

Summary notes from May 15-17, 2007 workshop on science support for annual catch limit determinations. Discussion draft only, does not represent NOAA policy

## **Science for ACL Workshop**

May 15-17, 2007  
Alaska Fisheries Science Center  
Seattle, WA

Sponsored by:  
NMFS Office of Science and Technology  
NMFS Office of Sustainable Fisheries

Hosted by:  
NMFS Alaska Fisheries Science Center

Workshop Summary Prepared by:  
Richard Methot

## **Workshop Summary**

This workshop was held to discuss the science requirements for implementation of annual catch limits (ACL) per the requirements of the Magnuson-Stevens Reauthorization Act of 2006 (MSRA). Four topics were covered: assessment support for ACL determination, quantifying and communicating uncertainty in assessment forecasts, SSCs and peer review, and data-limited situations. The workshop was not designed to develop specific recommendations. Rather, the goal was to engage in an inter-regional, management-science discussion to explore the breadth of current and potential approaches to these topics, and the potential merits of follow-up specific workshops to develop technical guidance.

Because the workshop was held soon after completion of formal scoping sessions on ACLs and because the workshop participants included representatives from all Science Centers, Regional Offices, and Fishery Management Councils, it also provided a natural opportunity to continue discussions on general issues with regard to definition of ACLs and guidance for their implementation. These discussions are valuable because they provide the workshop participants, who will be involved with ACL implementation, with a better working knowledge of the issues. However, the workshop was not intended to provide any specific advice on ACL implementation.

### **Overview of ACL Requirement**

The workshop opened with Galen Tromble (SF) presenting an overview of the MSRA requirements related to overfishing, optimum yield and annual catch limits. Some key issues are the concept of using targets below limits in order to avoid exceeding the limit while taking into account the degree of uncertainty in knowledge of the actual limit and the management capability in controlling catch close to the target. Another factor is the amount of time between excess mortality occurring in a fishery to accountability measures being implemented to address the problem.

### **Assessment Support for Annual Catch Limits**

Richard Methot (ST) presented a summary of the current and foreseeable ability to conduct adequate assessments for the 530 listed stocks. The goal of this exercise is to better understand our ability to calculate annual catch limits and related management quantities directly from adequate assessments rather than data-limited proxies. The lists developed by Science Center representatives included five categories ranging from stocks for which updates of current assessments probably will be suitable for ACL calculation, to a category of stocks for which even development of data-limited, stock-specific ACLs will be challenging. His presentation included a summary of the degree to which various FMPs have used stock complexes and the degree to which different FMPs have identified geographic sub-units of species within an FMP area.

### **Characterizing and Communicating Uncertainty**

Five presentations were made to provide background on the state of the scientific capability to calculate uncertainty in assessment results, to incorporate this uncertainty in forecasts of future stock conditions and potential yield, and to communicate this information to fishery managers and constituents. Richard Methot (ST) opened with an overview of factors that contribute to uncertainty in the assessment results. Kyle Shertzer (SEC) described an approach to using the uncertainty in the assessment to forecast future catch levels that would have a specified probability of preventing overfishing. Grant Thompson's (AKC) presentation showed how a decision theory approach to obtaining maximum "utility" can take into account the tradeoff between achieving a high average yield while avoiding hitting limits. Paul Rago (NEC) presented the NEFSC's method for doing projections that takes into account uncertainty in stock abundance plus uncertainty in future stock productivity (recruitment). He also showed how the uncertainty in assessments is underrepresented when it does not take into account the tendency for a sequence of assessments to show a consistent bias for several years. George Darcy (NER) emphasized the necessity of learning to deal with the inevitable uncertainty in assessment results, including improved communication between scientists and managers with regard technical stock assessments and their uncertainty.

### **ACLs in Data-Limited Situations**

Eight presentations covered a range of sub-topics within the general category of data-limited situations. Rick Hart (SEC) presented an overview of the shrimp life history and the

Summary notes from May 15-17, 2007 workshop on science support for annual catch limit determinations. Discussion draft only, does not represent NOAA policy

factors that cause these short life cycle stocks to not be amenable to ACL management. Norma Sands (NWC) followed with a presentation on Pacific salmon in which several special factors included short life cycle, inability to distinguish individual stocks real-time in ocean fisheries, ESA listing of several stocks, hatchery production, and minimal occurrence of some stocks in regional fisheries have influenced the development of salmon overfishing criteria. Grant Thompson (AKC) described the tier system developed for North Pacific groundfish in which the size of the buffer between the OFL and the target catch is based upon the quality of the available stock assessment information. Rebecca Reuter (AKC), Olav Ormseth (AKC) and Jane Dicosimo (NPFMC) teamed to describe recent efforts in the North Pacific groundfish FMPs to better define and manage catch of stock complexes. This includes investigation of alternative management approaches for non-target stocks that would not entail full status determination specifications. Jack McGovern (SER) presented the approach to defining complexes for data-limited stocks in the Southeast and Caribbean and to setting their target catch at a fraction of the estimated limit catch. In an effort to better understand whether recent average catch is a reasonable starting point for recommendation of an ACL in data-limited situations, Jim Hastie (NWC) compared the recent average catch of some west coast groundfish stocks to the level of recommended catch when these stocks were subsequently assessed for the first time. Alec MacCall (SWC) demonstrated how one might use a statistical approach to inclusion of stocks in a complex and using assessment of a related indicator stock to provide information on the status and potential ACL of the complex. Paul Rago (NEC) wrapped up the session with a presentation on the Northeast's approach to using time series of survey indices and catch to develop a data-limited assessment.

### **Role of SSCs and Peer Review**

Five presentations were made in the session on SSCs and peer review. Richard Methot (ST) opened with a brief summary of some of the issues including the chain of custody of the potential ACL number as it moves from the assessment through the technical review to the SSC and then to the Council. Elizabeth Clarke (NWC) presented an overview of the SEDAR, SARC and STAR processes including their use of external reviewers. Stephen Brown (ST) and Tom Gleason described the requirements of the Information Quality Act and OMB Peer Review Bulletin, and the role of the Center for Independent Experts (CIE) in conducting assessment reviews. Chris Kellogg (NEFMC) presented the historical role of the NEFMC's SSC which has served primarily as reviewers of specific scientific questions, rather than as routine components of the ongoing development and review of status determinations and harvest recommendations. The NE assessments are reviewed through the SAW/SARC process involving some external reviewers. Harvest recommendations are made by the Species Monitoring Committees and Plan Development Teams. Jane DiCosimo (NPFMC) described the NPFMC's SSC role in which they review all assessments and make recommendations on status determinations and harvest levels. The role of external reviewers in the North Pacific is focused on review of current methods and recommendations for improvements to implement in subsequent assessments.