

Appendix I

SSC's Recommendations on ABCs for the Northeast Multispecies Fishery



New England Fishery Management Council

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To: Paul J. Howard, Executive Director
From: Dr. Steve Cadrin, Chairman, Scientific and Statistical Committee
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Subject: Acceptable Biological Catch (ABC) Recommendations for the Northeast Multispecies Fishery

The Scientific and Statistical Committee (SSC) was asked to 1) review Groundfish Plan Development Team calculations of ABCs for groundfish stocks for fishing years 2010-2012 using the guidance previously provided by the SSC, and to 2) finalize Groundfish ABC recommendations to the Council. On August 10-11 2009, the SSC reviewed several sources of information and associated presentations by the Multispecies Plan Development Team (PDT):

1. Memo from Groundfish PDT to SSC, July 13, 2009
2. Memo from Paul Howard to SSC, June 23, 2009
3. Transboundary Resource Assessment Committee (TRAC) Status Report 2009/03 for Georges Bank Yellowtail Flounder
4. Addendum to Groundfish PDT Memo, August 7 2009

In May 2009, the SSC concluded that in the absence of better information on what an appropriate buffer should be between the OFL and the ABC, a relatively simple ABC specification could be applied to all groundfish stocks. In June 2009, the SSC recommended that the Council should consider an Acceptable Biological Catch (ABC) specification that uses the same method for all groundfish stocks, similar to guidelines for stocks that have not rebuilt at the end of the required building period:

1. *ABC should be determined as the catch associated with 75% of F_{MSY} .*
2. *If fishing at 75% of F_{MSY} does not achieve the mandated rebuilding requirements for overfished stocks, ABC should be determined as the catch associated with the fishing mortality that meets rebuilding requirements ($F_{rebuild}$).*
3. *For stocks that cannot rebuild to B_{MSY} in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate (i.e., the proportion of the stock caught as bycatch).*
4. *Interim ABCs should be determined for stocks with unknown status according to case-by-case recommendations from the SSC.*

Methods - The PDT applied the SSC's recommendations to derive ABCs for groundfish stocks for fishing years 2010-2012. The SSC endorsed the stock assessments and projection methods from the most recent peer review as a basis for providing ABC recommendations. Projections methods from the 2008 Groundfish Assessment Review Meeting (GARM) were applied to all groundfish stocks, except Georges Bank yellowtail flounder (derived from the 2009 Transboundary Resources Assessment Committee, TRAC) and Atlantic wolfish (derived from the 2008 Northeast Data Poor Stocks Working Group, DPSWG). Estimates of 2008 abundance from the GARM were projected

assuming estimates of 2008 catch (observed landings plus discards, estimated from 2008 observer data) and estimates of 2009 fishing mortality from the evaluation of the 2009 interim action (except for Georges Bank haddock and Georges Bank yellowtail flounder, for which the 2009 total allowable catch was assumed).

Method 1: ABC based on 75%F_{MSY}:

- Three groundfish stocks are rebuilt (Georges Bank haddock, Gulf of Maine haddock and redfish), and ABC recommendations are based on projections that assume 75%F_{MSY} from 2010 to 2012.
- Six stocks are expected to rebuild within the required period if fishing mortality is limited to 75%F_{MSY} (Georges Bank cod, Gulf of Maine cod, Cape Cod-Gulf of Maine yellowtail flounder, American plaice, witch flounder, and Georges Bank winter flounder), and ABC recommendations are based on projections that assume 75%F_{MSY} from 2010 to 2012.
- Six stocks do not have accepted projection methods (pollock, northern windowpane, southern windowpane, ocean pout, Atlantic halibut and Atlantic wolfish), and ABC recommendations are based on the most recent estimate of stock biomass and 75%F_{MSY}.

Method 2: ABC based on F_{rebuild}:

Three stocks are not expected to rebuild within the required period at 75%F_{MSY} (Georges Bank yellowtail flounder, southern New England-Mid Atlantic yellowtail flounder, and white hake), and ABC recommendations are based on fishing at F_{rebuild} during 2010 to 2012.

Method 3: ABC based on reduction in incidental bycatch:

Southern New England-Mid Atlantic winter flounder is not expected to rebuild within the required period, and the ABC recommendations are based on estimates of discards that result from recent management measures.

Method 4: Interim ABC based on data-poor proxies

Gulf of Maine winter flounder has unknown stock status, and the ABC recommendation is based on 75% of recent catches.

Technical Notes:

1. *Georges Bank Yellowtail Flounder* – The ABC recommendation for Georges Bank yellowtail flounder was based on the Council’s stated objective of rebuilding the stock to B_{MSY} by 2014 with 75% probability. Alternative assessments from the 2009 TRAC provide different perspectives with respect to rebuilding status and 2010 catch advice. The assessment including recent Canadian survey data suggests that rebuilding can be achieved at a 2010 catch of 2,600t. The assessment excluding recent Canadian survey data suggests that rebuilding can be achieved at a 2010 catch of 450t. The SSC recommends that 2010 ABC should be 1,500t, which is an intermediate between the ABCs implied by the alternative models. The assessment including recent Canadian survey data suggests that a 2010 catch of 1,500t provides 86% probability of rebuilding by 2014, and the assessment excluding recent Canadian survey data suggests that a 2010 catch of 1,500t provides 61% probability of rebuilding by 2014. ABC recommendations for 2011 and 2012 will be re-considered by the SSC based on TRAC updates in 2010 and 2011. If the decision of the Transboundary Management Guidance Committee (TMGC) is inconsistent with the U.S. rebuilding objectives, and an intermediate perspective of the two assessment models, the ability of the Council to achieve U.S. management objectives for Georges Bank yellowtail flounder will be limited.

2. *Georges Bank Cod* – If the decision of the TMGC is inconsistent with the U.S. rebuilding objectives, the ability of the Council to achieve U.S. management objectives for Georges Bank cod will be limited.
3. *Pollock* – Projection methods for pollock were accepted by the GARM, but the 2008 catch removed from the most recent estimate of biomass implies projections of negative survey indices. Given the poor performance of the projection method, the ABC for pollock is based on $75\%F_{MSY}$ and the most recent estimate of biomass (i.e., the average of 2006-2008 fall survey indices). The SSC recommends that pollock should be re-assessed as soon as possible to derive a more reliable basis for projection and catch advice.
4. *Wolffish* – The DPSWG did not determine a projection method to derive catch advice for wolffish. Alternative assumptions of selectivity and size at maturity provide a range of F_{MSY} and exploitable biomass estimates (e.g., $F_{MSY} = 0.2$ to 0.7 and exploitable biomass = 215 to 533 t). Based on the guidance from the DPSWG that F_{MSY} is most likely less than 0.35 and that survey-based estimates of size-at-maturity may not be reliable, the SSC recommends that ABC for 2010-12 be 83t, based on the assessment model that assumes steep selectivity and 75cm size at 50% maturity.
5. *Index-based Stock Assessments* - All index-based assessments should be reviewed in 2010 to determine if 2011 and 2012 ABC recommendations can be improved upon with Bigelow survey data and the calibration workshop results. If calibration coefficients are accepted by the workshop for use in stock assessment, updated survey indices can be used to derive revised ABC recommendations.

SSC Recommendations for Acceptable Biological Catch recommendations for the Northeast Multispecies Fishery (ABCs include all catch: U.S., Canada, recreational harvest, etc., as calculated in the most recent assessments).

Species	Stock	2008 Catch	2010 ABC	2011 ABC	2012 ABC
Cod	GB	5,134	4,812	5,616	6,214
Cod	GOM	8,499	8,530	9,012	9,018
Haddock	GB	20,901	62,515	46,784	39,846
Haddock	GOM	1,197	1,265	1,206	1,013
Yellowtail Flounder*	GB	1,276	1,500	1,689	1,916
Yellowtail Flounder	SNE/MA	504	493	687	1,003
Yellowtail Flounder	CC/GOM	727	863	1,041	1,159
American Plaice	GB/GOM	1,348	3,156	3,444	3,632
Witch Flounder		1,063	944	1,369	1,639
Winter Flounder	GB	963	2,052	2,224	2,543
Winter Flounder	GOM	402	238	238	238
Winter Flounder	SNE/MA	1,432	644	897	1,198
Redfish		1,364	7,586	8,356	9,224
White Hake	GB/GOM	1,876	2,832	3,295	3,638
Pollock*	GB/GOM	11,370	3,813	3,813	3,813
Windowpane*	GOM/GB	350	169	169	169
Windowpane*	SNE/MA	363	237	237	237
Ocean Pout*		125	271	271	271
Atlantic Halibut		84	71	78	85
Atlantic Wolffish			83	83	83

*ABCs for 2011 and 2012 for these stocks may be revisited based on updated assessments or survey indices.

Recommended ABCs for northeast multispecies stocks in 2010 and estimated catch in 2008 for comparison (catch of Georges Bank haddock extends beyond the scale of the right panel).

