

Application of Huynh 2020 Interim Analysis methods to assessed stocks from the US South Atlantic

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Built in performance metrics (PMs)

- P10 Probability $B > 0.1$ BMSY
- P50 Probability $B > 0.5$ BMSY
- P100 Probability $B > \text{BMSY}$
- PNOF Probability $F < \text{FMSY}$
- LTY Probability Long-Term Yield > 0.5 Relative Yield
- STY Probability Short-Term Yield > 0.5 Relative Yield
- AAVY Probability $\text{AAVY} < 0.2$ (Average Annual Variability in Yield)
- AAVE Probability $\text{AAVE} < 0.2$ (Average Annual Variability in Effort)
- Yield Average Yield (relative to Reference Yield)
- can easily vary reference values and years
- PMs compute probabilities across years for each simulation and return mean values across simulations (but we could recompute them however we want from the raw MSE objects)

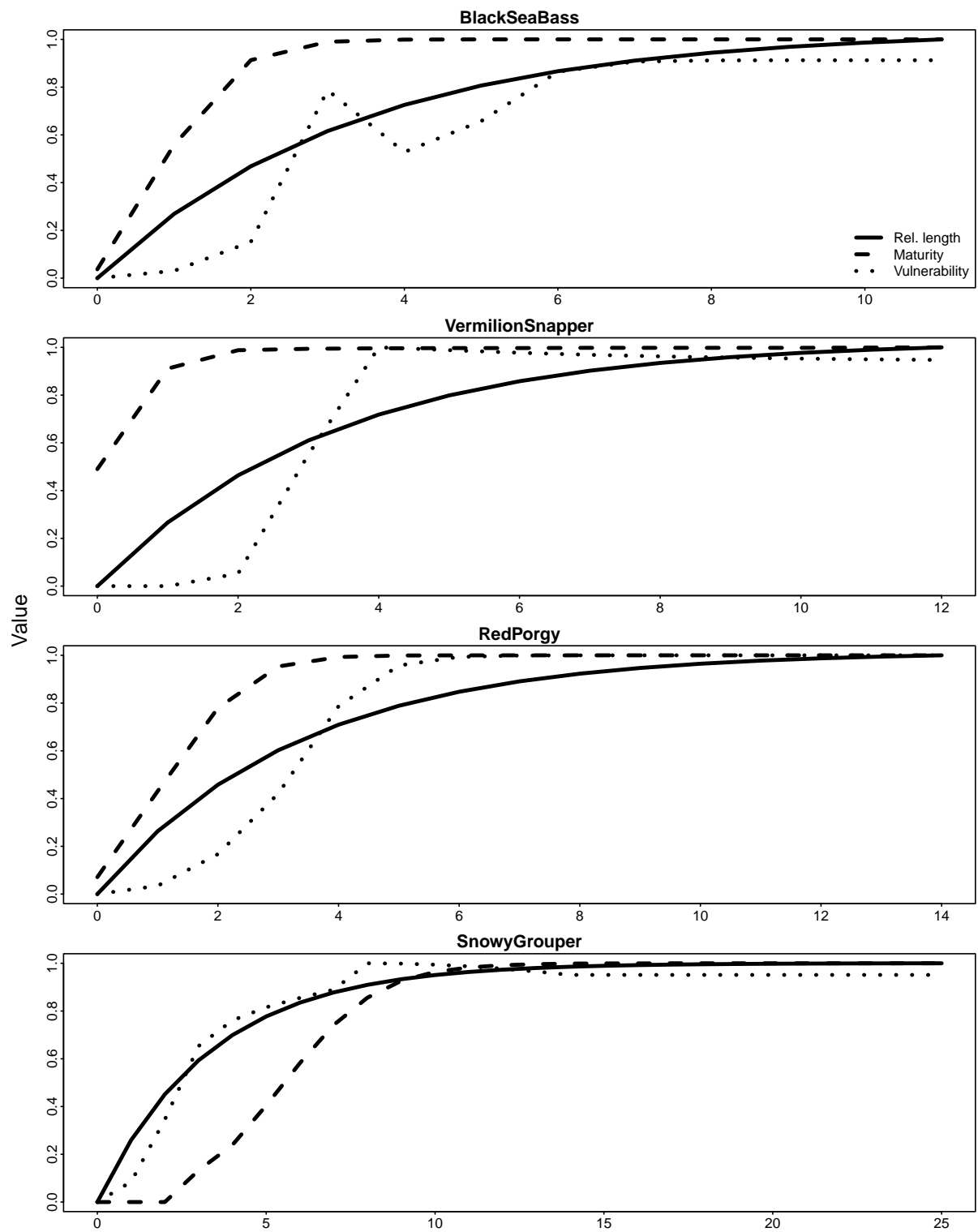


Figure 1: Life history (growth and maturity) and vulnerability schedules at age used in the operating models during the projection period BlackSeaBass, VermilionSnapper, RedPorgy, and SnowyGrouper. Growth is expressed as mean length-at-age relative to that at the maximum age.

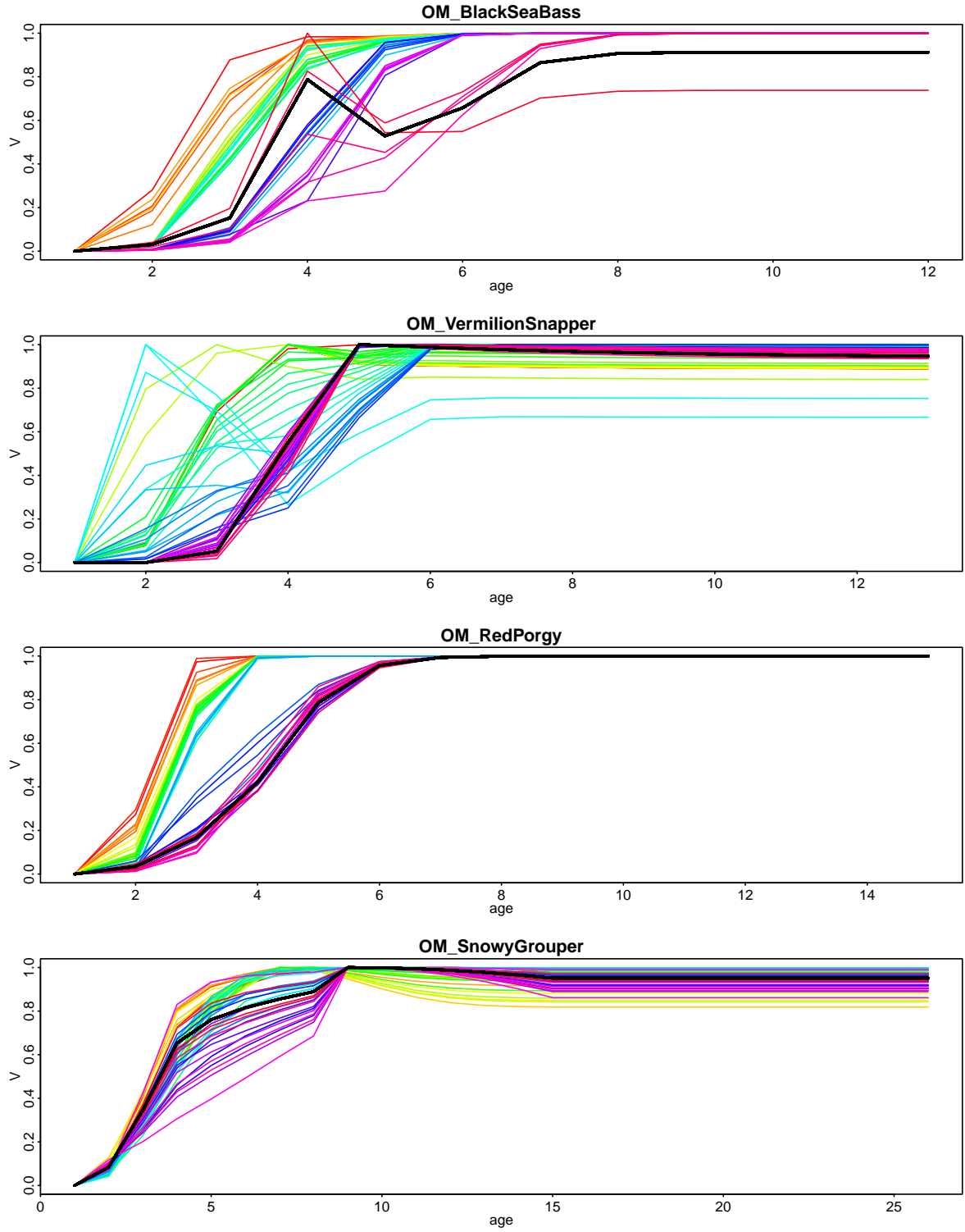
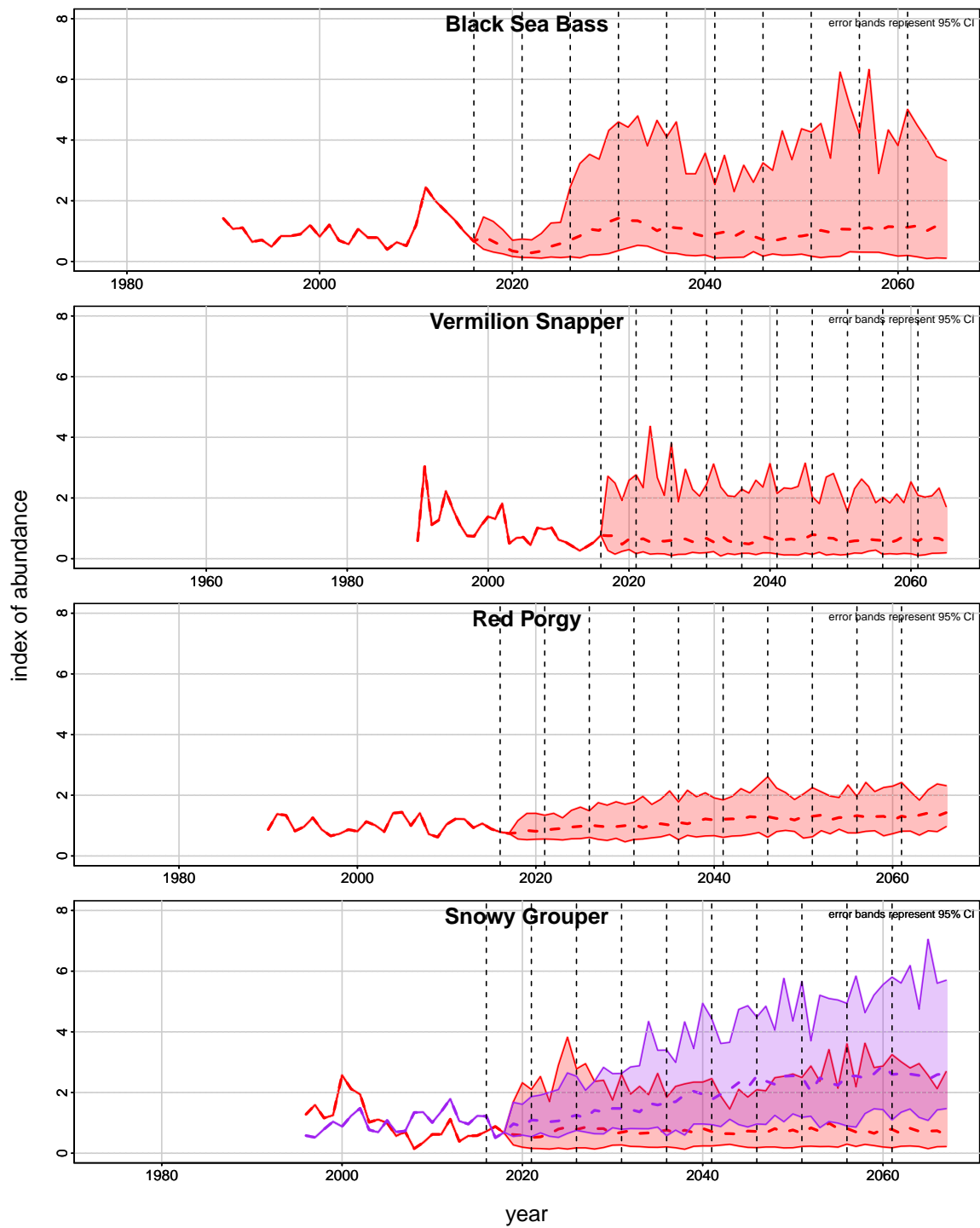
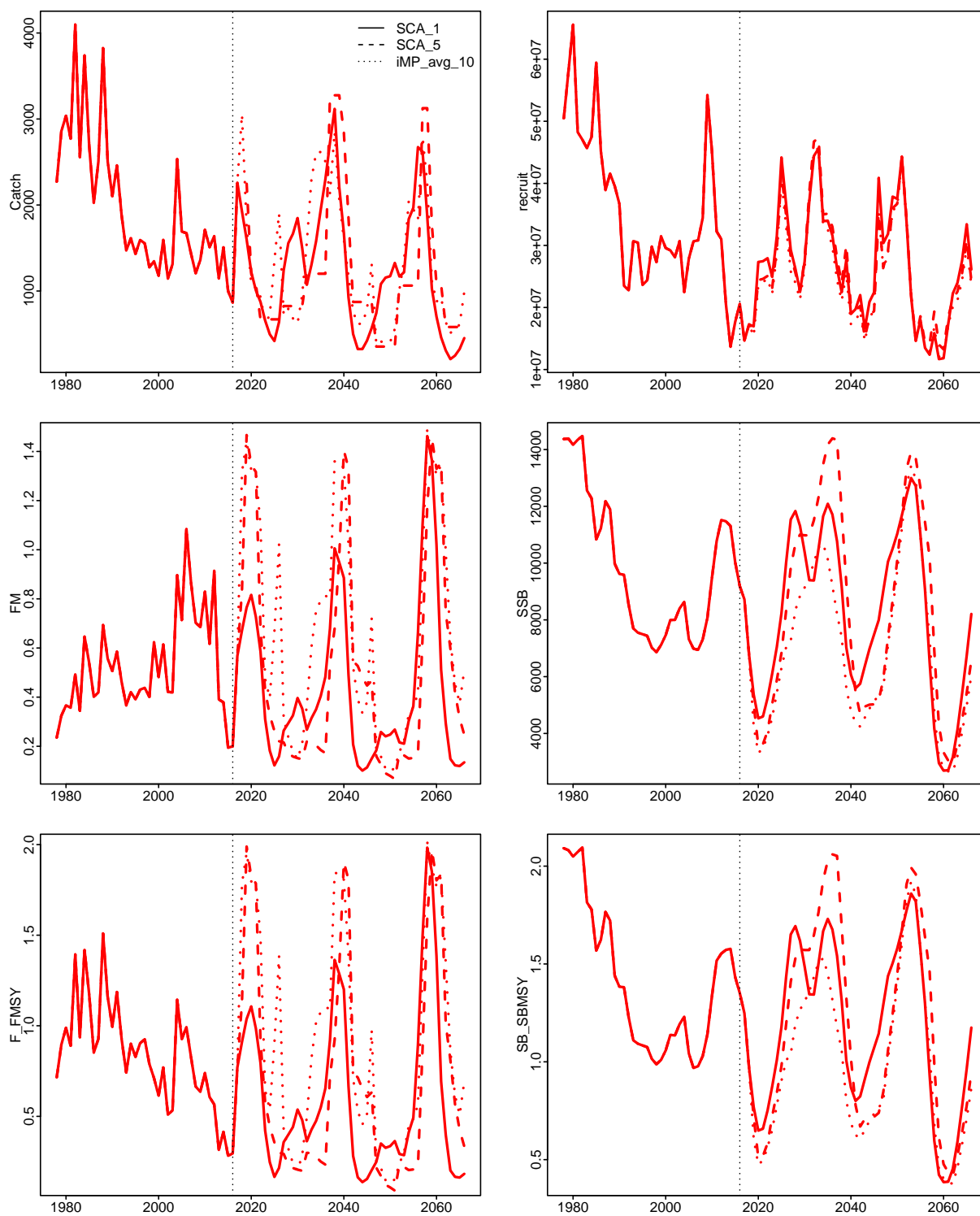


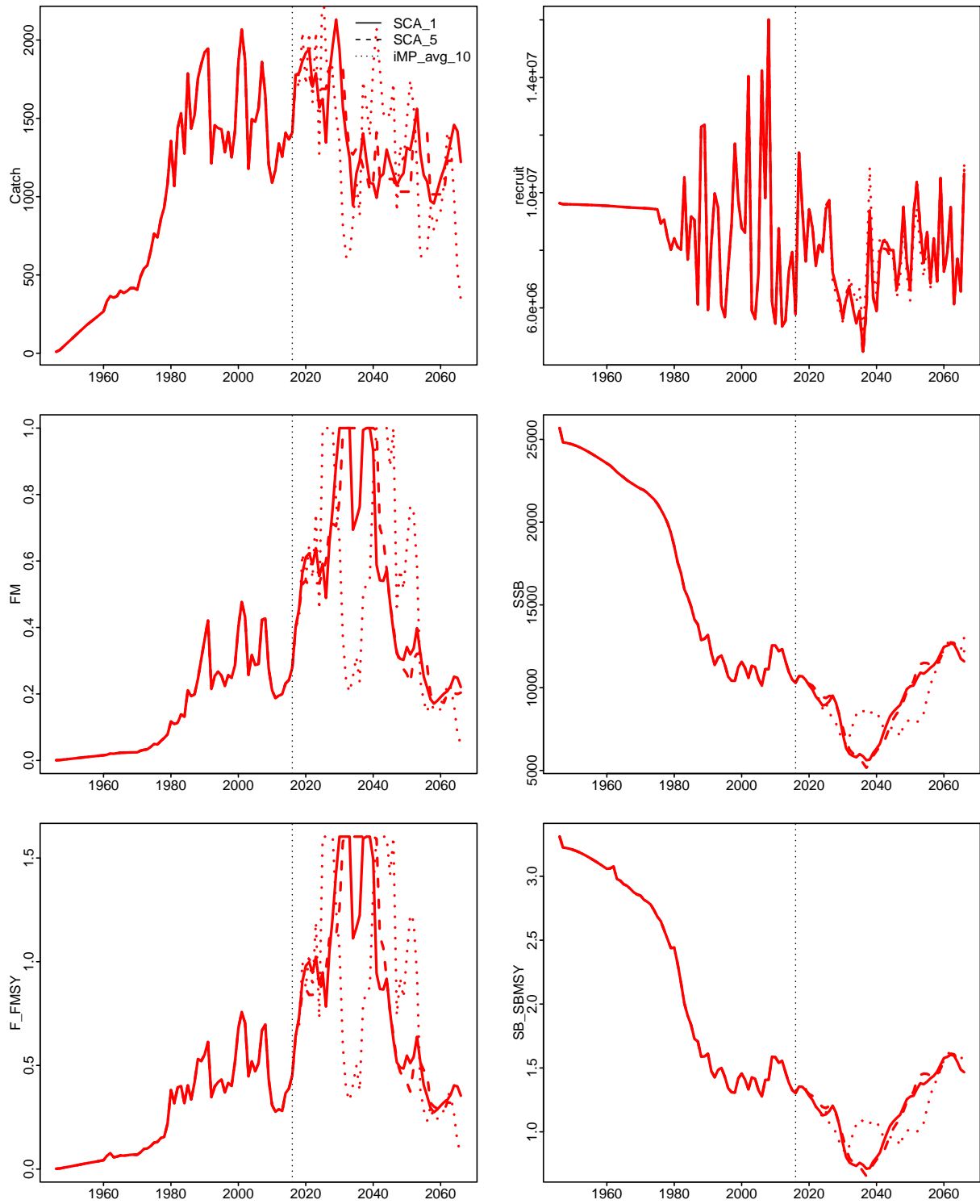
Figure 2: Vulnerability schedules at age used in the operating models during the historical period (colored lines in rainbow order) and projection period (black lines) BlackSeaBass, VermilionSnapper, RedPorgy, and SnowyGrouper. Growth is expressed as mean length-at-age relative to that at the maximum age.



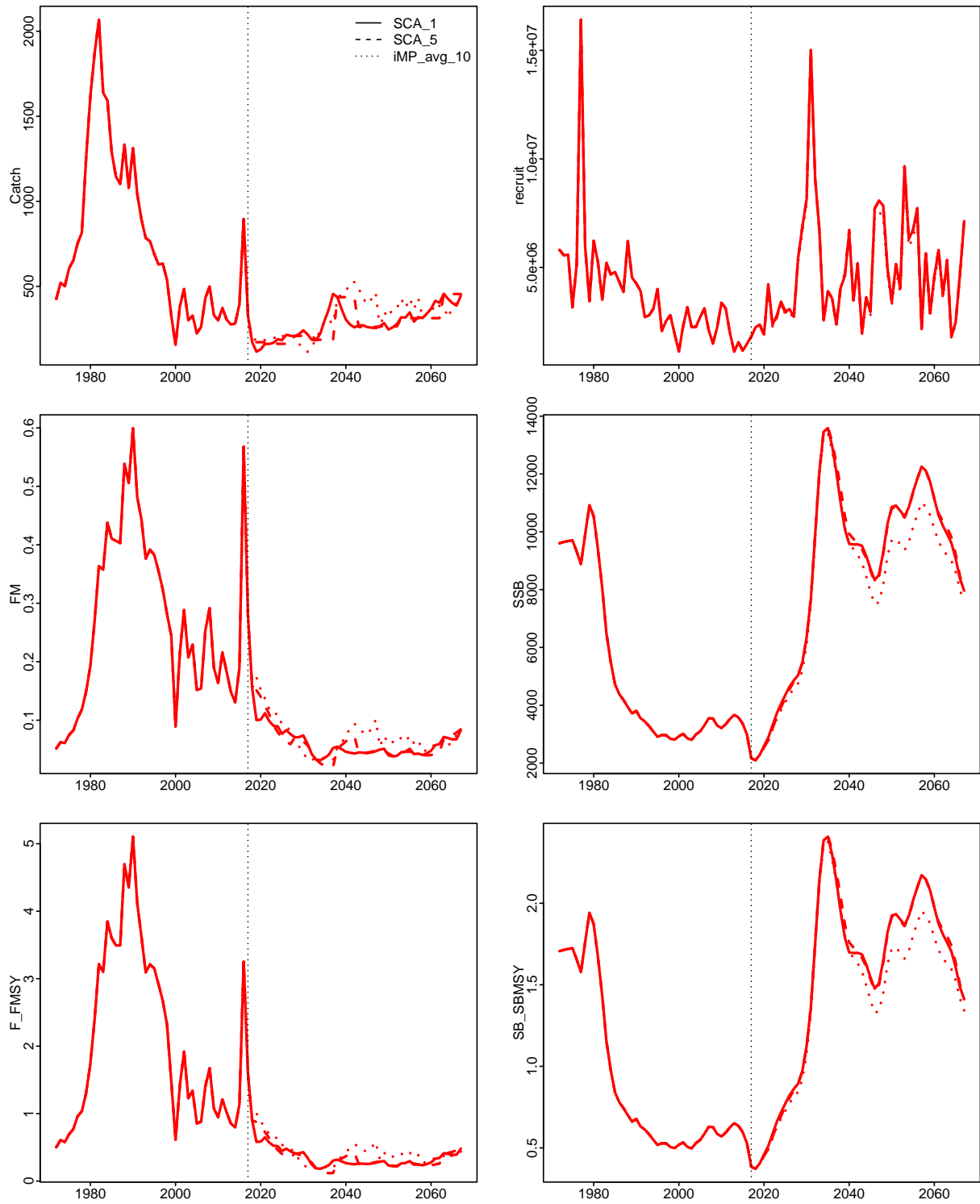
BlackSeaBass, base



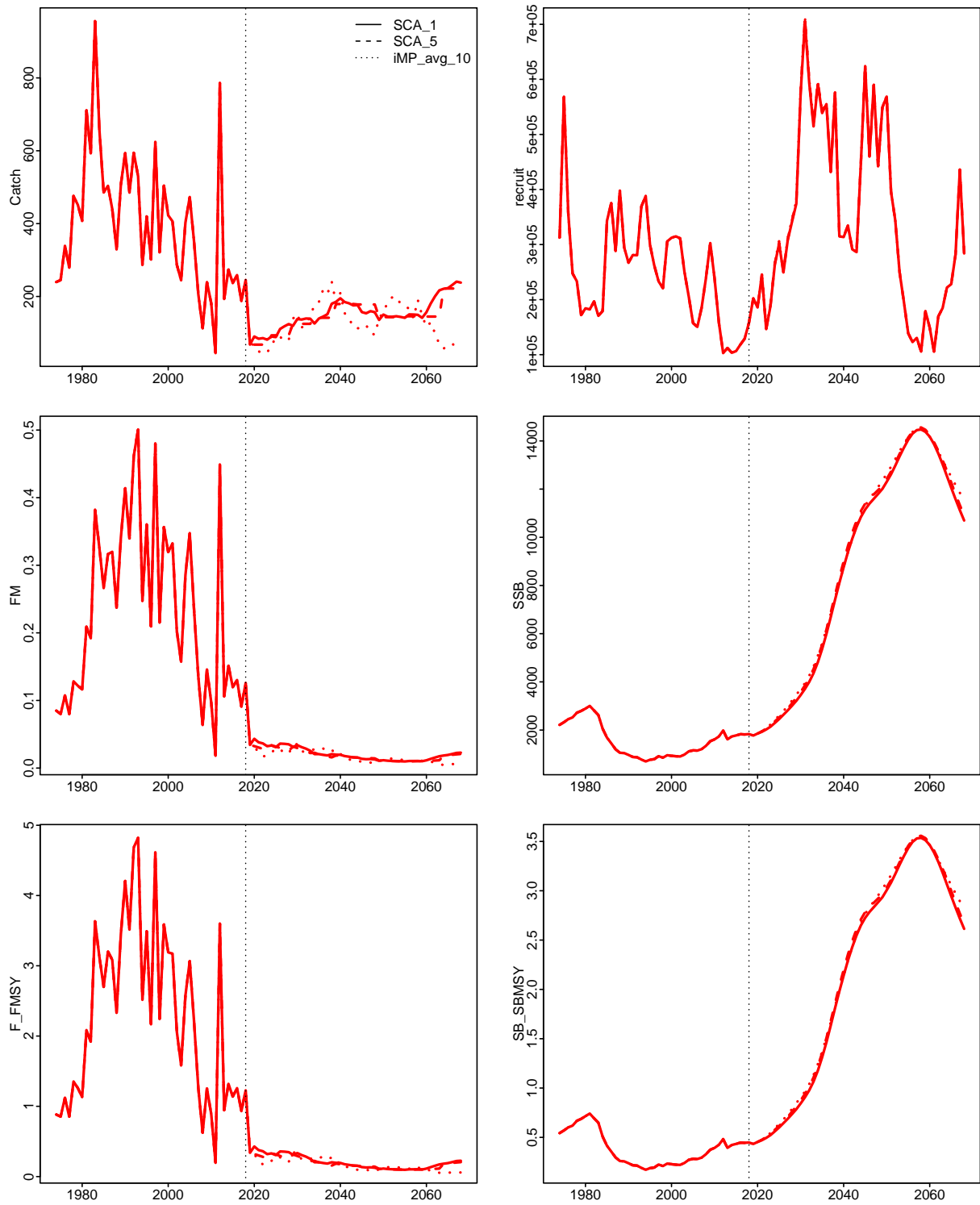
VermilionSnapper, base



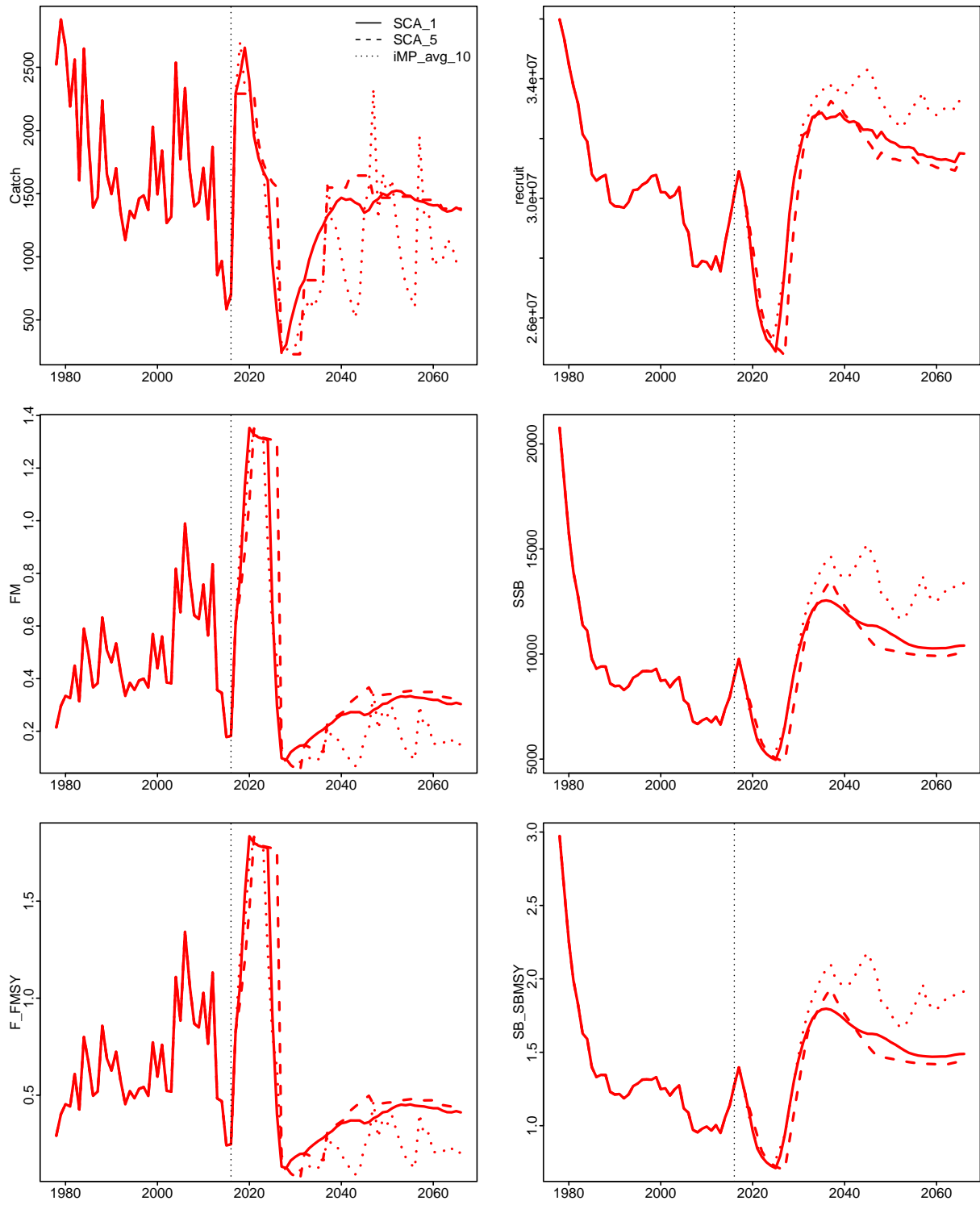
RedPorgy, base



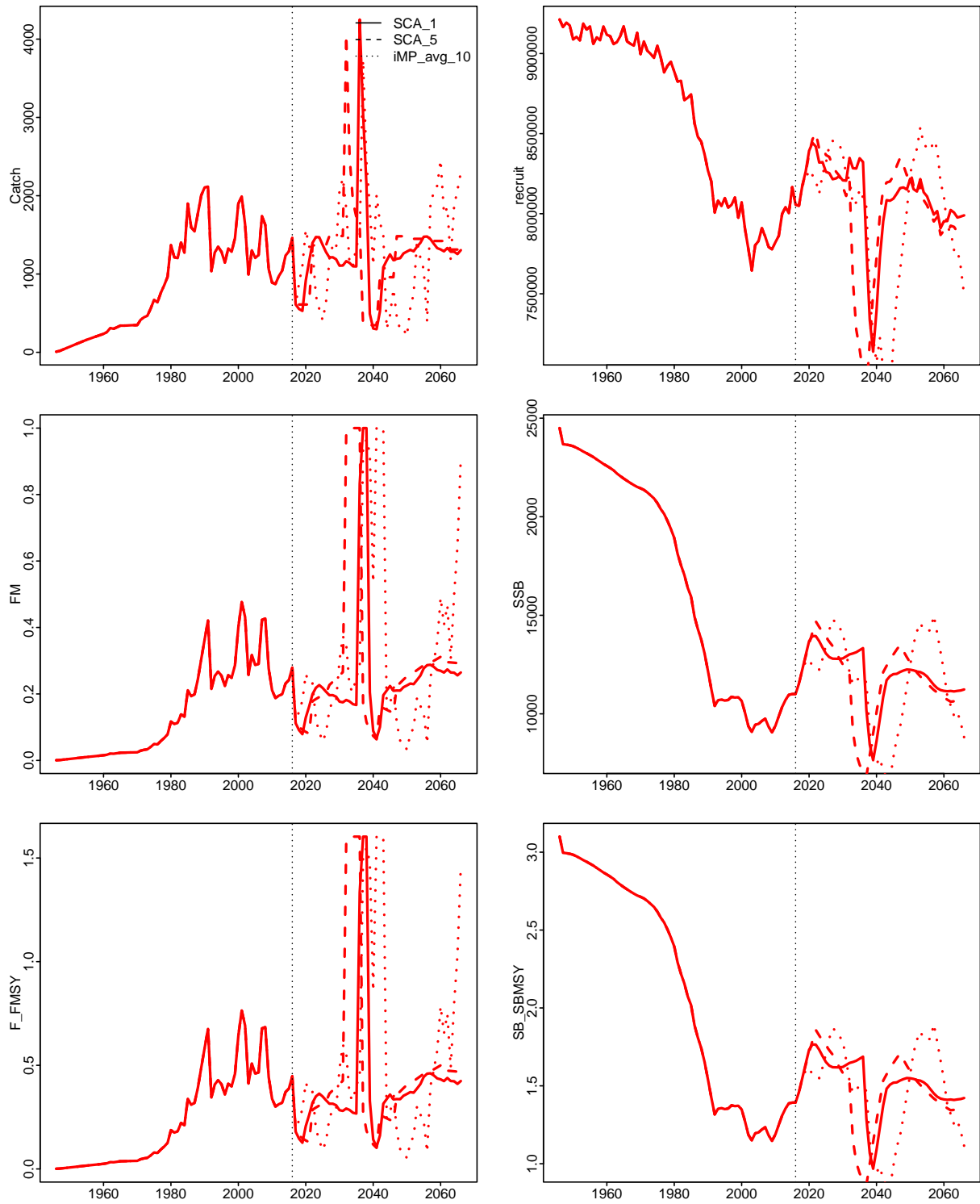
SnowyGrouper, base



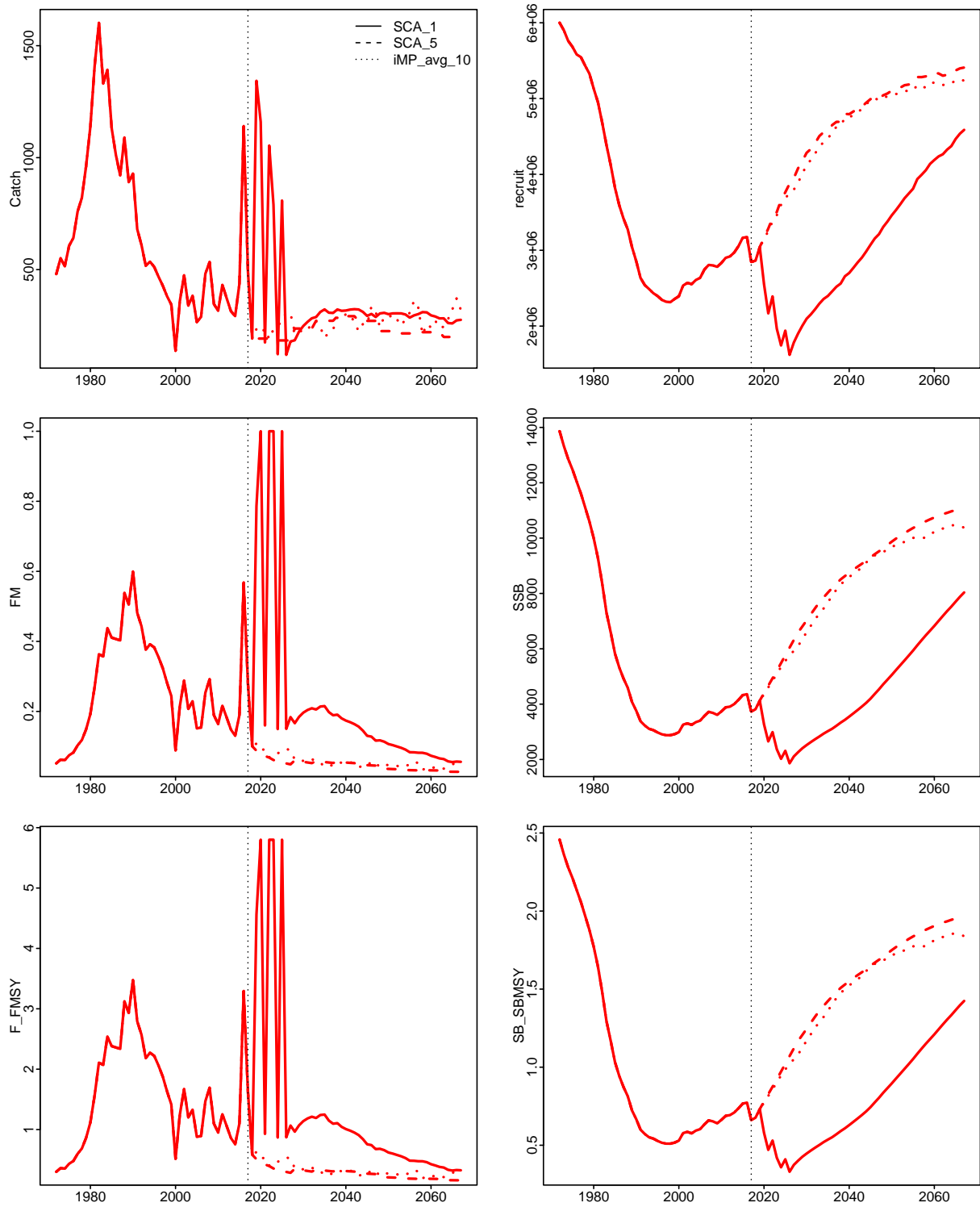
BlackSeaBass, minerr



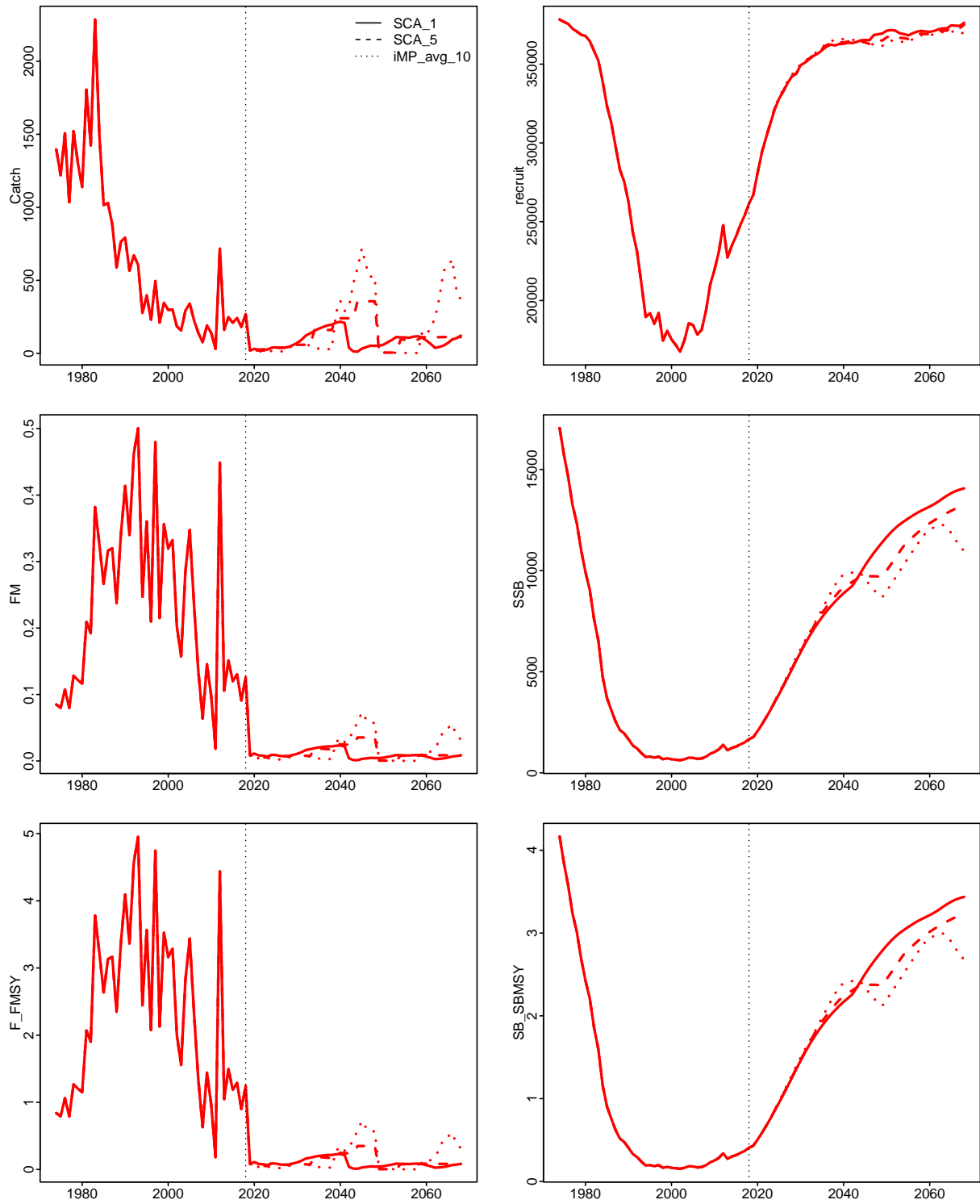
VermilionSnapper, minerr



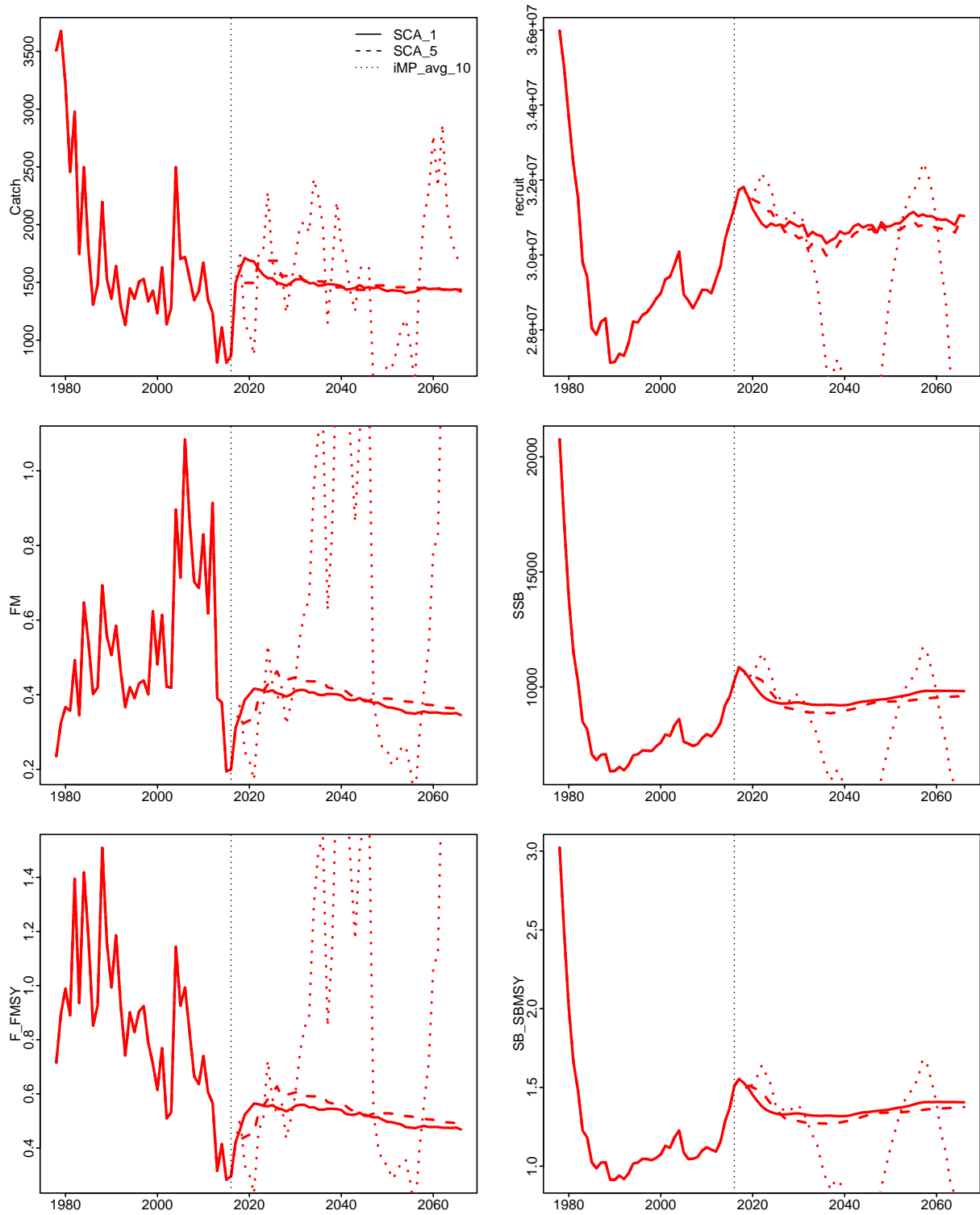
RedPorgy, minerr



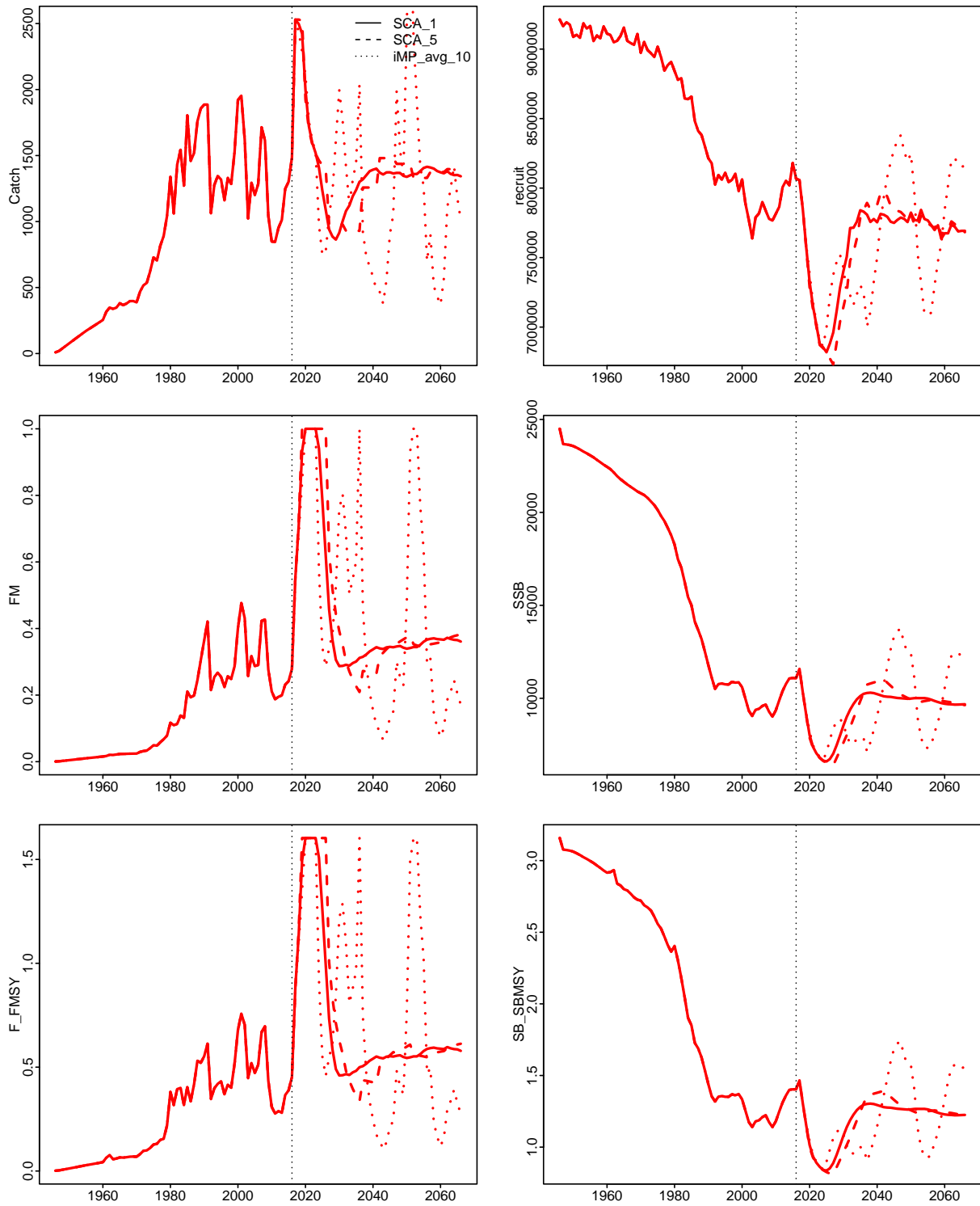
SnowyGrouper, minerr



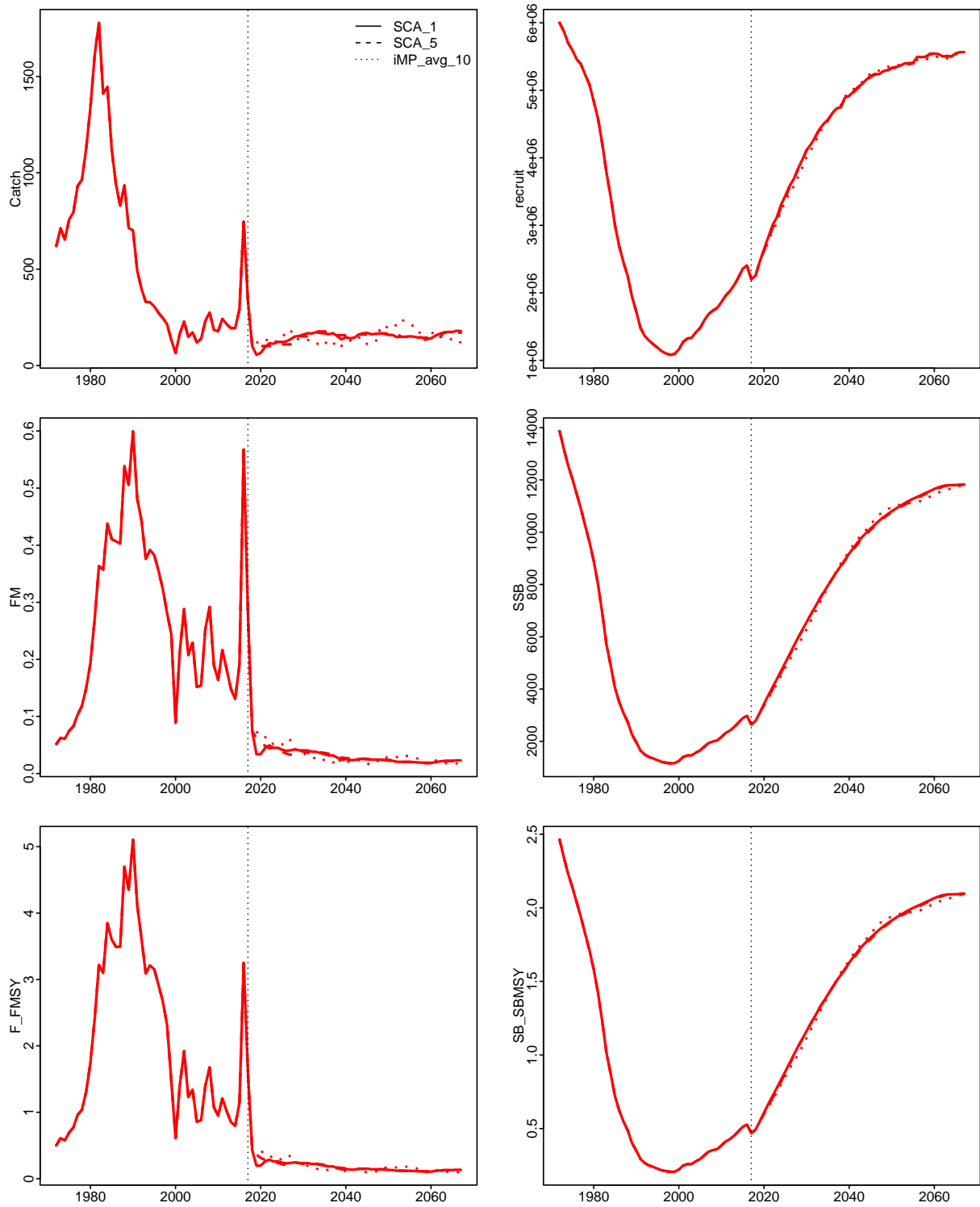
BlackSeaBass, minrecdev



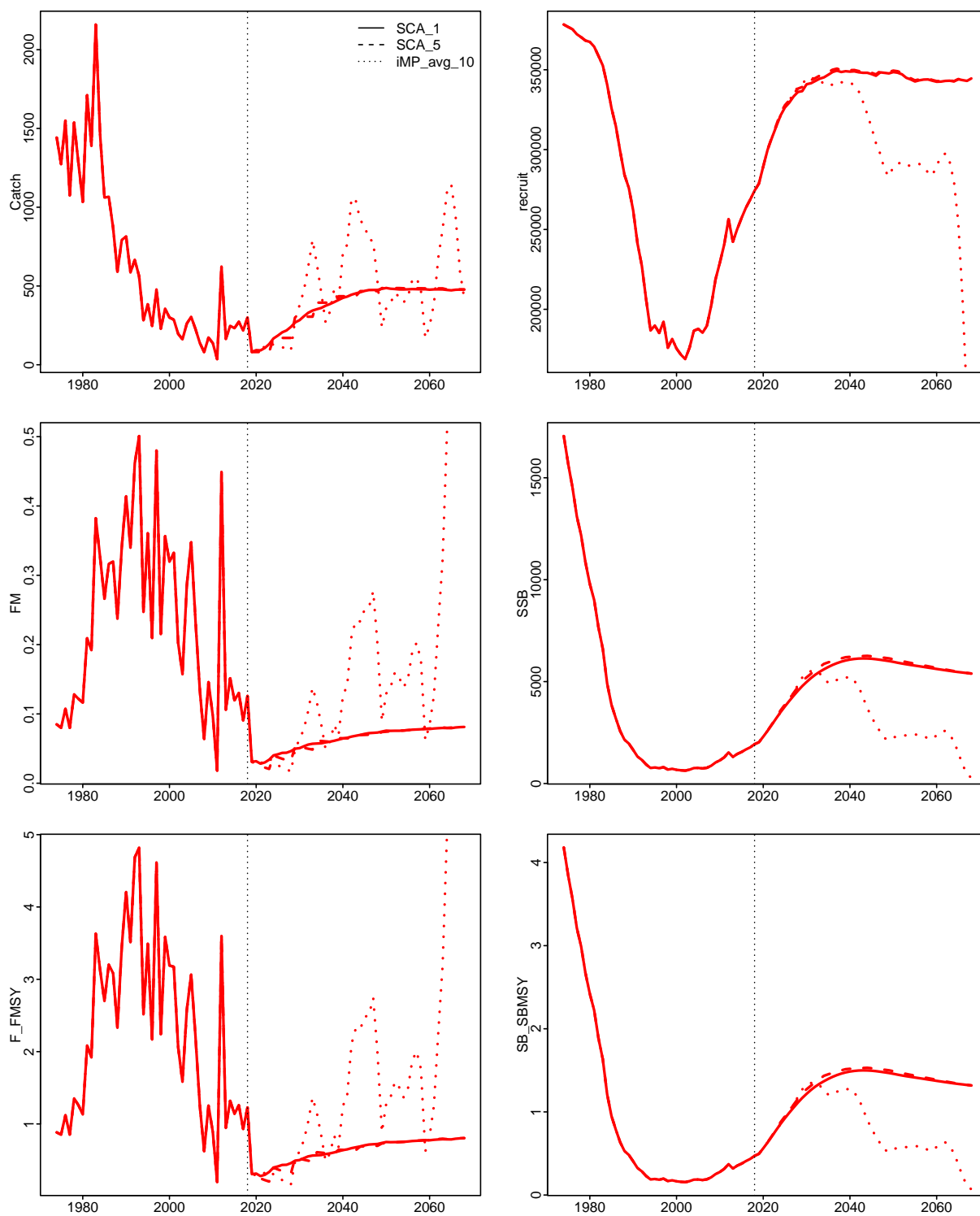
VermilionSnapper, minrecdev



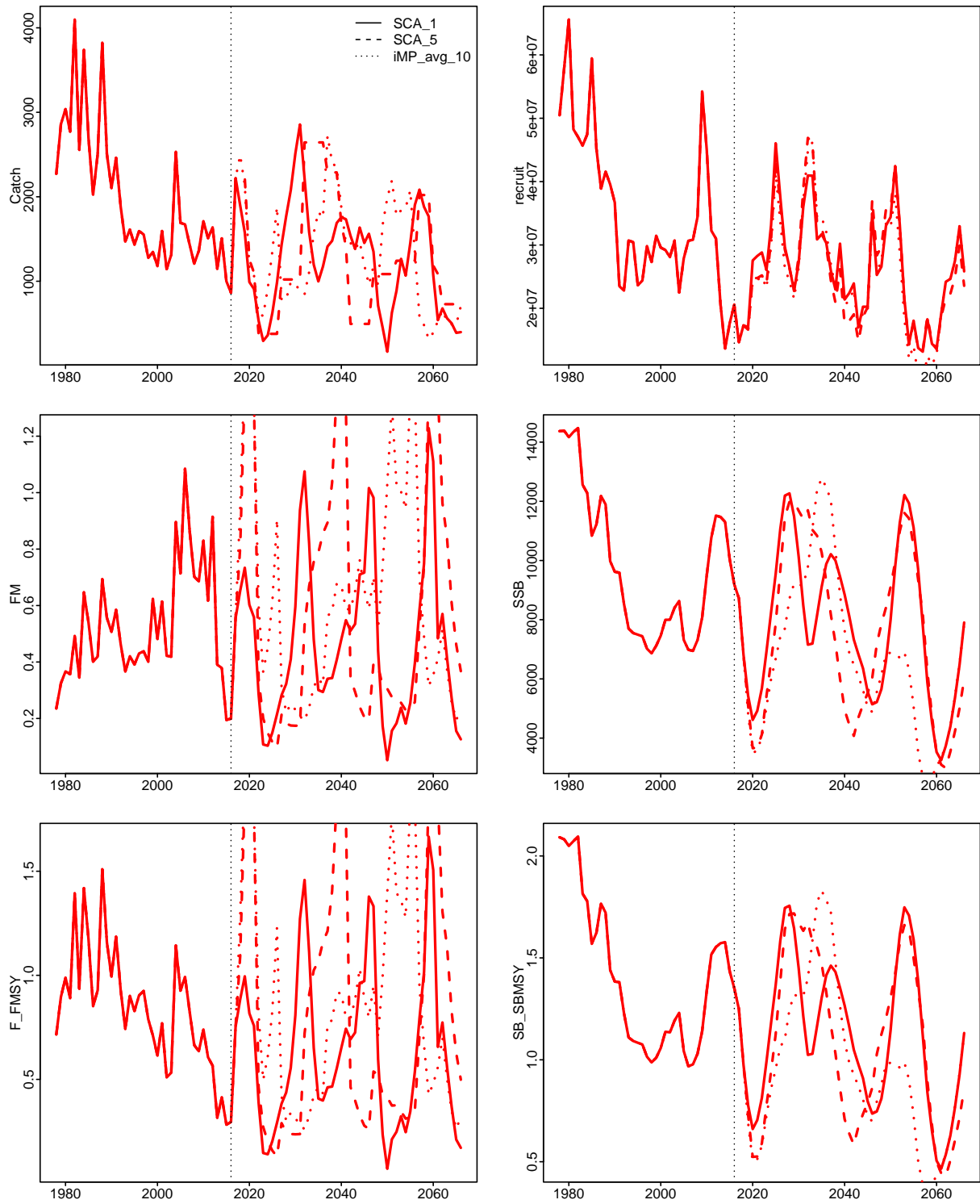
RedPorgy, minrecdev



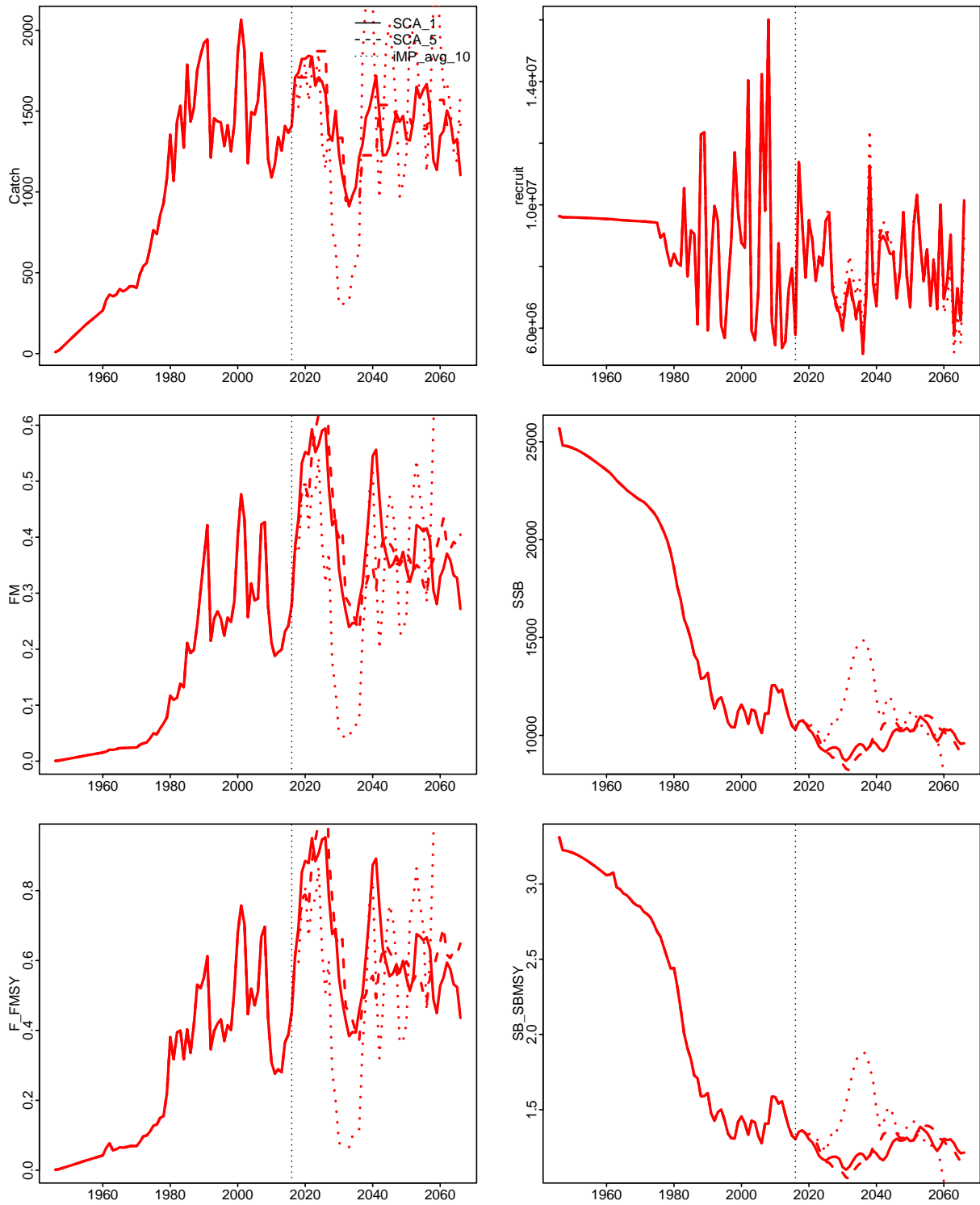
SnowyGrouper, minrecdev



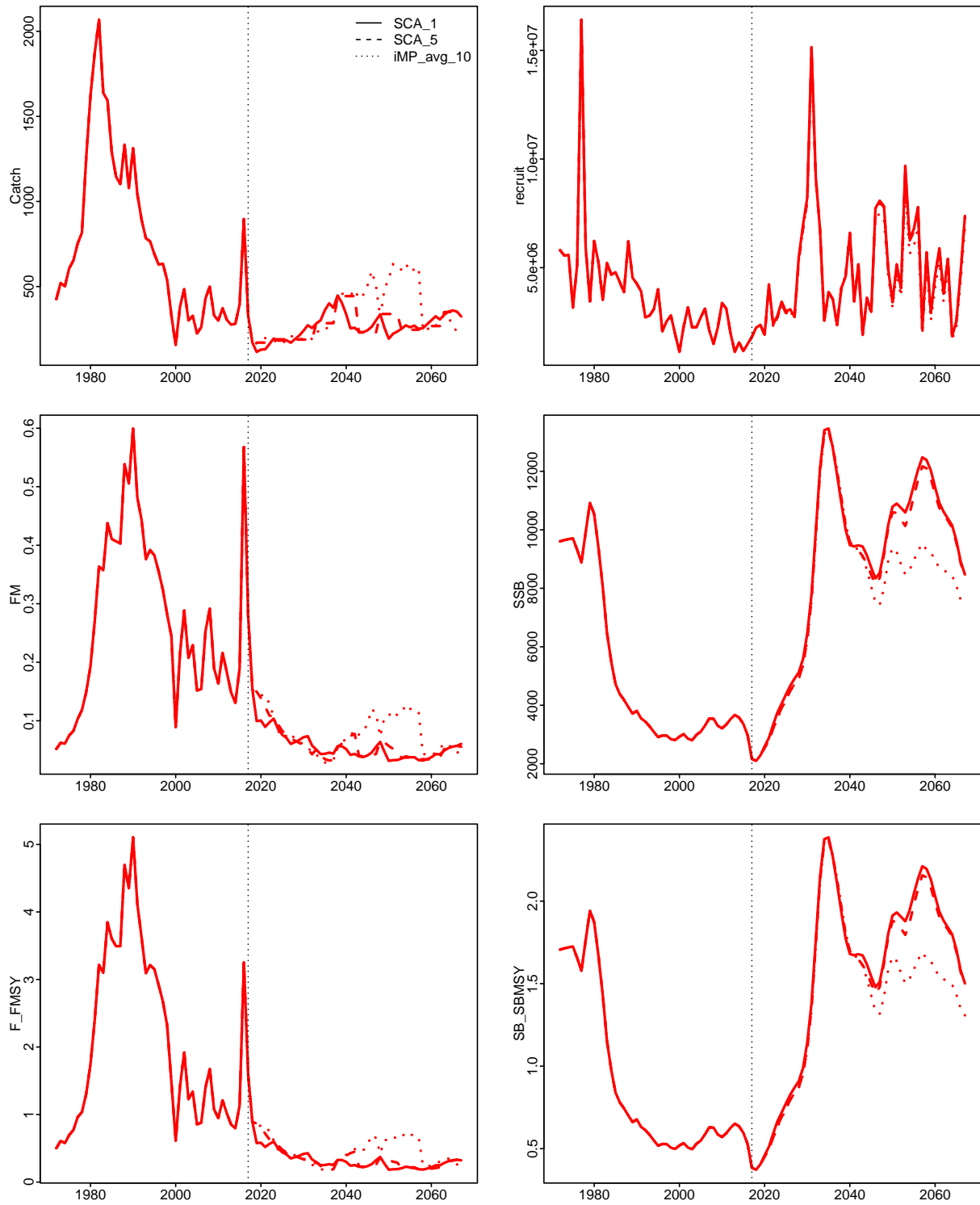
BlackSeaBass, perfobs



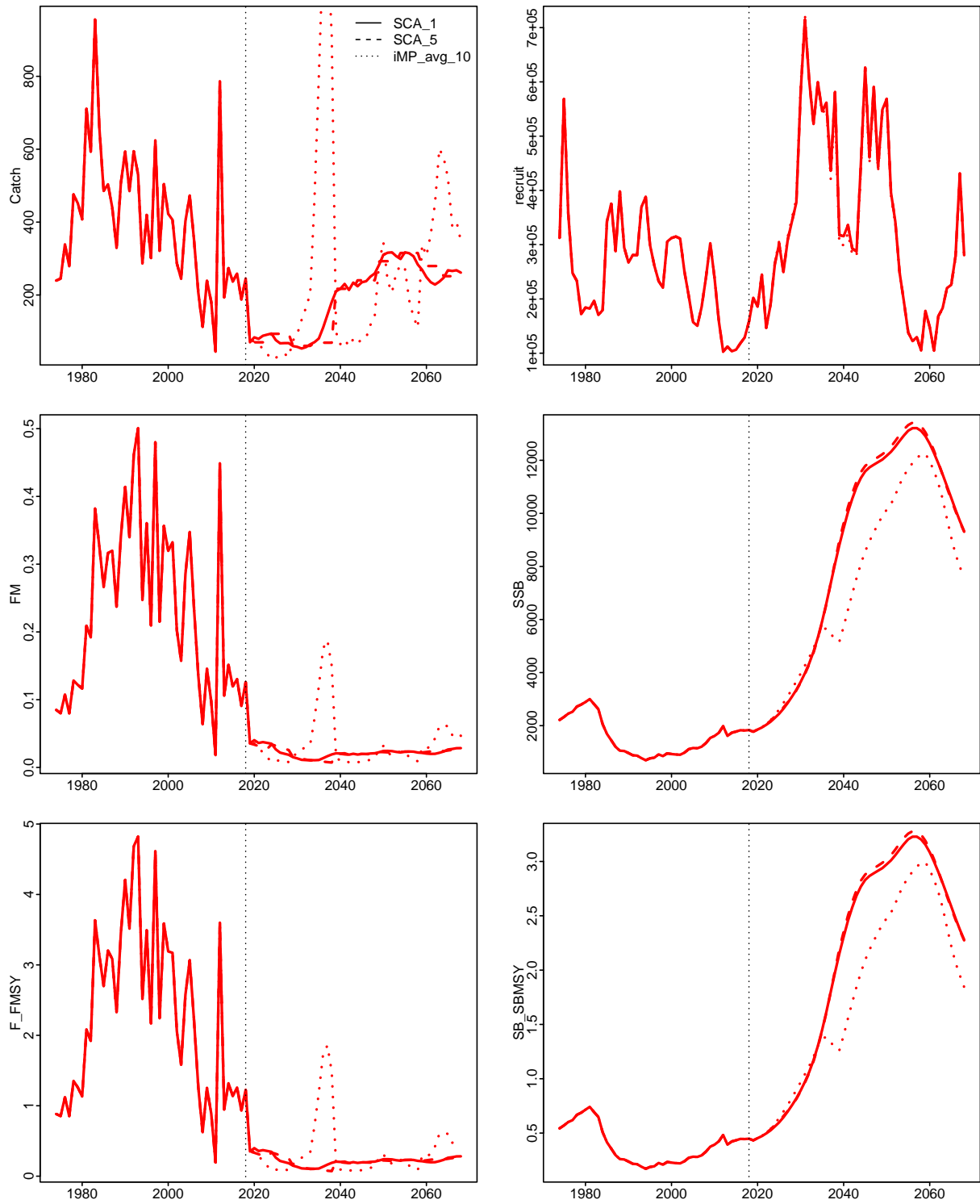
VermilionSnapper, perfobs

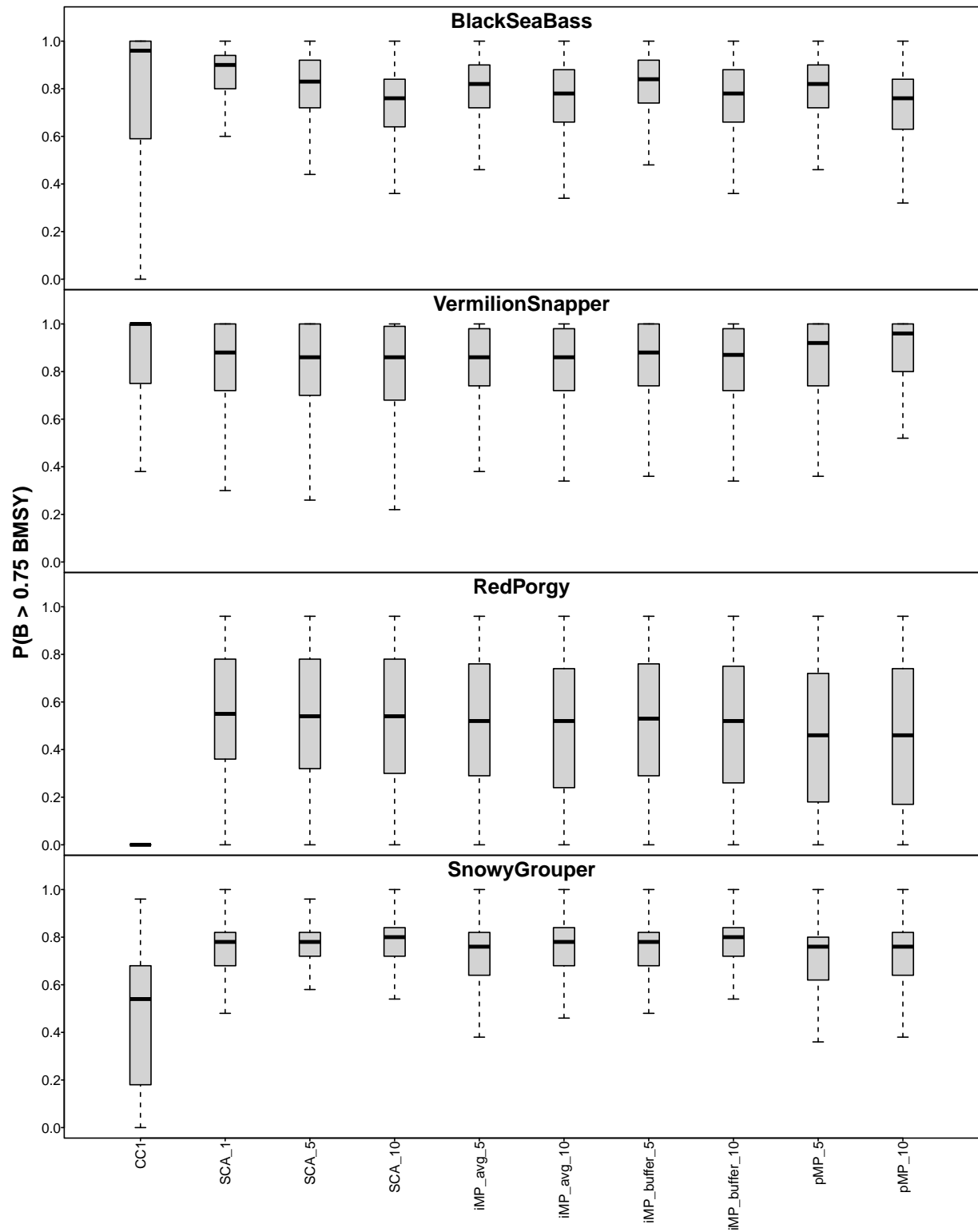


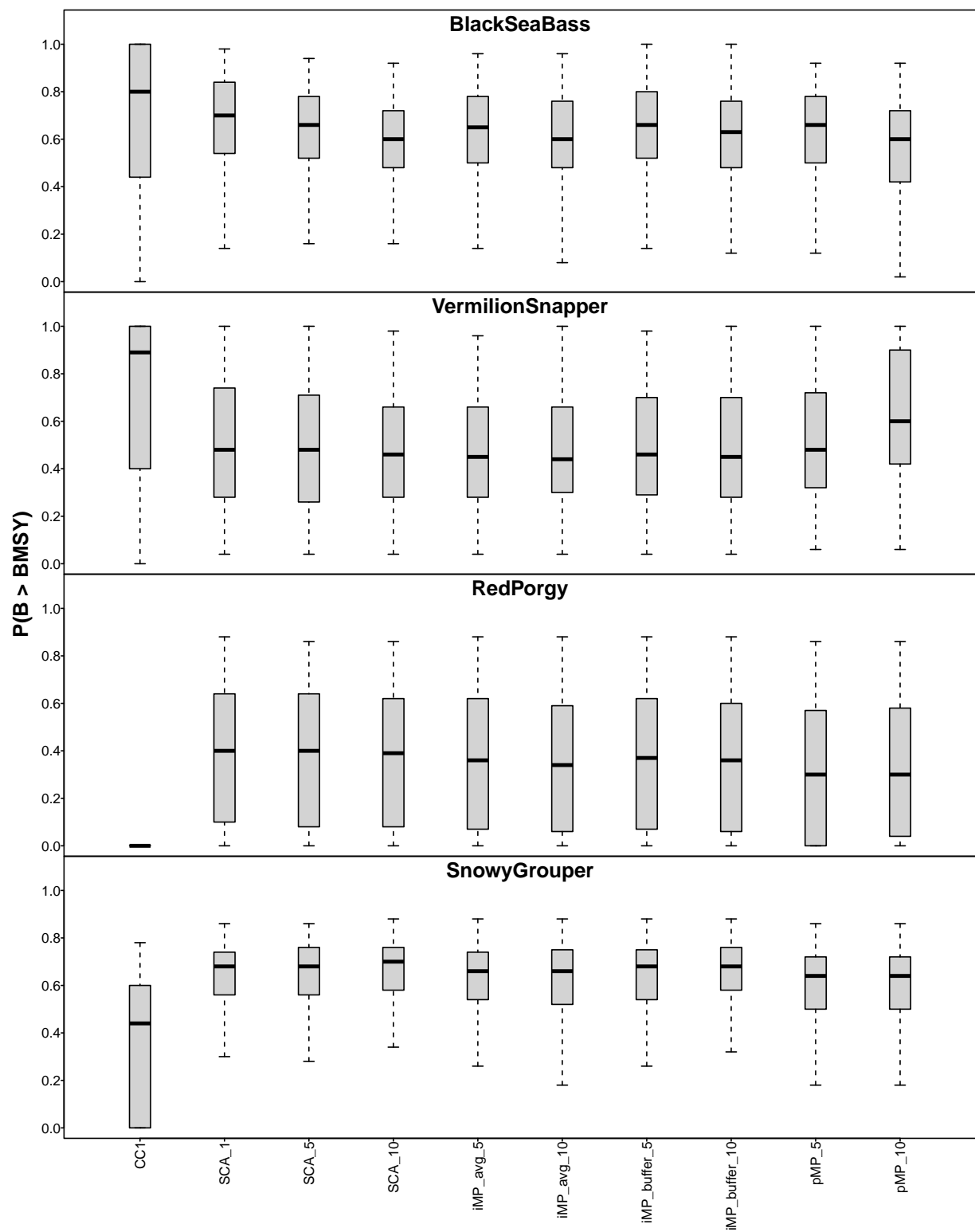
RedPorgy, perfbos

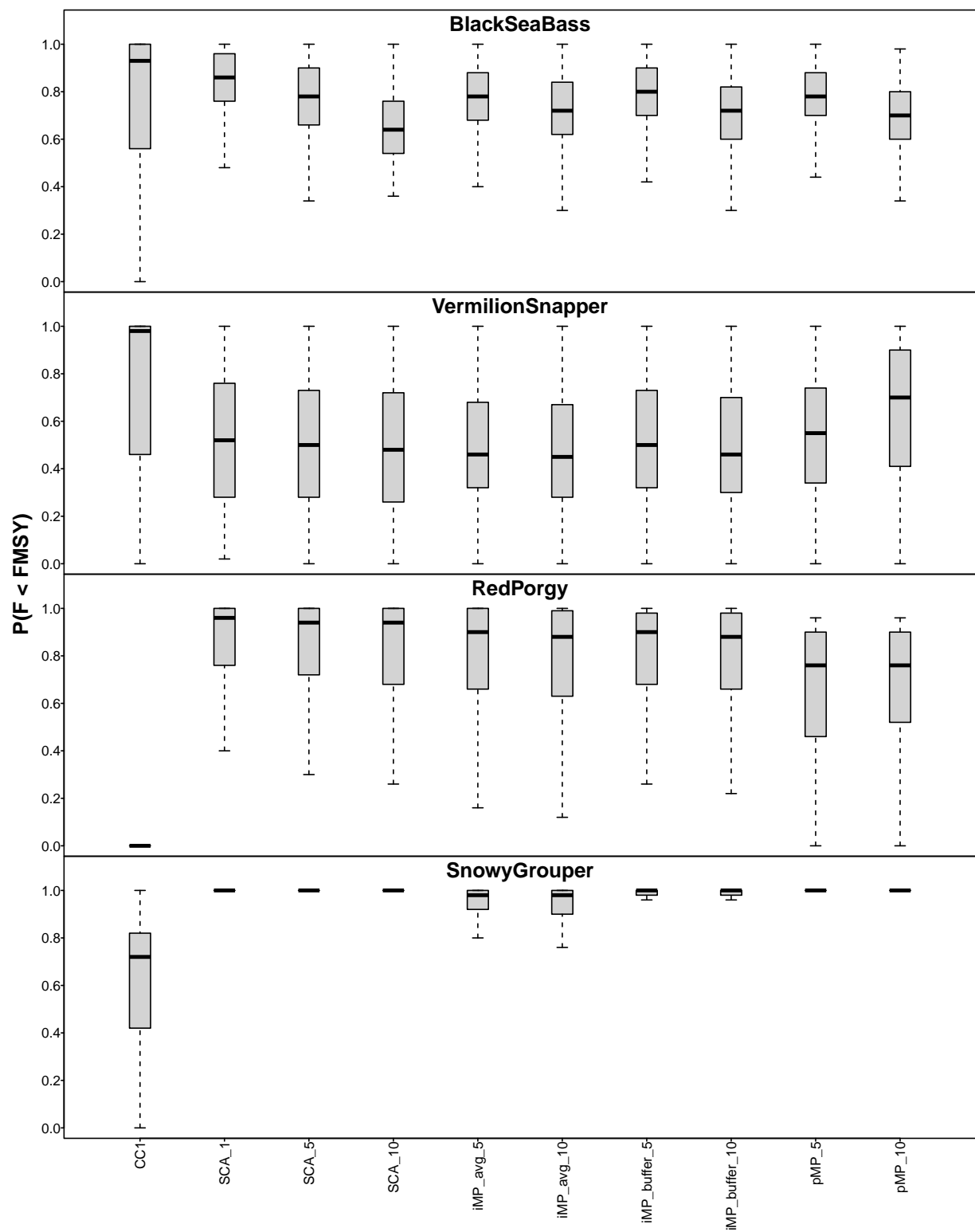


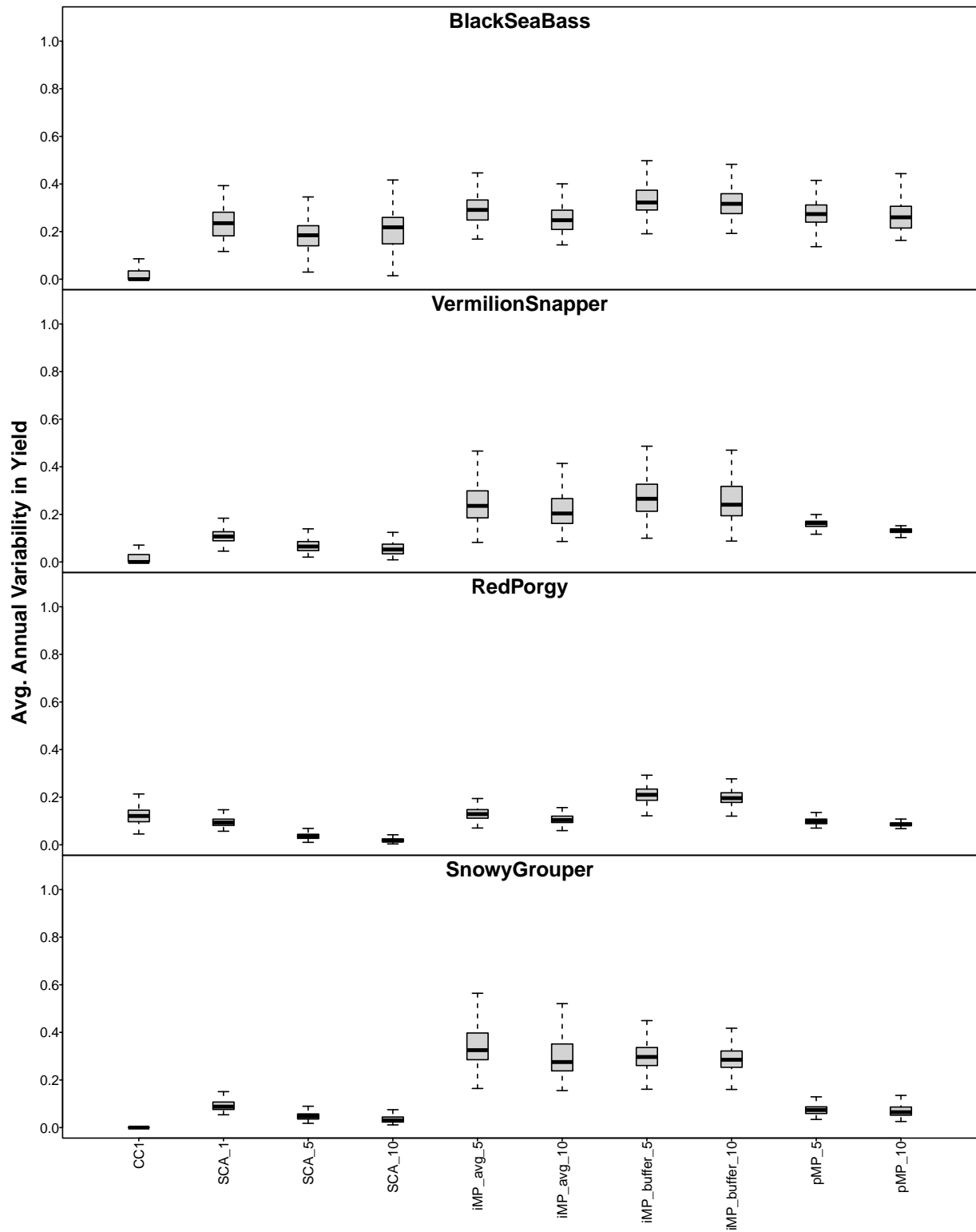
SnowyGrouper, perfobs

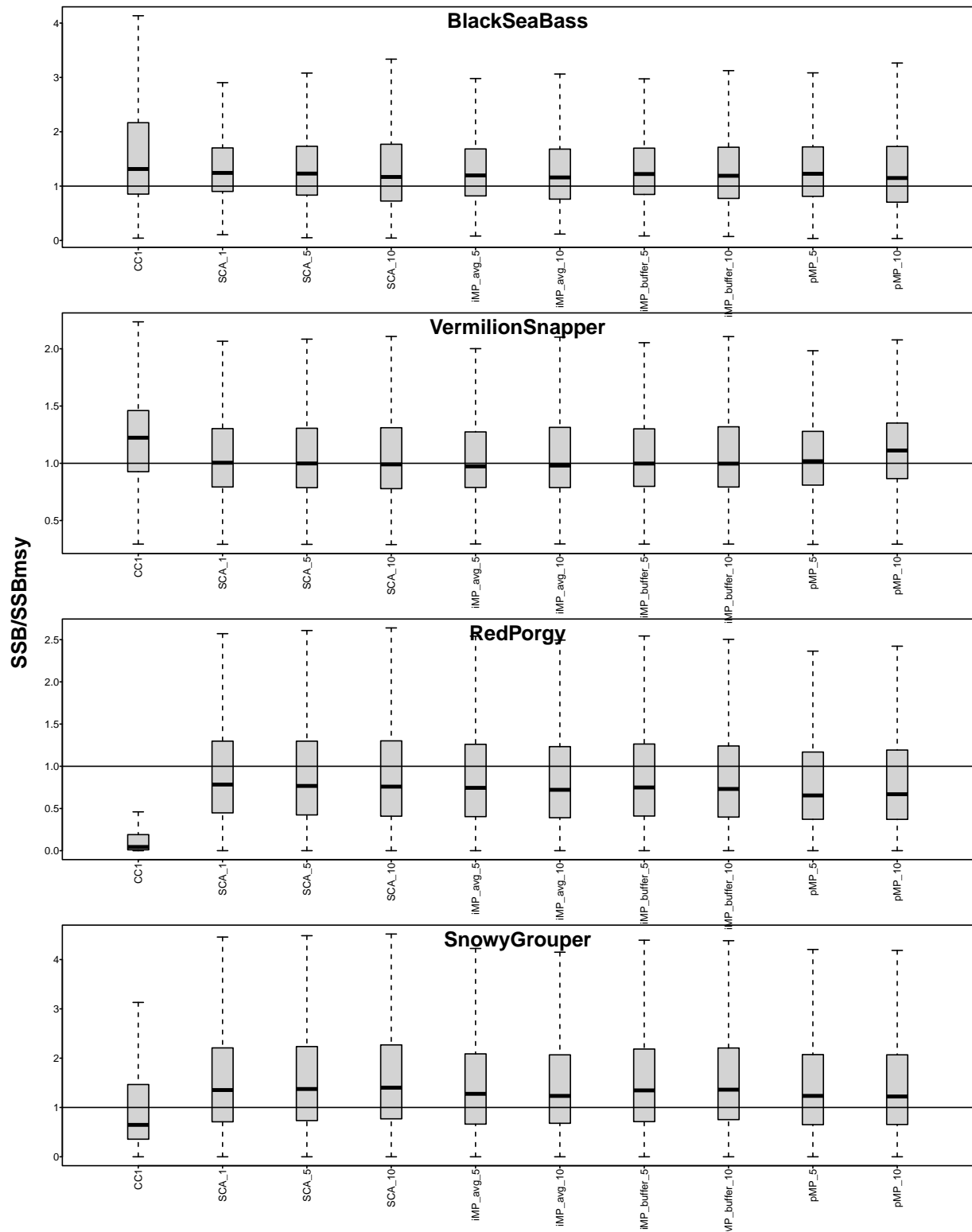


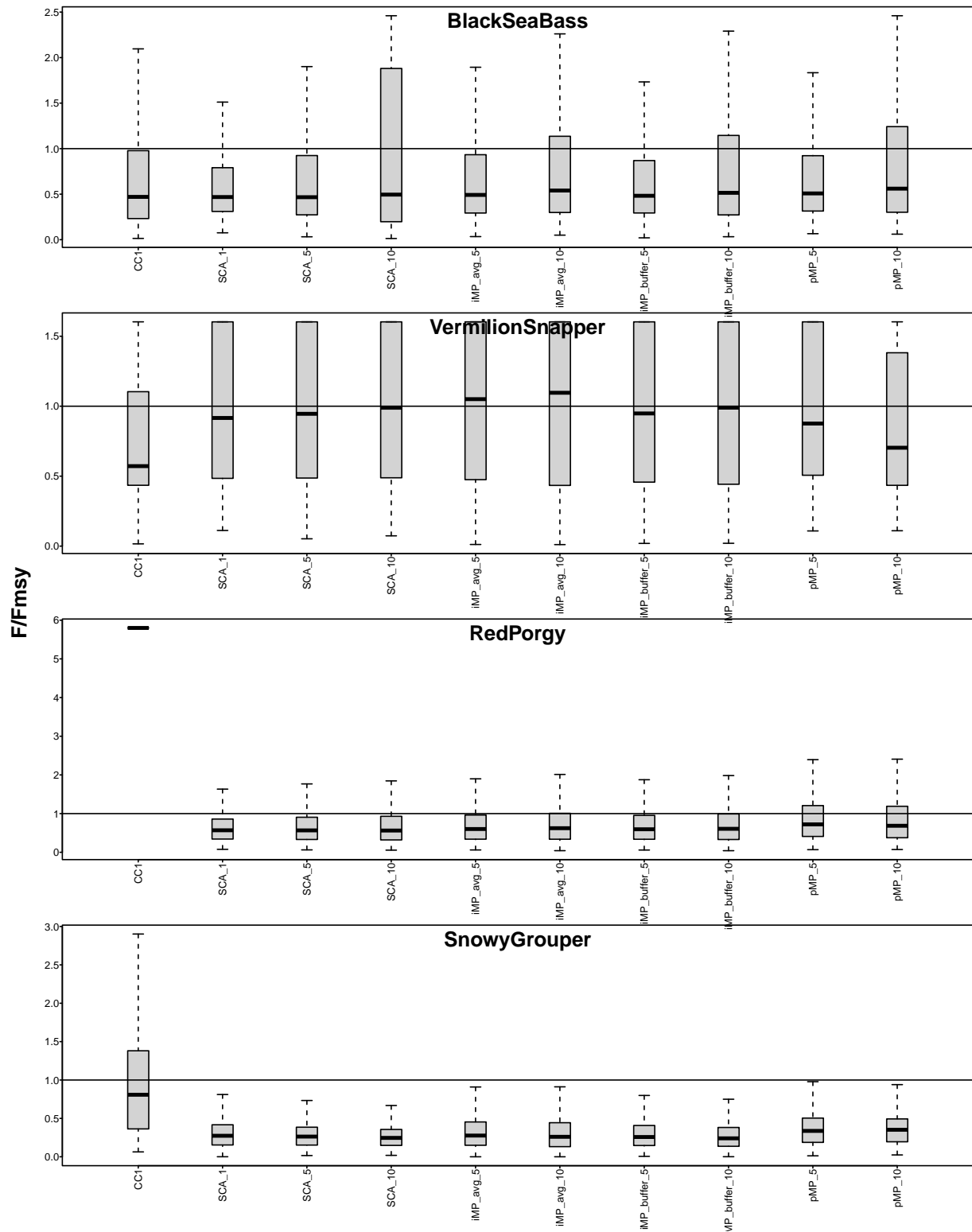


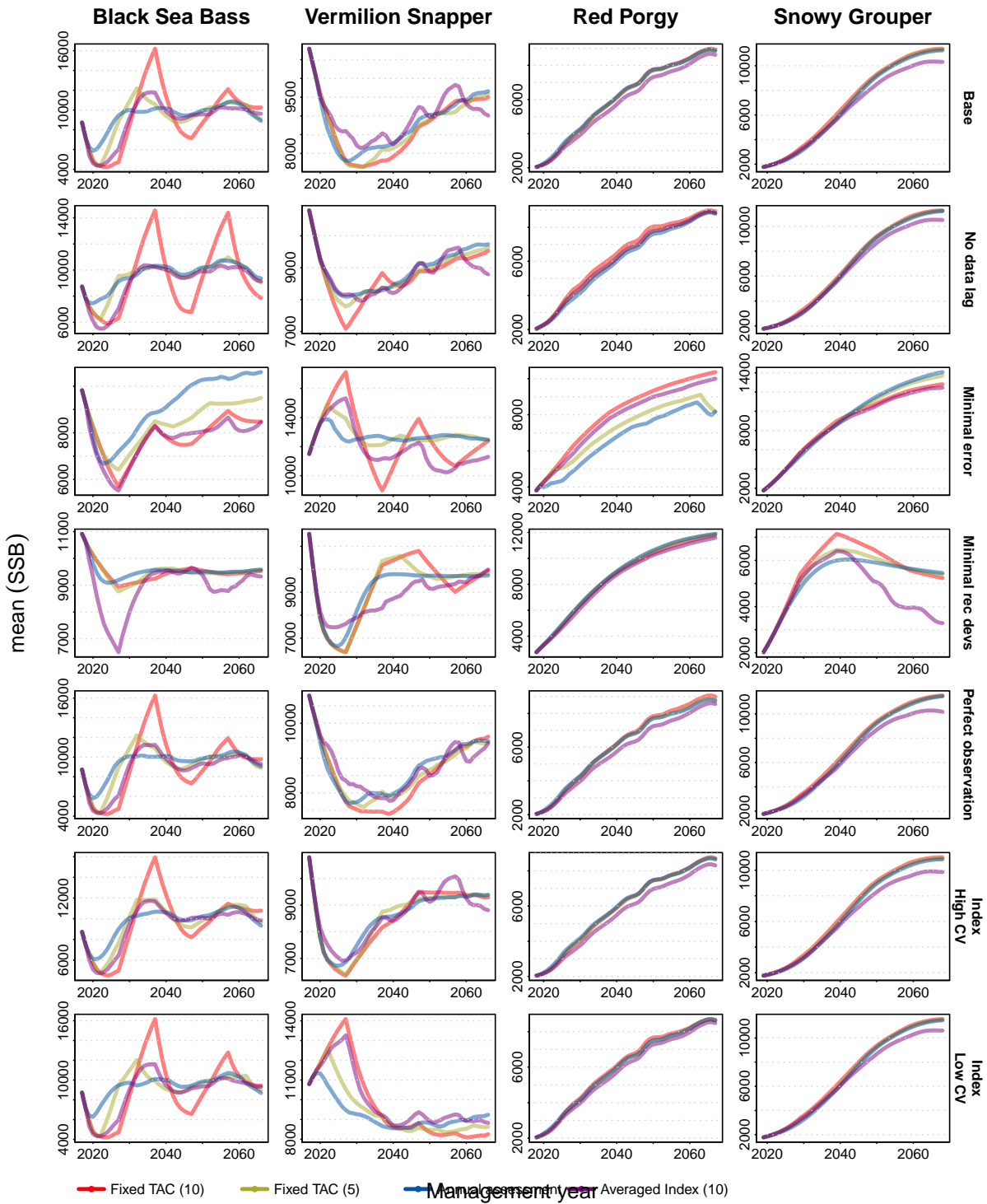


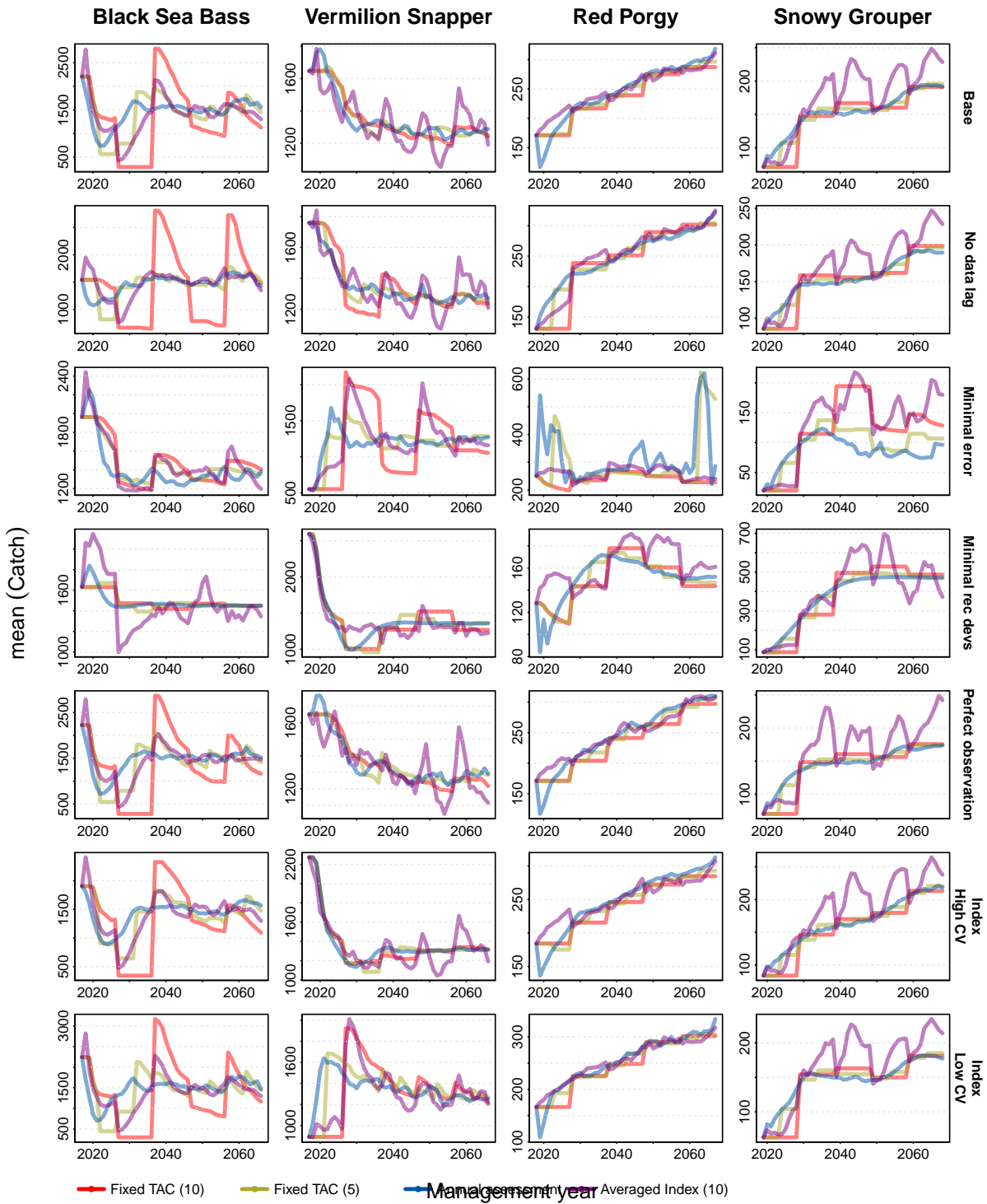


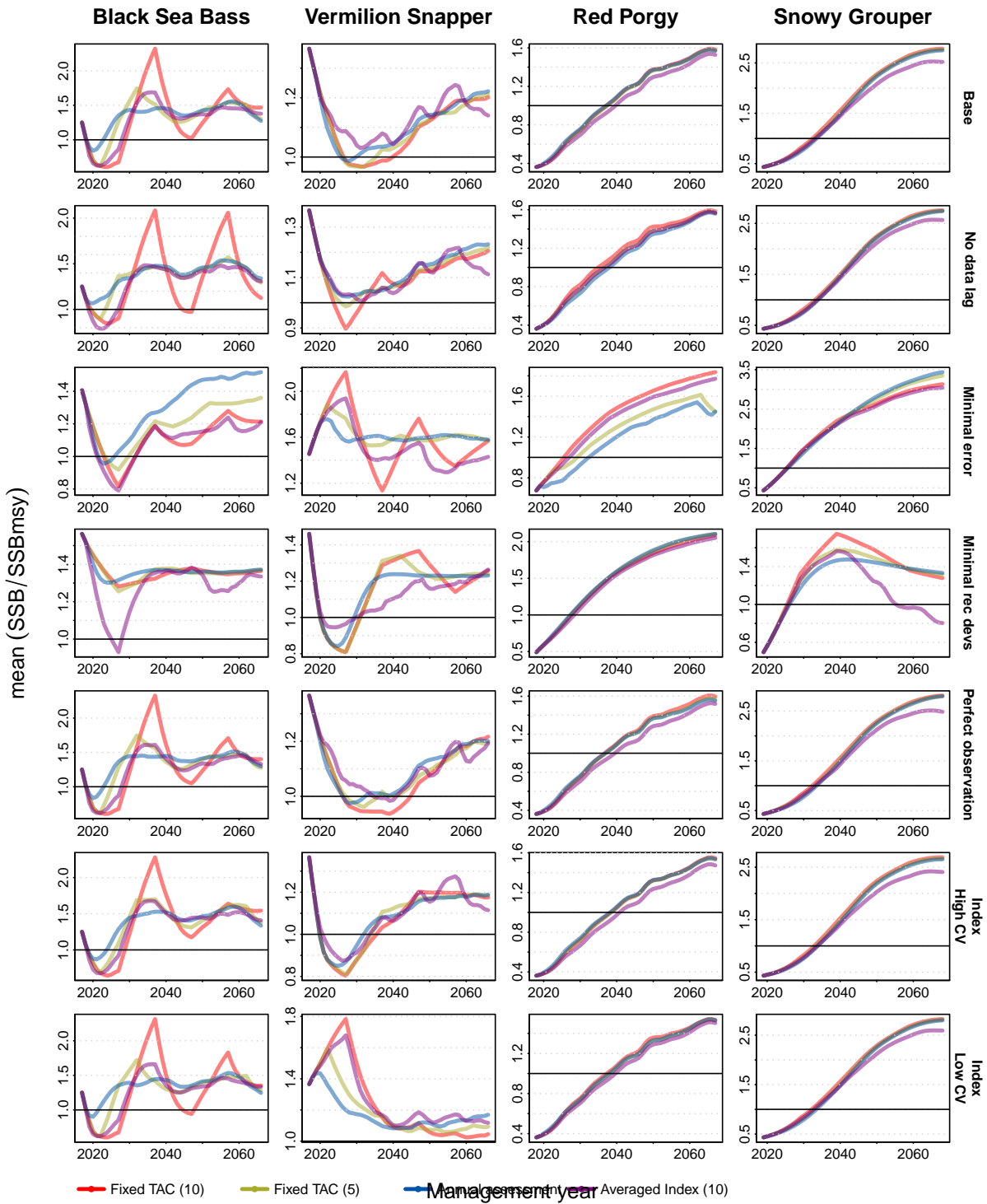


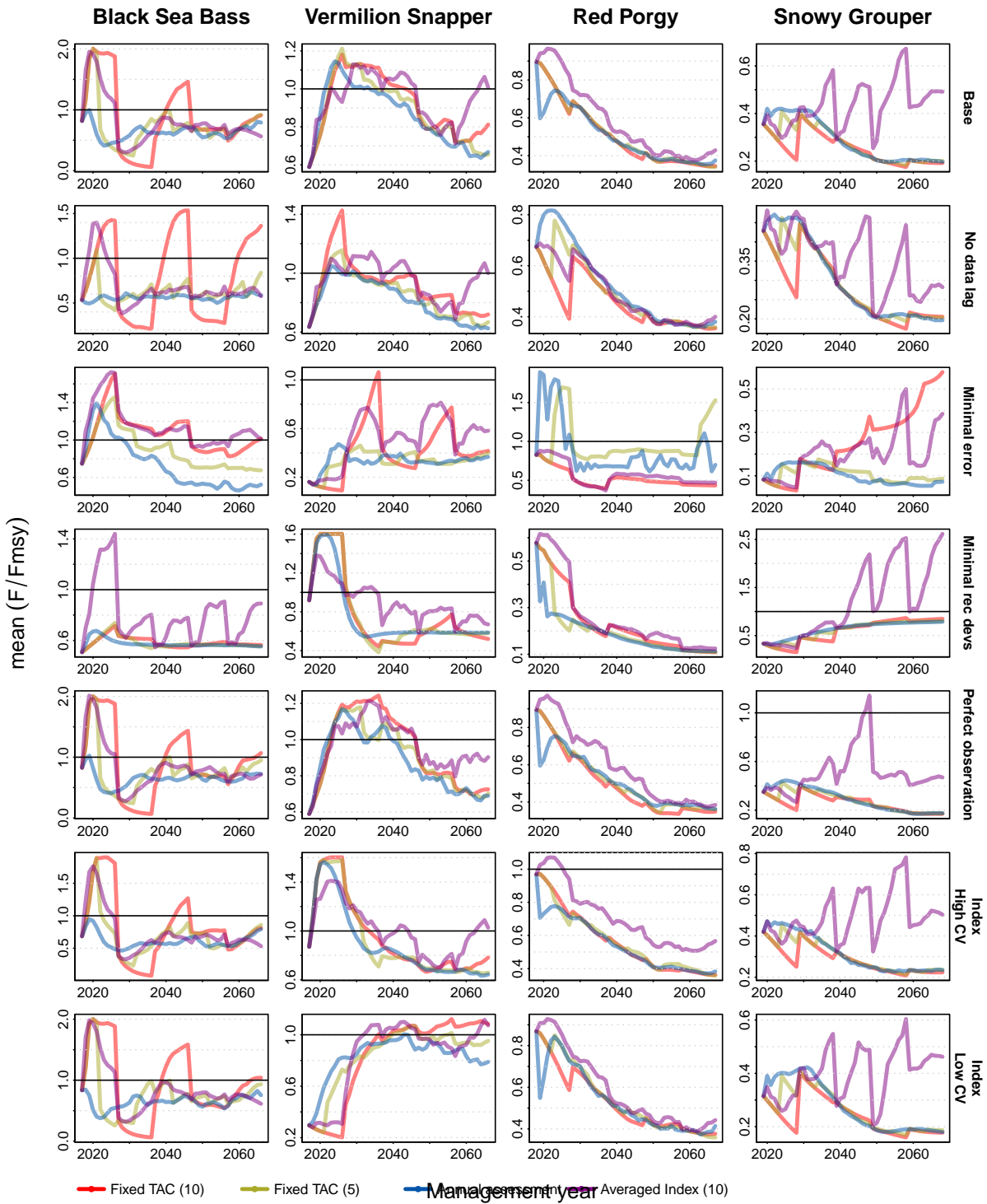


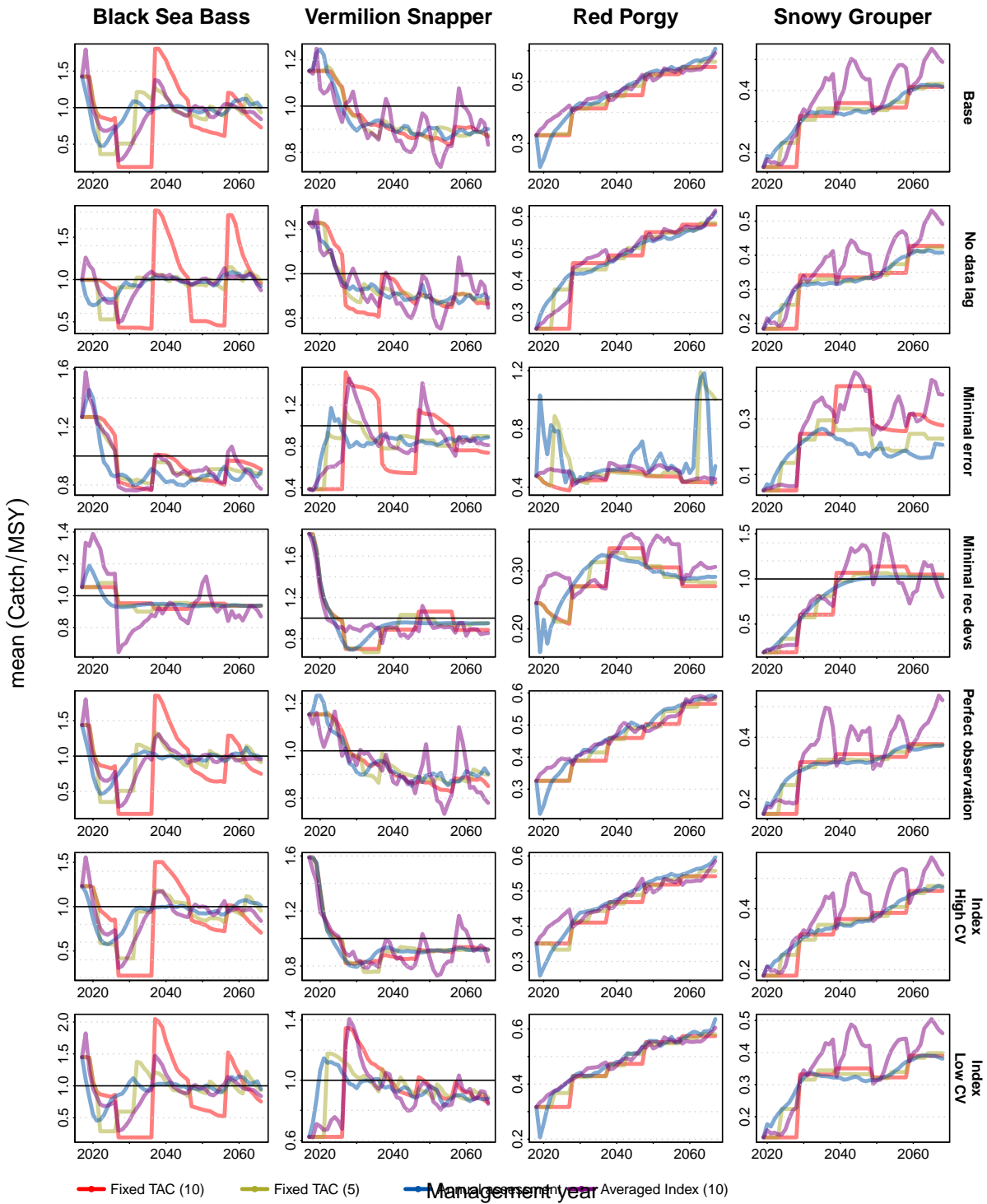












Tradeoff plots

Phase plots

