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Report of the ISC Albacore Working Group (ALBWG) for 2009

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Albacore Stock Status and Conservation Advice

Formal updates of North Pacific albacore stock status have not been conducted since the last stock assessment in December 2006, which used fishery data through 2005. The ALBWG conducted a qualitative update using available fisheries data from 2006 to 2008 at its 8-9 July 2009 meeting (in conjunction with ISC9). This qualitative update found that:

- total catch in 2006 was slightly greater than in 2005 and increased substantially in 2007, to a level typical of the catches occurring during the 1996-2004 period;
- preliminary catch for 2008 decreased to a level more consistent with catches after 2004;
- recent trends in nominal CPUE differ depending on the fishing area and sometimes season within an area, and the gear type;
- there is little easily interpretable information in Japanese longline nominal CPUE on recent trends in spawning biomass. Recent changes in the distribution of the fishery will need to be appropriately standardized before it can accurately reflect relative abundance;
- although the increasing catch from the Japanese pole and line fishery in 2007 may be indicative of a stronger than average recruitment from 2003, the Canadian and USA troll data from 2008 were largely uninformative concerning trends in recruitment because the 2003 year class would have exited these fisheries by 2008.

On the basis of these findings, the ALBWG concluded that:

1. Fisheries data from 2006 to 2008 neither support nor refute the hypotheses from the 2006 stock assessment that spawning biomass reached an historic high in 2005, that spawning biomass will decline to the long-term average by 2015, or that the 2001 and 2003 year-classes contributed relatively strong recruitment pulses to the stock;
2. Nominal albacore effort in most fisheries appears to have declined since 2005 and catches since 2004 (with the exception of 2007) have been substantially lower than in the previous decade. This could mean that F_{2008} is now less than the $F(0.75 \text{ yr}^{-1})$ used in the 2006 stock assessment projections. Alternatively, F

may be as high as the value used in the stock assessment projections since the level of recruitment after 2005 is not known; and

3. A new stock assessment will be necessary to fully understand the implications of the new data available since the last stock assessment.

The ALBWG offers no new conservation advice for North Pacific albacore above and beyond that which was provided to ISC7 in July 2007, pending the results of a new stock assessment. The ALBWG appreciates the guidance provided by the Northern Committee (NC4) on reference points for North Pacific albacore and noted that it will plan to provide the information needed to implement the interim management objective in future stock assessments.

The NC proposed an interim management objective for the North Pacific albacore stock (NC4, September 2008) to maintain the spawning stock biomass (SSB) above the average level of its ten historically lowest points (ATHL) with a probability greater than 50%. The associated F-based reference point ($F_{SSB-ATHL}$) was not estimated in the last (2006) stock assessment. Preliminary estimates of $F_{SSB-ATHL}$ using data from the last stock assessment were discussed at the April 2009 ALBWG meeting and updated with fishery data through 2008 at the July 2009 meeting. Based upon the updated analysis, the estimated reference point value for $F_{SSB-ATHL}$ using a 25-yr projection period is 0.75 yr^{-1} . The ALBWG noted that this reference point estimate is similar to the value of current F ($F_{2002-2004} = 0.75 \text{ yr}^{-1}$) estimated in the 2006 stock assessment, but acknowledges that further refinement of the algorithm to calculate $F_{SSB-ATHL}$ may be needed prior to the next stock assessment. The ALBWG has interpreted $F_{SSB-ATHL}$ as a limit reference point, however, further guidance is requested from the Northern Committee to clarify whether $F_{SSB-ATHL}$ should be interpreted as a limit or target reference point.

Progress and Plans for the Next Stock Assessment

The ALBWG held two meetings in 2009:

1. a regular workshop meeting, 14-22 April 2009 in Shimizu, Japan; and
2. an update meeting, 8-9 July 2009 in Kaohsiung, Taiwan.

The primary focus of the April 2009 meeting was on stock assessment modeling, particularly the transition from the VPA to the Stock Synthesis (SS) model, reviewing

the spatially explicit fishery definitions developed in 2007 due to seasonal patterns that may compromise selectivity estimates and CPUE trends in several fisheries, consideration of alternative modeling approaches, and updating minimum SSB reference points based on NC decisions. The meeting held in conjunction with ISC9 focused on updating fishery statistics, providing a qualitative update on stock status since the last assessment, and planning for the next North Pacific albacore stock assessment.

The following accomplishments were achieved by the ALBWG over the past year:

- An update of national fishery statistics through 2008;
- Satisfactory progress in developing a length-based stock synthesis (SS) integrated model, which will use catch-at-length as input data for the next assessment;
- The decision to use the length-based SS Version 3 as the primary model platform for the next stock assessment;
- Development of data protocols and specifications for SS3 and VPA in next stock assessment;
- New provisional spatial definitions for the Japanese pole-and-line and longline fisheries (that require additional work before they can be confirmed) and plans to conduct similar work on the Taiwan longline, USA longline and Can/USA troll fisheries;
- Completion of a biological research plan to improve albacore stock assessments by collecting new life history data and integration of this plan into a multi-species, multi-national program;
- Development of work plans for 2009-2011 in preparation for the next stock assessment;
- Election of a new Working Group Chair (J. Holmes);
- Provision of a qualitative update on stock status since the last (2006) assessment;
- Work plan to develop indices of SSB for stock status updates between stock assessments; and
- Estimation of the F-based reference point ($F_{SSB-ATHL}$) for North Pacific albacore minimum spawning biomass objective adopted by the NC.

Based on discussions at the update meeting in July 2009, the ALBWG concluded that the schedule proposed at ISC8 for the next stock assessment (in 2010) would have to be

delayed one year to 2011 due to workload issues faced by WG members. The new schedule for the next North Pacific albacore stock assessment is as follows:

1. Regular meeting: 16-23 March 2010 in Shimizu, Japan, to complete fishery definitions and identify indices of SSB
2. Update meeting: 13-14 July 2010 (with ISC10) in Canada, to update fisheries statistics and stock status information
3. Data preparation meeting: 16-29 October 2010 (exact dates depending on the IATTC Science Workshop schedule)
4. Stock assessment workshop: 22-29 March 2011, location to be determined.

All of these meetings are required in order to complete assignments and review results for the next assessment by March 2011. Stock status and conservation advice will then be provided to the ISC11 plenary (July 2011) and to NC7 (September 2011).

The ALBWG has made good progress in the last year in transitioning from the age-structured VPA to length-based SS model for the next stock assessment because of the commitment of its members. However, the ALBWG notes several issues that may affect future work:

- Staffing and other resource issues are posing challenges to member participation in ALBWG meetings. Ensuring continuity of participation by the same scientists will be critical in the upcoming cycle of meetings leading to the next stock assessment;
- The one-year delay in scheduling of ALBWG meetings for the next stock assessment has impacted the work plans of the ISC Pacific Bluefin Working Group as many of the same scientists are involved;
- There is a need to include outside experts in a peer review function either as an ongoing process throughout the series of meetings required for a stock assessment or through some other mechanism; and
- Collaboration with the WCPFC-SC on North Pacific and South Pacific albacore assessments has been proposed. The ALBWG notes that such collaboration, although potentially valuable, is not possible at this time given the tight timeline for the next assessment and resource challenges faced by member scientists. Exploration of data gap issues could be mutually beneficial.