

**Figure S1. Performance of age-at-harvest abundance estimators with simulated data.** In each panel, the y-axis depicts abundance, scaled by the inverse of the overall mean across the time series. Red lines correspond to (2.5<sup>th</sup>, 50<sup>th</sup>, and 97.5<sup>th</sup> percentiles) of the true population dynamics (across stochastic simulations). Gray polygon encompasses 95% of the estimated values. Rows correspond to different estimators and columns correspond to different simulation scenarios.