



Atlantic States Marine Fisheries Commission

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MEMORANDUM

January 27, 2020

To: South Atlantic State/Federal Fisheries Management Board
From: Red Drum Stock Assessment Subcommittee
RE: Red Drum Stock Assessment Road Map

The Assessment Science Committee (ASC) was tasked with providing a road map for future red drum stock assessments to the South Atlantic State/Federal Fisheries Management Board. The ASC formed a subcommittee to develop the road map and the subcommittee recommended the Red Drum Stock Assessment Subcommittee (SAS) be repopulated to assist with the road map.

Together, the ASC and Red Drum SAS recommend evaluating three potential frameworks to develop management advice from the next stock assessment (in no particular order):

1. model-free stock indicators, similar to traffic light analyses used for Atlantic croaker and spot,
2. a population dynamics model tracking the juvenile components of the stocks, and
3. a population dynamics model tracking all life stages of the stocks.

The anticipated advantage of the first framework is being able to provide advice on all life stages with data currently available, with the most notable disadvantage being no quantitative stock status estimates. Rather, this framework would provide stock status as changes in individual data sets or indicators relative to some predefined time period in the available data. The anticipated advantage of the second framework is being able to provide estimates of stock status relative to potential productivity from integrated juvenile data (currently available), with the most notable disadvantage being stock status estimates that are not influenced by changes in the mature, adult components of the stocks (data currently limited or not available). The anticipated advantage of the third framework is being able to provide estimates of stock status relative to potential productivity from integrated data across life stages, but estimates from this framework are likely to have relatively high levels of uncertainty given current data limitations on adult components of the stocks (i.e., lack of age composition data characterizing dead discards).

It is recommended that the Red Drum SAS develop simulation models as a focal point of the next assessment, given the unique characteristics of red drum life history and data availability. Simulation models will simulate red drum stocks that will be subjected to various fishing mortality scenarios and sampled to mimic available data streams. Data streams will then be applied to the three potential frameworks to test their reliability in characterizing stock status

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and inform the preferred framework for providing management advice. Simulation testing will also be used to identify the data deficiencies causing uncertainty in assessment advice to focus improvements in data collection efforts into the future. The Red Drum SAS anticipates an assessment timeline of four years to fully address the simulation work proposed. The recommended timeline is for a two-stage assessment process that includes two years of work devoted to simulation analysis with a peer review in 2022 and a subsequent two years of work devoted to a traditional benchmark stock assessment with a peer review in 2024. If the recommended timeline is approved, the simulation analysis will be scheduled for an ASMFC external peer review in 2022. The Southeast Data, Assessment, and Review (SEDAR) peer review schedule currently has a placeholder for a red drum benchmark assessment, and a request could be made to reschedule this assessment for review in 2024.

The Red Drum SAS recommends the Board provide direction to begin developing terms of reference for the simulation analysis at the ASMFC 2020 Winter Meeting to stay on track with the proposed timeline. Additionally, the SAS recommends the South Atlantic Board recommend to the Interstate Fisheries Management Plan Policy Board, approval of resources to conduct the necessary work and peer review workshops.