

ASA Results

Parameter estimates

Parameter	Estimate	SE
dummy	0.0000	NA
fsh_sel50	8.4302	NaN
fsh_sel50	4.3401	NaN
fsh_sel95	8.5538	NaN
fsh_sel95	4.3401	NaN
srv_sel50	4.6890	NaN
srv_sel50	3.4670	NaN
srv_sel95	4.6107	NaN
srv_sel95	6.5830	NaN
fsh_logq	-9.9297	NaN
srv1_logq	-7.7460	NaN
srv2_logq	-8.8008	NaN
mr_logq	-0.0001	NaN
log_rbar	14.6532	NaN
log_rec_devs	-0.0179	NaN
log_rec_devs	-0.0197	NaN
log_rec_devs	-0.0217	NaN
log_rec_devs	-0.0238	NaN
log_rec_devs	-0.0261	NaN
log_rec_devs	-0.0287	NaN
log_rec_devs	-0.0314	NaN
log_rec_devs	-0.0345	NaN
log_rec_devs	-0.0377	NaN
log_rec_devs	-0.0413	NaN
log_rec_devs	-0.0451	NaN
log_rec_devs	-0.0492	NaN
log_rec_devs	-0.0536	NaN
log_rec_devs	-0.0583	NaN
log_rec_devs	-0.0634	NaN
log_rec_devs	-0.0688	NaN
log_rec_devs	-0.0745	NaN
log_rec_devs	-0.1073	NaN
log_rec_devs	0.2055	NaN
log_rec_devs	0.1151	NaN
log_rec_devs	0.1286	NaN
log_rec_devs	0.4200	NaN
log_rec_devs	0.1002	NaN
log_rec_devs	-0.0174	NaN
log_rec_devs	-0.1709	NaN
log_rec_devs	0.0714	NaN
log_rec_devs	0.1020	NaN
log_rec_devs	-0.0808	NaN
log_rec_devs	0.0524	NaN
log_rec_devs	0.2371	NaN
log_rec_devs	-0.0344	NaN

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Parameter	Estimate	SE
log_rec_devs	0.3040	NaN
log_rec_devs	0.0607	NaN
log_rec_devs	0.2959	NaN
log_rec_devs	0.0606	NaN
log_rec_devs	0.5623	NaN
log_rec_devs	0.6114	NaN
log_rec_devs	0.7253	NaN
log_rec_devs	0.7995	NaN
log_rec_devs	0.3410	NaN
log_rec_devs	0.3218	NaN
log_rec_devs	0.2784	NaN
log_rec_devs	-0.1503	NaN
log_rec_devs	-0.3896	NaN
log_rec_devs	-0.6157	NaN
log_rec_devs	-0.8412	NaN
log_rec_devs	-0.9156	NaN
log_rec_devs	-1.0707	NaN
log_rec_devs	-1.1316	NaN
log_rec_devs	-1.0787	NaN
log_rec_devs	-0.9207	NaN
log_rec_devs	-0.9287	NaN
log_rec_devs	-0.6935	NaN
log_rec_devs	-0.5034	NaN
log_rec_devs	0.0338	NaN
log_rec_devs	0.0411	NaN
log_rec_devs	0.5390	NaN
log_rec_devs	0.5003	NaN
log_rec_devs	0.3940	NaN
log_rec_devs	0.3937	NaN
log_rec_devs	0.1485	NaN
log_rec_devs	-0.1216	NaN
log_rec_devs	-0.1627	NaN
log_rec_devs	-0.3210	NaN
log_rec_devs	-0.1180	NaN
log_rec_devs	-0.1636	NaN
log_rec_devs	-0.2656	NaN
log_rec_devs	0.0922	NaN
log_rec_devs	0.2253	NaN
log_rec_devs	0.1579	NaN
log_rec_devs	-0.1597	NaN
log_rec_devs	-0.0360	NaN
log_rec_devs	0.2120	NaN
log_rec_devs	0.8961	NaN
log_rec_devs	1.4146	NaN
log_rec_devs	1.2119	NaN
log_rec_devs	-0.1862	NaN
log_Fbar	-3.6645	NaN
log_F_devs	-1.7308	NaN
log_F_devs	-2.7868	NaN
log_F_devs	-2.2366	NaN

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Parameter	Estimate	SE
log_F_devs	-2.3431	NaN
log_F_devs	-1.6423	NaN
log_F_devs	0.2042	NaN
log_F_devs	0.4852	NaN
log_F_devs	0.4000	NaN
log_F_devs	0.4360	NaN
log_F_devs	0.3416	NaN
log_F_devs	0.2342	NaN
log_F_devs	0.4313	NaN
log_F_devs	0.5714	NaN
log_F_devs	0.9539	NaN
log_F_devs	0.8456	NaN
log_F_devs	0.9179	NaN
log_F_devs	1.0571	NaN
log_F_devs	1.4201	NaN
log_F_devs	1.2711	NaN
log_F_devs	0.7420	NaN
log_F_devs	0.7090	NaN
log_F_devs	0.3557	NaN
log_F_devs	0.3819	NaN
log_F_devs	0.4971	NaN
log_F_devs	0.7362	NaN
log_F_devs	0.7807	NaN
log_F_devs	0.8475	NaN
log_F_devs	0.5996	NaN
log_F_devs	0.5367	NaN
log_F_devs	0.0880	NaN
log_F_devs	-0.0423	NaN
log_F_devs	-0.2340	NaN
log_F_devs	-0.1534	NaN
log_F_devs	-0.2085	NaN
log_F_devs	-0.6316	NaN
log_F_devs	-1.0197	NaN
log_F_devs	-1.4489	NaN
log_F_devs	-1.3656	NaN
spr_Fxx	-0.0113	NaN
spr_Fxx	1.7988	NaN
spr_Fxx	0.0715	NaN

Catchability

Estimates on natural scale

Fishery q: 0

Survey (1-hr soak) q: 0.0004

Survey (3+hr soak) q: 0.0002

Mark-recapture q: 0.9999

Likelihood components

Catchability priors: 4.566, 0.3513, 1.7919, 0

Catch: 0.0098

Abundance indices (fsh, srv1, srv2, mr): 12.0399, 3.9076, 8.535, 0.6132

Age comp 8440.5565, 3409.6151

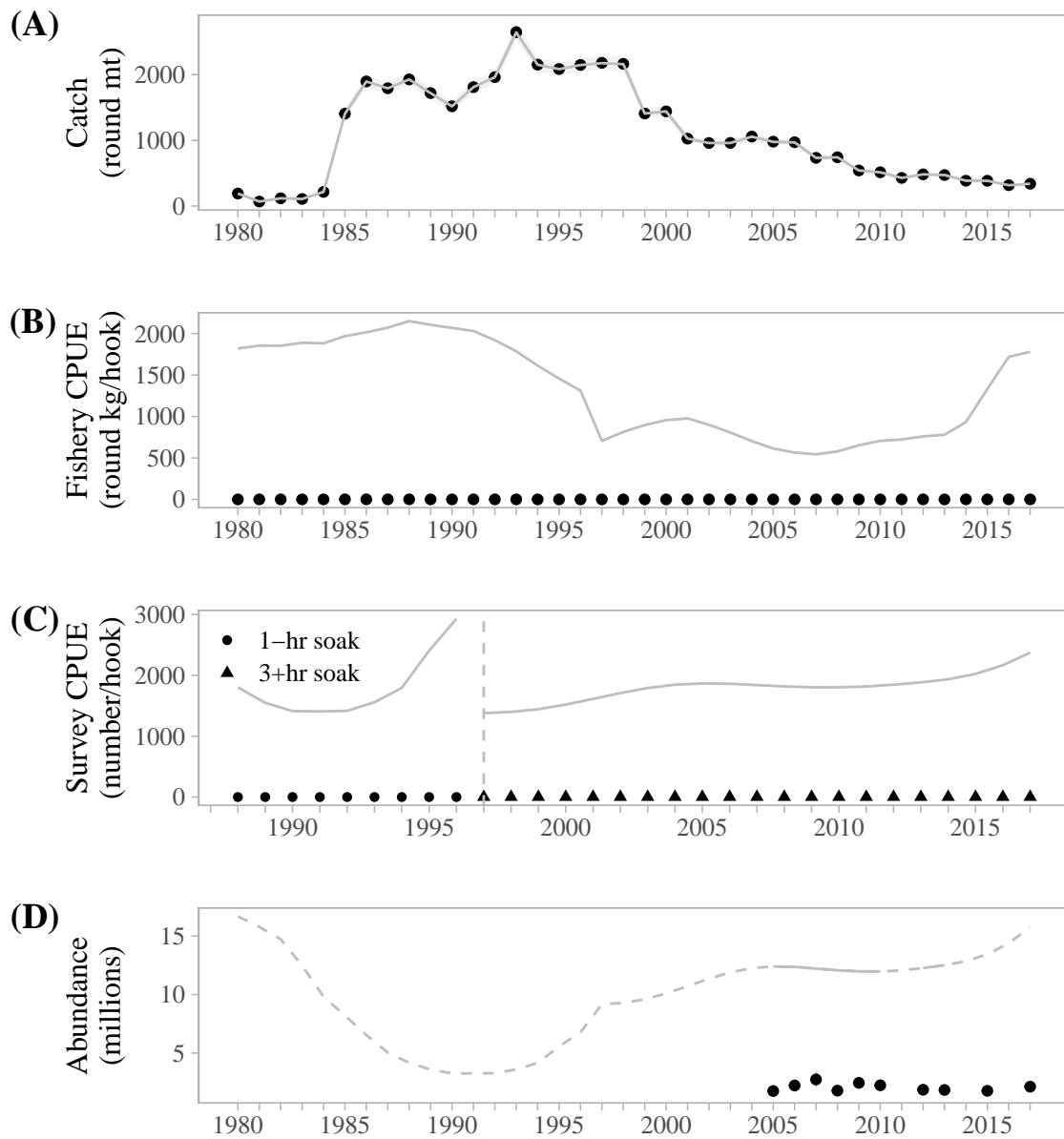
Multinomial offsets 11.3056, 38.3321

Penalty on fishing mortality deviations: 4.2104

Penalty on recruitment deviations: 1.6485

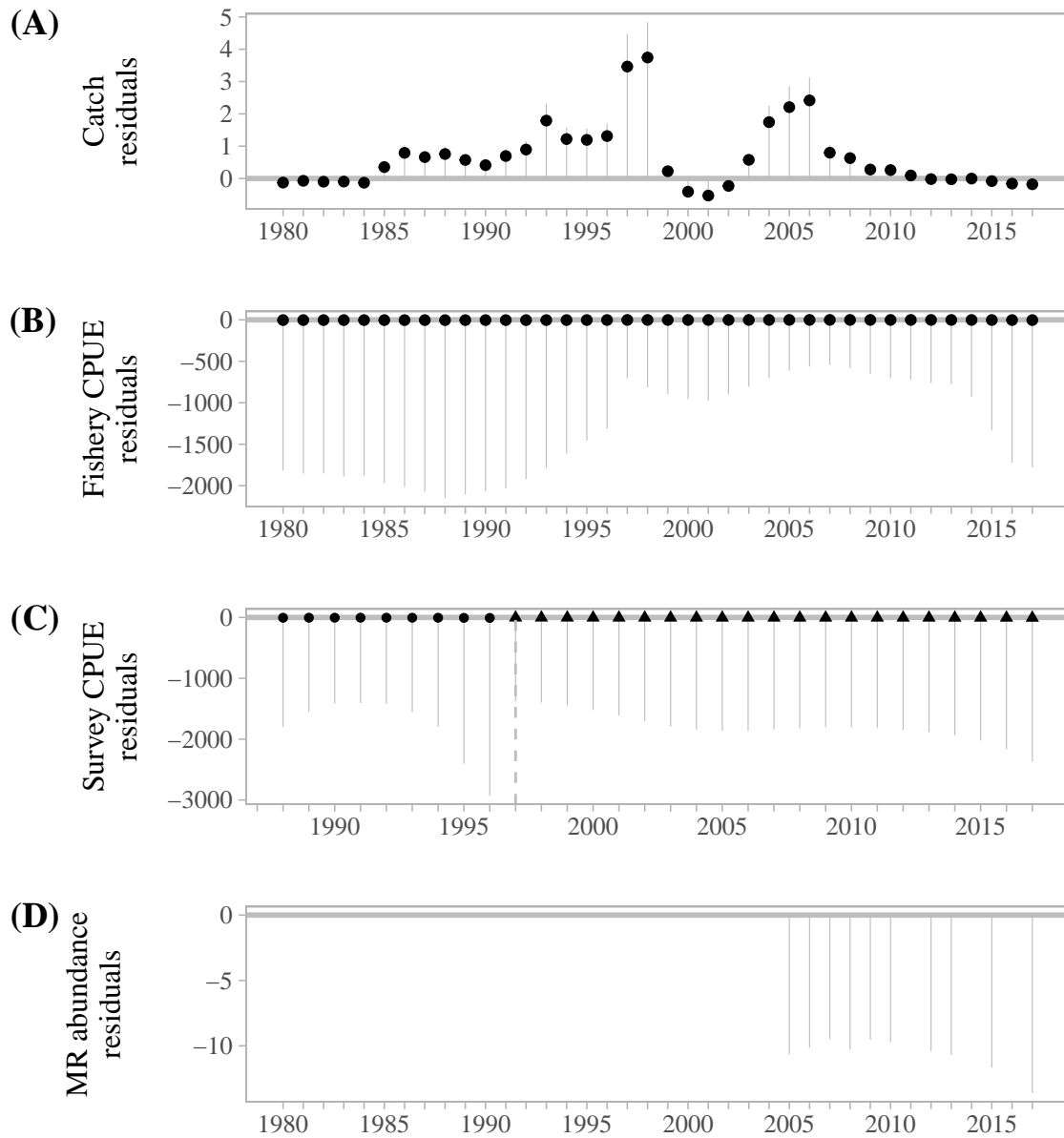
Total likelihood: 11888.5952

Time series of catch and abundance indices

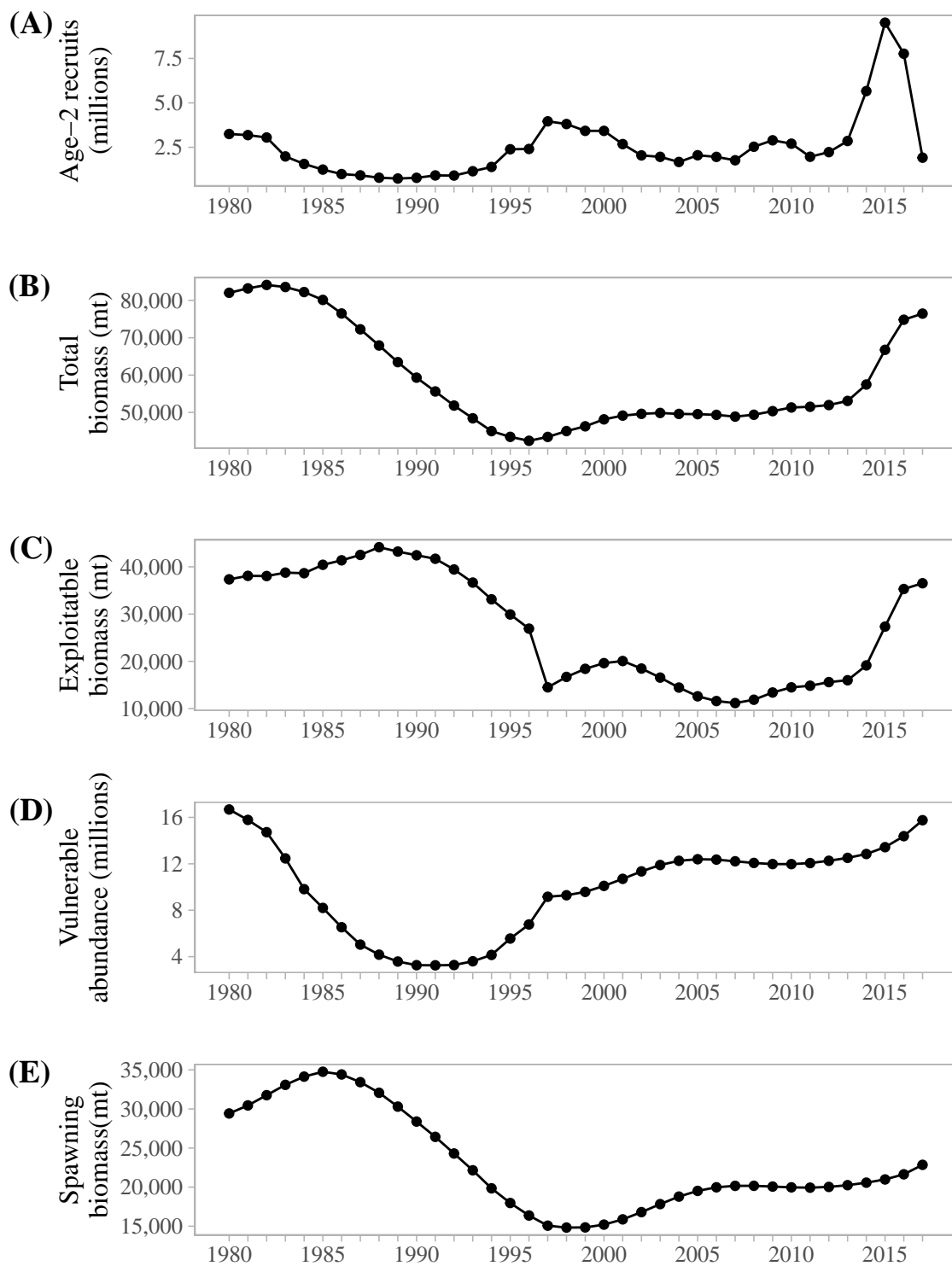


Residuals for time series of catch and abundance indices

Standardized residuals:

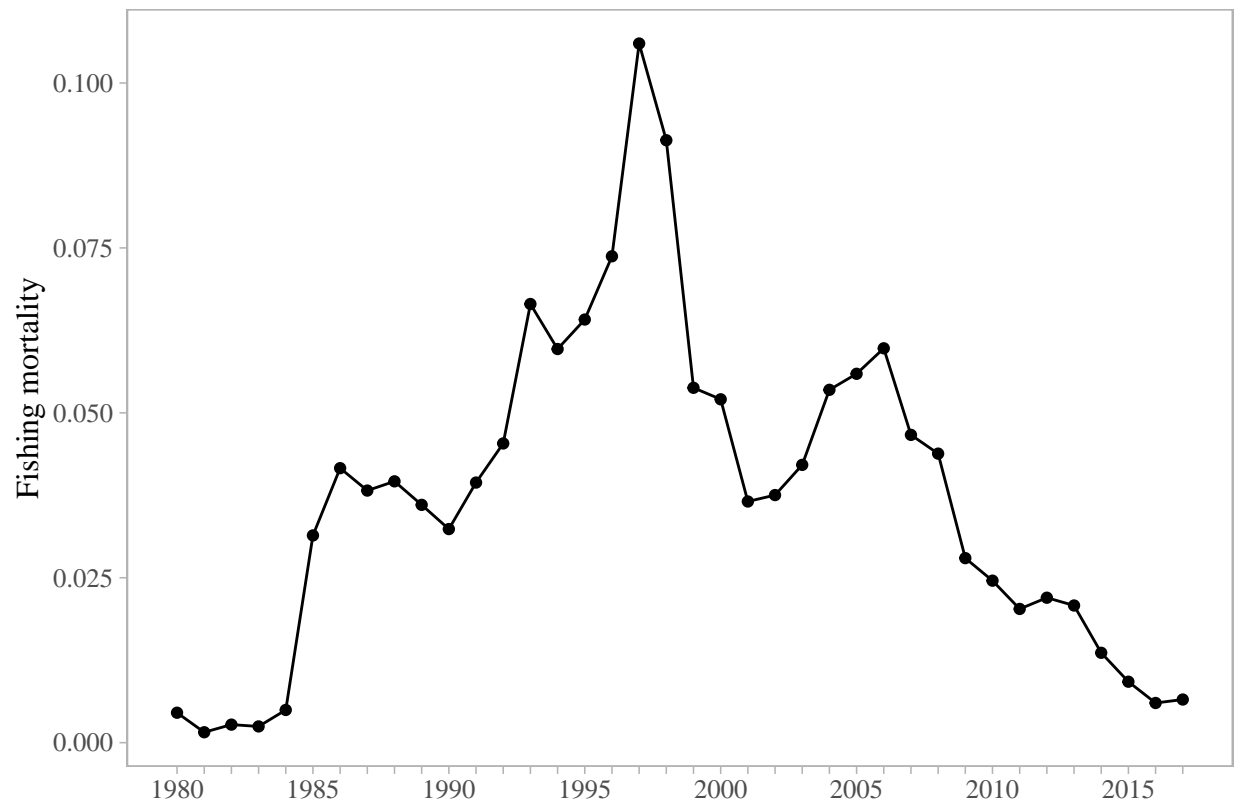


Derived time series of recruitment, abundance, and biomass

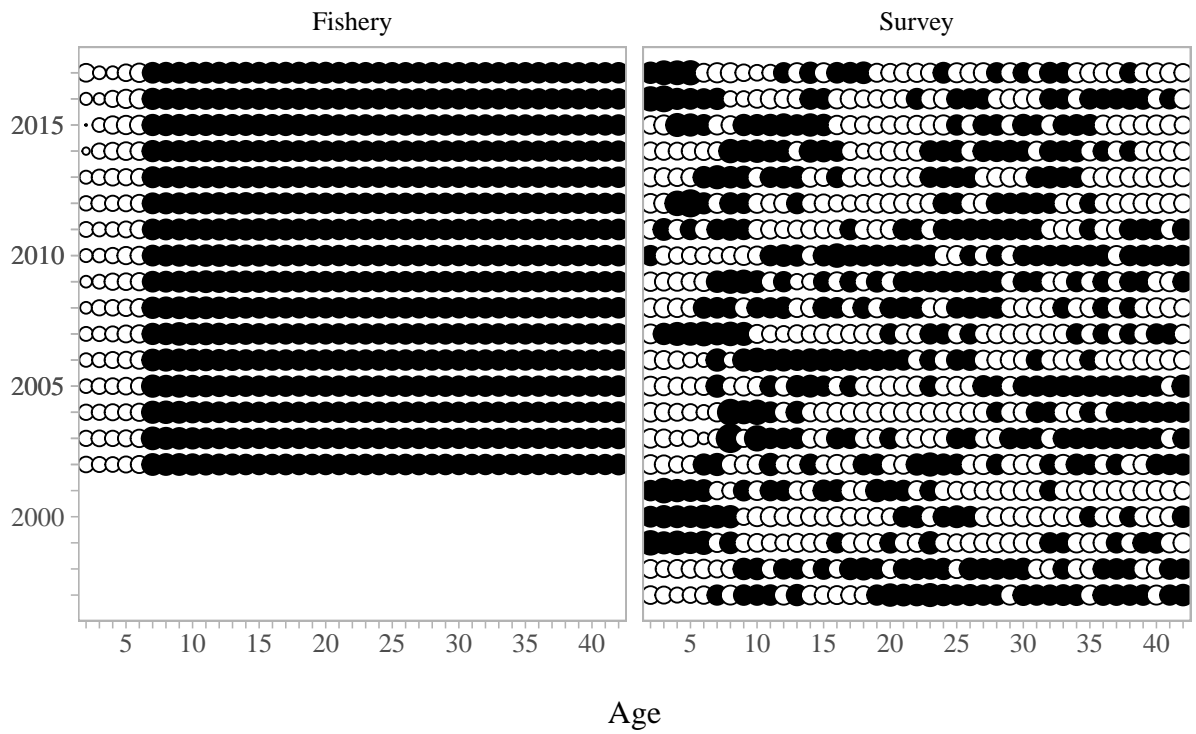


Estimate of fishing mortality

On natural scale

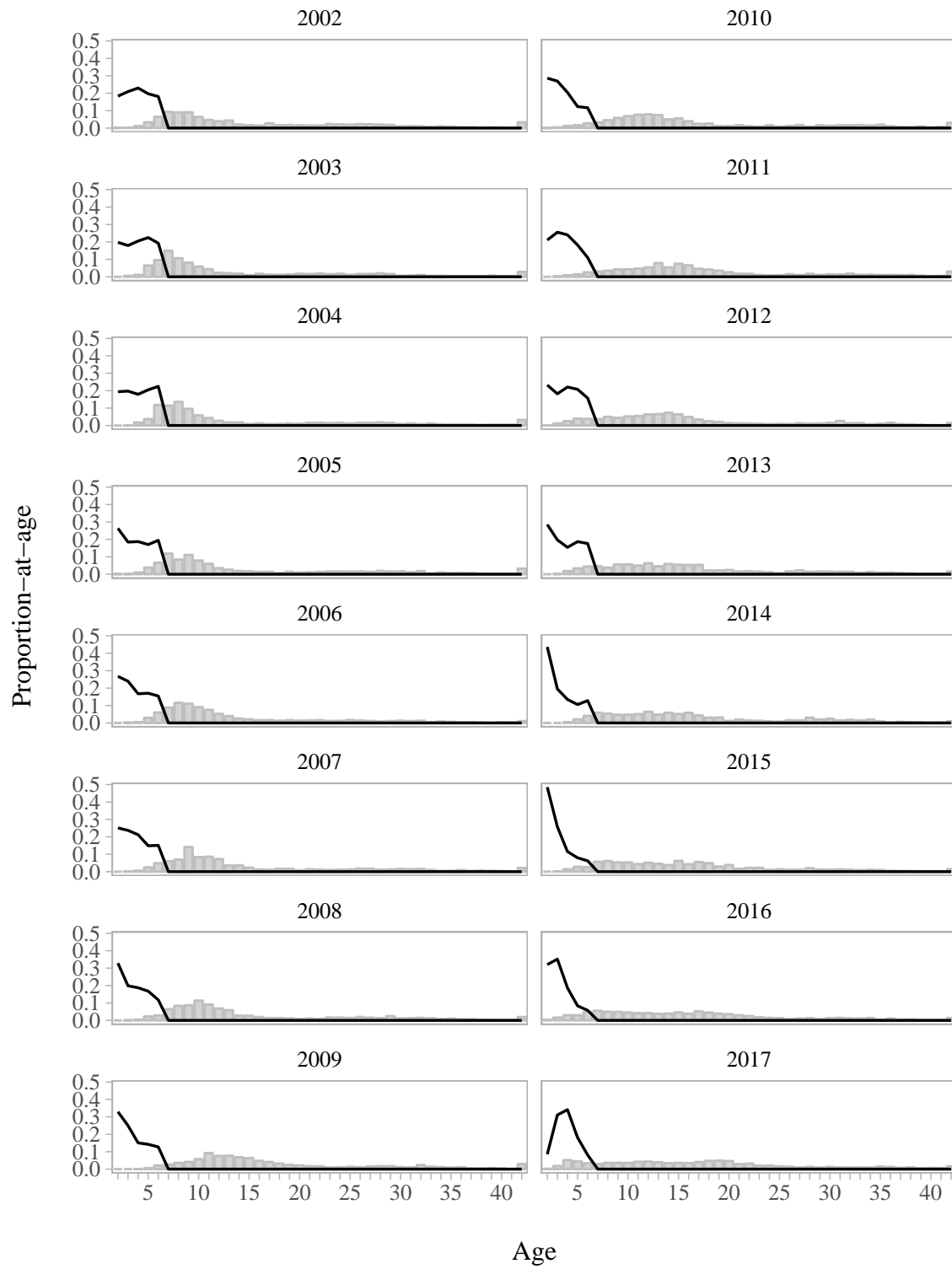


Fits to age comps

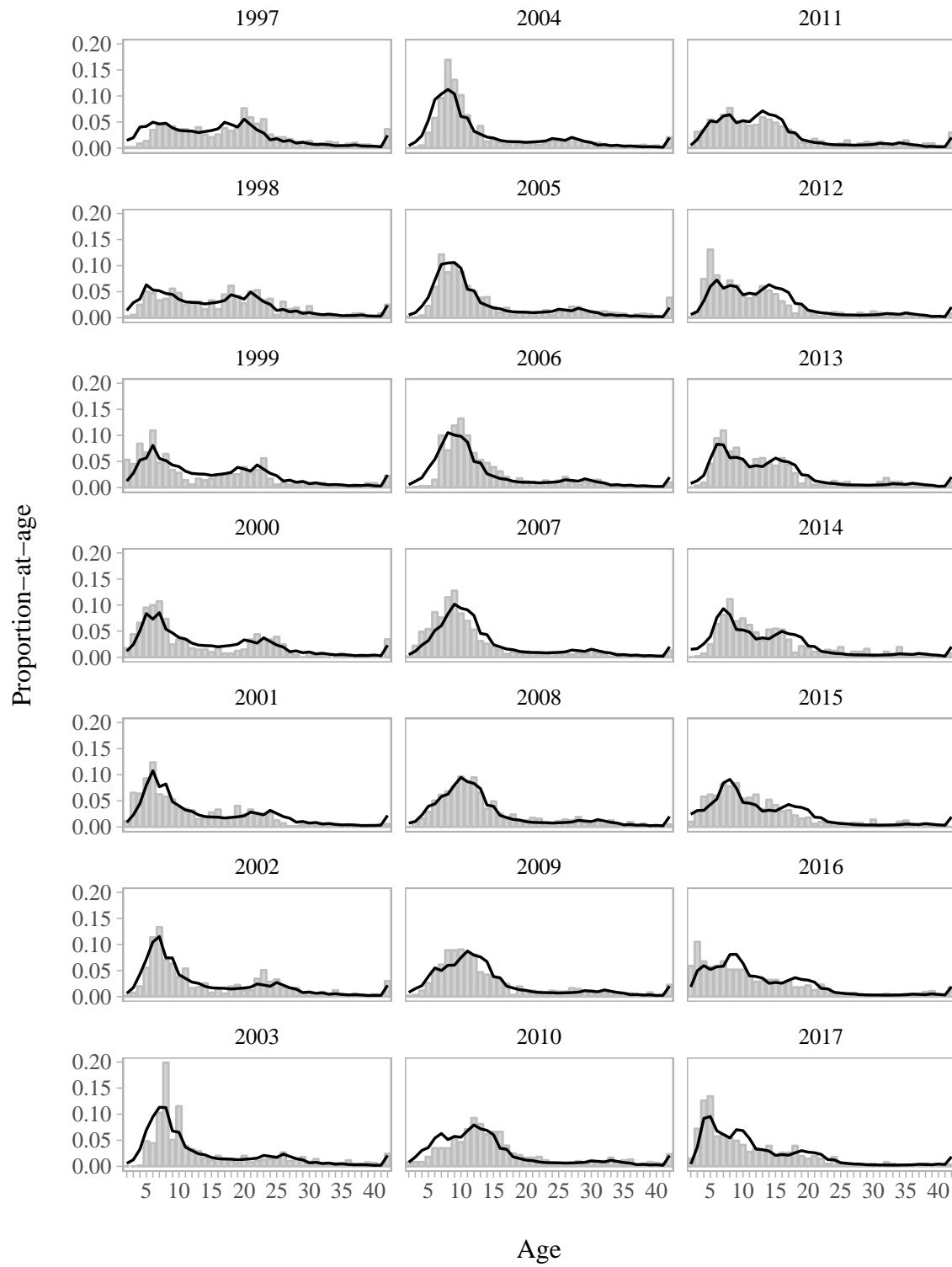


Model performance • Observed greater than estimated ○ Observed less than estimated

Fits to fishery age comps



Fits to survey age comps



Selectivity

