North Atlantic Albacore MSE

Agreed Validation Steps Before Advice Will Be Given

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15 March, 2018

Validation

Operating Models

Same random deviates

Use same random deviates across all scenarios, and check stability of higher and lower percentiles within and across OM/MP scenarios. i.e. run for 1000 iters for selected OM/MP combinations

Check SRR and Spawner v F curves

To check SRR run with high F's and the dynamics are working the way they should, i.e contrast in the Spawning stock size and what it gives on recruitment
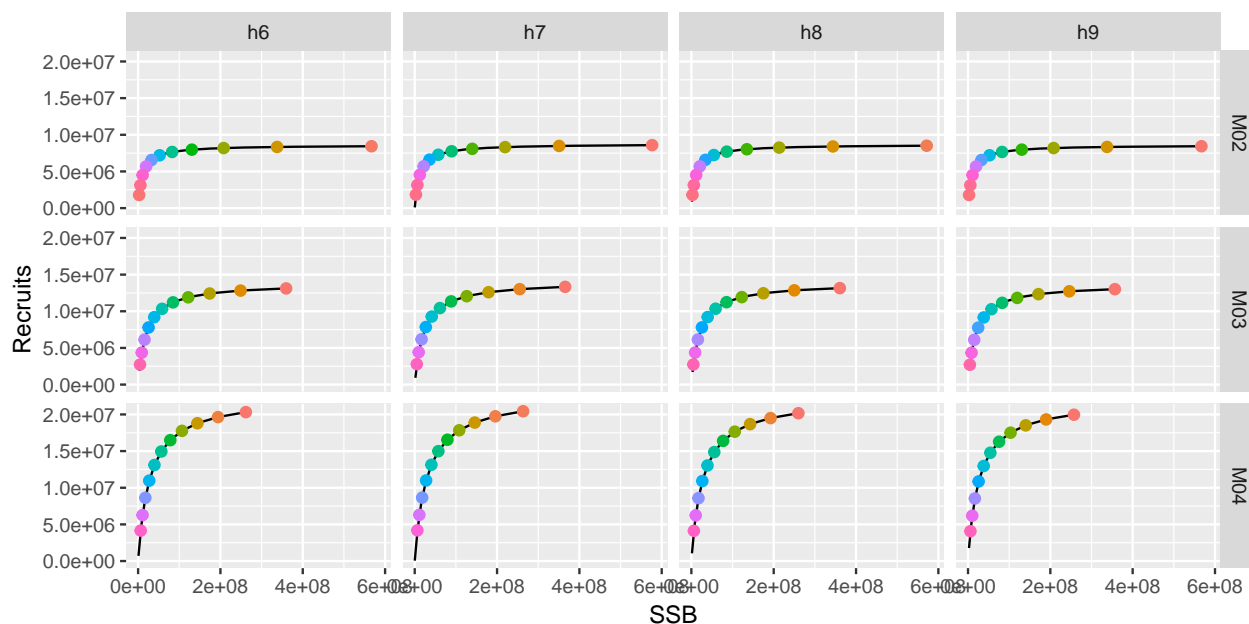
**Figure 'r iFig=iFig+1; iFig:
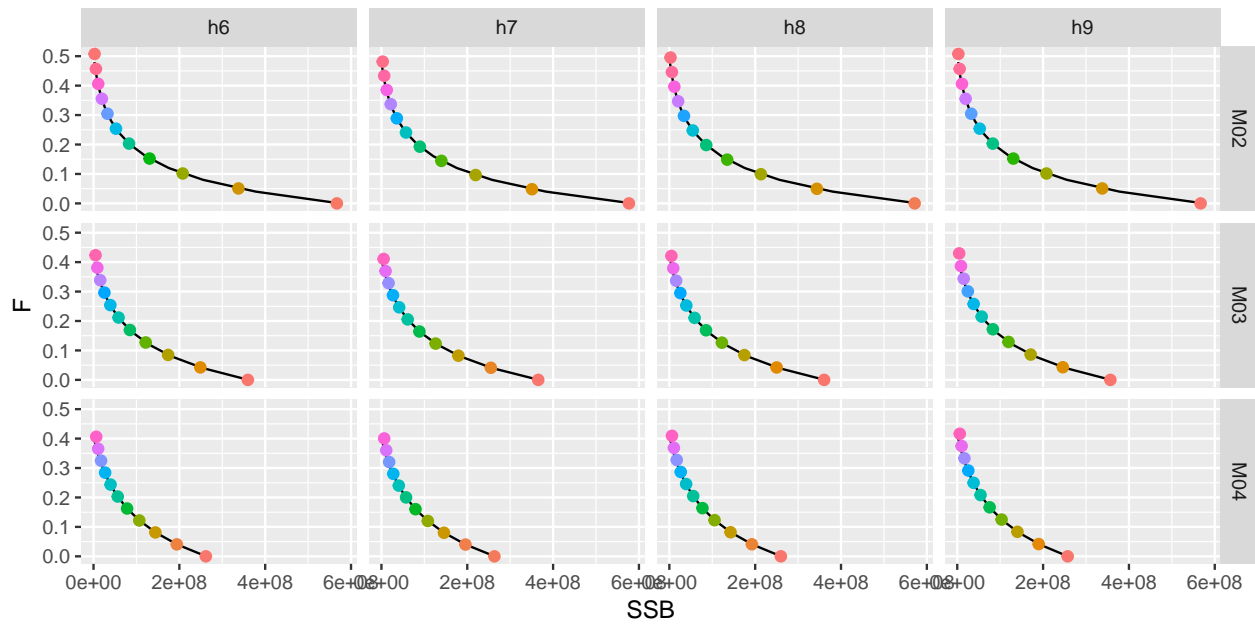
**Figure 'r iFig=iFig+1; iFig:

Crosstest

- Conduct a crosstest, i.e. run OM without feedback generate catch and CPUE fit SA, every 3 years and compare the OM and stock assessment (SA)
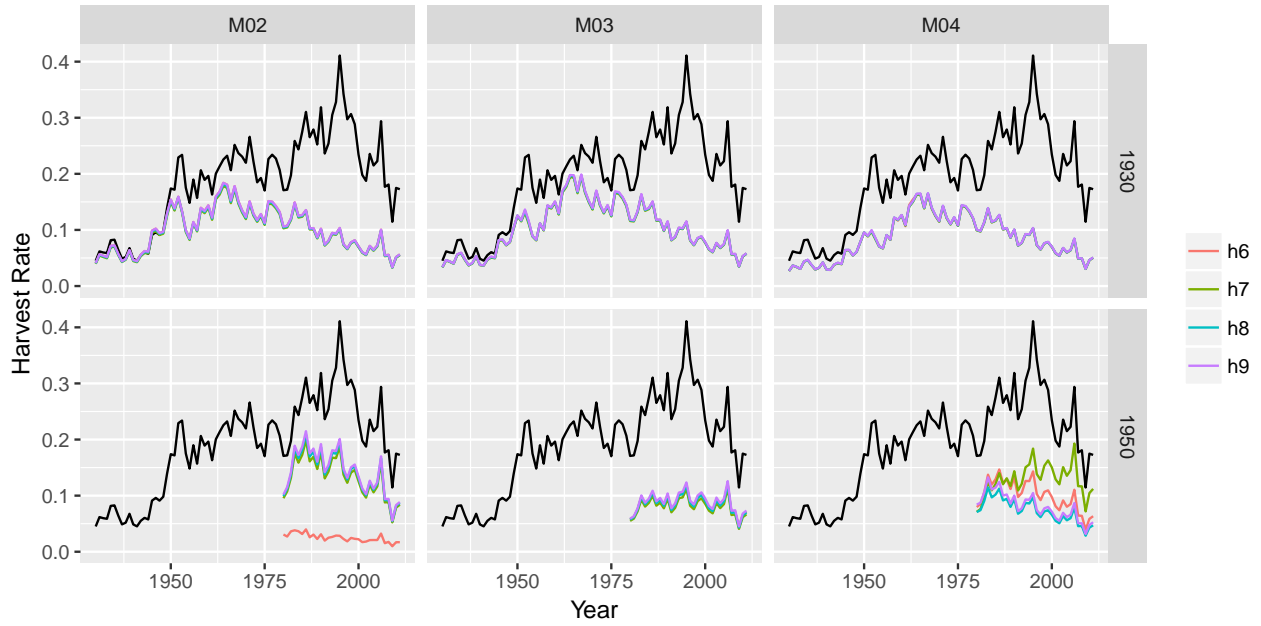
OEM in crosstest

- Use OEM in cross test

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[1] "1 1930 2011"
[1] "2 1930 2011"
[1] "3 1930 2011"
[1] "4 1930 2011"
[1] "5 1930 2011"
[1] "6 1930 2011"
[1] "7 1930 2011"
[1] "8 1930 2011"
[1] "9 1930 2011"
[1] "10 1930 2011"
[1] "11 1930 2011"
[1] "12 1930 2011"
[1] "1 1980 2011"
[1] "2 1980 2011"
[1] "3 1980 2011"
[1] "4 1980 2011"
[1] "5 1980 2011"
[1] "6 1980 2011"
[1] "7 1980 2011"
[1] "8 1980 2011"
[1] "9 1980 2011"
[1] "10 1980 2011"
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[1] "11 1980 2011"
[1] "12 1980 2011"
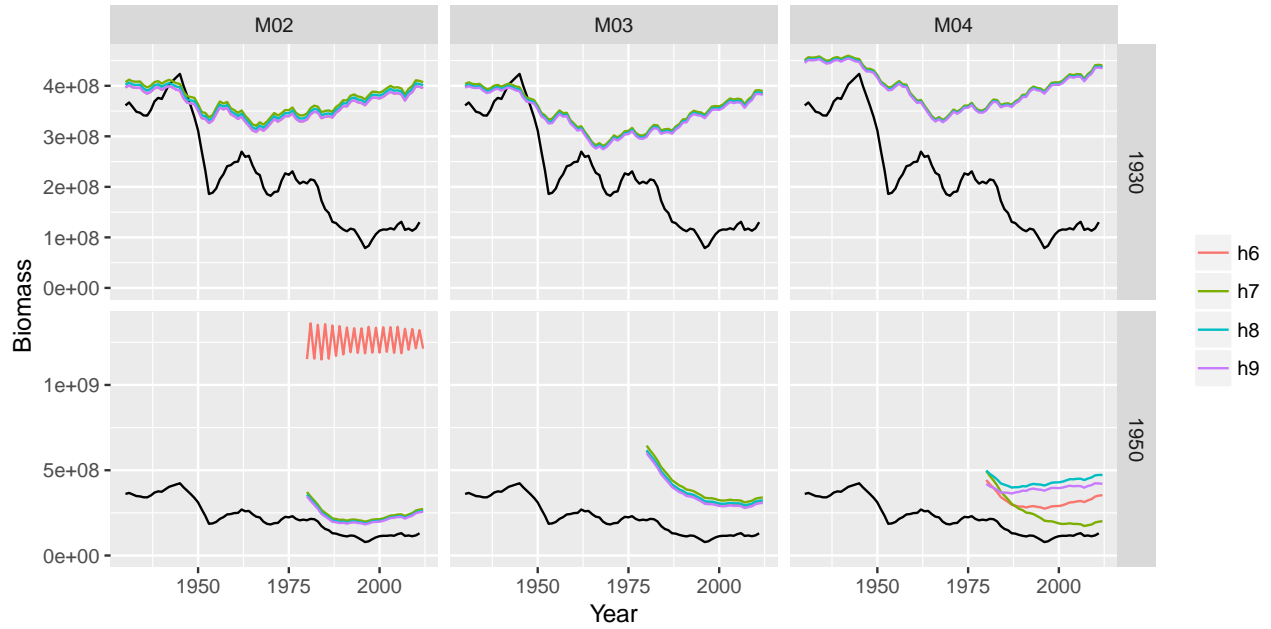
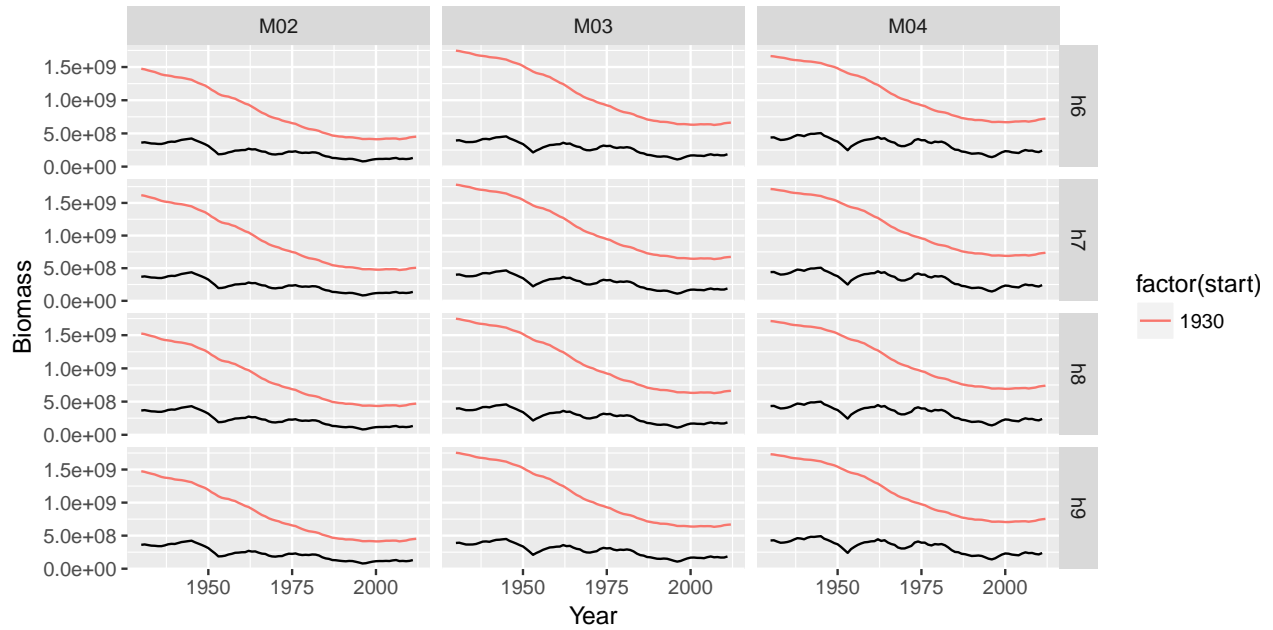**Figure 1** Crosstest comparision of biomass with MFCL estimates.

Figure 2 Crosstest comparision of harvest rate with MFCL estimates.

[1] "1 1930 2011"
[1] "2 1930 2011"
[1] "3 1930 2011"
[1] "4 1930 2011"
[1] "5 1930 2011"
[1] "6 1930 2011"
[1] "7 1930 2011"
[1] "8 1930 2011"

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[1] "9 1930 2011"
[1] "10 1930 2011"
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[1] "2 1950 2011"
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[1] "1 1980 2011"
[1] "2 1980 2011"
[1] "3 1980 2011"
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[1] "10 1980 2011"
[1] "11 1980 2011"
[1] "12 1980 2011"
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Figure 3 Crosstest comparision of biomass with MFCL estimates.
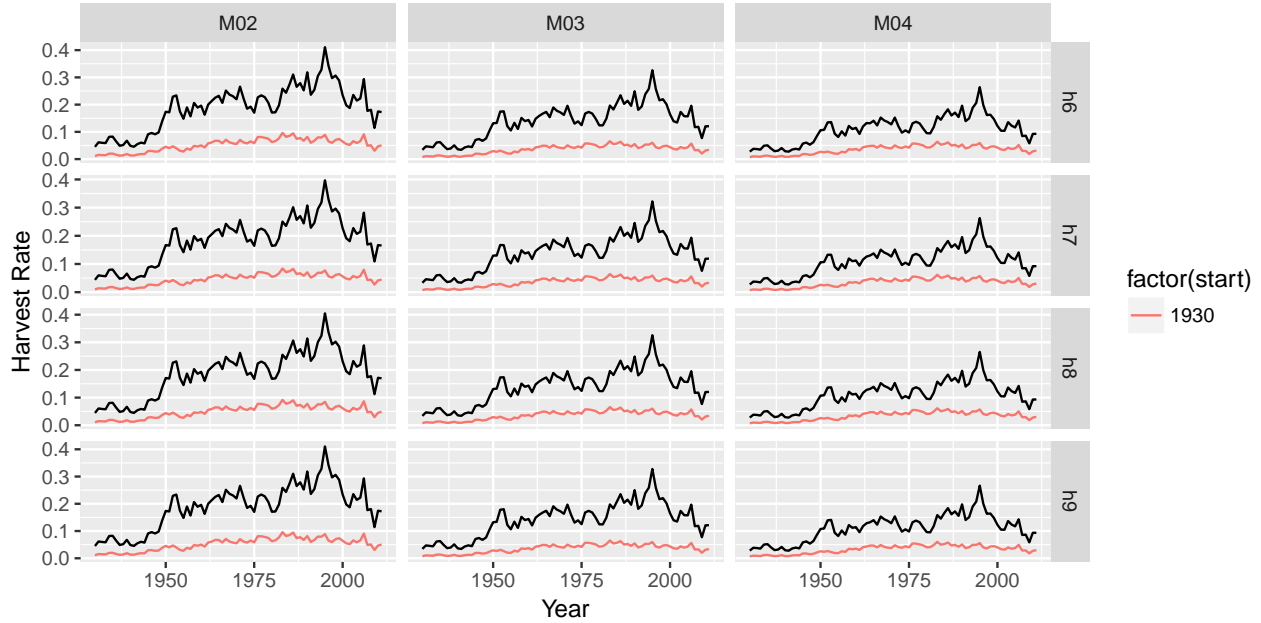
Figure 4 Crosstest comparision of harvest rate with MFCL estimates.

Figure 5 Estimates of r.

Figure 6 Estiamtes of K.

Figure 7 Estiamtes of r.

$\mathbf{F}{=}F_{MSY}$

- For all OM/MP trials run simple F=Ftarget projection, to check dynamics

OM with feedback

- Run OM with feedback for an F target of FMSY and compare to F projection

OM with feedback and B_{MSY} as B_{Thresh}

- Run a OM with feedback for an F target of FMSY and an Btreshold of BMSY, compare to above.

OM with feedback and B_{MSY} as B_{Thresh} and TAC Bounds

- Run a OM with feedback for an F target of FMSY and an Btreshold of BMSY plus TAC bounds of 20, 25 and 30%, compare to above.

Factorial Design

- Run scenarios using a factorial design, i.e. main effects, 1st, 2nd, . . . order interactions, see if you can predict the performance indicators

Refpts

- Compare OM and MP reference points

TAC

- Check TAC output by MP and Catch taken from OM, iteration by iteration.

Conditioning

- OM conditioning, of historic and future, i.e. calculate the OM production functions and compare trajectories to these.

Refpts

- Compare OM reference points and statistics such as K, r, . . . to MP values

Check SA

- Check SA, e.g. hitting bounds, convergence

TAC

- Compare TAC output from MP compared to Catch from OM