SEDAR stock assessment categories

Operational Stock Assessment

The operational stock assessment category provides management advice quickly and efficiently using previously approved methods and data sources.

- Builds upon approaches developed in previous benchmark and supports incremental improvements.
- Throughput is maximized through a quick and efficient process with few or no public meetings, saving considerable staff time.
- The most recent data available are processed one time based on specifications that are determined in advance (rather than multiple times as is often the case with the current system), saving considerable staff time
- Concise documentation for consistent, standardized public presentation of results.
- Reviews are completed by the Council SSC's (as with current SEDAR update and standard assessments)
- Allows for reasonable flexibility in the model and data to accommodate specific concerns reflected in the Terms of Reference (e.g., previously vetted model approaches and data sets that might be new to the particular stock, or other changes that the SSC feels competent to review).

Steps in the process:

1. Assimilate data necessary for the modeling framework, including the most recently available data. A public meeting (workshop or webinars) should only be required if there is a need to vet the addition of a data stream that is new for the particular stock. (Action: Data Providers)
2. Incorporate data, run the model, and summarize results in a streamlined report. A public meeting (workshop or webinars) should only be required if there is a need to vet changes in the assessment methods previously reviewed and accepted for this particular stock. A change to new software could be considered provided it makes essentially the same calculations and has been reviewed and applied previously to other SEDAR stocks. (Action: Assessment modelers)
3. Review model results. (Action: SSC and Assessment leads)

Expected timeline: 3-6 months

Expected Products: Concise report with an executive summary.

Research Stock Assessment

The research stock assessment category places the emphasis on developing a highly credible stock assessment framework. It should be applied in cases where a new model, hypothesis, or question needs to be answered about a stock/population. It is not intended to provide management advice, but rather set the stage (prototype approach) for operational modeling.

- Serves to answer questions, test hypotheses, or otherwise explore new ideas for assessing a stock or stocks. Establishes scientific credibility of new data types or analysis methods.
- Does not necessarily need to focus on an individual species, such that results might generalize to multiple operational stock assessments.
- Allows for complete flexibility in data and model choice.
- The process should be expected to last up to a year (or more) and involve a series of public meetings. Includes:
    - thorough documentation of new data/methods/performance
    - extensive investigation of model performance
- A hard deadline should be avoided because the necessary steps to achieve a consensus model are too difficult to anticipate. A deadline may hinder options not previously envisioned.
- Reviews should be completed by a panel of independent experts, with the Council SSC's, ultimately providing recommendations for further improvements. Review should be commensurate with the degree of novelty and controversy.

Steps in the process:

1. Schedule the species to be addressed well in advance (2-3 years prior to anticipated completion) so that all relevant data can be processed, analyzed, and finalized for use in the process. Unfortunately much of our data collection involves archiving samples for later analysis. Thus, archived samples for genetics, reproductive measures, and age determination require a fair amount of lead time to complete. Determine stock boundaries as needed. (Action: Data Providers begin data preparations)
2. Hold workshop(s) to assimilate all available data for the species of interest, but not necessarily the most recent data (14 months prior to anticipated completion). Public meetings to be held and input from fishermen will be valuable in understanding the data and its potential uses. Document the proceedings and decisions, particularly where recommendations depart from previously established best practices. (Action: Participants complete assessment report)

3. Data explorations will guide the structure and type of modeling to be built. Build a modeling framework to answer the question/hypothesis. Consider multiple models. Document the final modeling framework being proposed. (Action: Participants complete assessment report)

4. Review modeling framework proposal. Receive recommendations for operational model framework. (Action: CIE and SSC Review and comment on assessment, complete a review report)

Expected timeline: 9-14 months from data workshop completion, but could be longer depending on the hypothesis or question. For example, a question that requires new data collection to answer might require a longer time frame.

Expected Products: Data workshop report, Assessment workshop report, Review report, and an approved/accepted model for use in future operational assessments.

Figure 1. Hypothetical example of two year cycle of the research and operational assessment tracks for five analysts. After two years the results would include 3 research track assessments completed and 10 operational assessments providing management advice. Long term averages for a staff of 5 analysts would work out to 1-2 research track assessments per year and 4-6 operational assessments per year, depending on how many research tracks are chosen in a year.