SSC assessment prioritization requests

NOAA FISHERIES

Alaska Fisheries Science Center

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Background (can be skimmed or skipped)

SSC minutes (2/17, 1 of 4)

- “The SSC noted that criteria should be established that could be used to trigger an “off cycle” assessment....
- “The SSC identified the following possible criteria but recognized that this is not an exhaustive list:
  - “Unexpected change in survey biomass or other data (perhaps implemented by a deviation of more than xx standard deviations);
  - “Evidence of a new environmental link to time trends in growth, recruitment, or mortality that substantially alters the estimation of biological reference points or stock status;
  - “Evidence of a marked change in retrospective bias or residuals that would indicate a change in productivity;
  - “Availability of new information on vital rates (M, maturity, growth) that alters estimation of biological reference points or stock status;
  - (Continued on next slide)

SSC minutes (2/17, 2 of 4)

- Non-exhaustive list of possible criteria, continued:
  - "Availability of new information on survey performance (selectivity, Q);
  - "Change in catch suggesting that targeting of a member of a complex is occurring;
  - "Evidence of stock structure and possibility of overharvest of a sub-population;
  - "Substantial change in catch to ABC ratio;
  - "Change in management regulations that would alter fishing behavior such as rationalization of GOA groundfish fisheries;
  - "Distributional shifts that would change catchability or types of fleet targeting the resources."
- "The SSC requests that the authors and the Plan Teams develop guidelines for when an off-year assessment should be developed."

SSC minutes (2/17, 3 of 4)

- "The SSC also noted that there is a general need to address the treatment of uncertainty in the current tier system.
  - "Specific to assessment frequency, the SSC recommends an evaluation of how projected OFL-to-ABC buffers should increase in the intervening years between full assessments.
  - "This analysis should be brought forward before the changes are implemented."
- "The SSC recommends that a framework for evaluating the costs and benefits of changing the target frequency for the stocks identified above is needed before the changes are implemented.
  - "This cost-benefit analysis framework would allow the NPFMC to evaluate the performance of the change in target frequency at the end of the four-year trial period."

SSC minutes (2/17, 4 of 4)

- "The SSC also requests a more quantitative evaluation of the potential risks of changing the target frequency of the GOA flatfish stocks to a four-year cycle."
- "The SSC would like to receive both the performance analysis framework and the risk assessment for GOA flatfish and crab stocks before implementing the change in target frequency."

Team response (9/17, 1 of 2)

- The Teams agreed to place the assignment for developing criteria that would trigger an “off cycle” assessment on the September 2018 agenda
- Team observations:
  1. None of the SSC’s three requested analyses had been undertaken
  2. The new assessment schedule has already been implemented
  3. The Council adopted the SSC requests for analyses #2 and #3 only
  4. The time needed to complete those two analyses may very well exceed the small amount of time freed by switching to the new assessment schedule

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Team response (9/17, 1 of 2)

- Team observations, continued:
  5. The risks associated with switching to the new schedule would appear to be low, given that assessments scheduled for less frequent assessments are generally characterized by:
     - Low average annual change in biomass
     - Low average ratio of catch to ABC
     - Low fishery importance
- In light of the above observations, the Teams recommended that the Council reconsider the need for the two requested analyses

Team recommendations (11/17)

- The Council reaffirmed its original tasking to complete the SSC requests for analyses #2 and #3, and added analysis #1 also
- The Teams recommend that a workshop be convened, involving members (to be named) of the Groundfish Plan Teams, the Social Science Planning Team, and the SSC, along with the GOA flatfish assessment authors, to examine existing work that pertains to the costs and benefits of different assessment frequencies or either of the other requested analyses.
- The Teams would like to receive clarification from the SSC regarding the scope of the three analyses that were requested in February in the context of assessment prioritization.

SSC minutes (12/17; 1 of 4)

- "The Joint Plan Teams requested clarification on SSC advice regarding this topic provided in the February 2017 minutes, which called for the following three actions:
  1. "Development of a framework for evaluating the costs and benefits of changing the target frequency for the affected stocks and complexes;
  2. "A more quantitative evaluation of the potential risks of changing the target frequency of GOA flatfish stocks to a four-year cycle; and
  3. "An evaluation of how projected OFL-to-ABC buffers should increase in the intervening years between full assessments."
- (Note that the analyses have been re-numbered in the above)

SSC minutes (12/17; 2 of 4)

- "With respect to issue 1 *[cost-benefit analysis]*, the SSC clarifies that our comments were intended to encourage the development of an evaluation framework that can be used for a cost-benefit analysis after a full 4-year assessment cycle is completed.
  - "A proper evaluation will need to compare the observed outcomes under the new stock assessment frequencies with what the outcomes would have been had the stock assessment frequencies not been changed.
  - "Such an evaluation requires forethought as to what the measurable outcomes (i.e., costs and benefits) will be and the information that should be recorded and gathered in the meantime to facilitate an evaluation."

SSC minutes (12/17; 3 of 4)

- Issue #1 (cost-benefit analysis), continued:
  - "Examples of indicators of the benefits of the change could include:

1. "Substantive improvements to the assessment.
2. "Substantive improvements to the review and consideration of alternative treatment of the input data.
3. "Environmentally linked assessments based on the ESP.
4. "Development of methods for tracking progression of uncertainty."

  - "Examples of costs of the changes might include:

1. "Number of abrupt changes in the biological reference points due to prolonged periods between assessments.
2. "Reductions in annual productivity indices ... for use in evaluating environmental linkages or global productivity assessments.
3. "Retrospective realization of overfishing."

SSC minutes (12/17; 4 of 4)

- "With respect to issue 2 above *[risk analysis]*, the SSC recommends that the assessment schedule should be used for a full 4-year cycle and then a cost benefit assessment should be conducted and changes to the system should be considered."
- "With respect to issue 3 above *[buffer analysis]*, the SSC suggests that a framework for evaluating the impacts of increased uncertainty could be developed for the 4-year cycle flatfish assessments that are managed in Tier 3.
  - "For example, a representative subset of the authors could estimate how advice would have changed if a full assessment had been conducted on a 2-year cycle.
  - "The SSC also recommends that Tier 1 stocks that have been moved to a biennial cycle (e.g., BSAI NRS) could be used to examine how uncertainty increases as the time between assessments increases using MCMC projections."

Action items

Summary of tasks

- For this meeting:
  - Develop criteria for conducting off-year assessments
  - Analysis #1 (cost-benefit analysis): Determine what the measurable costs and benefits will be and the information that should be recorded and gathered each year to facilitate an evaluation at the conclusion of the first 4-year cycle
- Sometime before the conclusion of the first 4-year cycle:
  - Develop the methods that will be used to conduct all three analyses
  - Whose responsibility is this?
    - One SSC comment suggests that the buffer analysis might be the responsibility of the authors of assessments of Tier 3 GOA flatfish stocks that have been moved to a 4-year cycle

Review of SSC's list of possible criteria (1 of 2)

- "The SSC identified the following possible criteria but recognized that this is not an exhaustive list:
  - "Unexpected change in survey biomass or other data (perhaps implemented by a deviation of more than xx standard deviations);
  - "Evidence of a new environmental link to time trends in growth, recruitment, or mortality that substantially alters the estimation of biological reference points or stock status;
  - "Evidence of a marked change in retrospective bias or residuals that would indicate a change in productivity;
  - "Availability of new information on vital rates (M, maturity, growth) that alters estimation of biological reference points or stock status;
  - (Continued on next slide)

Review of SSC's list of possible criteria (2 of 2)

- Non-exhaustive list of possible criteria, continued:
  - "Availability of new information on survey performance (selectivity, Q);
  - "Change in catch suggesting that targeting of a member of a complex is occurring;
  - "Evidence of stock structure and possibility of overharvest of a sub-population;
  - "Substantial change in catch to ABC ratio;
  - "Change in management regulations that would alter fishing behavior such as rationalization of GOA groundfish fisheries;
  - "Distributional shifts that would change catchability or types of fleet targeting the resources."

Review of SSC's list of cost-benefit measures

- "Examples of indicators of the benefits of the change could include:
  1. "Substantive improvements to the assessment.
  2. "Substantive improvements to the review and consideration of alternative treatment of the input data.
  3. "Environmentally linked assessments based on the ESP.
  4. "Development of methods for tracking progression of uncertainty."
- "Examples of costs of the changes might include:
  1. "Number of abrupt changes in the biological reference points due to prolonged periods between assessments.
  2. "Reductions in annual productivity indices ... for use in evaluating environmental linkages or global productivity assessments.
  3. "Retrospective realization of overfishing."