

## #2 - Whiting



## New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116  
John Pappalardo, *Chairman* | Paul J. Howard, *Executive Director*

**MEMORANDUM**

July 28, 2011

**To:** Science and Statistical Committee (SSC)  
**From:** Paul J. Howard, Executive Director  
**Subject:** Acceptable Biological Catch recommendations for Whiting for fishing Years 2012 - 2014

**Background**

Amendment 19 to develop Annual Catch Limits (ACLs) for hakes was postponed until after the benchmark assessment results became available (NEFSC 2011) in January 2011. It was hoped that the benchmark would produce analytical assessments with estimates of maximum sustainable yield (MSY) based reference points and scientific uncertainty. Unfortunately, despite many attempts with different models, the analytical assessments ultimately could not resolve different signals coming from low catches (especially compared with those in the early part of the time series), increasing stock biomass, and an increasingly truncated age structure in survey catches (i.e. increasing absence of older fish, particularly silver hake).

Nonetheless, the benchmark assessment made progress on resolving stock structure, species identification in the survey and commercial catches, and in estimating consumption. Despite the inclusion of predatory consumption estimates which were almost an order of magnitude greater than catch, the analytical models still did not perform well. Instead, the SAW accepted an index based assessment for both red and silver hake status determination, similar to previous assessments, with updated reference points. For offshore hake, there was no reliable information about catch or trends in abundance and biomass to guide management of offshore hake.

During a methods meeting in April 2011, the Whiting PDT presented information about scientific uncertainty in the whiting benchmark assessments (NEFSC 2011a and 2011b), and analyzed three methods for estimating the risk of the ABC exceeding the OFL. The SSC approved using Method 2 to estimate scientific uncertainty and directed the Whiting PDT to conduct additional analyses to evaluate ABC alternatives at different levels of scientific uncertainty estimated by Method 2. All analyses in this document are based on Method 2 to estimate scientific uncertainty (i.e. risk of exceeding OFL).

The Scientific and Statistical Committee (SSC) must approve an Acceptable Biological Catch (ABC) limit for each stock and the New England Fishery Management Council (Council) must set ACLs for the managed small mesh multispecies stocks based on new benchmark assessment data, completed in December 2010 and published in January 2011 (NEFSC 2011a and NEFSC 2011b). During the ABC methods review in April 2011, the SSC asked for additional analyses

to evaluate the scientific risk of setting alternative ABCs: an evaluation of signal to noise reduction methods, medium term projections for the southern silver hake stock using the ASAP Run 6 results from the benchmark assessment, and an evaluation of the social and economic effects of alternative ABCs. The PDT conducted these analyses and present the results in Document 1.

The ABC recommendations based on Method 2 (approved by the SSC in April 2011 to estimate scientific uncertainty) are presented in Section 6.0 of Document 1. For red hake, the recommendation is based on the 25<sup>th</sup> percentile of the ABC distribution (222.6 mt for the northern stock and 2,954 mt for the southern stock) and the analysis includes an estimate of the probability that the ABC may exceed the MSY proxy. Compared to the April 2011 report (Document 2), these results were updated to include the recently available spring 2011 bottom trawl survey results.

For silver hake, the Whiting PDT is recommending that the SSC consider setting the ABC at a value less than the 25<sup>th</sup> percentile which are 13,180 mt for the northern stock and 32,640 mt for the southern stock (34,000 mt when augmented to account for catches of offshore hake). Other alternatives are presented in Table 15 of Document 1, including an estimated risk of exceeding MSY and a comparison to recent catches.

More conservative ABCs would have a lower probability of exceeding the MSY proxy to account for a greater amount of scientific uncertainty in our knowledge of silver hake stock dynamics. In April 2011, the Whiting PDT recommended and the SSC approved augmenting the southern silver hake ABC to account for mixed catches of offshore hake. Historically the proportion of the catch from offshore hake is 4%, using the SAW model-based estimates of species composition in the catch of the southern stock area.

#### **Terms of reference for setting Whiting ABCs:**

1. Recommend ABC for whiting stocks for fishing years 2012-2014

#### **Primary documents:**

1. Recommendations for Red, Silver, and Offshore Hake (Whiting) Allowable Biological Catches for 2012-2014, July 2011
2. Options for Whiting/Hake Biological Reference Points, MSY Proxies, And ABC, March 2011

#### **Background documents:**

3. Northeast Fisheries Science Center (NEFSC). 2011a. 51st Northeast Regional Stock Assessment Workshop (51st SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 11-01; 70 p.  
<http://www.nefsc.noaa.gov/publications/crd/crd1101/index.html>.
4. Northeast Fisheries Science Center (NEFSC). 2011b. 51st Northeast Regional Stock Assessment Workshop (51st SAW) Assessment Report. US Dept Commer, Northeast

Fish Sci Cent Ref Doc. 11-02.

<http://www.nefsc.noaa.gov/publications/crd/crd1102/index.html>.