

Appendix C5

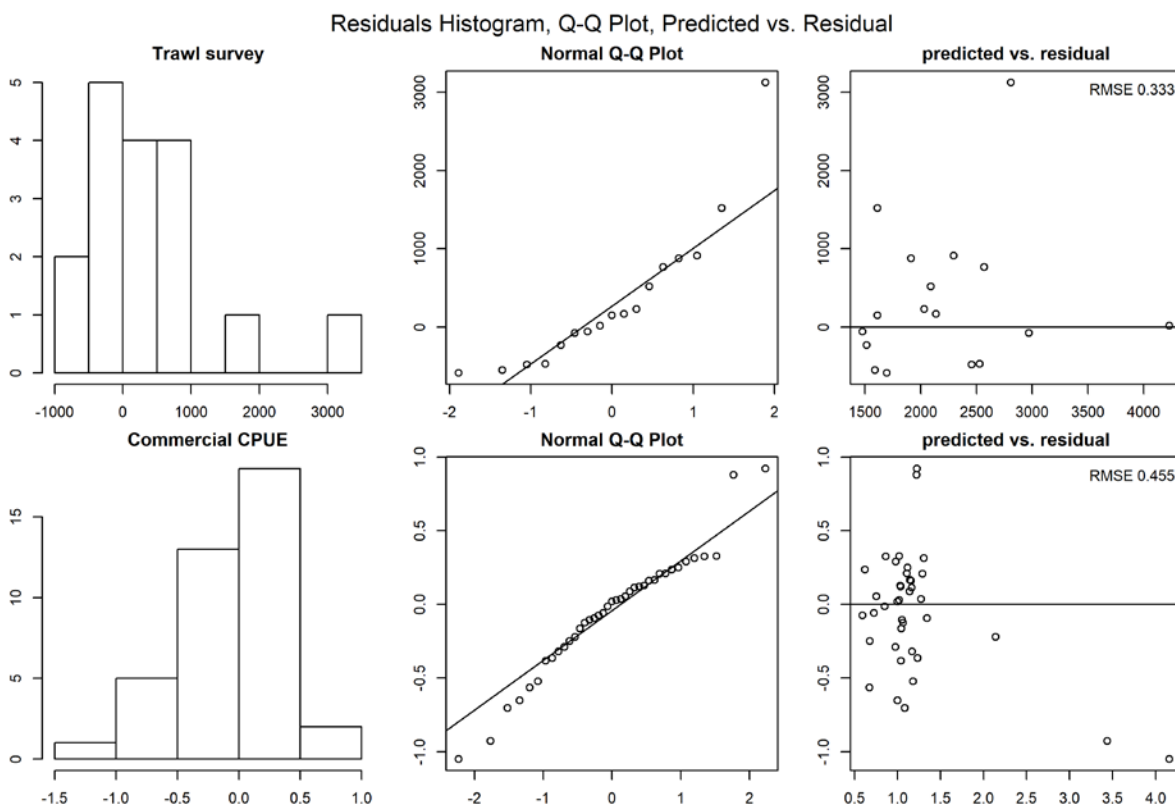


Figure C5-1. QQ Plot of Trawl survey and Commercial CPUE.

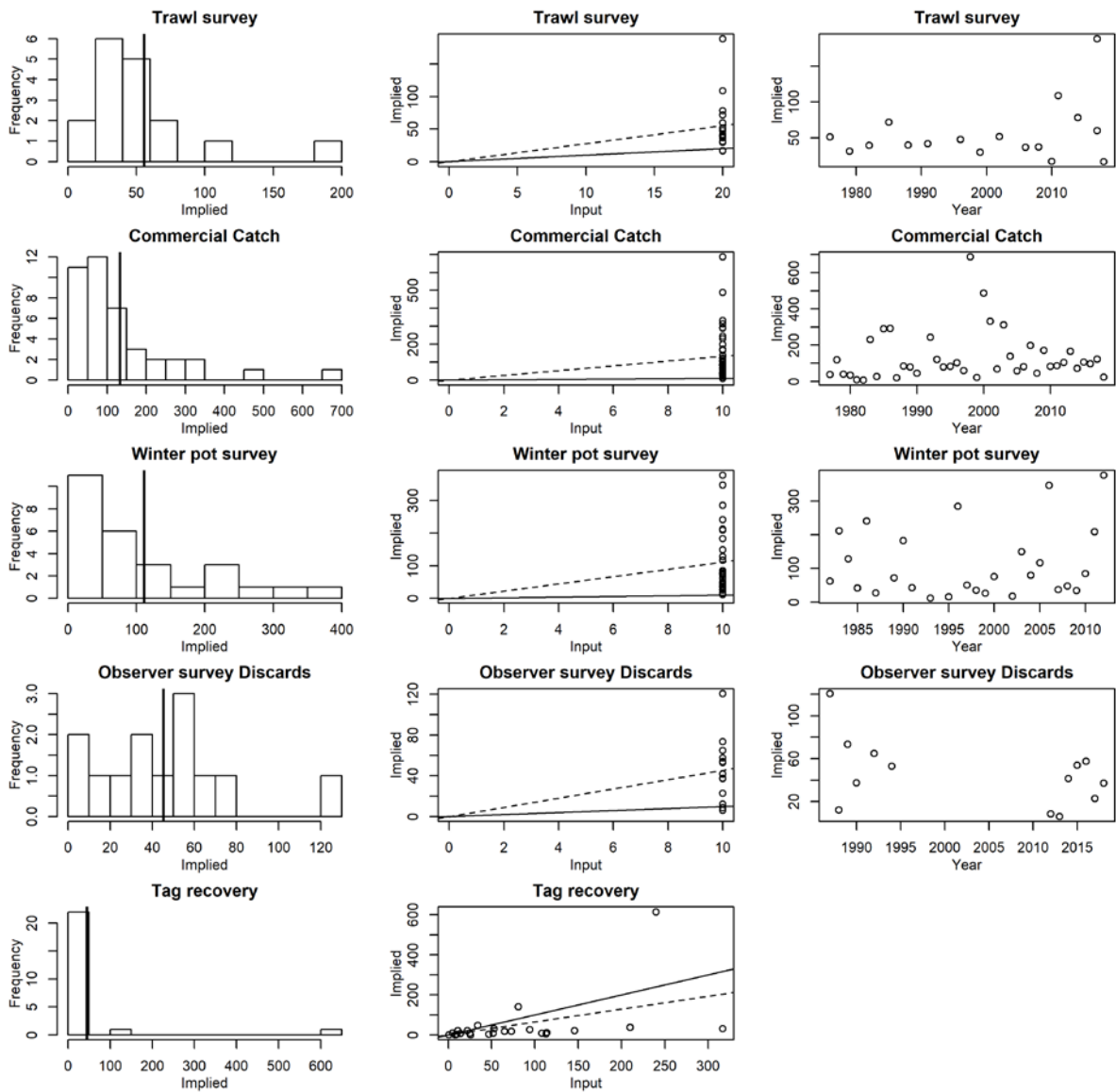


Figure C5-2: Implied effective samples. Figures in the first column show implied effective sample size (x-axis) vs. frequency (y-axis). Vertical solid line is the mean implied effective sample size. The second column show input sample size (x-axis) vs. implied effective sample size (y-axis). Dashed line 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).

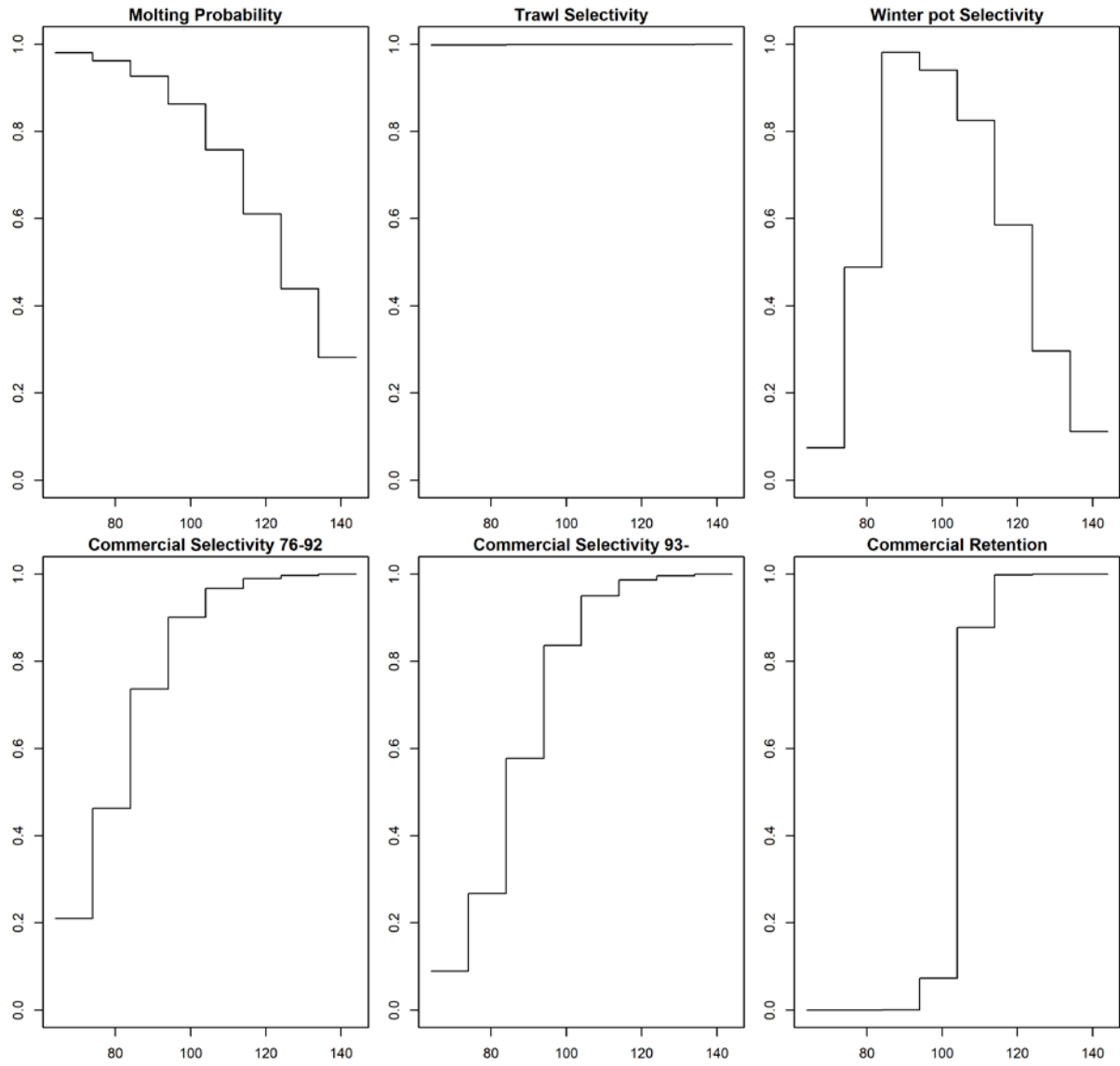


Figure C5-3. Molting probability and trawl/pot selectivity. X-axis is carapace length.

Trawl survey crab abundance

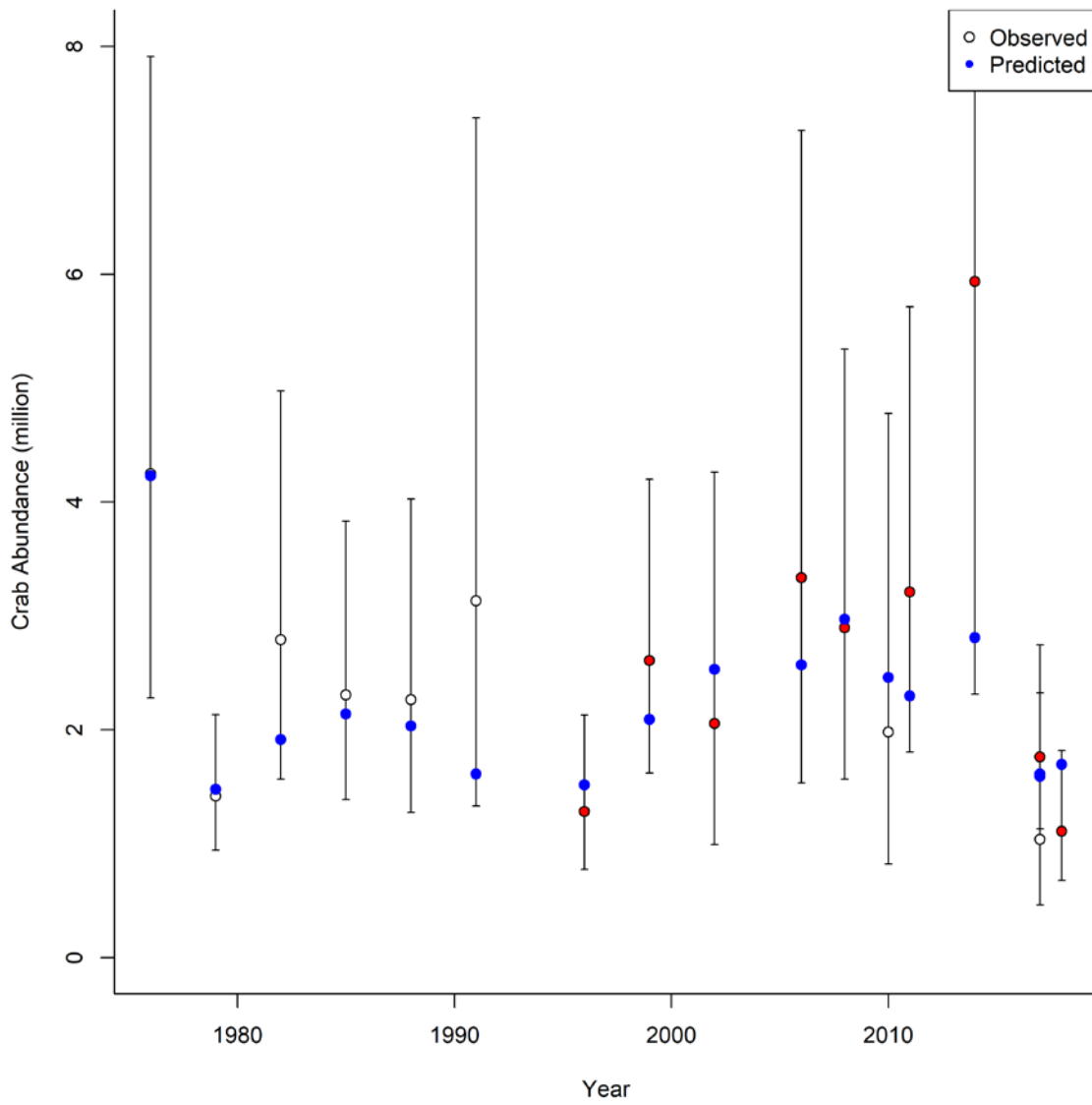


Figure C5-4. Estimated trawl survey male abundance (crab ≥ 64 mm CL). Observed: White: NOAA Trawl Survey, Red: ADG&G Trawl Survey

Modeled crab abundance Feb 01

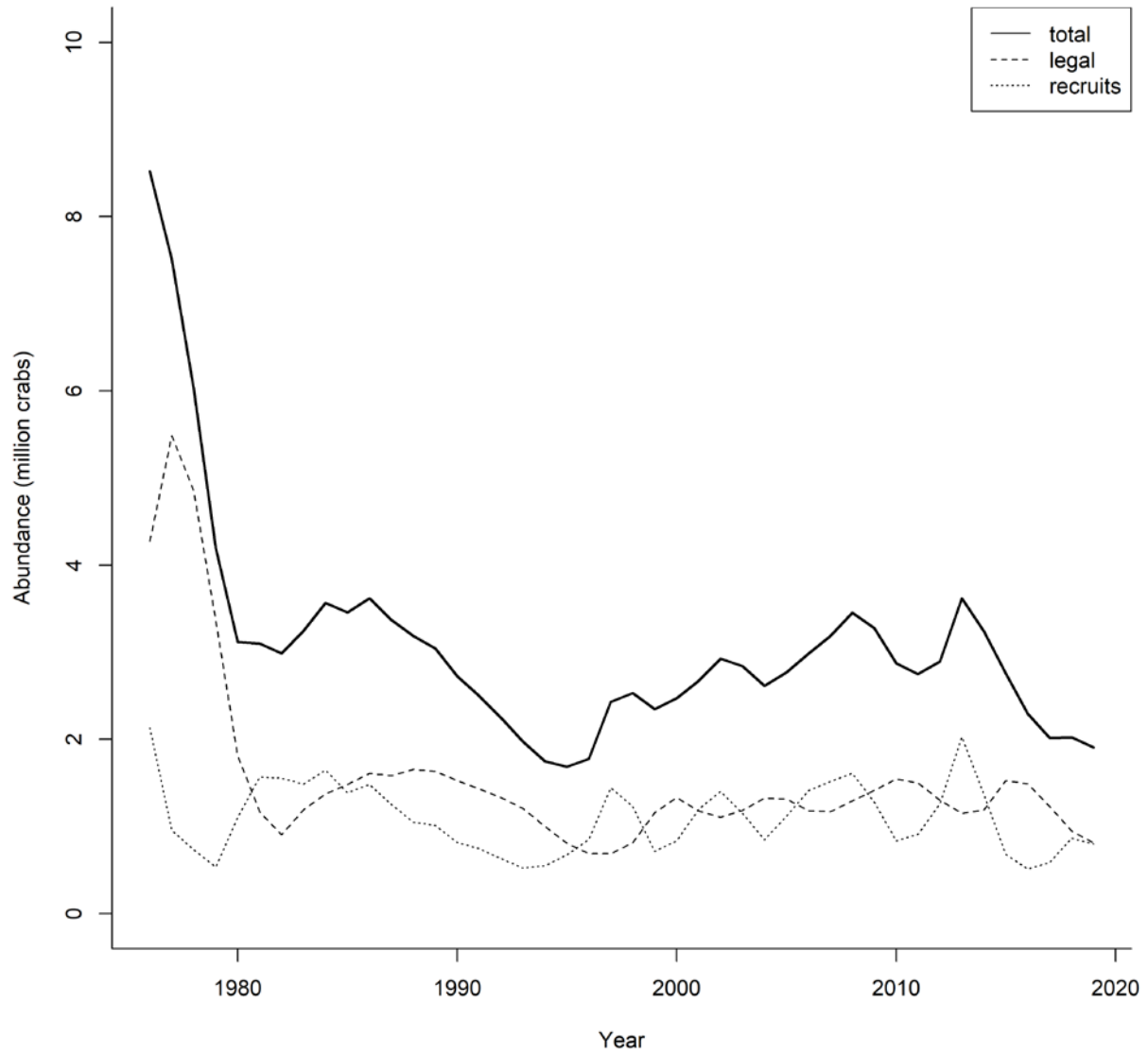


Figure C5-5. Estimated abundance of legal males from 1976-2015.

MMB Feb 01

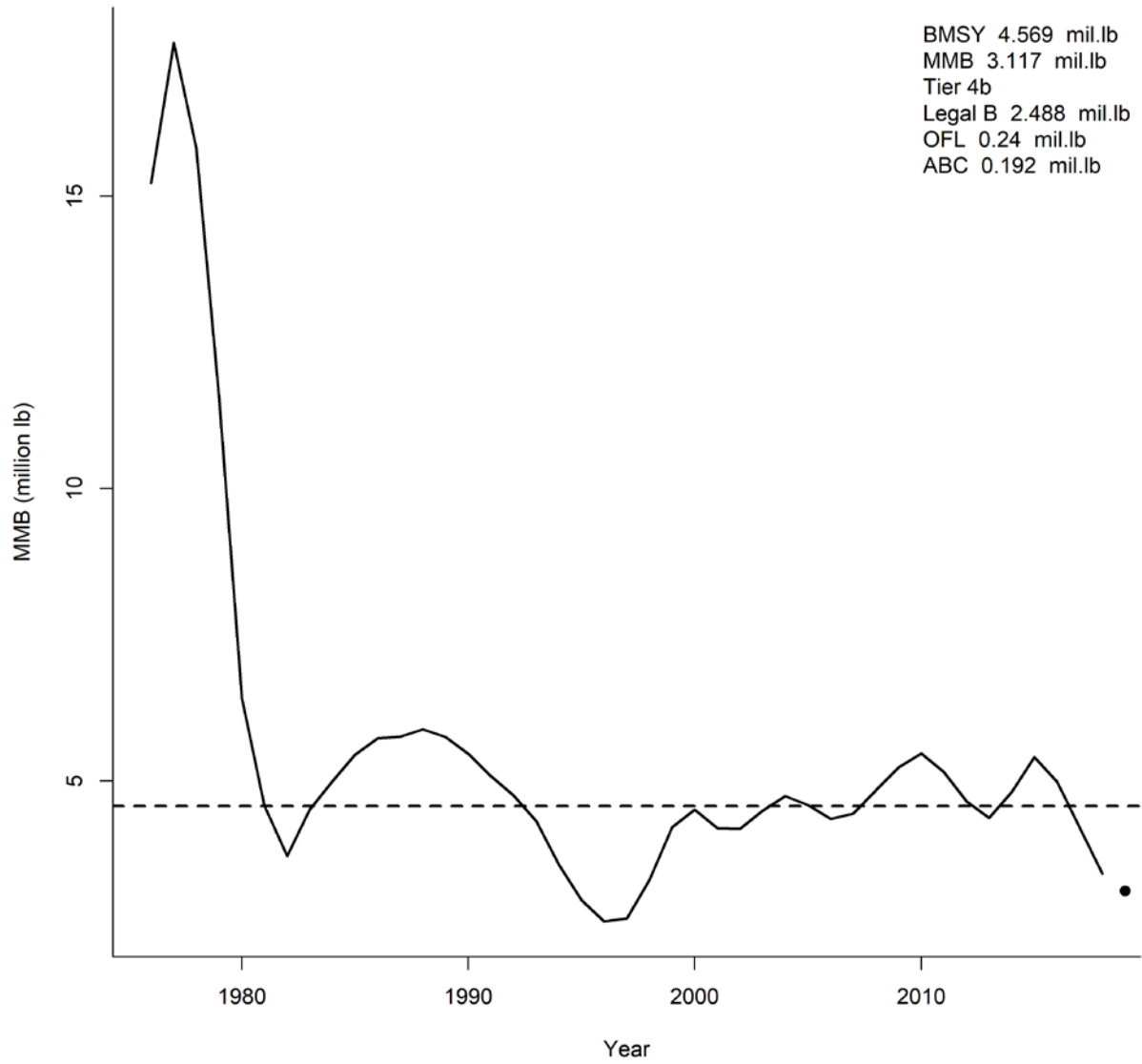


Figure C5-6. Estimated abundance of Mature Male Biomass from 1976-2019. Dash line shows Bmsy (Average MMB of 1980-2019).

Summer commercial standardized cpue

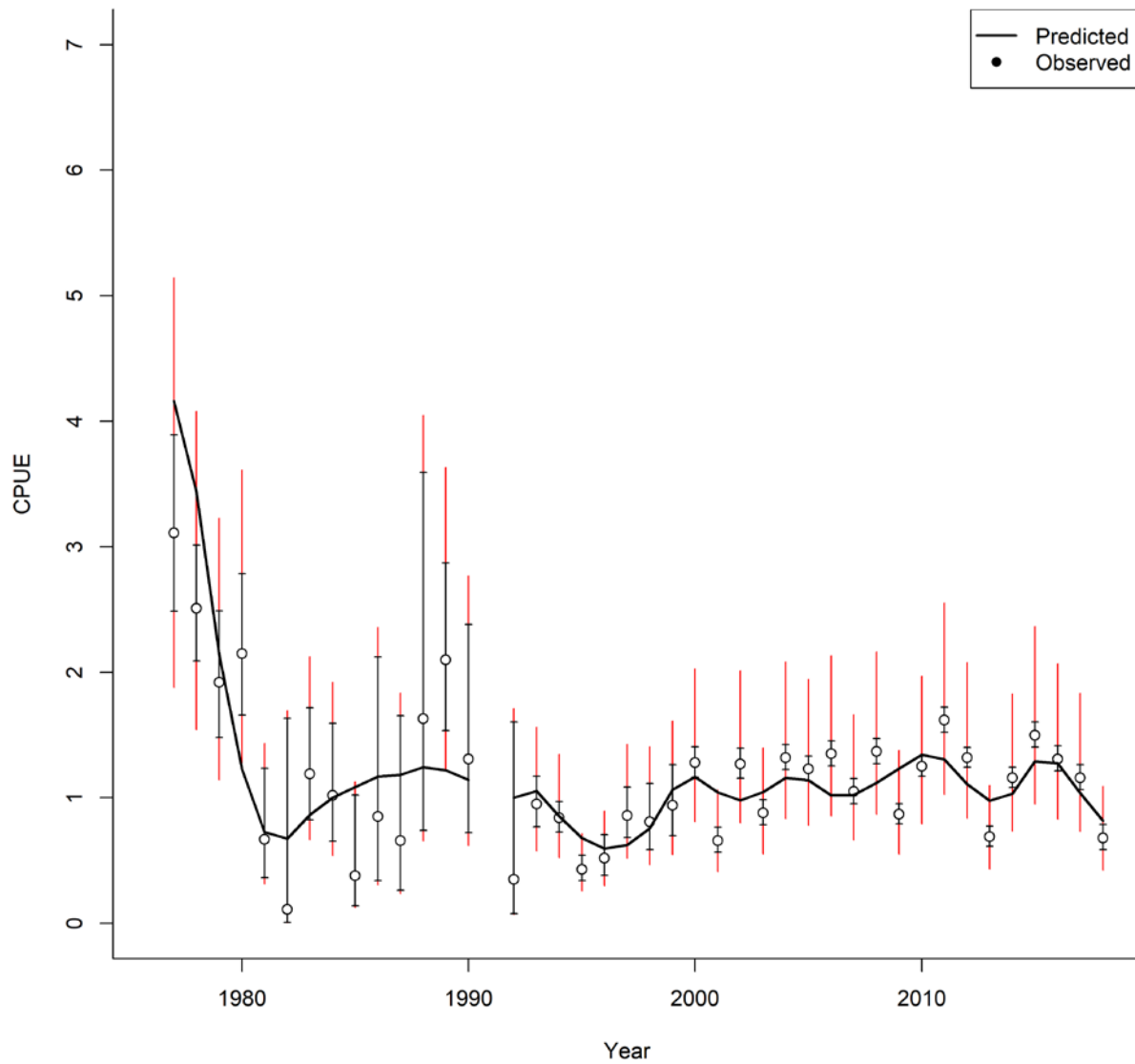


Figure C5-7. Summer commercial standardized cpue 1977-2018.

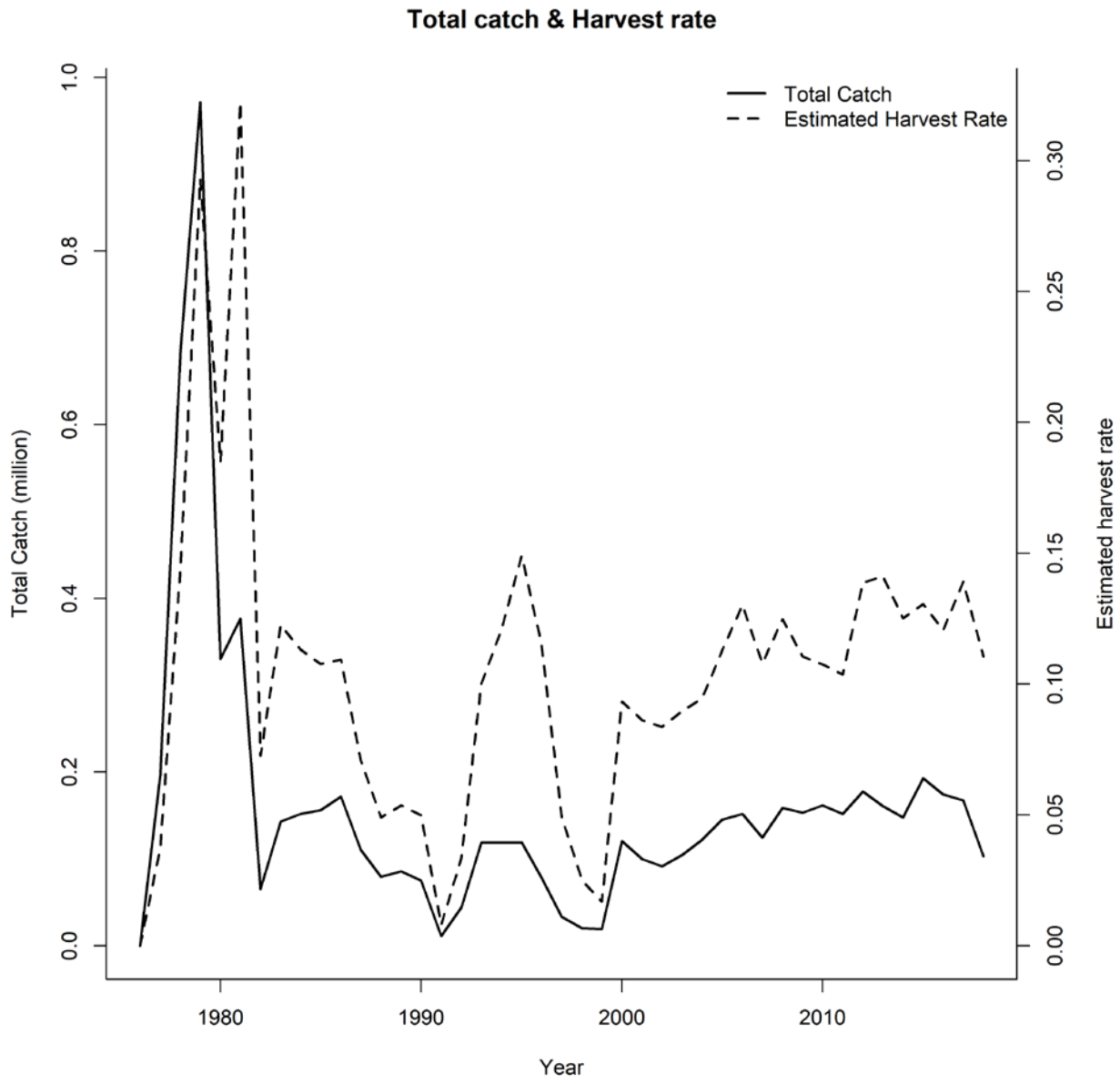


Figure C5-8. Total catch and estimated harvest rate 1976-2018.

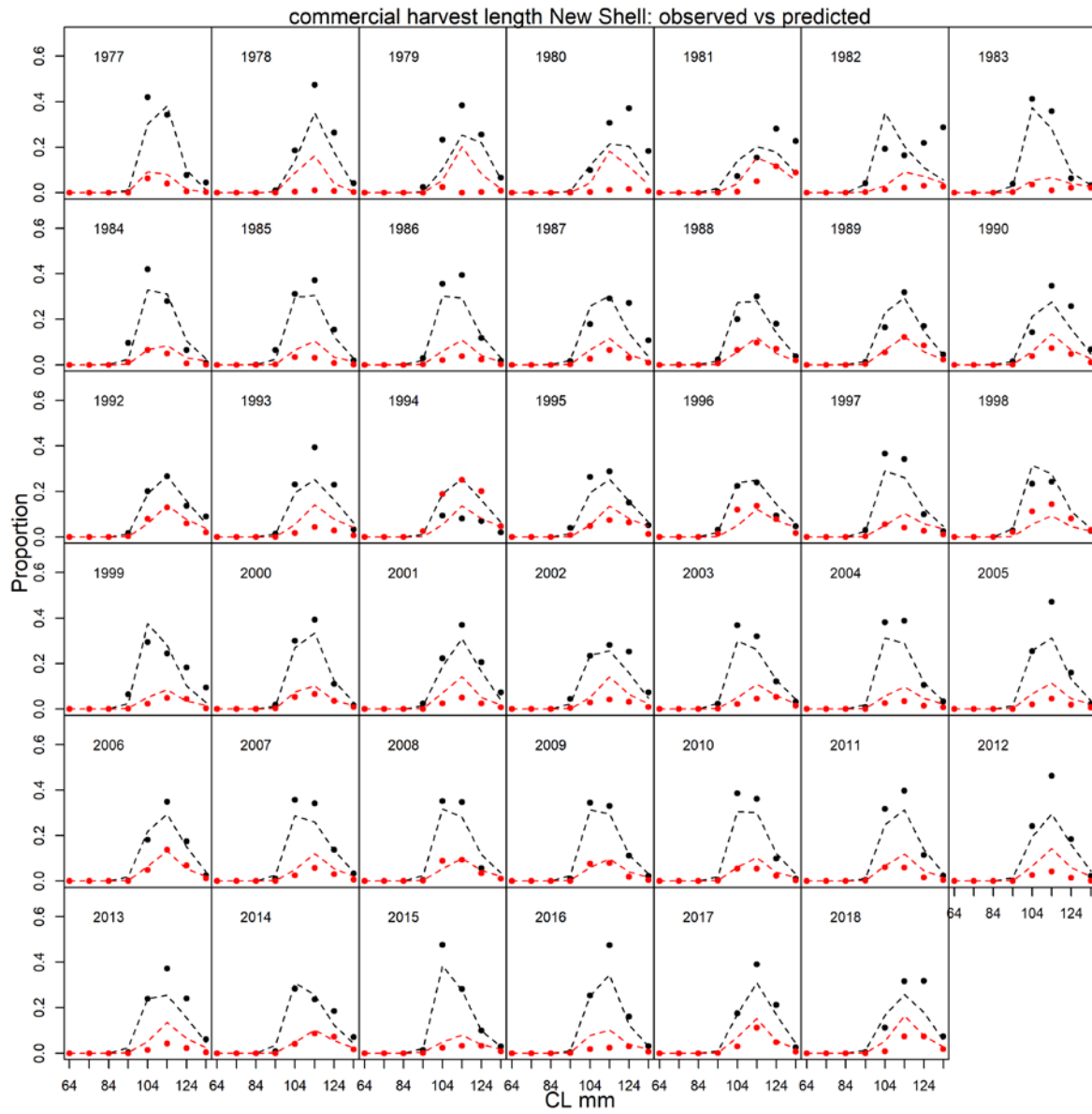


Figure C5-9. Predicted (dashed line) vs. observed (dots) length class proportions for commercial catch. Black: New Shell, Red: Old Shell

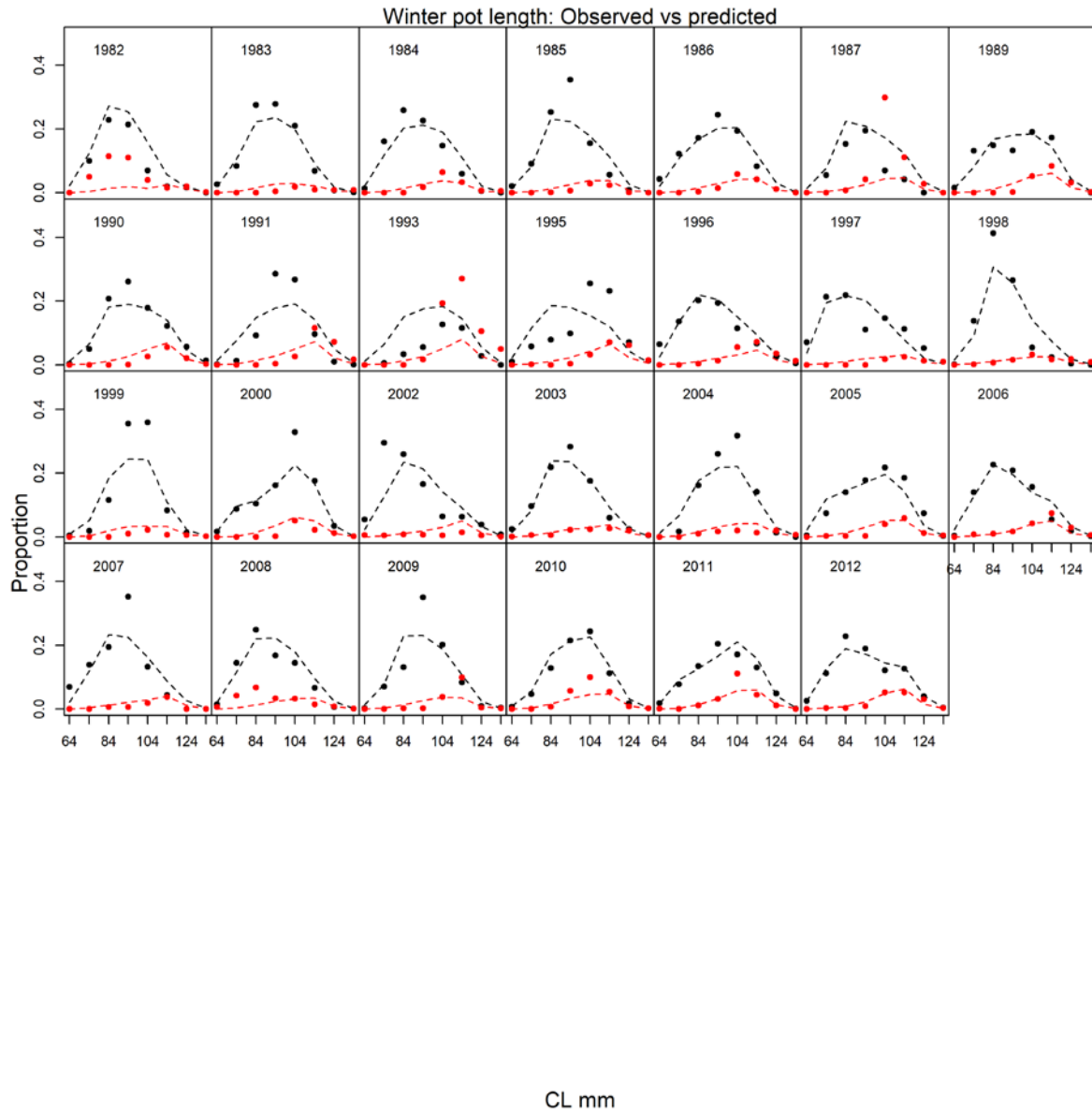


Figure C5-10. Predicted (dashed line) vs. observed (black dots) length class proportions for the winter and spring pot survey.

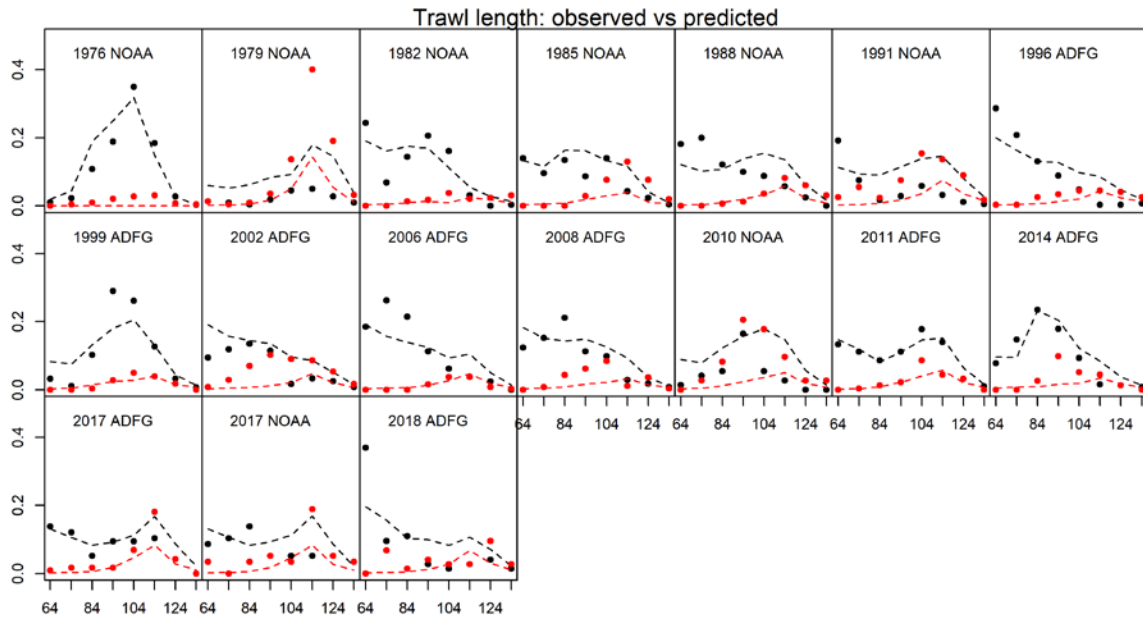


Figure C5-11. Predicted (dashed) vs. observed (dots) length class proportions for trawl

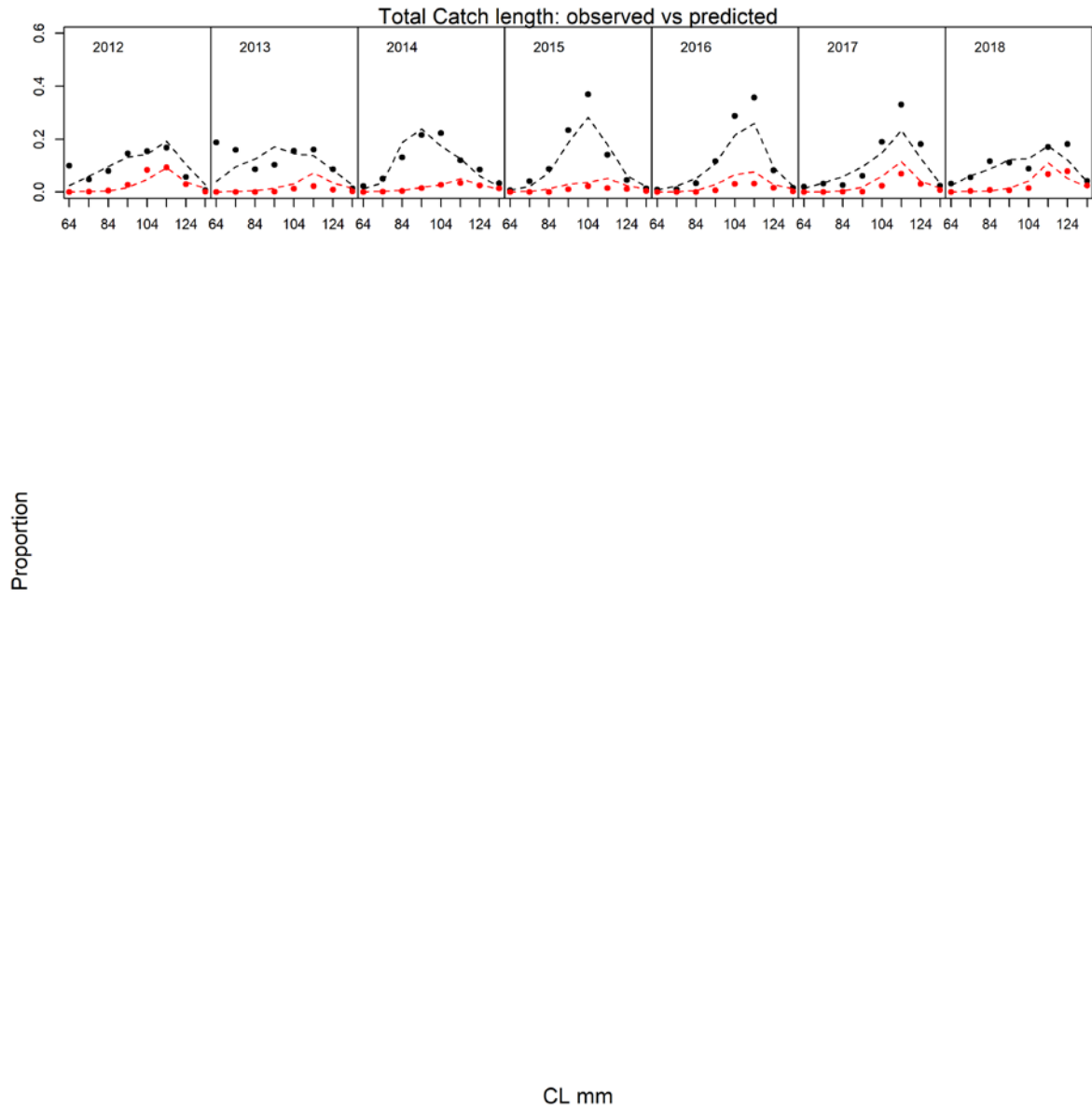


Figure C5-12. Predicted (dashed) vs. observed (dots) length class proportions for the observer survey.

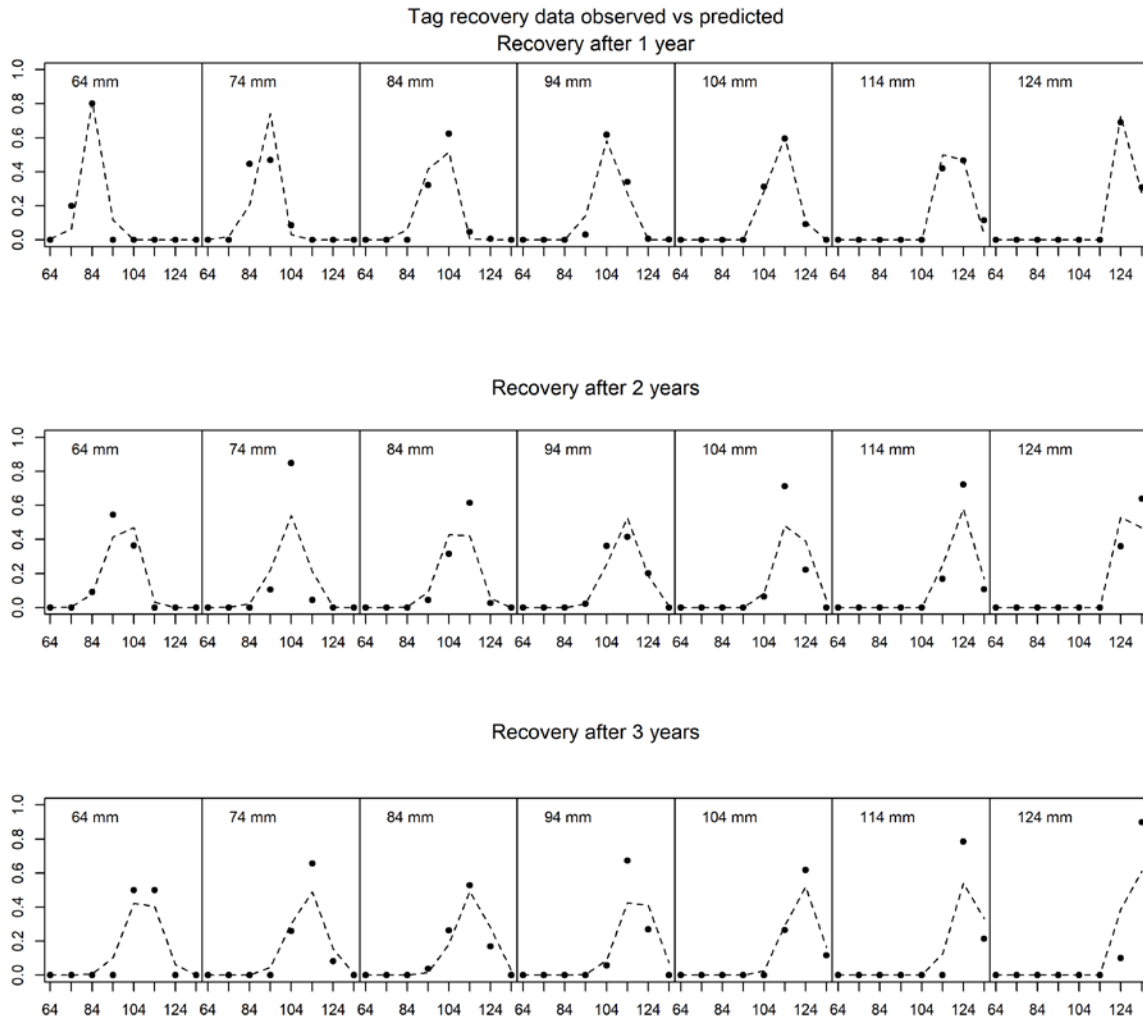


Figure C5-13. Predicted vs. observed length class proportions for tag recovery data.

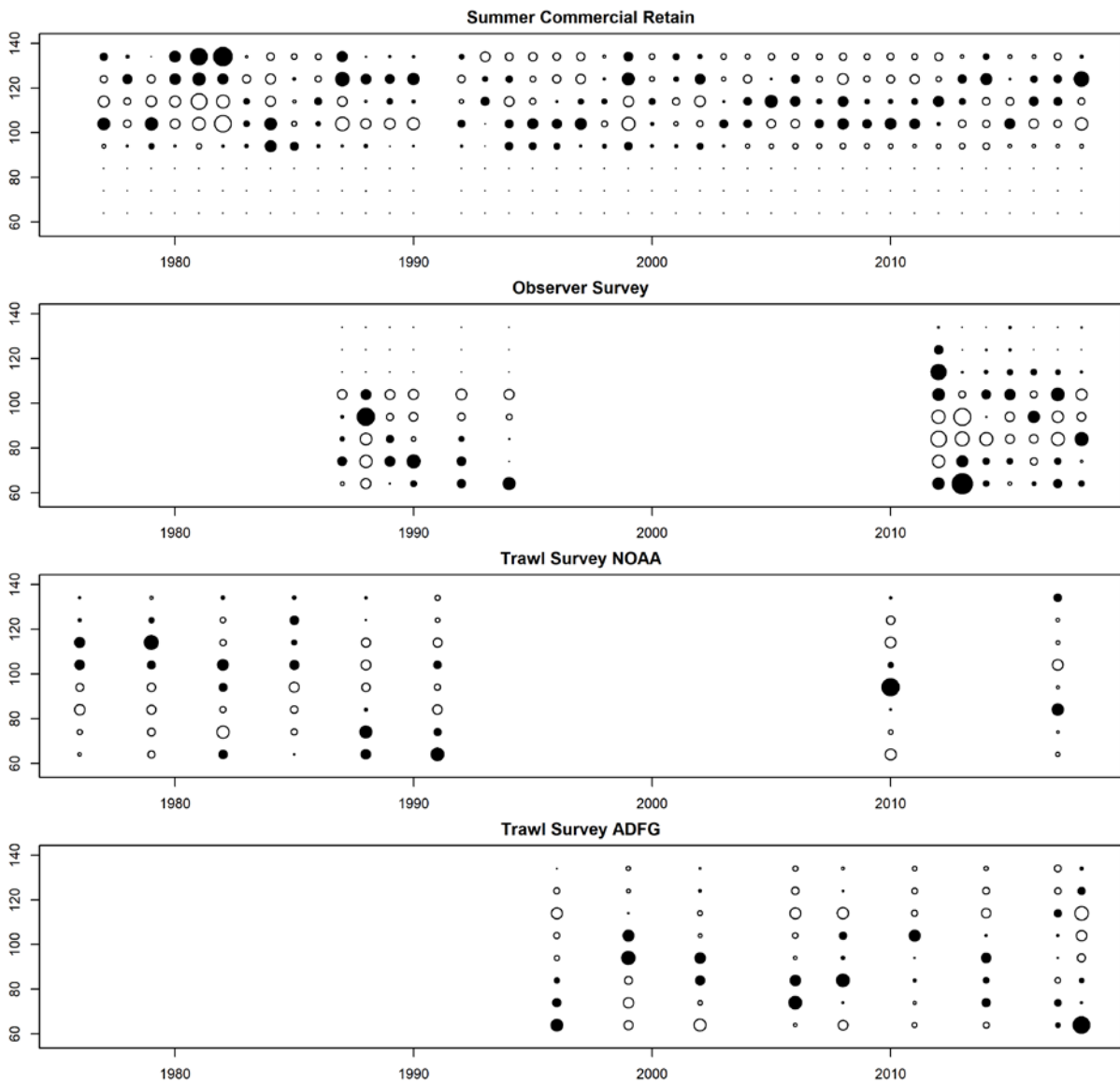


Figure C5-14. Bubble plots of predicted and observed length proportions. Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

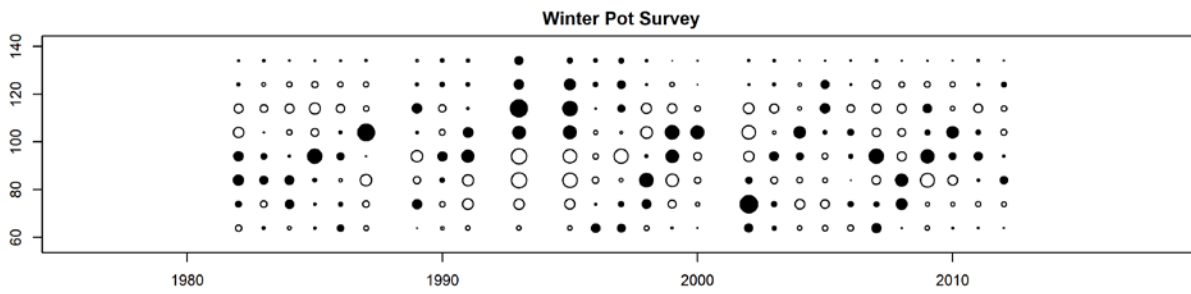


Figure C5-15. Bubble plots of predicted and observed length proportions. Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

Table C5. Summary of parameter estimates for a length-based stock synthesis population model of Norton Sound red king crab.

name	Estimate	std.dev
log_q1	-7.005	0.171
log_q2	-6.815	0.114
log_N76	9.050	0.131
R0	6.441	0.081
log_R76	0.023	0.419
log_R77	-0.529	0.371
log_R78	-0.714	0.354
log_R79	0.392	0.319
log_R80	0.532	0.284
log_R81	0.421	0.264
log_R82	0.388	0.317
log_R83	0.570	0.277
log_R84	0.183	0.293
log_R85	0.494	0.280
log_R86	0.063	0.289
log_R87	0.024	0.247
log_R88	0.013	0.259
log_R89	-0.337	0.280
log_R90	-0.276	0.253
log_R91	-0.563	0.289
log_R92	-0.710	0.306
log_R93	-0.537	0.289
log_R94	-0.299	0.258
log_R95	-0.068	0.225
log_R96	0.570	0.217
log_R97	-0.023	0.294
log_R98	-0.631	0.320
log_R99	-0.004	0.309
log_R00	0.299	0.263
log_R01	0.389	0.240
log_R02	-0.014	0.314
log_R03	-0.285	0.329
log_R04	0.283	0.240
log_R05	0.409	0.221
log_R06	0.442	0.242

name	Estimate	std.dev
log_R07	0.510	0.229
log_R08	0.075	0.286
log_R09	-0.399	0.291
log_R10	0.038	0.246
log_R11	0.354	0.275
log_R12	0.888	0.191
log_R13	-0.190	0.296
log_R14	-0.652	0.313
log_R15	-0.710	0.279
log_R16	-0.436	0.241
log_R17	0.015	0.283
a1	1.526	4.568
a2	2.337	4.253
a3	3.785	4.063
a4	4.066	4.048
a5	4.306	4.039
a6	3.544	4.069
a7	2.112	4.332
r1	10.000	0.804
r2	9.712	0.825
log_a	-2.669	0.090
log_b	4.828	0.015
log_φ _{st1}	-5.000	0.090
log_φ _{wa}	-2.112	0.318
log_φ _{wb}	4.799	0.029
Sw1	0.074	0.036
Sw2	0.489	0.122
log_φ _l	-2.141	0.083
log_φ _l	-2.026	0.077
log_ar	-0.794	0.130
log_br	4.646	0.008
w ² _t	0.051	0.016
q	0.749	0.129
σ	3.862	0.212
β ₁	12.249	0.727
β ₂	7.702	0.177
ms78	3.218	0.265

