Testing methods:
Best Available Scientific Information (BASI)

The what and why of the BASI approach

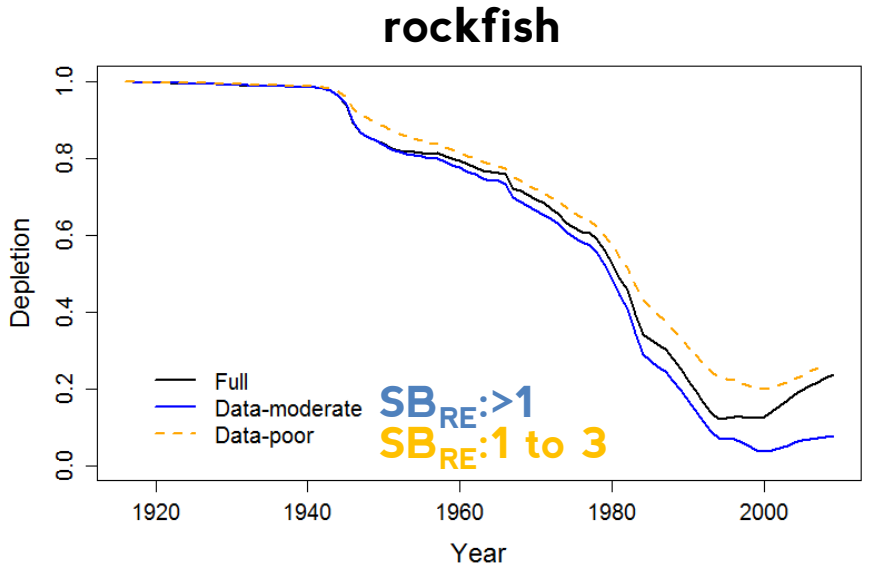
What

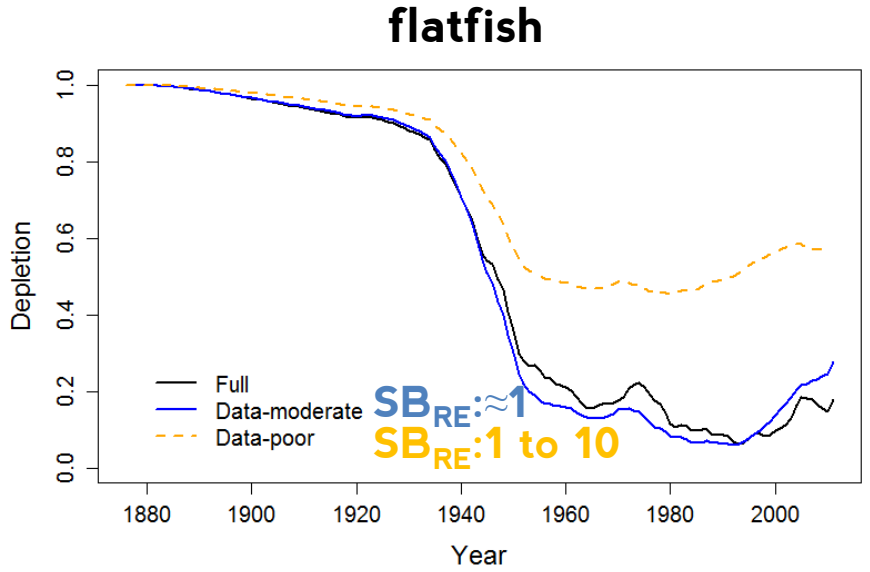
- Alternate approach to testing methods
- Uses stock assessment output rather than MSE as reference

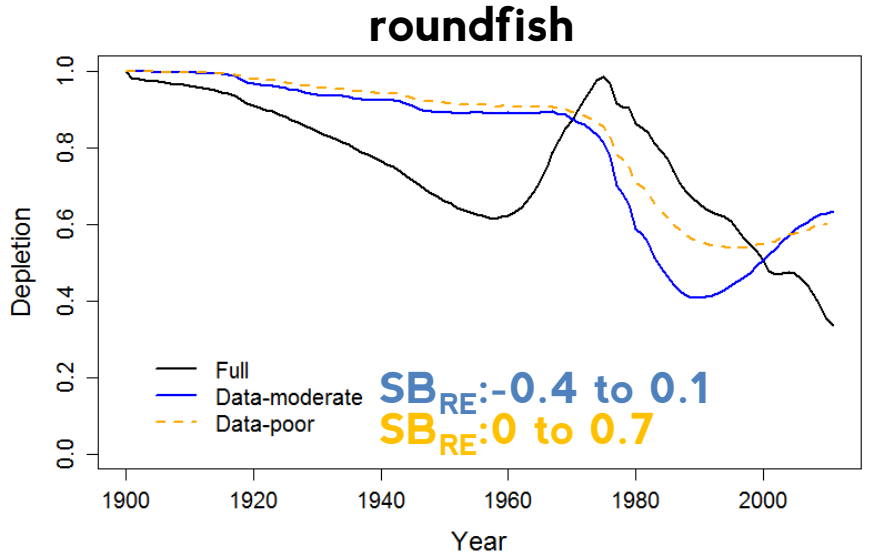
Why

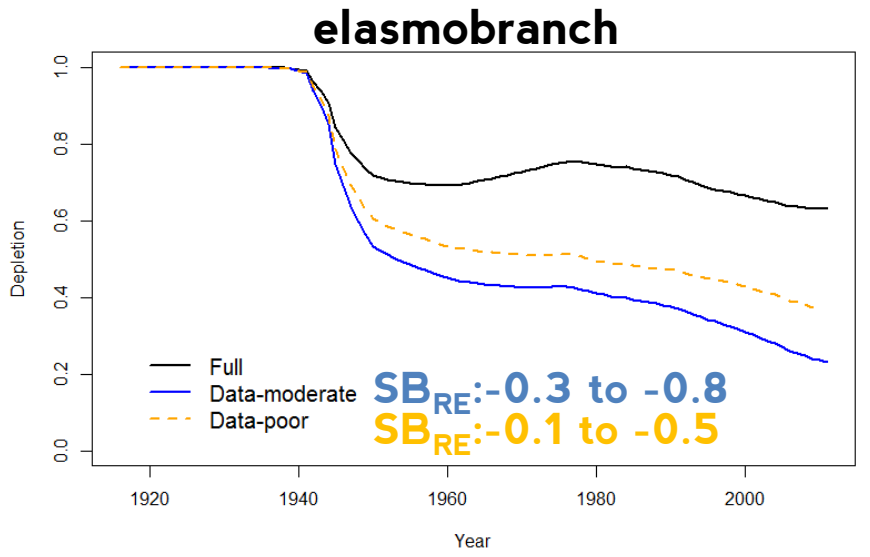
- MSE not always available
- MSE has limitations; having an alternative looks is a good thing

Comparing assessment methods

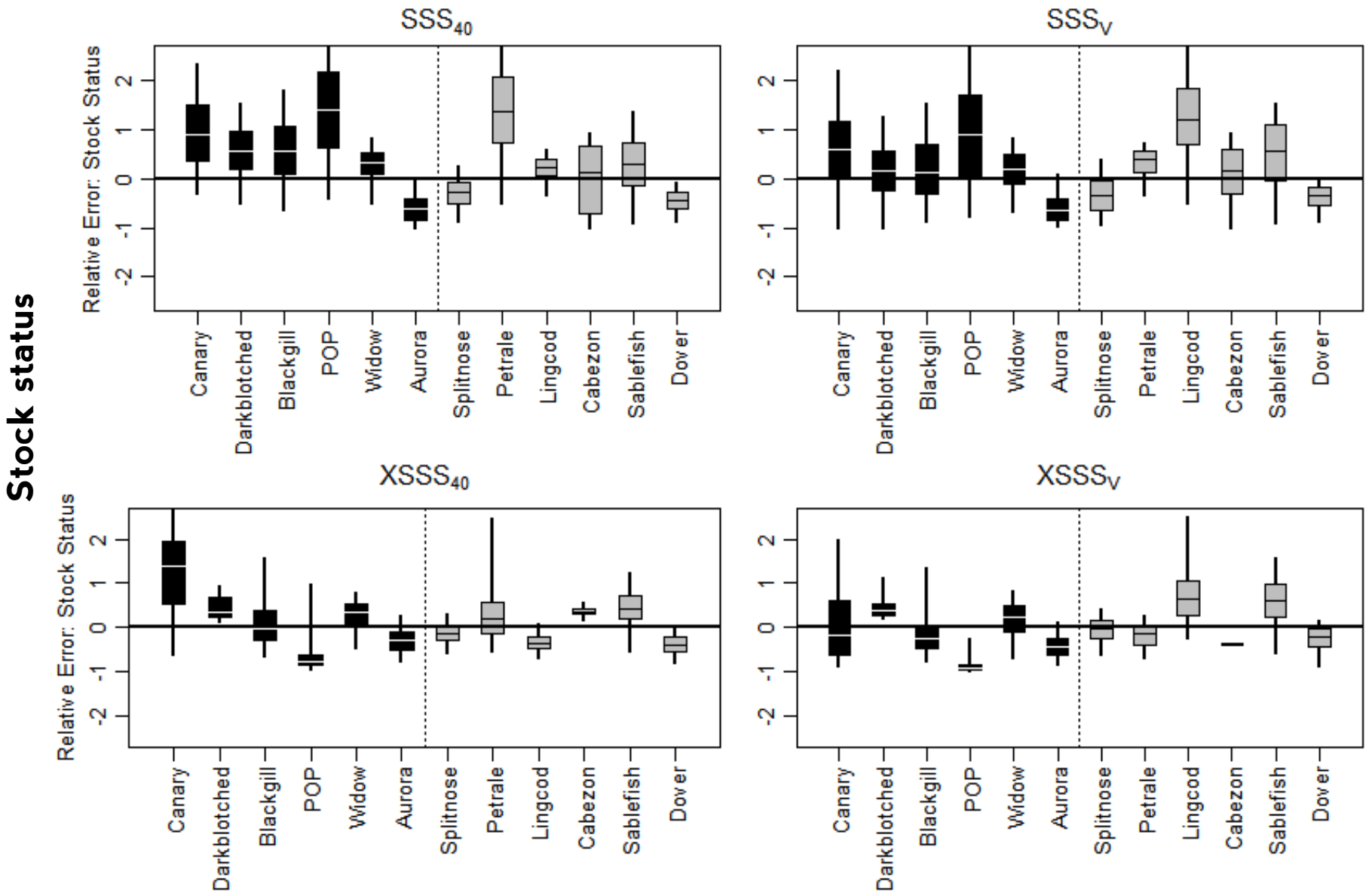








Application: When MSE not available



Example: Status

- Could not simulate PSA scoring
- BASI allows evaluation of model performance

Source: Cope et al. 2015

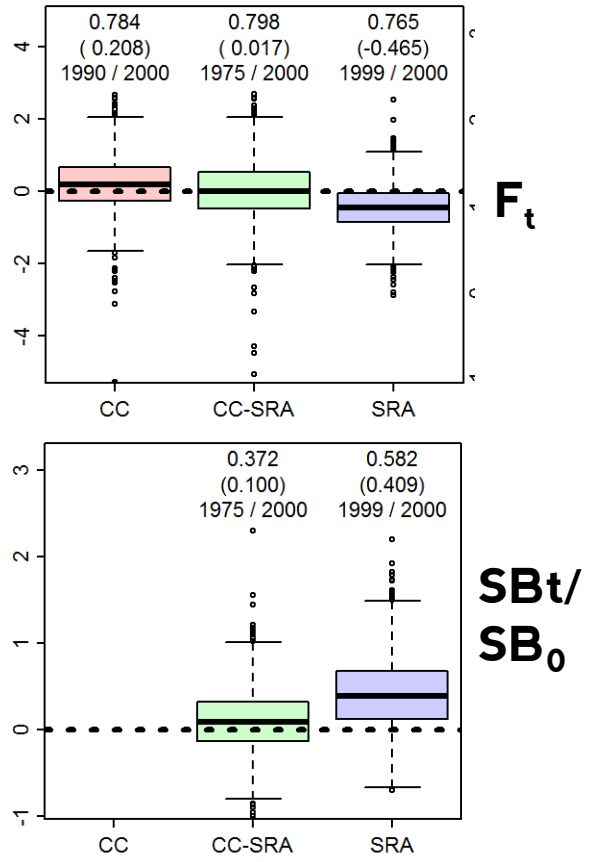
Catch Curve Stock Reduction Analysis in SS

Benefits

- Length comps. more available
- Stock status prior not needed

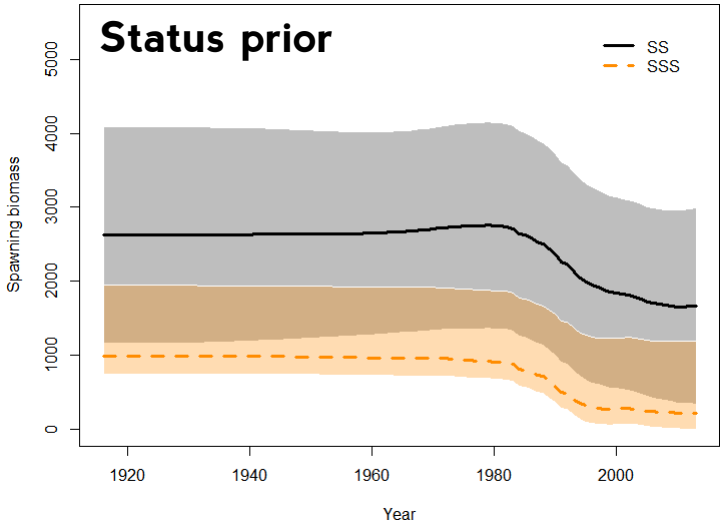
Assumptions

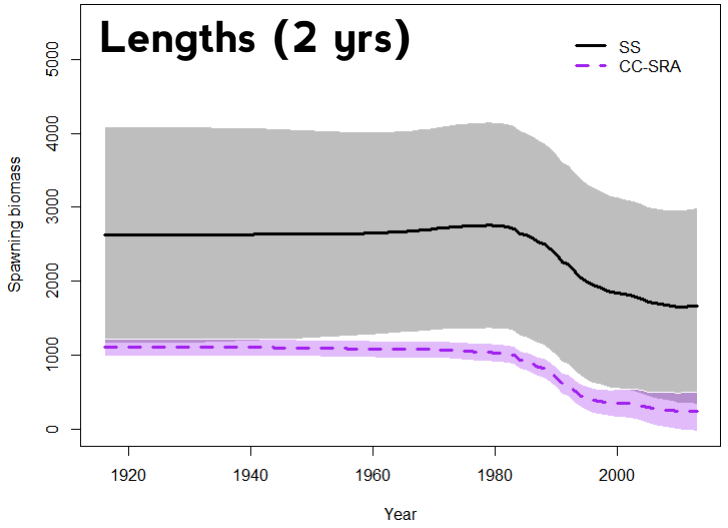
- Catch history known
- Unfished equilibrium before catch
- Known maturity and growth
- Known effective sample size of composition data

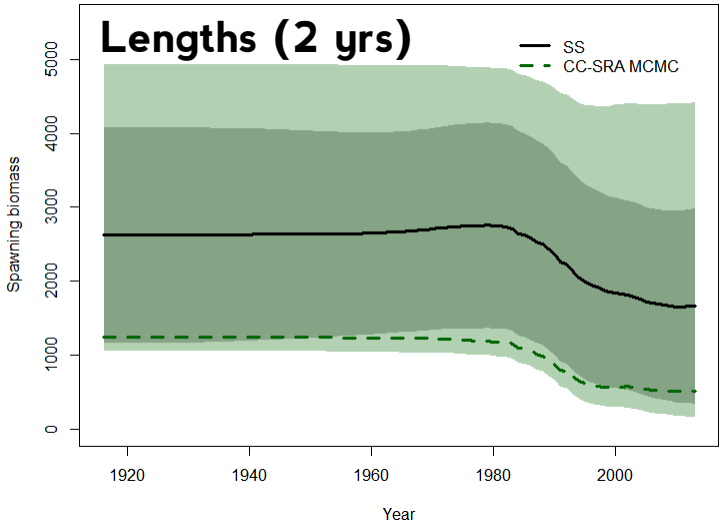


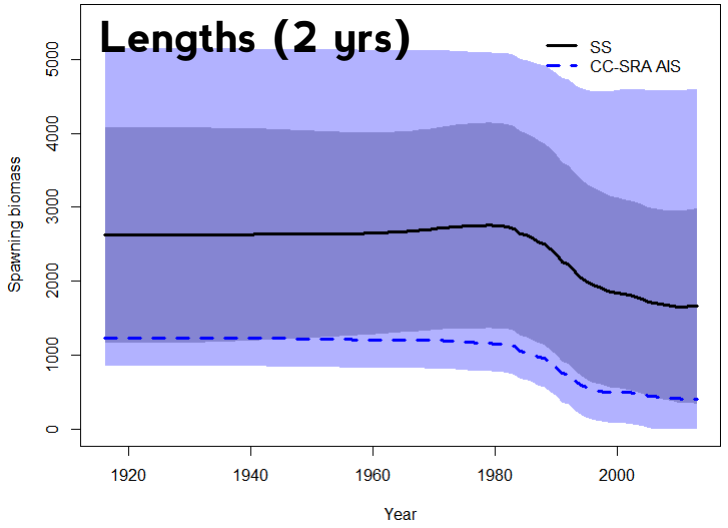
Source: Thorson and Cope 2015

BASI comparisons: Scale





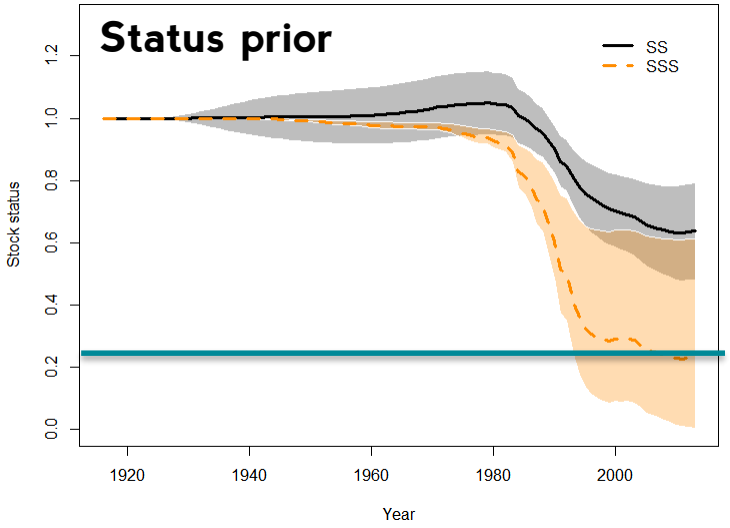


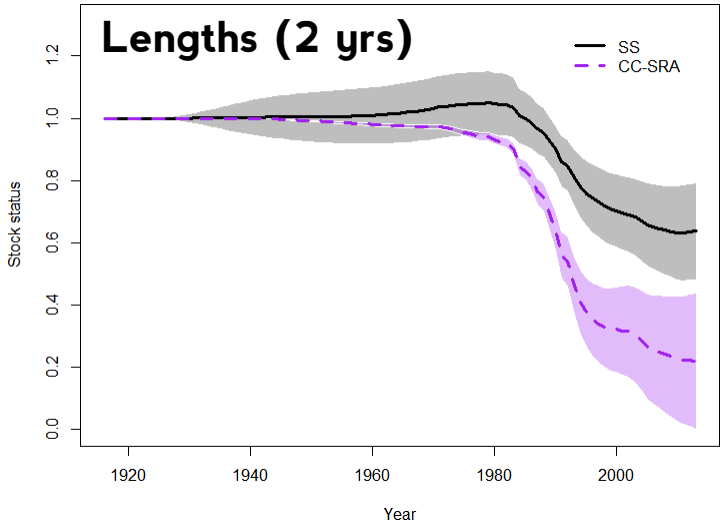


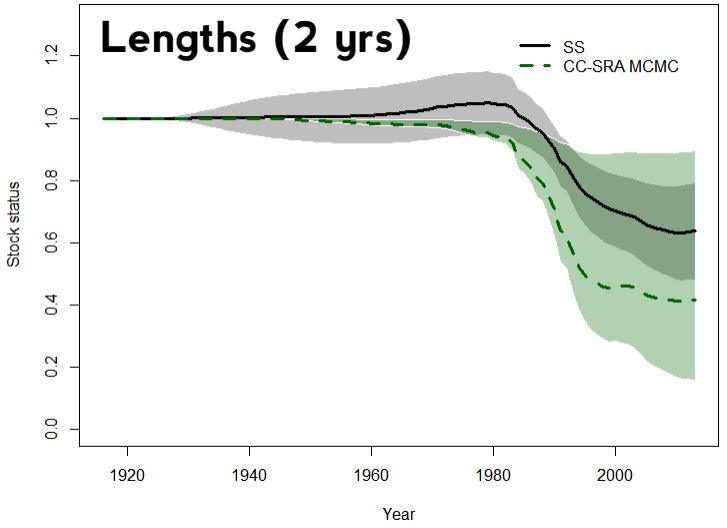
- Scale under-estimated
- MLE variance low
- AIS & MCMC similar; variance larger than benchmark

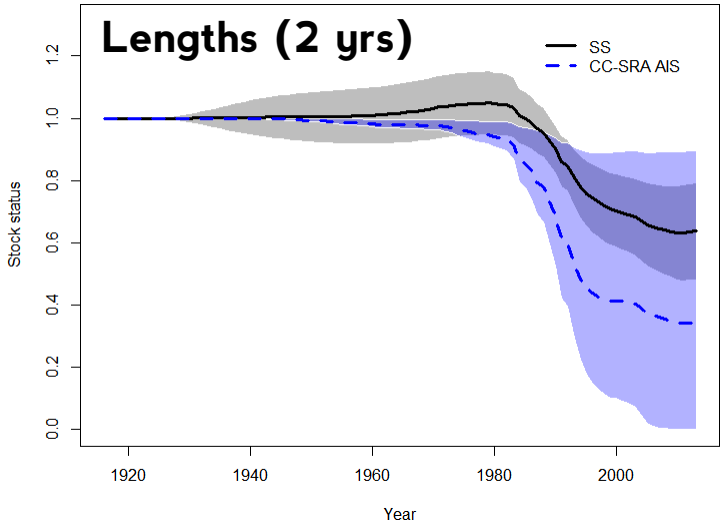
Sources: *Thorson and Cope 2015*

BASI comparisons: Stock Status









- **Status under-estimated; AIS,MCMC best performers**
- **AIS & MCMC similar; variance includes benchmark**

Demo:
conduct BASI comparisons

Summary: BASI approach

- Alternate approach to testing methods
- Uses stock assessment output rather than MSE as reference
- Useful to help understand systematic behavior of approaches
  - Consider this approach whenever doing a full assessment
- Can also help understand the full data model