

I. Data Workshop, April 16-18, 2007

1. Characterize stock structure and develop a unit stock definition.
2. Tabulate available life history information:
 - a.) Provide appropriate models to describe growth, sexual maturity, and fecundity by age, sex, or length, as applicable.
 - b.) Provide estimates of natural mortality (age-specific, if feasible).
 - c.) Provide estimates of recreational catch-and-release mortality as well as commercial discard mortality.
3. Provide measures of population abundance that are appropriate for stock assessment:
 - a.) Document all data collection programs used to develop indices, addressing program objectives, methods, coverage, sampling intensity, and other relevant characteristics.
 - b.) Consider fishery-dependent and fishery-independent data sources; provide measures of abundance by appropriate strata (e.g., age, size, area, and fishery); provide measures of precision.
4. Characterize commercial and recreational catch:
 - a.) Provide landings and discard removals, in pounds and numbers.
 - b.) Evaluate the adequacy of available data for accurately characterizing harvest and discard by species and fishery sector.
 - c.) Provide length and age distributions of the catch and discards, if feasible.
5. Evaluate the adequacy of available data for estimating the impacts of past and current management actions.
6. Recommend assessment methods and models that are appropriate given the quality and scope of the data sets reviewed and management requirements.
7. Provide recommendations for future research and monitoring. Include specific guidance on sampling intensity and coverage where possible.
8. Prepare complete documentation of workshop actions and decisions, and write the SEDAR-15A Data Workshop Report. Provide final datasets in a format accessible to all participants. The final SEDAR-15A Data Workshop Report and all dataset are due no later than May 31, 2007.

II. Assessment Workshop I, August 21-23, 2007

The following terms of reference (TOR) were not formally announced before the first assessment workshop but were borrowed partially from the Caribbean mutton snapper SEDAR 14 Assessment Workshop and the SEDAR Generic Assessment Workshop TORs. These were used for the second and final assessment workshop.

1. Review any changes in data following the data workshop and any analysis suggested by the data workshop. Summarize data as used in each assessment model. Provide justification for any deviations from Data Workshop recommendations.

2. Develop population assessment models that are compatible with available data and recommend which model and configuration is considered most reliable or useful for providing advice. Document all input data, assumptions, and equations.
3. Provide estimates of stock population parameters (fishing mortality, abundance, biomass, selectivity, stock-recruitment relationship, etc); include appropriate and representative measures of precision for parameter estimates.
4. Characterize uncertainty in the assessment and estimated values, considering components such as input data, modeling approach, and model configuration. Provide appropriate measures of model performance, reliability, and 'goodness of fit'.
5. Provide yield-per-recruit, spawning biomass-per-recruit, and stock-recruitment evaluations, values, and figures.
6. Provide complete SFA criteria that are compatible with applicable FMPs and Acts. This may include evaluating existing SFA benchmarks or estimating alternative SFA benchmarks (SFA benchmarks include MSY, F_{msy} , B_{msy} , MSST, and MFMT); recommend proxy values where necessary; provide stock control rules.
7. Provide declarations of stock status relative to existing and, if appropriate, recommended SFA benchmarks: MSY, F_{msy} , B_{msy} , MSST, MFMT.
8. Provide an Allowable Biological Catch (ABC) range that is consistent with FMP requirements.
9. Project future stock conditions (biomass, abundance, and exploitation) and develop rebuilding schedules if warranted; include estimated generation time. Stock projections shall be developed in accordance with the following guidelines.
 - A) If stock is overfished:
 $F=0$, $F=current$, $F=F_{msy}$, F_{target} (OY),
 $F=F_{rebuild}$ (max that rebuild in allowed time)
 - B) If stock is overfishing:
 $F=F_{current}$, $F=F_{msy}$, $F= F_{target}$ (OY)
 - C) If stock is neither overfished nor overfishing:
 $F=F_{current}$, $F=F_{msy}$, $F=F_{target}$ (OY)
10. Evaluate the results of past management actions and, if appropriate, probable impacts of current management actions with emphasis on determining progress toward stated management goals.
11. Provide recommendations for future research and data collection (field and assessment); be as specific as practicable in describing sampling design and sampling intensity.
12. Complete the Assessment Workshop Report (Section III of the SEDAR Stock Assessment Report) and prepare a first draft of the Assessment Advisory Report.