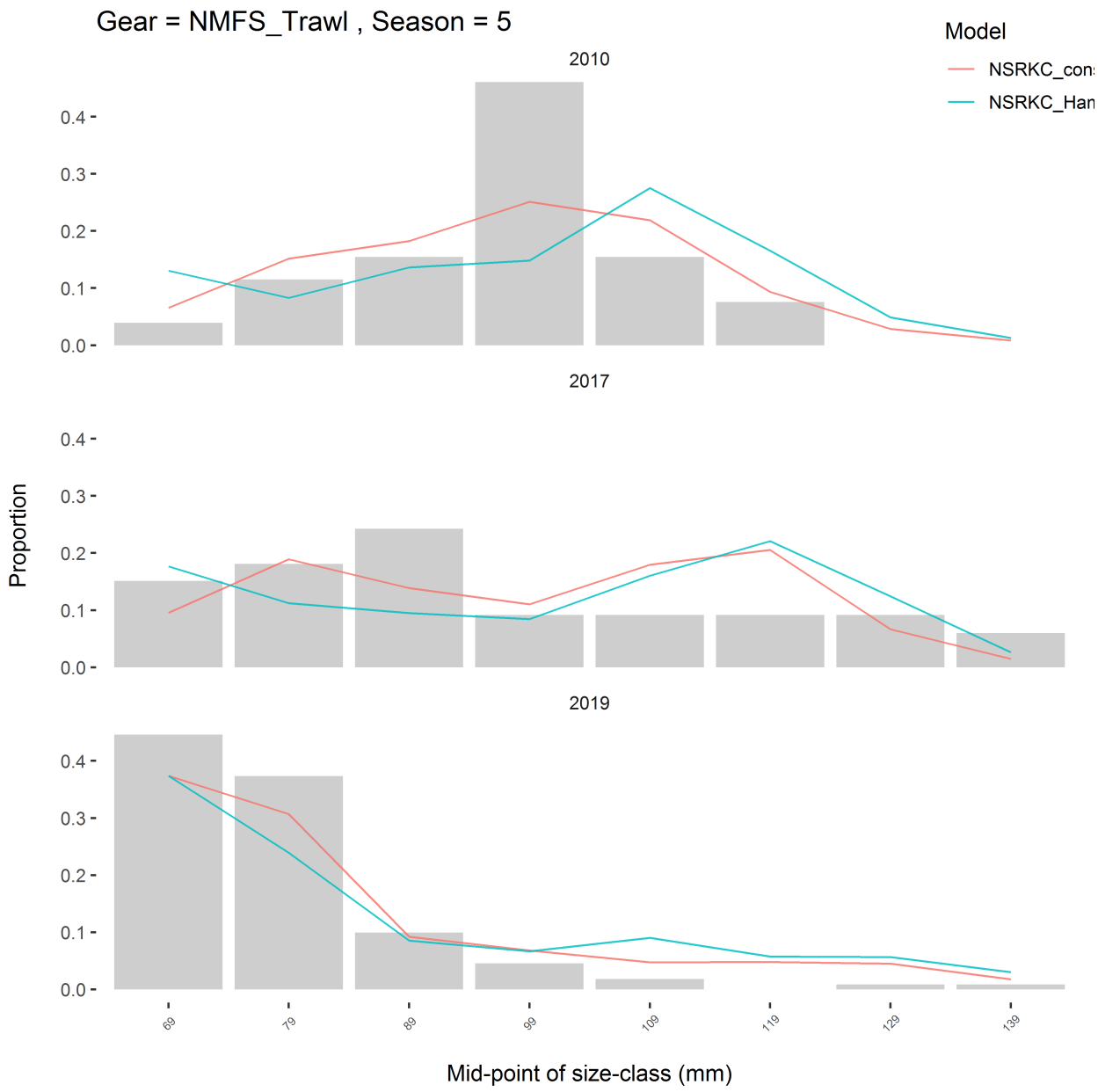

Figure 10: Model fits to the size composition data.

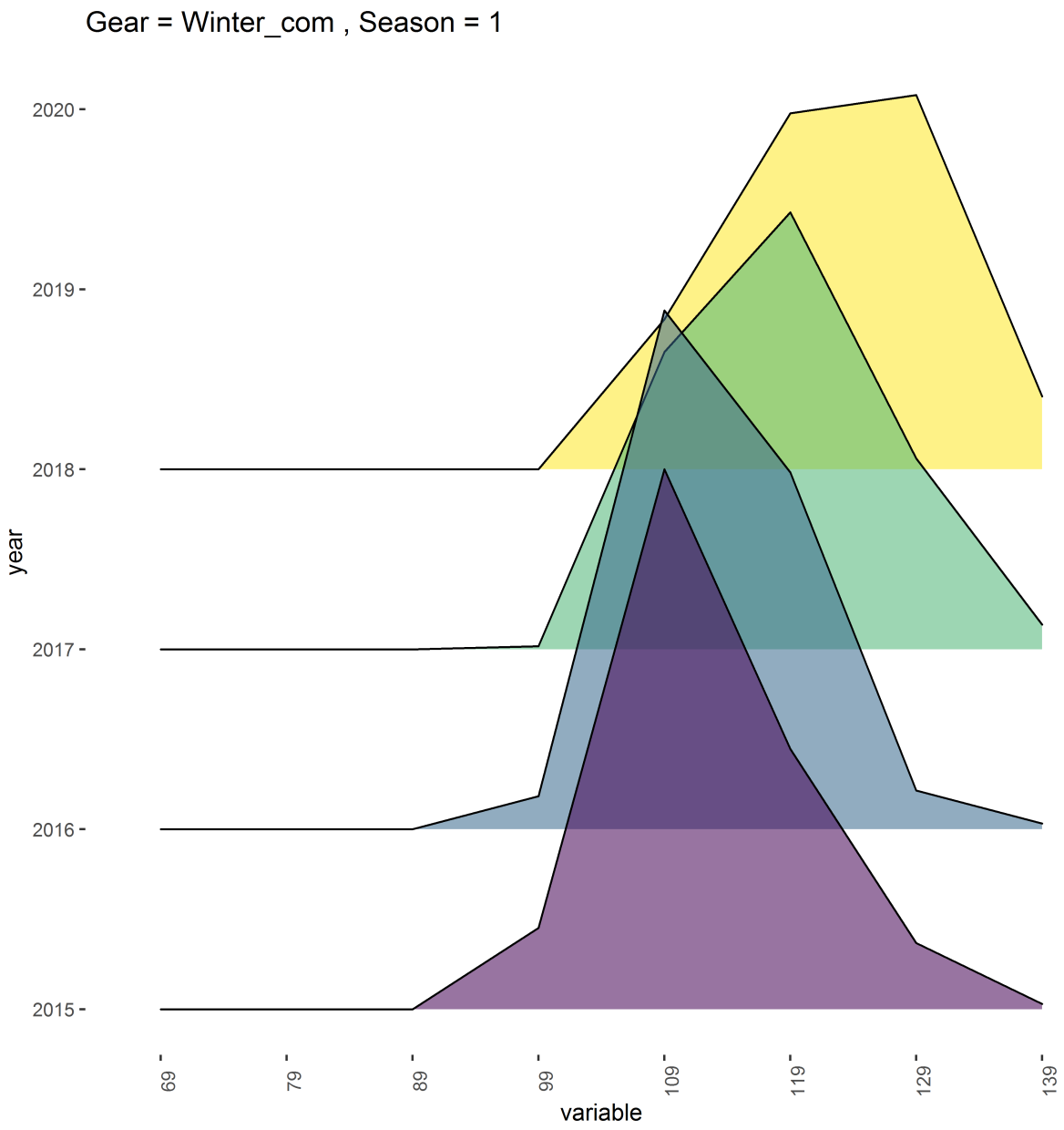

Figure 11: Observed size composition data.

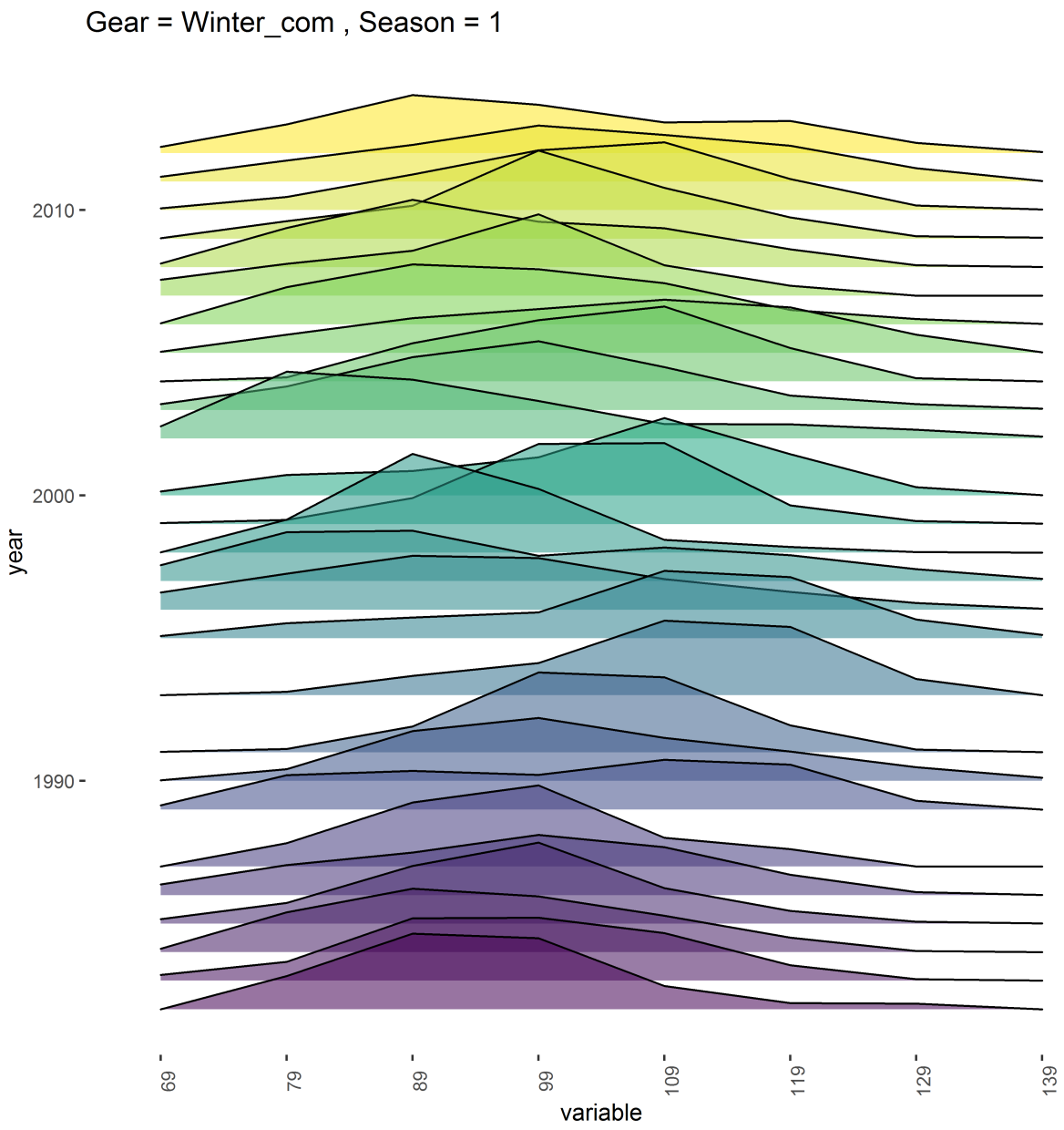

Figure 12: Observed size composition data.

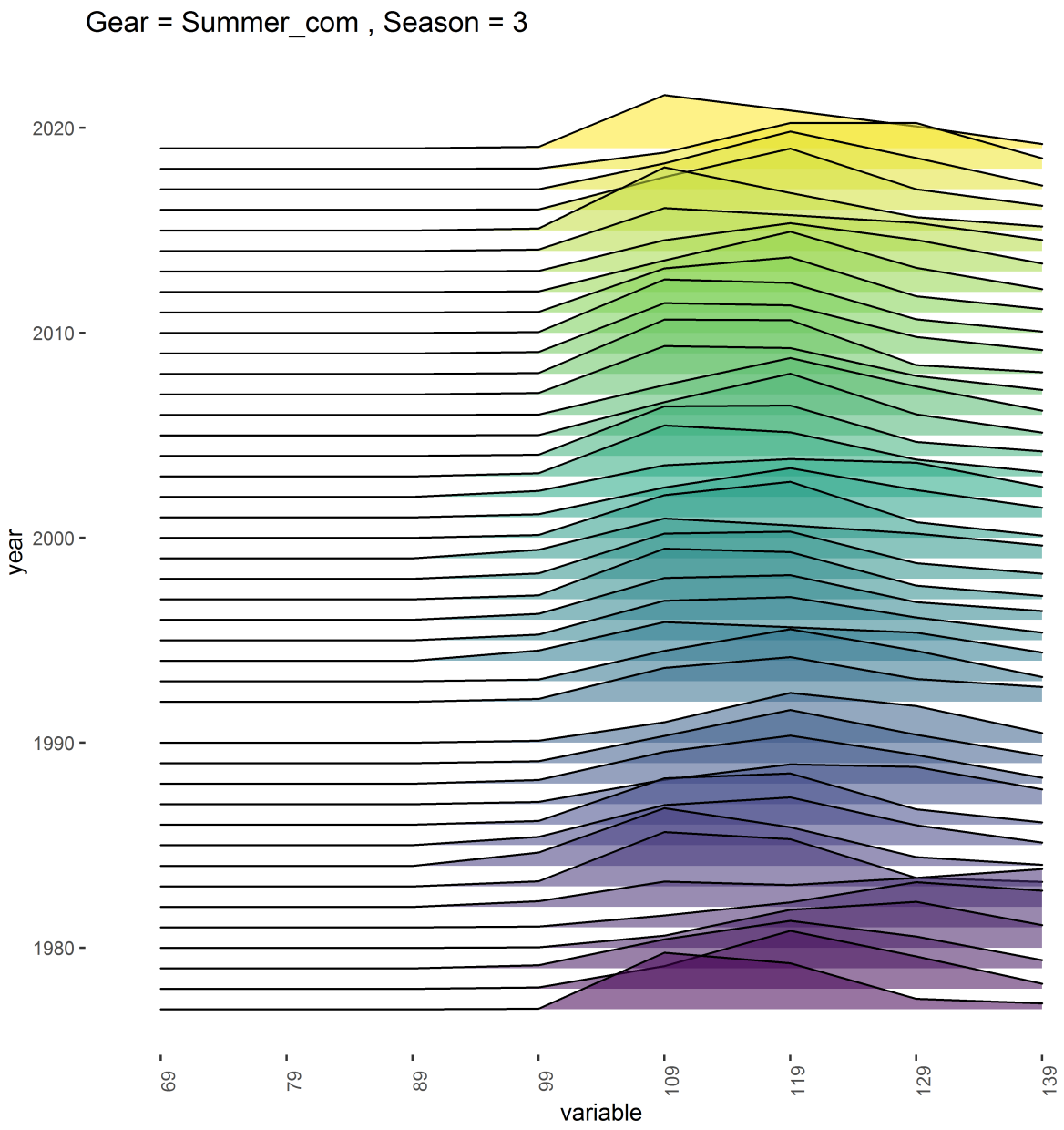

Figure 13: Observed size composition data.

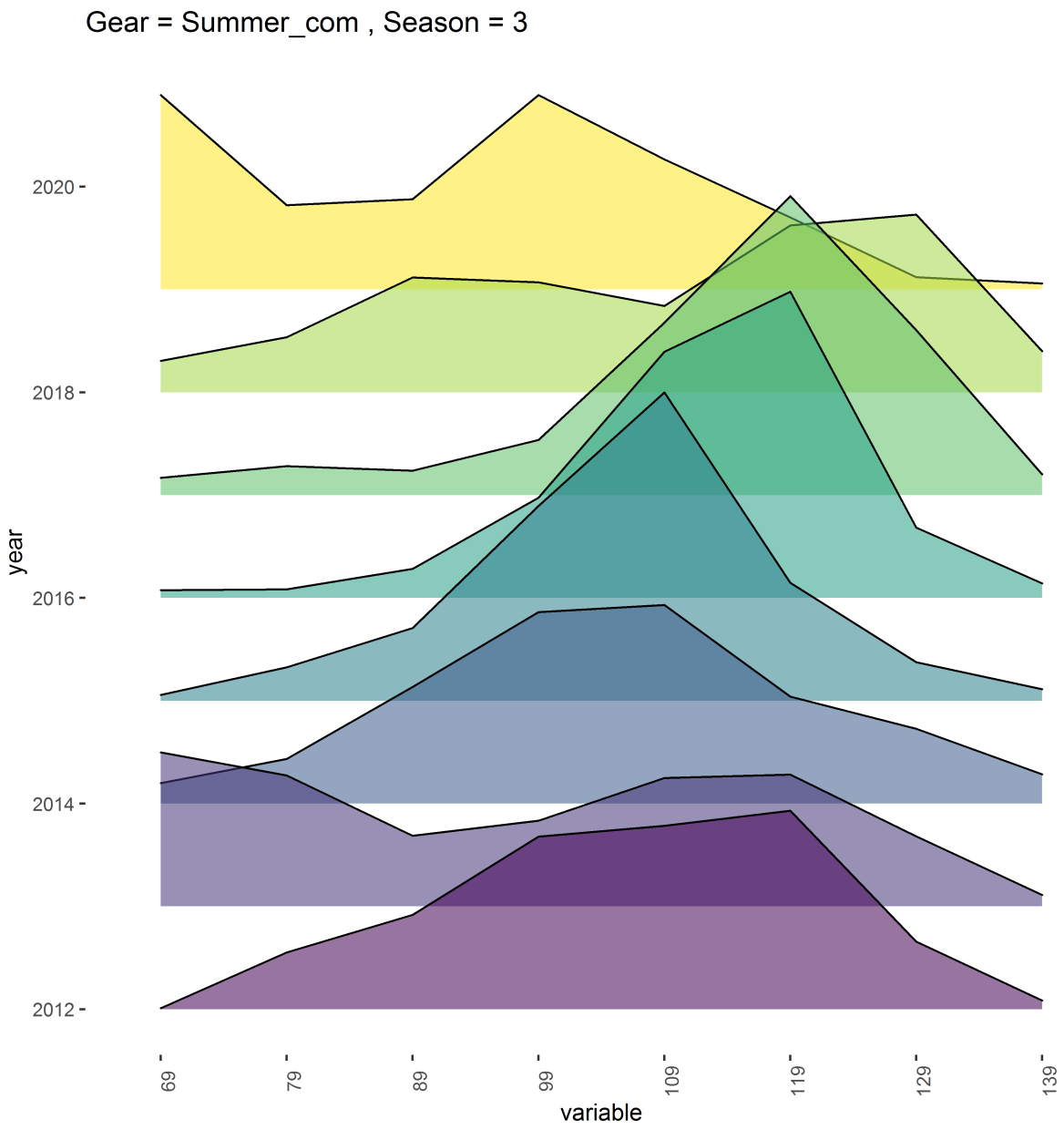

Figure 14: Observed size composition data.

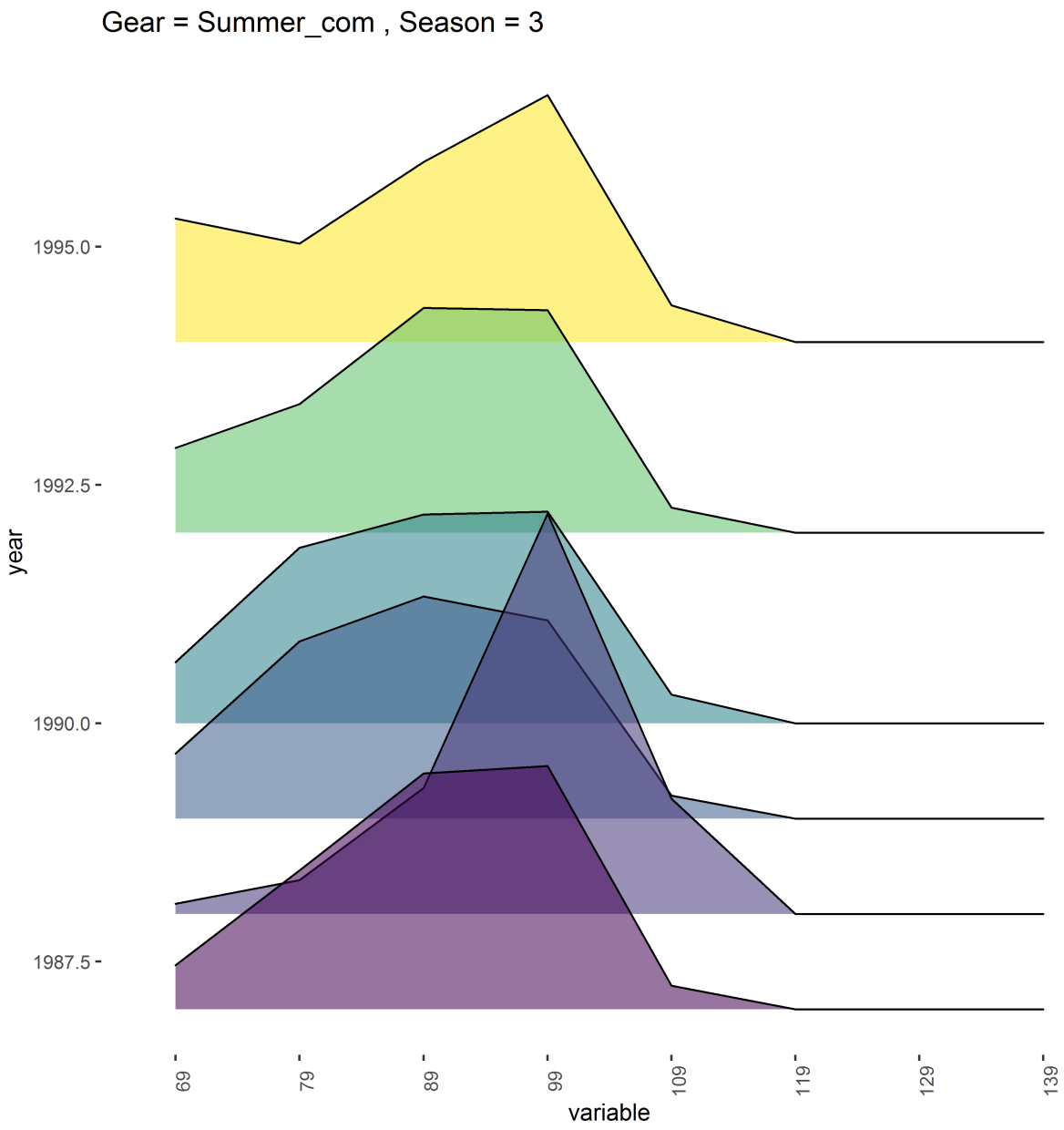

Figure 15: Observed size composition data.

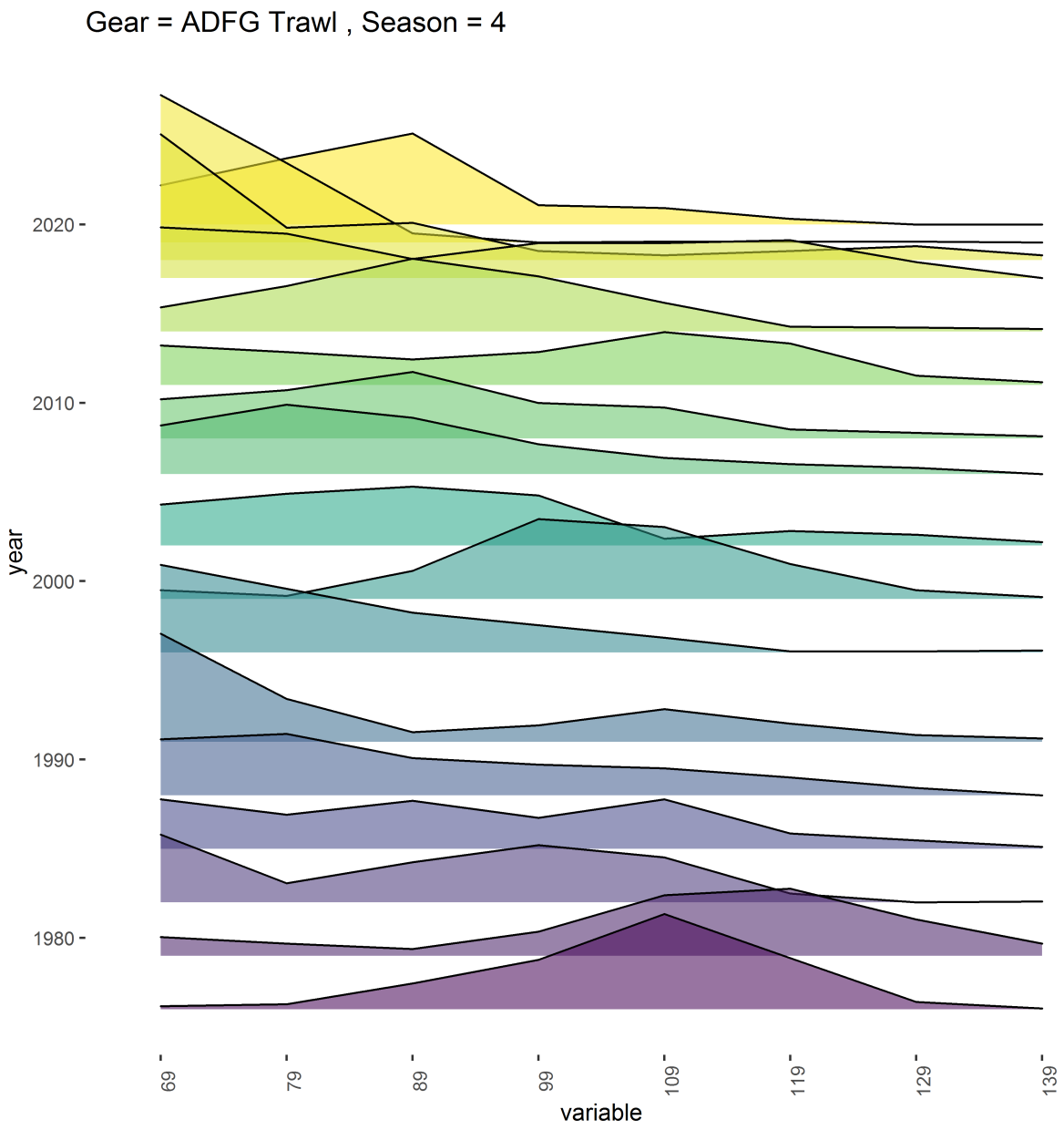

Figure 16: Observed size composition data.

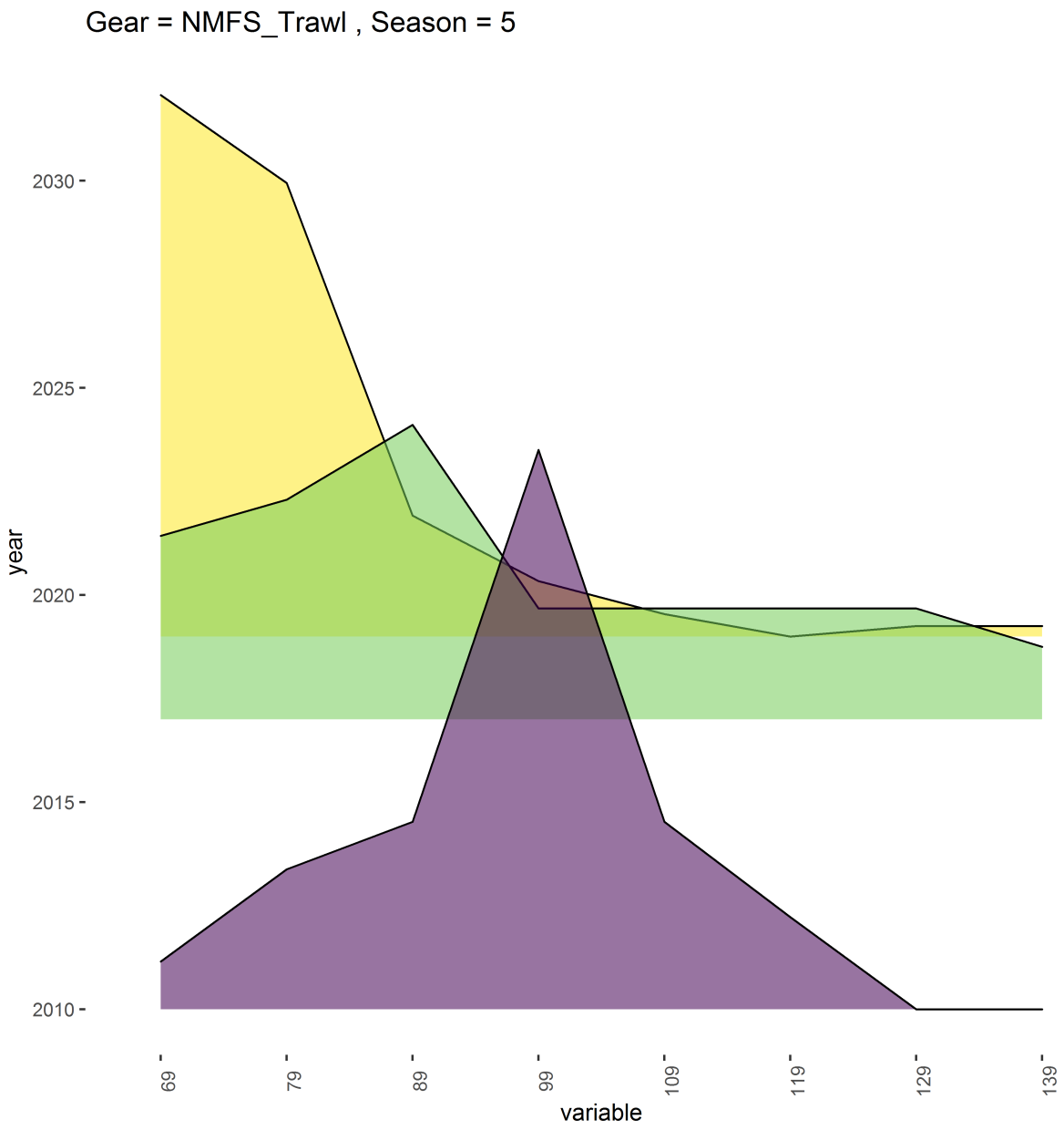

Figure 17: Observed size composition data.

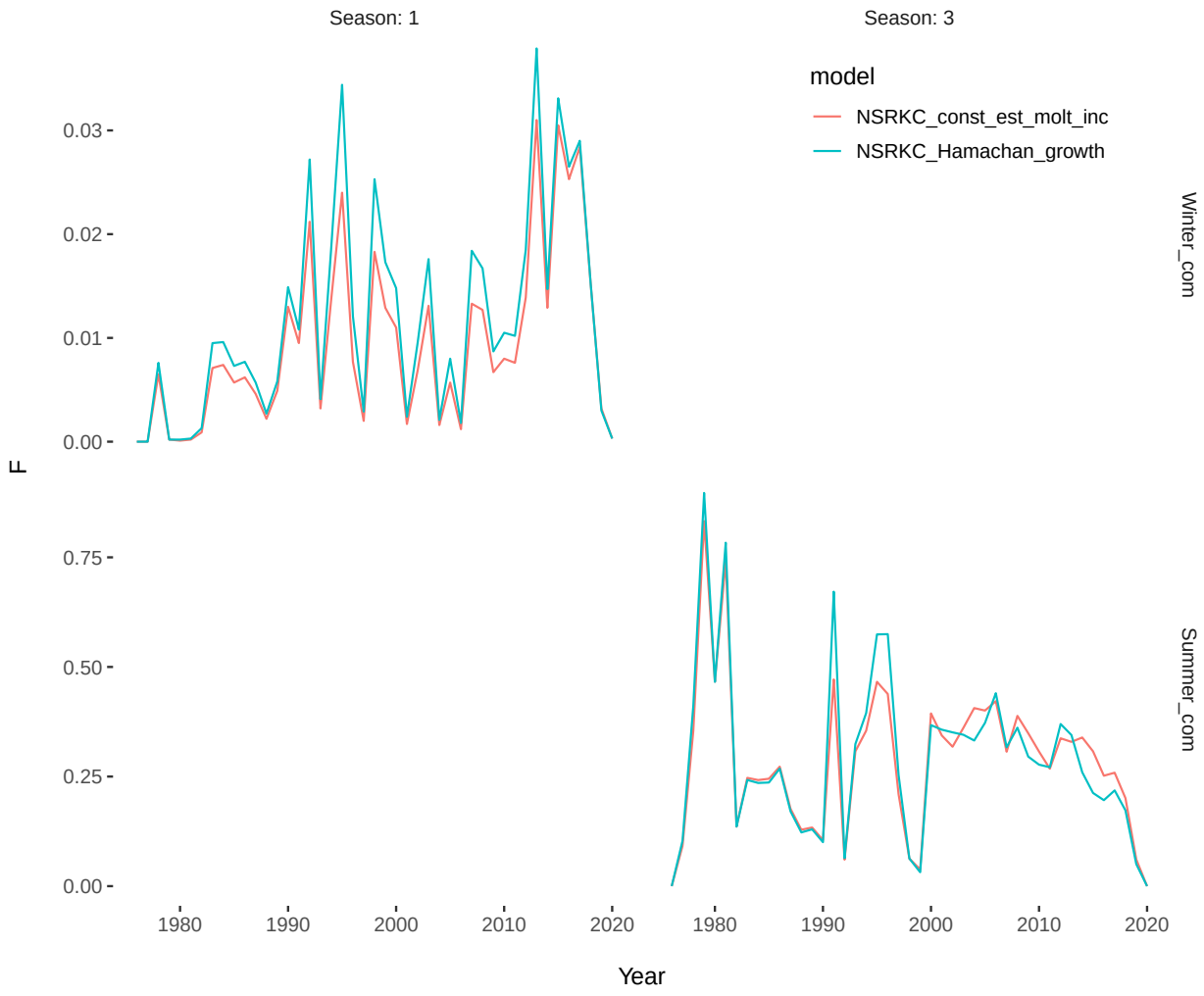

Figure 18: Estimated fishing mortality by fleet.

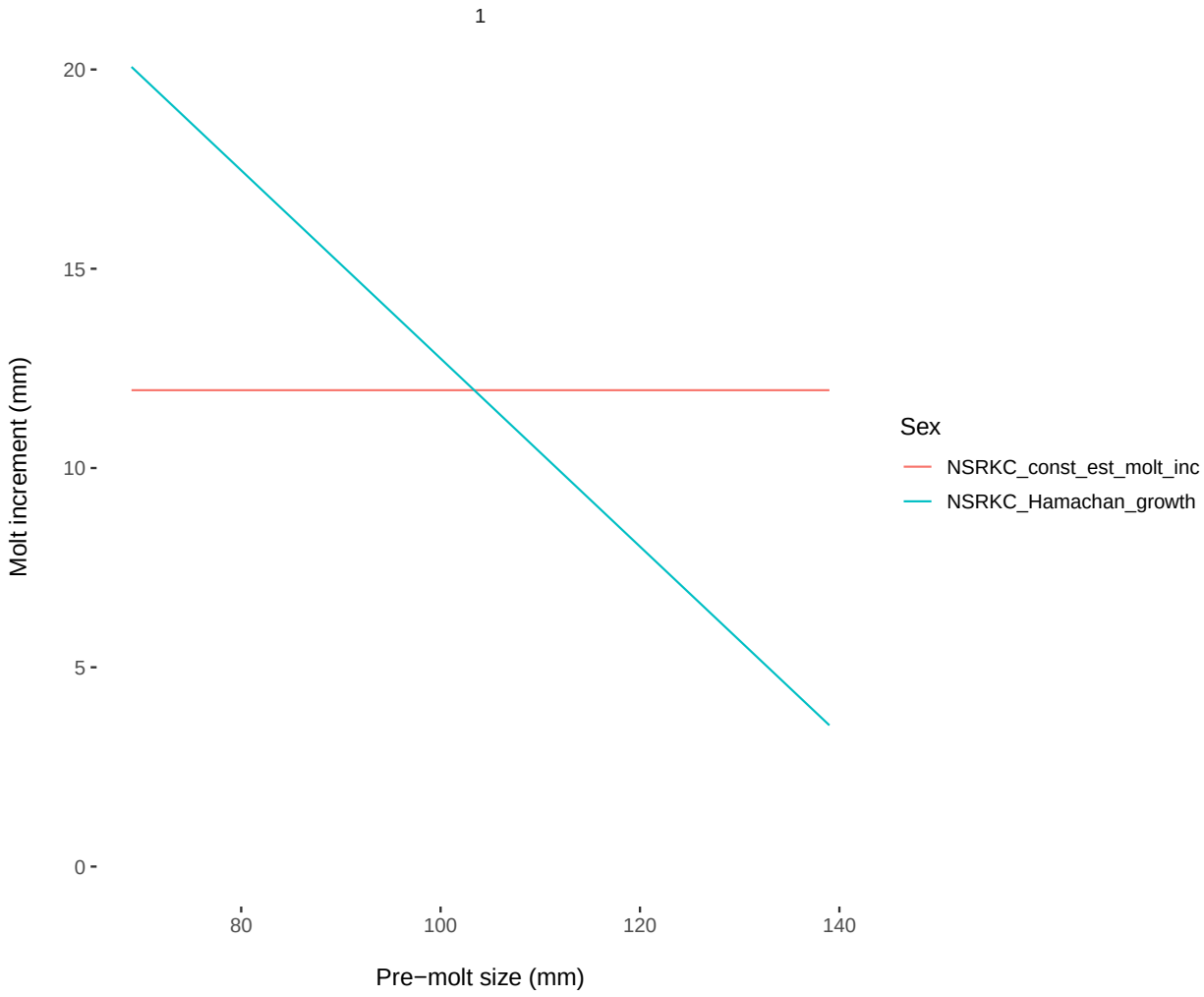

Figure 19: Estimated molt increments.

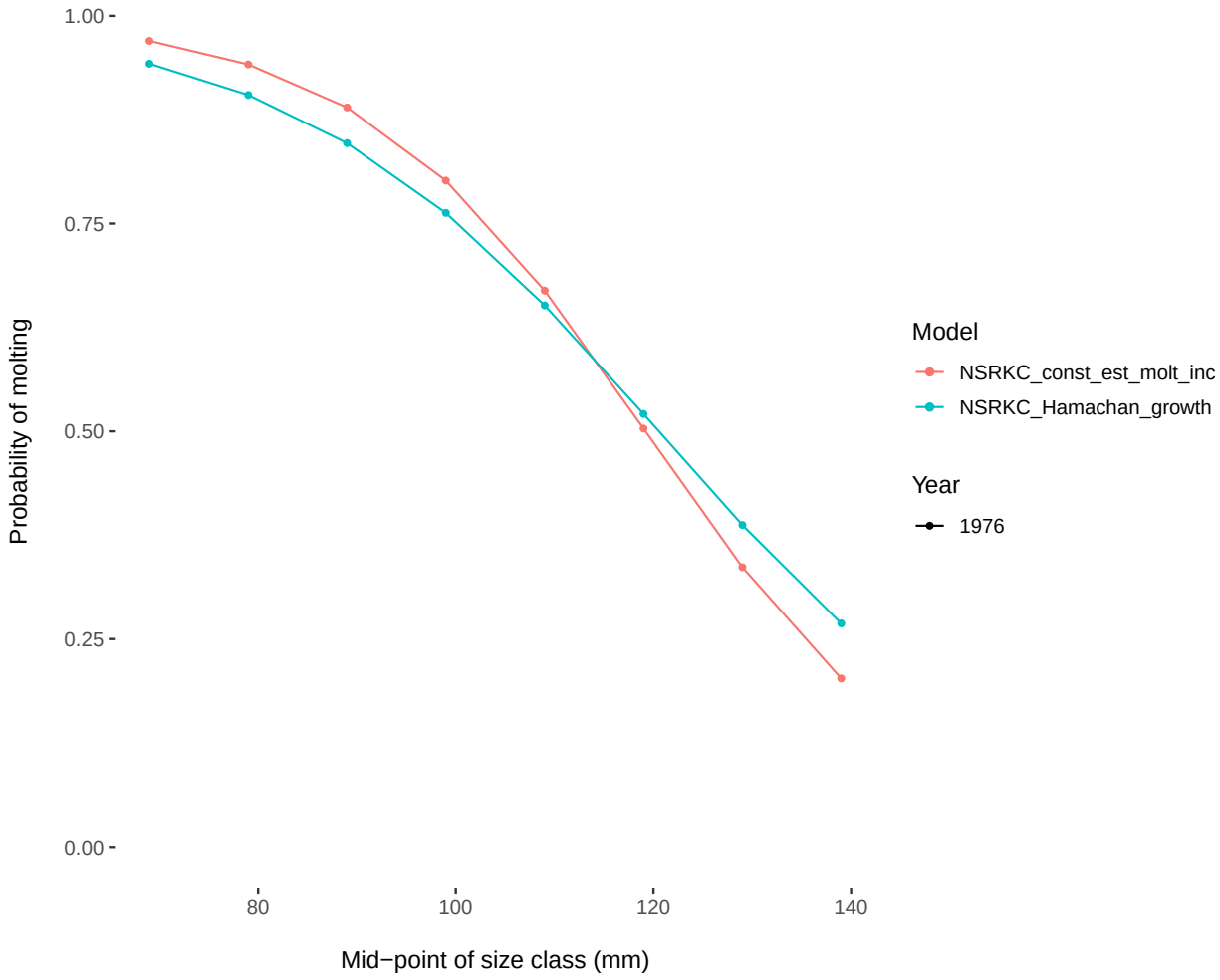

Figure 20: Estimated probability of molting.

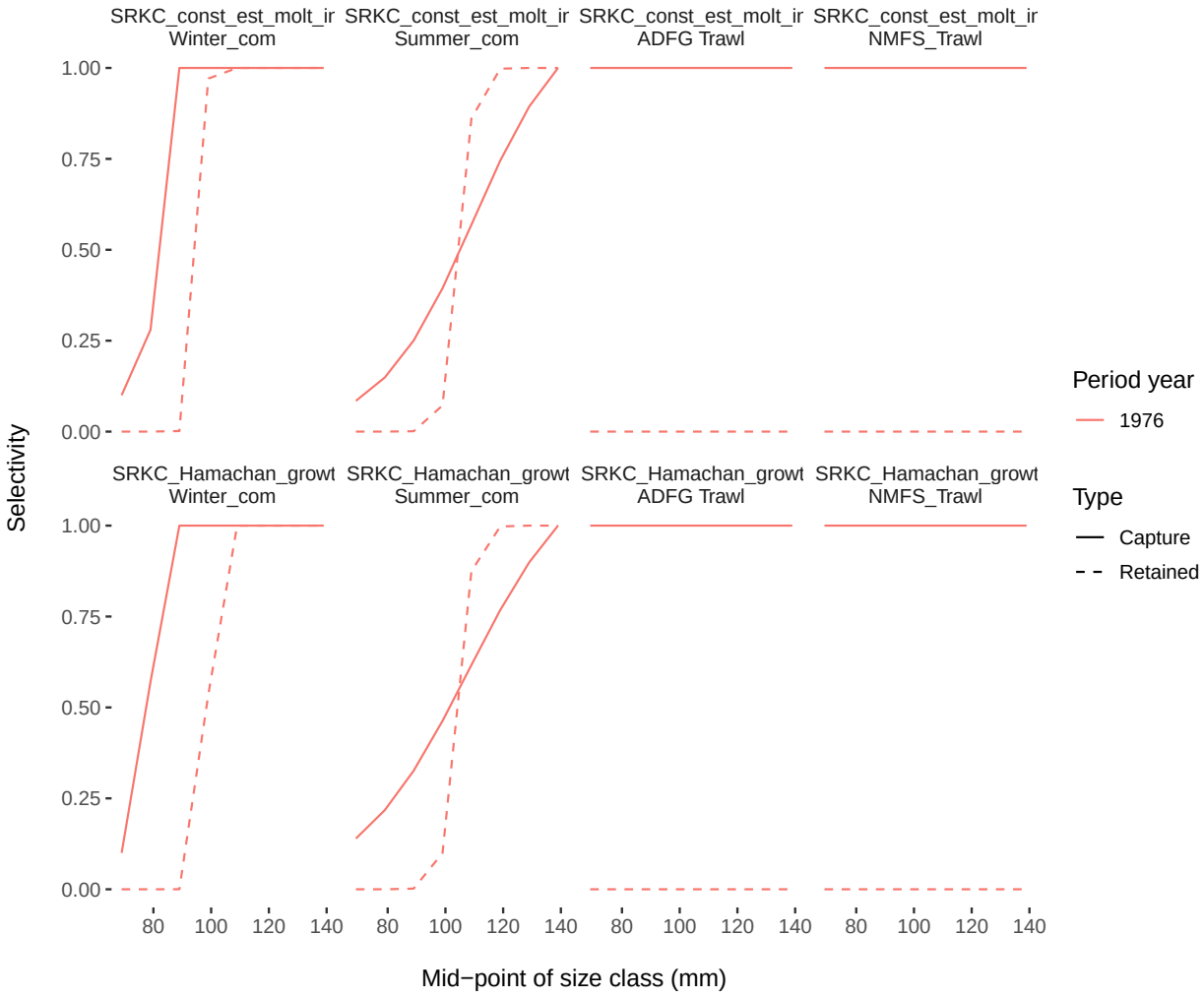

Figure 21: Estimated selectivity.

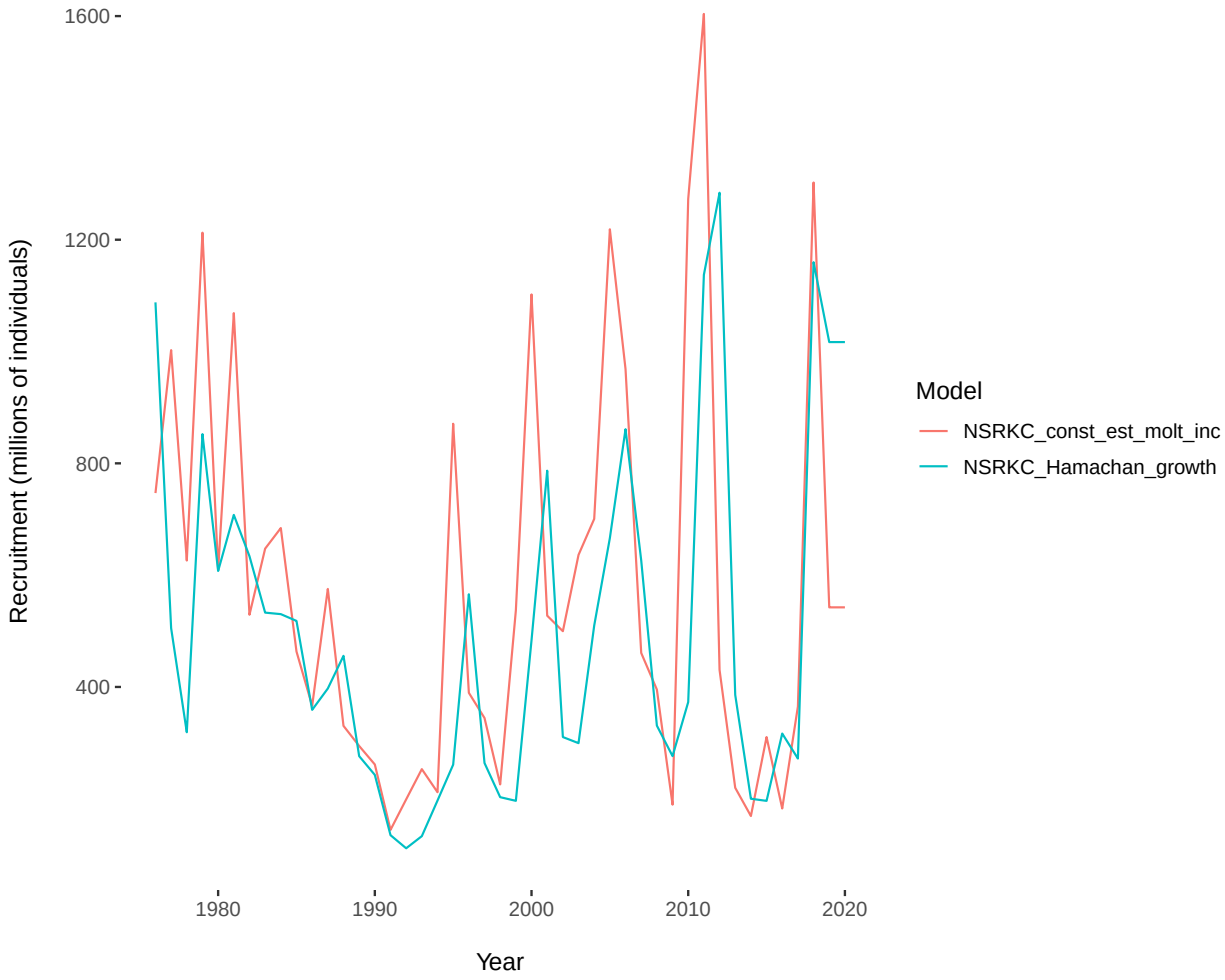

Figure 22: Estimated recruitment.

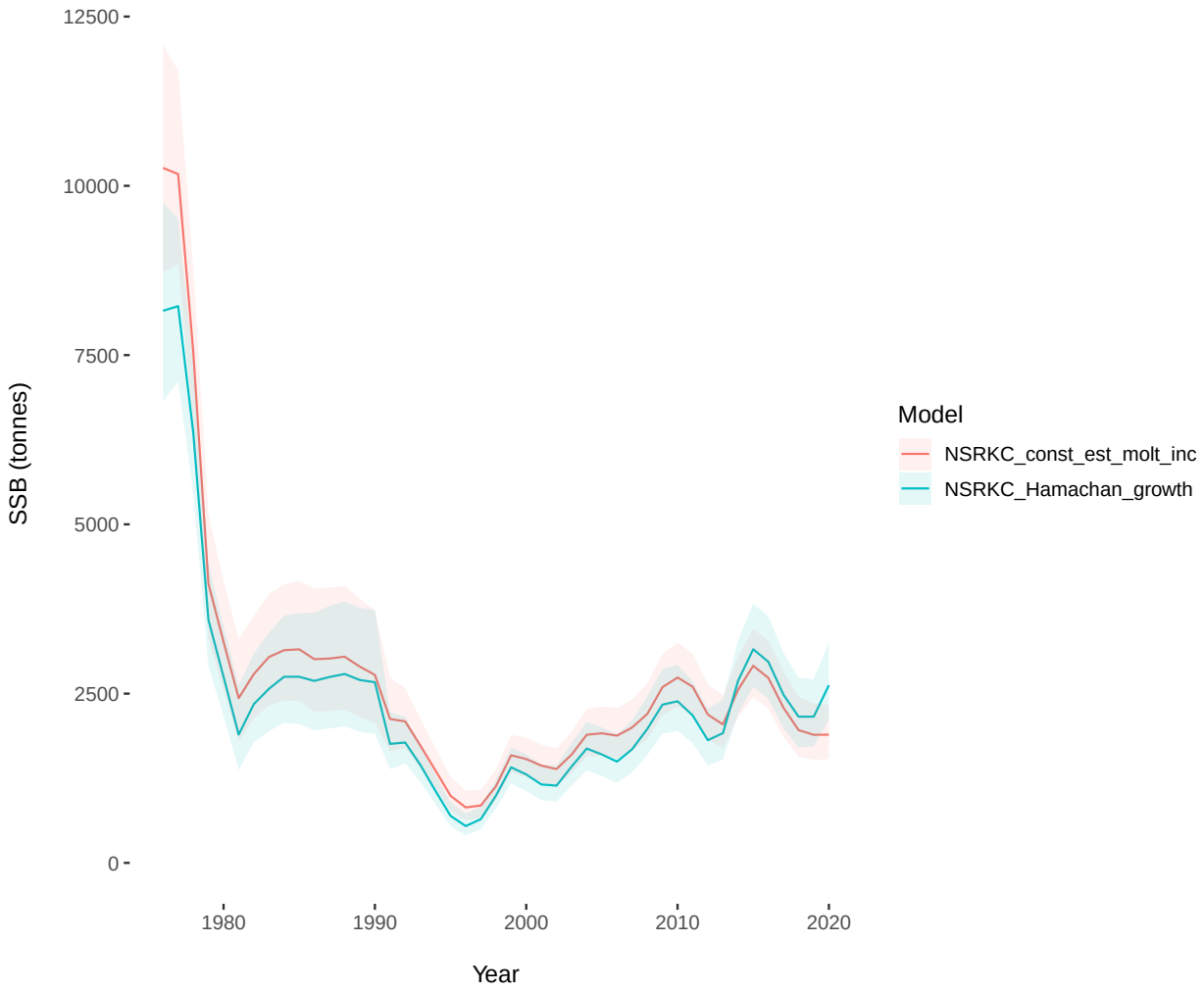

Figure 23: Estimated mature biomass

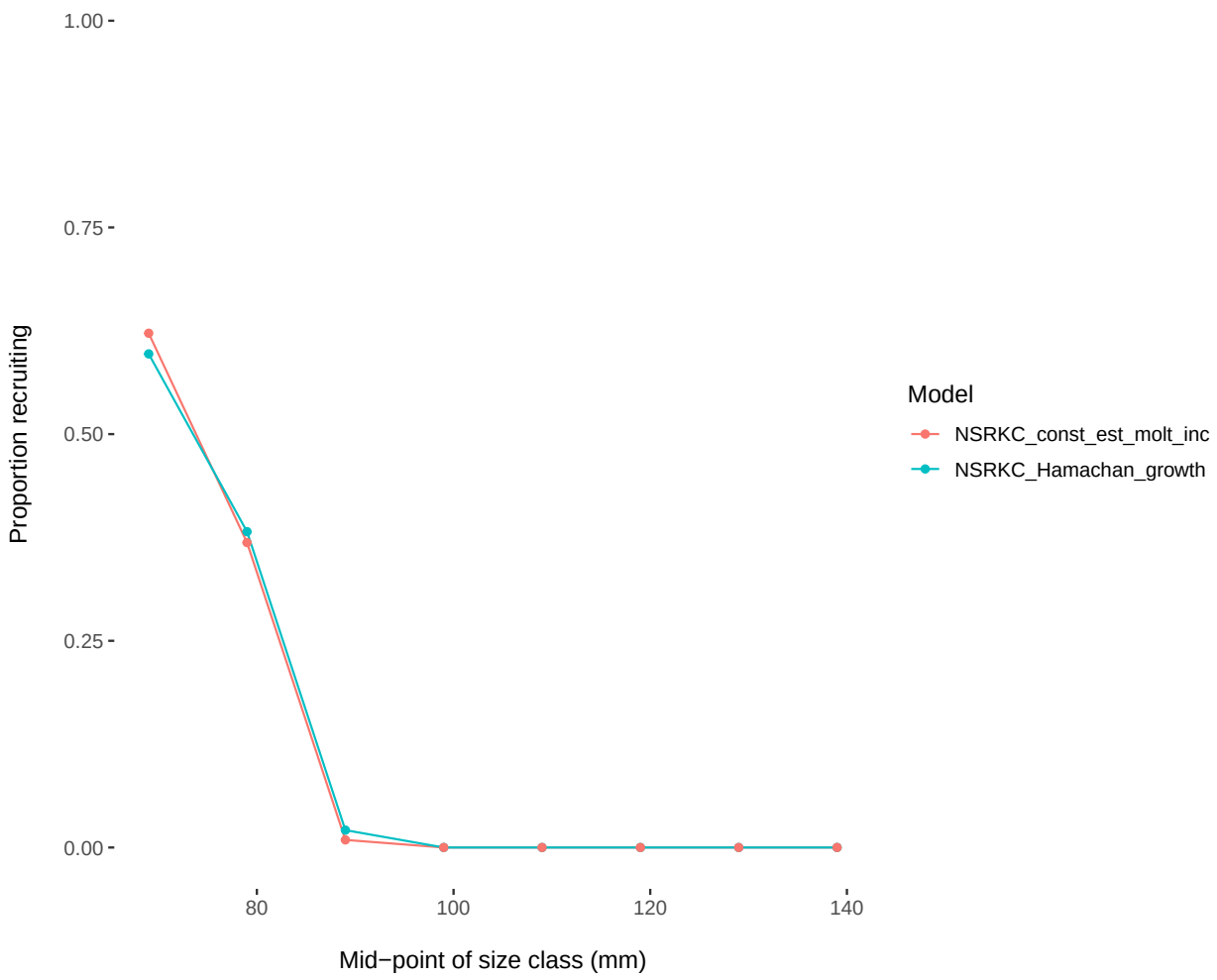

Figure 24: Estimated size at recruitment

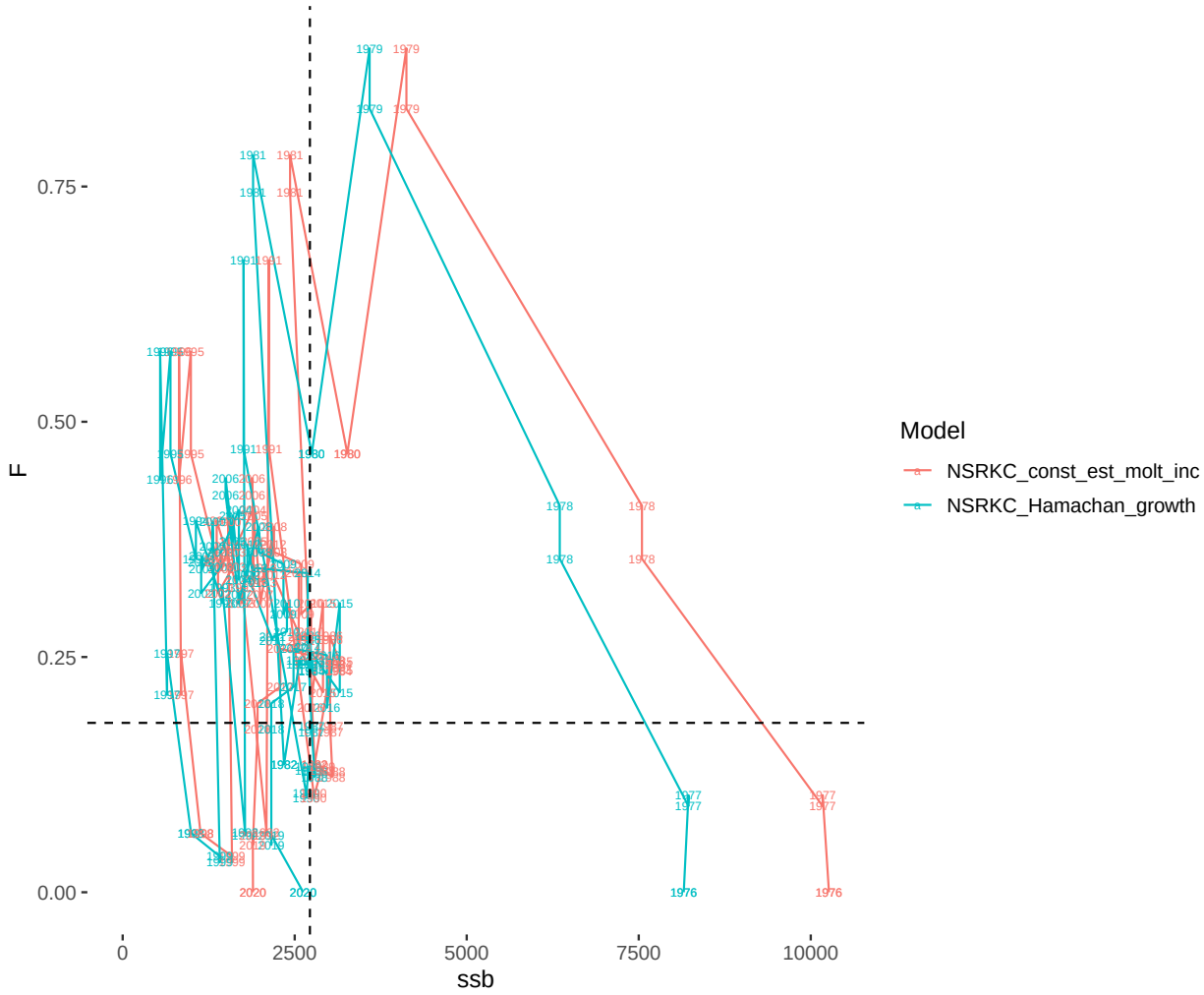

Figure 25: Kobe plot for the summer commercial fleet.