Appendix C2

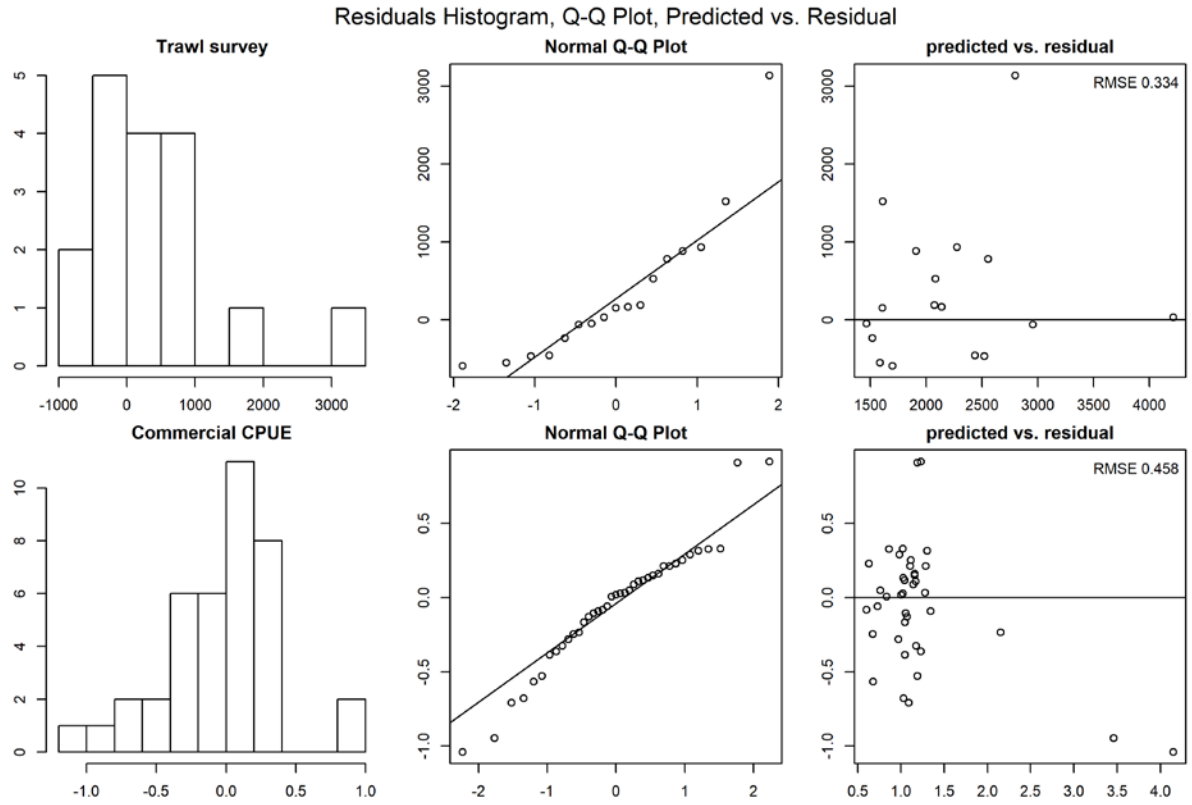

Figure C2-1. QQ Plot of Trawl survey and Commercial CPUE.

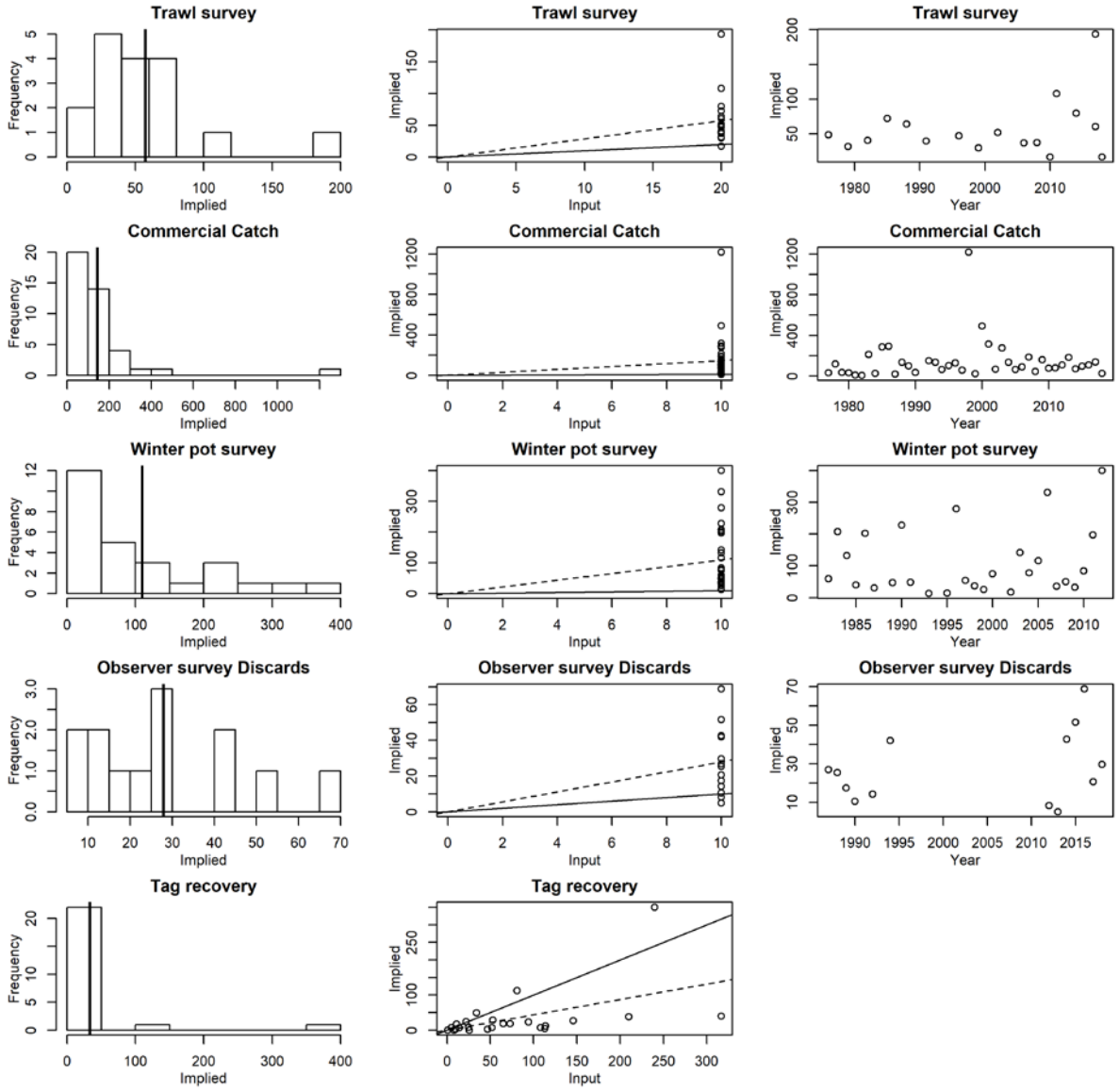

Figure C2-2: Implied effective samples. Figures in the first column show implied effective sample size (x-axis) vs. frequency (y-axis).
Vertical solid line is the mean implied effective sample size.
The second column show input sample size (x-axis) vs. implied effective sample size (y-axis). Dashed line 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).

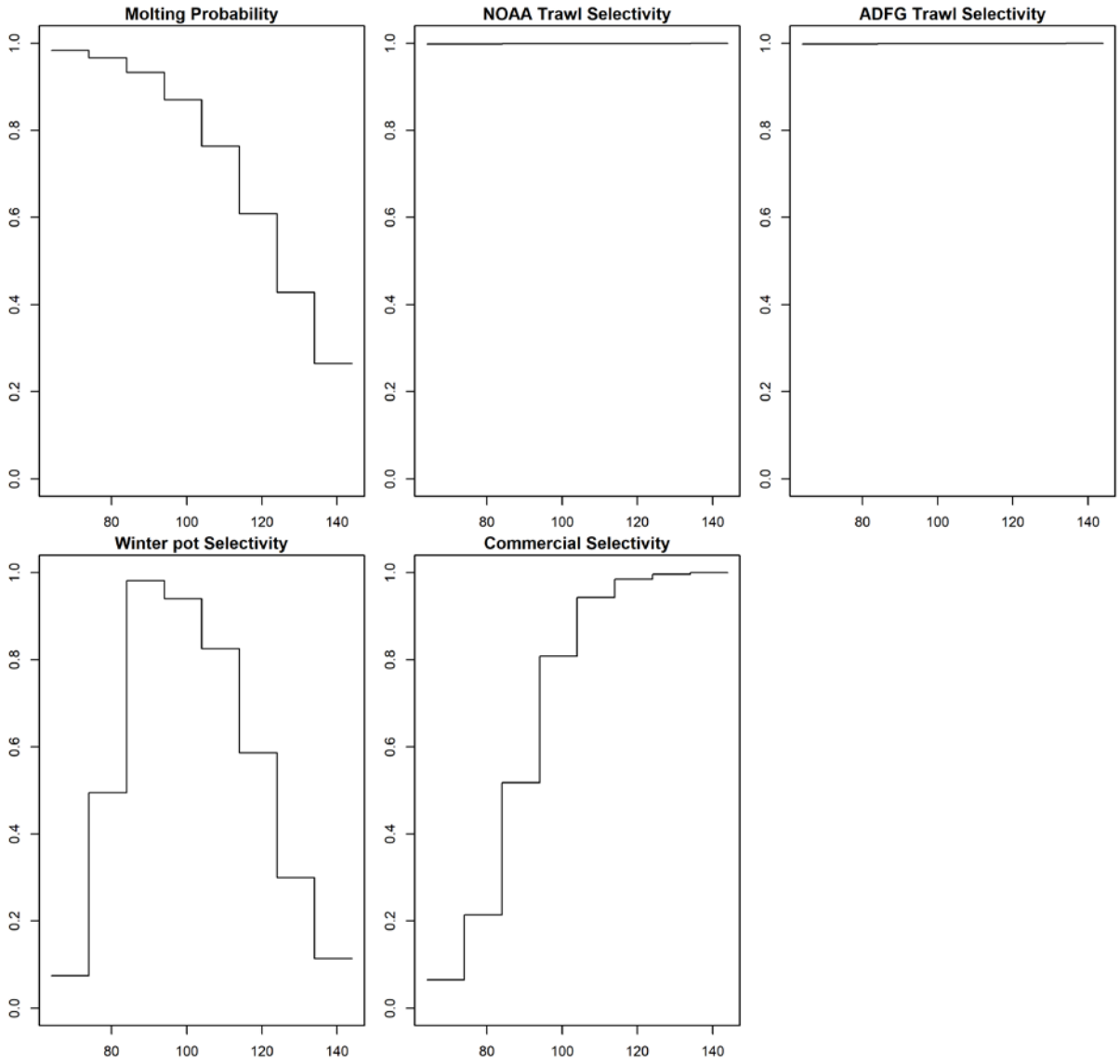

Figure C2-3. Molting probability and trawl/pot selectivity. X-axis is carapace length.

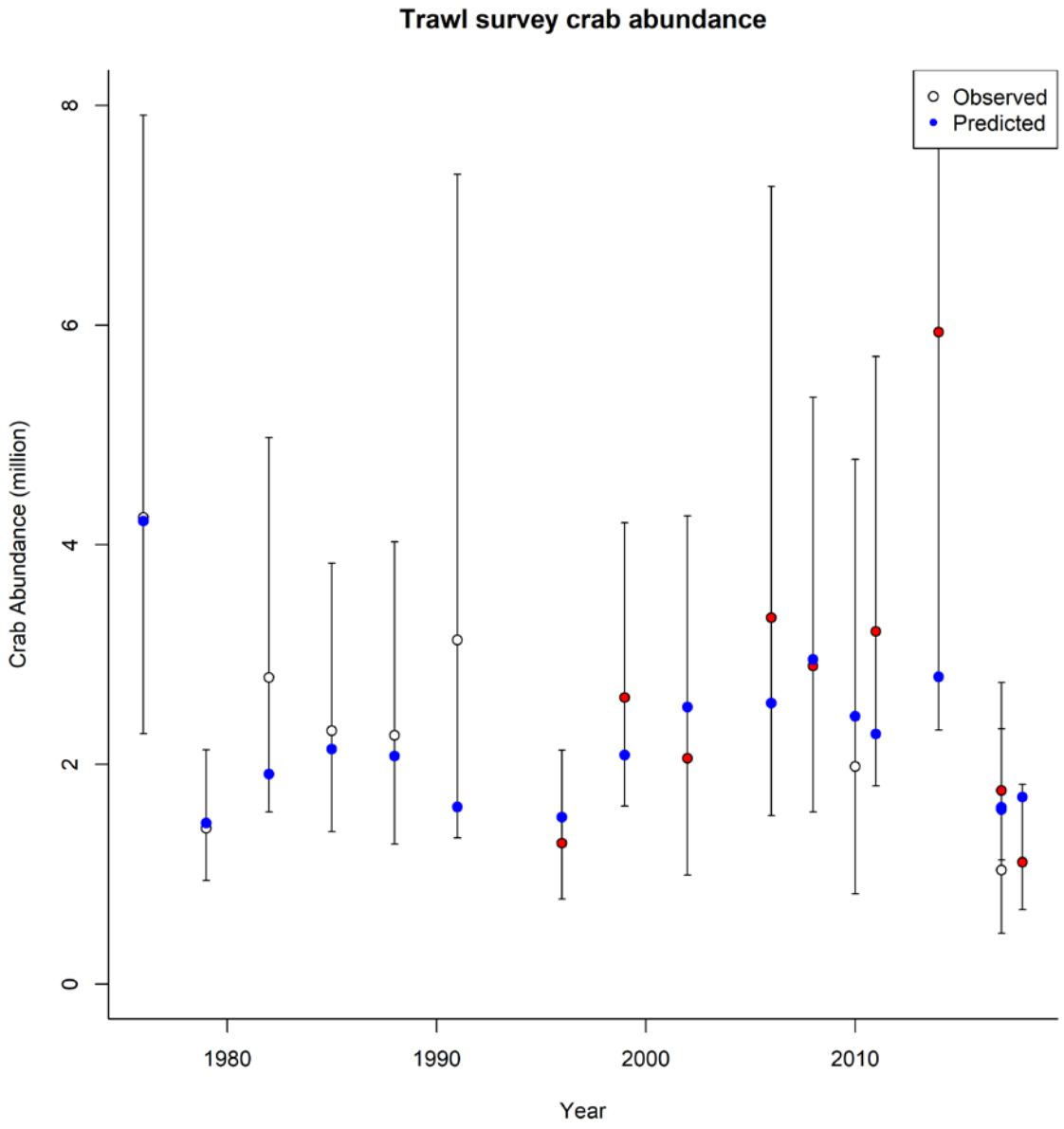

Figure C2-4. Estimated trawl survey male abundance (crab >= 64 mm CL). Observed: White: NOAA Trawl Survey, Red: ADG&G Trawl Survey

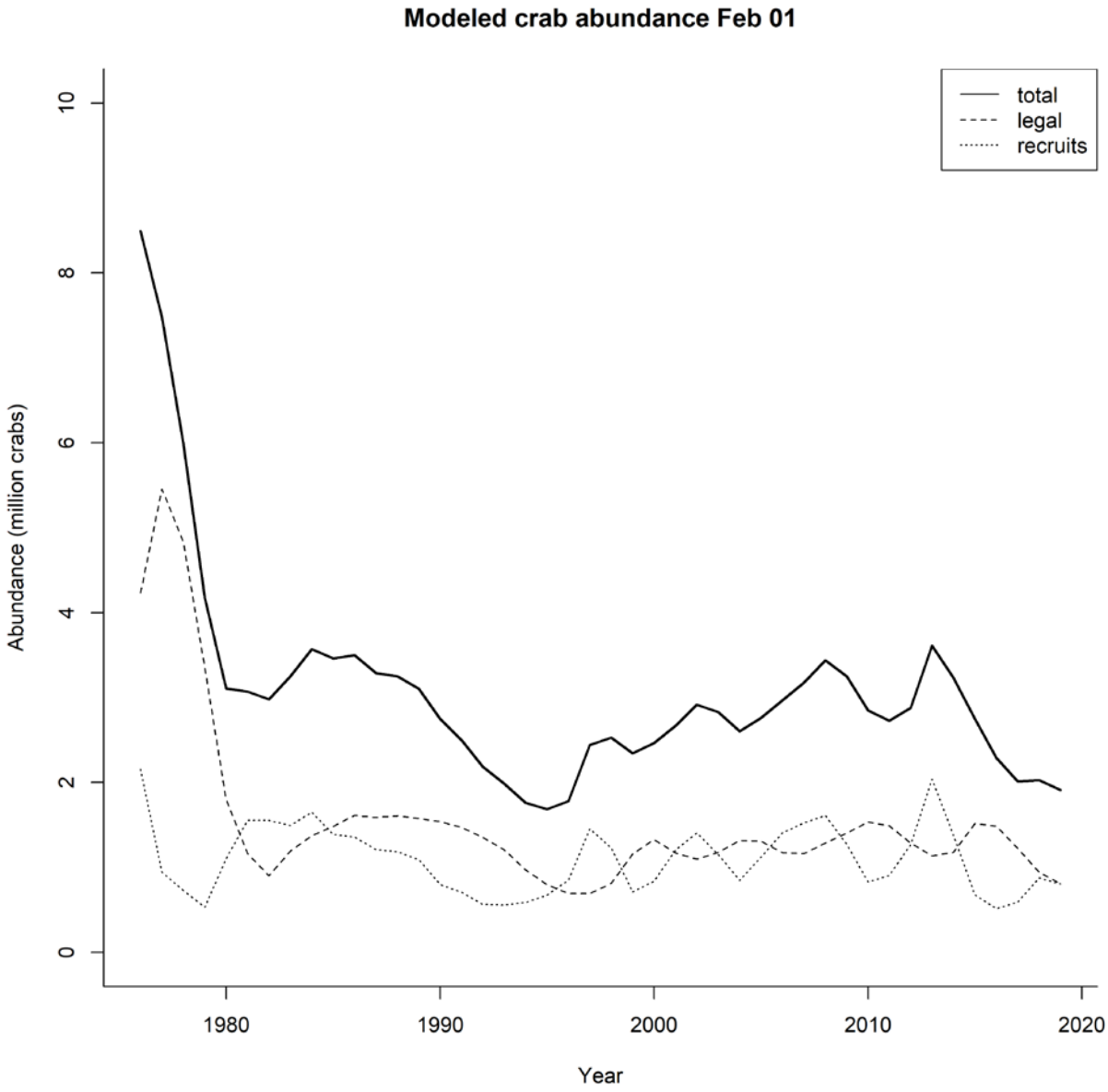

Figure C2-5. Estimated abundance of legal males from 1976-2015.

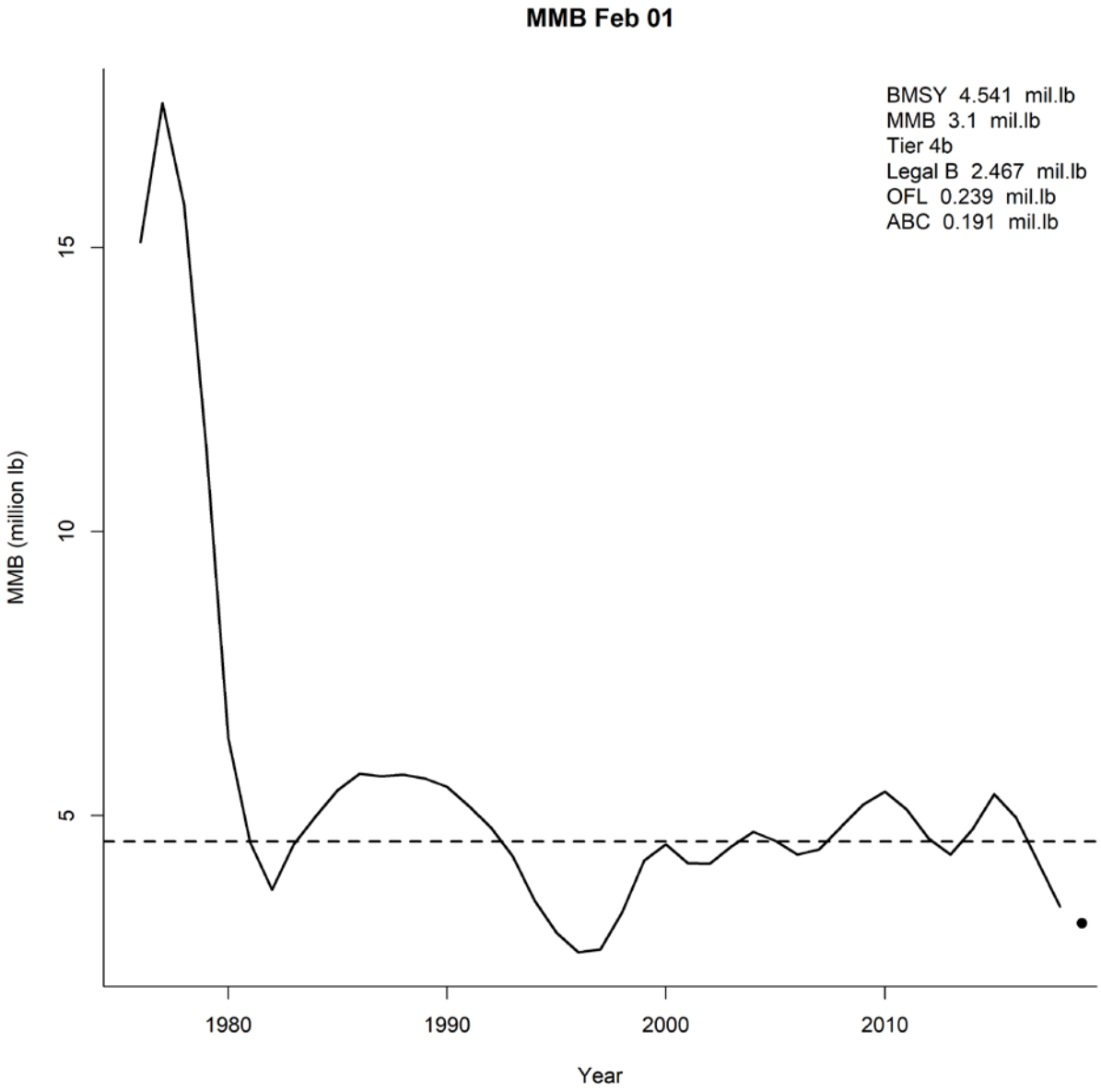

Figure C2-6. Estimated abundance of Mature Male Biomass from 1976-2019. Dash line shows Bmsy (Average MMB of 1980-2019).

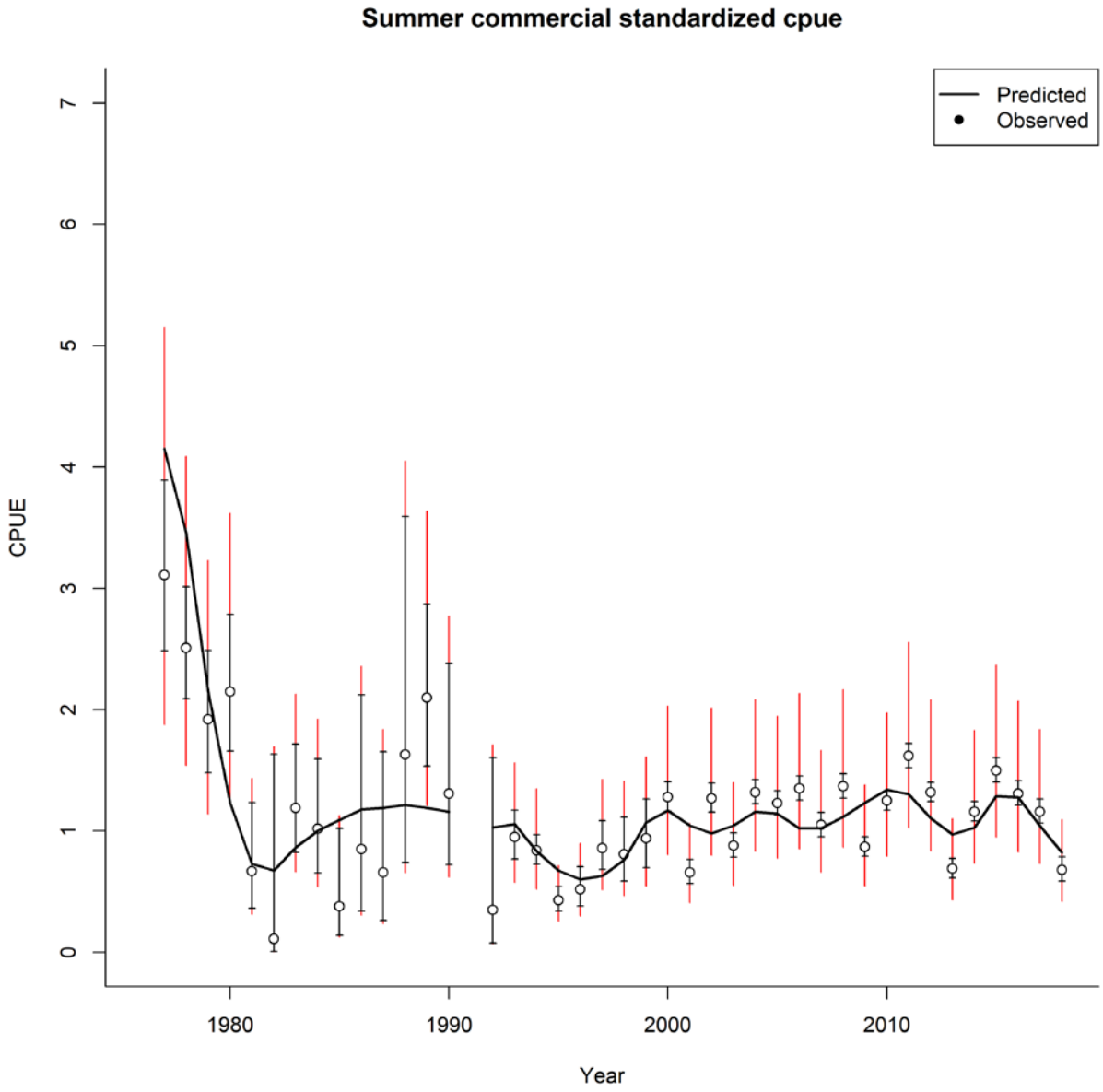

Figure C2-7. Summer commercial standardized cpue 1977-2018.

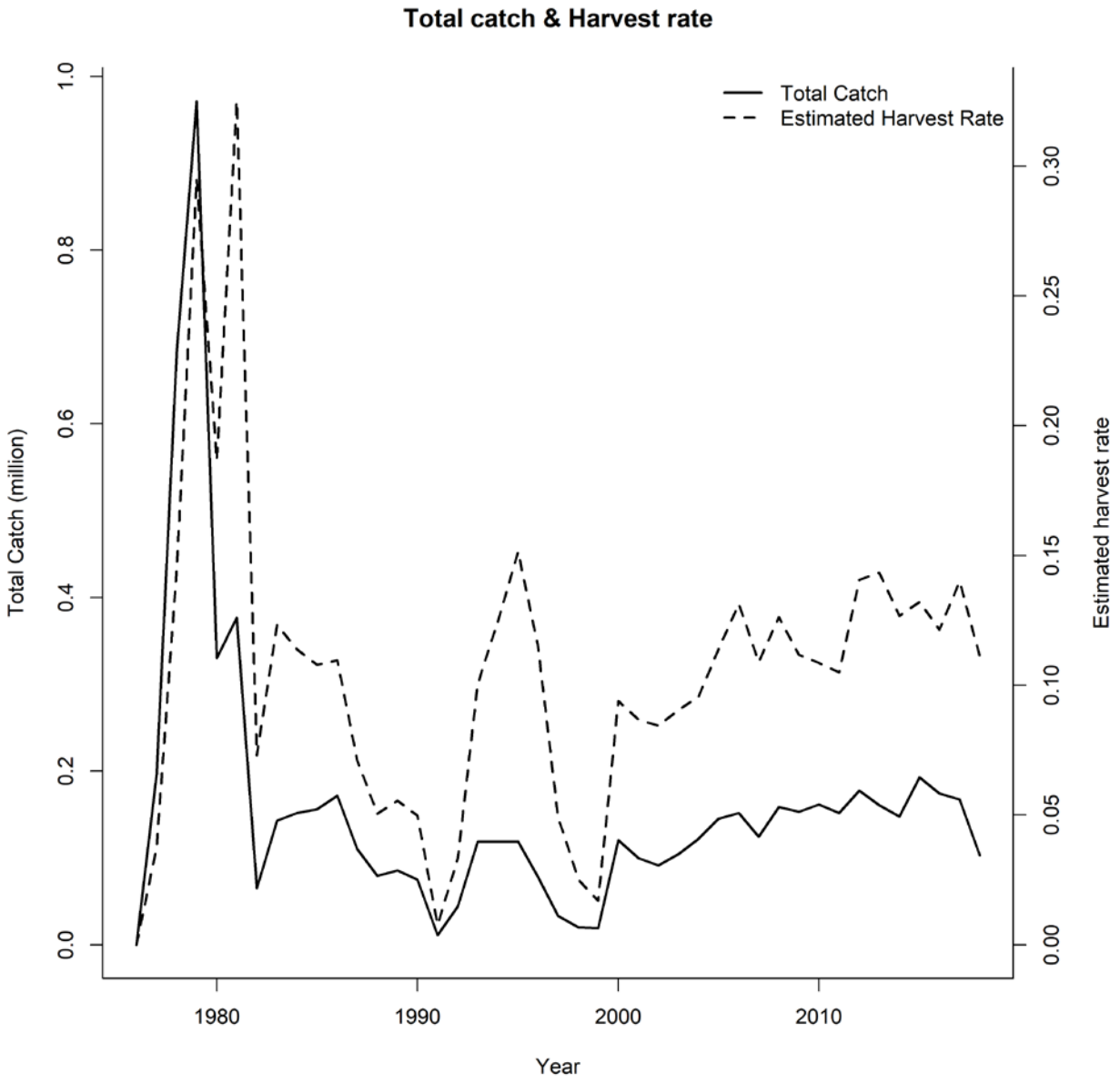

Figure C2-8. Total catch and estimated harvest rate 1976-2018.

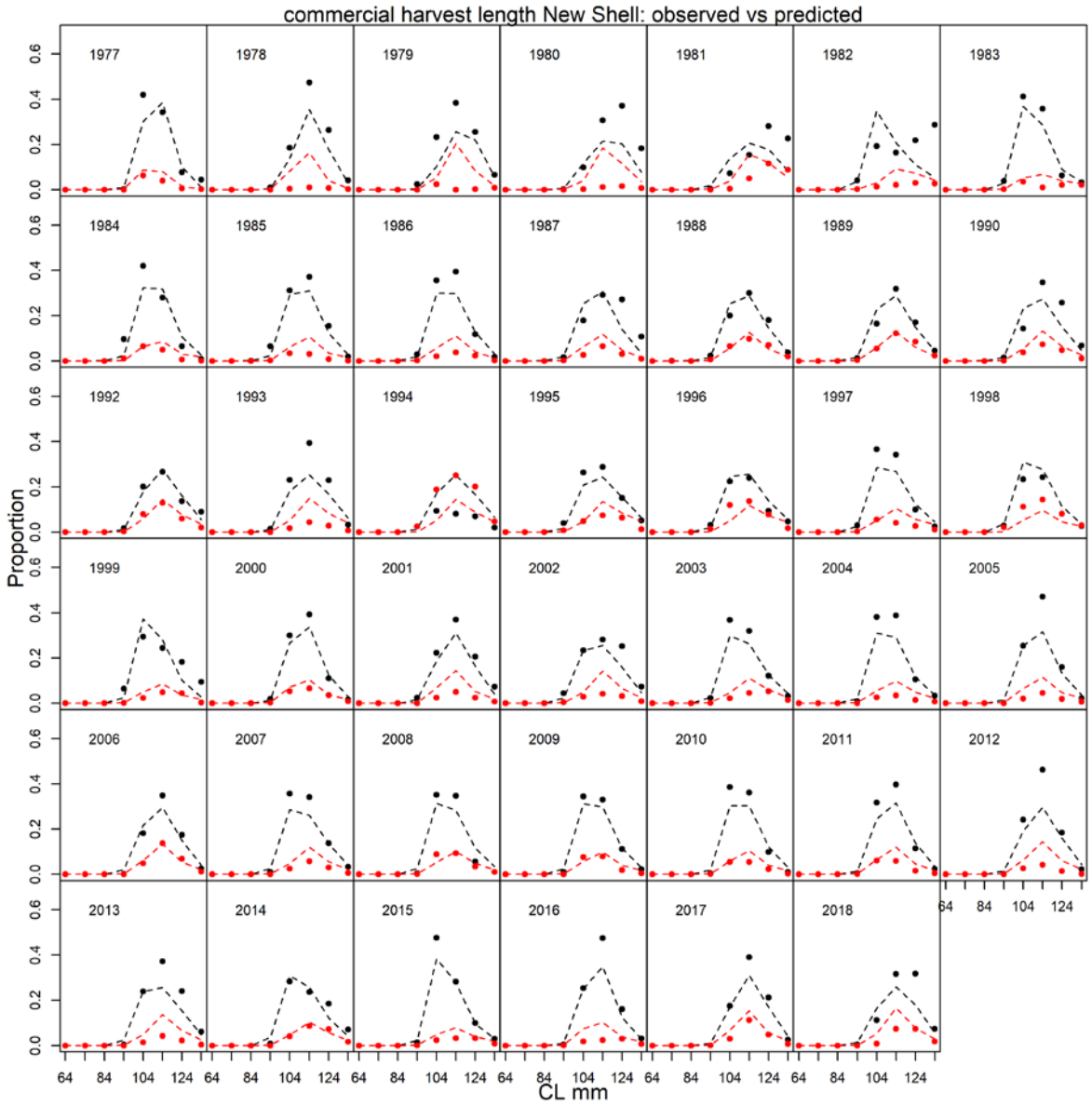

Figure C2-9. Predicted (dashed line) vs. observed (dots) length class proportions for commercial catch. Bladk: New Shell, Red: Old Shell

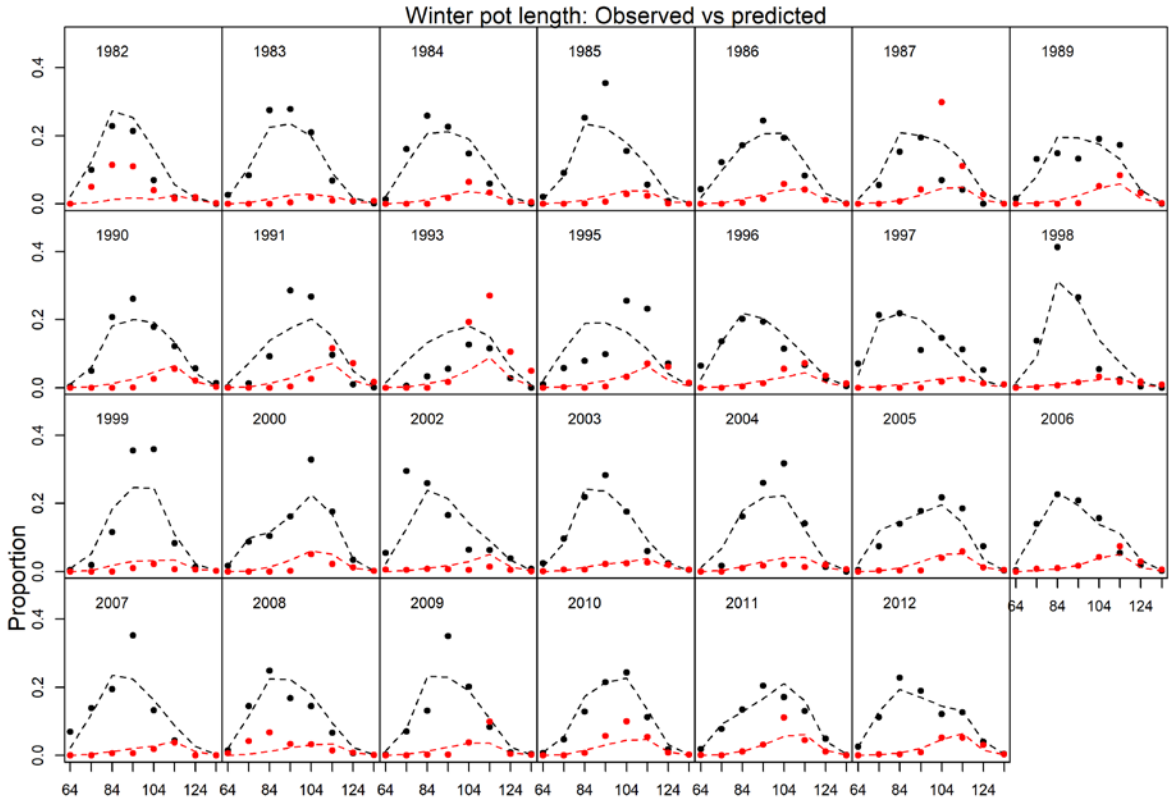

Figure C2-10. Predicted (dashed line) vs. observed (black dots) length class proportions for the winter and spring pot survey.

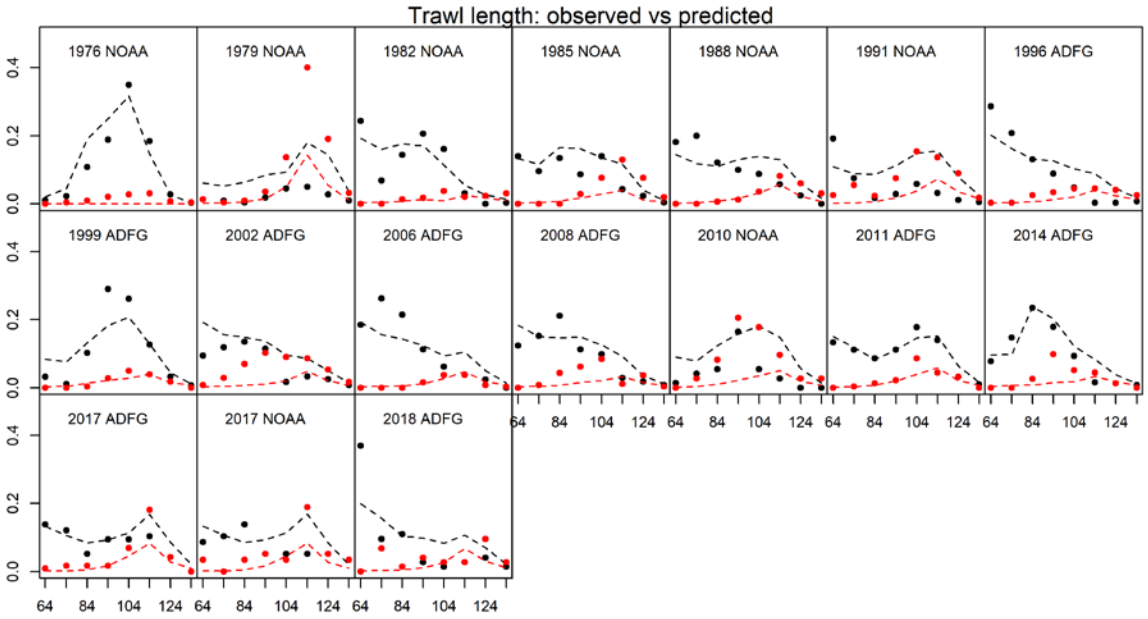

Figure C2-11. Predicted (dashed line) vs. observed (black dots) length class proportions for trawl survey

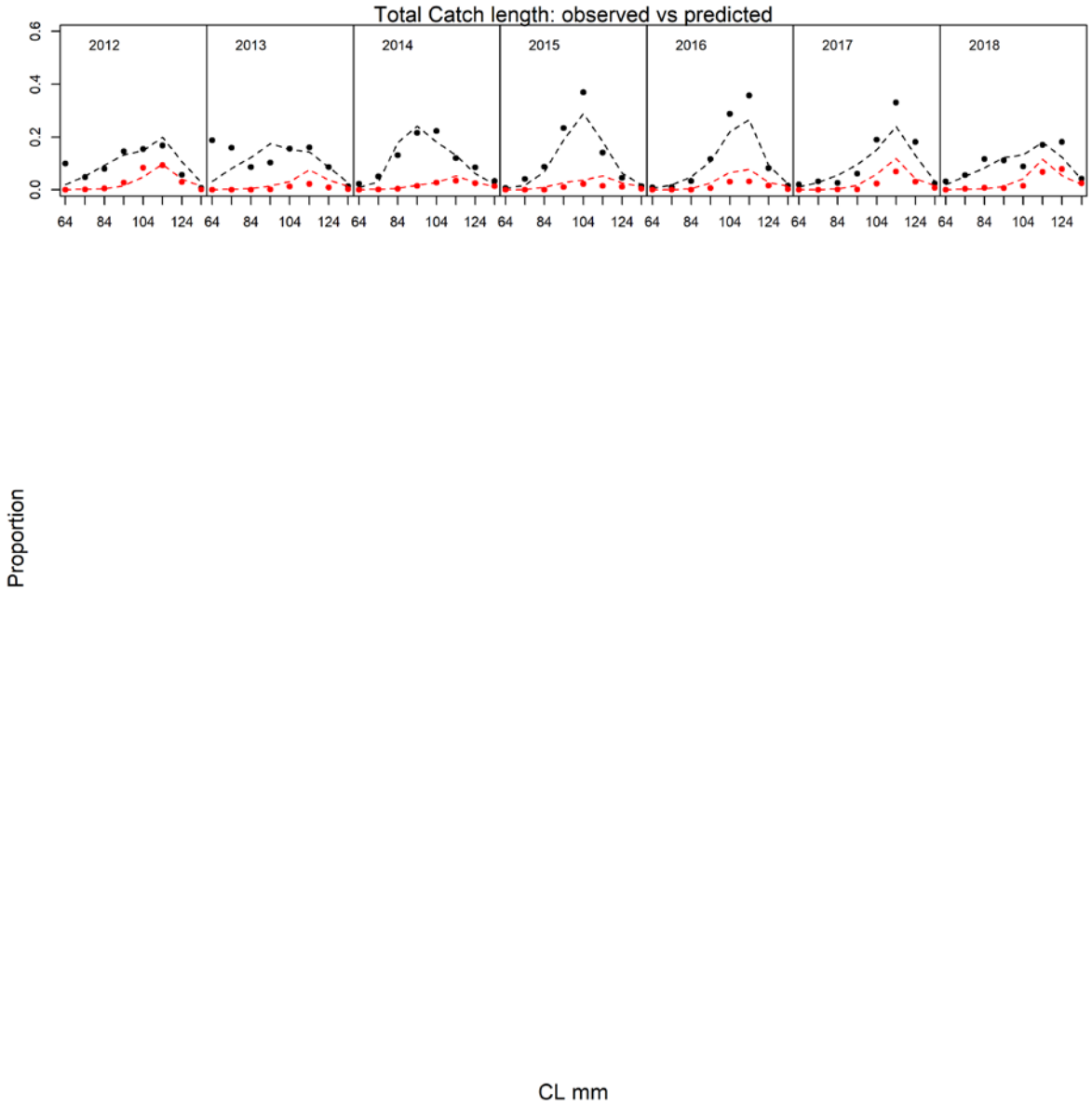

Figure C2-12. Predicted (dashed) vs. observed (dots) length class proportions for the observer survey.

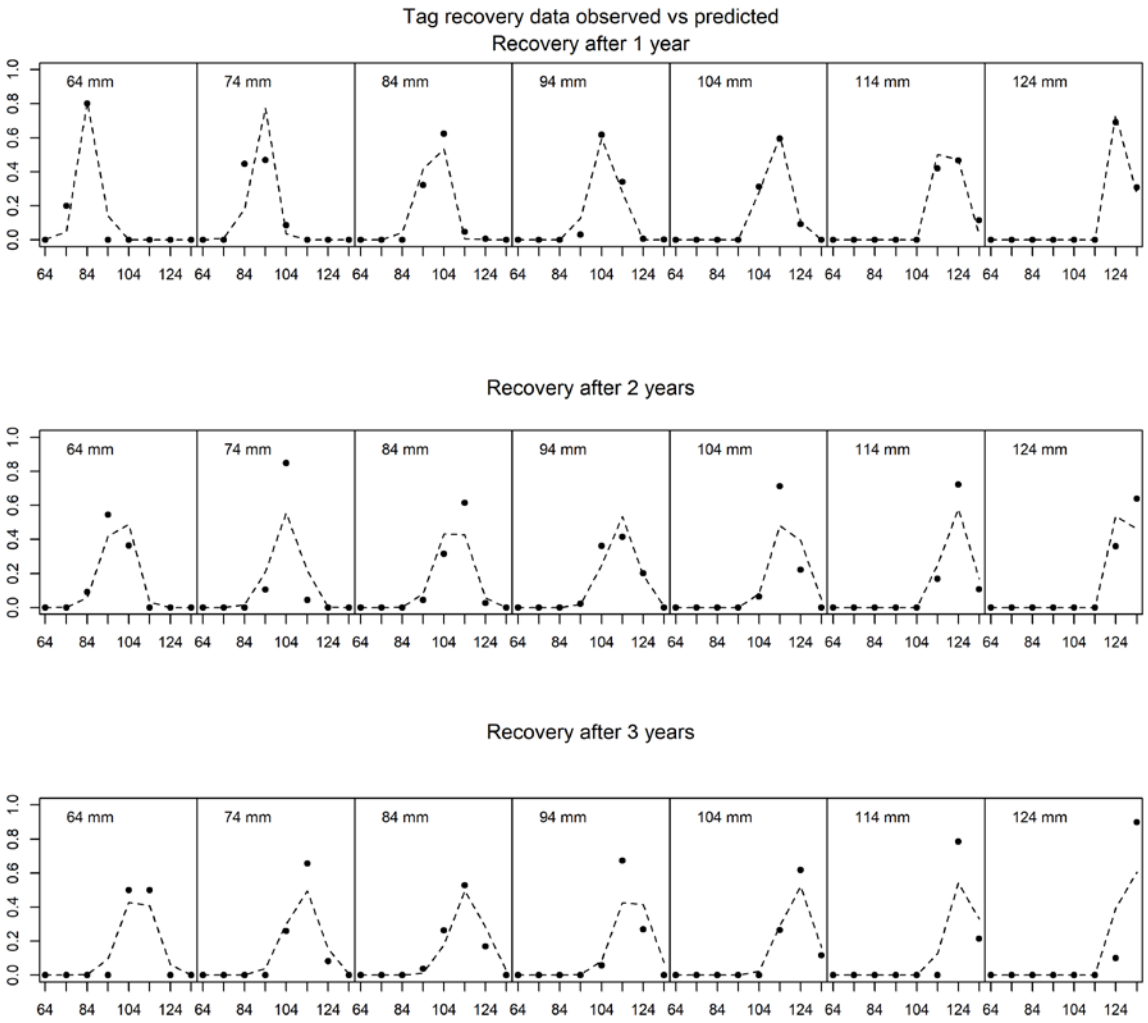

Figure C2-13. Predicted vs. observed length class proportions for tag recovery data.

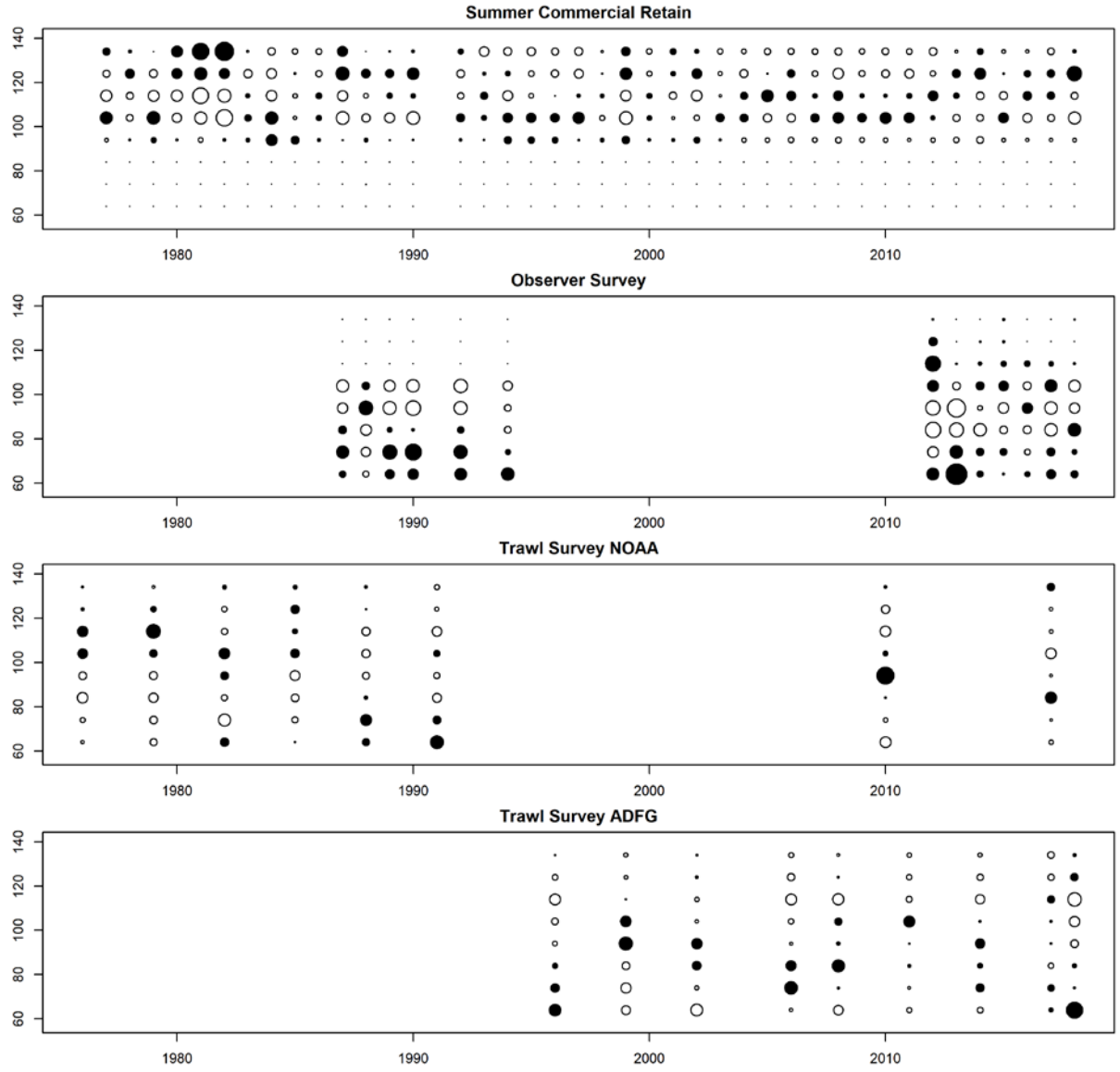

Figure C2-14. Bubble plots of predicted and observed length proportions.
Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

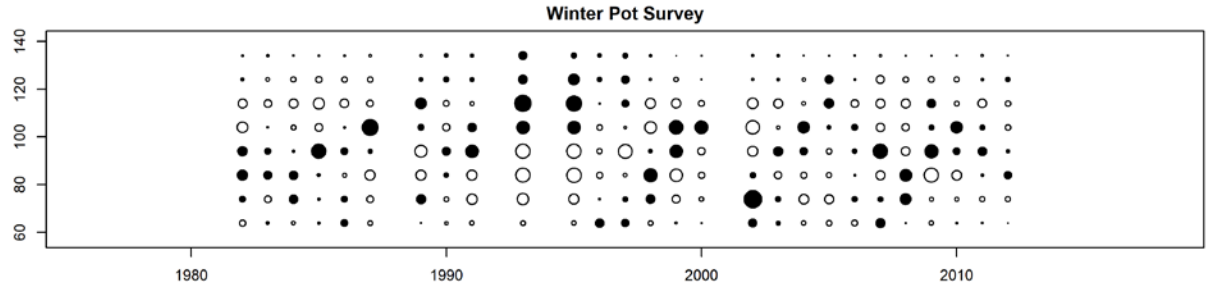

Figure C2-15. Bubble plots of predicted and observed length proportions.
Black circle indicates model estimates lower than observed, white circle indicates model estimates higher than observed. Size of circle indicates degree of deviance (larger circle = larger deviance).

Table C2 . Summary of parameter estimates for a length-based stock synthesis population model of Norton Sound red king crab.

name	Estimate	std.dev
$\log\_q_1$	-6.983	0.177
$\log\_q_2$	-6.800	0.124
$\log\_N_{76}$	9.047	0.130
R_0	6.435	0.082
$\log\_R_{76}$	0.011	0.419
$\log\_R_{77}$	-0.541	0.370
$\log\_R_{78}$	-0.715	0.354
$\log\_R_{79}$	0.394	0.318
$\log\_R_{80}$	0.511	0.288
$\log\_R_{81}$	0.421	0.266
$\log\_R_{82}$	0.395	0.318
$\log\_R_{83}$	0.571	0.280
$\log\_R_{84}$	0.180	0.300
$\log\_R_{85}$	0.366	0.324
$\log\_R_{86}$	0.090	0.340
$\log\_R_{87}$	0.214	0.268
$\log\_R_{88}$	0.025	0.304
$\log\_R_{89}$	-0.413	0.320
$\log\_R_{90}$	-0.321	0.272
$\log\_R_{91}$	-0.740	0.337
$\log\_R_{92}$	-0.511	0.308
$\log\_R_{93}$	-0.526	0.306
$\log\_R_{94}$	-0.310	0.261
$\log\_R_{95}$	-0.064	0.226
$\log\_R_{96}$	0.583	0.217
$\log\_R_{97}$	-0.044	0.299
$\log\_R_{98}$	-0.626	0.320
$\log\_R_{99}$	0.002	0.310
$\log\_R_{00}$	0.307	0.265
$\log\_R_{01}$	0.387	0.242
$\log\_R_{02}$	-0.018	0.315
$\log\_R_{03}$	-0.282	0.331
$\log\_R_{04}$	0.292	0.241
$\log\_R_{05}$	0.403	0.223
$\log\_R_{06}$	0.450	0.243

name	Estimate	std.dev
$\log\_R_{07}$	0.505	0.231
$\log\_R_{08}$	0.062	0.289
$\log\_R_{09}$	-0.406	0.292
$\log\_R_{10}$	0.037	0.247
$\log\_R_{11}$	0.365	0.278
$\log\_R_{12}$	0.893	0.192
$\log\_R_{13}$	-0.199	0.300
$\log\_R_{14}$	-0.646	0.314
$\log\_R_{15}$	-0.704	0.281
$\log\_R_{16}$	-0.427	0.243
$\log\_R_{17}$	0.030	0.285
a_1	1.590	4.591
a_2	2.386	4.285
a_3	3.833	4.097
a_4	4.103	4.082
a_5	4.338	4.073
a_6	3.570	4.102
a_7	2.134	4.357
r1	10.000	0.878
r2	9.684	0.901
log_a	-2.615	0.091
log_b	4.825	0.014
$\log\_\phi_{st1}$	-5.000	0.099
$\log\_\phi_{wa}$	-2.120	0.321
$\log\_\phi_{wb}$	4.799	0.029
Sw1	0.074	0.036
Sw2	0.495	0.125
$\log\_\phi_1$	-1.990	0.090
log_ar	-0.831	0.206
log_br	4.647	0.012
w^2_t	0.051	0.016
q	0.749	0.129
σ	3.895	0.217
β_1	11.990	0.769
β_2	7.751	0.184
ms78	3.239	0.269