

Appendix C1: Model 0 Results

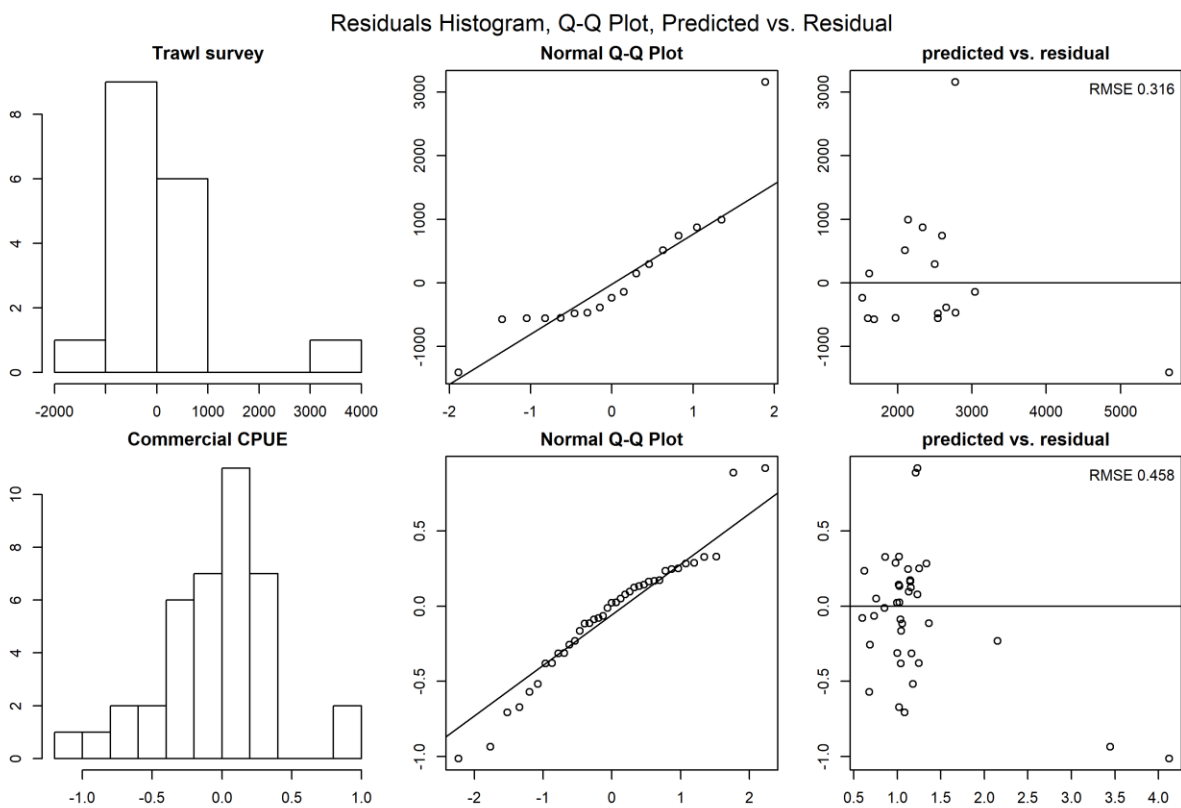


Figure C1-1. QQ Plot of Trawl survey and Commercial CPUE.

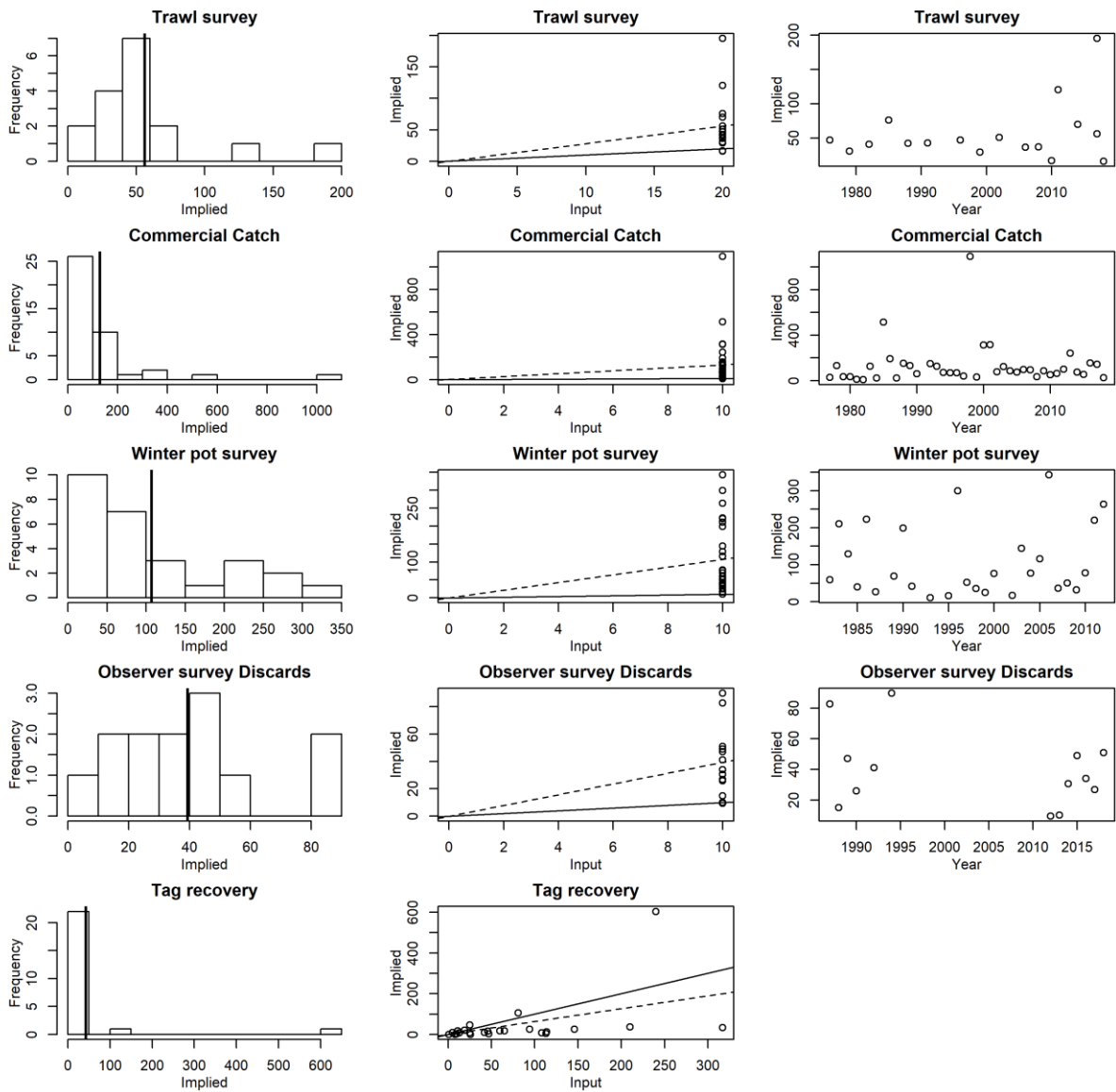


Figure C1-2: Implied effective samples. Figures in the first column show implied effective sample size (x-axis) vs. frequency (y-axis).

Vertical solid line is the mean implied effective sample size.

The second column show input sample size (x-axis) vs. implied effective sample size (y-axis).

Dashed line indicates linear regression slope, and solid line is 1:1 line. The third column show year (x-axis) vs. implied effective sample size (y-axis).

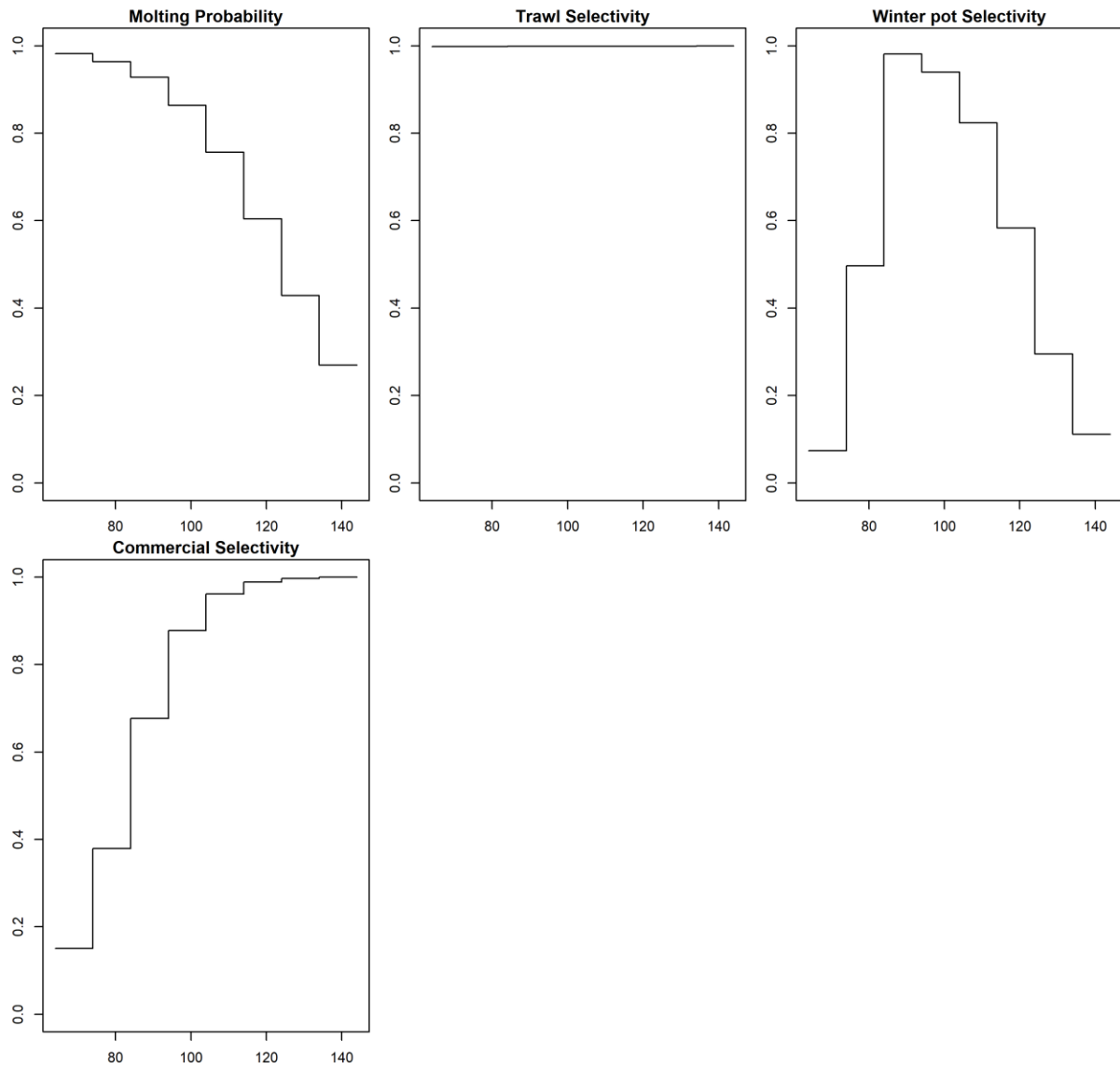


Figure C1-3. Molting probability and trawl/pot selectivity. X-axis is carapace length.

Trawl survey crab abundance

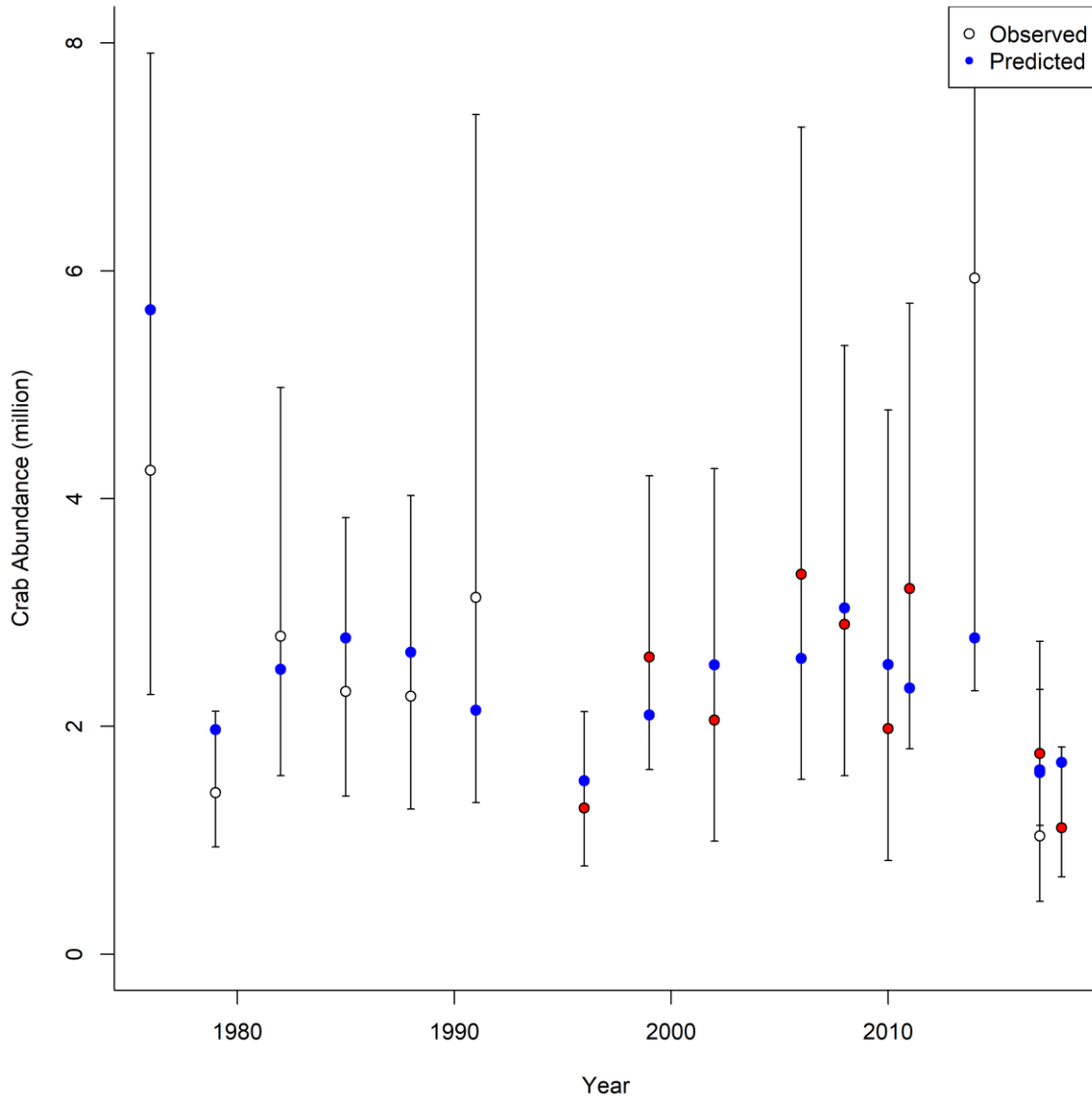


Figure C1-4. Estimated trawl survey male abundance (crab ≥ 64 mm CL). Observed: White: NOAA Trawl Survey, Red: ADG&G Trawl Survey

Modeled crab abundance Feb 01

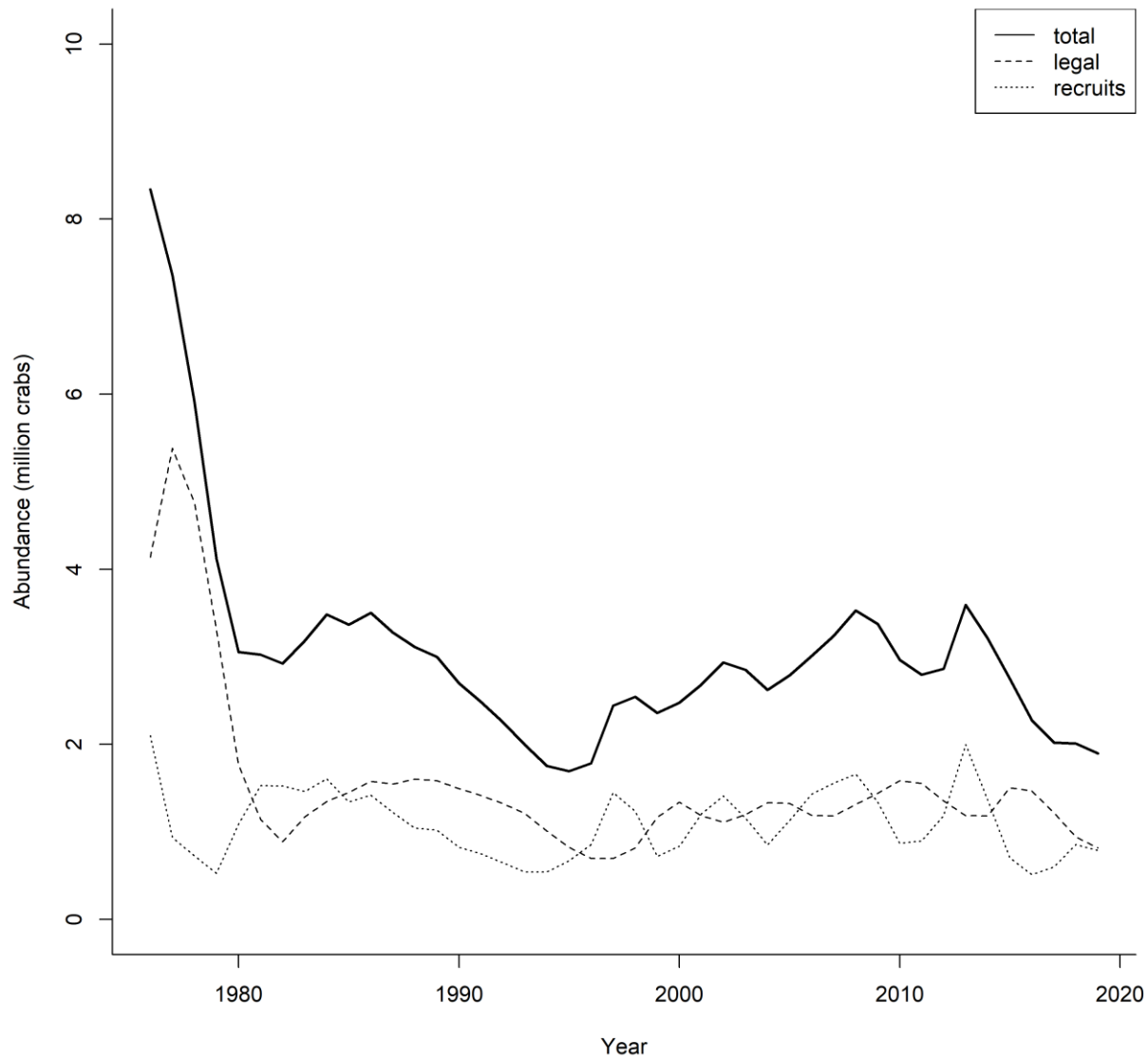


Figure C1-5. Estimated abundance of legal males from 1976-2015.

MMB Feb 01

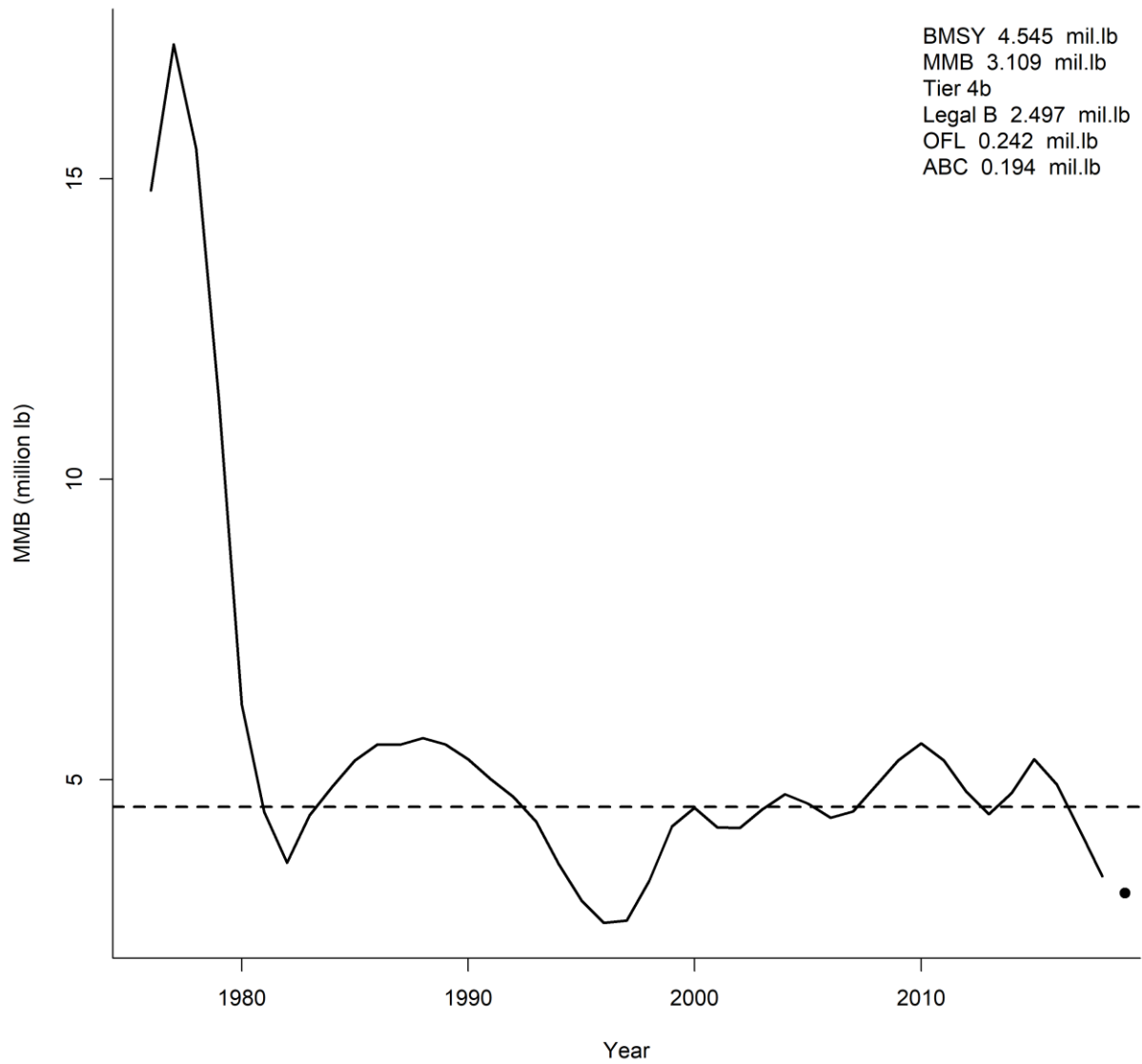


Figure C1-6. Estimated abundance of Mature Male Biomass from 1976-2019. Dash line shows Bmsy (Average MMB of 1980-2019).

Summer commercial standardized cpue

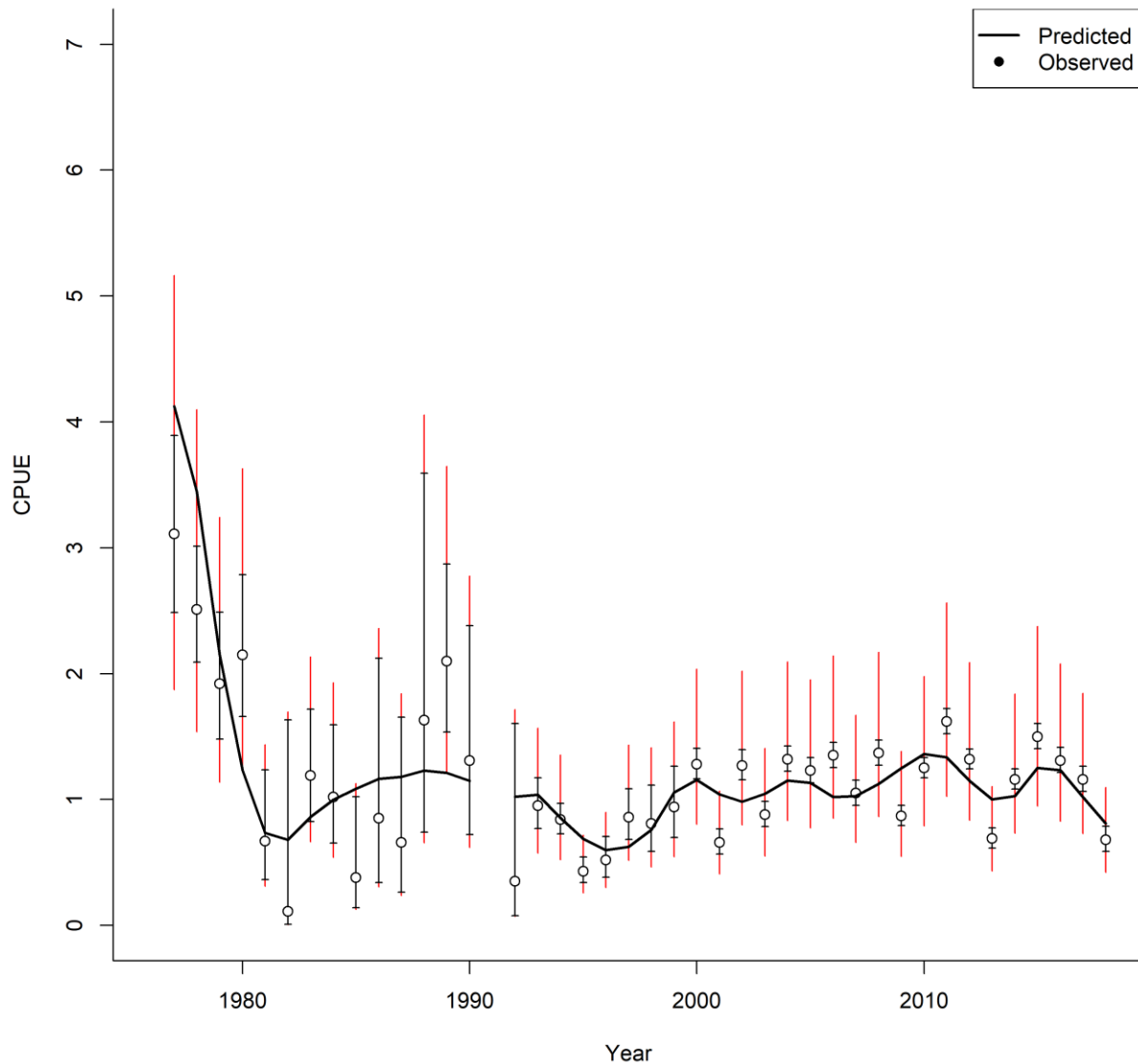


Figure C1-7. Summer commercial standardized cpue 1977-2018.

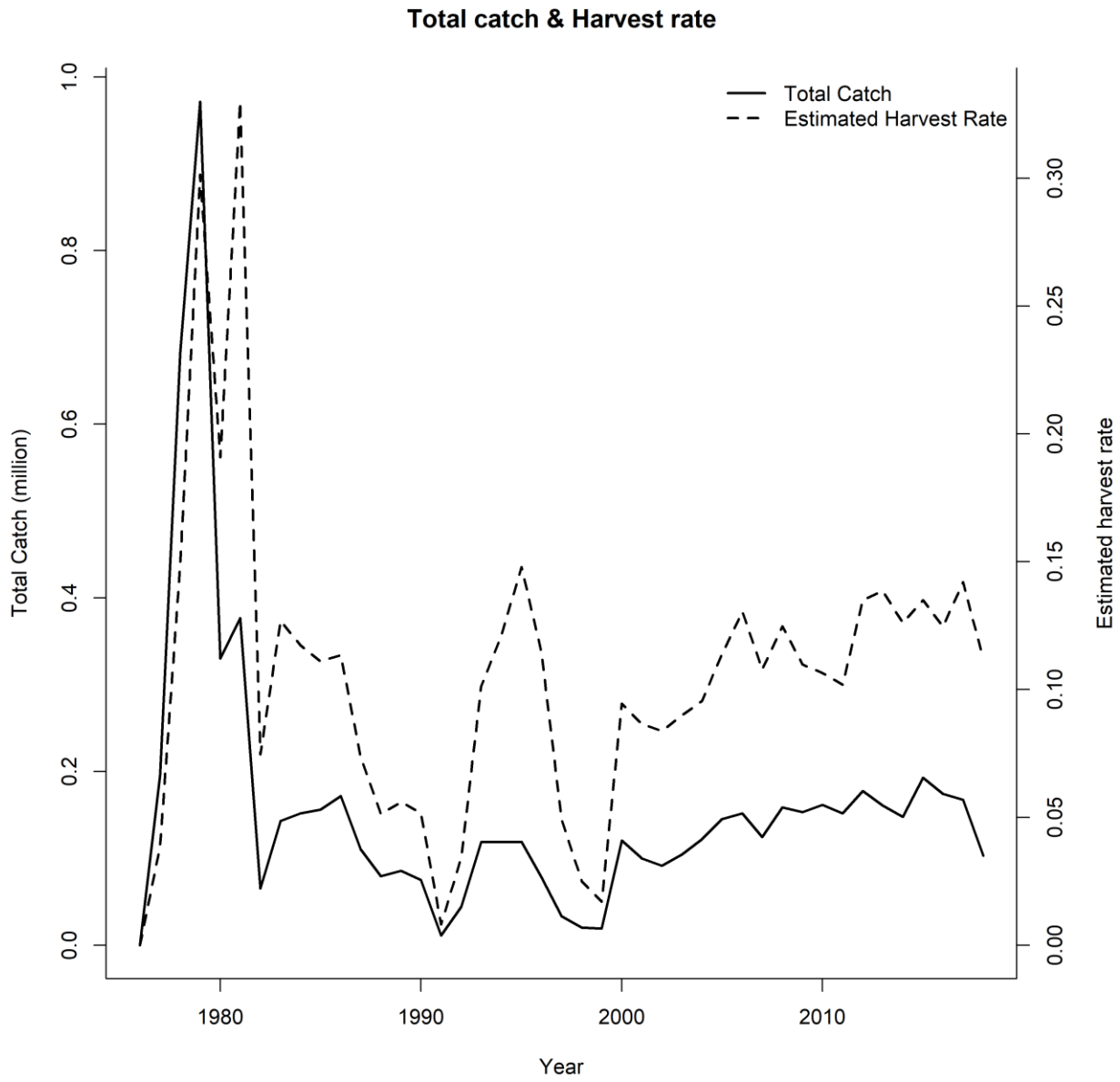


Figure C1-8. Total catch and estimated harvest rate 1976-2018.

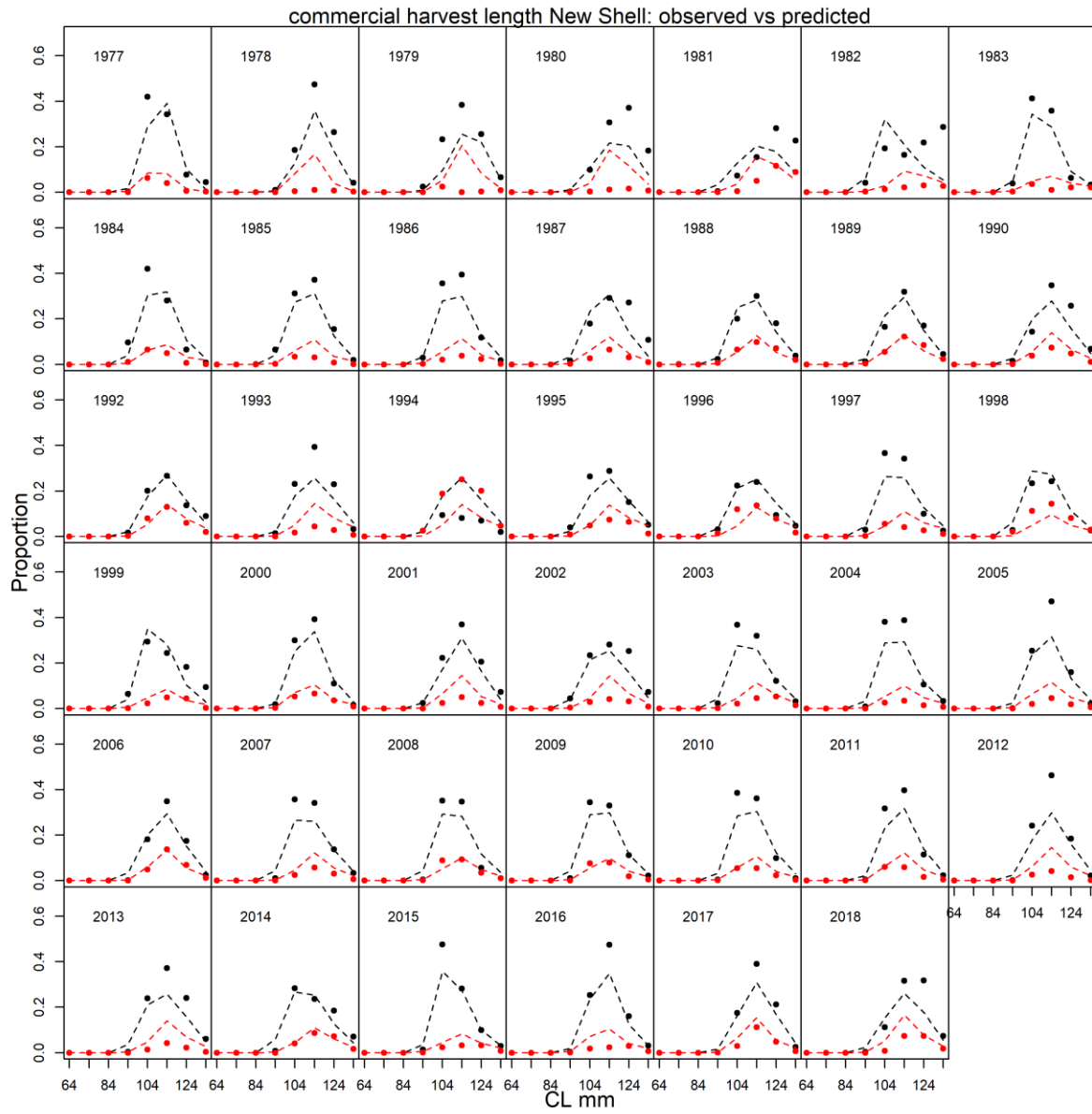


Figure C1-9. Predicted (dashed line) vs. observed (dots) length class proportions for commercial catch. Black: New Shell, Red: Old Shell

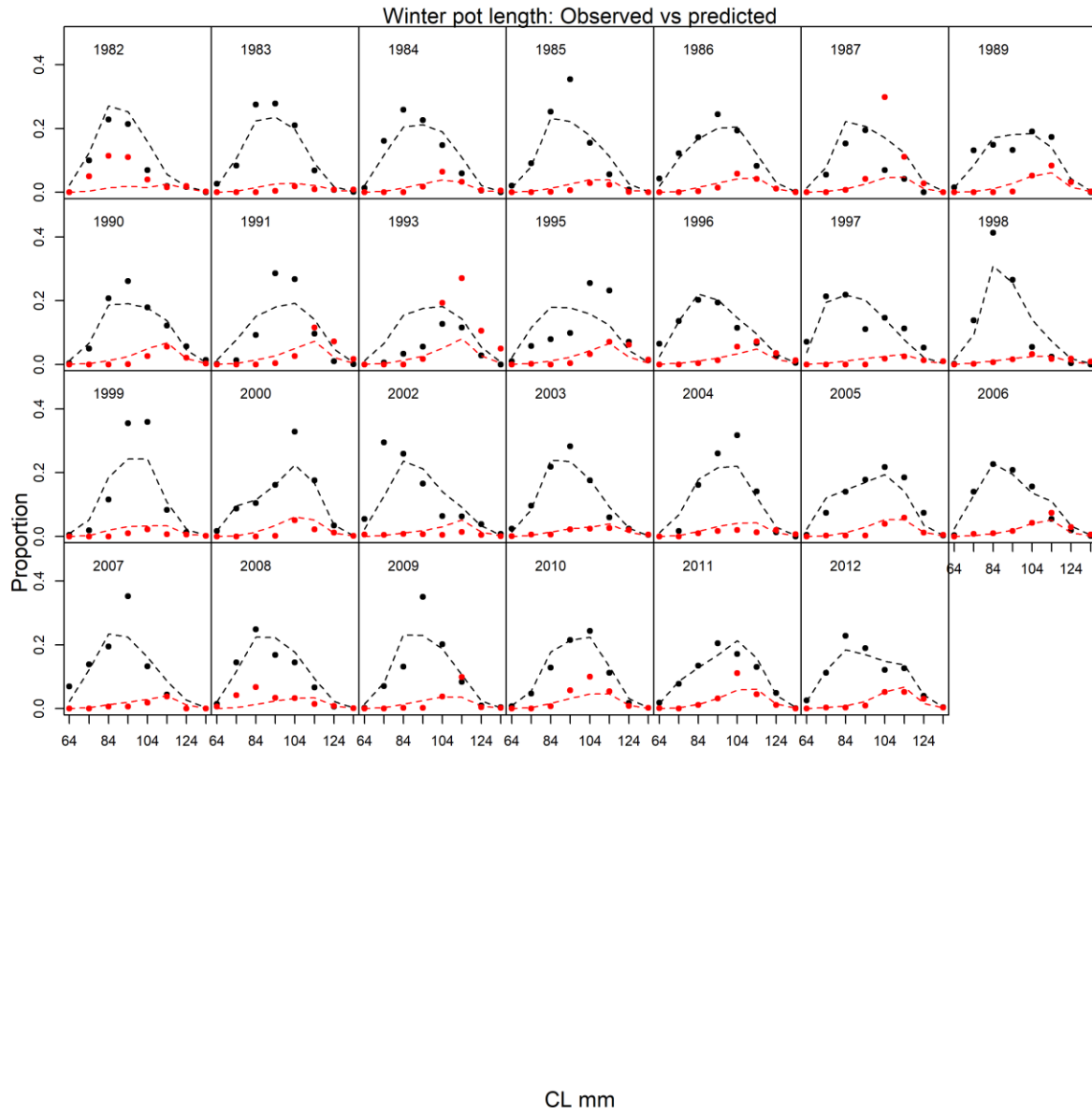
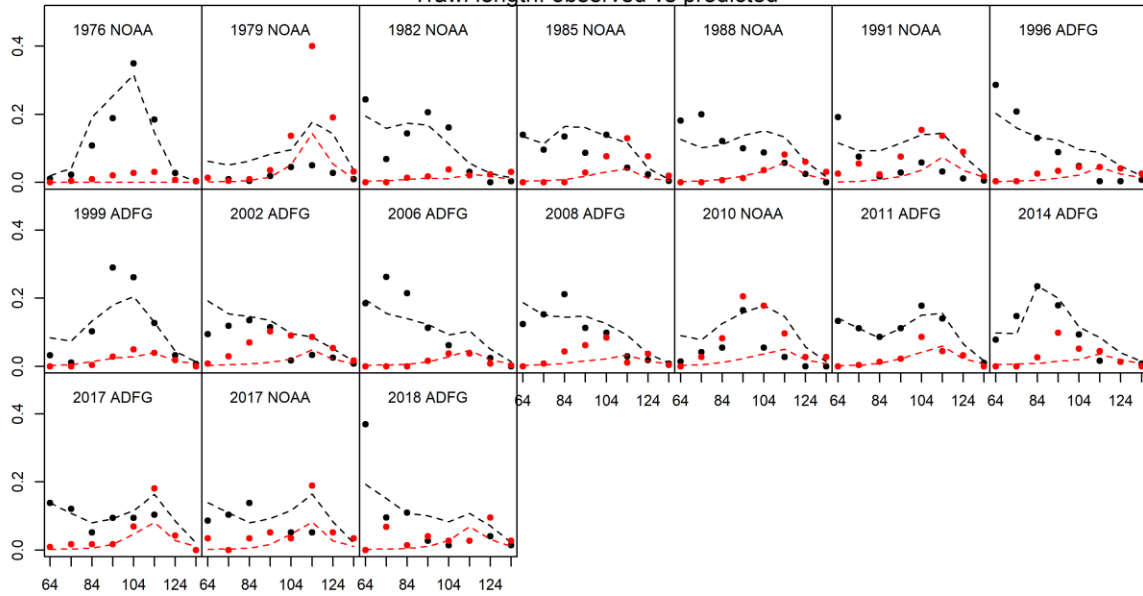


Figure C1-10. Predicted (dashed line) vs. observed (black dots) length class proportions for the winter and spring pot survey.

Trawl length: observed vs predicted



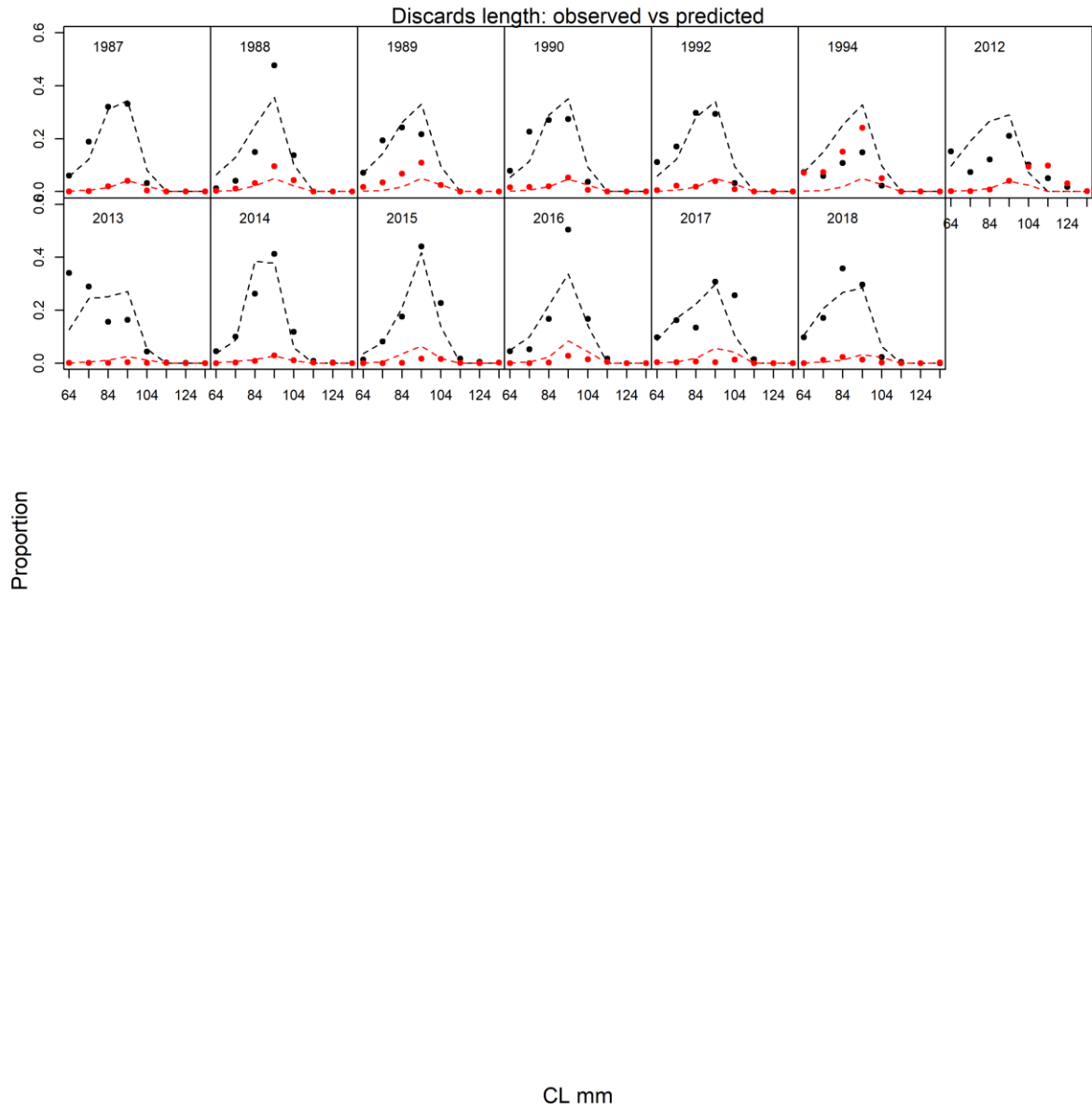


Figure C1-12. Predicted (dashed) vs. observed (dots) length class proportions for the observer survey.

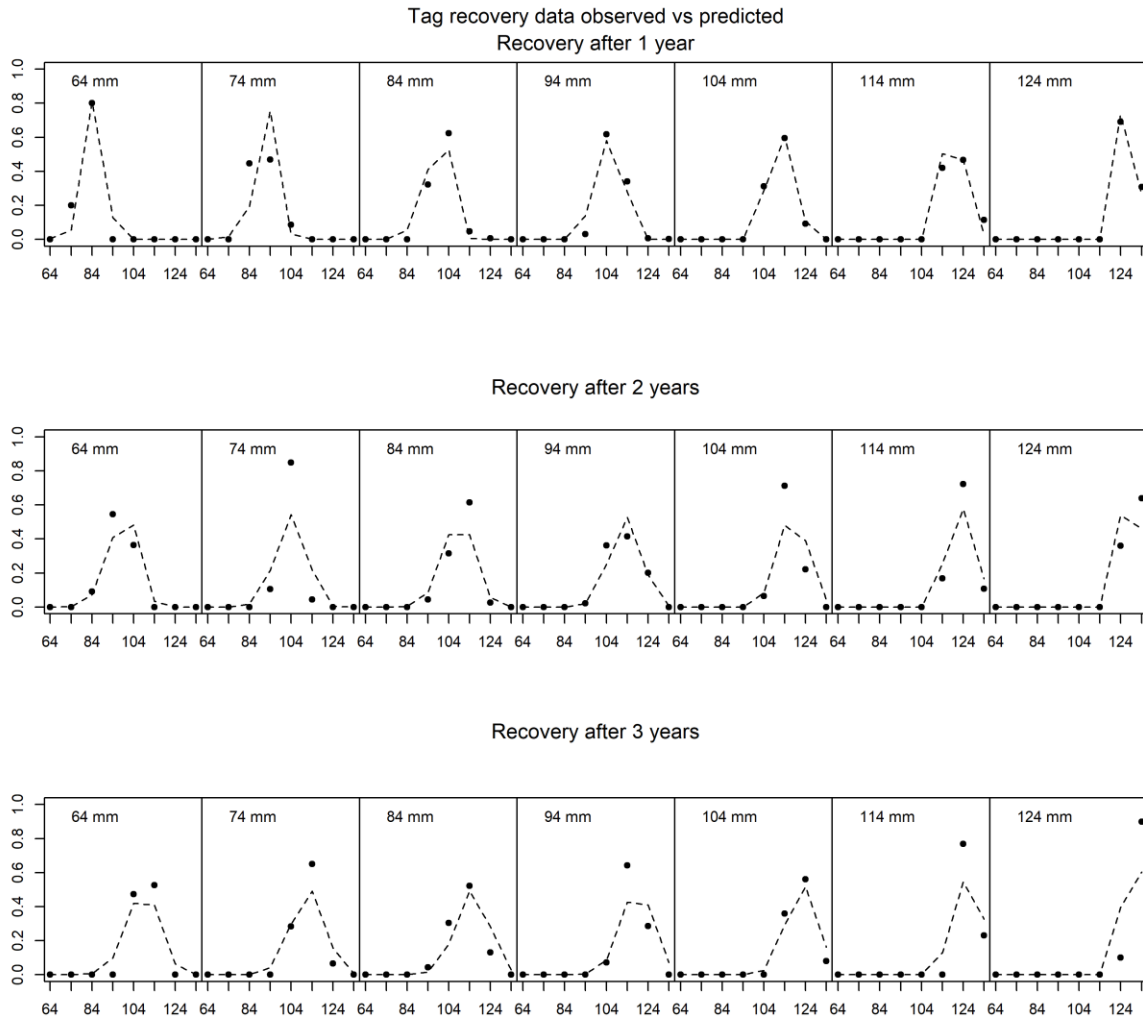


Figure C1-13. Predicted vs. observed length class proportions for tag recovery data.

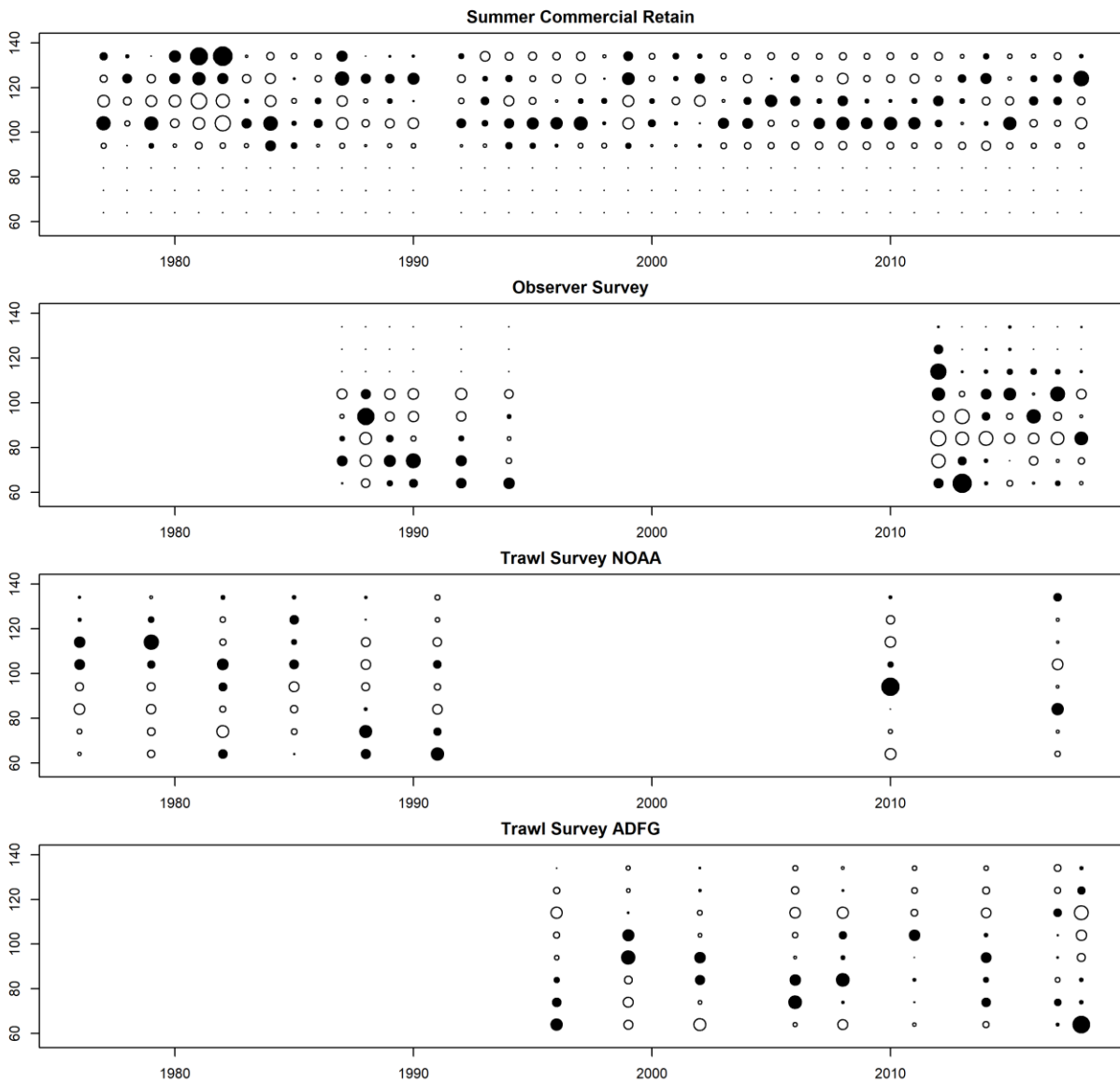


Figure C1-13. Bubble plots of predicted and observed length proportions. Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

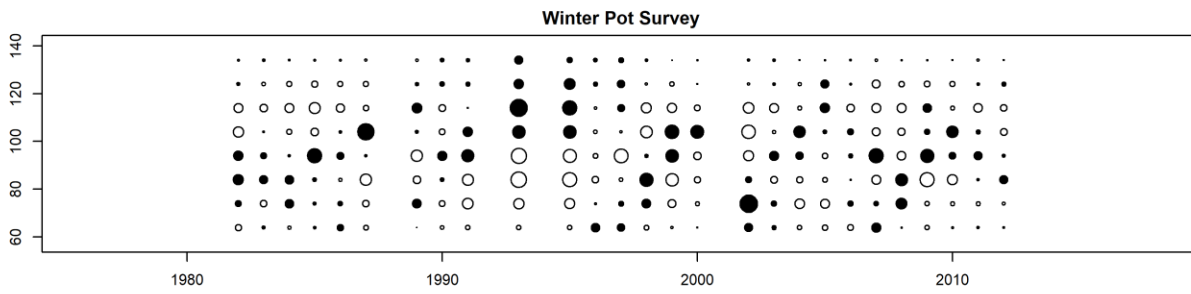


Figure C1-14. Bubble plots of predicted and observed length proportions. Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

Table C1 . Summary of parameter estimates for a length-based stock synthesis population model of Norton Sound red king crab.

name	Estimate	std.dev
log_q1	-6.965	0.168
log_q2	-6.816	0.109
log_N76	9.029	0.130
R0	6.440	0.081
log_R76	0.013	0.416
log_R77	-0.541	0.370
log_R78	-0.725	0.353
log_R79	0.373	0.315
log_R80	0.500	0.283
log_R81	0.404	0.263
log_R82	0.372	0.314
log_R83	0.540	0.275
log_R84	0.147	0.291
log_R85	0.447	0.276
log_R86	0.061	0.286
log_R87	0.021	0.246
log_R88	0.025	0.258
log_R89	-0.329	0.280
log_R90	-0.276	0.253
log_R91	-0.526	0.285
log_R92	-0.673	0.302
log_R93	-0.577	0.289
log_R94	-0.292	0.257
log_R95	-0.063	0.225
log_R96	0.576	0.217
log_R97	-0.016	0.293
log_R98	-0.624	0.320
log_R99	-0.008	0.310
log_R00	0.311	0.263
log_R01	0.390	0.241
log_R02	-0.005	0.314
log_R03	-0.280	0.330
log_R04	0.300	0.241
log_R05	0.425	0.222
log_R06	0.477	0.243

name	Estimate	std.dev
log_R07	0.540	0.231
log_R08	0.134	0.287
log_R09	-0.367	0.294
log_R10	-0.002	0.253
log_R11	0.282	0.274
log_R12	0.890	0.185
log_R13	-0.196	0.284
log_R14	-0.568	0.294
log_R15	-0.751	0.269
log_R16	-0.389	0.226
log_R17	-0.018	0.275
a1	1.543	4.575
a2	2.316	4.264
a3	3.826	4.069
a4	4.106	4.055
a5	4.325	4.046
a6	3.550	4.075
a7	2.117	4.335
r1	10.000	0.845
r2	9.680	0.863
log_a	-2.645	0.087
log_b	4.824	0.014553
log_φst1	3.145	5183.900
log_φwa	-2.115	0.317
log_φwb	4.798	0.028
Sw1	0.073	0.035
Sw2	0.500	353.550
log_φl	3.795	6501.300
w ² _t	0.052	0.016
q	0.766	0.131
σ	3.876	0.216
β ₁	12.301	0.705
β ₂	7.700	0.175
ms78	3.189	0.272