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New England Fishery Management Council

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John Pappalardo, *Chairman* | Paul J. Howard, *Executive Director*

To: Paul J. Howard, Executive Director
From: Dr. Steve Cadrin, Chairman, Scientific and Statistical Committee
Date: November 17, 2009

Subject: Acceptable Biological Catch (ABC) value for the Gulf of Maine / Georges Bank Atlantic herring complex – Response to Council Motion

The Scientific and Statistical Committee (SSC) was asked to “revisit the size of the 40% buffer between OFL and ABC to consider whether application of recent years’ retrospective difference of about 17% is sufficient to account for scientific uncertainty caused by retrospective patterns.”

In September 2009, the SSC recommended that:

1. *The Overfishing Limit (OFL) is 145,000 mt in 2010, 134,000 mt in 2011 and 127,000 mt in 2012 based on projections of fishing at the current estimate of F_{MSY} .*
2. *Acceptable Biological Catch (ABC) is 90,000 mt each year for 2010 to 2012.*
3. *Catch recommendations include combined U.S. and Canadian catch of the Gulf of Maine / Georges Bank Atlantic herring complex.*
4. *A new benchmark assessment should be scheduled as soon as possible to address sources of uncertainty, re-estimate MSY reference points and consider including estimates of consumption and spatial structure in the assessment.*

The SSC developed its September 2009 ABC recommendation using two general approaches that produced consistent catch advice. The first approach accounted for the uncertainty in the assessment with a 40% buffer between OFL and ABC. The second approach was based on the observation that recent catches had resulted in stable biomasses above B_{MSY} and fishing mortality below F_{MSY} since the mid 1990s. Based on these, the SSC recommended an ABC of 90,000mt for 2010 to 2012.

The SSC considered the Council request by correspondence and during a conference call on November 12, 2009. The SSC concluded that there is no scientific basis for a 17% buffer, and that a 17% buffer is insufficient to account for scientific uncertainty.

Although there is substantial uncertainty in the stock assessment, the Gulf of Maine-Georges Bank stock complex does not appear to be overfished and overfishing does not appear to be occurring. In the context of several sources of substantial uncertainty (retrospective inconsistency, exploitation of mixed stocks, etc.), it would not be appropriate to allow catches to increase. Accordingly, the SSC recommends that annual catches in 2010 to 2012 should be limited to recent catch. Catches were 90,000 mt in 2008; the average for 2006 to 2008 is 106,000 mt; and the average for 2004 to 2008 is 108,000 mt.

The choice of recent time period to use in the derivation of ABC depends on the Council’s implicit tolerance to risk. However, it is important to consider that exploitable biomass is projected to

decline during 2010 – 2012 due to the recruitment of poorer than average year-classes. Furthermore, the risk of depleting spawning components and the role of herring in the ecosystem as a forage species needs to be considered. Given the substantial uncertainty in the assessment, the Council should consider a conservative catch limit (e.g., 90,000 mt as recommended by the SSC in September). The SSC notes that it would be appropriate to use the same recent time period to determine both the catch limit as well as the management uncertainty adjustment for Canadian catches.

The catch limit should be considered to be reviewable and revisable pending new information. Ideally, information from a revised stock assessment could be used to revise catch advice within this management cycle (2010 to 2012). The SSC recommends that the next benchmark assessment be scheduled well in advance of the management cycle for 2013 catch advice.

The SSC recommendations that:

- **Acceptable Biological Catch for the Gulf of Maine / Georges Bank Atlantic herring complex in 2010 to 2012 should be limited to recent catch.**
- **A new benchmark assessment should be scheduled as soon as possible.**

This recommendation replaces the recommendation of September 2009.