

Figure 1. King crab fishing districts and sections of Statistical Area Q.

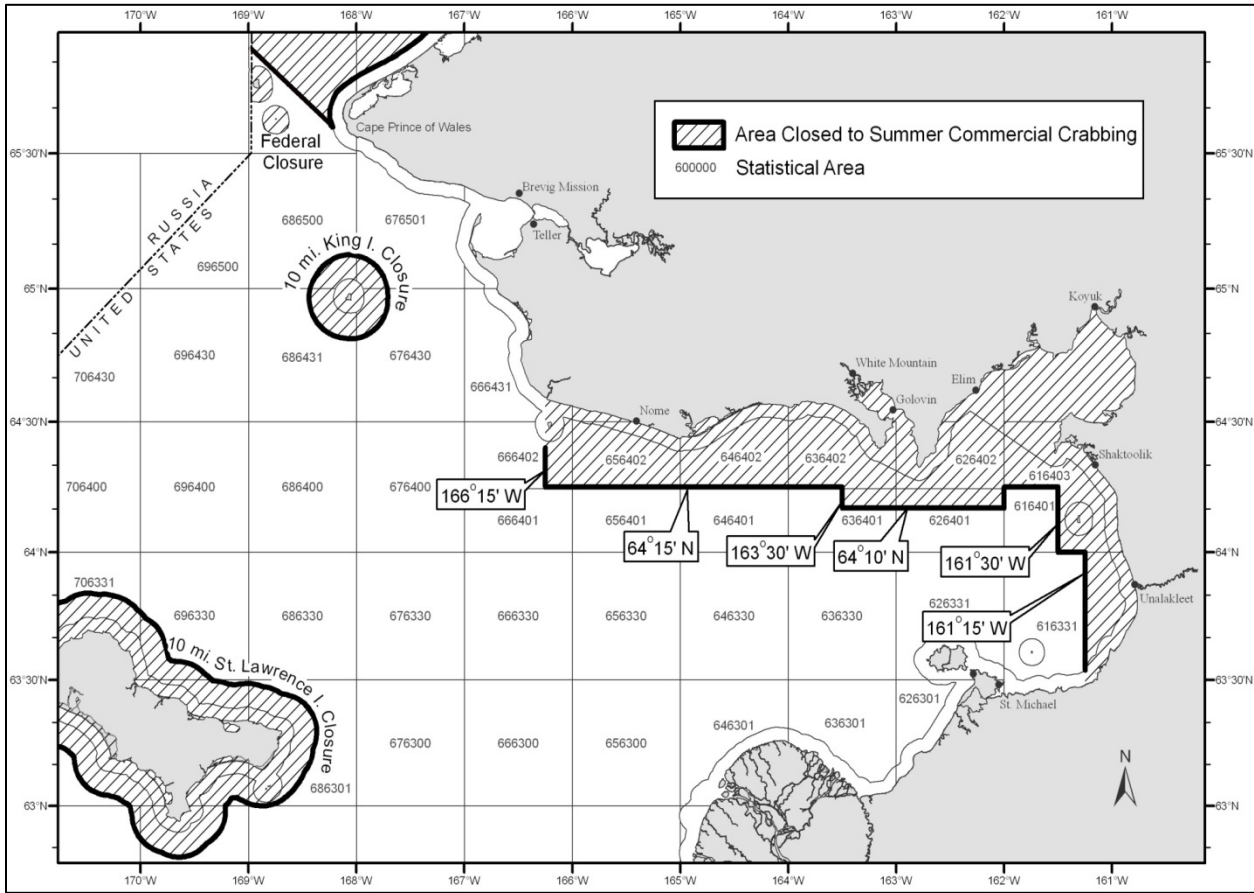


Figure 2. Closed water regulations in effect for the Norton Sound commercial crab fishery. Line around the coastline delineates the 3-mile state waters zone.

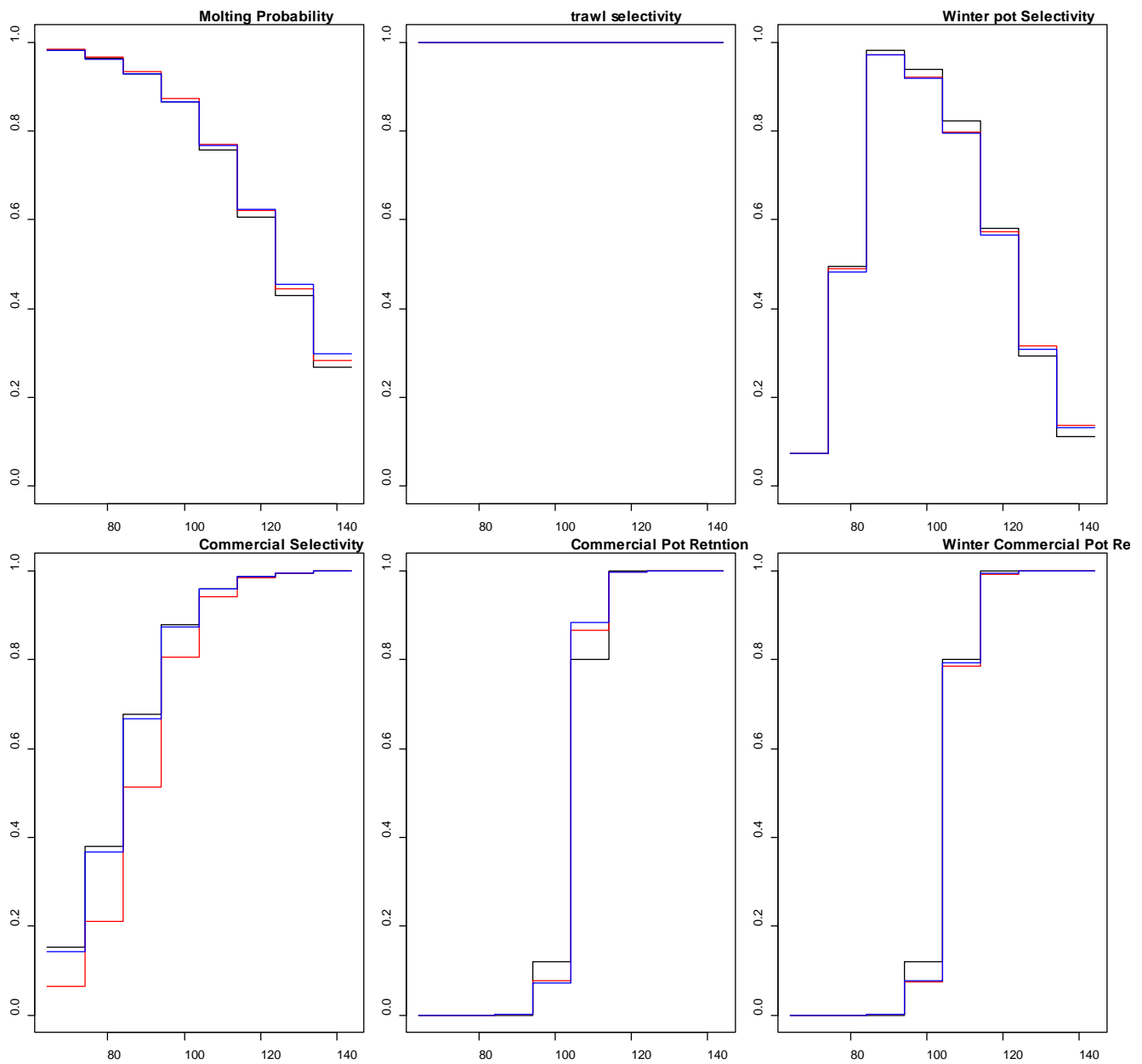


Figure 3. Model estimated annual molting probability, and selectivity for trawl survey, winter pot survey, summer commercial fishery, and summer and winter commercial retention. X-axis is carapace length (mm). Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

Modeled crab abundance Feb 01

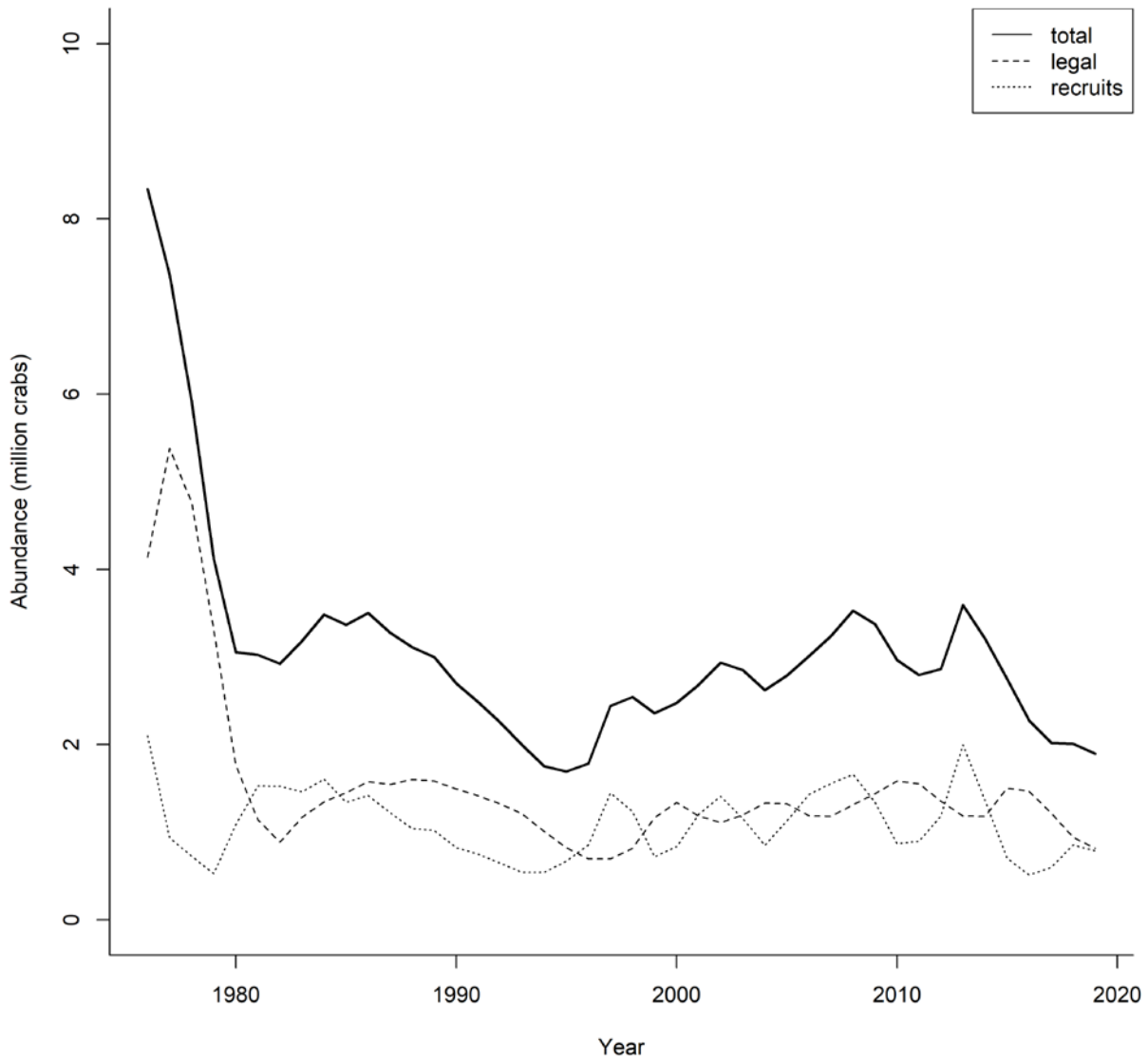


Figure 4. Model estimated abundances of total, legal (CL>104mm) and recruit (CL 64-94nn) males during 1976-2018.

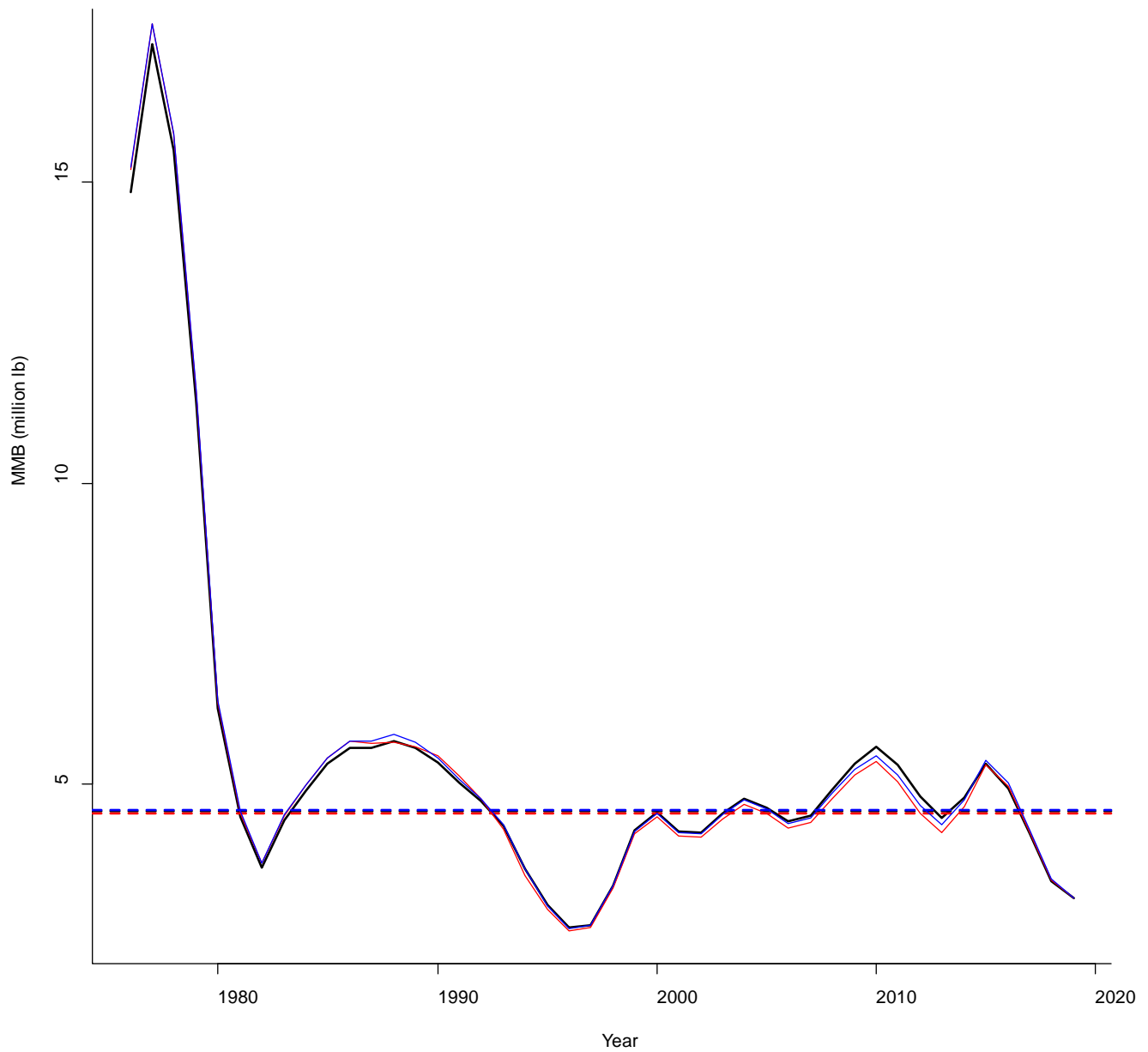


Figure 5. Estimated MMB during 1976-2018. Dash line shows Bmsy (Average MMB of 1980-2018). The black point indicates the projected MMB of 2018. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

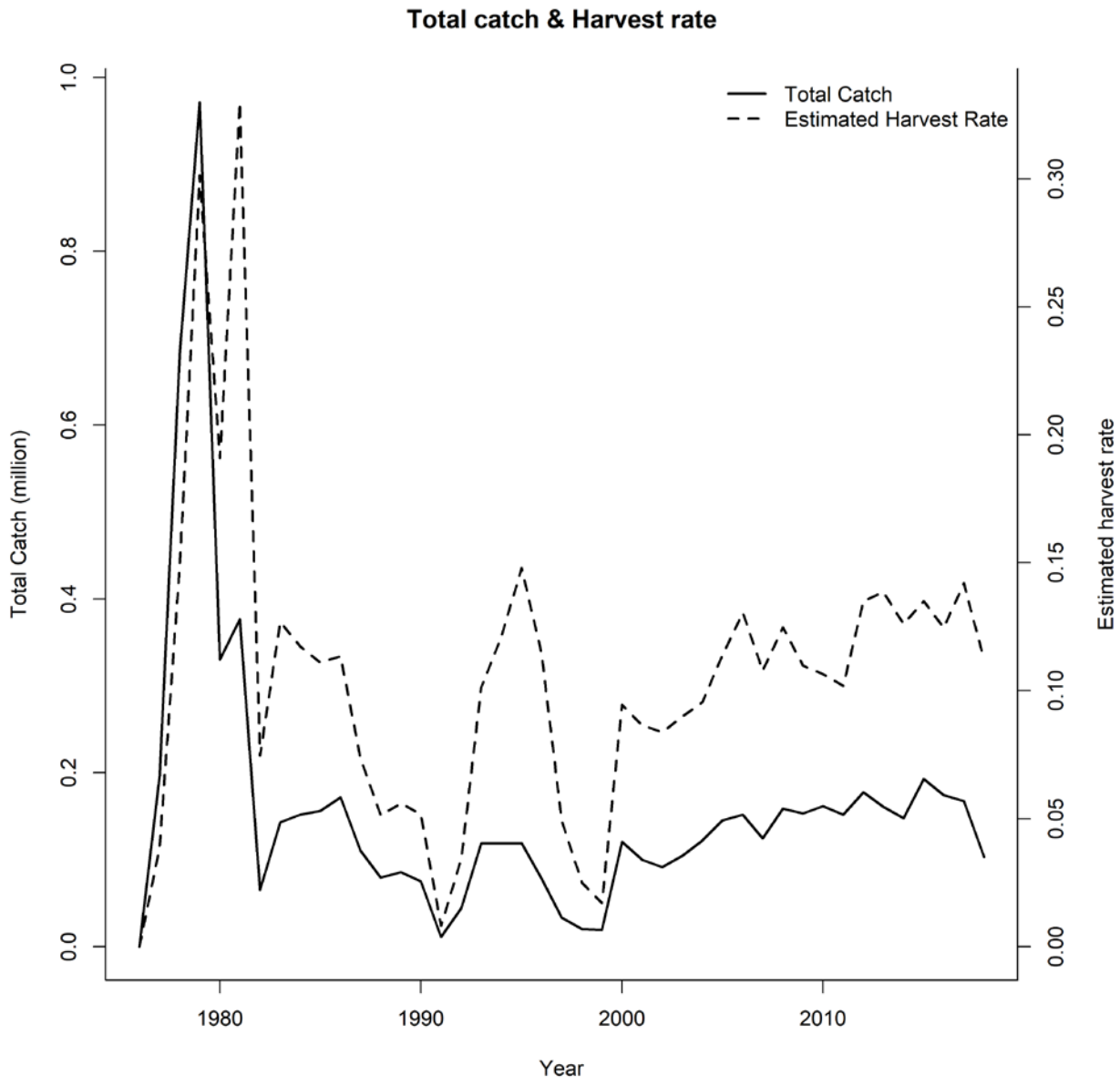


Figure 6. Commercial catch and estimated harvest rates of legal males over time.

Trawl survey crab abundance

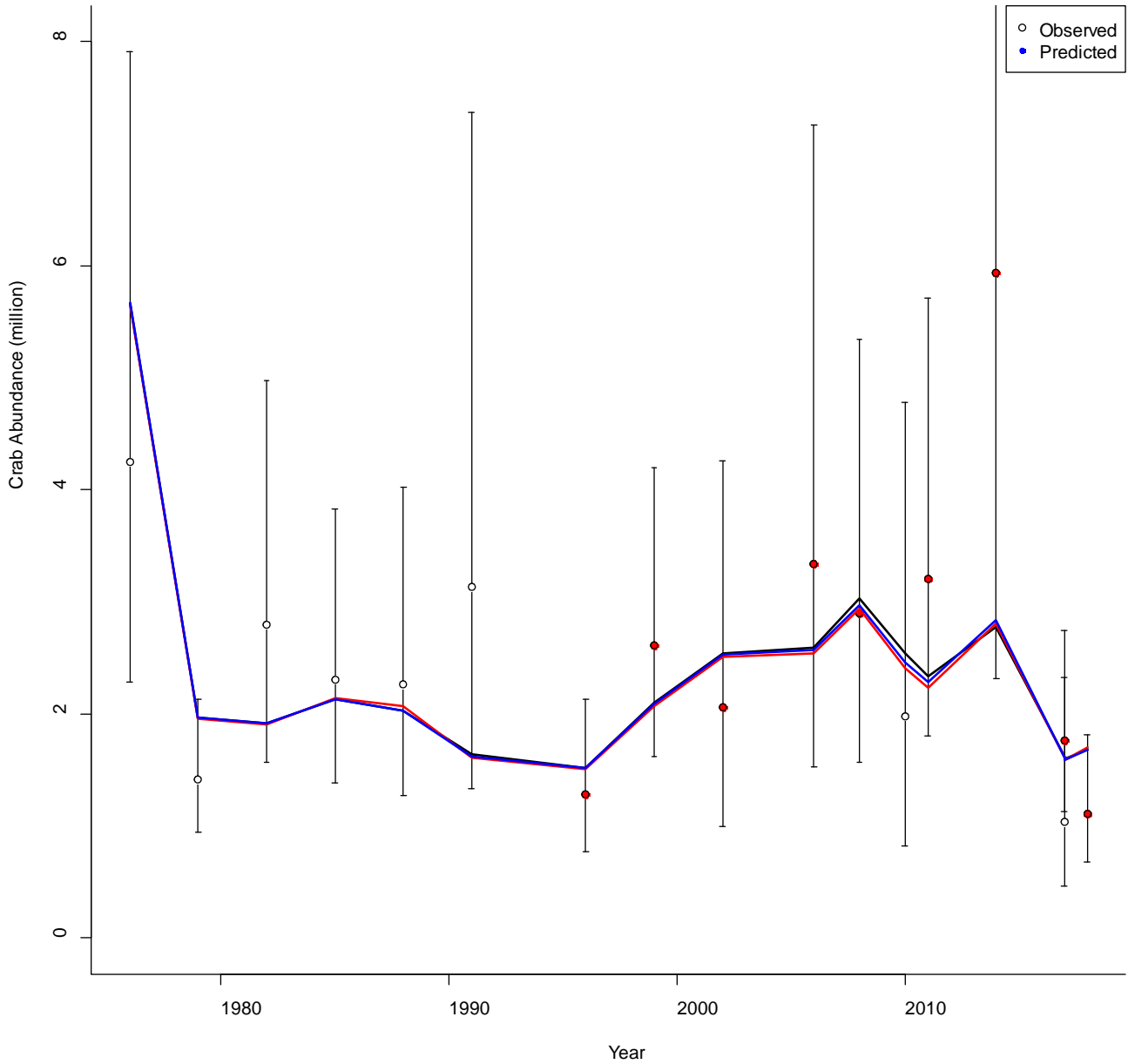


Figure 7. Observed (open circle) (White: NMFS, Red ADF&G) and model estimated (dots) trawl survey male abundances with 95% lognormal Confidence Intervals (1976-1991:crab \geq 74 mm CL, 1996-2017:crab \geq 64 mm CL) Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

Summer commercial standardized cpue

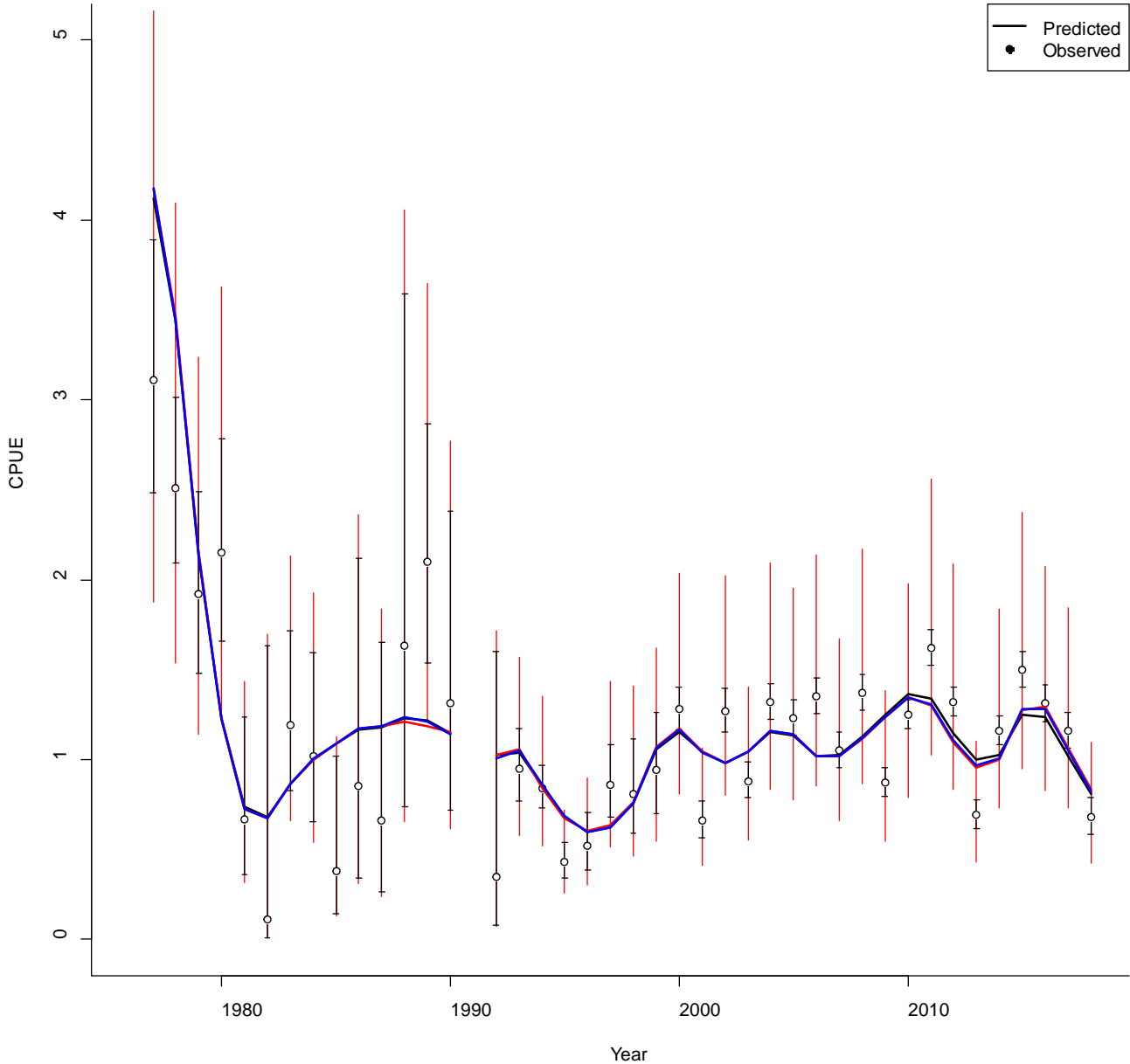


Figure 8. Summer commercial fishery standardized cpue. Vertical black lines are input SD and red lines are input and estimated additional SD. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

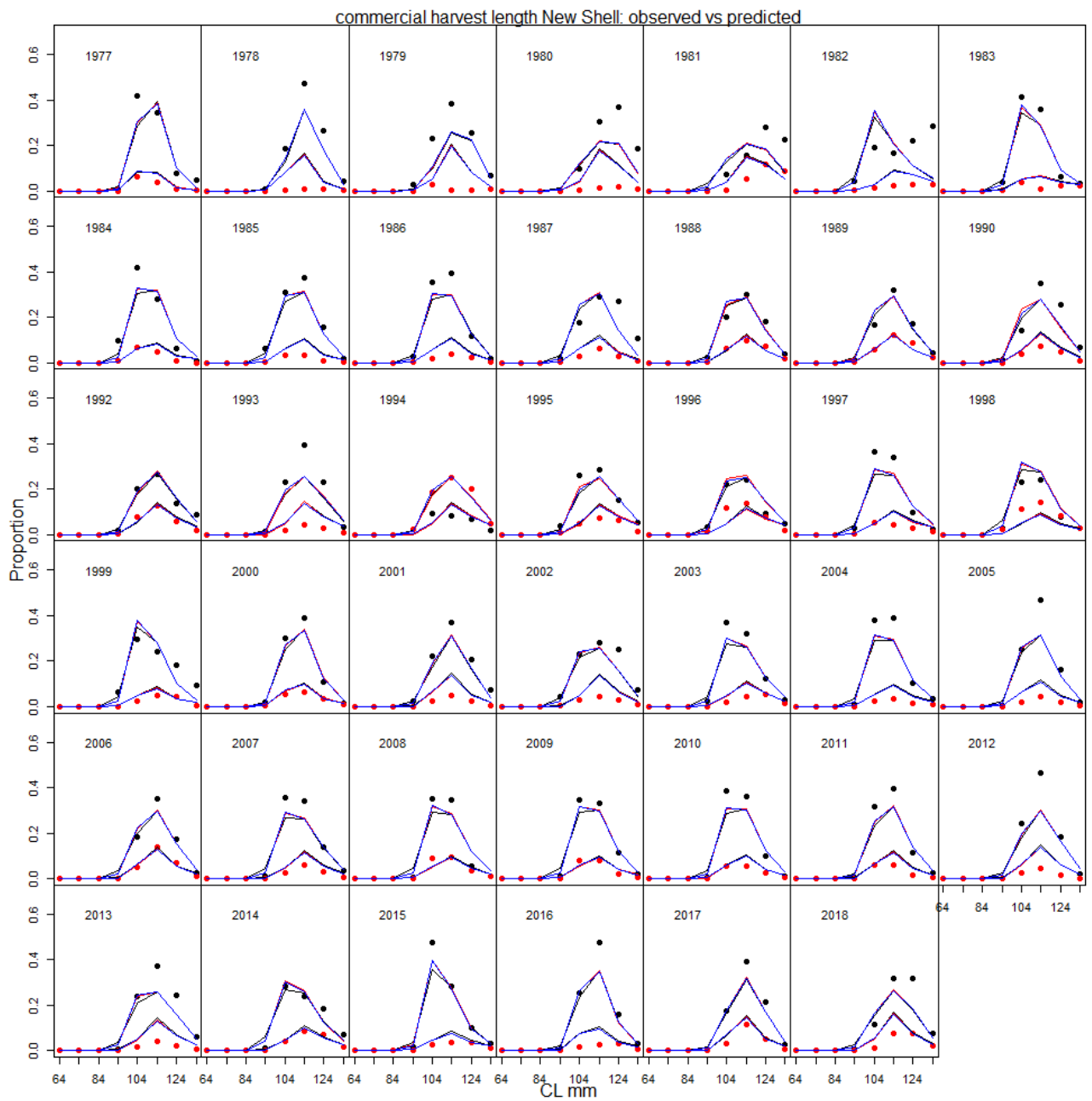


Figure 9. Predicted (line) vs. observed (dots: black New Shell, red Old Shell) length class proportions for the summer commercial catch. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

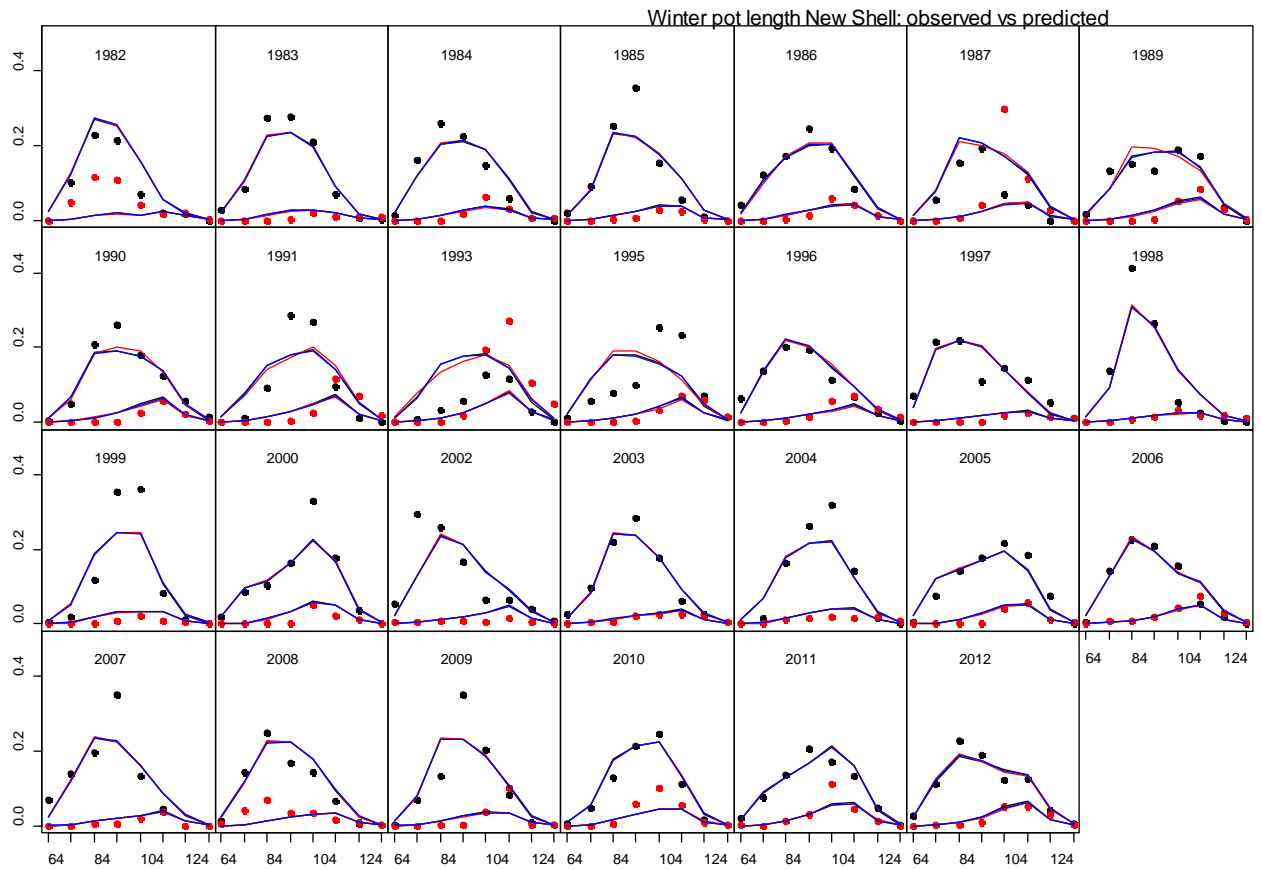


Figure 10. Predicted (line) vs. observed (dots: black New Shell, red Old Shell) length class proportions for winter pot survey. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

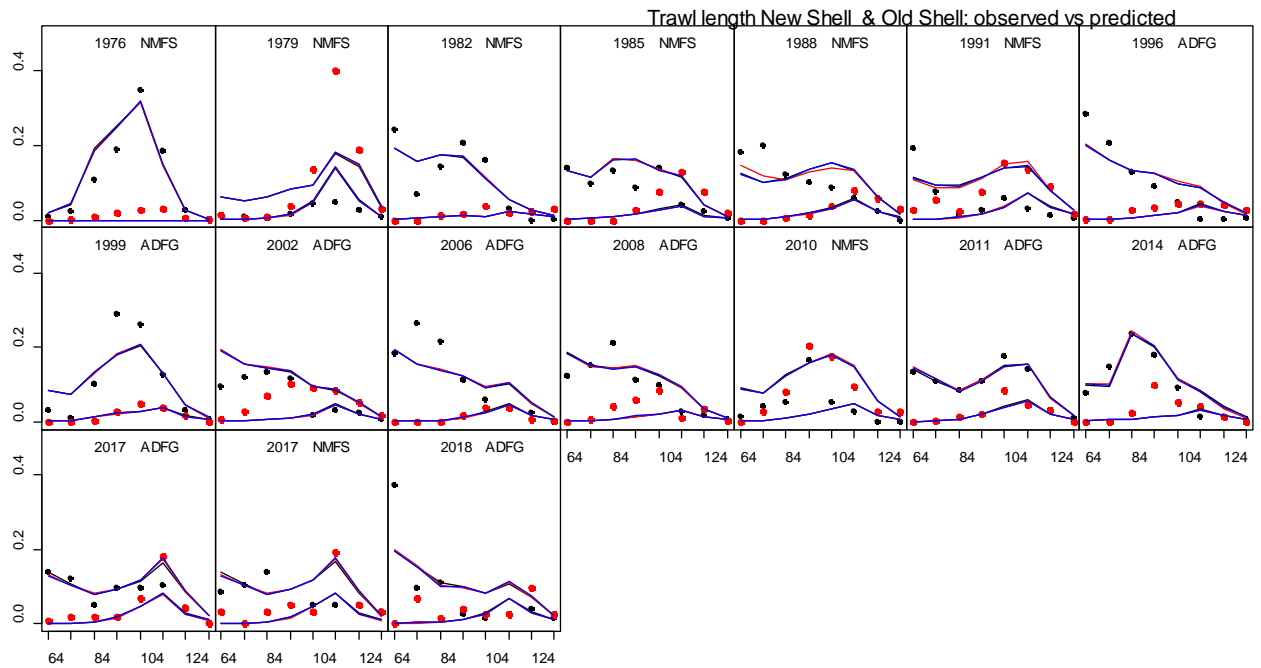


Figure 11. Predicted (line) vs. observed (dots: black New Shell, red Old Shell) length class proportions for trawl survey. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

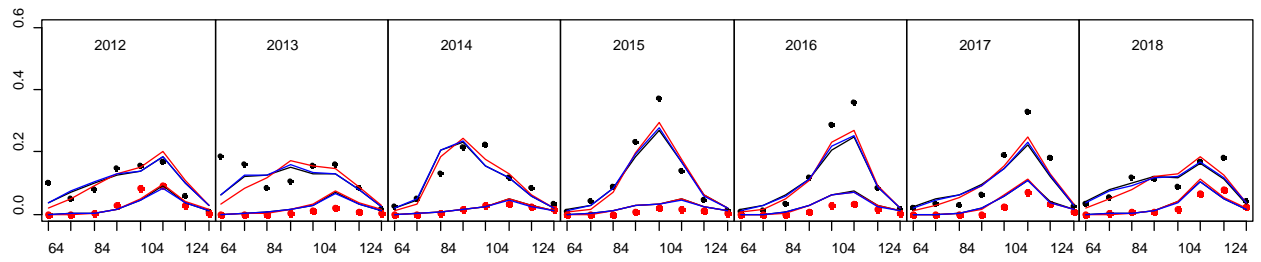


Figure 12. Predicted (line) vs. observed (dots: black New Shell, red Old Shell) length class proportions for observer data. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

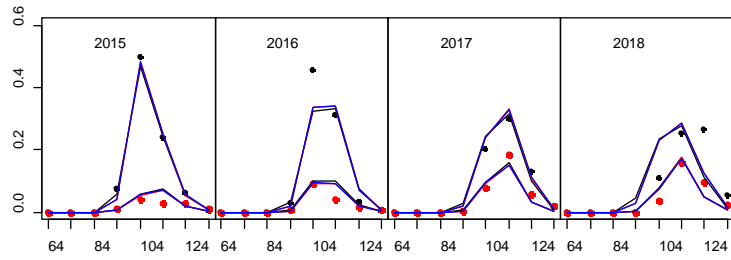


Figure 13. Predicted (line) vs. observed (dots: black New Shell, red Old Shell) length class proportions for observer data. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

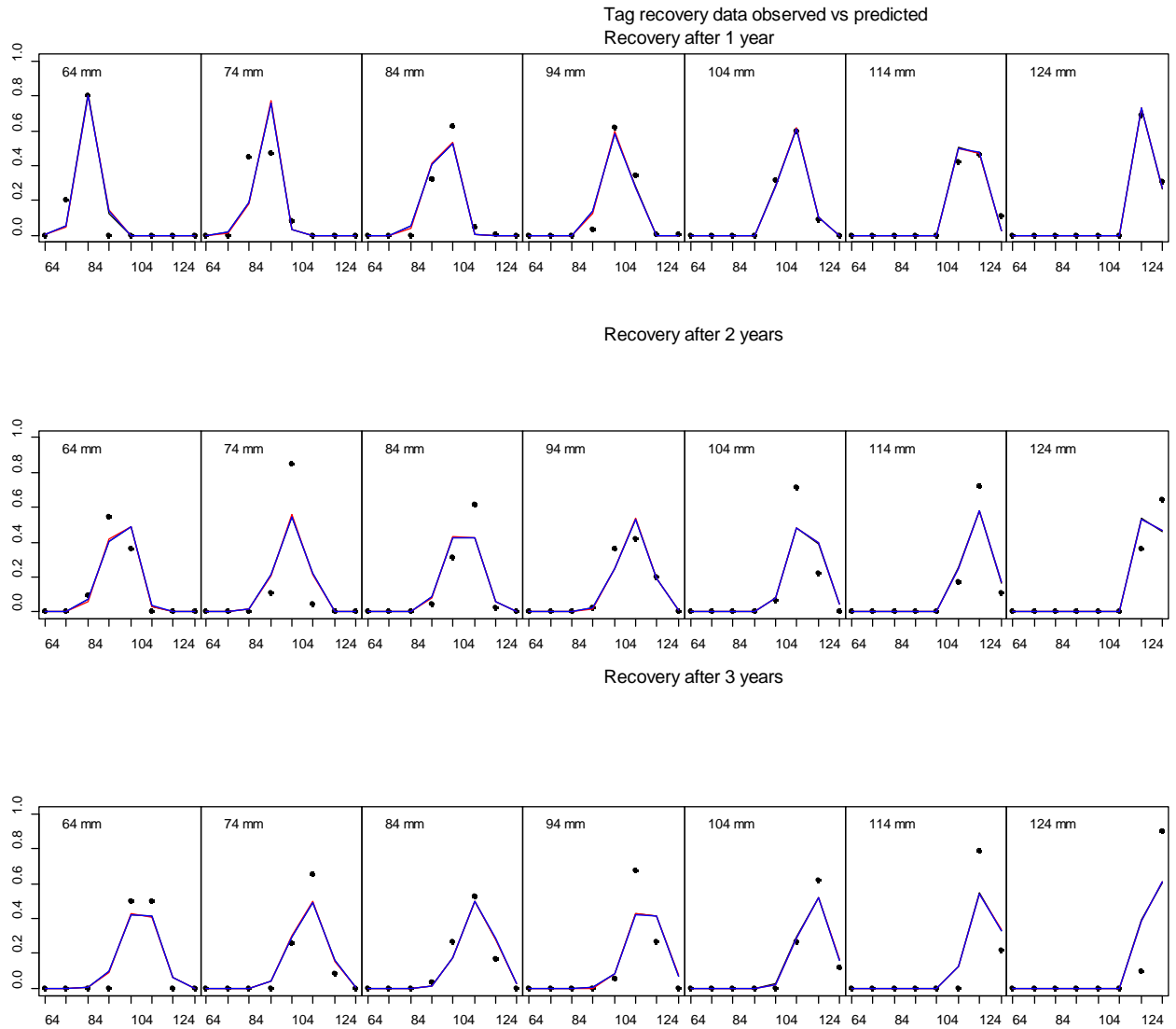


Figure 14. Predicted (line) vs. observed (dots: black New Shell, red Old Shell) length class proportions tag recovery data. Line colors black, red, and blue correspond to model 18.0, model 18.2a, and model 18.2b, respectively.

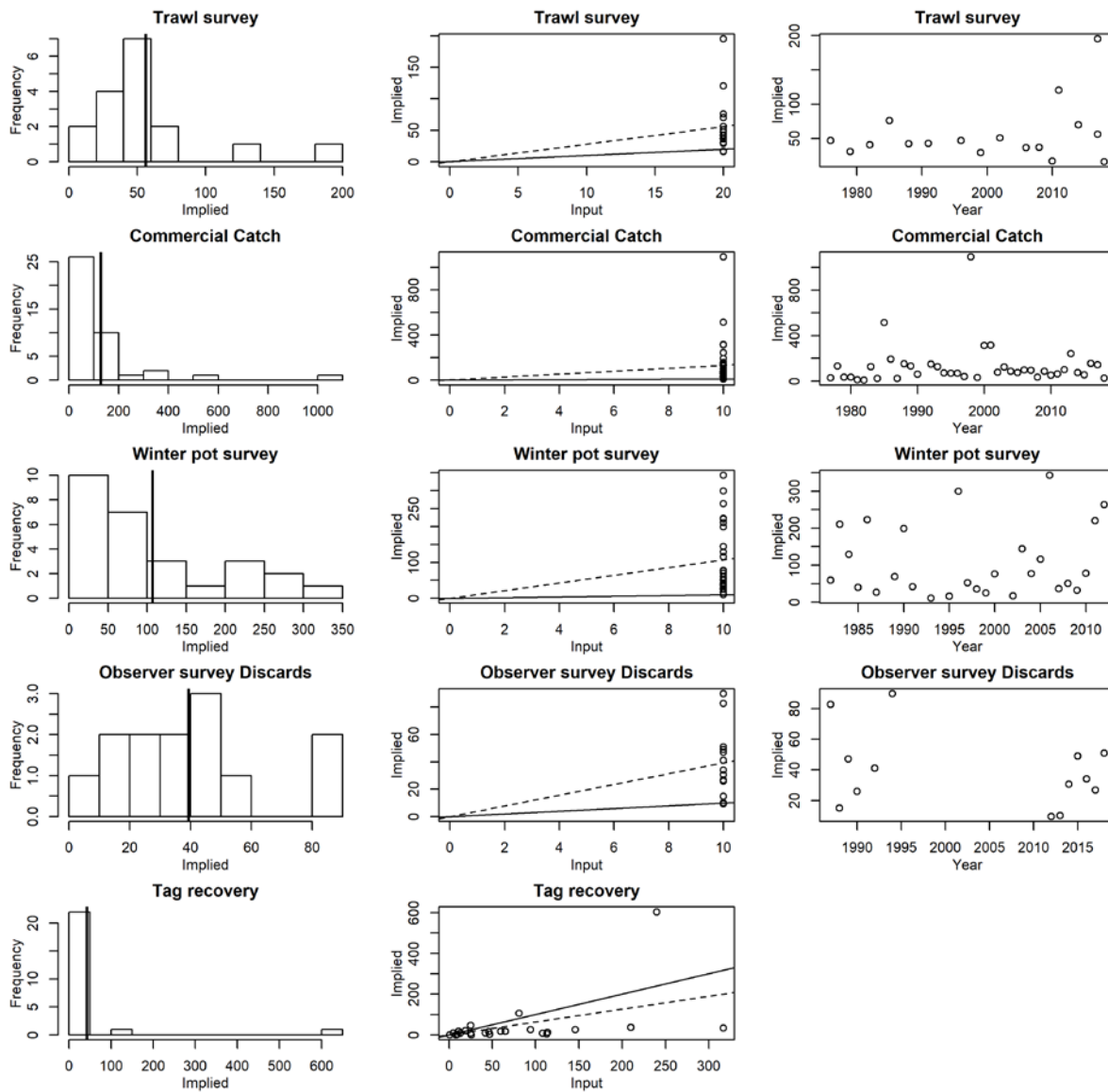


Figure 15. Input vs. model implied effective sample size. Figures in the first column show implied effective sample size (x-axis) vs. frequency (y-axis). Vertical solid line is the implied sample size. Figures in the second column show input sample sizes (x-axis) vs. implied effective sample sizes (y-axis). Dashed line indicates the linear regression slope, and solid line is 1:1 line. Figures in the third column show years (x-axis) vs. implied effective sample sizes (y-axis).

Residuals Histogram, Q-Q Plot, Predicted vs. Residual

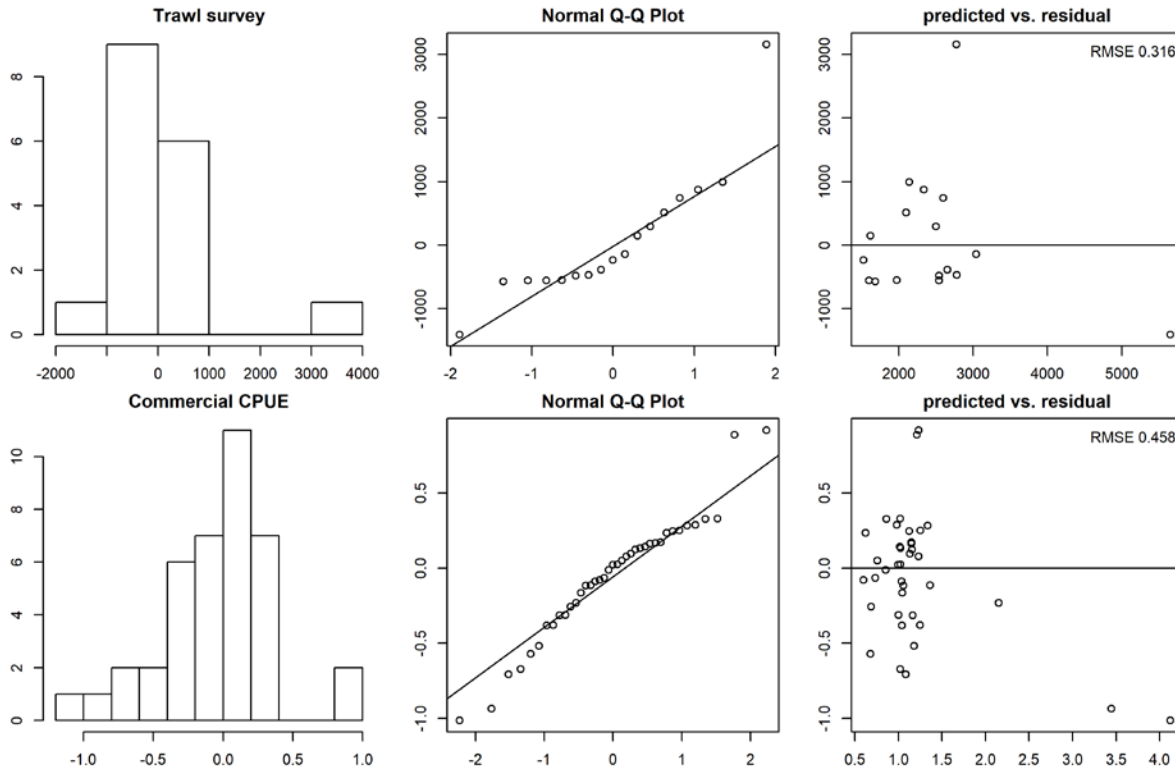
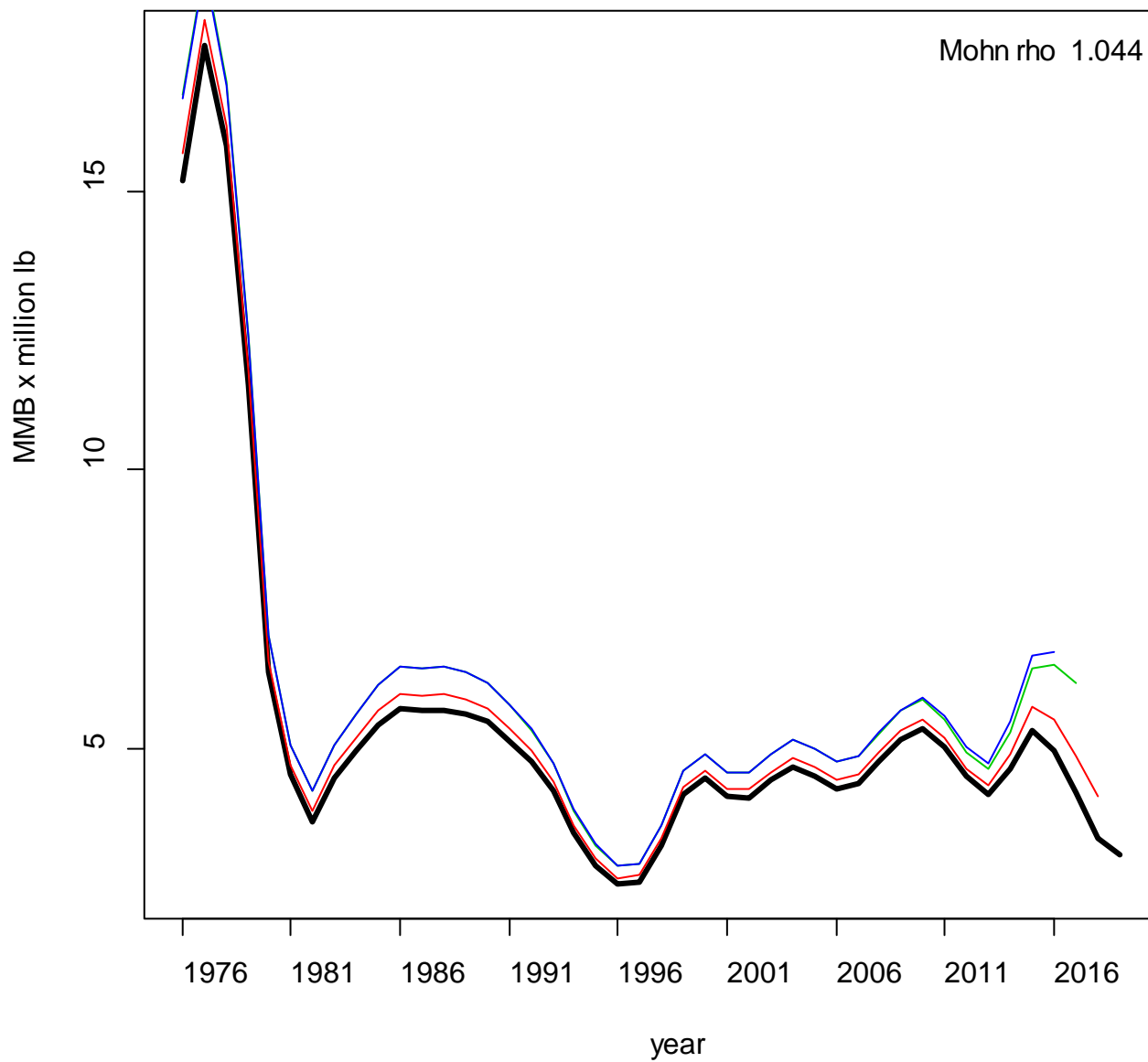


Figure 15. QQ plots of trawl survey abundance and commercial CPUE residuals.

Retrospective Analysis



Retrospective Analysis

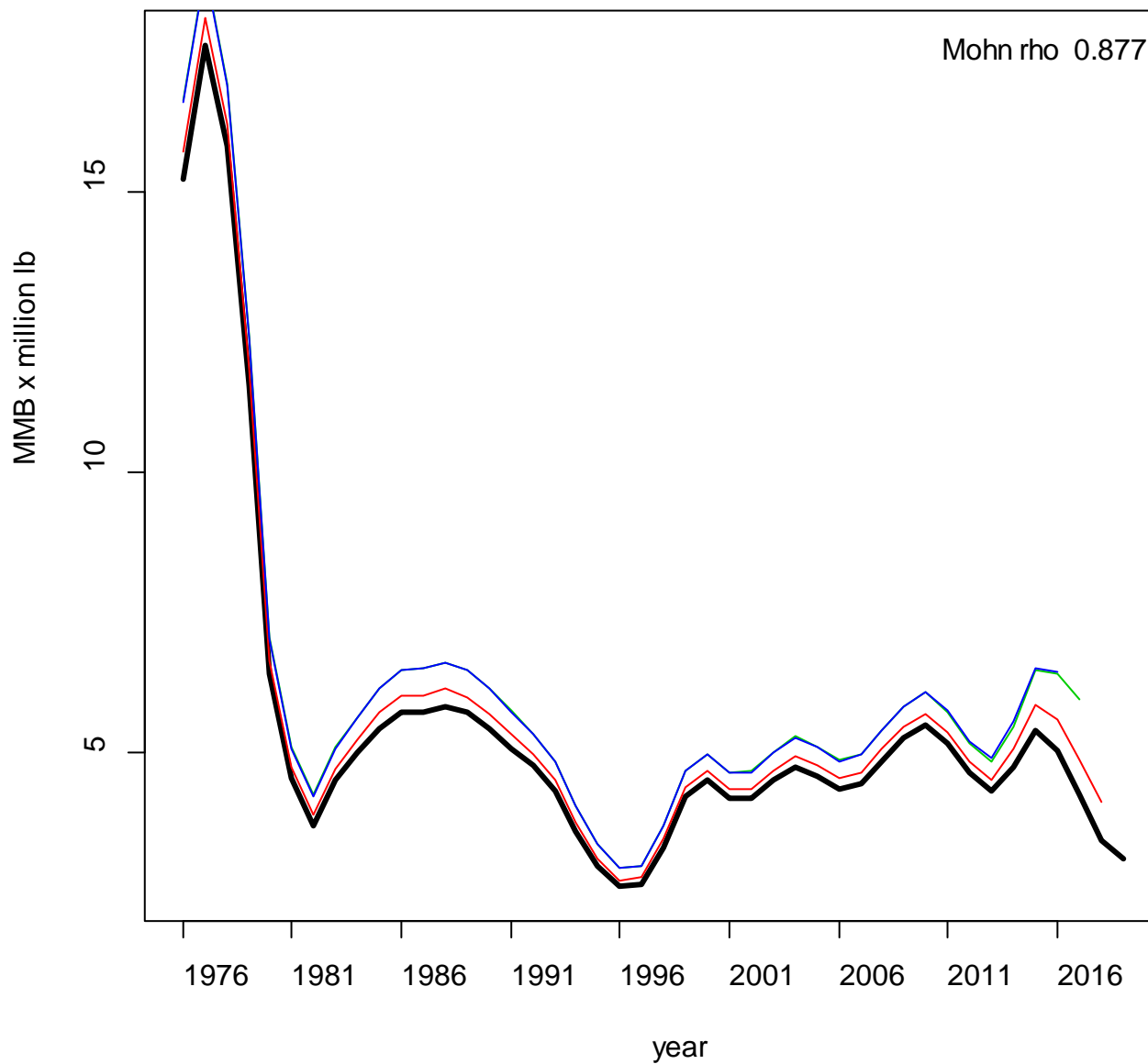


Figure 17. Retrospective analyses. Each line shows a series of retrospective MMB.