

Stock Assessment Review (STAR) Panel 2 for Quillback Rockfish off California

Southwest Fisheries Science Center Auditorium, NOAA
110 McAllister Way | Santa Cruz CA 95060

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1 - Request

Plot comparisons of age-0 recruits and recruitment deviations for sensitivities (two separate plots without confidence intervals). Sensitivities include 1) base model, 2) removal of all ages, 3) removal of growth fleet, 4) fixed growth at 2021 values with ages, 5) fixed growth at 2021 values without ages, 6) estimate M, and 7) no blocks on selectivity. Please separate sensitivities into multiple plots if you think they are difficult to interpret.

1 - Rationale

There were considerable differences in the magnitude and variability in recruitment deviations between the 2021 and pre-STAR base model. Evaluating changes in time-varying recruitment based on incremental changes in the biological inputs would enhance our understanding about relative effects of new age data, updated growth parameters, estimate of M, and time-blocking on recruitment.

1 - STAT Response

1 - Panel Conclusion

2 - Request

Plot comparisons of recruitment deviations for 15-year retrospective analysis using the pre-STAR base model.

2 - Rationale

This will help determine how influential the recent data are on the estimation of the 1994 year class as well as other historical year classes.

2 - STAT Response

2 - Panel Conclusion

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3 - Request

Conduct a new sensitivity with no age data and no blocks on selectivity (all asymptotic) and compare this to the following runs: the base model, the current sensitivity with no age data with time blocks, and the current sensitivity of no blocks on selectivity with age data. Separately plot the spawning output, fraction unfished, and recruitment deviations.

3 - Rationale

This sensitivity will increase our understanding about the effects of selectivity and age data on the model outcomes.

3 - STAT Response

3 - Panel Conclusion

4 - Request

Recalculate the effective sample sizes for the commercial length composition data (see Tables 2 and 3) using the number of trips only and compare to the effective sample sizes used in the base case. Compare the effective sample sizes from this run to the effective sample sizes of the pre-STAR base. If materially different, present a comparison of spawning output, fraction unfished, and recruitment deviations for these two runs.

4 - Rationale

The Francis method typically only uses the number of trips as the input to the iterative reweighting process. The approach in this assessment has used a combination of both the number of trips and number of samples (lengths, ages), which may mean that the composition data are over-weighted.

4 - STAT Response

4 - Panel Conclusion

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5 - Request

Combining and expanding on Figures 18 and 19, plot the pre-base model fitted growth curve and estimated variability with fleet-specific (i.e., model named growth fleet and commercial fleet) observations of length-at-age.

5 - Rationale

This will assist in understanding how well the mean and variability of the age-at-length data are being fit by the model.

5 - STAT Response

5 - Panel Conclusion

6 - Request

Tune sigmaR using the built-in approach within R4SS (i.e., looking at asymptotic variance and between standard errors of estimated recruitment deviations; equation 23 in SS manual) by running it at most twice. Present the spawning output, fraction unfished, and recruitment deviation plots. Present the method of tuning sigmaR along with the resulting value for sigmaR and the recruitment variance check plot from R4SS.

6 - Rationale

There is a process for tuning sigmaR in Stock Synthesis and early recruitment deviations show an estimated SE greater than 0.6. Furthermore, the 1994 recruitment is more than 3 standard deviations outside of the expected deviation of a recruitment deviation.

6 - STAT Response

6 - Panel Conclusion