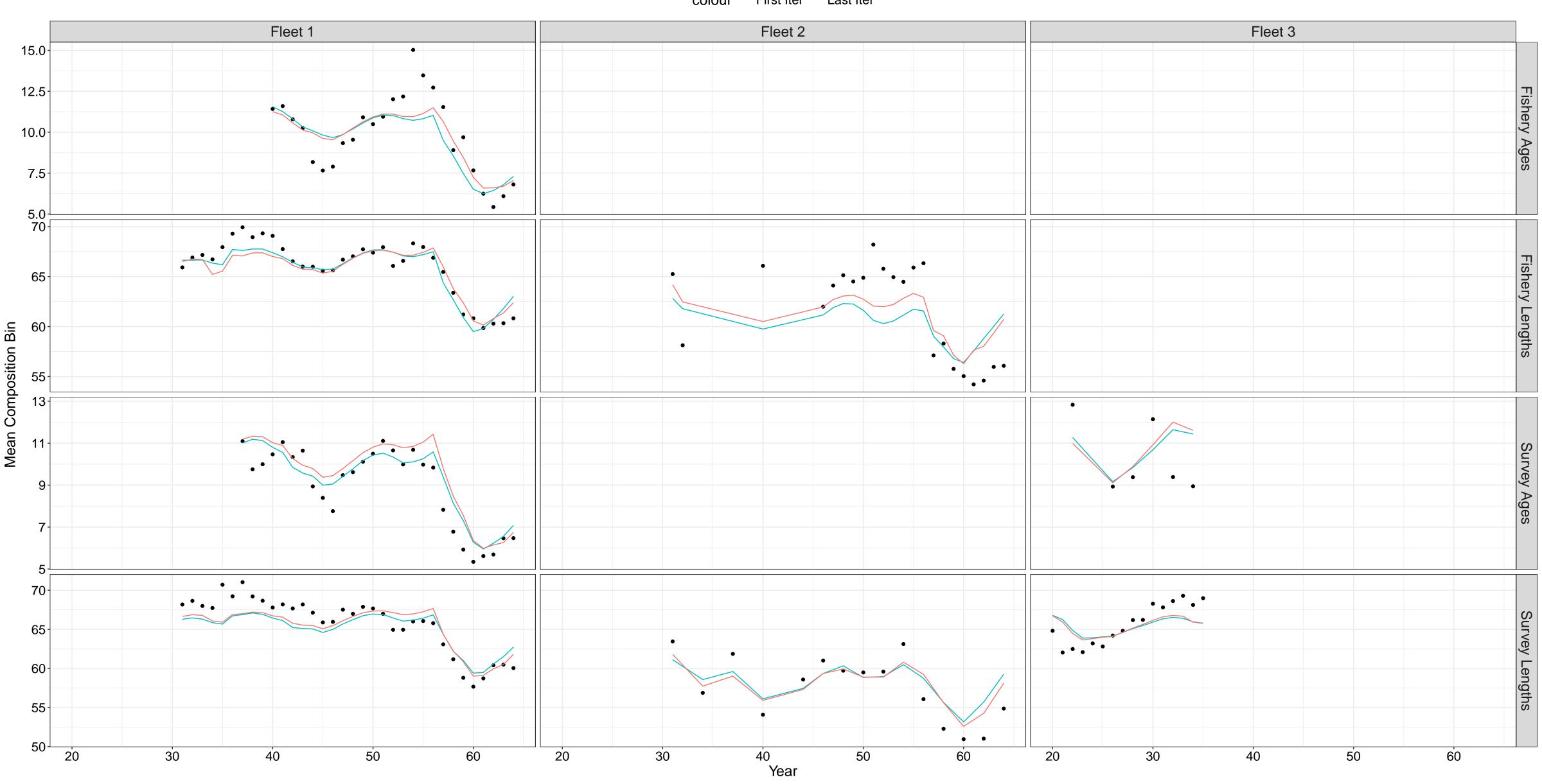
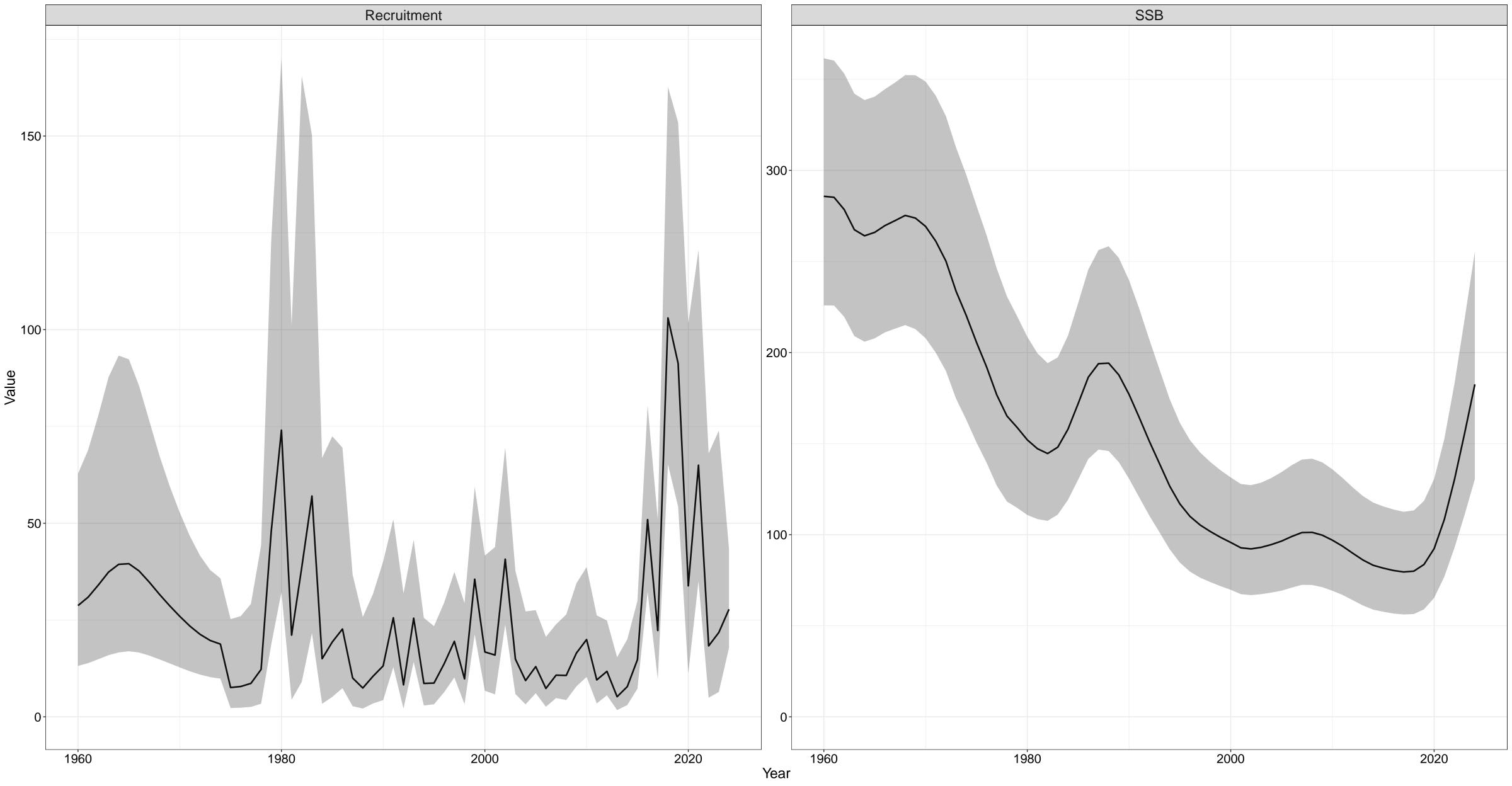
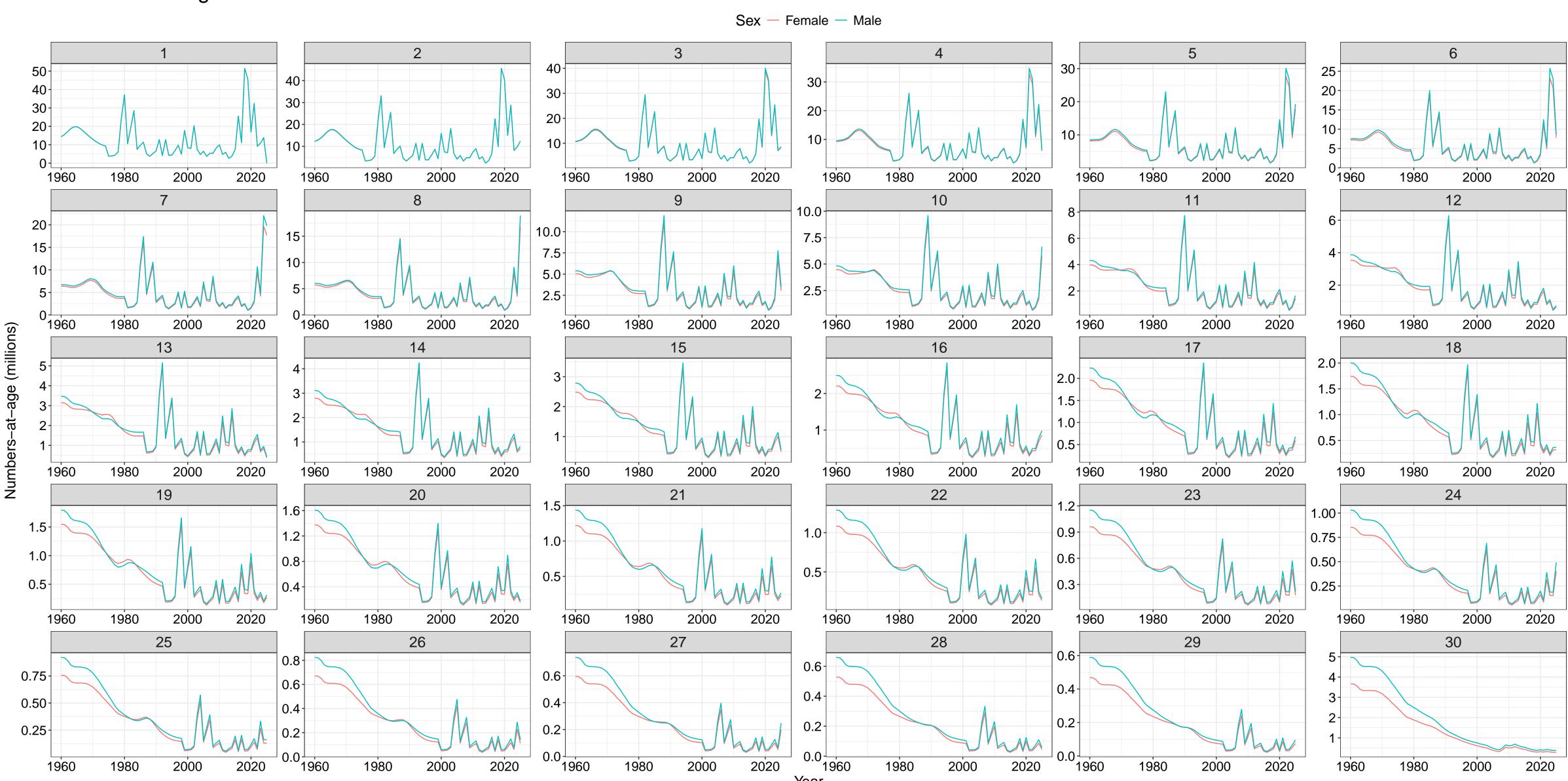
	Comp_Type	Init_Weight	Final_Weight		
1	LLF_Age_F	0.8261073	0.7890867		
2	LLF_Age_M	NA	NA		
3	LLS_Age_F	3.7922454	3.7097586		
4	LLS_Age_M	NA	NA		
5	JPN_LLS_Age_F	1.3168111	0.6704864		
6	JPN_LLS_Age_M	NA	NA		
7	LLF_Len_F	4.1837057	3.6443068		
8	LLF_Len_M	4.2696935	NA		
9	TF_Len_F	0.3164859	0.1889496		
10	TF_Len_M	0.2293966	NA		
11	LLS_Len_F	1.4379202	1.1111841		
12	LLS_Len_M	1.0705376	NA		
13	TS_Len_F	0.6708833	0.4795902		
14	TS_Len_M	0.4652071	NA		
15	JPN_LLS_Len_F	1.2777281	0.8146675		
16	JPN_LLS_Len_M	0.8575195	NA		

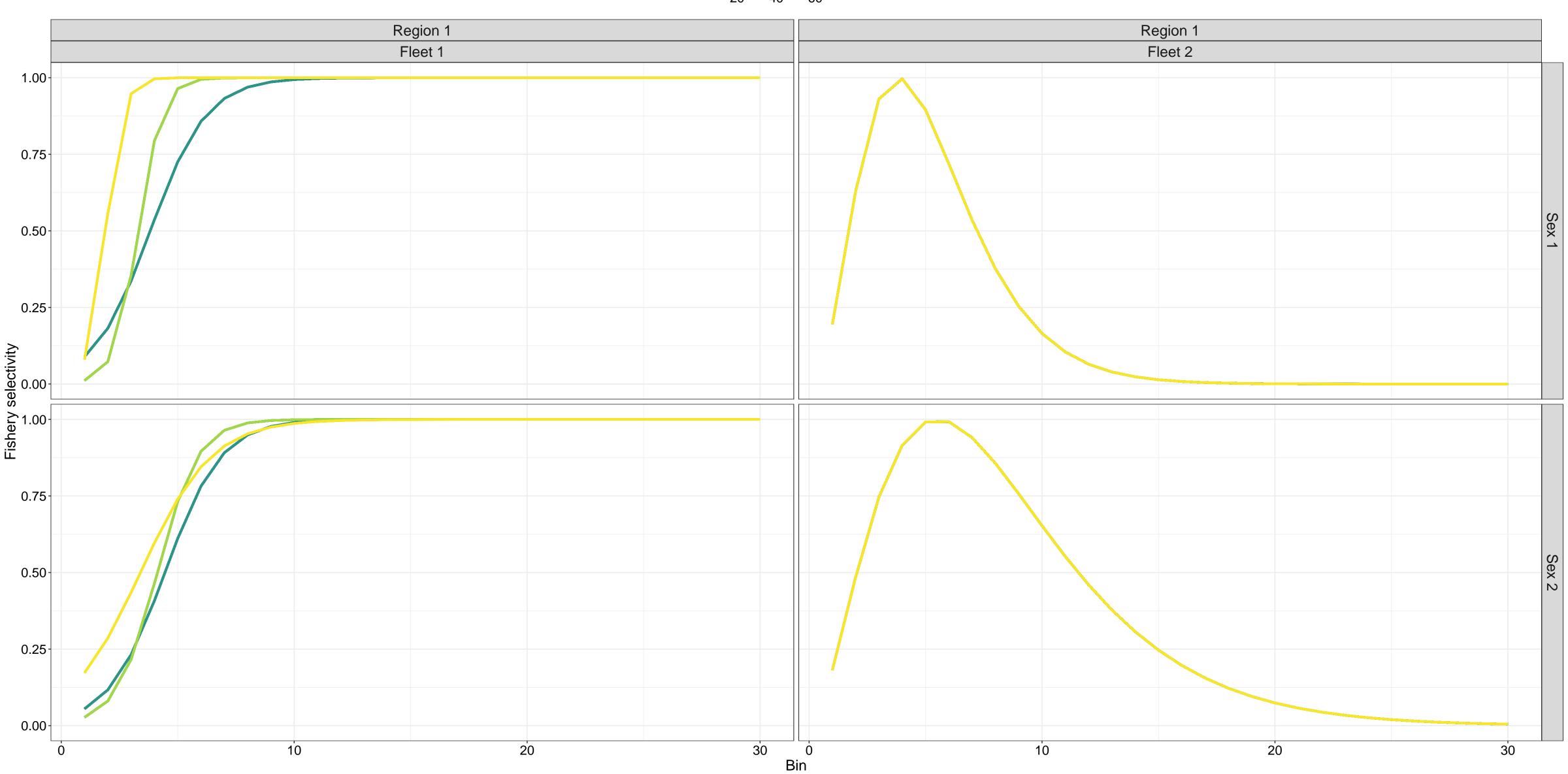


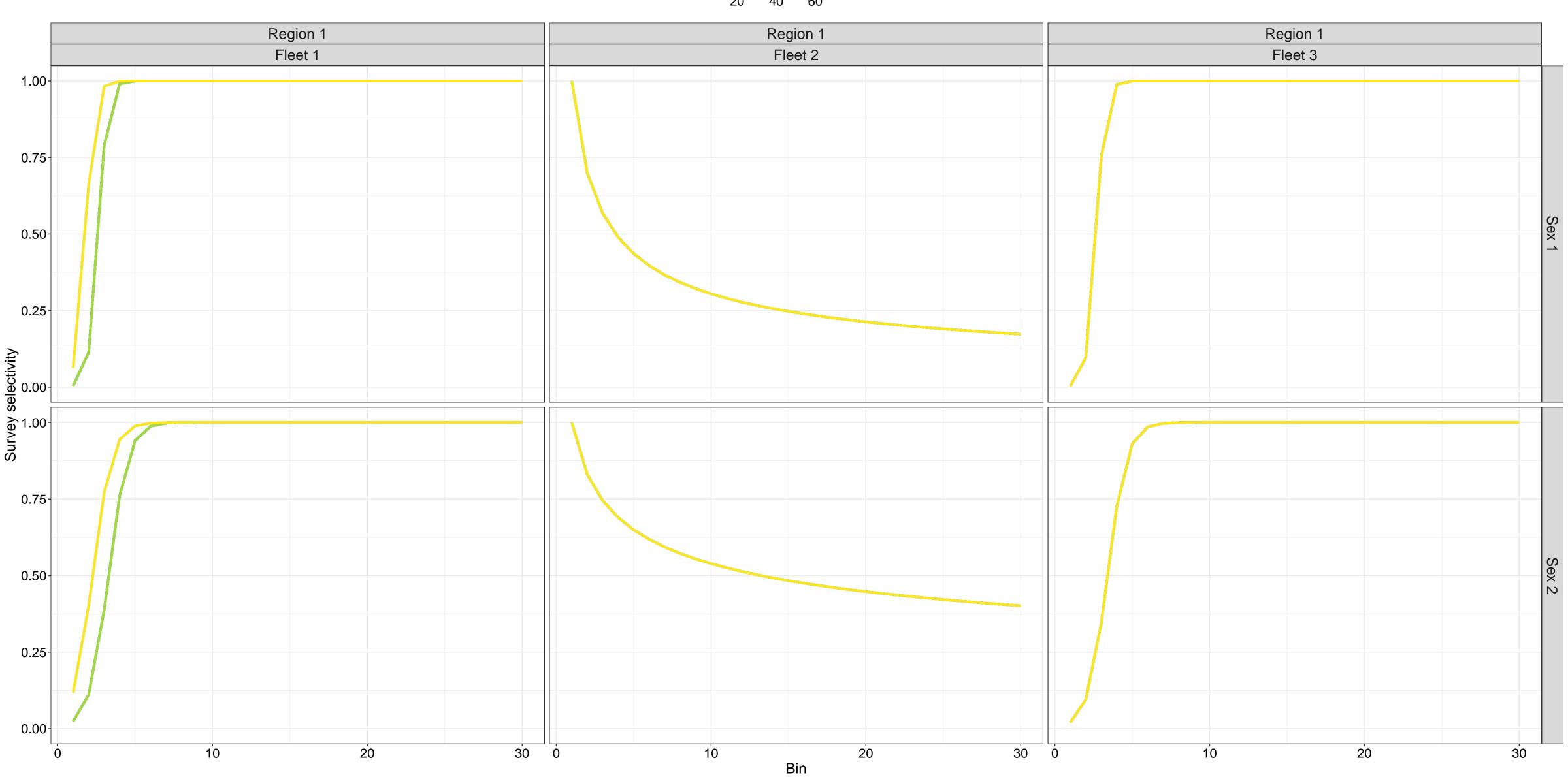
	Model	Region	Terminal_SSB	Terminal_F	Catch_Advice	B_Ref_Pt	F_Ref_Pt	B_over_B_Ref	F_over_F_Ref
1	1	1	182.5187	0.0491891389376414	45.61297	113.81134	0.09799	1.6037	0.502

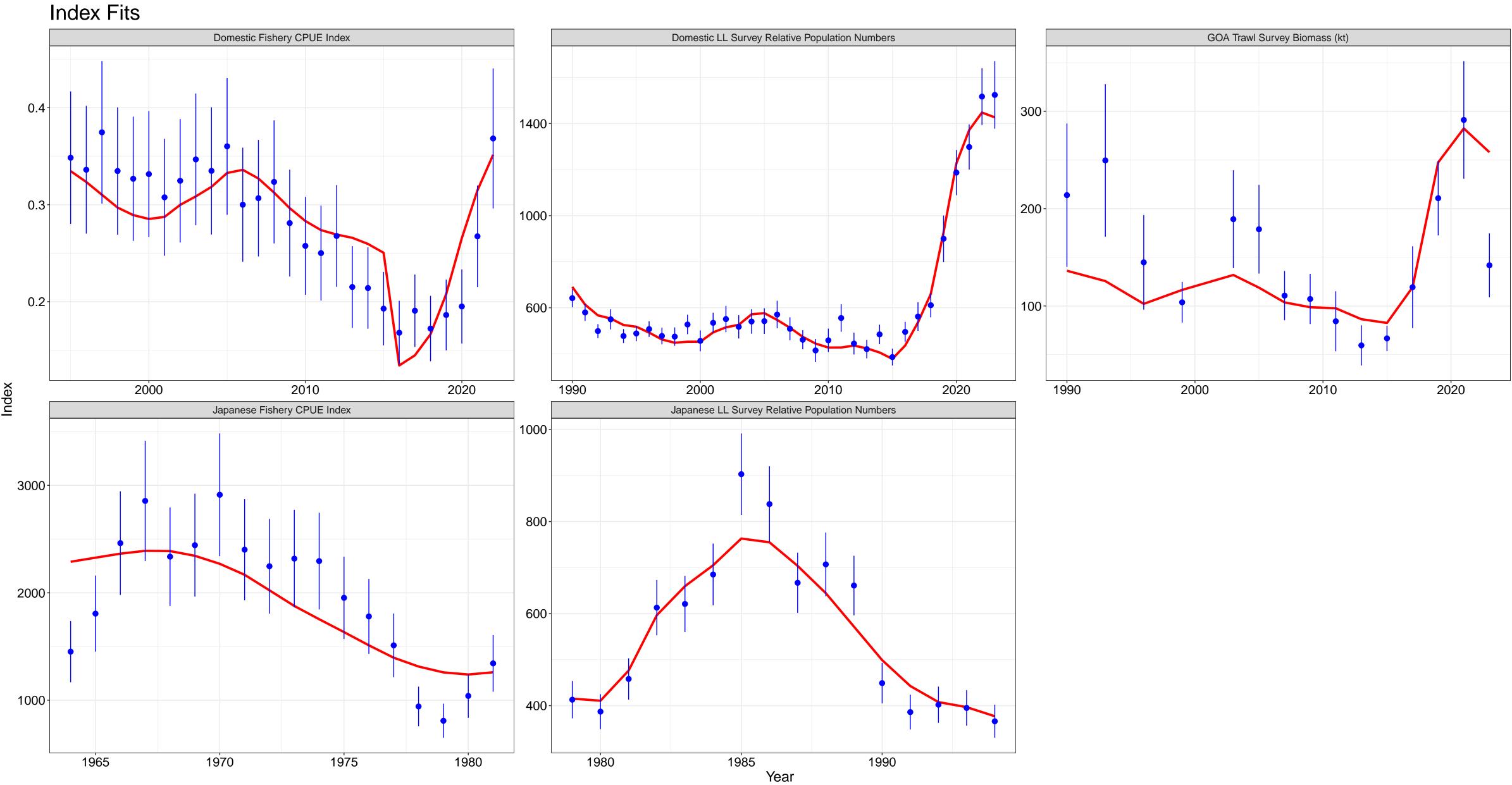




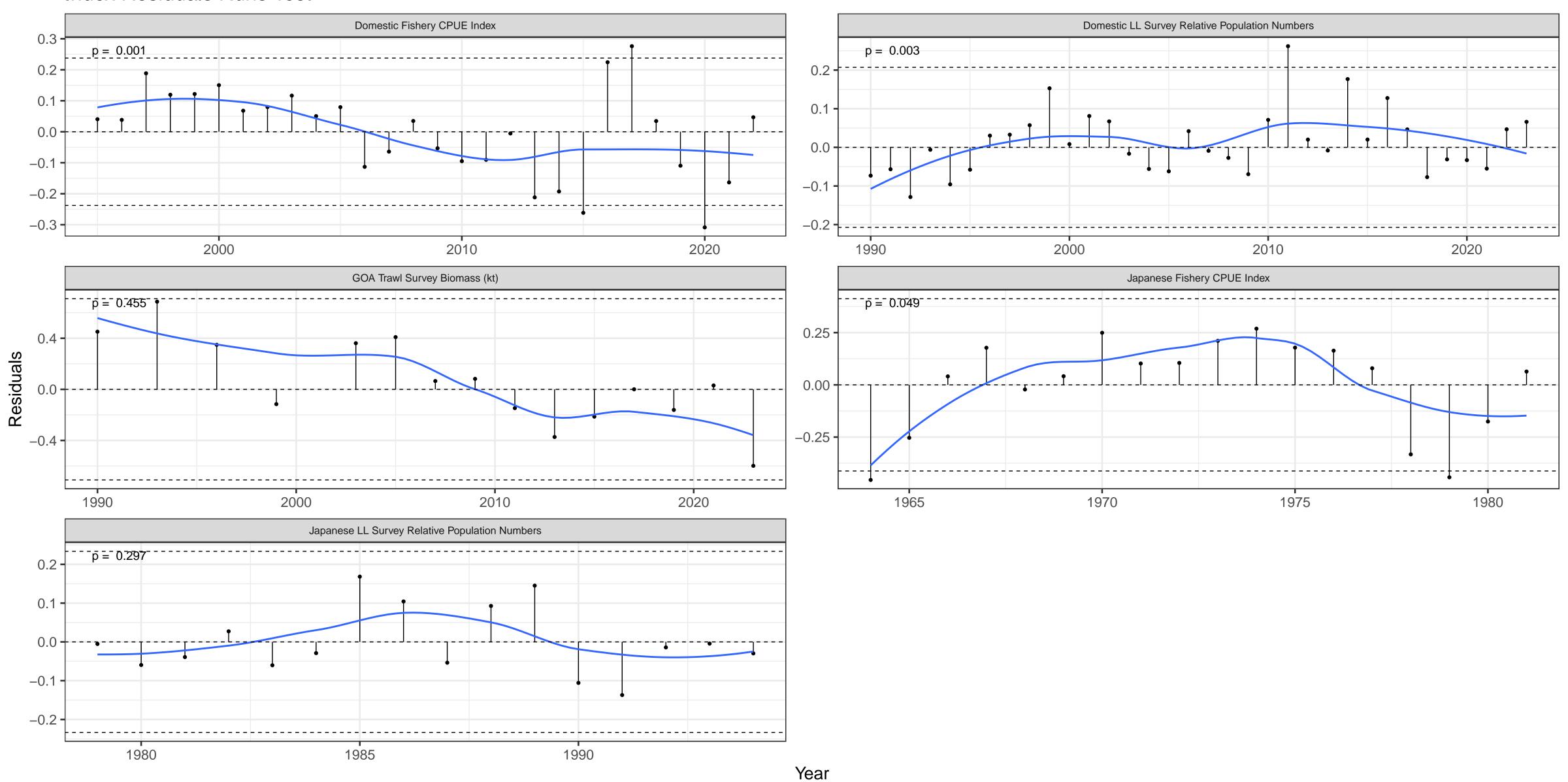
Year

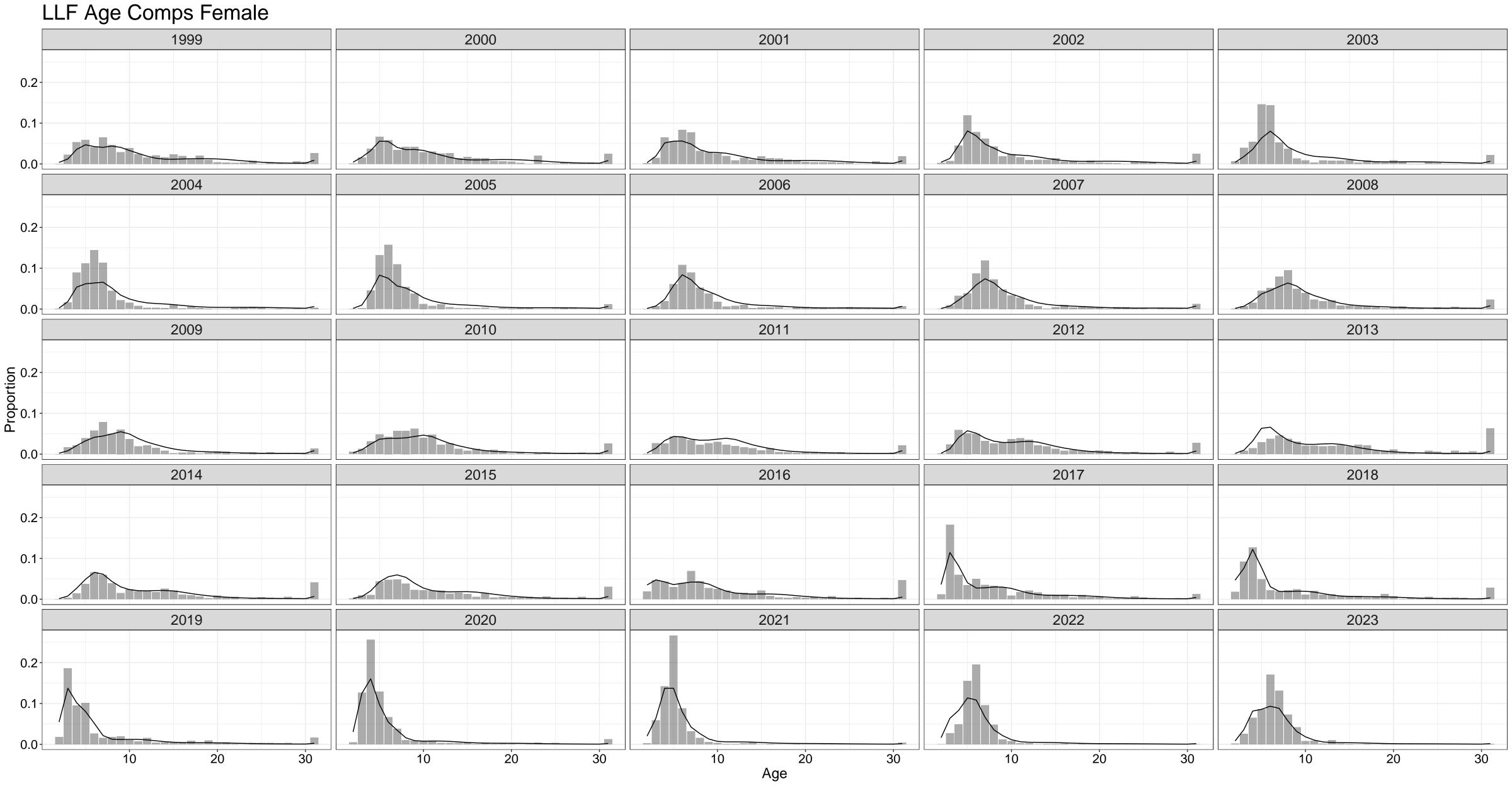






## Index Residuals Runs Test

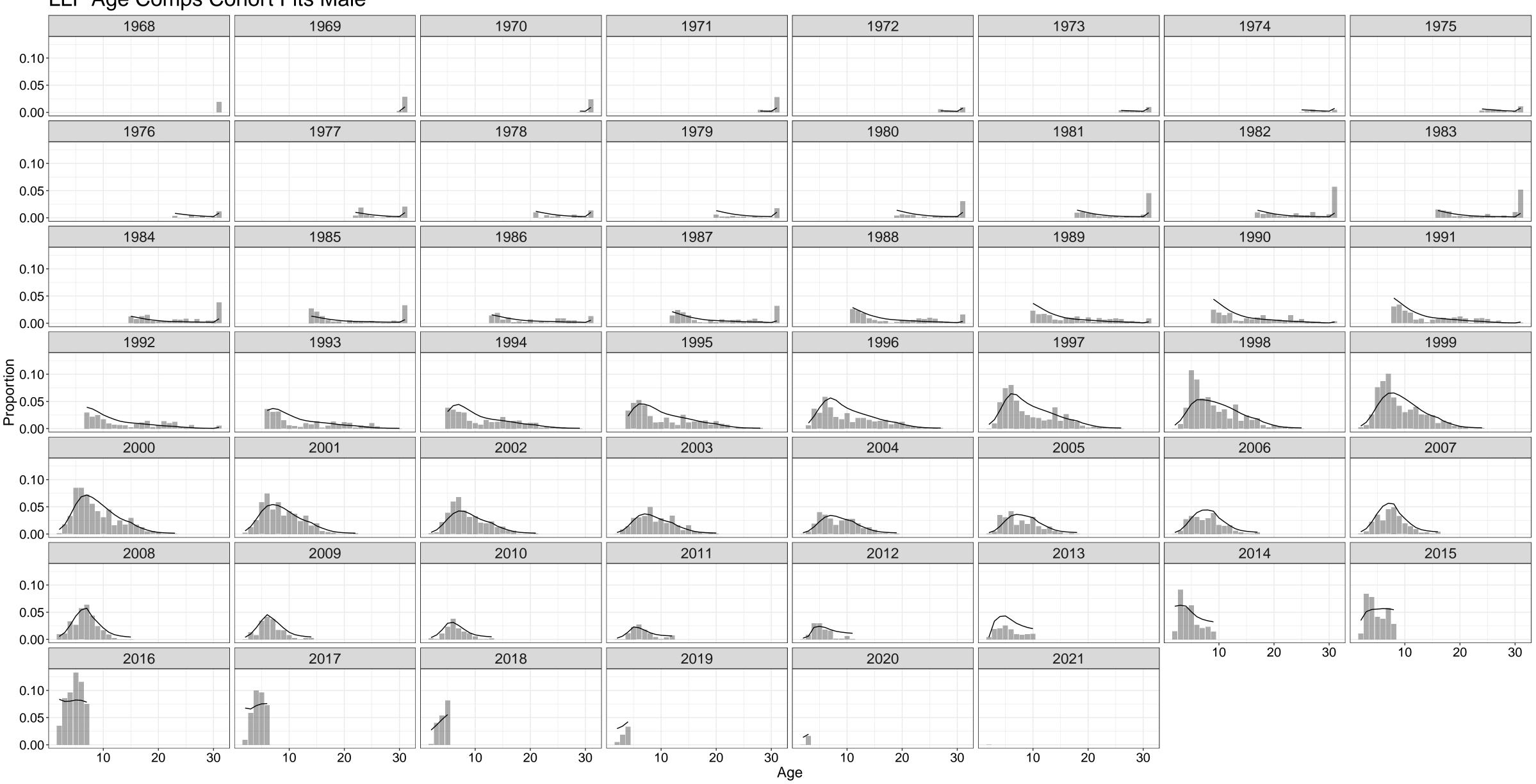




LLF Age Comps Cohort Fits Female 0.2 0.1 0.0 0.2 0.1 0.0 0.2 0.1 0.0 Proportion 0.2 0.2 0.1 0.0 0.2 0.1 0.0 0.2 0.1 Age

LLF Age Comps Male 0.10-0.05 0.10 0.05 Proportion 0.10-0.00 0.10-0.05-0.00 0.10 0.05 Age

LLF Age Comps Cohort Fits Male



LLF Length Comps Female 0.08 0.06 0.04 0.02 0.00 0.08-0.06 0.04 0.02 0.00 0.08 0.06 0.04 Proportion - 0.02 - 0.00 - 0.06 - 0.0 0.04 0.02 0.00 0.08 0.06 0.04 0.02 0.00 100 40 0.08 0.06 0.04 0.02 0.00

100 40 Length

100 40

100 40

LLF Length Comps Male 0.075 0.050 0.025 0.000 0.075 0.050 0.025 0.000 0.075 0.050 0.025-0.000-0.075-0.050 0.025 0.000 0.075 0.050 0.025 0.000 100 40 0.075 0.050 0.025 0.000 100 40 100 40 100 40 

Length

TF Length Comps Female 0.09 0.06 0.03-0.00 0.09 0.06-0.03-0.00 Proportion 0.09-0.00 0.09-0.06 0.03-0.00 100 40 100 40 0.09-0.06-0.03 0.00 100 40 Length

TF Length Comps Male 0.15 0.10-0.05 0.00 0.15 0.10 0.05 0.00 Proportion 0.10-0.05-0.00 0.15 0.10 0.05 0.00 100 40 100 40 0.15 0.10-0.05 0.00 100 40 

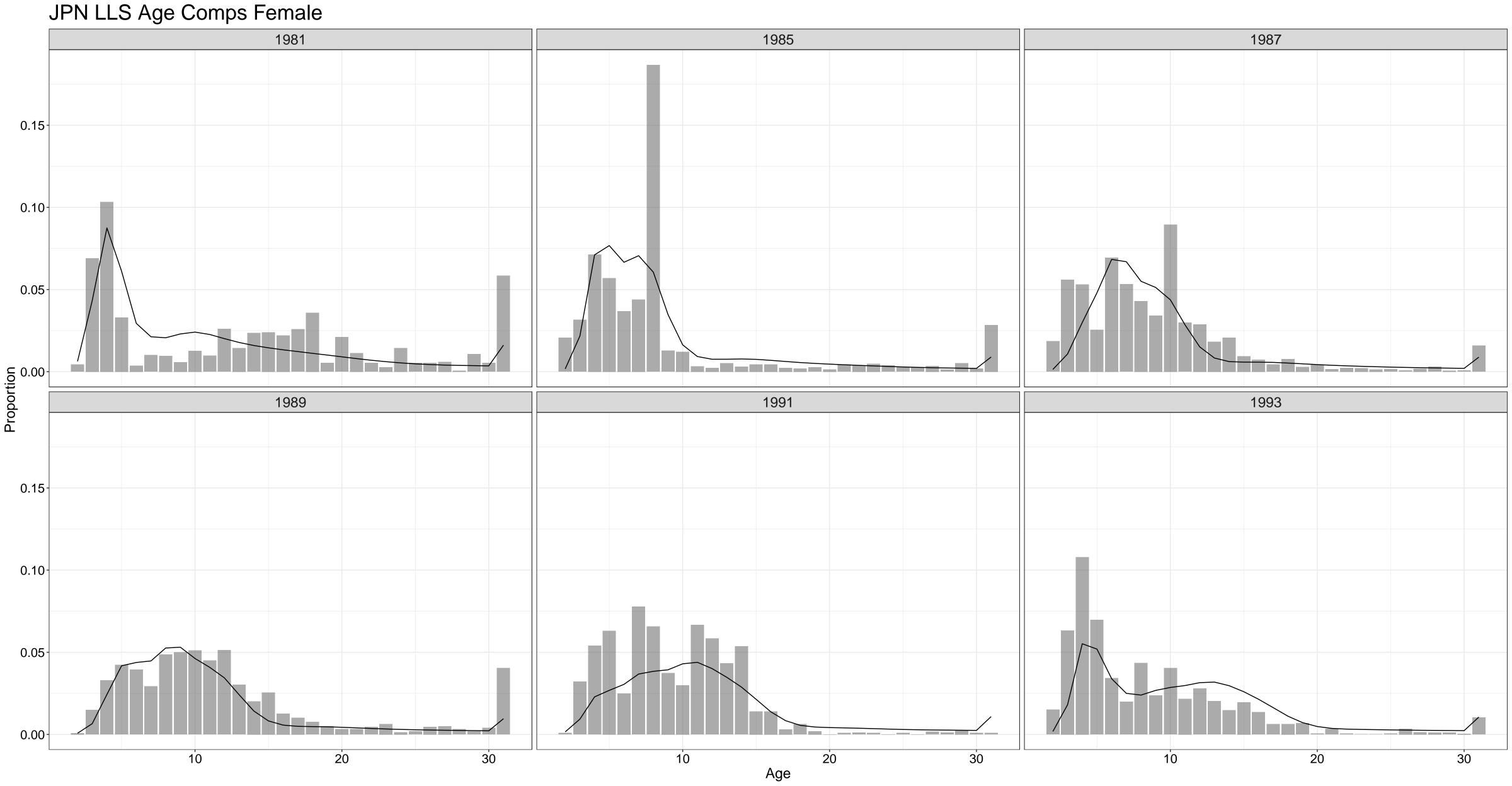
Length

LLS Age Comps Female 0.25 0.20 0.15 0.10-0.05 0.00 0.25 0.20-0.15 0.10 0.05 0.00 0.25 O.20-0.15-0.10-0.05-0.00 0.25 0.20-0.15-0.10 0.05 0.00 0.25 0.20 0.15 0.10 0.05 0.00 Age

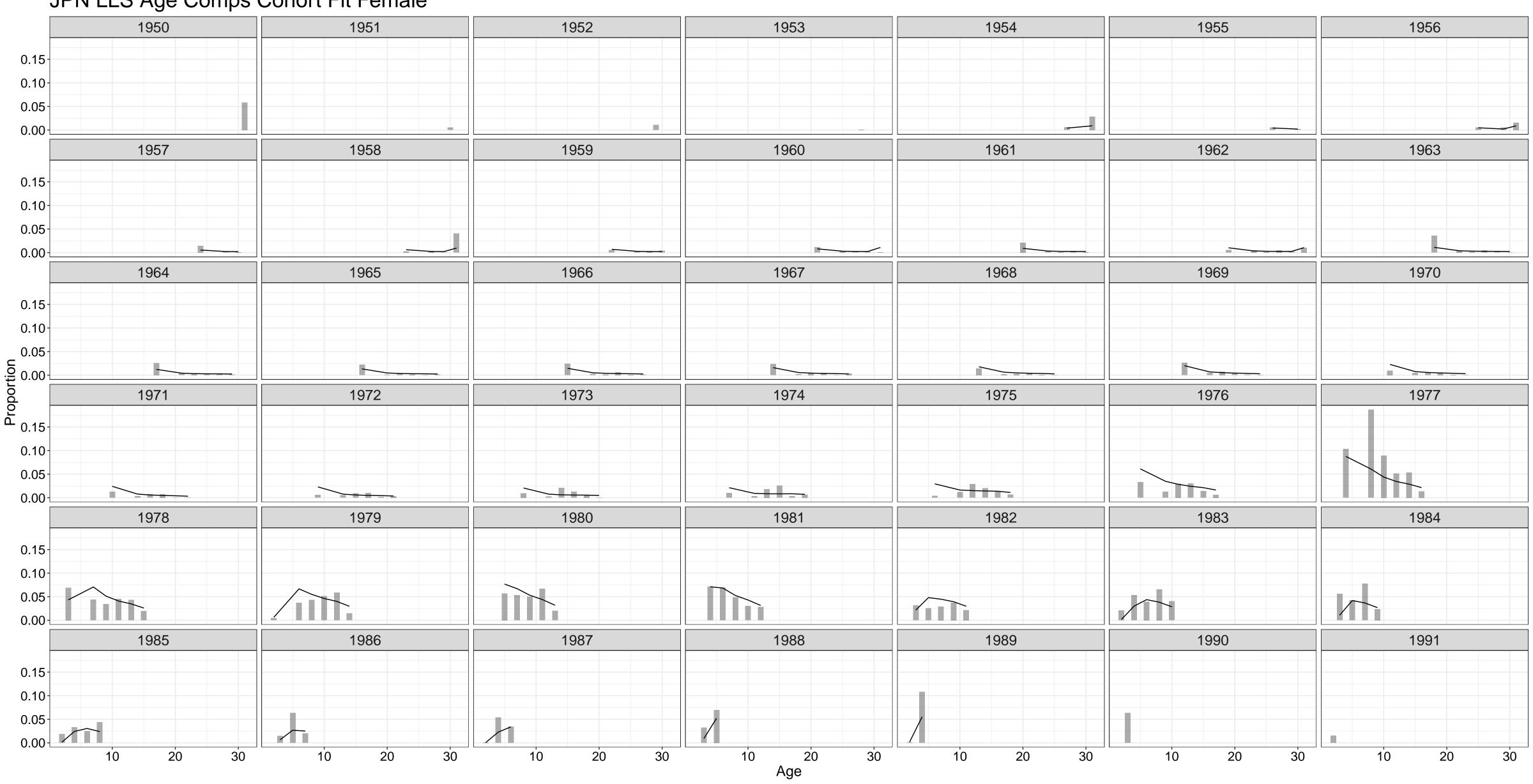
## LLS Age Comps Cohort Fit Female 0.25 0.20 0.15 0.10 0.05 0.00 0.25 0.20 0.15 0.10 0.05 0.00 0.25-0.20-0.15-0.10-0.05-0.00-0.25-0.20-0.15-0.00-0.00-0.25-0.20-0.15-0.10-0.05-0.00-0.25 0.20 0.15 0.10 0.05 0.00 0.25-0.20-0.15-0.10-0.05-0.00-0.25-0.20-0.15-0.10-0.05-0.00-Age

LLS Age Comps Male 0.15 0.10 0.05 0.00 0.15 0.10 0.05 0.00 0.15 Proportion 0.10-0.00 0.15 0.10 0.05 0.00 0.15 0.10 0.05 0.00 Age

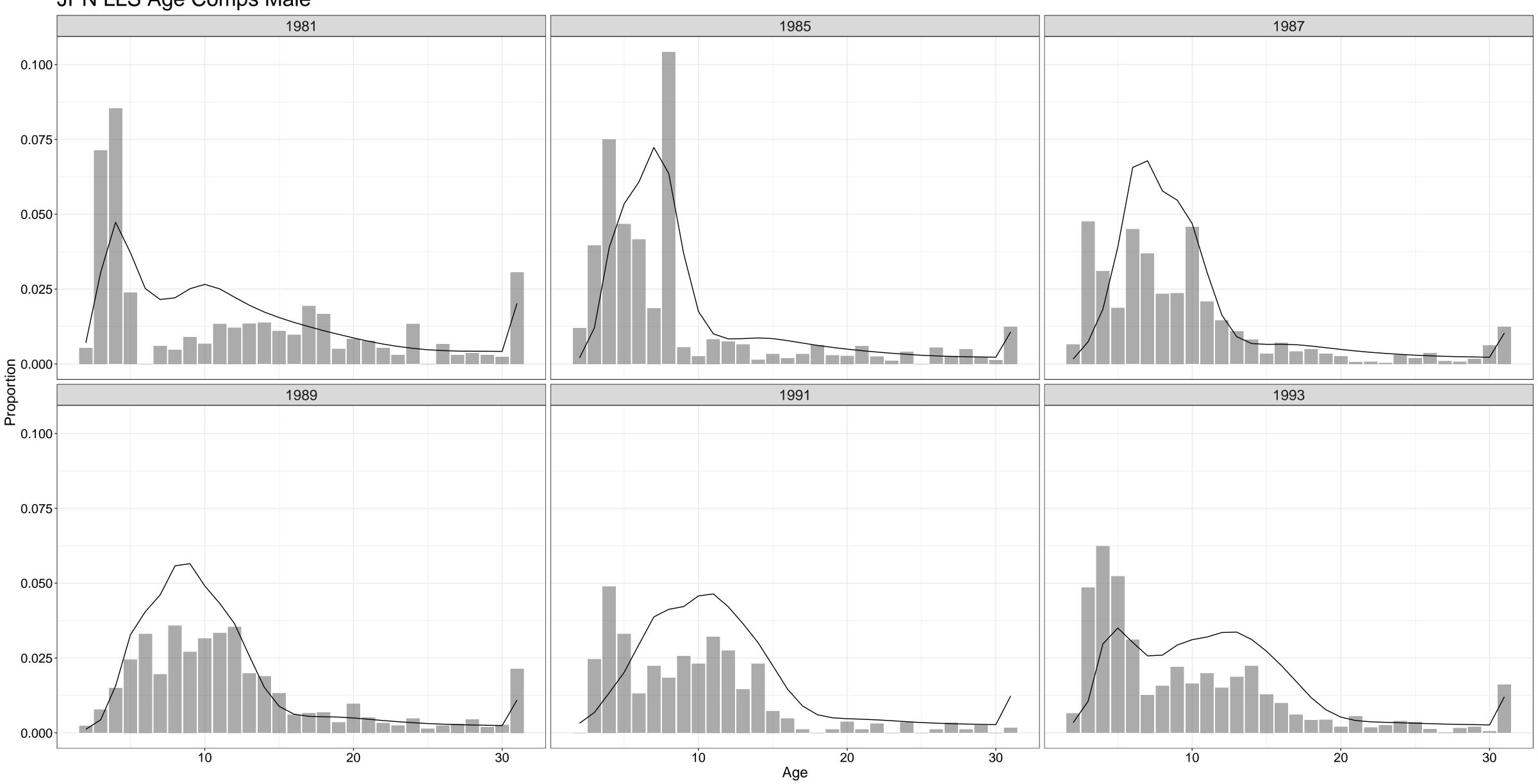
## LLS Age Comps Cohort Fit Male 0.15 0.10 0.05 / 0.00 0.15-0.10 0.05 0.00 0.15-0.10 0.05 0.00 0.15 0.10 Proportion 0.00-0.05 0.00 0.15-0.10-0.05 0.00 0.15 0.10-0.05 0.00 0.15 0.10 0.05 0.00



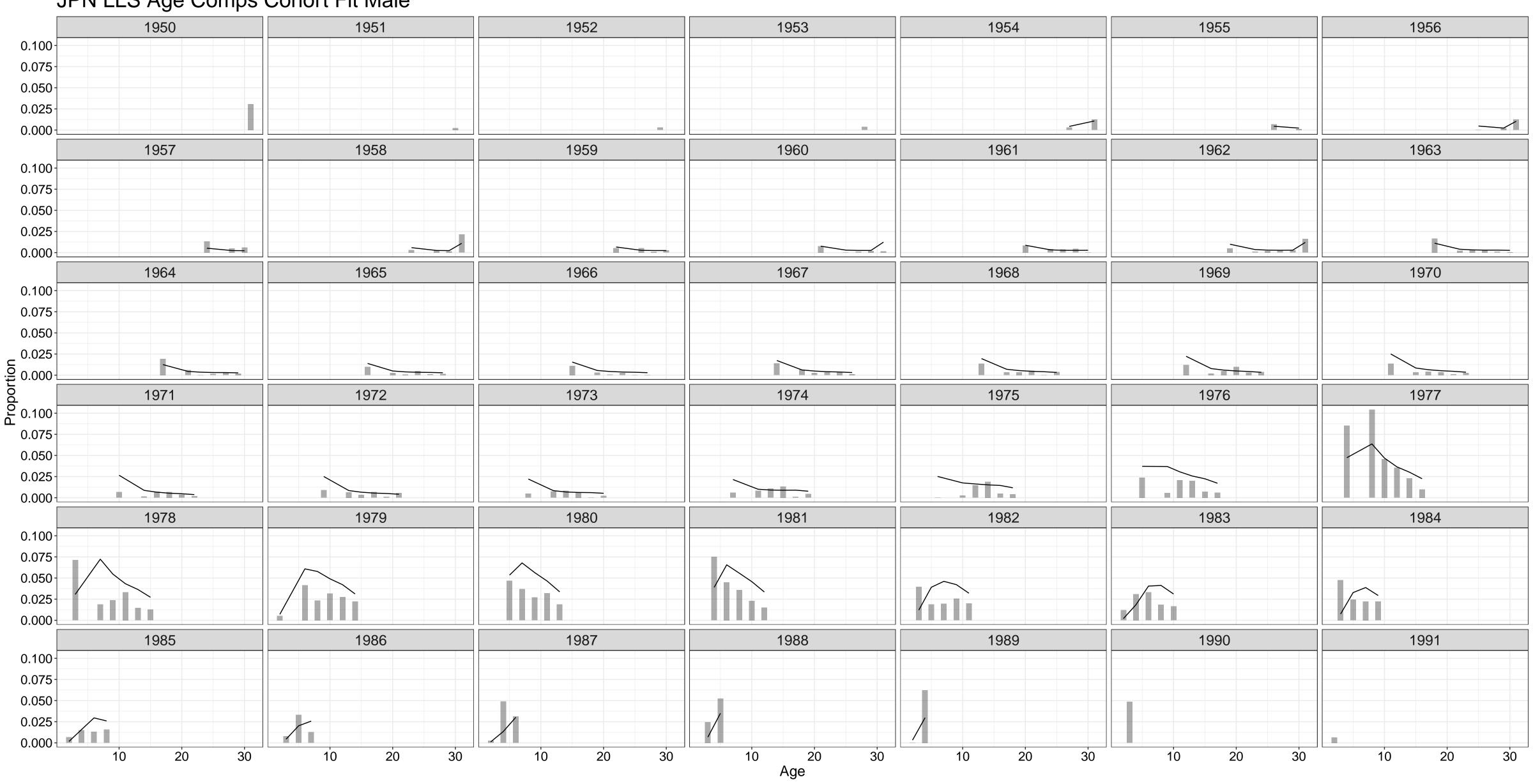
JPN LLS Age Comps Cohort Fit Female



JPN LLS Age Comps Male



JPN LLS Age Comps Cohort Fit Male



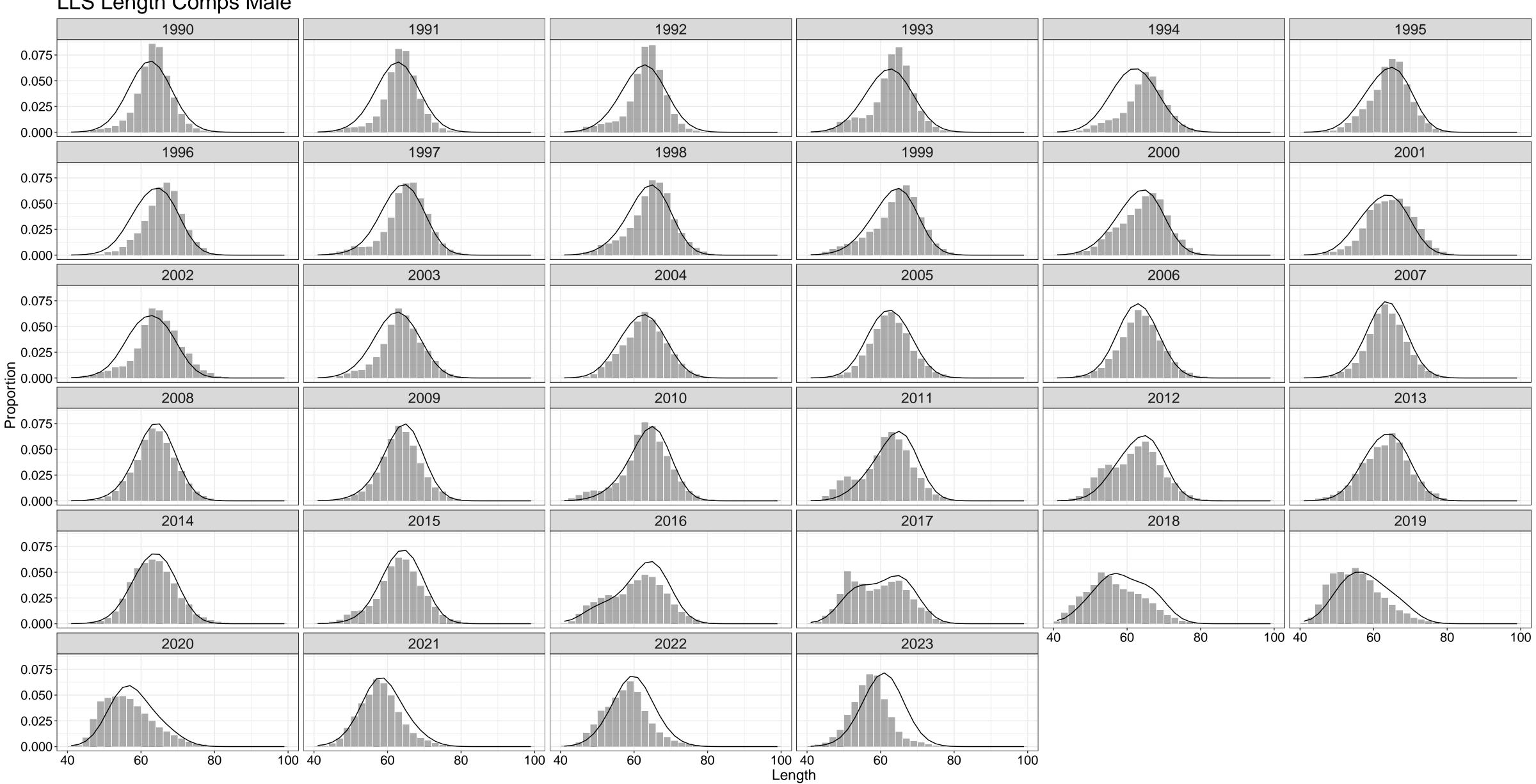
LLS Length Comps Female 0.08 0.06 0.04 0.02 0.00 0.08-0.06-0.04 0.02 0.00 0.08 0.06-0.04 Proportion 0.00-0.04 0.02 0.00 0.08-0.06 0.04 0.02 0.00 100 40 0.08-0.06 0.04 0.02 0.00

100 40 Length

100 40

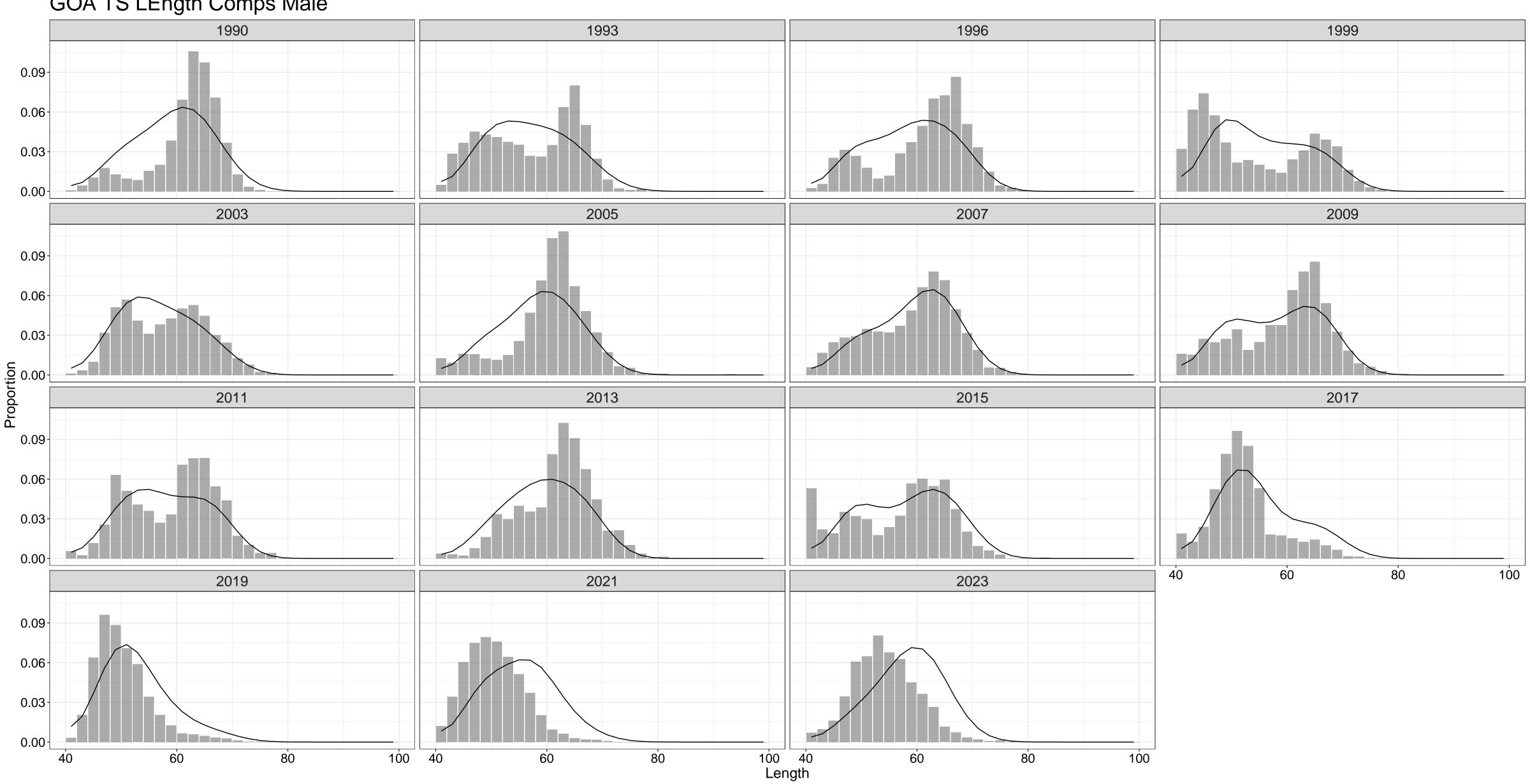
100 40

LLS Length Comps Male

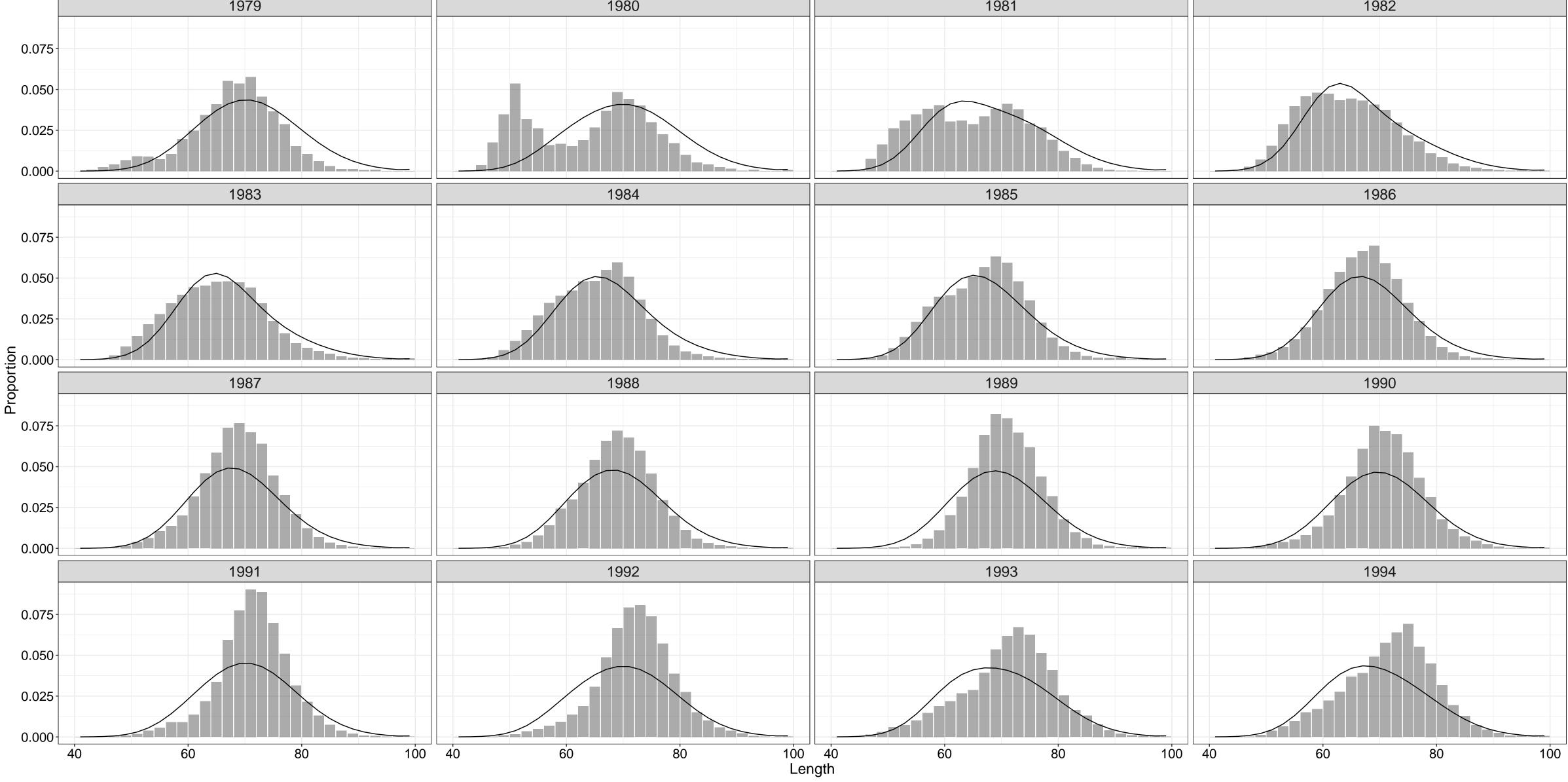


GOA TS Length Comps Female 1993 1999 1990 1996 0.100 0.075 0.050 0.025 0.000 2003 2005 2007 2009 0.100 0.075 0.050 0.025 Proportion 0.000 2011 2013 2015 2017 0.075 0.050 0.025 0.000 100 60 80 2019 2021 2023 0.100 0.075 0.050 0.025 0.000 60 80 100 40 Length 80 40 60 60 80 100 100

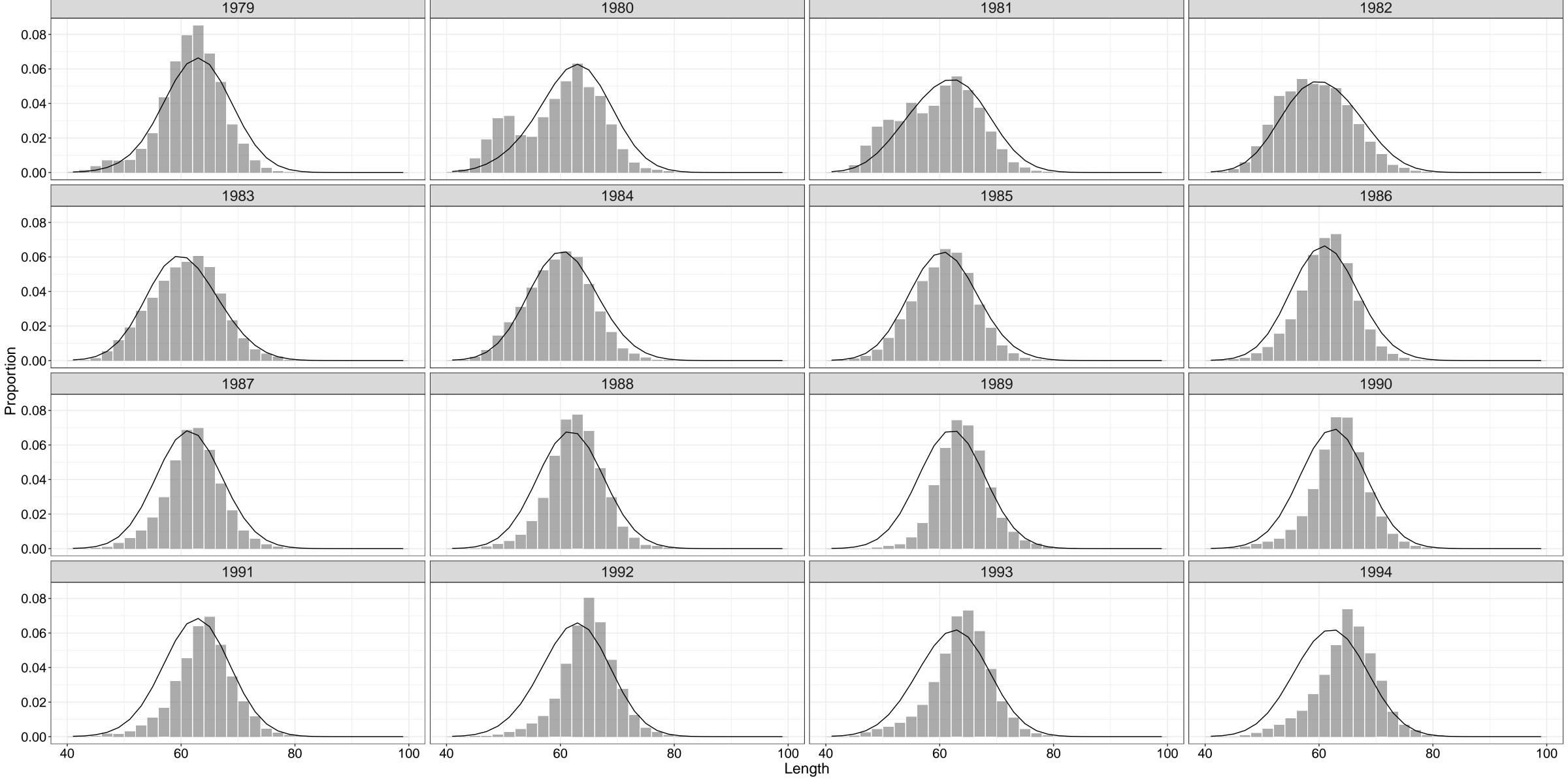
GOA TS LEngth Comps Male

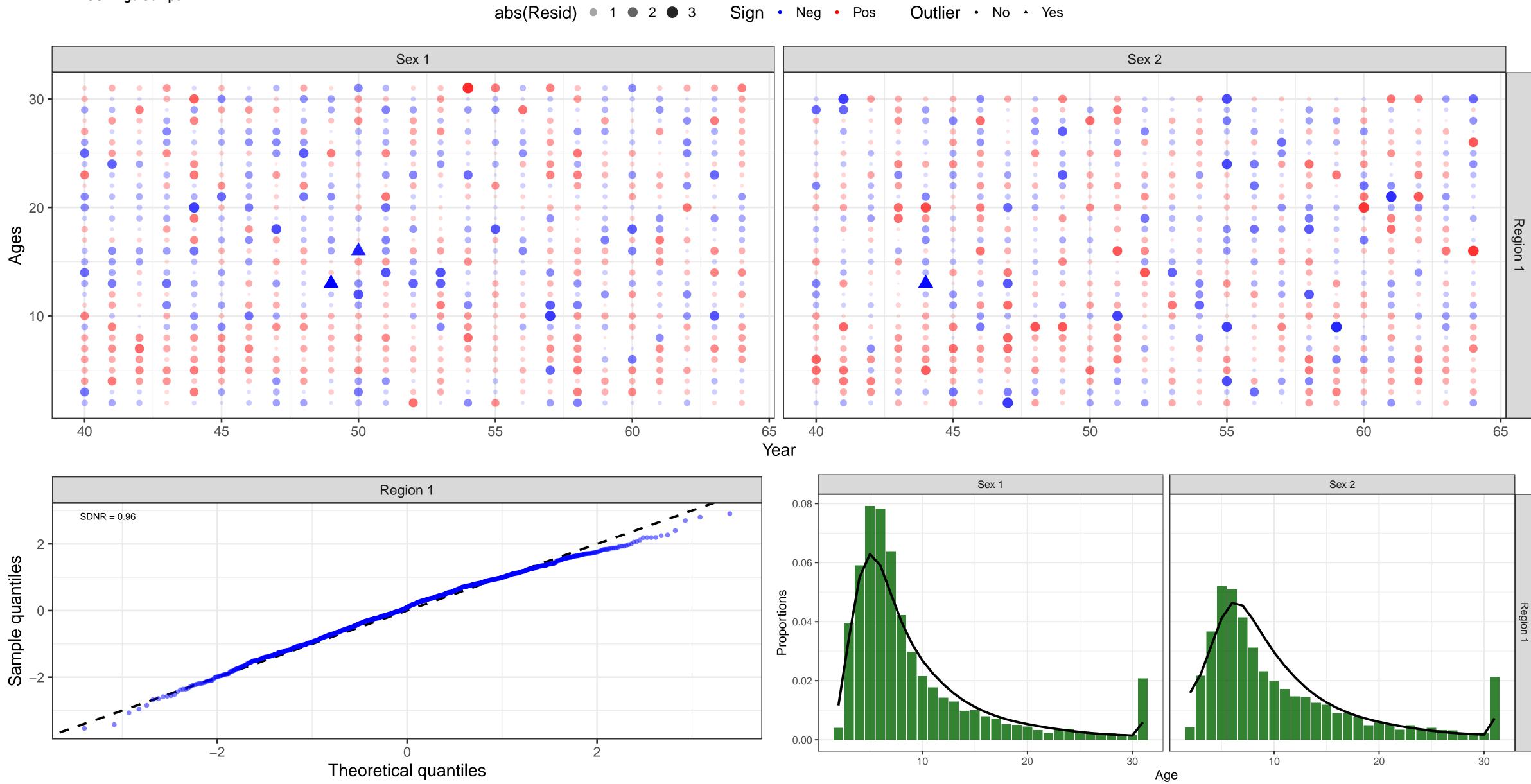


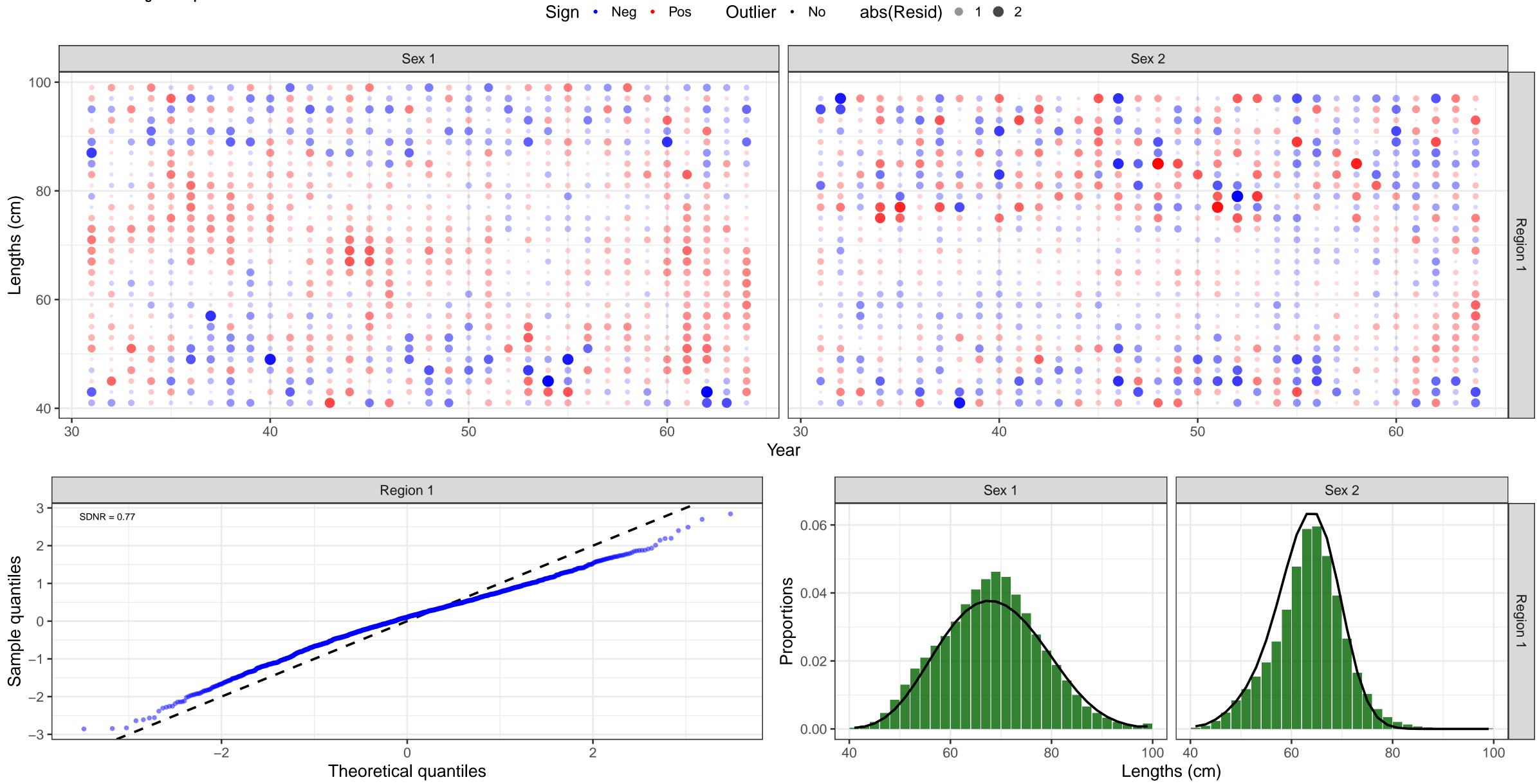
JPN LLS Length Comps Female 1979 1980 1981 1982 0.075 0.050 0.025 0.000 1983 1984 1985 1986 0.075 0.050 0.025 1987 1988 1989 1990 0.075 0.050 0.025 0.000 1992 1993 1994 1991 0.075 0.050

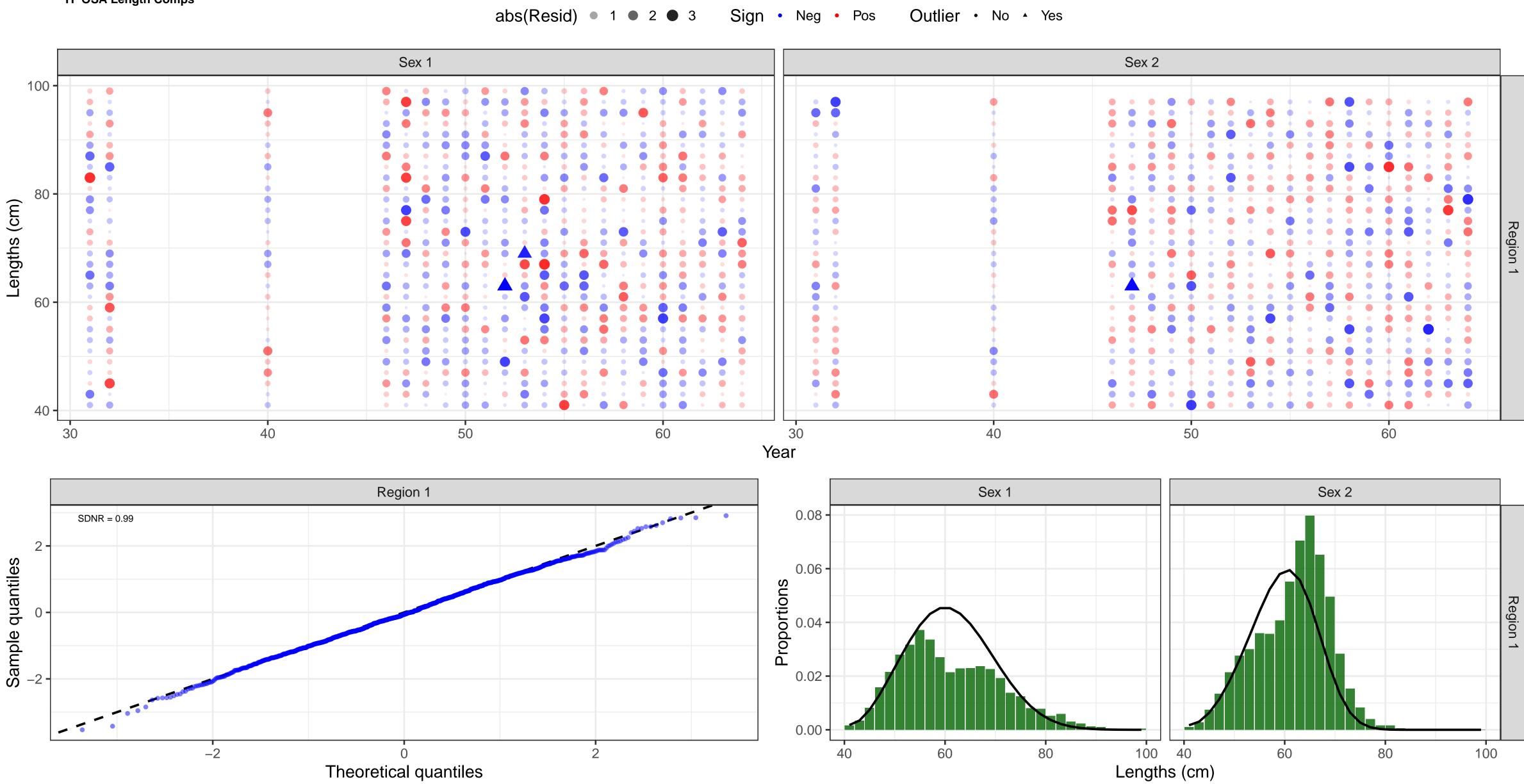


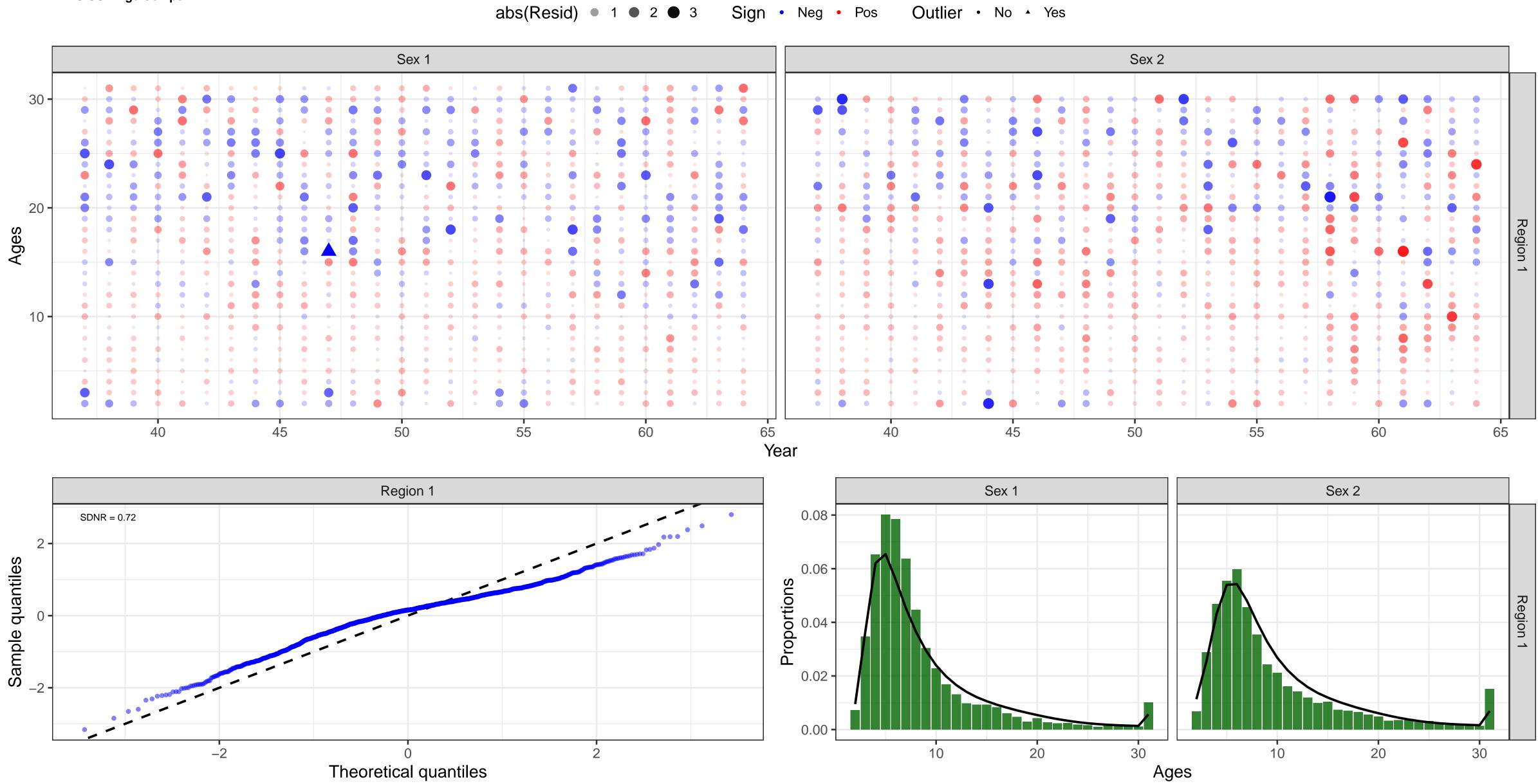
JPN LLS Length Comps Male 

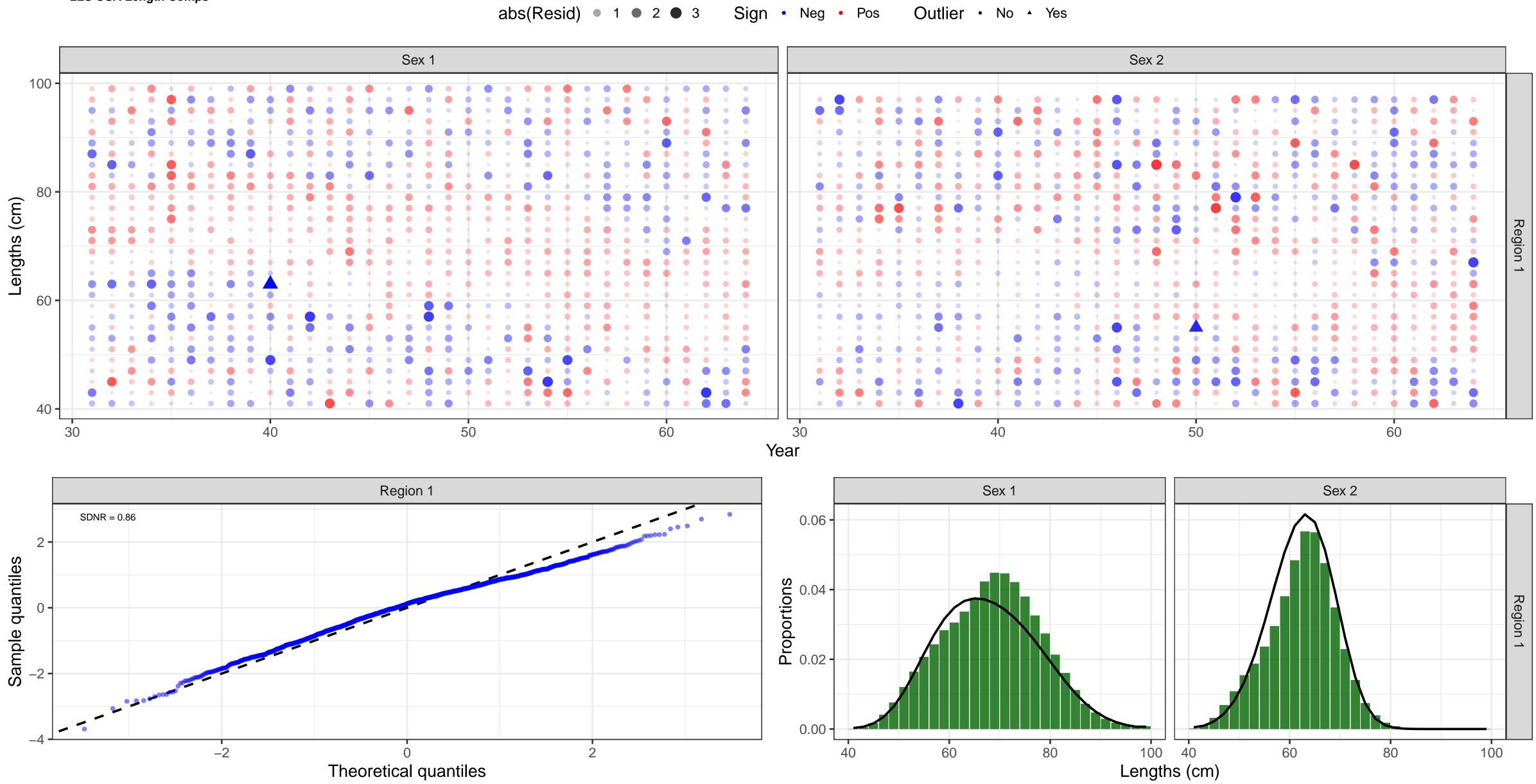


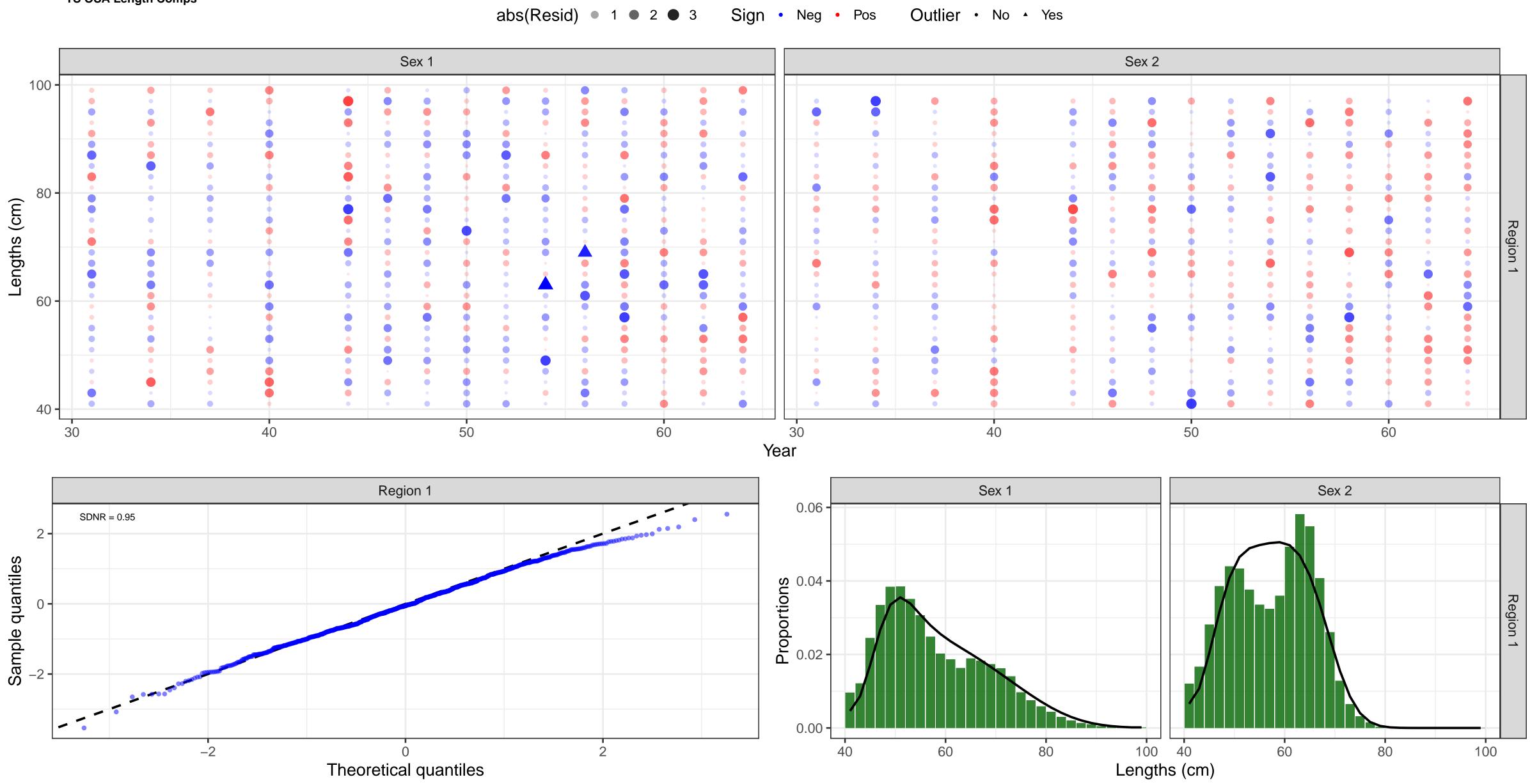


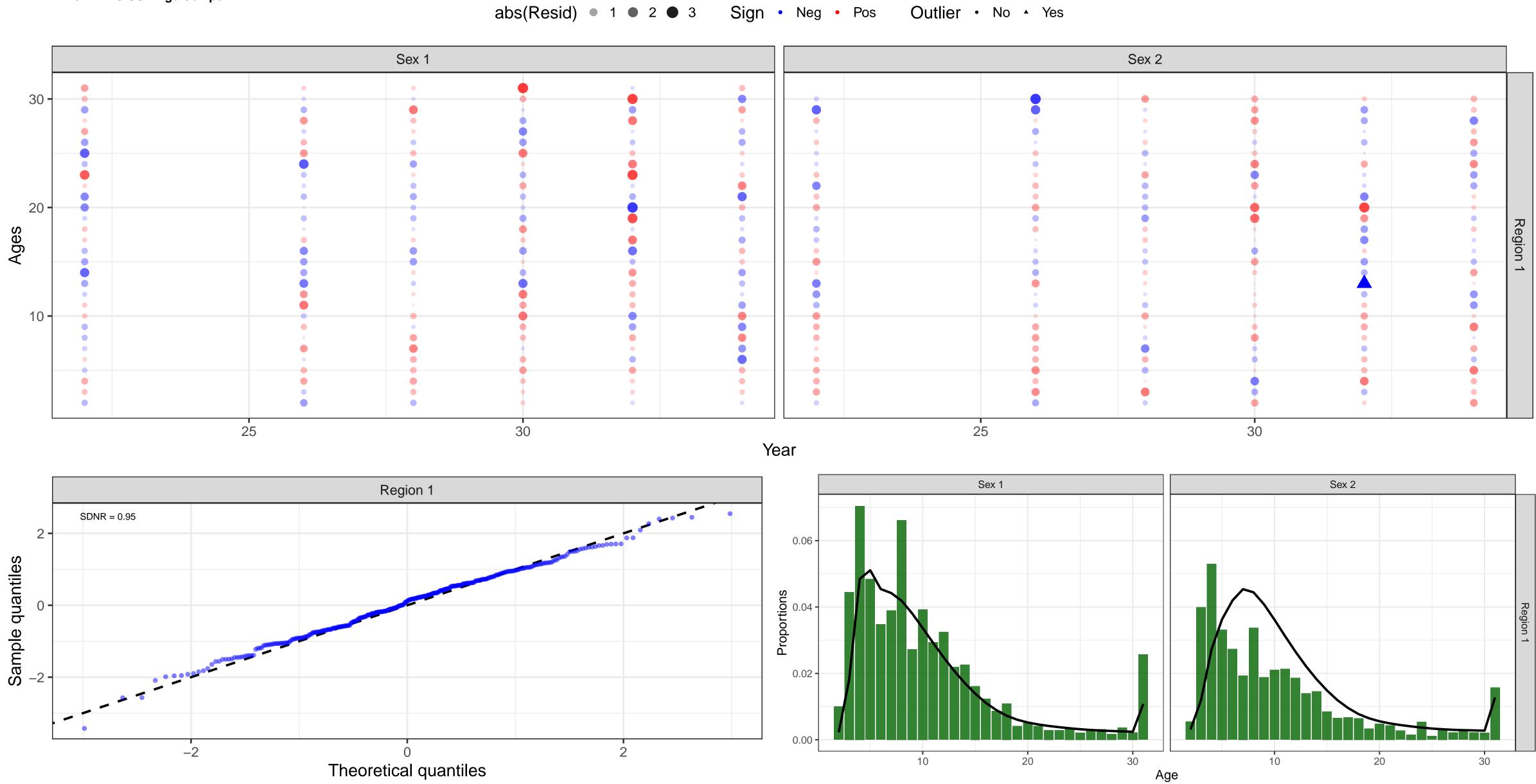


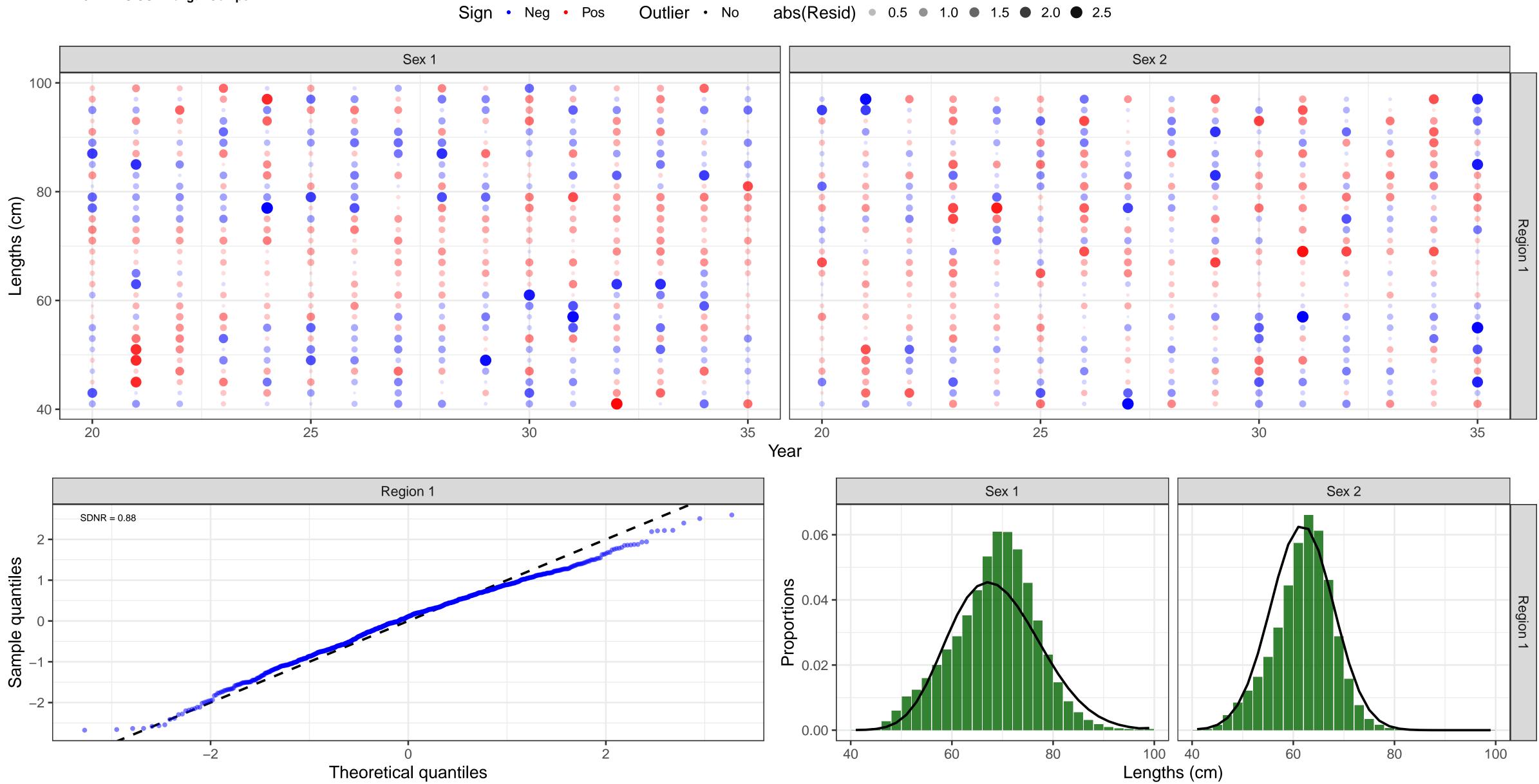


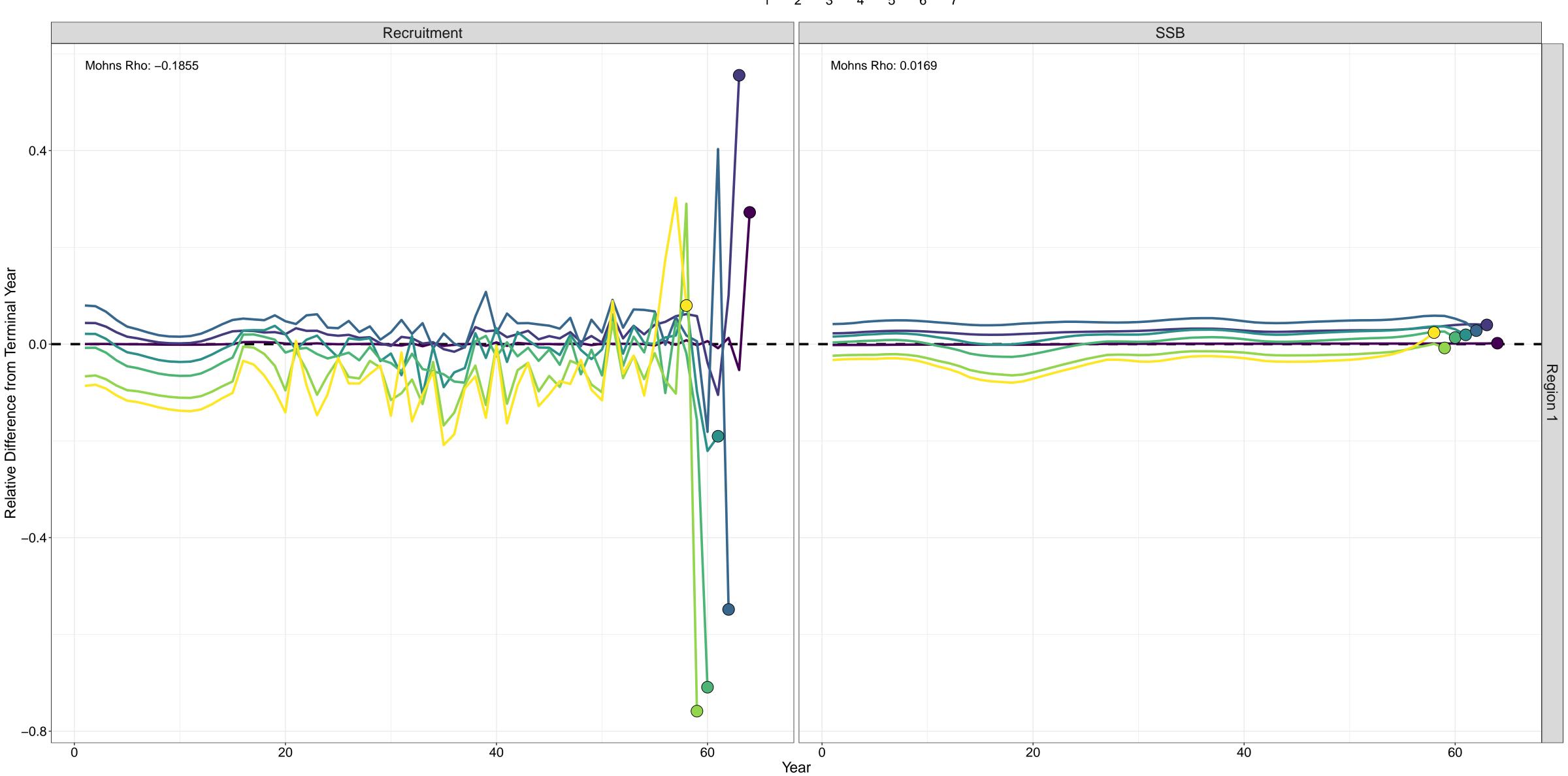




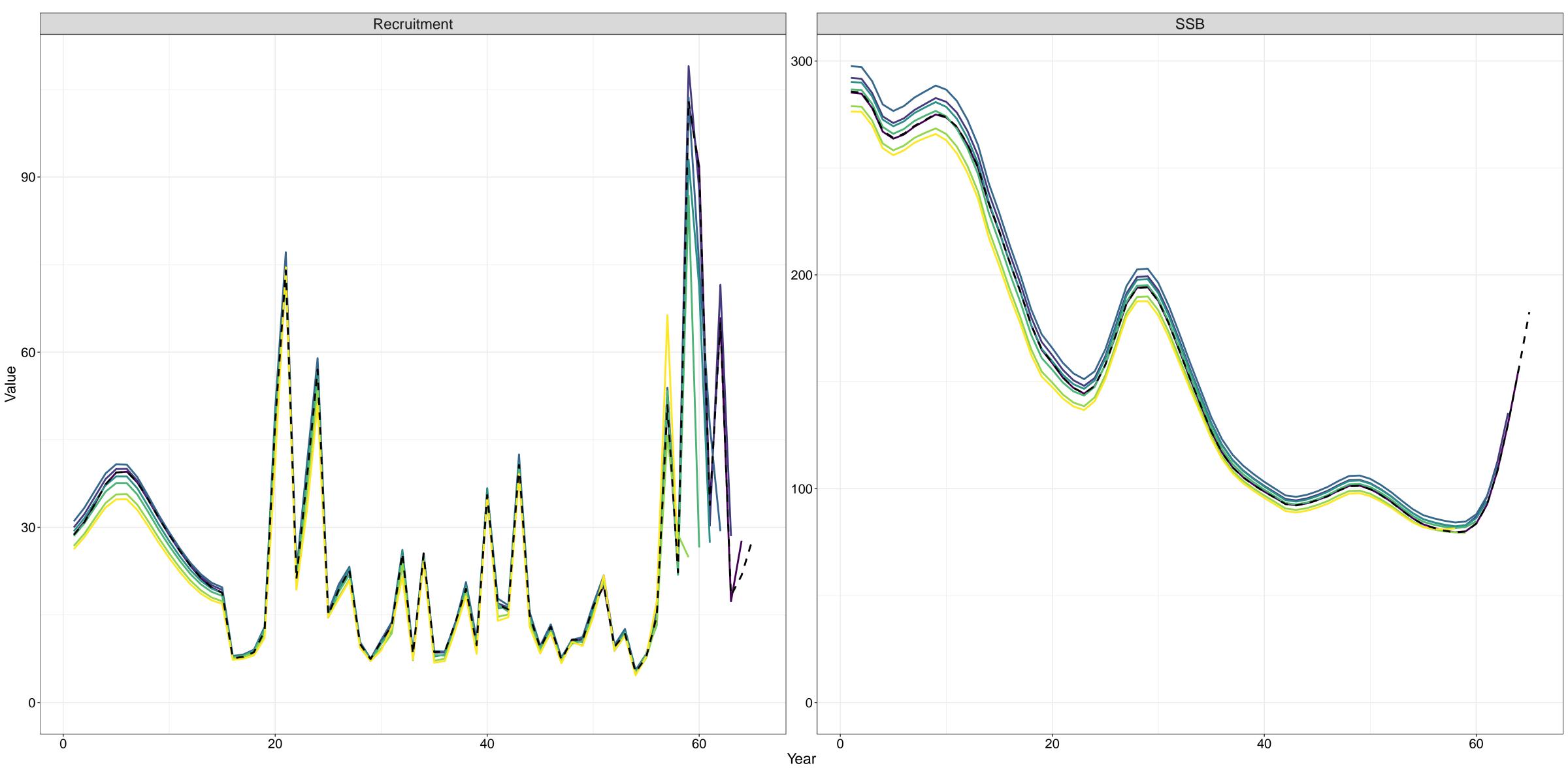


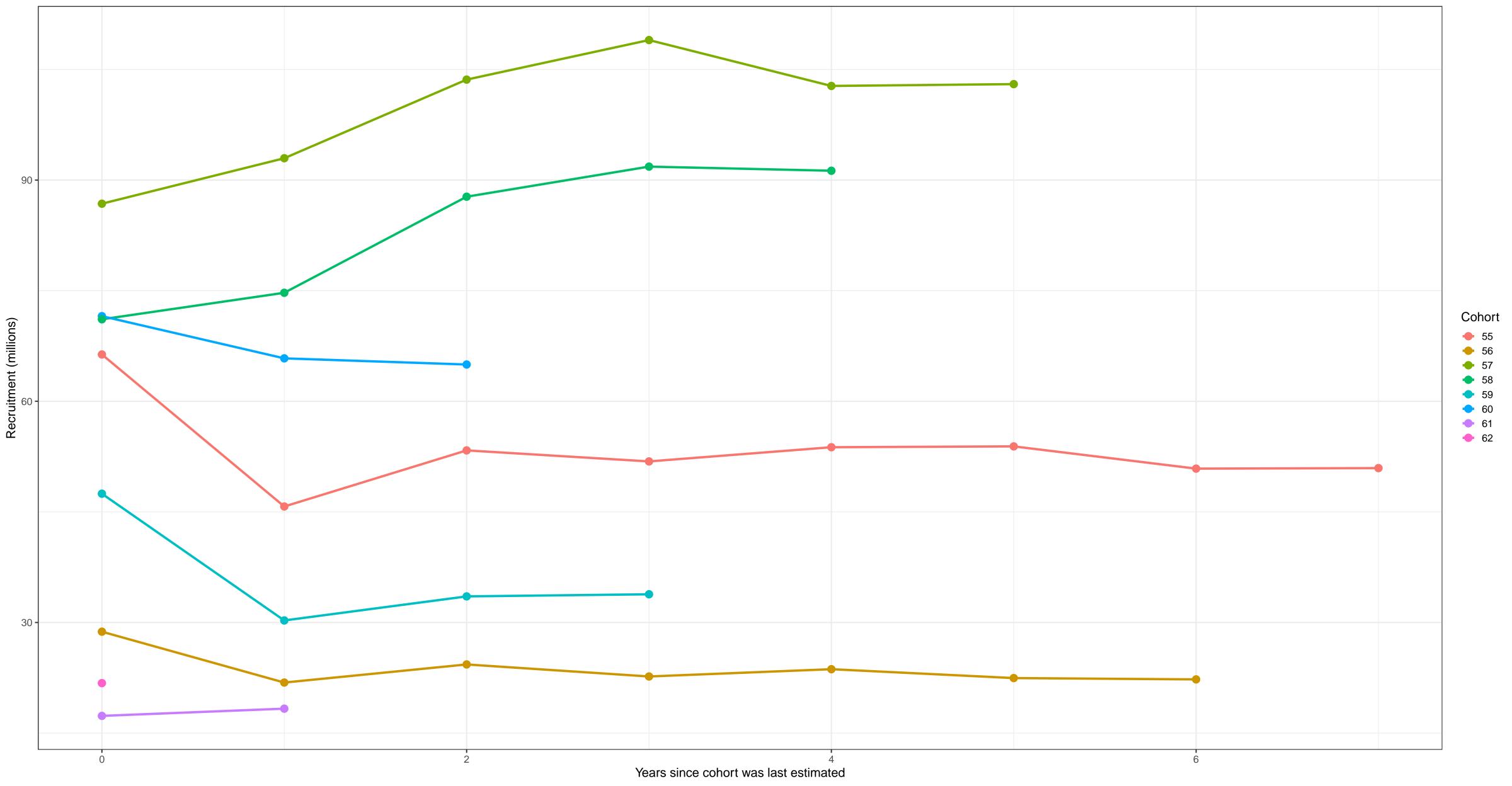












Jitter SSB and Recruitment Region 1 100 -Age 2 Recruitment (millions) 75 **-**50 -25 -Value Hessian TRUE Proportion Converged: 1 250 **-**200 -150 **-**

Year

2000

2020

1980

100 -

1960

Jitter nLL and Convergence

