Figure 1. King crab fishing districts and sections of Statistical Area Q.
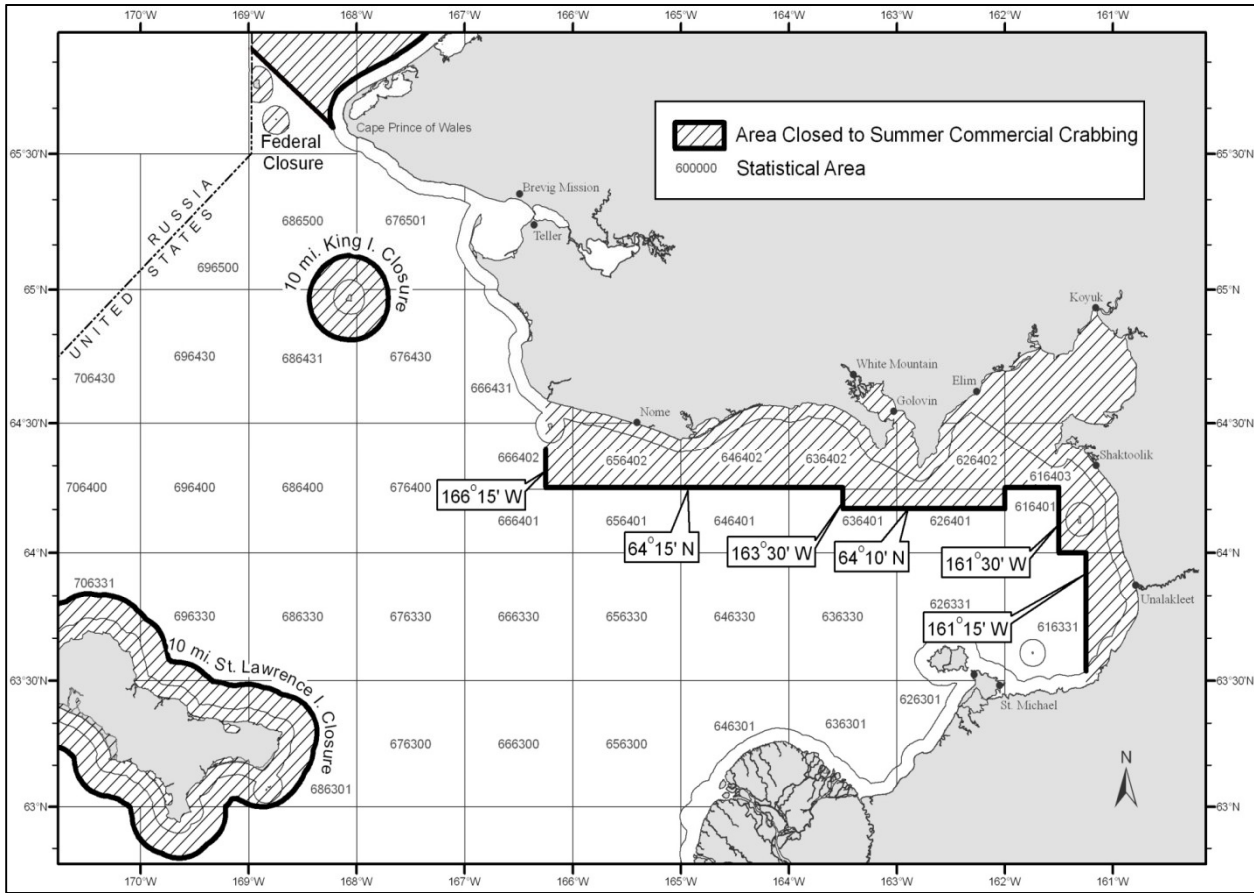
Area Closed to Summer Commercial Crabbing

600000 Statistical Area

170°W 169°W 168°W 167°W 166°W 165°W 164°W 163°W 162°W 161°W

65°30'N

Federal Closure

Cape Prince of Wales

Brevig Mission

Teller

686500 676501

696500

10 mi. King I. Closure

65°N

Koyuk

696430 686431 676430

706430

White Mountain

Elim

666431

Golovin

Nome

64°30'N

Shaktoolik

666402 656402 646402 636402 626402

616403

706400 696400 686400 676400

166°15' W

666401 656401 646401 636401 626401 616401

64°15' N 163°30' W 64°10' N 161°30' W

706331

64°N

Unalakleet

696330 686330 676330 666330 656330 646330 636330

626331

10 mi. St. Lawrence I. Closure

161°15' W 616331

676300 666300 656300

63°30'N

626301

St. Michael

686301 646301 636301

63°N

170°W 169°W 168°W 167°W 166°W 165°W 164°W 163°W 162°W 161°W

UNITED STATES
RUSSIA

N

Figure 2. Closed water regulations in effect for the Norton Sound commercial crab fishery. Line around the coastline delineates the 3-mil3 state waters zone.
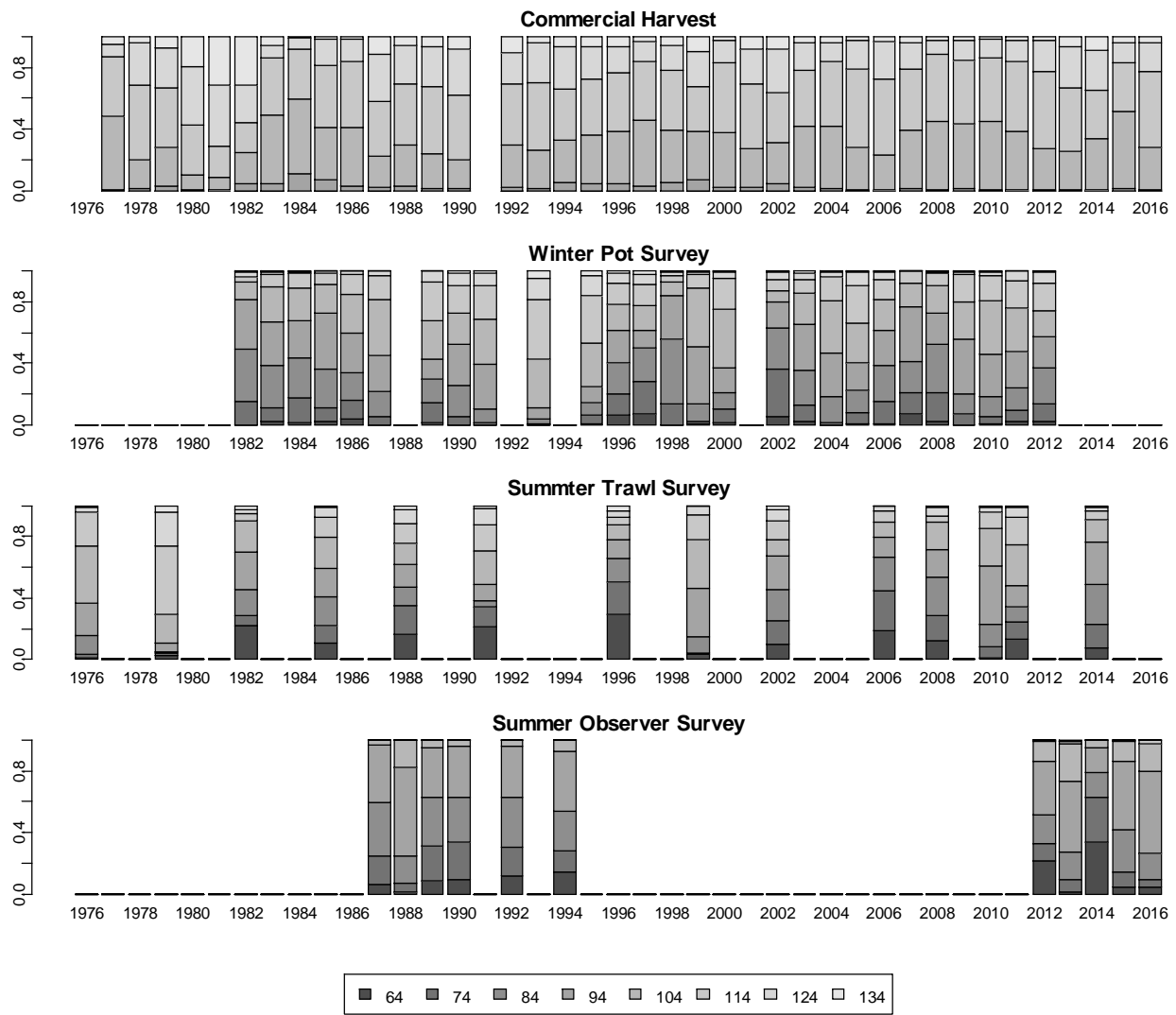
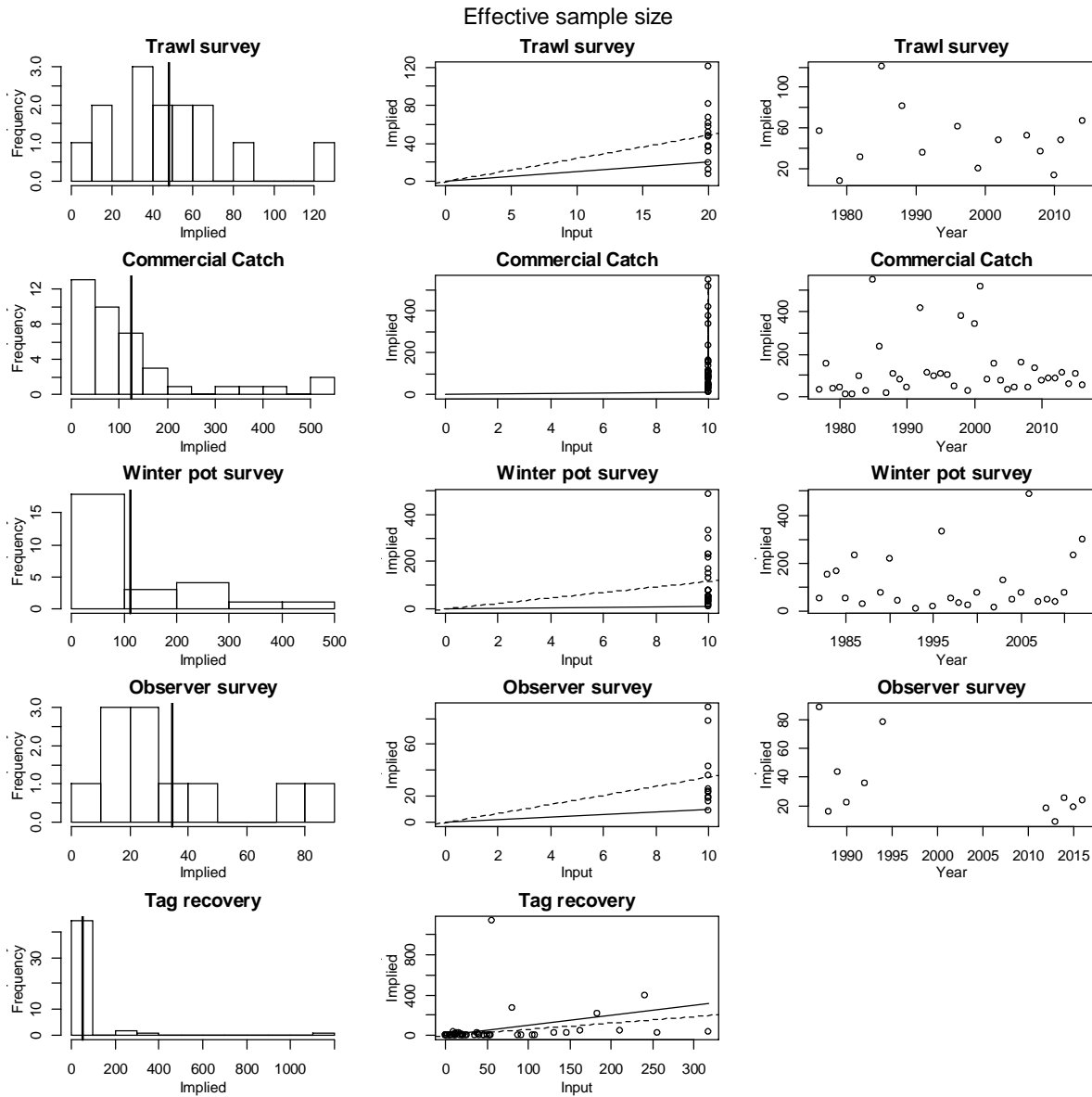Figure 3. Observed length compositions during 1976-2016.

Figure 4. Effective sample size vs. implied (Input) sample size. Figures in the first column show effective sample size (x-axis) vs. frequency (y-axis). Vertical solid line is the implied sample size. Figures in the second column show implied sample sizes (x-axis) vs. 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. effective sample sizes (y-axis).
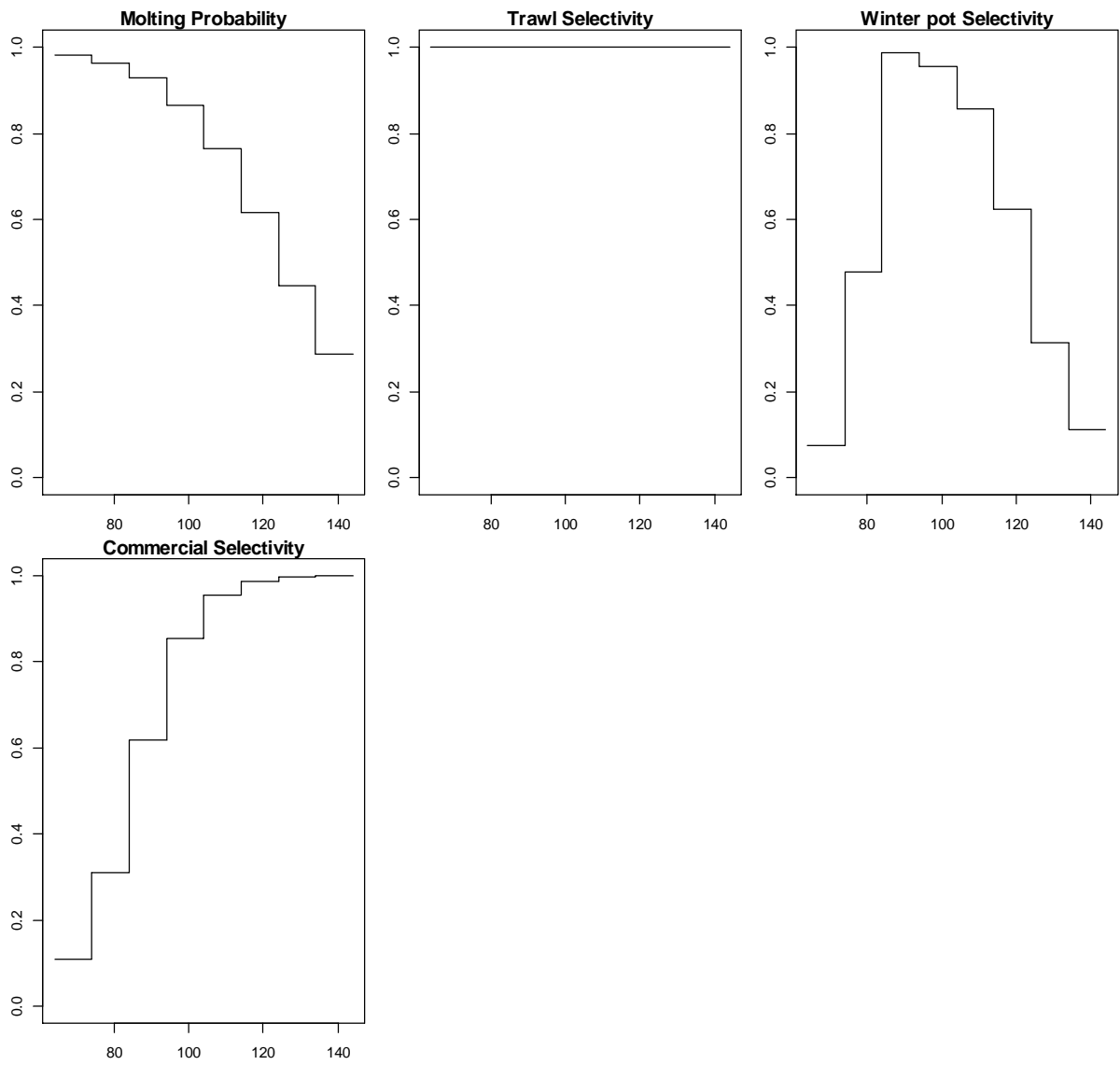
Figure 5. Model estimated annual molting probability, trawl survey selectivity, winter pot survey selectivity, and summer commercial fishery selectivity. X-axis is carapace length (mm).
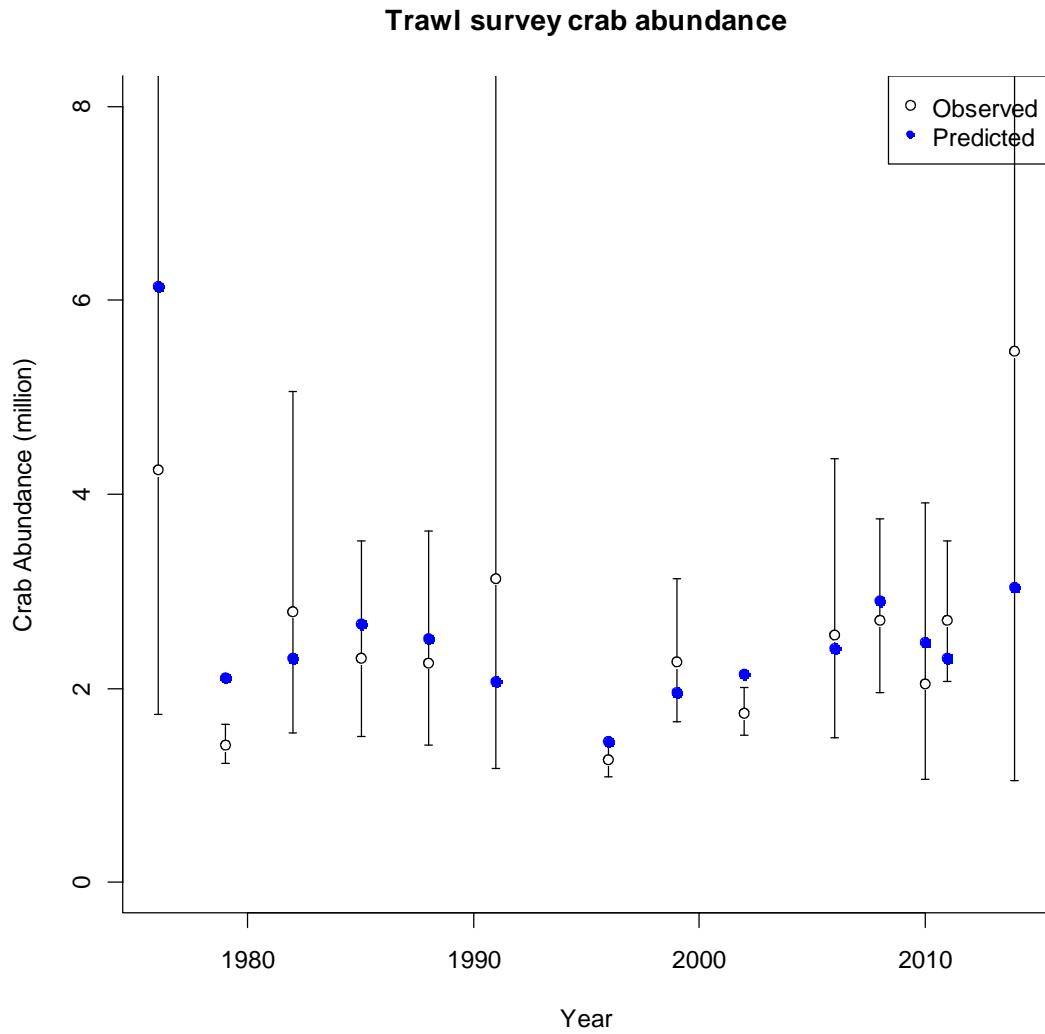
Figure 6. Observed and model estimated trawl survey male abundances with 95% lognormal Confidence Intervals (crab ≥ 74 mm CL).
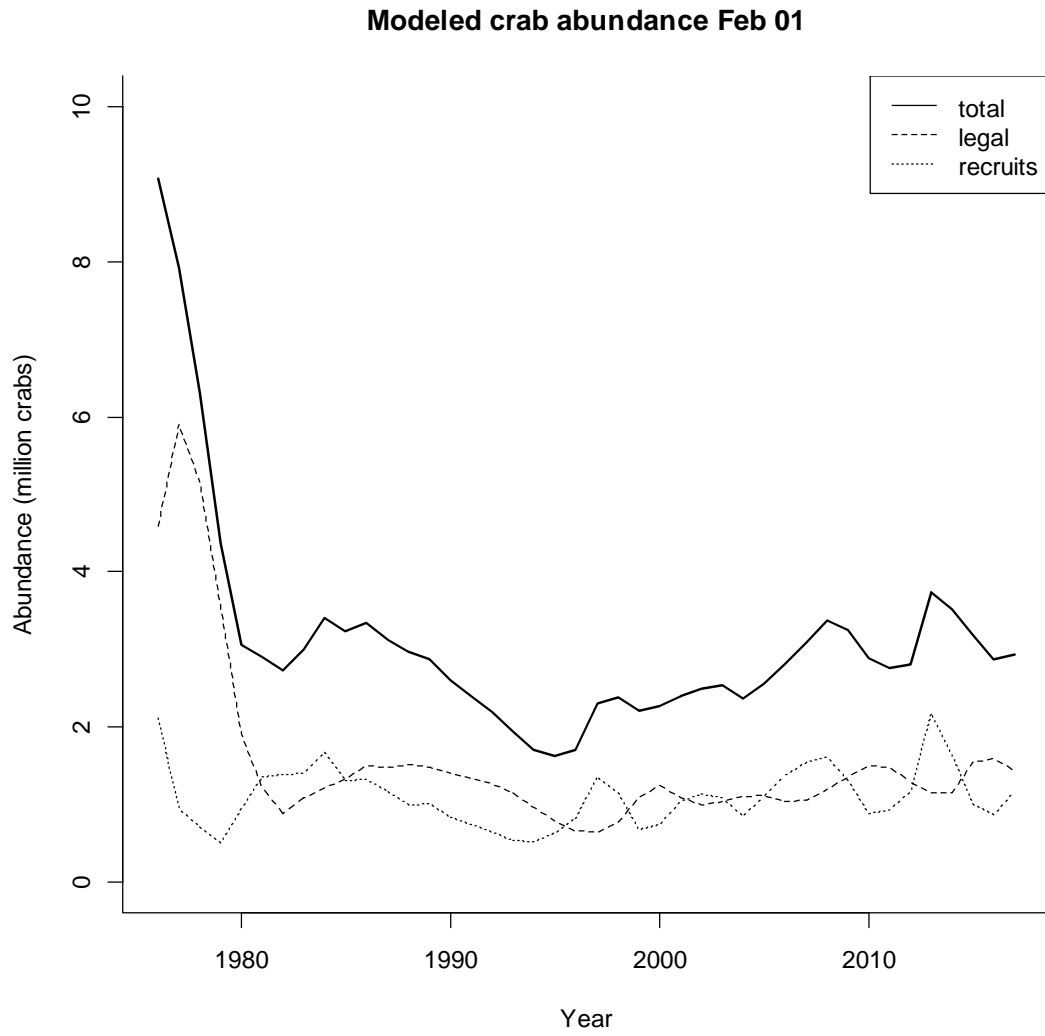
Modeled crab abundance Feb 01

Figure 7. Estimated abundances of legal and recruit males during1976-2015.

MMB Feb 01

BMSY 4.509 mil.lb
MMB 5.076 mil.lb
Legal B 4.354 mil.lb
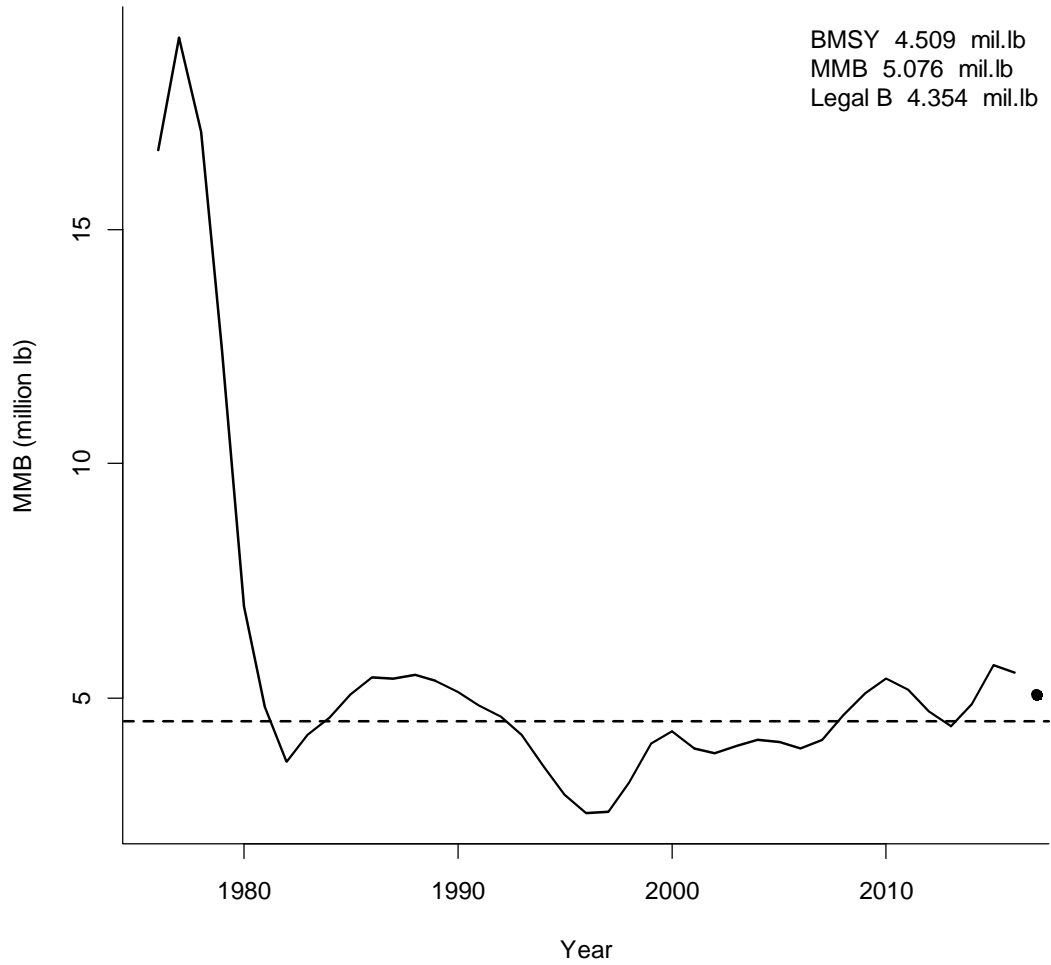
Figure 8. Estimated MMB during 1976-2015. Dash line shows Bmsy (Average MMB of 1980-2016). The black point indicates the projected MMB of 2016.
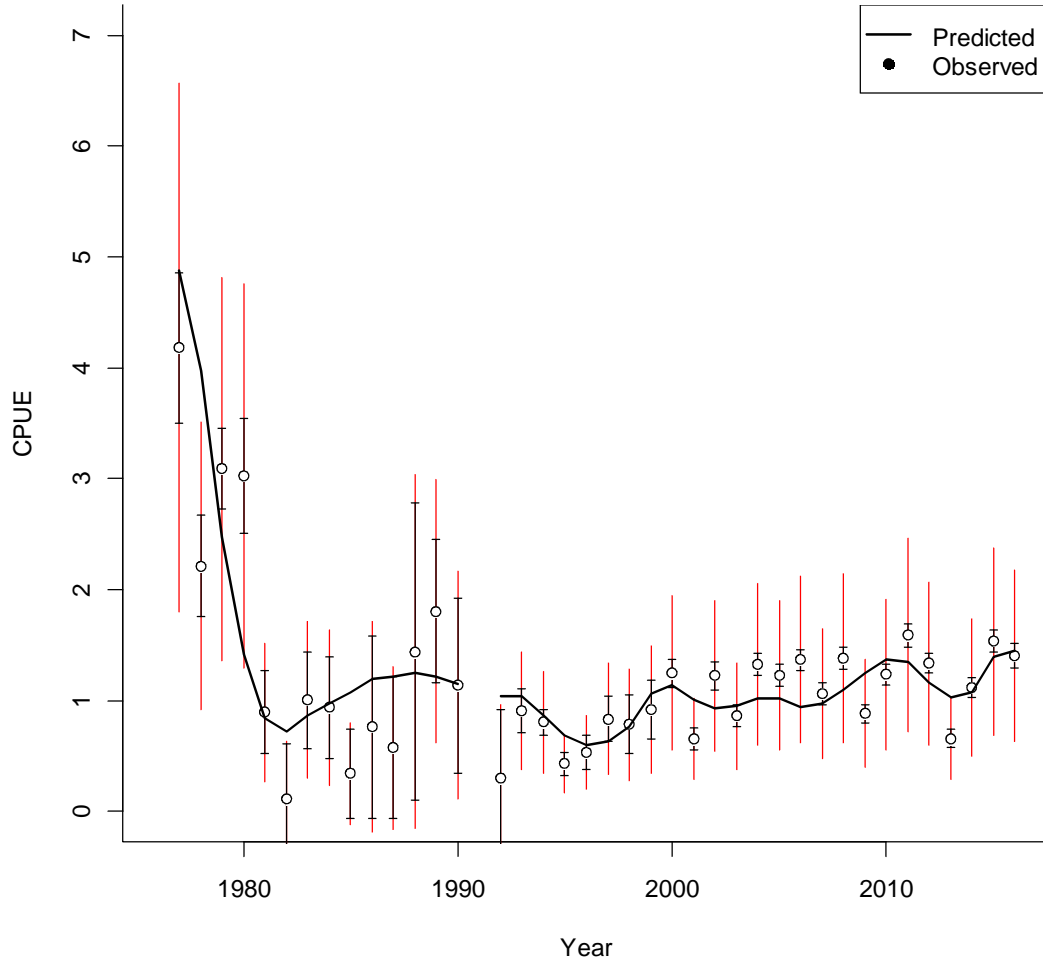
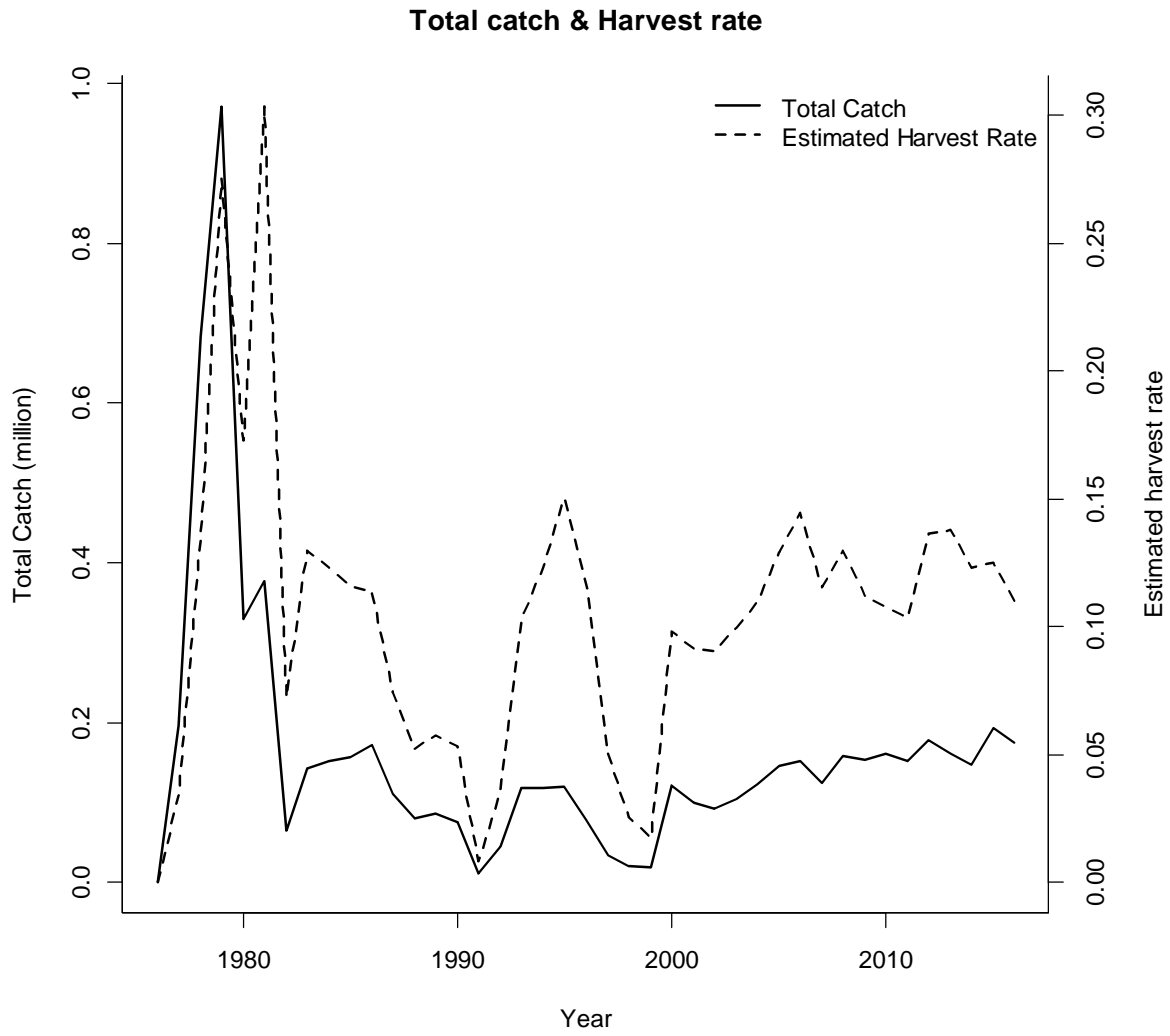Figure 9. Summer commercial fishery standardized cpue. Vertical black lines are input SD and red lines are input and estimated additional SD.

Total catch & Harvest rate

Figure 10. Commercial catch and estimated harvest rates of legal males over time.
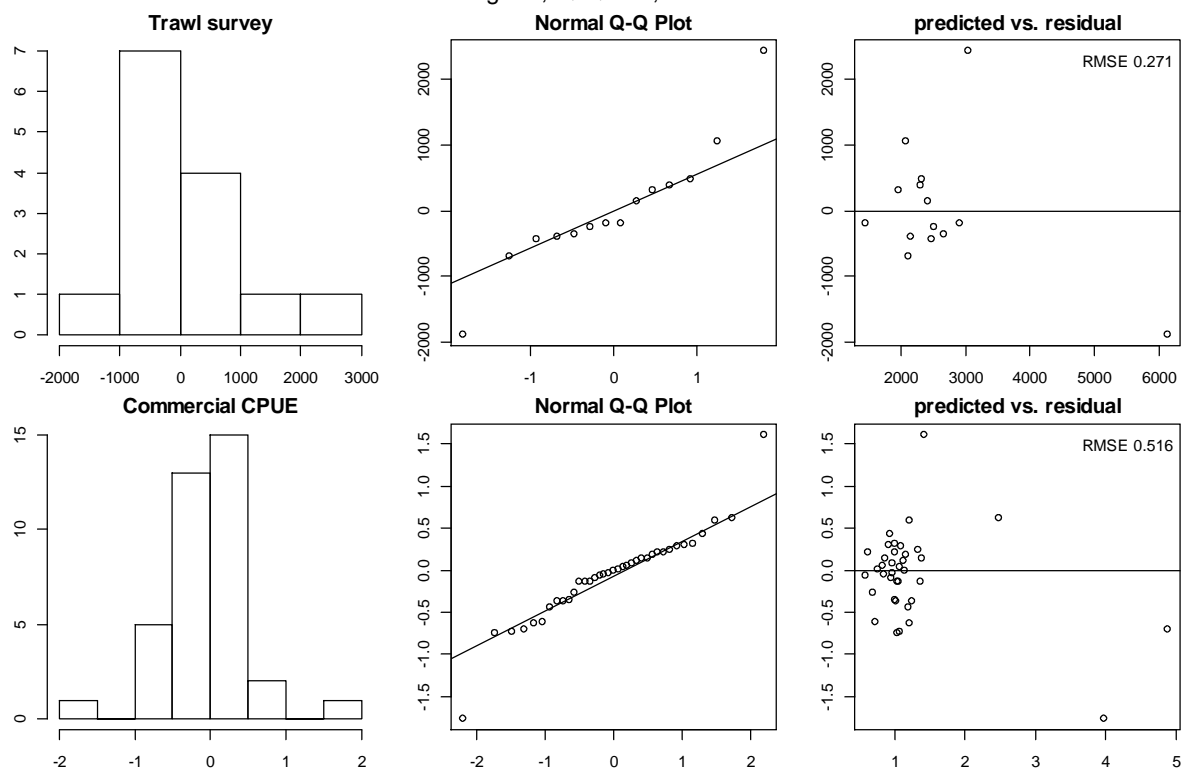
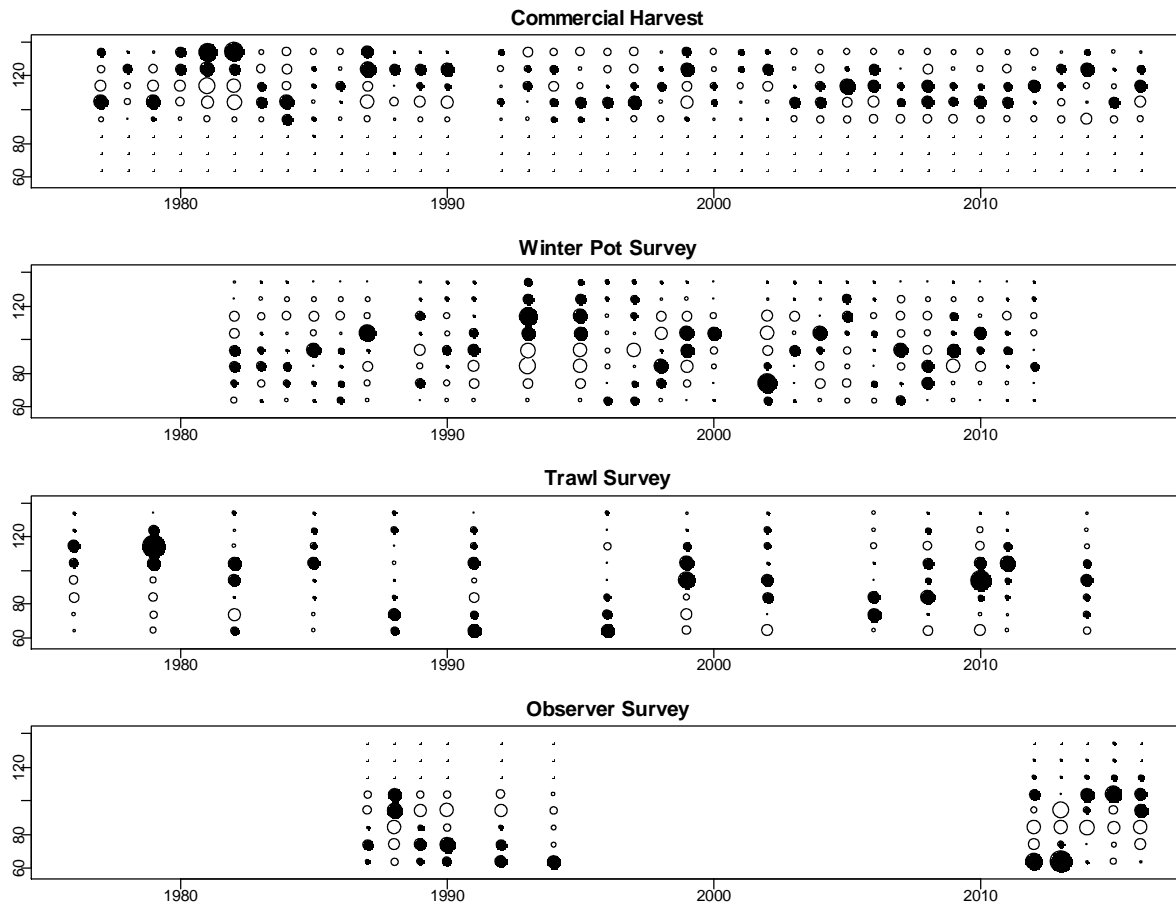Figure 11. QQ plots of trawl survey abundance and commercial CPUE residuals.

Figure 12. Bubble plot of predicted and observed length proportions (Alternative model 0). 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).

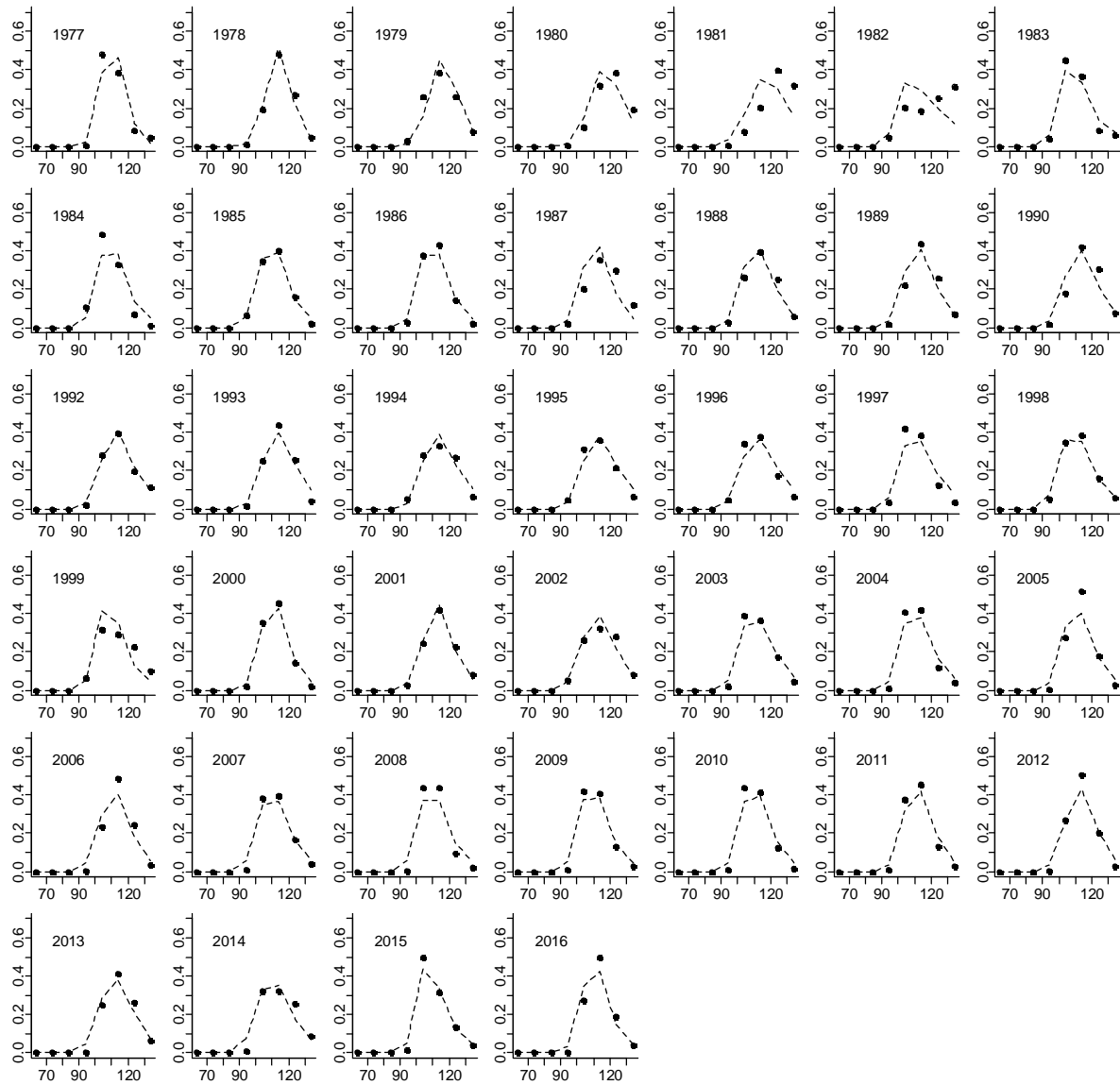commercial harvest length: observed vs predicted

Figure 13. Predicted (dashed line) vs. observed (black dots) length class proportions for the summer commercial catch.

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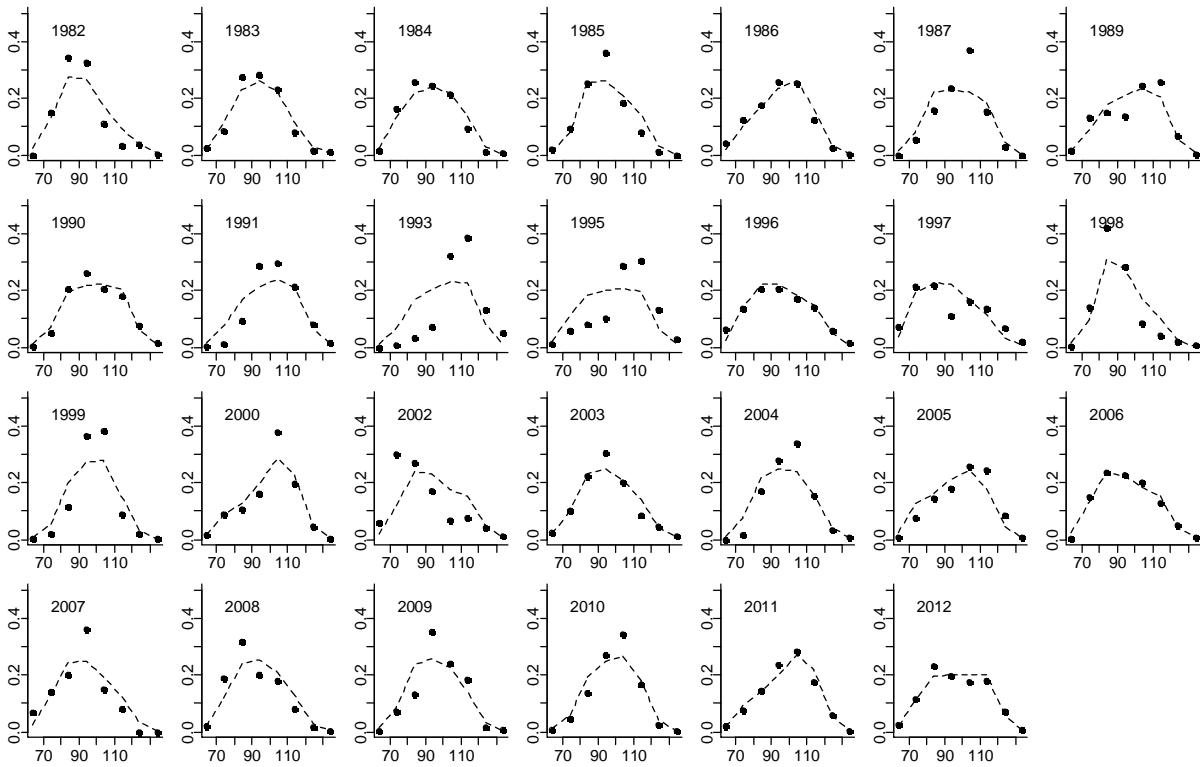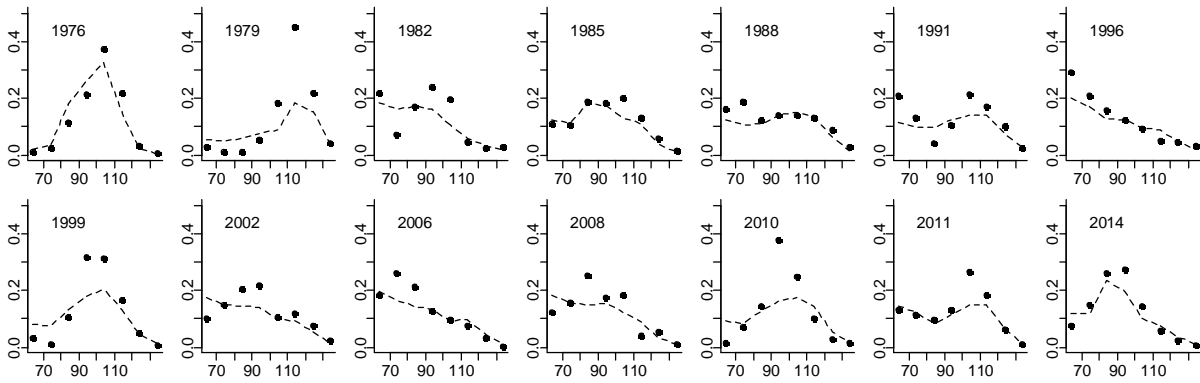Winter pot length: observed vs predicted

Figure 14. Predicted vs. observed length class proportions for winter pot survey.

Trawl length: observed vs predicted

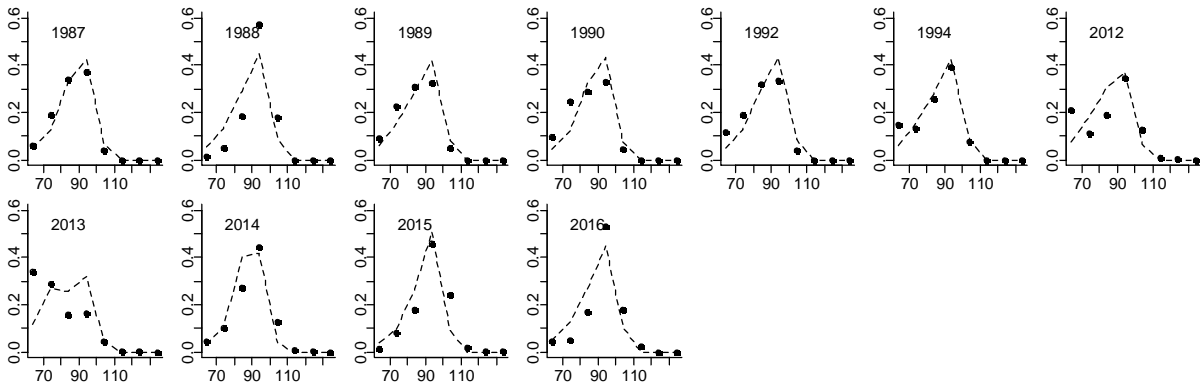Discards length: observed vs predicted

Figure 15. Predicted vs. observed length class proportions for trawl survey and commercial observer data.
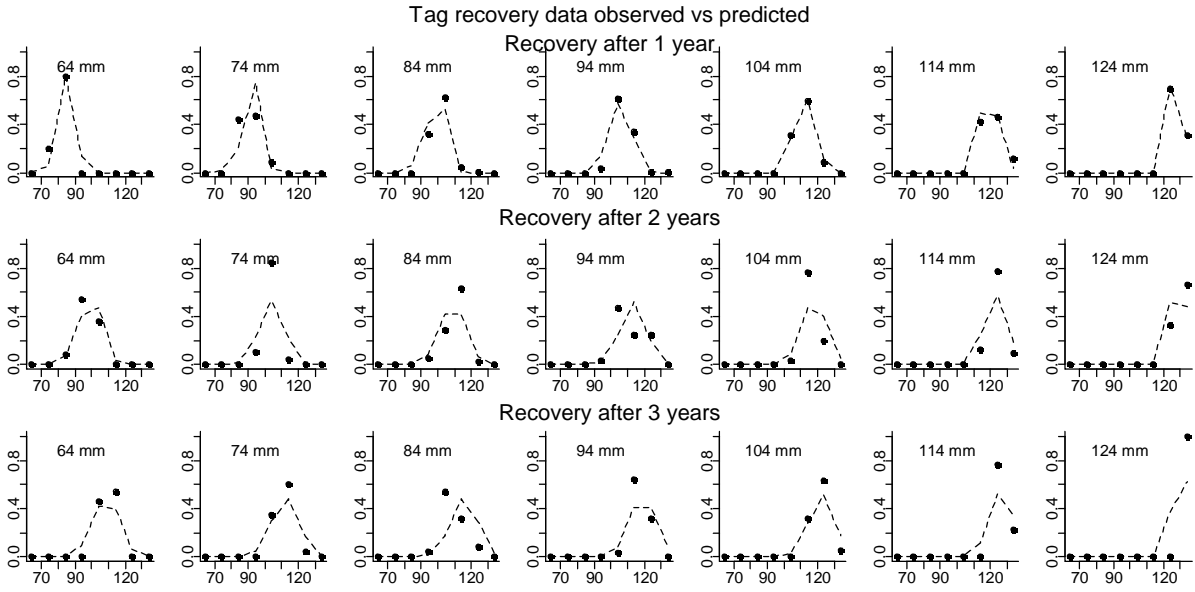
Figure 16. Predicted vs. observed length class proportions for tag recovery data.
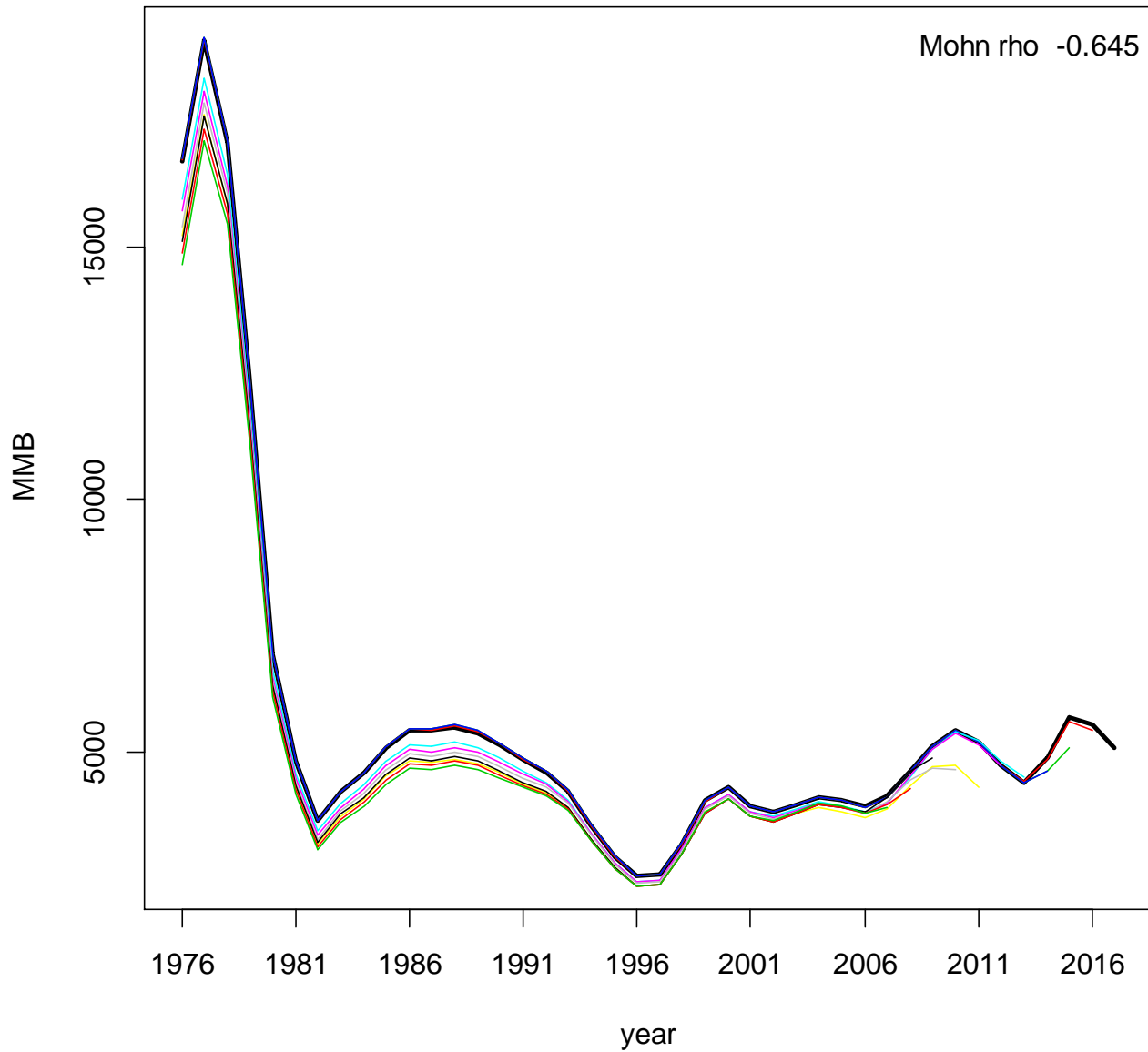
Retrospective Analysis

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