

Appendix C6

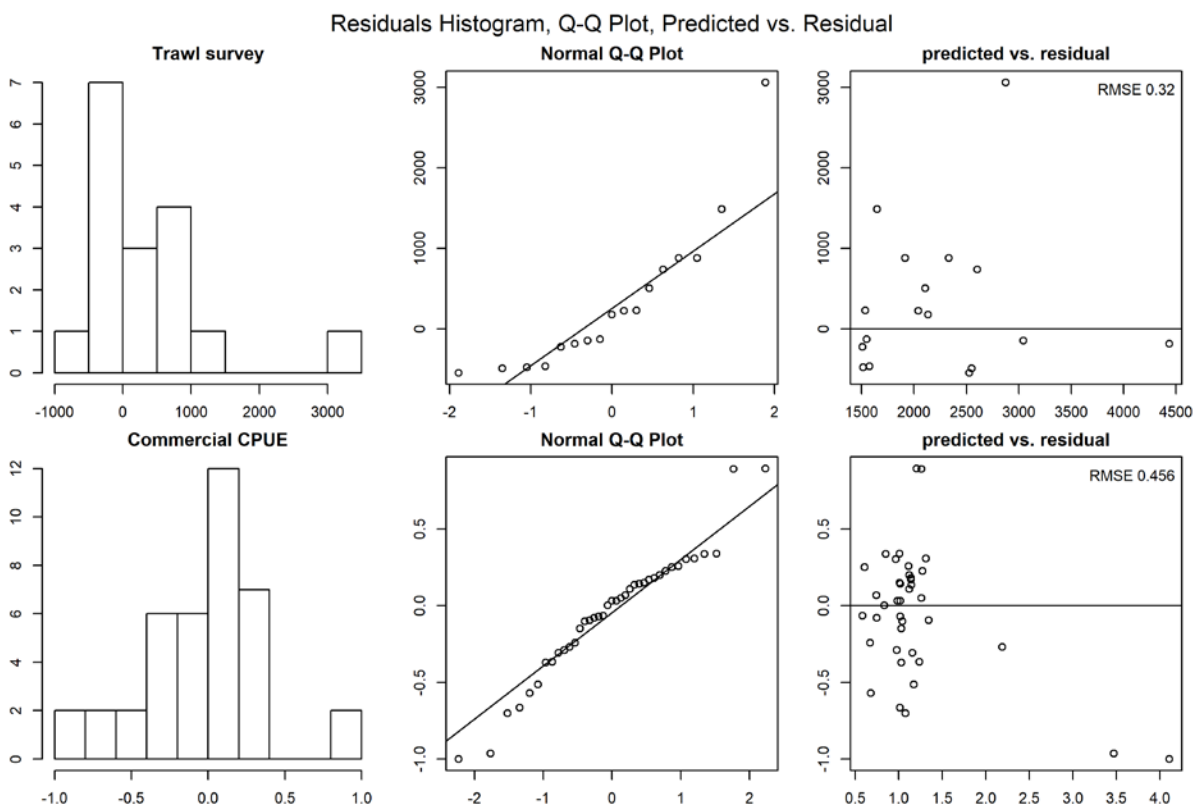


Figure C6-1. QQ Plot of Trawl survey and Commercial CPUE.

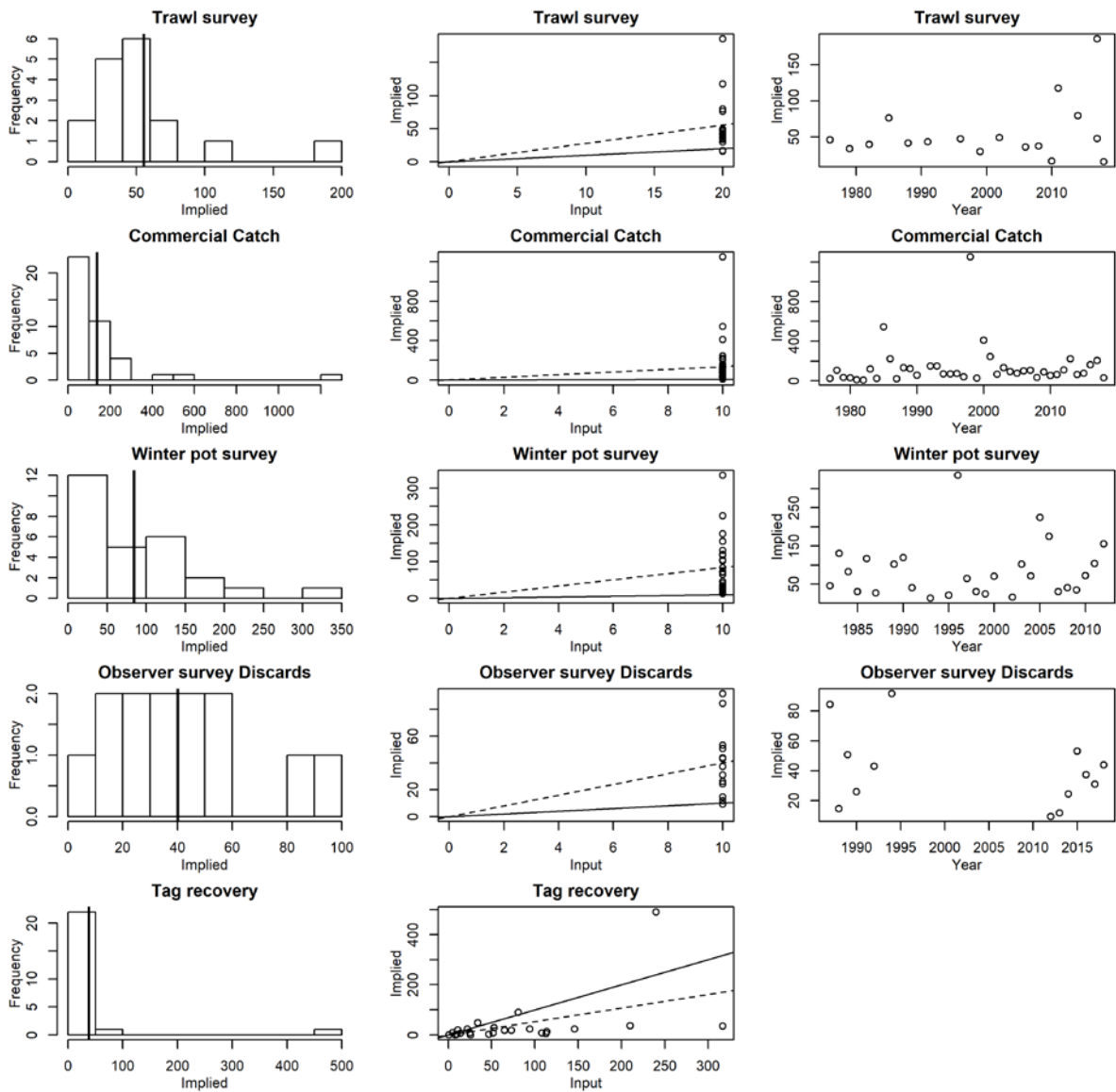


Figure C6-2: Implied effective samples. Figures in the first column show implied effective sample size (x-axis) vs. frequency (y-axis). Vertical solid line is the mean implied effective sample size. The second column show input sample size (x-axis) vs. implied effective sample size (y-axis). Dashed line 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).

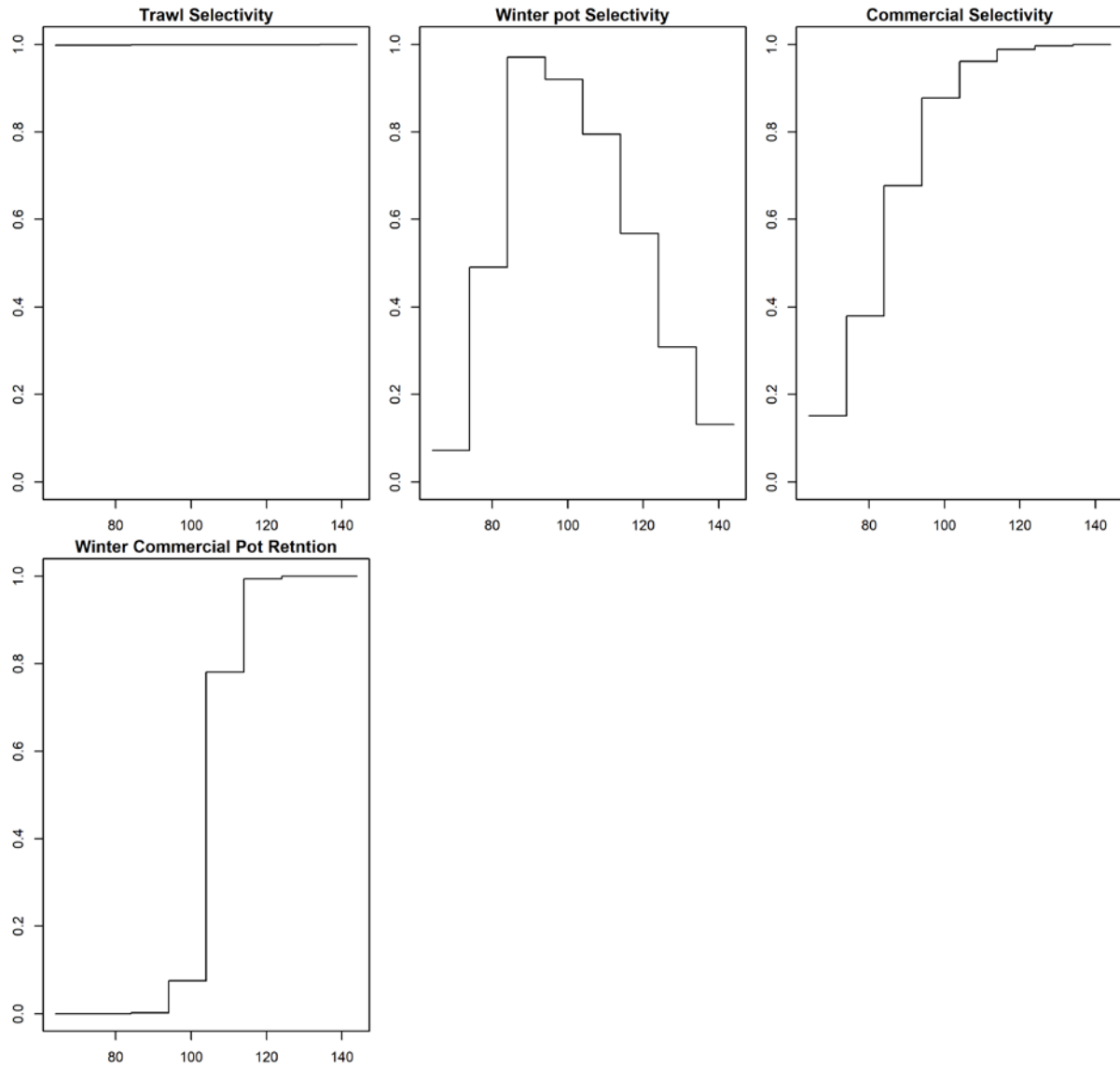


Figure C6-3. Molting probability and trawl/pot selectivity. X-axis is carapace length.

Trawl survey crab abundance

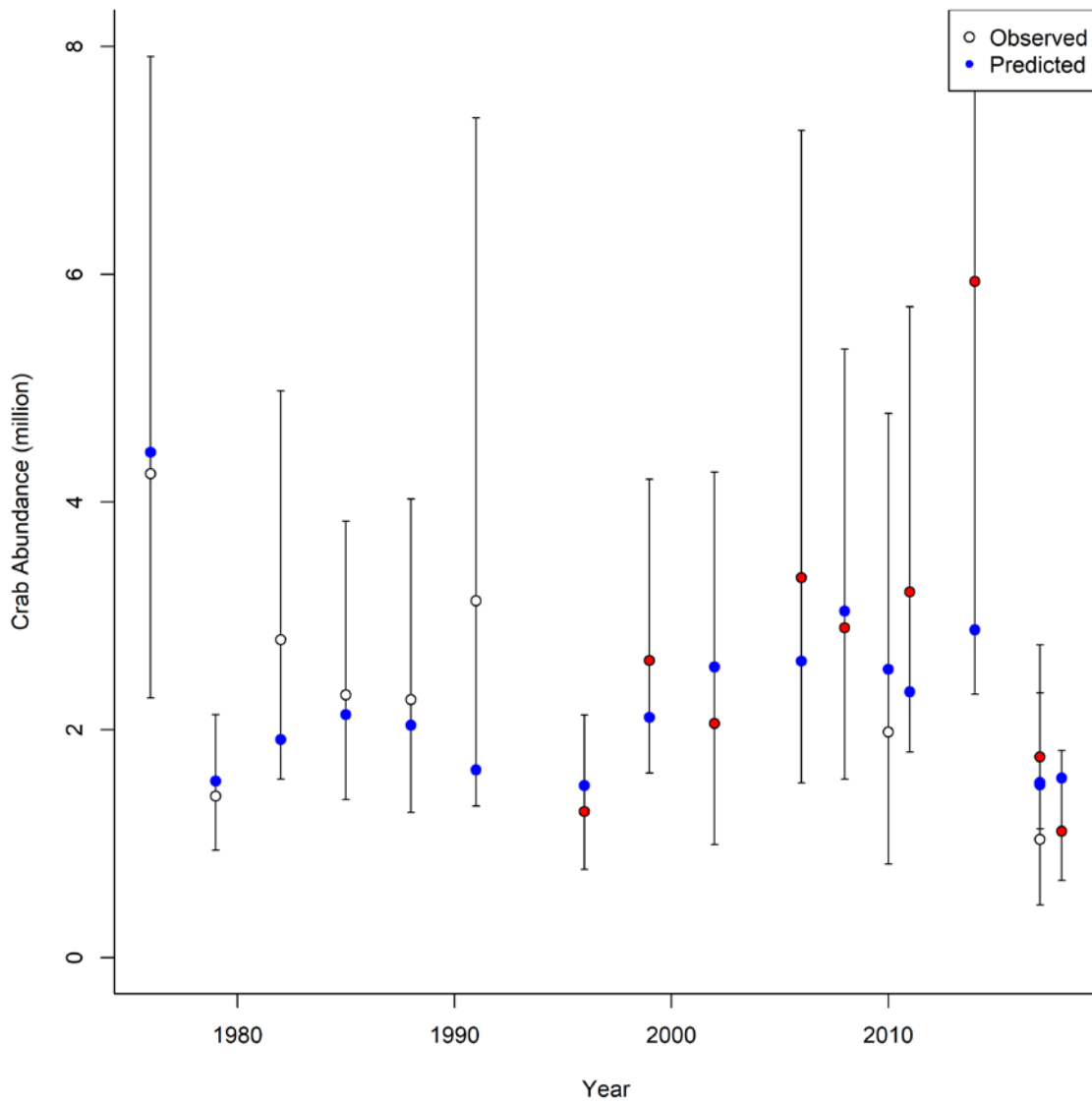


Figure C6-4. Estimated trawl survey male abundance (crab \geq 64 mm CL). Observed: White: NOAA Trawl Survey, Red: ADG&G Trawl Survey

Modeled crab abundance Feb 01

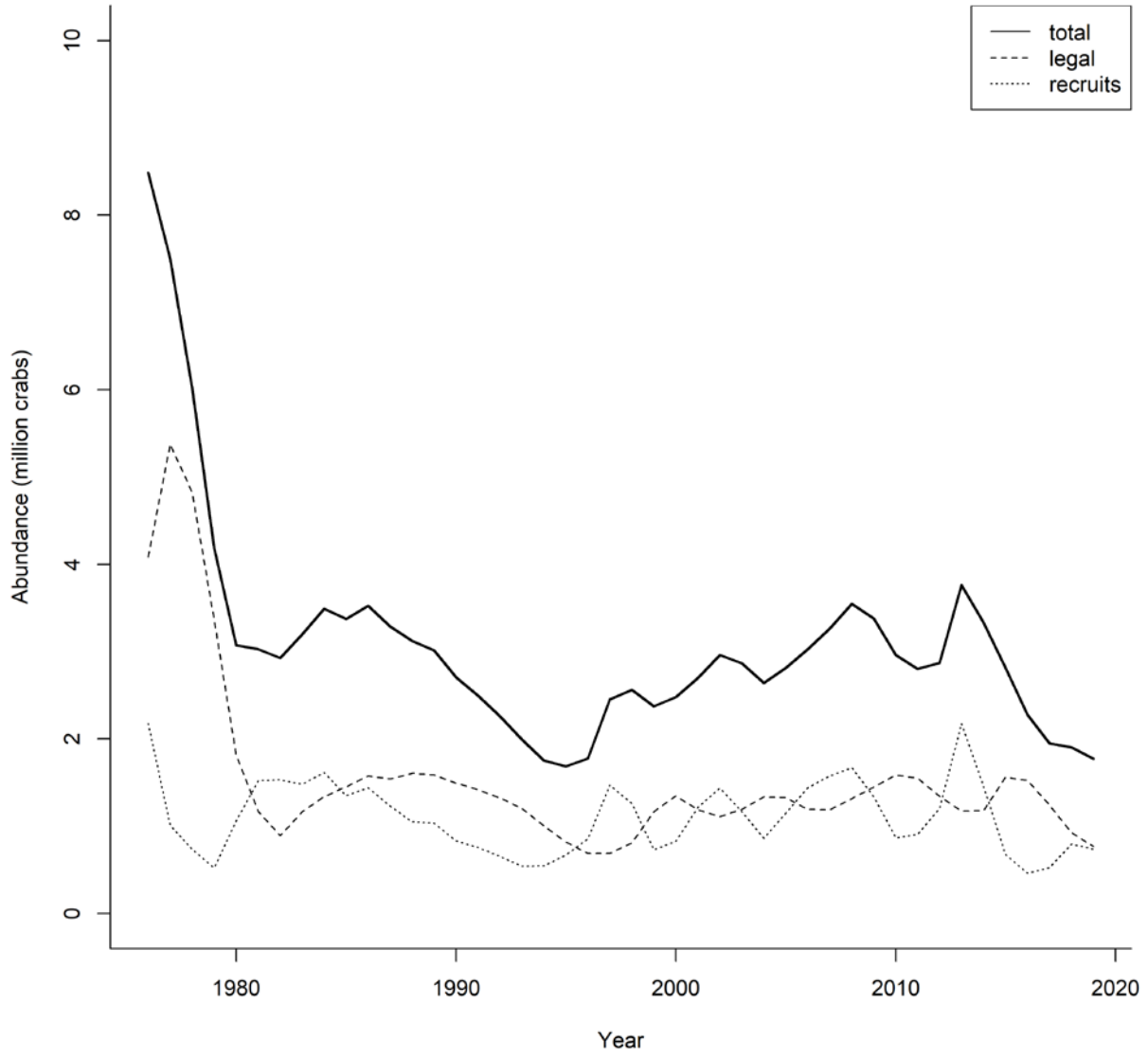


Figure C6-5. Estimated abundance of legal males from 1976-2015.

MMB Feb 01

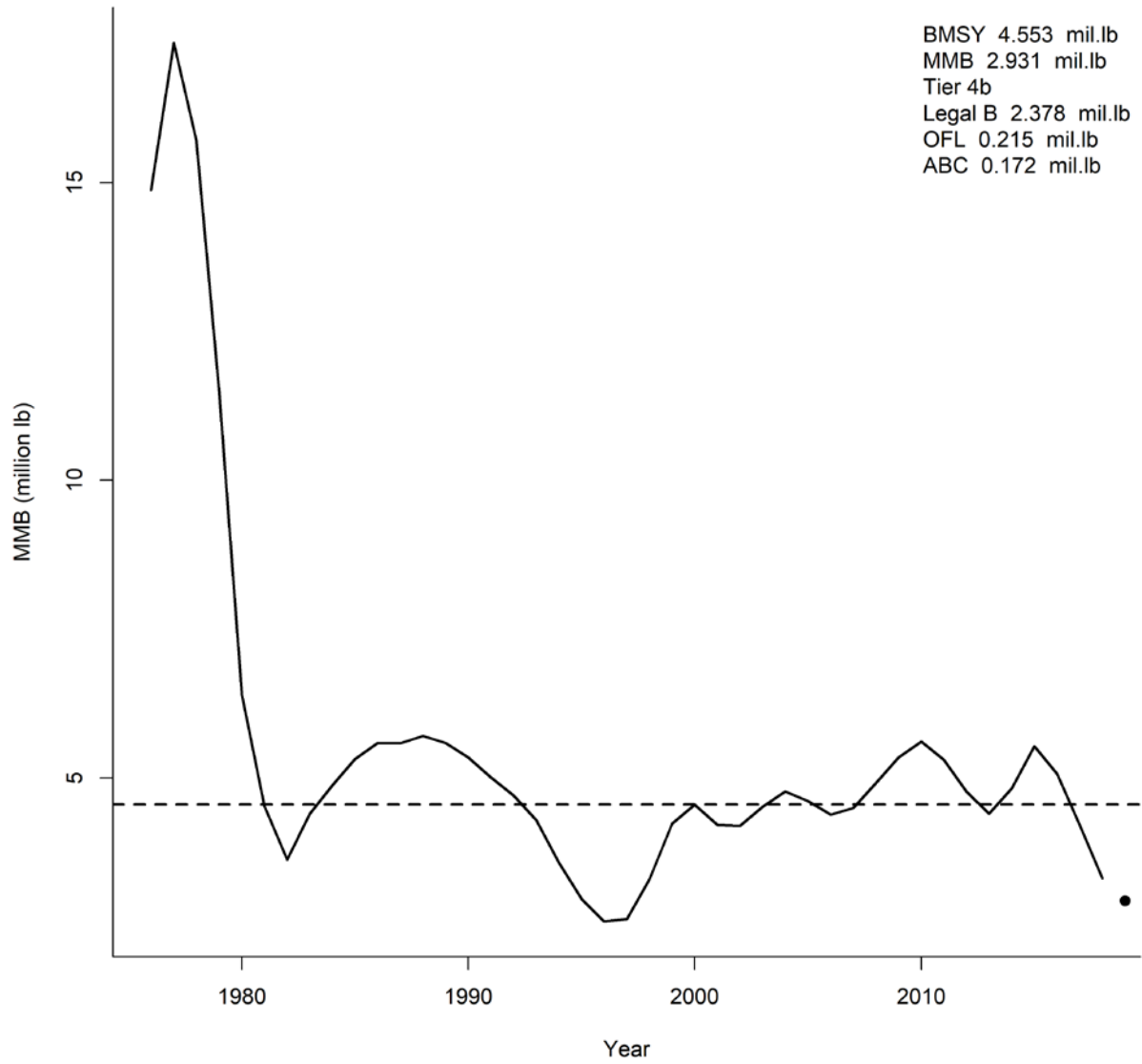


Figure C6-6. Estimated abundance of Mature Male Biomass from 1976-2019. Dash line shows Bmsy (Average MMB of 1980-2019).

Summer commercial standardized cpue

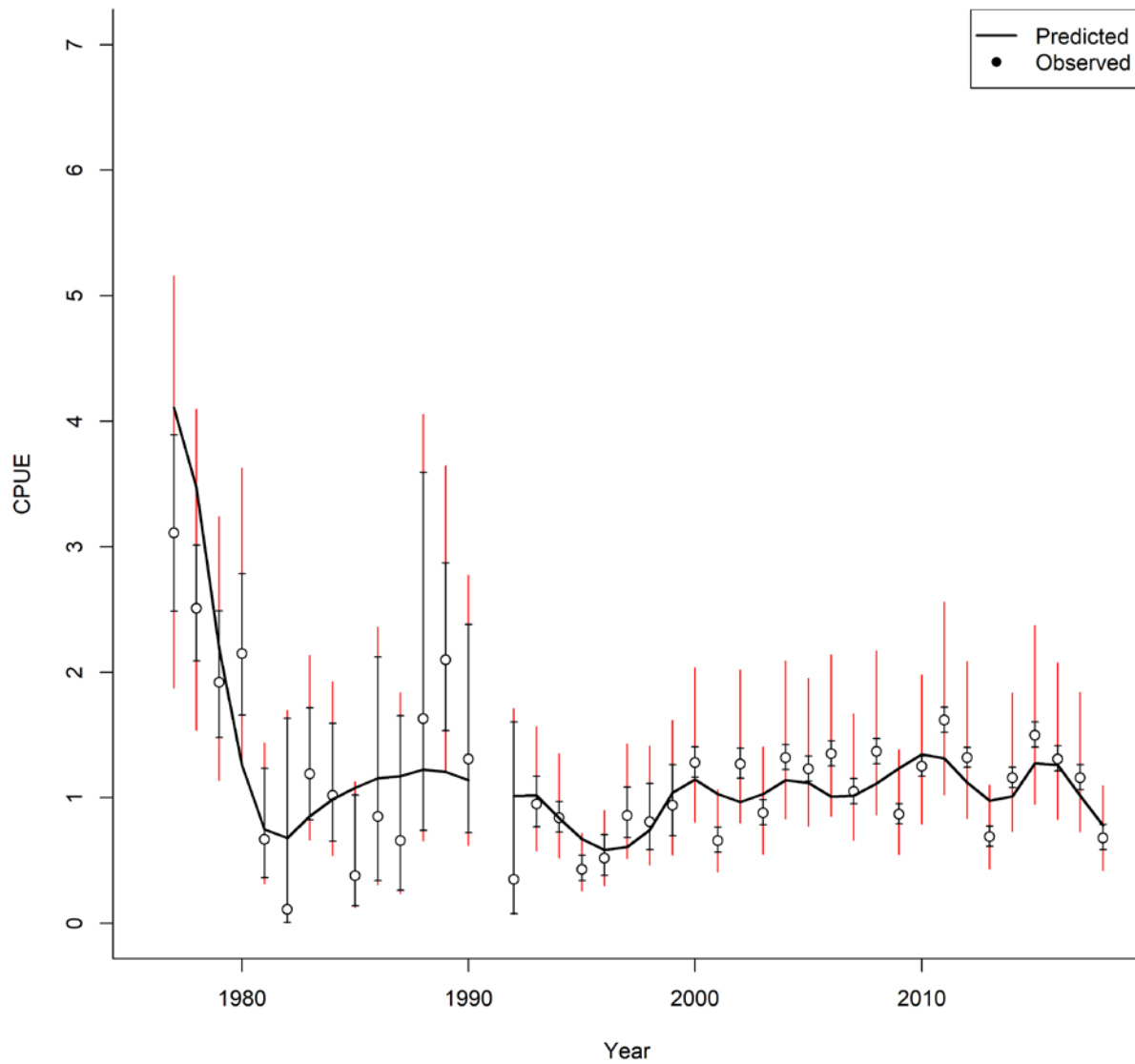


Figure C6-7. Summer commercial standardized cpue 1977-2018.

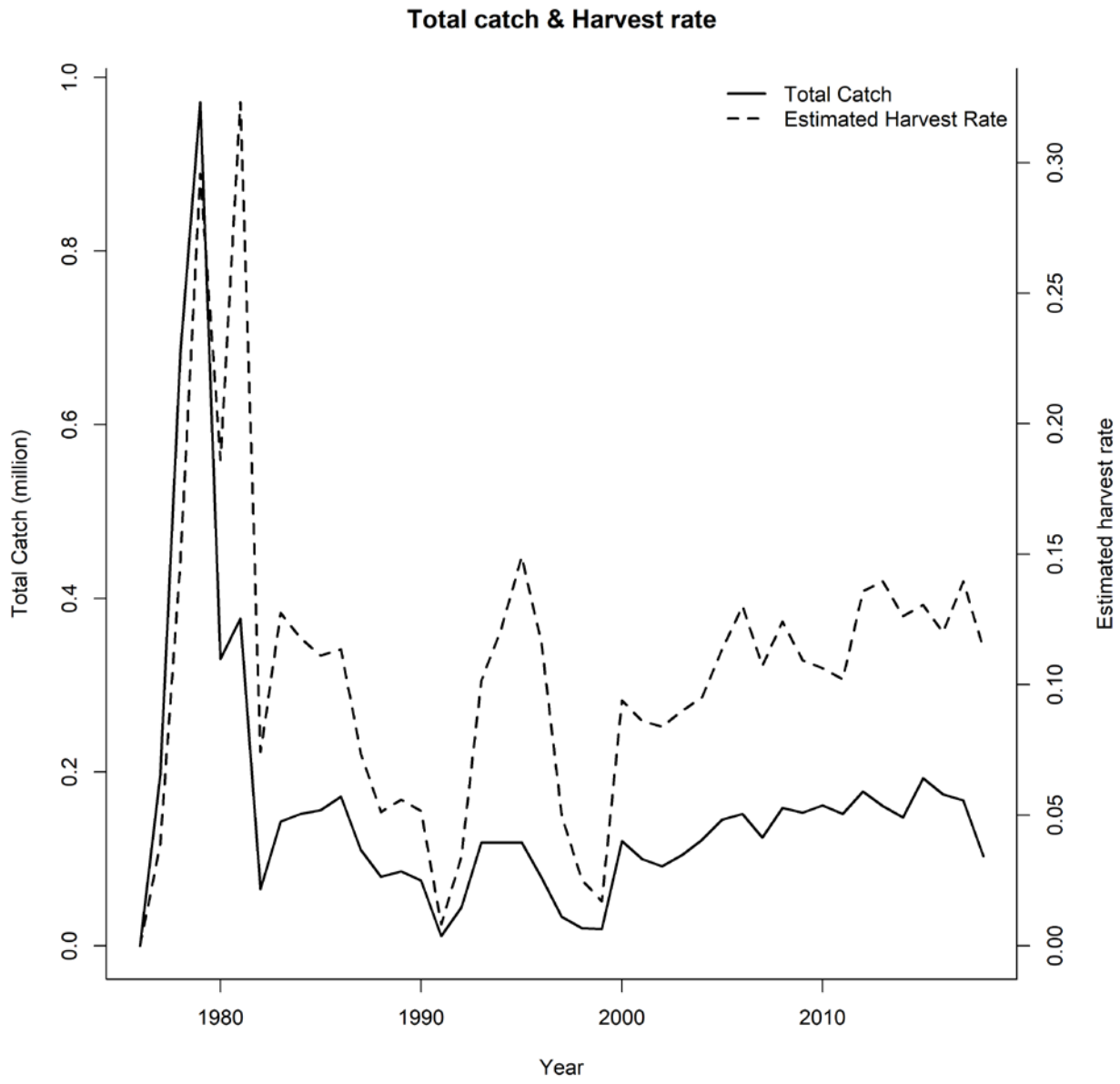


Figure C6-8. Total catch and estimated harvest rate 1976-2018.

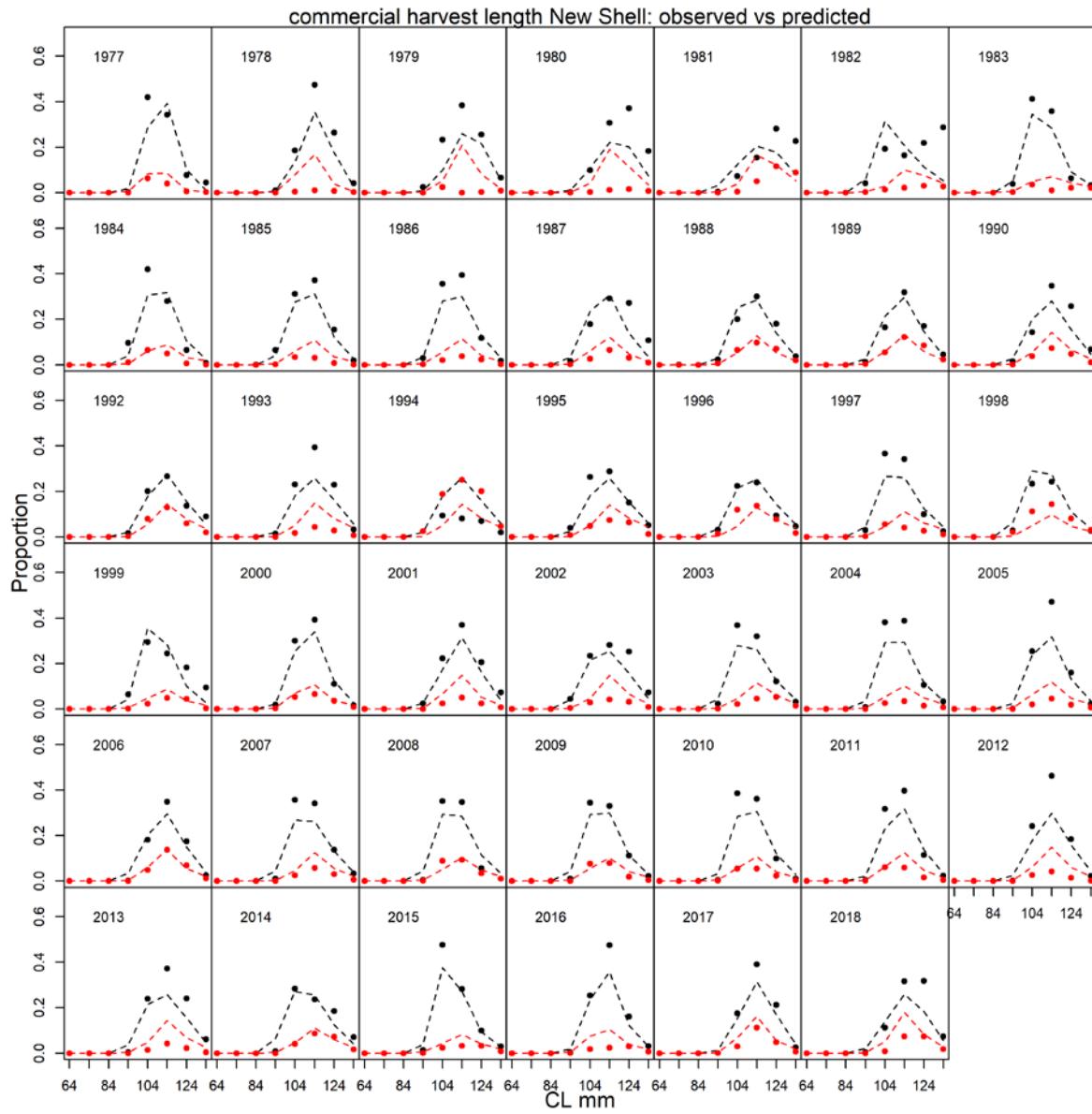


Figure C6-9. Predicted (dashed line) vs. observed (dots) length class proportions for commercial catch. Black: New Shell, Red: Old Shell

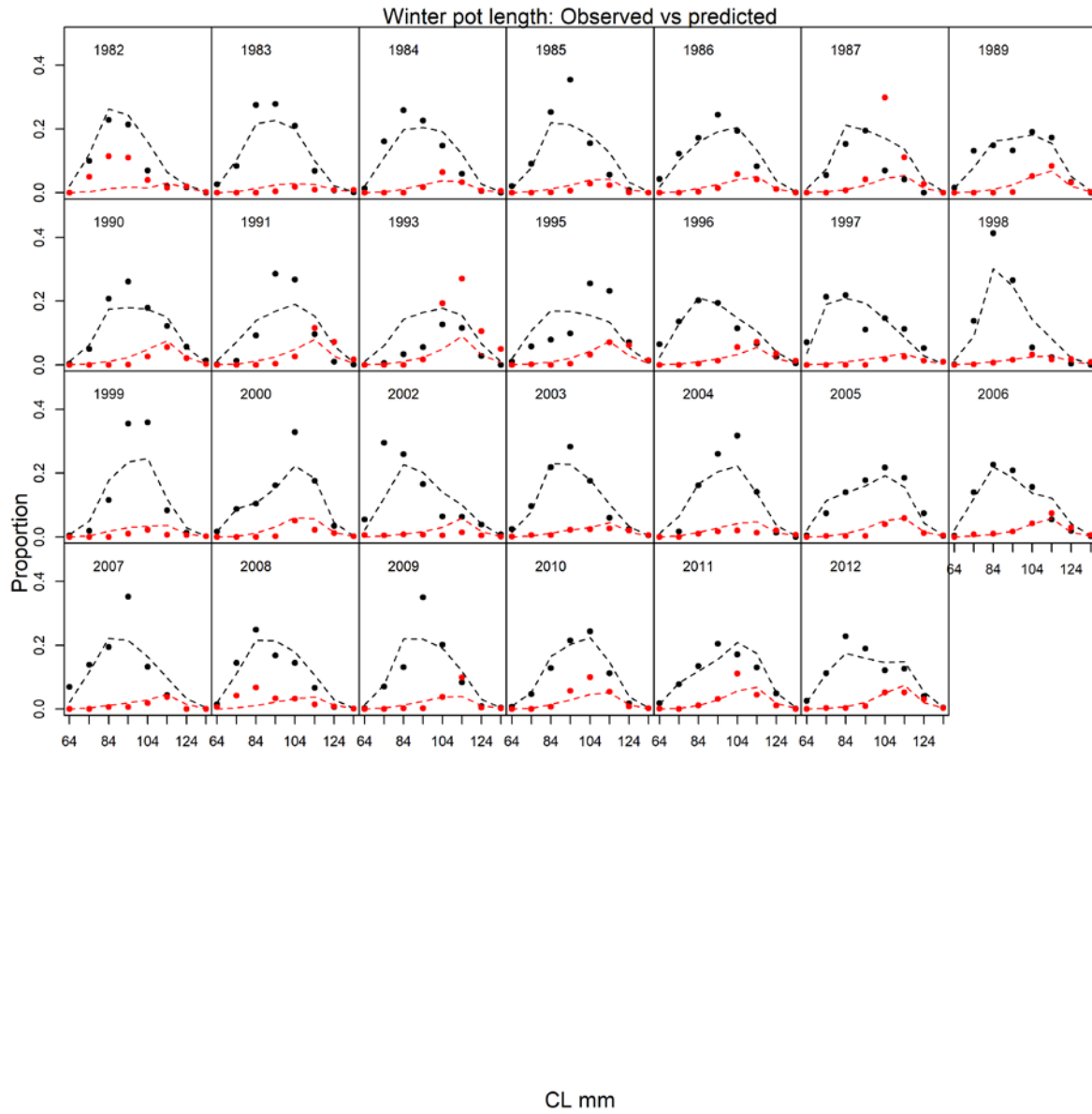


Figure C6-10. Predicted (dashed line) vs. observed (black dots) length class proportions for the winter and spring pot survey.

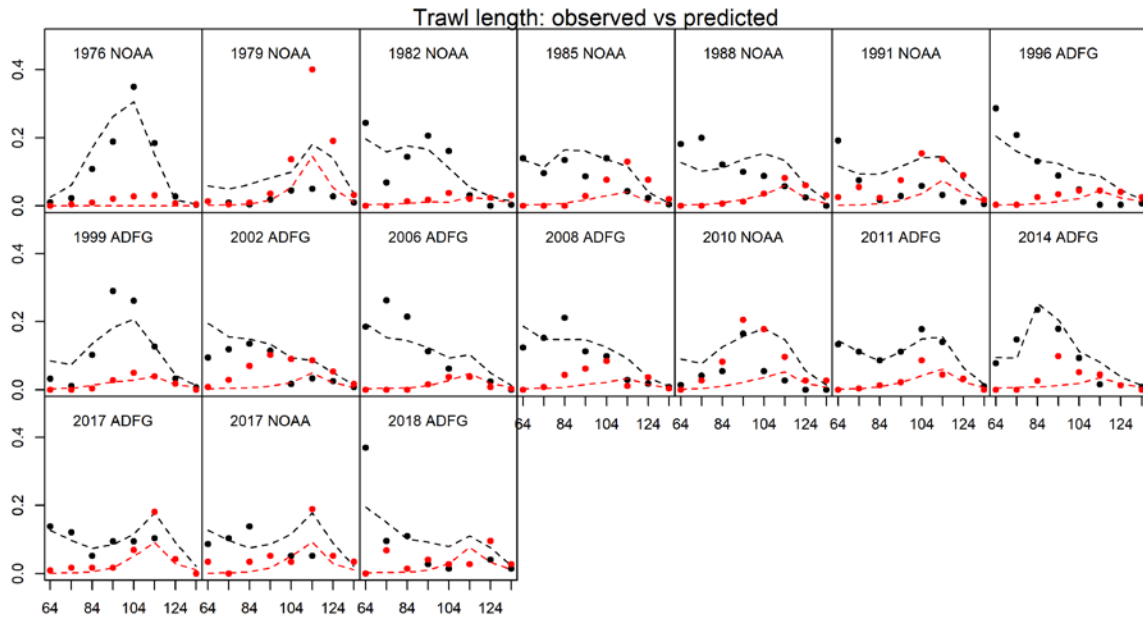


Figure C6-11. Predicted (dashed) vs. observed (dots) length class proportions for trawl survey

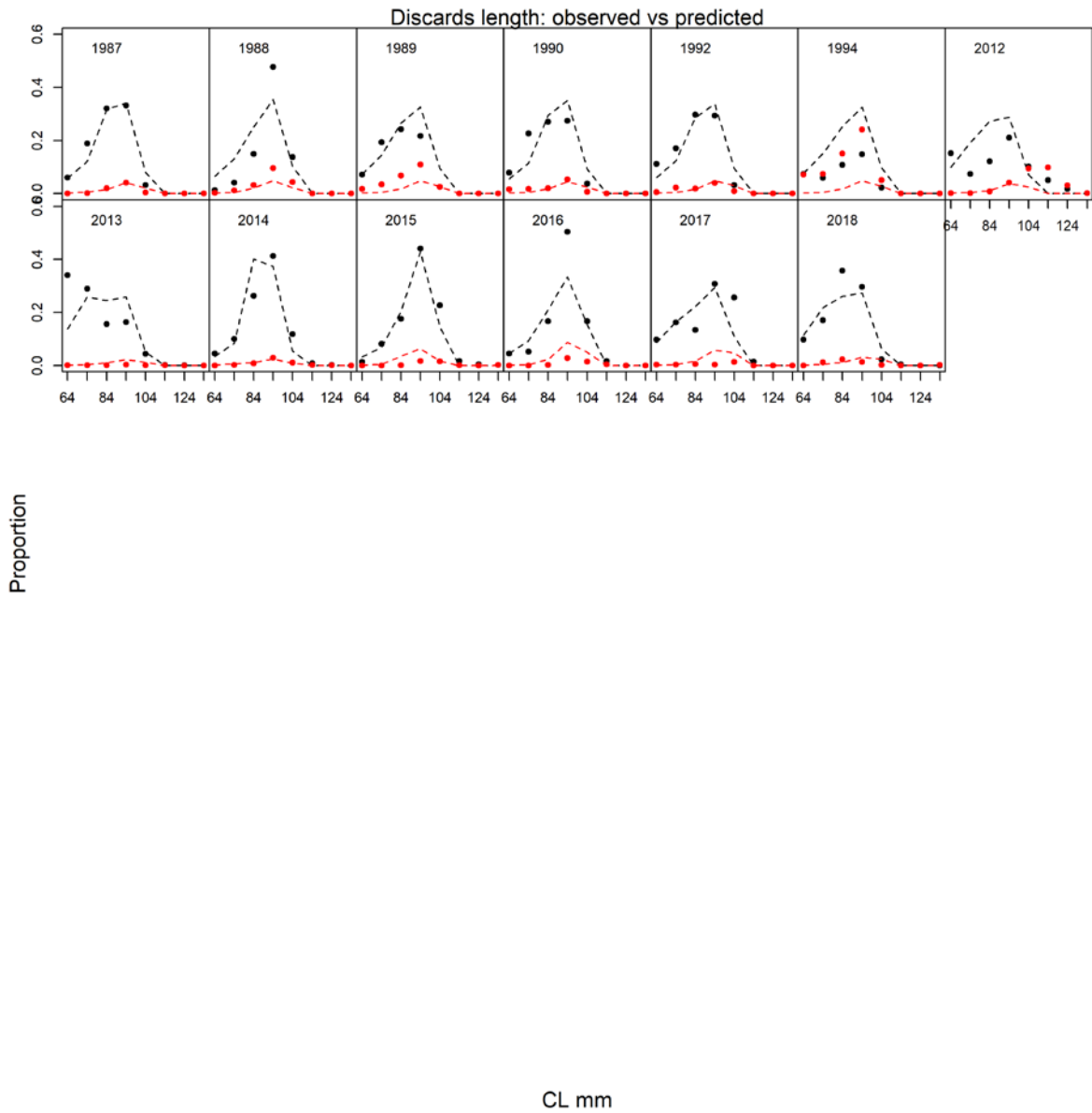
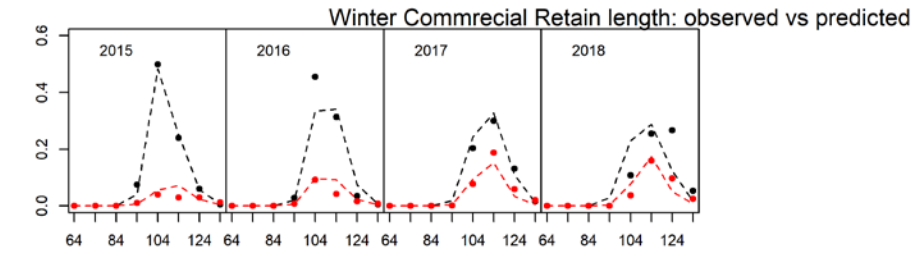


Figure C6-12. Predicted (dashed) vs. observed (dots) length class proportions for the observer survey.



Proportion

CL mm

Figure C8-13. Predicted (dashed) vs. observed (dots) length class proportions for winter commercial survey.

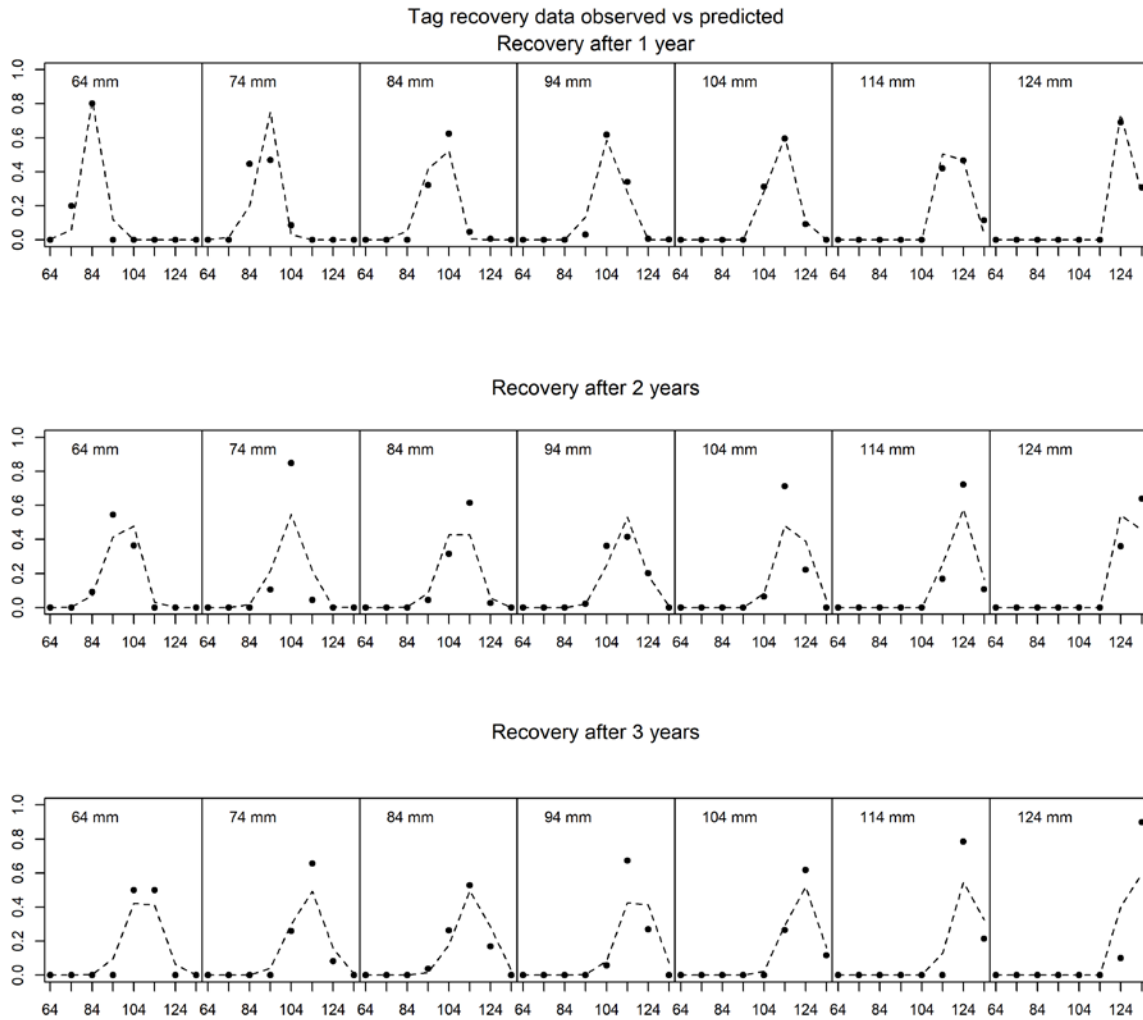


Figure C6-14. Predicted vs. observed length class proportions for tag recovery data.

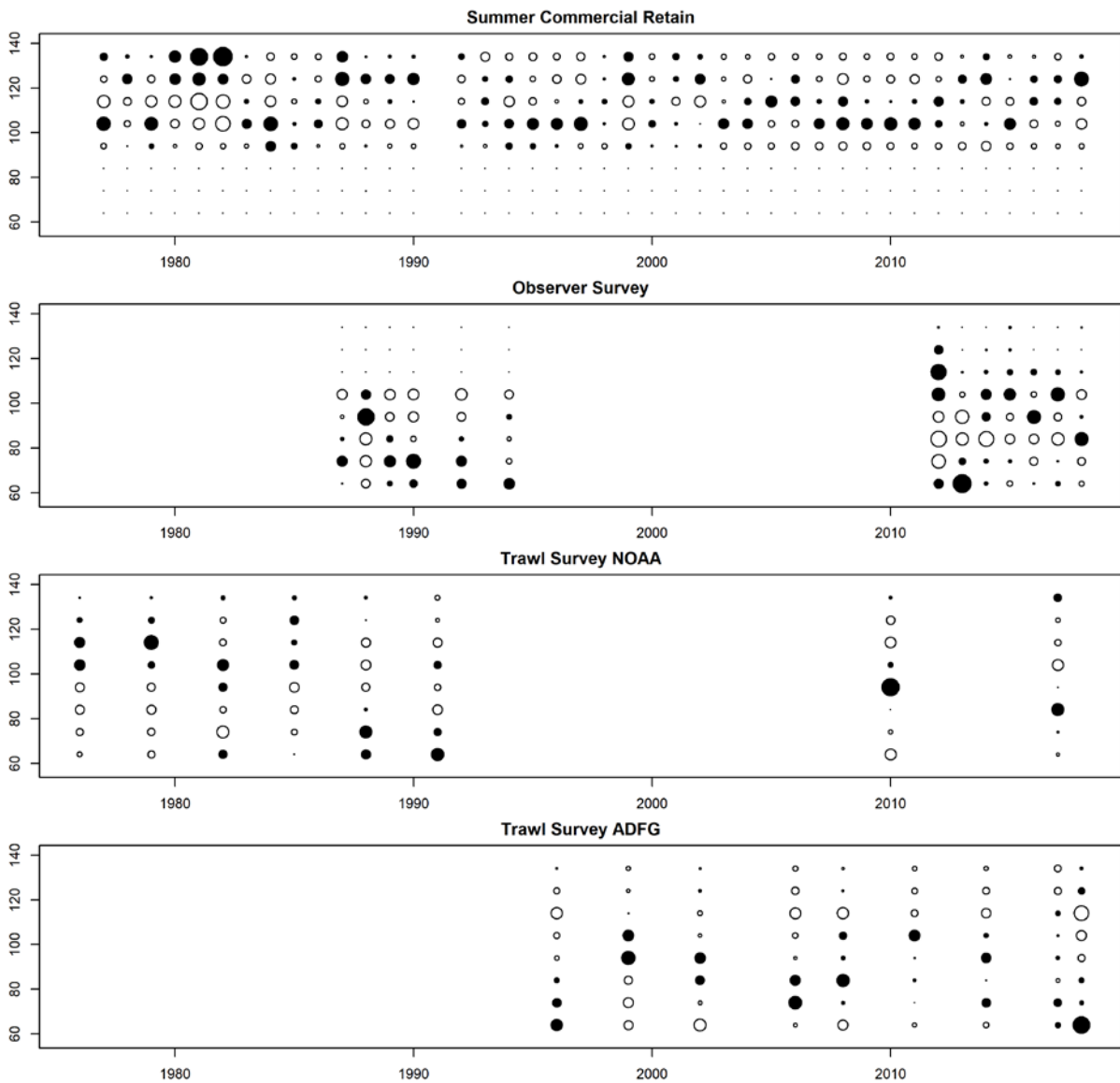


Figure C6-15. Bubble plots of predicted and observed length proportions. Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

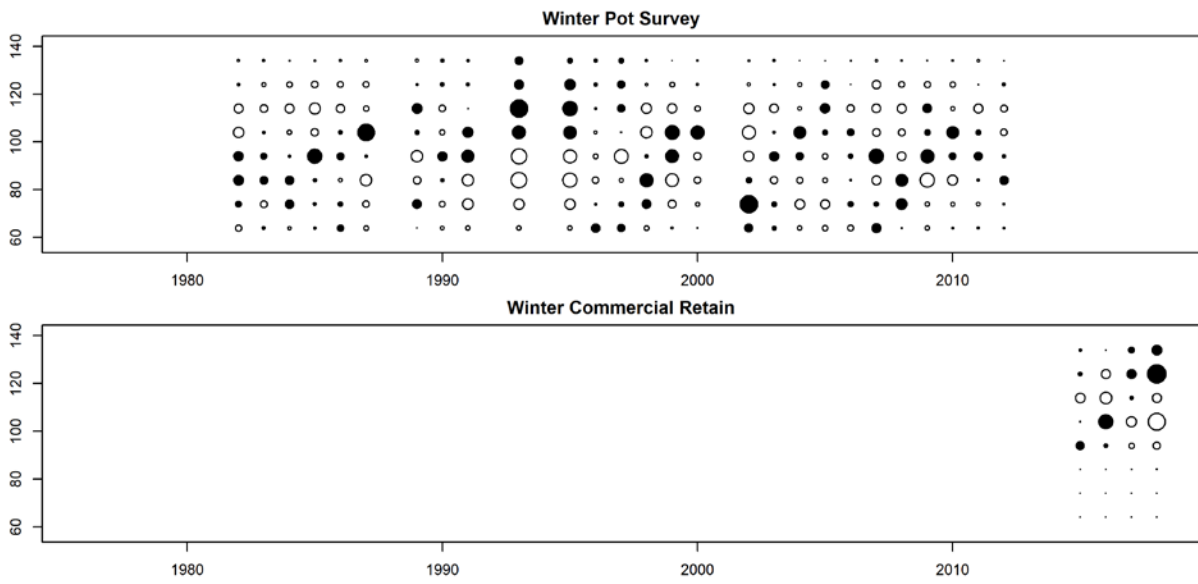


Figure C6-16. Bubble plots of predicted and observed length proportions. Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

Table C6. Summary of parameter estimates for a length-based stock synthesis population model of Norton Sound red king crab.

name	Estimate	std.dev
log_q1	-6.967	0.168
log_q2	-6.809	0.109
log_N76	9.034	0.130
R0	6.436	0.081
log_R76	0.014	0.416
log_R77	-0.538	0.370
log_R78	-0.722	0.353
log_R79	0.377	0.315
log_R80	0.506	0.283
log_R81	0.408	0.263
log_R82	0.374	0.314
log_R83	0.545	0.275
log_R84	0.152	0.290
log_R85	0.449	0.276
log_R86	0.067	0.285
log_R87	0.025	0.246
log_R88	0.027	0.257
log_R89	-0.328	0.279
log_R90	-0.274	0.252
log_R91	-0.525	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	0.573	0.218
log_R97	-0.014	0.292
log_R98	-0.626	0.320
log_R99	-0.010	0.309
log_R00	0.310	0.263
log_R01	0.390	0.240
log_R02	-0.006	0.314
log_R03	-0.281	0.330
log_R04	0.299	0.241
log_R05	0.425	0.222
log_R06	0.473	0.242

name	Estimate	std.dev
log_R07	0.537	0.231
log_R08	0.120	0.287
log_R09	-0.385	0.292
log_R10	-0.039	0.252
log_R11	0.221	0.273
log_R12	0.929	0.176
log_R13	-0.121	0.278
log_R14	-0.568	0.292
log_R15	-0.774	0.267
log_R16	-0.391	0.226
log_R17	-0.016	0.275
a1	1.506	4.543
a2	2.276	4.231
a3	3.785	4.033
a4	4.068	4.019
a5	4.293	4.010
a6	3.521	4.040
a7	2.093	4.308
r1	10.000	0.818
r2	9.677	0.837
log_a	-2.662	0.089
log_b	4.831	0.015
log_φ _{st1}	-5.000	0.093
log_φ _{wa}	-2.225	0.308
log_φ _{wb}	4.796	0.033
Sw1	0.072	0.035
Sw2	0.491	0.125
log_φ _l	-2.093	0.049
log_awr	-0.973	0.540
log_bwr	4.655	0.037
w ² _t	0.052	0.016
q	0.766	0.131
σ	3.886	0.211
β ₁	12.441	0.692
β ₂	7.655	0.171
ms78	3.196	0.272