Appendix C3

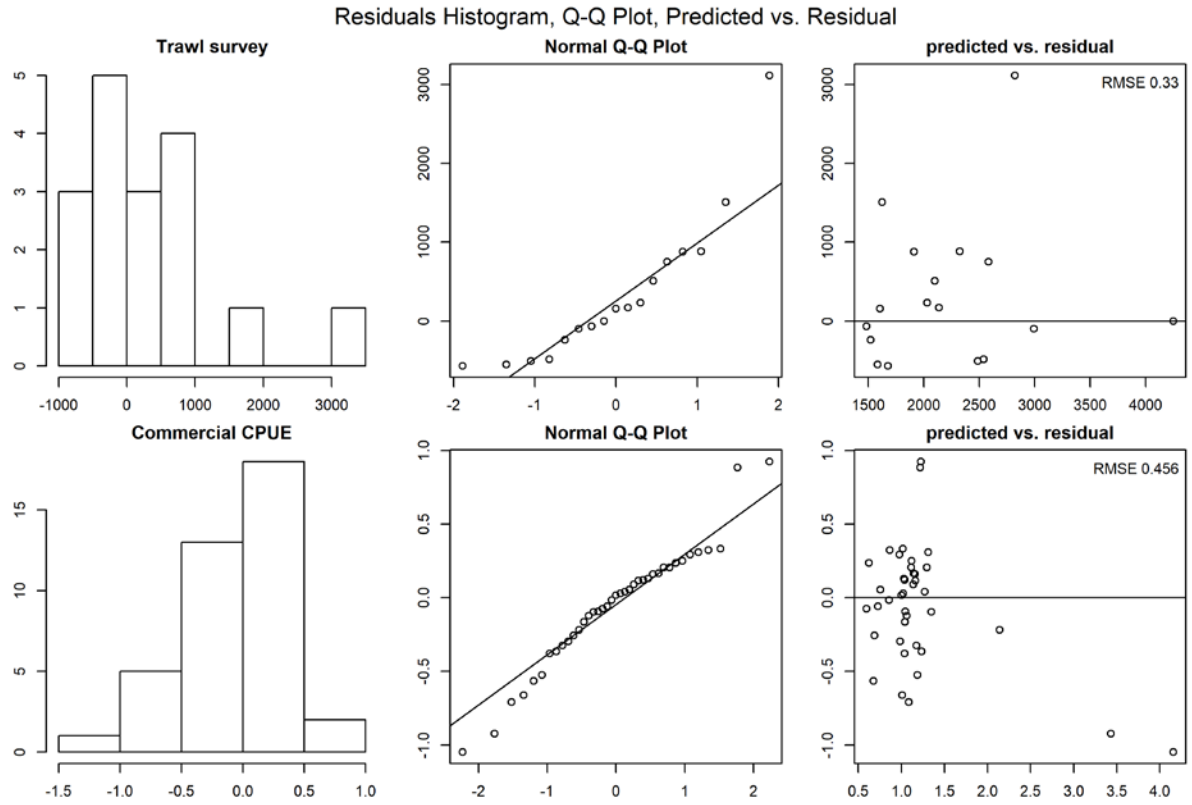


Figure C3-1. QQ Plot of Trawl survey and Commercial CPUE.

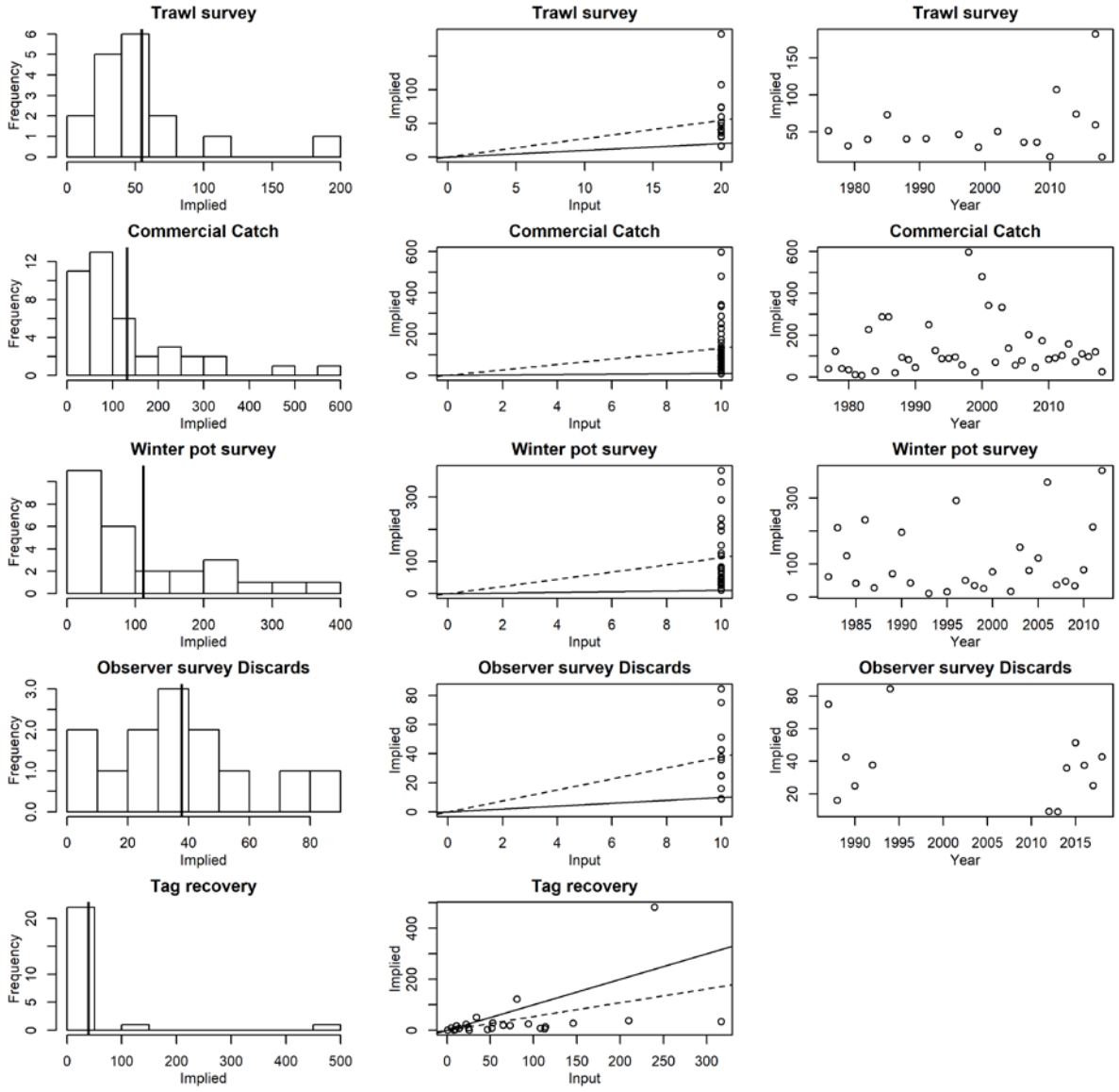


Figure C3-2: Implied effective samples. Figures in the first column show implied effective sample size (x-axis) vs. frequency (y-axis).
Vertical solid line is the mean implied effective sample size.
The second column show input sample size (x-axis) vs. implied effective sample size (y-axis). Dashed line 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).

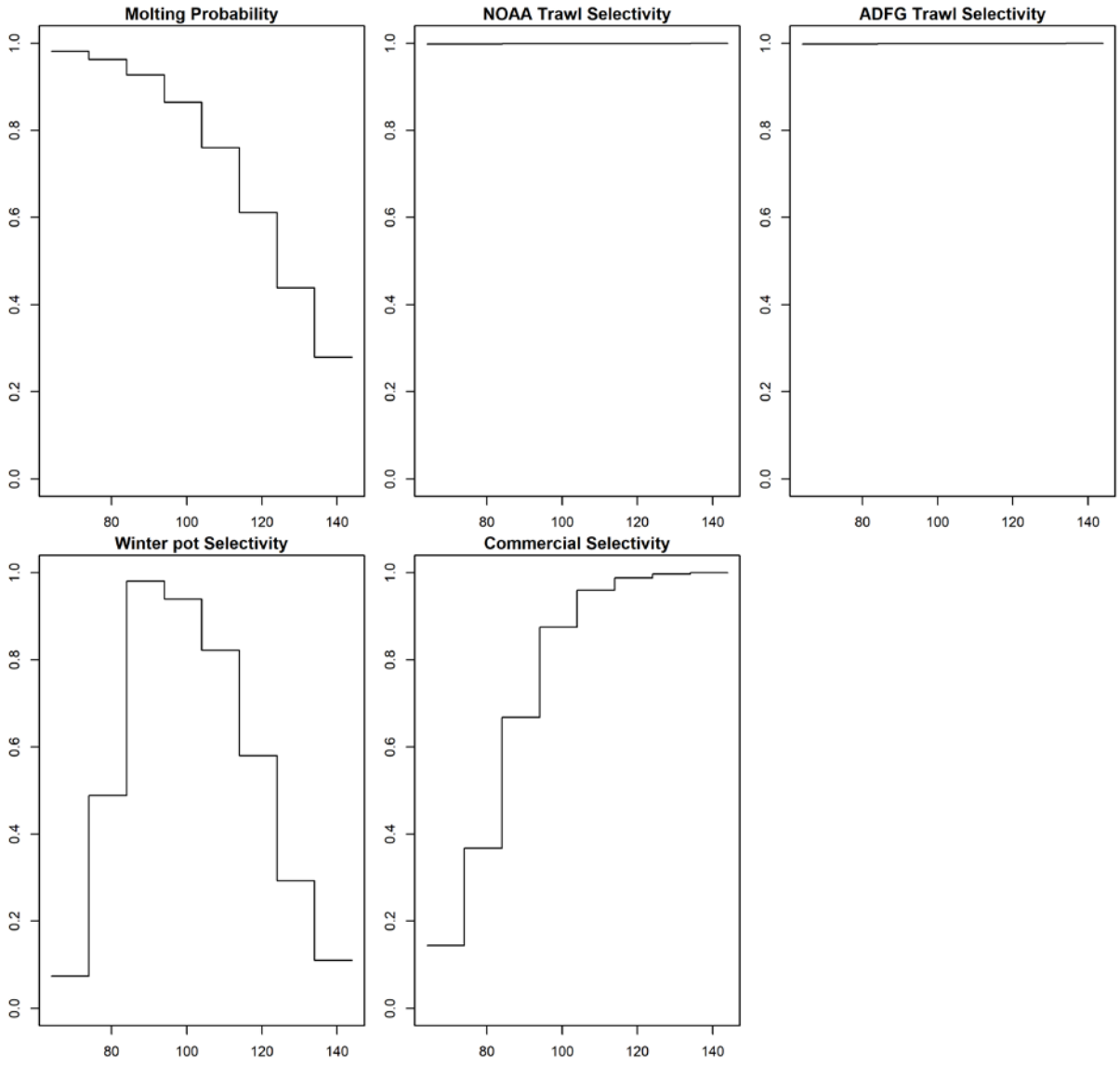


Figure C3-3. Molting probability and trawl/pot selectivity. X-axis is carapace length.

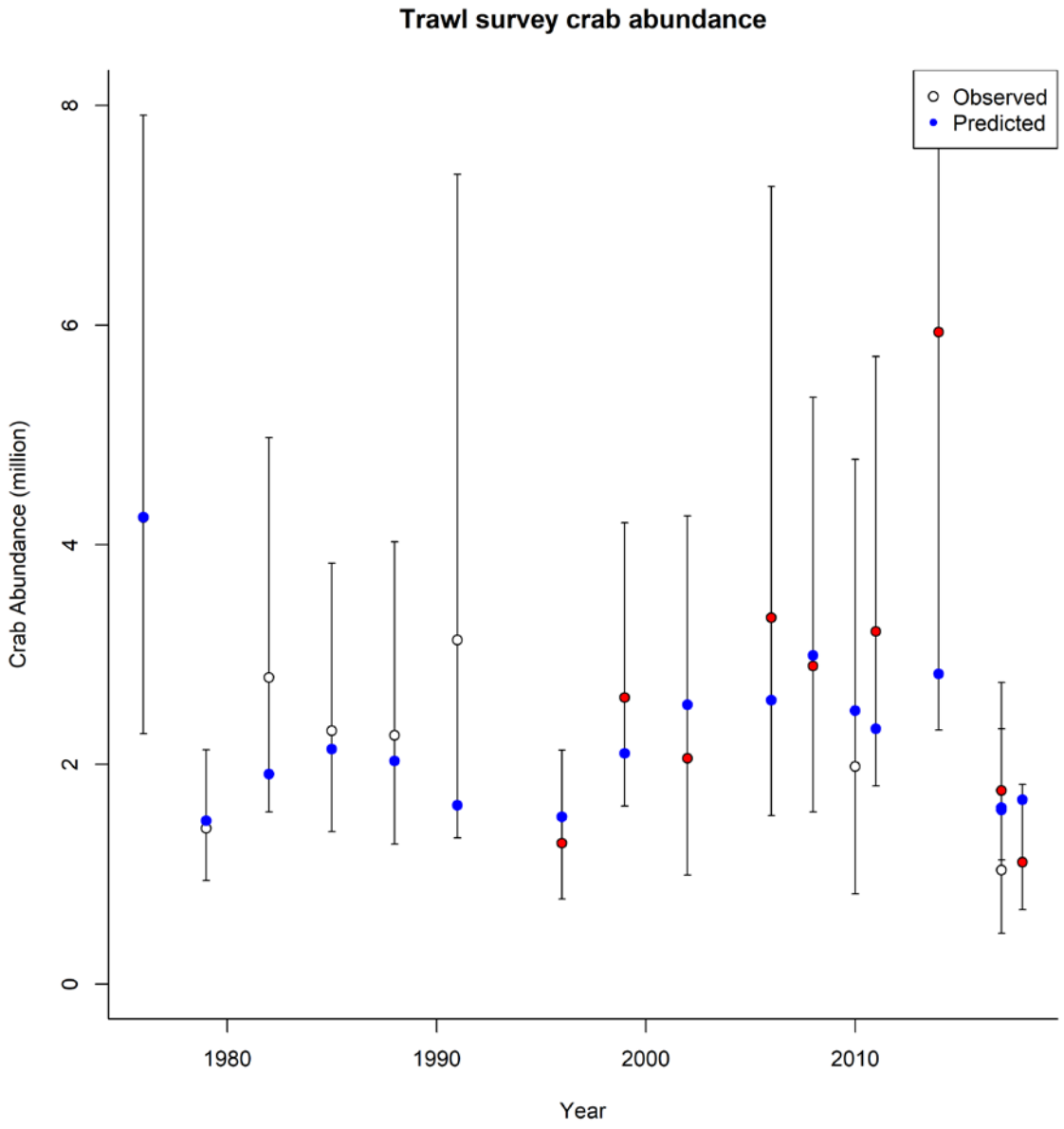


Figure C3-4. Estimated trawl survey male abundance (crab >= 64 mm CL). Observed: White: NOAA Trawl Survey, Red: ADG&G Trawl Survey

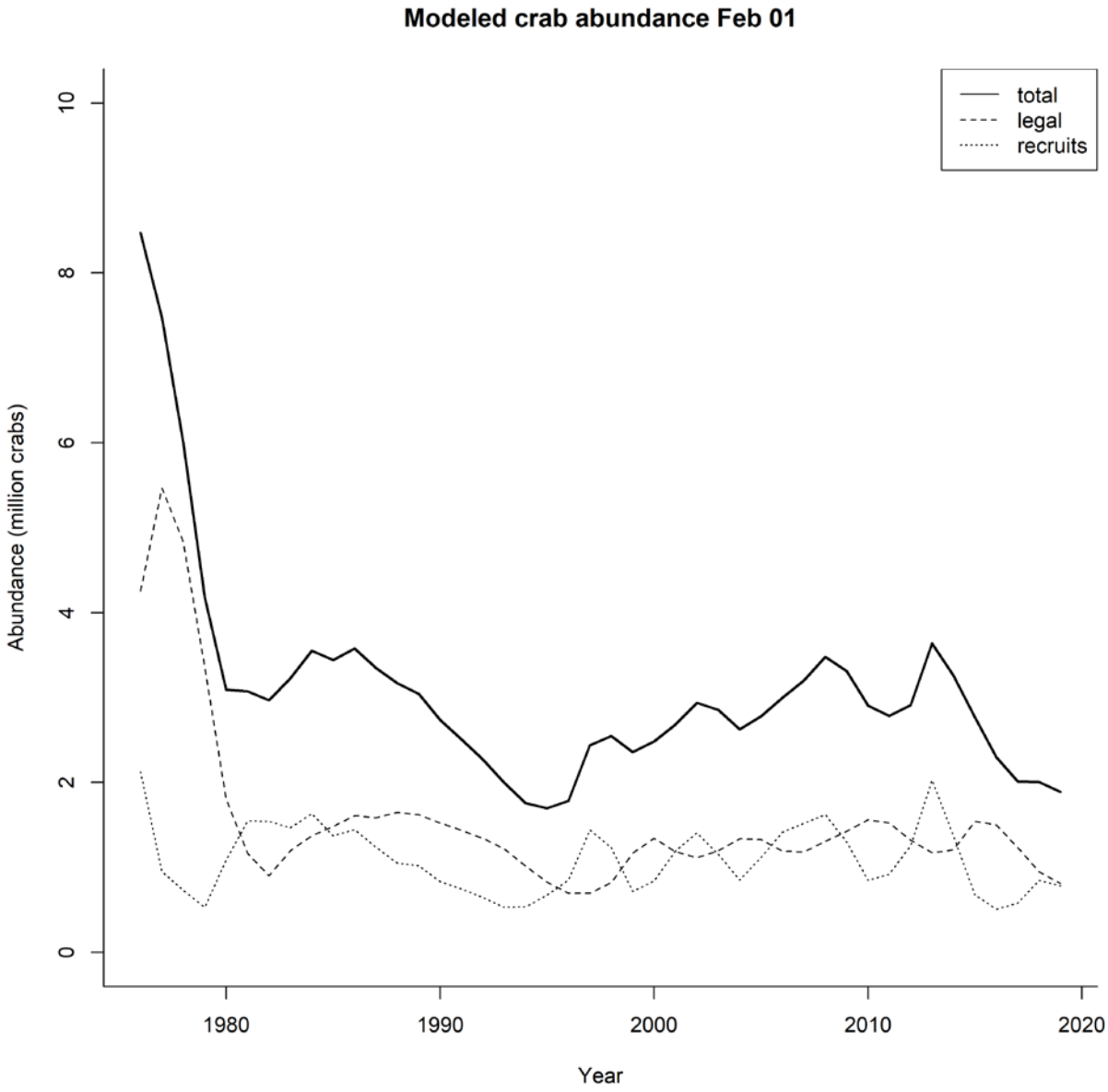


Figure C3-5. Estimated abundance of legal males from 1976-2015.

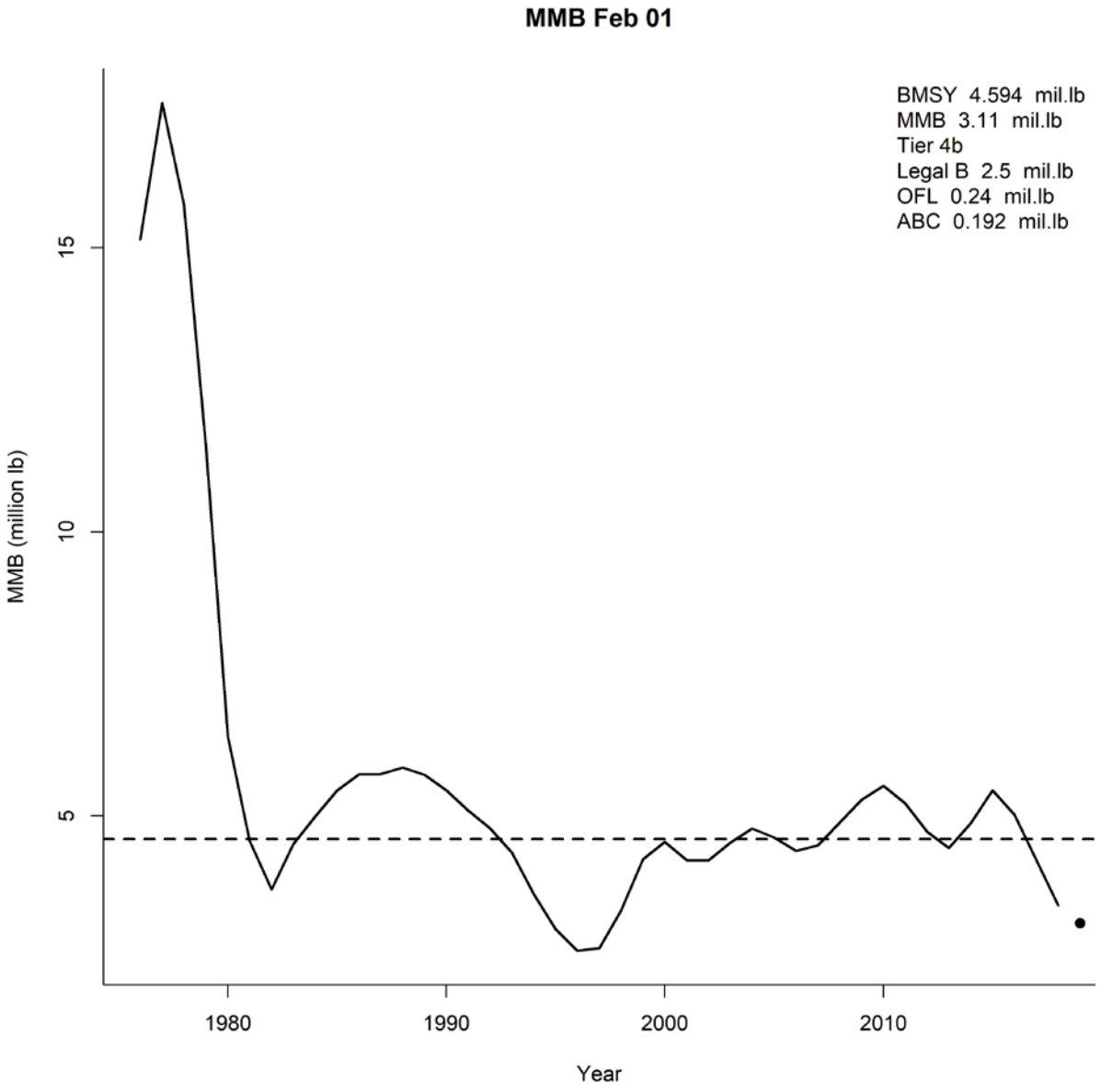


Figure C3-6. Estimated abundance of Mature Male Biomass from 1976-2019. Dash line shows Bmsy (Average MMB of 1980-2019).

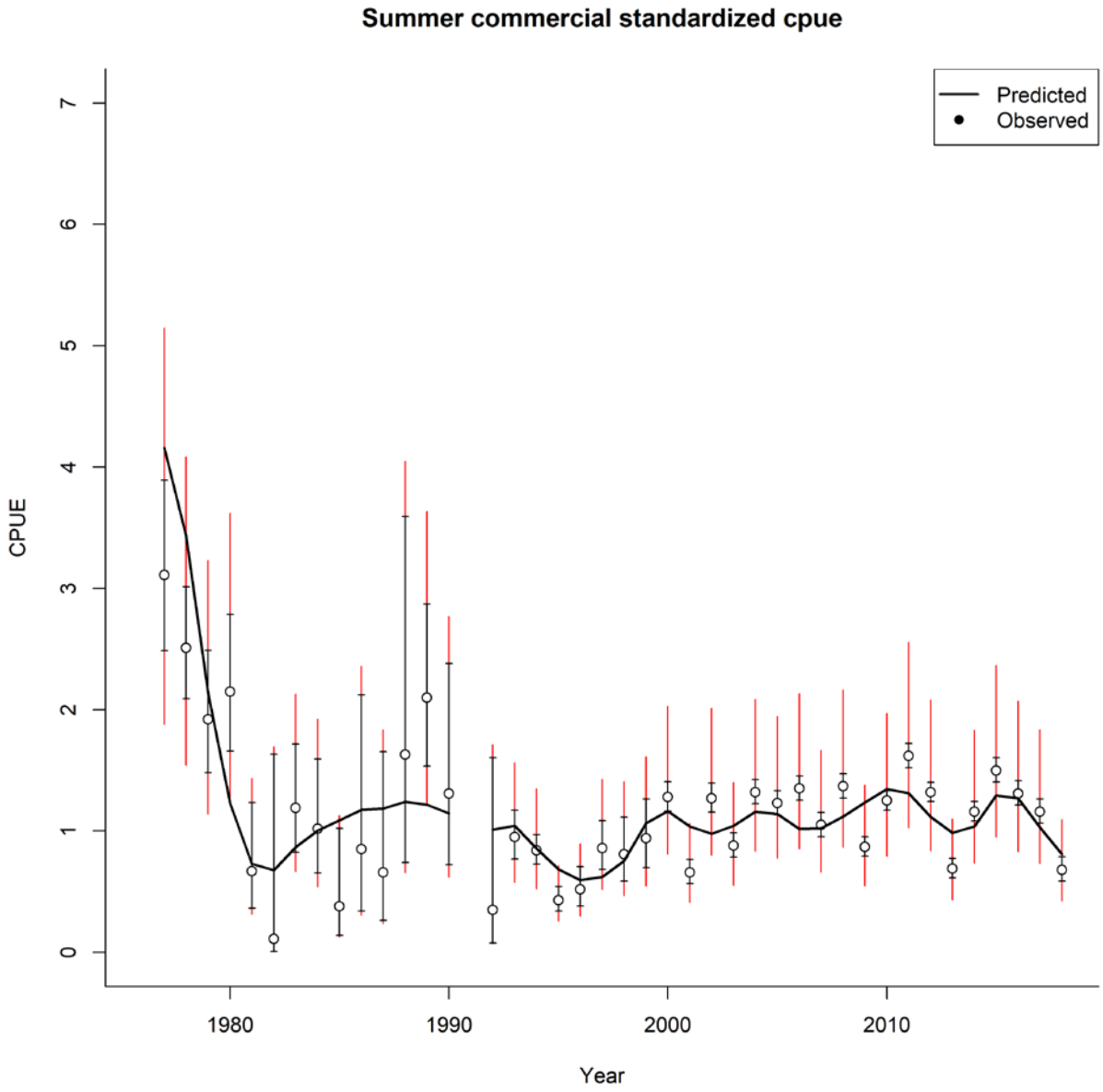


Figure C3-7. Summer commercial standardized cpue 1977-2018.

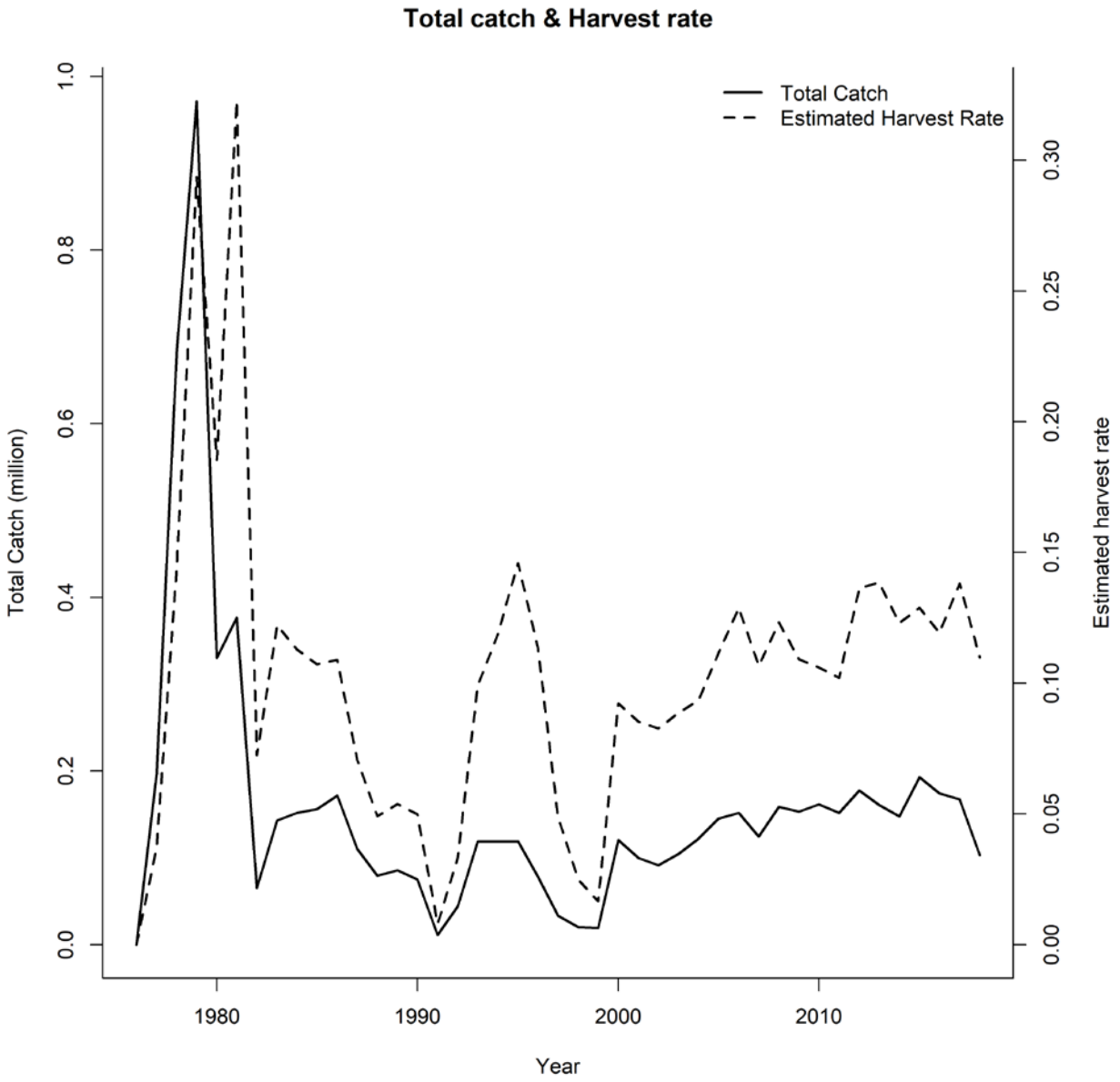


Figure C3-8. Total catch and estimated harvest rate 1976-2018.

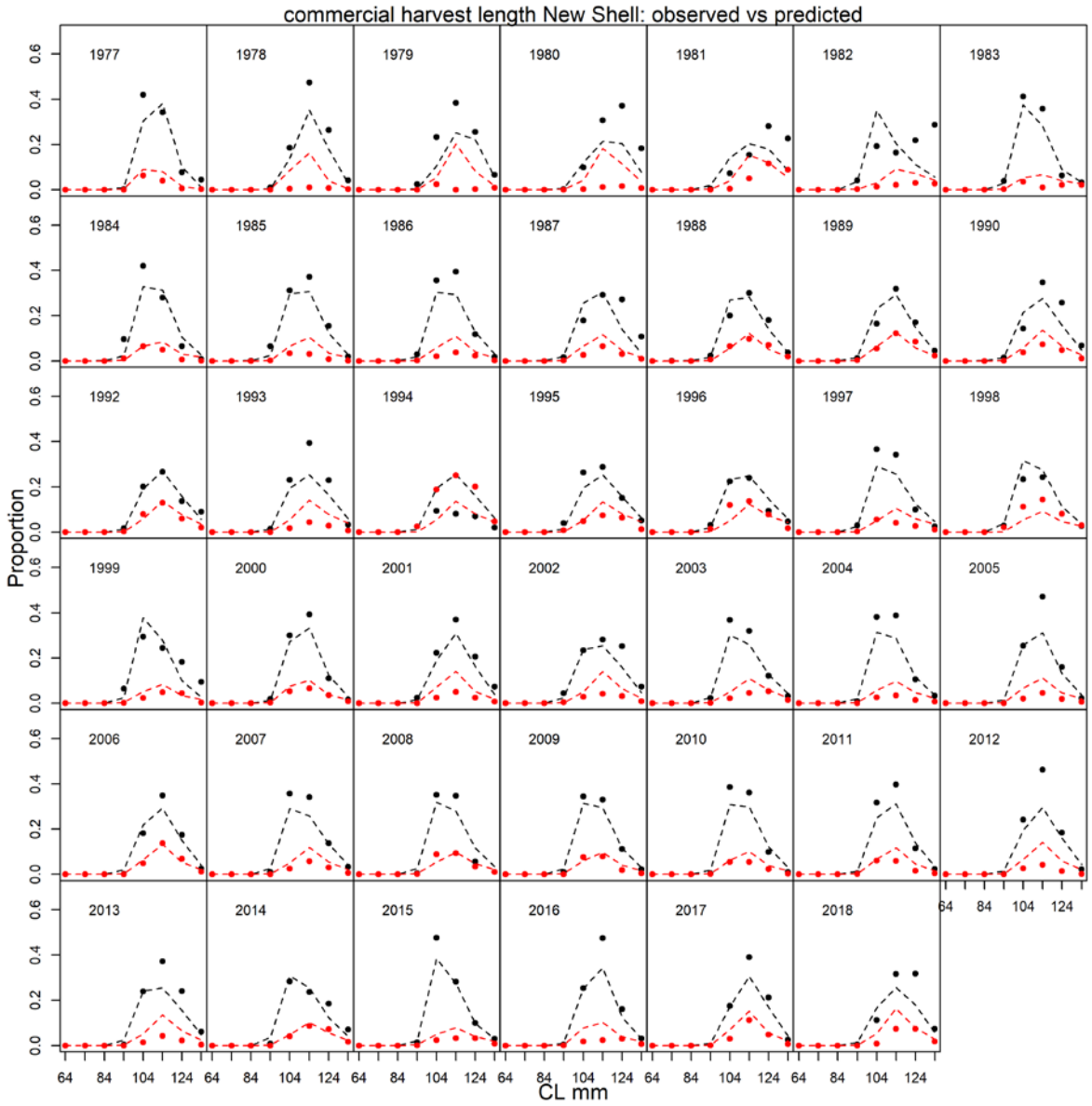


Figure C3-9. Predicted (dashed line) vs. observed (dots) length class proportions for commercial catch. Bladk: New Shell, Red: Old Shell

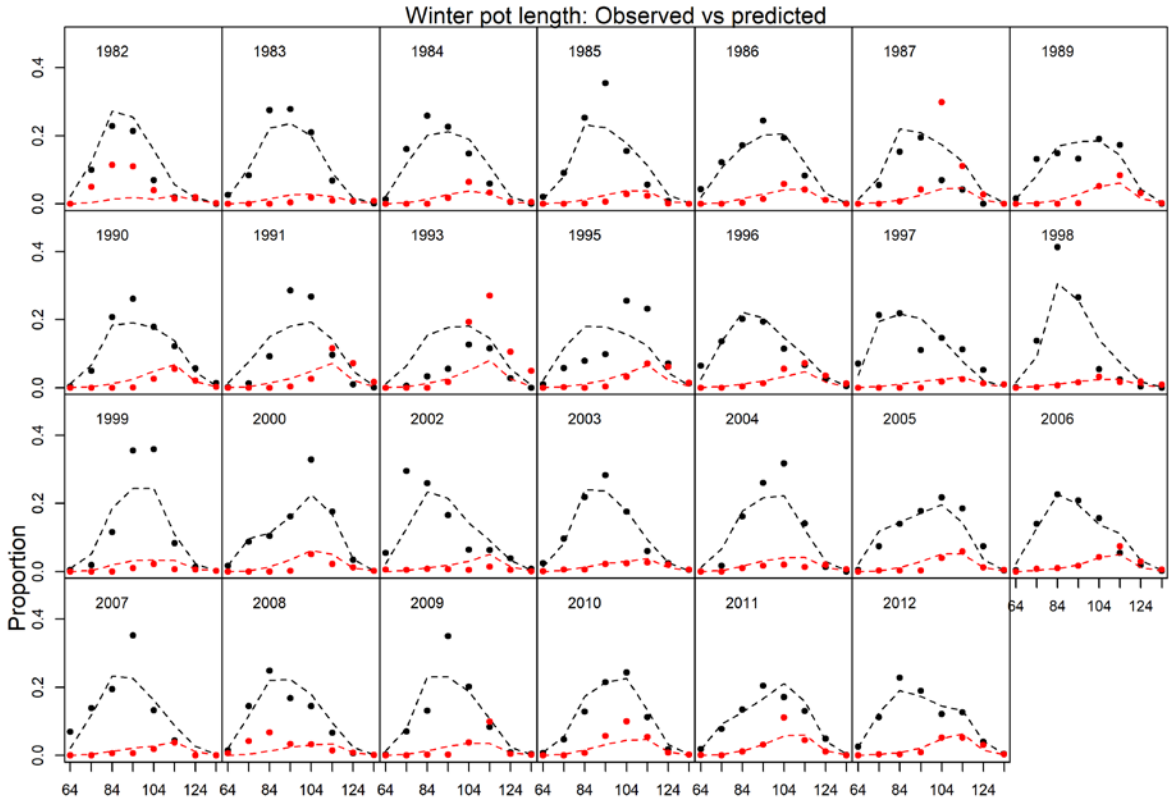


Figure C3-10. Predicted (dashed line) vs. observed (black dots) length class proportions for the winter and spring pot survey.

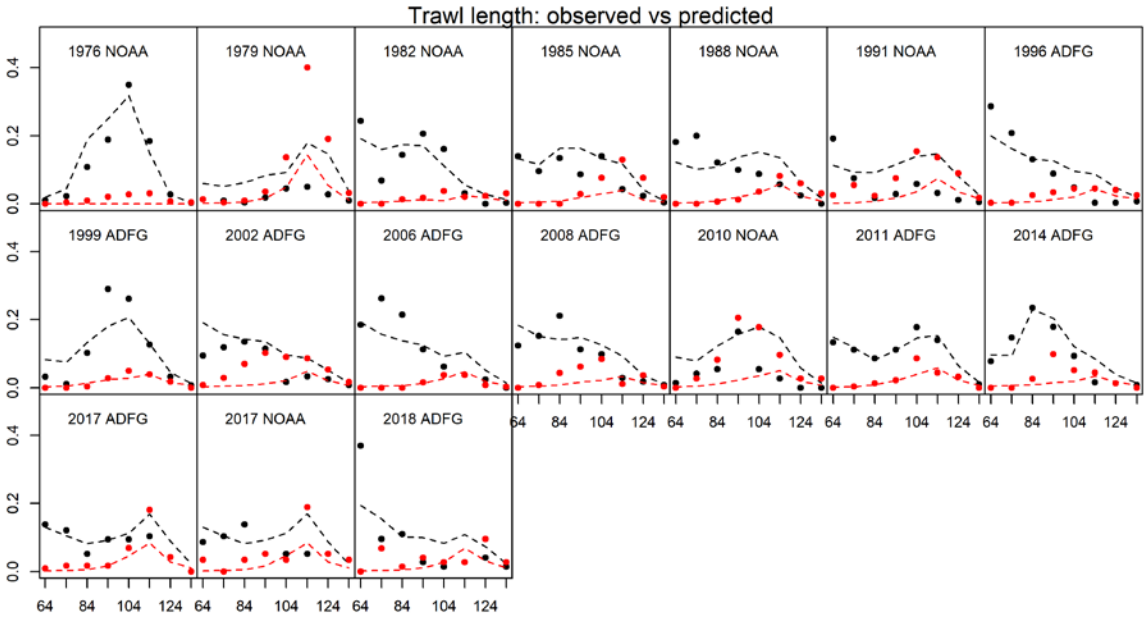
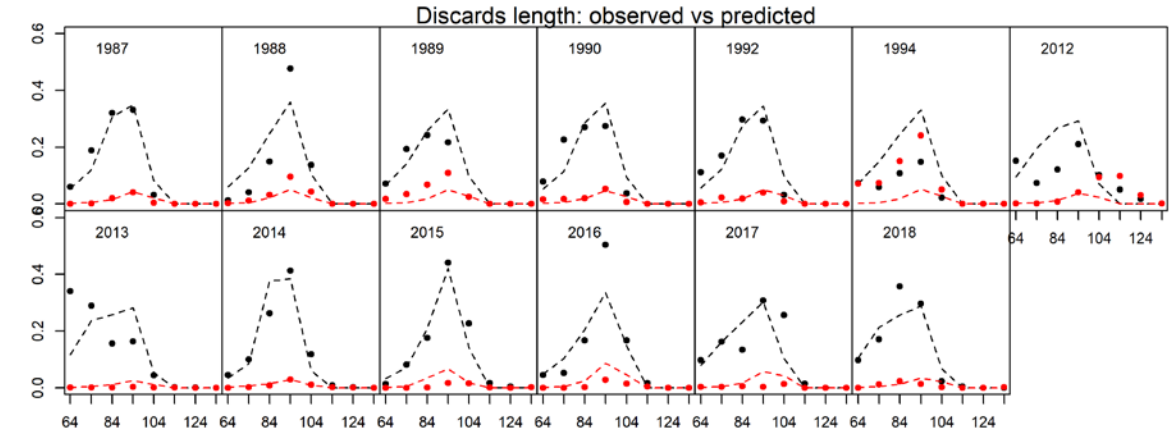


Figure C3-11. Predicted vs. observed length class proportions for trawl survey.



Proportion

CL mm

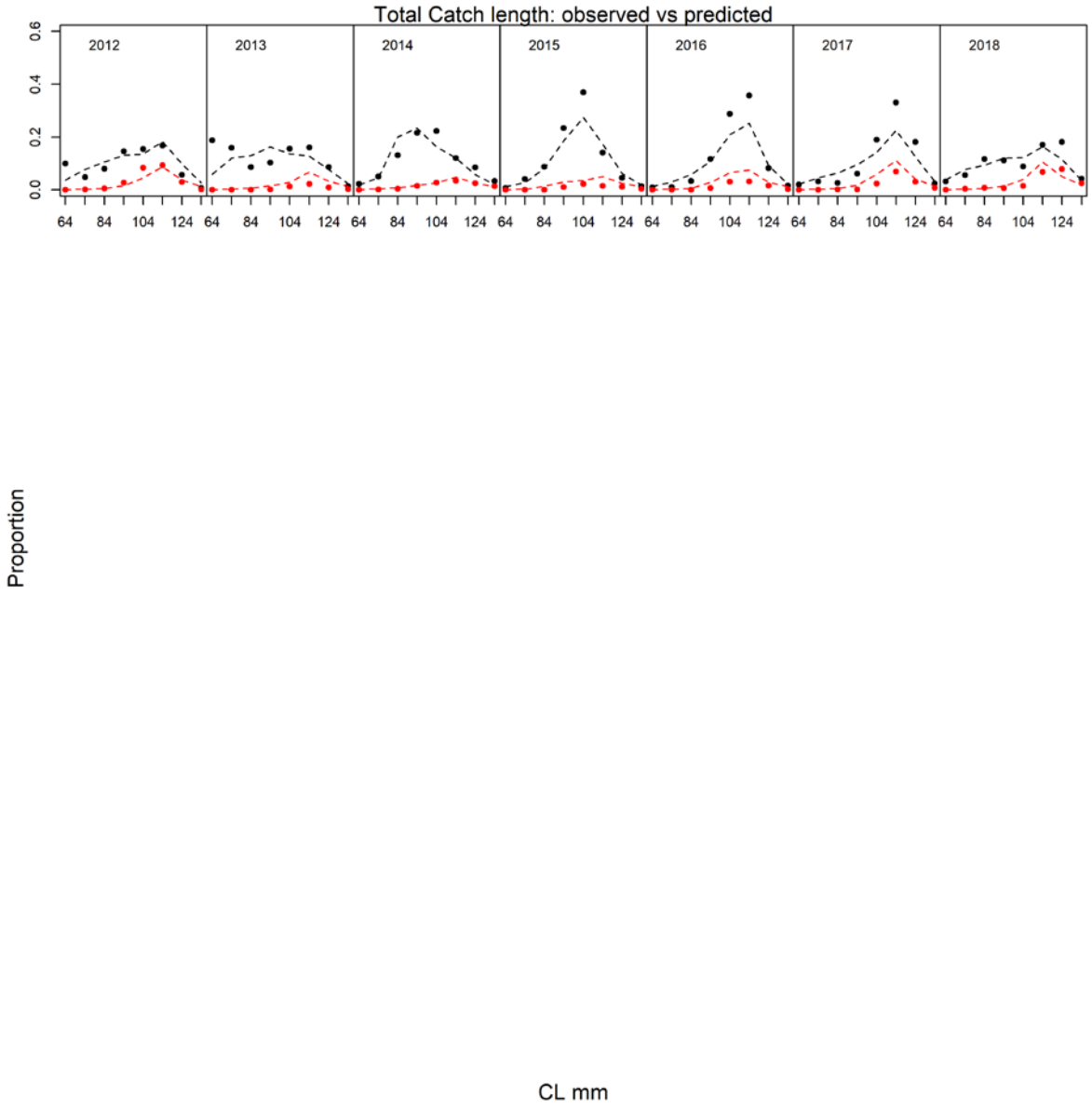


Figure C3-12. Predicted (dashed) vs. observed (dots) length class proportions for the observer survey.

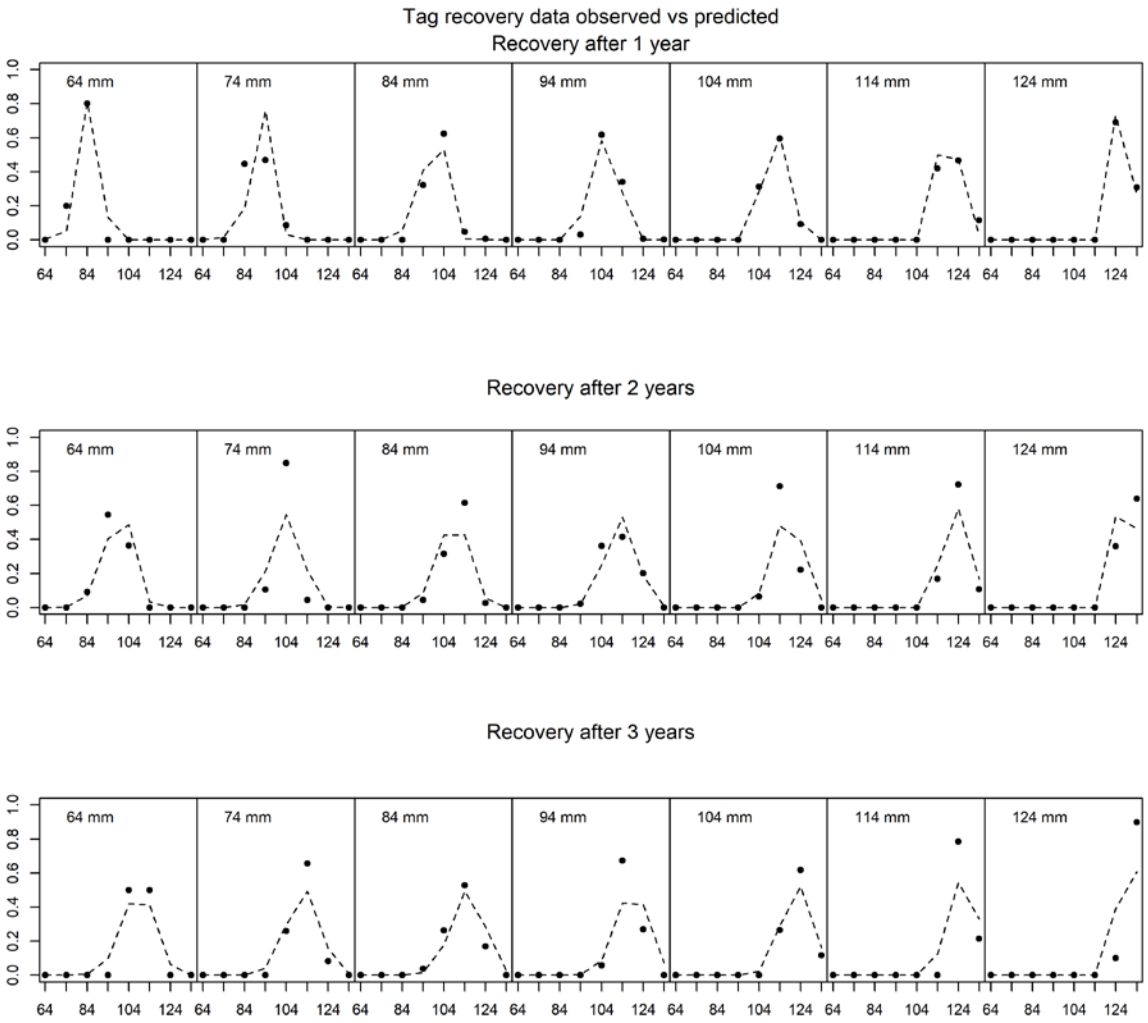


Figure C3-13. Predicted vs. observed length class proportions for tag recovery data.

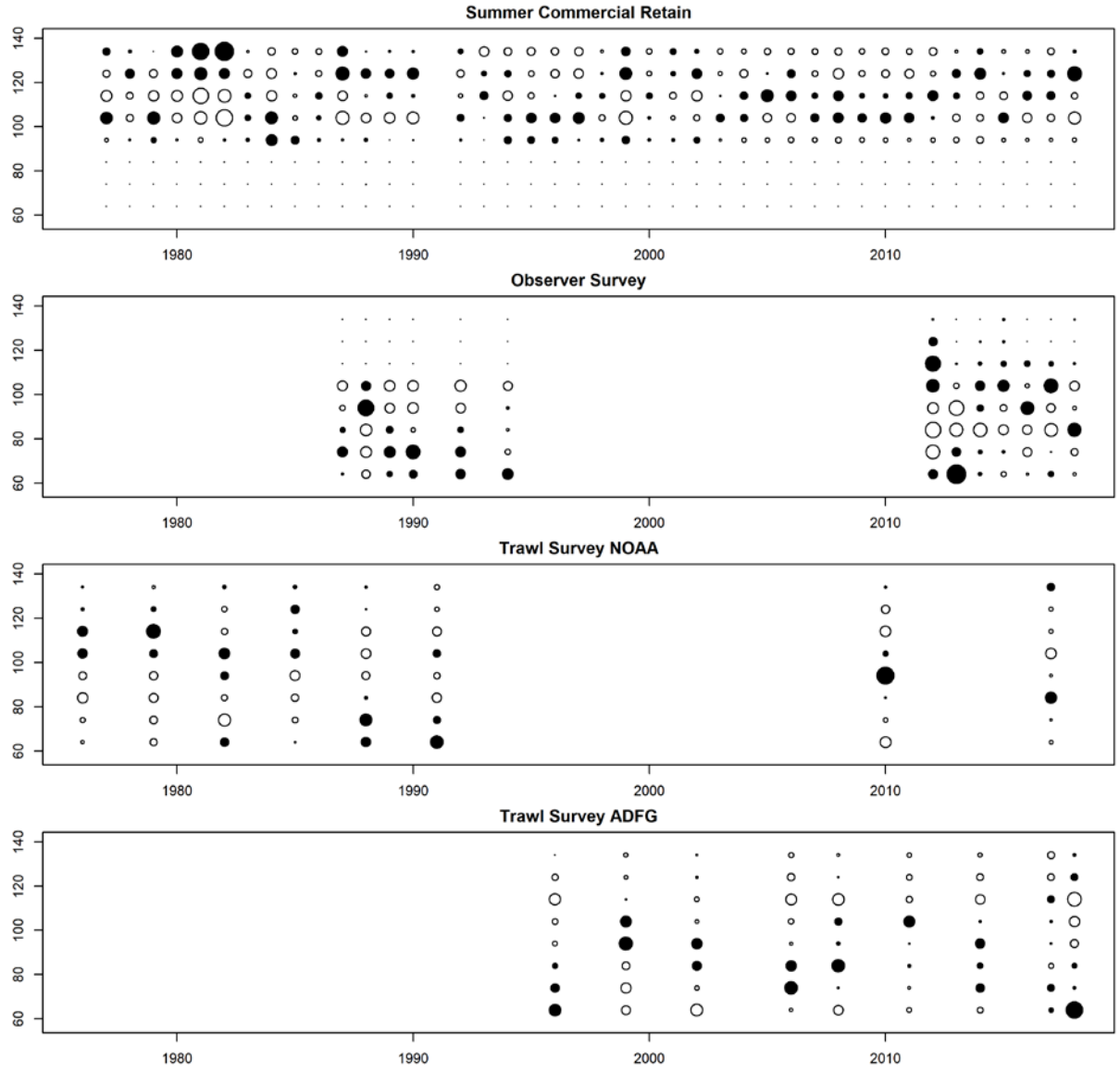


Figure C3-14. Bubble plots of predicted and observed length proportions.
Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

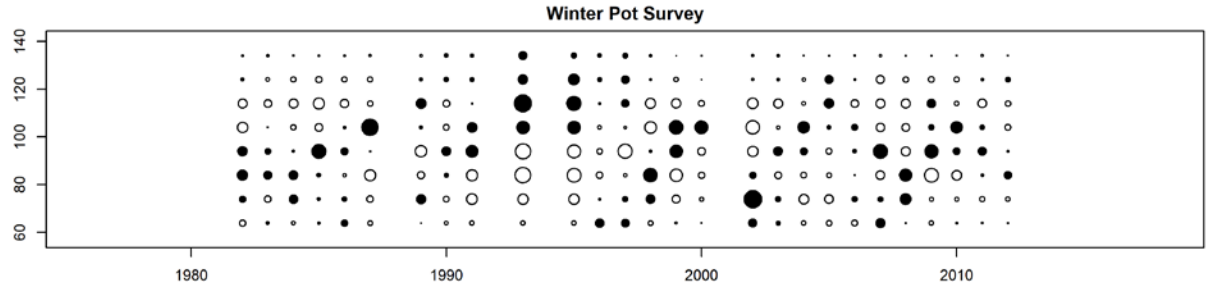


Figure C3-15. Bubble plots of predicted and observed length proportions.
Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

Table C3 . Summary of parameter estimates for a length-based stock synthesis population model of Norton Sound red king crab.

name	Estimate	std.dev
$\log_q_1$	-7.002	0.171
$\log_q_2$	-6.834	0.112
$\log_N_{76}$	9.045	0.131
R_0	6.444	0.081
$\log_R_{76}$	0.025	0.417
$\log_R_{77}$	-0.535	0.370
$\log_R_{78}$	-0.722	0.353
$\log_R_{79}$	0.368	0.317
$\log_R_{80}$	0.521	0.282
$\log_R_{81}$	0.412	0.263
$\log_R_{82}$	0.378	0.315
$\log_R_{83}$	0.564	0.275
$\log_R_{84}$	0.171	0.291
$\log_R_{85}$	0.461	0.279
$\log_R_{86}$	0.073	0.287
$\log_R_{87}$	0.023	0.247
$\log_R_{88}$	0.027	0.259
$\log_R_{89}$	-0.317	0.278
$\log_R_{90}$	-0.283	0.254
$\log_R_{91}$	-0.521	0.284
$\log_R_{92}$	-0.700	0.304
$\log_R_{93}$	-0.576	0.288
$\log_R_{94}$	-0.288	0.256
$\log_R_{95}$	-0.067	0.224
$\log_R_{96}$	0.570	0.217
$\log_R_{97}$	-0.009	0.291
$\log_R_{98}$	-0.630	0.319
$\log_R_{99}$	-0.002	0.308
$\log_R_{00}$	0.298	0.262
$\log_R_{01}$	0.394	0.239
$\log_R_{02}$	-0.006	0.312
$\log_R_{03}$	-0.282	0.329
$\log_R_{04}$	0.286	0.239
$\log_R_{05}$	0.416	0.220
$\log_R_{06}$	0.446	0.241

name	Estimate	std.dev
$\log_R_{07}$	0.521	0.228
$\log_R_{08}$	0.097	0.283
$\log_R_{09}$	-0.383	0.290
$\log_R_{10}$	0.047	0.245
$\log_R_{11}$	0.347	0.275
$\log_R_{12}$	0.889	0.190
$\log_R_{13}$	-0.181	0.294
$\log_R_{14}$	-0.650	0.312
$\log_R_{15}$	-0.719	0.277
$\log_R_{16}$	-0.450	0.239
$\log_R_{17}$	-0.010	0.282
a_1	1.521	4.554
a_2	2.332	4.238
a_3	3.775	4.048
a_4	4.053	4.033
a_5	4.296	4.024
a_6	3.536	4.053
a_7	2.105	4.319
r1	10.000	0.825
r2	9.710	0.844
log_a	-2.661	0.089
log_b	4.828	0.015
$\log_\phi_{st1}$	-5.000	0.087
$\log_\phi_{wa}$	-2.116	0.317
$\log_\phi_{wb}$	4.797	0.029
Sw1	0.074	0.036
Sw2	0.489	0.122
$\log_\phi_1$	-2.086	0.056
log_ar	-0.782	0.129
log_br	4.645	0.008
w^2_t	0.051	0.016
q	0.753	0.130
σ	3.853	0.211
β_1	12.397	0.701
β_2	7.674	0.173
ms78	3.208	0.264