Red Drum SEDAR 44 Stock Assessment Research Recommendations

ASMFC Red Drum Technical Committee & Stock Assessment Sub-Committee

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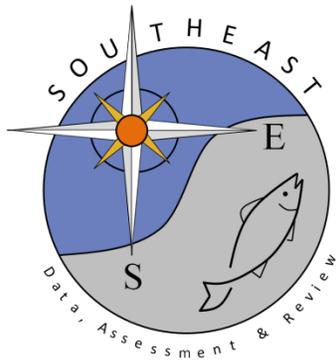
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Red Drum SEDAR 44 Stock Assessment Research Recommendations

This working paper includes research recommendations developed by the Red Drum Technical Committee and Red Drum Stock Assessment Subcommittee for the SEDAR 44 Stock Assessment. Research recommendations are divided into short and long term projects. Short and long term research recommendations are prioritized, with the highest priorities listed first under each section and the lowest priorities listed last under each section.

Short Term
- Conduct experiments using logbooks to develop estimates of the B2 catch length composition in both the North and South regions.
- Determine if existing and historic recreational data sources (e.g., tagging) can be used to evaluate better B2 selectivities.
- Further study is needed to determine discard mortality estimates for the Atlantic coast, both for recreational and commercial gears. Additionally, discard estimates should examine the impact of slot-size limit management and explore regulatory discard impacts due to high-grading. Investigate covariates affecting discard mortality (e.g., depth, size, seasonality).
- Continued and expand observer coverage for the NC and VA gill net fisheries (5-10% coverage).
- Expand observer coverage to include other gears of concern (i.e. haul seine, pound net, trawls).
- Expand biostatistical sampling (ages and lengths) to better cover all statistical strata (gears/states - principally NC and VA) and collect more ages proportional to lengths, preferably otoliths. Conduct statistical analysis to determine appropriate sample sizes to adequately characterize the age-size composition of removals.
- Conduct a tagging study using emerging technologies (i.e., acoustic tagging, satellite tagging, genetic tags) to evaluate stock mixing and identify movement of sub-adult fish transitioning to maturity.
- Determine batch fecundity estimates of red drum. Need to include age-specific spawning frequency and spawning season length for this indeterminate spawner.
- Update maturity schedules for Atlantic red drum from Florida to Virginia. Preferably, gonad histology samples should be collected from all sizes over time and archived.
- Otolith microchemistry analysis should be considered to look at state level differences between regions to support stock structure differentiation.
- Continue cooperation between state ageing labs, such as the October 2008 red drum ageing workshop, to provide consistent age verification between labs.

Long Term
- Investigate iterative re-weighting of data components to identify the appropriate weights given to each data component in the objective function.

- Investigate alternative functions for retention to include recreational harvest and dead releases in the same fleets. Commercial discards should also be considered as a discard component of the landings fleet.
- Allow for time varying reporting rate of tag recaptures in the assessment model. This would allow use of more recent tag-recapture data from NC and estimates of changes over time in both regions.
- Continue genetic analyses (i.e, SC DNR analyses) to evaluate stock structure and mixing and temporal changes in genetic composition of the red drum population.
- Consider a pilot Virginia adult survey and expanding current adult fishery-independent survey coverage in Florida waters.
- Identify impacts of water quality, environmental, and ecosystem changes on red drum stock dynamics. Incorporate in the stock assessment models.
- Quantify habitat changes for future management planning