MAFMC Scientific and Statistical Committee Meeting
September 21, 2010
Baltimore, MD
Terms of reference

Using information provided by August 30, 2010, the SSC will provide a written report that identifies the following for the upcoming fishing year(s):

1) The materials considered by the SSC in reaching its recommendation;

MAFMC [Mid-Atlantic Fishery Management Council]. 2010. Spiny Dogfish ABC, Commercial Quota and Trip Limits for the 2011+ Fishing Years (Staff Memo to SSC, Spiny Dogfish MC). 7p.

NEFSC [Northeast Fisheries Science Center]. 2006. Report of the 43rd Northeast Regional Stock Assessment Workshop (43rd SAW): 43rd SAW Assessment Report. CRD 06-25. 400 pp.

Rago, P. J. and K. A. Sosebee. 2010a. Update on the Status of Spiny Dogfish in 2010 and Initial Evaluation of Alternative Harvest Strategies. 35 p.

Rago, P. J. and K. A. Sosebee. 2010b. Biological Reference Points for Spiny Dogfish, Northeast Fisheries Science Center Reference Document 10-06. 52p.

2) The level (1-4) that the SSC deems most appropriate for the information content of the most recent stock assessment, based on criteria listed in the most recent version of the proposed omnibus amendment;

Level 3

Rationale: The assessment does not, in the opinion of the SSC, adequately reflect uncertainty in the OFL estimate. The probability of biomass falling below the biomass threshold is addressed is addressed, however, there is no probability distribution associated with Fmsy itself. Additionally, Fmsy is problematic in its relationship with Bmsy (see #3 below).

3) The level of catch (in weight) associated with the overfishing limit (OFL) based on the maximum fishing mortality rate threshold;

For 2011: *20,267 mt*
For 2011 – 2013: *20,267, 20,861, 20,865 mt*
For 2011-2015: *20,267, 20,861, 20,865 20,397 19,701 mt*

By definition, projected biomass at F_{msy} should stabilize near B_{msy}. The SSC reviewed three constant F long-term projections ($Ft_{hreshold}$, F_{target}, 75% $F_{threshold}$) and observed that, within a generation, projected SSB at $F_{threshold,}$ the F_{msy} proxy(0.325) fell below the overfished threshold. Among the constant F projections, only long term projections at F =0.207 appeared to stabilize the stock at B_{msy} within the 30 year timeframe of the stochastic projections. Based on SSC

discussions with the lead analyst, F target (0.207) was deemed appropriate for OFL. Based on the consistency between F=0.207 and the biomass reference point, the F associated with OFL was changed from F = 0.325 to F = 0.207.

4) The level of catch (in weight) associated with the acceptable biological catch (ABC) for the stock based on one, three and five year planning horizons. The ABC will be selected based on the overfishing definition contained in the FMP and to reflect the level of scientific uncertainty inherent in the OFL such that the recommended ABC is less than or equal to the OFL and is consistent with the intent of the Act, and the National Standard 1 Guidelines,

For 2011: 15,200 mt
For 2011 – 2013: 15,200, 15,646, 15,649 mt
For 2011-2015: 15,200, 15,646, 15,649 15,298, 14, 776 mt

*Rationale: The ABC levels are a reduction from OFL based on p*35% with a 75% CV for lognormal distribution of OFL (equivalent to 75%OFL). Spiny dogfish is deemed atypical due to aspects of its life history that make it more vulnerable to overfishing but are not accounted for in the assessment (e.g., relationship between pup survival and maternal size and population sex ratio)*

5) If possible, the probability of overfishing associated with catches associated with the OFL and ABC recommendations (if not possible, provide a qualitative evaluation);

Estimated to be 35% based on proposed risk policy contained in the Omnibus Amendment

6) The most significant sources of scientific uncertainty associated with determination of OFL and ABC;

- *3 year running average of survey biomass (design-based variance) for males and females.*
- *Area swept per tow in the NEFSC trawl survey.*
- *Conversion coefficient for Bigelow to Albatross.*
- *Discard level and associated mortality by fishery*
- *Sampling distribution of B and F based on integration of all input parameters*
- *Estimate of sex ratios in landings and discards.*
- *Mortality rates of discarded fish*
- *Variance in gear catchability*
- *Discards of dogfish in Canadian fisheries*
- *Future Canadian landings*
- *Changes in selectivity, particularly with more directed fisheries.*
- *Scaling with landings*
- *Changes in effort associated with changing regulations, esp for groundfish sectors*
- *Scale of population — Q*
- *Calibration coefficient to convert Bigelow to Albatross units.*

- *Biological Reference Points*
- *95% Parametric Conf Interval for 30.3 kg/tow is {10.98, 49.71}.*
- *Sex ratios of landings*
- *Male dogfish—high biomass, negligible F*
- *Gear specific differences*
- *Pup survival*
- *Stock recruit relationship,*

7) A certification that the recommendations provided by the SSC represent the best scientific information available.

To the best of the SSC's knowledge, these recommendations are based on the best available scientific information.