ASMFC Summer Flounder, Scup, Black Sea Bass Technical Committee

Review of Models for Fisheries Management

October 16, 2013

The Summer Flounder, Scup, and Black Sea Bass Technical Committee (TC) met to discuss approaches for setting future recreational measures at the September 16-17 Joint MAFMC/ASMFC Monitoring Committee and Technical Committee Meeting. The TC reviewed two projects- A Model to Evaluate Recreational Management Measures by John Ward ; and Summer Flounder Management Strategy Evaluation by Mike Wilberg, et al.- to assess their utility to the fisheries management processes of the Commission and Council. Listed below are brief abstracts of each report and the summary reviews of each project from the TC members. While the TC felt both models have the potential to help inform the management process, the model presented by Mike Wilberg was seen as a more viable tool to incorporate into the recreational specification process moving forward.

A Model to Evaluate Recreational Management Measures using MRIP data *(J.Ward)*

Abstract*:* The analysis used with this model allows for the evaluation of recreational management measures (i.e., minimum size, possession limit, and open season) for an upcoming fishing year by predicting the landings that are likely to occur across all length categories using a logistic regression analysis. A second analysis estimates the potential total number of fish landed and caught for a set of fishery management regulations and known conditions in a specific fishery. The model can then be used to predict proportional and directional effects of landings in relation to recreational regulatory changes while also incorporating non-biological factors.

TC Review Summary: The TC initially expressed interest in the results of this project and methodology, specifically in its capability to predict changes in harvest and incorporate extra fishery variables in a quantitative manner (which is a tool not currently available to the TC). The TC had concerns regarding a lack of realism in the model's outputs and had questions about some of the data sources/input variables. Additional consultation with John Ward has not diminished these concerns to the satisfaction of most members of the TC. These concerns in conjunction with the estimated timetables for conducting sensitivity runs (3-4 months) and additional analysis (1-2 months) led the TC to have less confidence in the model's usefulness.

Summer Flounder Management Strategy Evaluation *(PMAFS)*

Abstract*:* This analysis tested the effects of current and alternative regulatory and management options in the summer flounder recreational fishery using management strategy evaluation (MSE). A simulation model was developed to 1) evaluate the effectiveness of the current and alternative methods for setting annual regulations that achieve high harvests without exceeding the catch limit, and 2) evaluate the effects of different regulations (combinations of bag, minimum size limits and/or slot limits) on the summer flounder population and on the recreational fishery. Outputs, split between a northern (MA-NY) and southern (NJ-NC) region include harvest estimates, discard estimates, proportion of females harvested, and probability of exceeding the ACL. In general, the scenarios where only the bag limit was adjusted (with a coastwide minimum size of 16 in) outperformed those where both the bag and size limits (both minimum and slot sizes) were adjusted. The option that adjusted only the bag limit resulted in comparably high harvest and low discards (both in weight and numbers), the lowest discard proportion, and lowest proportion of females harvested relative to other options. Regionally, the bag limit only option resulted in the highest harvest per angler (despite having the lowest bag limit), although the size of landed fish was smaller on average. This regulatory option also resulted in overages and penalties (both in frequency and magnitude) that were at or below the levels of the alternatives. The model was developed prior to recent changes to AMs.

Review Summary: The TC expressed interest in the analysis presented by Mike Wilberg, specifically in its ability to predict management success with currently available management tools. The TC would like to request PMAFS explore model sensitivity to non-compliance with size limits and possession limits. Mike Wilberg estimated that ~~,~~ the time table to complete this additional analysis was approximately 3-4 months. The TC conveyed that this model could potentially be used to set consistent management measures within a region, and then test variations on those regional management measures to meet some a priori goals (such as similar ACL buffers to decrease the probability of exceeding the ACL). The model could also investigate regionally defined allocations that provide regions with equal discard proportions and potential for management success. This could serve as a starting point to examine what allocations are needed in each region to meet management goals including equitable retention rates. Mike Wilberg ~~et al.,~~ estimated that the time table to complete this additional analysis was approximately 1 month (Due to current workload, any changes to this model would not be started until January 2014). Flexibility in the regional makeup constitutes a major change to the modeling effort.

Next Steps

-For the 2014 recreational specification setting process, the TC would like to proceed with the same ad hoc approach utilized in previous years.

-Though it will not be ready for incorporation into the 2014 recreational setting process, the TC would like to work with Wilberg et al. to utilize the model for future recreational specification settings.