A Precautionary Management Framework for North Pacific Albacore: HMSMT Report Overview

Pacific Fishery Management Council Meeting
Agenda Item D.5.b HMSMT report
Garden Grove, CA
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Management Context

• The 2011 North Pacific albacore assessment: stock was not overfished and overfishing was not occurring
• The North American components of the fishery are considered sustainable
• A less favorable future assessment could require international and domestic management actions
• Management bodies should consider potential measures before a critical management need arises
• The Northern Committee is developing a framework for management that includes choosing reference points and establishing harvest control rules
Guide to HMSMT Report Sections

1. Introduction / Purpose of report and generic description of a management framework
2. Management Objectives (p. 1)
3. Target and Limit Reference Points (p. 2)
4. Harvest Control Rules (p. 5)
5. Management Measures to Reduce Fishing Mortality (p. 6)
The HMSMT chose to align our recommendations with elements for a management framework identified by the WCPFC Science Committee (Berger, et al. 2012), which include:

- defined management objectives
- target and limit reference points
- performance metrics
- consideration of systemic uncertainties
- alternative management options (e.g. types of harvest control measures, data to be used, or stock assessment process)
- candidate harvest control rules
Management Objectives

From the W. Coast HMS FMP, the HMSMT synthesized the following management goals:

1. Maintain long-term conservation and sustainable use of N. Pac. albacore.
2. Maintain and support long-term benefits for the Nation’s albacore fishing industry.
3. Provide a long-term, stable supply of locally caught fish to consumers.
4. Establish procedures to help implement future management actions.
5. Implement measures to account for total mortalities, including discards.
6. Implement harvest strategies with respect to scientific and management uncertainty.
Target Reference Points

• The ISC Albacore Working Group is expected to recommend reference points to the July 2013 ISC Plenary.
• For a precautionary management framework the target fishing mortality (F) reference point should be set as a percentage reduction from the associated limit reference point to reduce the likelihood that a limit reference point will be breached.
• Similarly, a target B (biomass) reference point should be set as a percentage increase from the associated limit B reference point.
Potential Target and Limit F Reference Points for Albacore

- Interim reference point used in the North Pacific Albacore is $F_{SSB-ATHL}$
- For the 2011 assessment, reasonable estimates of MSY were not possible
- Spawning potential ratio (SPR%) reference points (level 2) are considered by many other tuna science advisors as good alternatives when MSY (level 1) cannot be reliably estimated
- The HMSMT believes SPR% reference points may be the next best choice
Potential Target and Limit B Reference Points for Albacore

• Biomass reference points (B-limit and B-target) are needed to comply with the National Standard 1 Guideline
• To be consistent with the HMS FMP, any selected B-limit reference points should be lower than $B_{\text{MSY}}$ (or $B_{\text{MSY}}$ proxy)
• Absent an assessment-derived MSY, a level 2 reference point could be considered, such as some fraction of unfished $B$
Harvest Control Rules (HCR)

- Among HCRs considered by HMSMT, the sliding scale (simple or complex linear) appears to be appropriate for albacore – these conceptual models are intended to generalize the relationship between stock status and control measures such as F or B and catch or effort.
- The complex form could help to buffer against uncertainties and natural fluctuation in stock status.
- Whatever HCR is selected should balance the biological risks of overfishing or overfished stocks against the costs of lost fishing opportunity or unnecessary management.
Measures to Reduce Mortality

- Catch-based and effort-based measures are used as proxies for mortality reduction.
- Catch-based management measures typically involve establishing a Total Allowable Catch (TAC) with the control rule.
- Effort-based measures include time-and-area closures, effort controls (e.g., vessel size, hold capacity or other constraints on fishing power), or limits on numbers of vessels permitted.
Measures to Reduce Mortality (cont.)

Managing all NP albacore fisheries based on effort has been problematic for a number of reasons including:

- A lack of agreement on a common effort metric (basic format of data, vessels fishing, days fished, etc.)
- Submitted data are not independently verifiable
- These shortcomings are in part the reason the NC work plan seeks to establish a precautionary management framework for NP albacore
Conclusions

• Given that the effort information submitted to the NC is incomplete and the challenges with managing effort, it may be preferable to develop catch-based measures at the international level.

• The Council could incorporate some of the information in these HMSMT Reports in recommendations to the U.S. delegation for the upcoming NC meeting.