Rapporteur notes for WP 02, 06, 07, and the model configuration

WP 06 – Japanese CPUE

The working group discussed the decision making during the development of the Japanese longline CPUE. It was clarified that the CPUE were not split into deep and shallow set sectors because the number of shallow sets was very small, and fishermen target swordfish seasonally and by area. Therefore the gear configuration is confounded with the spatial and temporal components. There was a suggestion that dividing the data into deep and shallow sets in the future may improve convergence issues within the model.

The WG discussed including hooks between floats (HBF) as a random effect in the spatio-temporal model. After additional information and figures were provided comparing the models with and without HBF, the WG suggested that the model with HBF was used for the assessment, as it is selected when considering the wAIC. However, it was noted that there was not a large difference between the two models, and that the variance of the HBF effect was very large, which increased the CV of the standardized CPUE. The WG agreed, however, that this would have minimal impact in the assessment model.

The apparent heteroscadicty in the model residuals was also discussed. This may be due to the inclusion of both deep (many zero catches) and shallow (mostly positive catches) sets. It was suggested that a simpler model like a GAMM be considered in the future if it is difficult to get the spatio-temporal models to converge, or to consider a targeting effect to better separate the deep and shallow sets. It was also suggested to bin HBF and include as a fixed effect instead of as a random effect.

WP 07 – Taiwanese CPUE

The WG discussed whether the more complex standardization models were overfitting the data, even though they were selected by AIC. After considering the BIC and showing that the stepwise addition of each covariate did not substantially change the CPUE trend, the WG agreed that the standardized CPUE was the best available.

WP 02 – US LL CPUE

There was some discussion how the fishery regulations changed over time in the Hawaii longline shallow set fishery. These have included permanent area closures (MPA), partial year closures due to interactions with sea turtles, and changes to using monofilaments and circle hooks. The WG also discussed why the 1995 point in the deep set fishery was so influential, likely because it is a partial year. It was discussed whether this year should be dropped from the assessment. It was also pointed out that the deep set CPUE index is provided as a recruitment index, consistent with its usage in the 2018 assessment. This is a fishery that catches swordfish incidentally and primarily catches age 0-1 fish.

Model configuration:

I don’t really have any notes from this discussion, as we pretty much just accepted your suggestions as is. There was a bit of discussion on the appropriate level for the growth CVs, and whether we should attempt to empirically set them as they are fairly subjective at this time.