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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: April 28, 2010

Subject: Review of Skate Acceptable Biological Catch (ABC)

The Scientific and Statistical Committee (SSC) was asked to update the skate complex ABC, using the 2008 NMFS autumn bottom trawl survey for skates and the same basis for determining the ABC which the SSC approved on February 6, 2009.

On February 11, 2009 the SSC recommended:

- *The SSC recommends that Acceptable Biological Catch for the Northeast skate complex is 23,826 mt per year for the 2010 and 2011 fishing years.*
- *The ABC recommendation is derived as the multispecies skate catch associated with the median of the observed series of a catch/biomass exploitation index and the most recent three-year average of the multispecies skate survey index.*

On September 23 2009, the SSC provided revised recommendations:

- *The revised recommendation is that ABC is 30,643 mt per year for the 2010 and 2011 fishing years;*
- *The revised ABC is 74% of the estimated catch in 2007 (landings plus dead discards); Therefore total catch (the sum of landings and dead discards) must be reduced by at least 26%; and*
- *The 2011 ABC recommendation should be reconsidered by the SSC in 2010 based on the Skate Plan Development Team's (PDTs) review of updated survey data and results from the 2008 survey calibration workshop.*

On March 17, 2010 the SSC reviewed several sources of information and associated presentations by the Skate PDT: March 8, 2010 memo from Skate PDT on the 2008 fall survey data and the effect on a revised skate ABC.

The PDT and SSC reviewed several aspects of the fall 2008 survey for the seven skate species in the complex. There was a substantial increase in survey catch of winter skate (and increase from 3.71 kg/tow in 2007 to 9.51 kg/tow in 2008). Geographic distributions of survey catches were similar over time, the increase in survey catches of winter skate occurred in all strata, and there were no survey tows that were statistical outliers. Size distributions sampled in the 2008 survey were generally consistent with those in 2007, but there were more 75-90 cm winter skate than expected, which is similar to size-based survey patterns observed during an increase in biomass in 1980s. The apparent three-fold increase in winter skate biomass is considered to be partly a result of survey measurement error, and partly a result of increased skate biomass. The current stock assessment method for skates is a three-year average of survey biomass indices, which is intended to account for

measurement error in annual biomass indices. The SSC concludes that the most recent three-year average biomass index for the seven skate species should be updated to include data from the 2008 fall survey.

The SSC recommends that the ABC be revised to account for updated survey information. The previously recommended method for deriving an interim ABC is the product of the median observed exploitation index and the most recent three-year average of the multispecies skate survey index. The SSC accepts the updated survey data as the best scientific information available for managing the Northeast skate complex fisheries. Similar to other resources where fisheries are managed based on index-based assessments, survey data should be evaluated during multi-year specifications to detect changes in resource conditions.

Several new challenges concerning skate management are expected to arise in the future. Updating survey indices beyond fall 2008 will require the calibration of the old and new survey systems. Preliminary calibration estimates are available for little skate and winter skate, but not for the other five skate species. Discarding of skates is expected to be a continuing problem that may increase under new management regimes. Stock status, life histories, and geographic ranges vary among skate species: northern species (thorny skate and smooth skate) are overfished; southern species (rosette skate and clearnose skate) are not overfished; target species (winter skate and little skate, as well as barndoor skate) are rebuilding. The target species and northern species are most likely transboundary resources. Future management of the New England skate complex fisheries should include consideration of treating species separately or as geographic groups of species.

The SSC recommends that:

- 1. The interim ABC for the Northeast skate complex in 2010 and 2011 is 41,080 mt based on updated survey information and the accepted ABC-setting method.**
- 2. The strategy for managing skate fisheries should be reconsidered.**