



New England Fishery Management Council

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To: Tom Nies, Executive Director
From: Scientific and Statistical Committee
Date: November 10, 2016

Subject: Improving the ABC control rule and catch advice for groundfish.

Over a series of recent meetings, the SSC has considered a variety of issues and analyses related to the performance the ABC control rule and development of catch advice for groundfish. **These deliberations have led the SSC to recommend that the Council adopt as a priority for 2017 a thorough and systematic re-evaluation and, as warranted, revision of the ABC control rule for groundfish.**

A number of issues have motivated the SSC discussions to date on the performance of the ABC control rule, supporting analyses informing those discussions, and ultimately this recommendation. Too often, catch within ACLs is revealed by later stock assessments to have still resulted in overfishing. The 2015 groundfish operational assessments suggest that progress has been made on keeping within fishing mortality limits, but biomass of many stocks remains slow to recover. This might be due to ecosystems changes causing declining productivity, analytical problems that introduce significant scientific uncertainties (especially retrospective patterns and overly optimistic projections), or a combination of these and other factors. Untangling these factors and determining the appropriate responses when developing catch advice is an urgent need.

The recent announcement by NOAA of revised National Standards guidelines provides added impetus for this recommendation, given that elements of the current control rule might need to be reconciled with the new guidelines. The recommended process is underway through the SSC deliberations to date, supported by the work of John Wiedenmann and Olaf Jensen at Rutgers University contracted by the Council and other analyses. The SSC feels that the process now needs to involve more regular and formal dialogue between the SSC and the Council, and possibly additional technical support from the PDT or external contracted experts, to focus the discussion around those issues that will most directly inform management needs. The SSC is prepared to form a sub-group that might provide additional review of technical materials, engage in discussion with Council members or staff outside of SSC meetings, or carry out other activities as needed in support of this process.

At the October 18, 2016 meeting at which the SSC reached consensus on recommending to the Council that this be a 2017 priority, we identified a series of more specific issues that might be formally addressed during the process. Candidate questions include, but are not limited to:

1. Should a tiered approach, similar to those developed by other Councils, be used that links assessment quality, resource status, or other attributes to the uncertainty buffer?

2. Should the default control rule shift from the current fixed-F approach to a ramped or sloped function by which the fishing mortality used to derive ABC increases or decreases with the estimated biomass?
3. What are the conditions under which different “plan B” approaches might be used when a modeling framework previously approved in a benchmark assessment does not pass peer review in a subsequent operational assessment?
4. How can environmental data be considered in the development of catch advice, even if not formally incorporated into the model? E.g., could the uncertainty buffer be increased or decreased based on whether data suggest that environmental conditions are more or less favorable for a given stock? Would this only be appropriate when index-based or other more data-limited approaches are used?
5. When index-based methods are used, what are the changes that would prompt an adjustment to status quo catch advice¹? I.e., how large of a change and in which indicators represents a sufficient change in perception of the stock to warrant a response?
6. How should the control rule be structured to ensure sufficient flexibility to respond to new information, while also maintaining consistency from stock-to-stock and year-to-year?
7. What are the criteria under which model-based estimates should be used? What are the criteria under which stock projections should be used?
8. How can the outcomes of multiple models be used to gauge uncertainty and risk, and ultimately develop catch advice, even if a single model is used for status determination²?
9. How can the risk evaluation matrices developed by the Risk Policy Work Group be linked to the ABC control rule in order to select more explicit risk-based uncertainty buffers?
10. How can management strategy evaluation (MSE) be utilized to better understand the performance of and risks associated with alternative forms of the control rule?
11. Can new data and analyses help elucidate causes of the retrospective inconsistency that is prevalent in many groundfish stock assessments³? As research continues to address the retrospective problem, how should the control rule respond to different types and magnitudes of retrospective patterns?

The SSC notes that addressing some of these questions, and others, will require close collaboration with Council partners. For example, the insights and experience of the NEFSC Population Dynamics Branch will be critical in identifying the conditions under which different “plan B” methods should be utilized (#3 above). Data and expertise from across NEFSC will be needed to

¹ See the SSC’s August 2016 report to the Council on OFLs and ABCs for Georges Bank yellowtail flounder for additional discussion of this particular issue.

² An SSC discussion on the use of multiple models is summarized in an April 2014 report to the Council. That report proposed creation of a sub-group to continue discussing those ideas, although that has not come to fruition.

³ The SSC concluded in our June 2016 report to the Council on methods for developing groundfish catch advice that retrospective patterns remain one of the most important scientific impediments to effective management, and will likely continue to compromise the performance of any type of control rule.

identify the environmental data that might be used to inform catch advice (#4), and possibly in further efforts to resolve the causes of retrospective patterns as well (#11). Questions about major changes in selected metrics that would warrant a change in catch advice for index-based stocks (#5) are relevant to multiple stocks, but were motivated by issues addressed for Georges Bank yellowtail flounder, which warrants consultation with the TRAC process.

Finally, although many of the issues outlined above are relevant to stocks beyond those in the groundfish complex, the SSC recommends that the proposed 2017 Council priority focus on groundfish initially. This will enable the highest priority issues to be selected and needed analyses to be more focused. The outcomes are likely to be relevant to other fisheries, and can provide a head start on any subsequent revisions of other control rules.