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New England Fishery Management Council

Scientific and Statistical Committee Report

Steve Cadrin, SSC Chair
April 2010

SSC Agenda

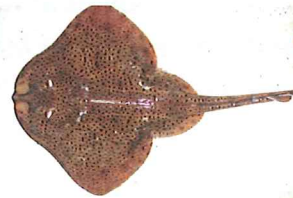
March 16

- SSC Business
 - officers & members
 - 2010 national SSC meeting
 - process issues
- Red crab ABC



March 17

- Reconsider the 2010 skate complex ABC
- Draft EBFM policy paper
- Peer Review
 - June 2010 SARC
 - TRAC/TMGC



Red Crab Terms of Reference

1. Review the Plan Development Team's (PDT) MSY Proxy Reevaluation
2. Provide the Council with the overfishing limit (OFL) and Acceptable Biological Catch (ABC) alternatives for red crab, together with guidance on the risk associated with each ABC alternative; and
3. Recommend an ABC control rule for inclusion in Amendment 3 to the Fishery Management Plan for Red Crab.
4. Advise the Council on an appropriate way to include female red crabs in the calculation of ABC.



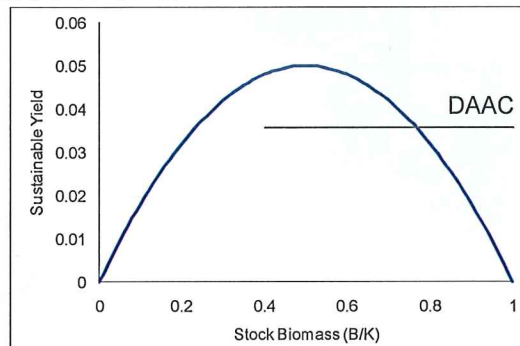
Red Crab – September 2009 Recommendations

1. The overfishing limit (OFL) for red crab is approximated as 1,700-1,900 mt based on long-term average landings and depletion-adjusted average catch analyses from the 2008 Data Poor Stocks Working Group; however, **both approaches to deriving OFL have technical problems that should be addressed to improve the basis of catch advice;**
2. The interim Acceptable Biological Catch (ABC) for red crab for 2010 is 1,284 mt based on 2007 landings until the OFL estimate is reevaluated; and
3. The improvement of fishery and resource monitoring information is needed to derive estimates of MSY reference points and an ABC control rule.



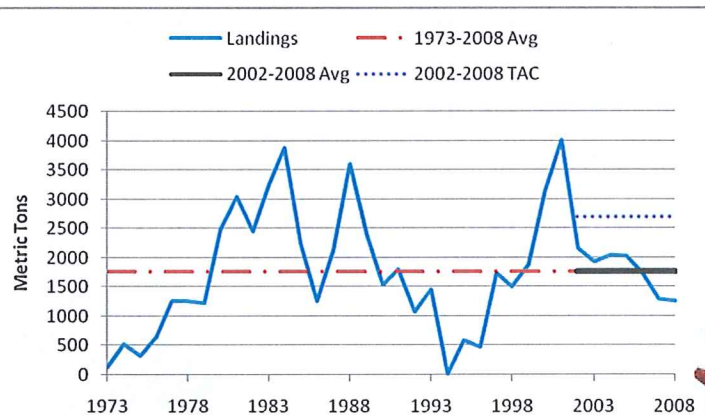
Depletion-Adjusted Average Catch

- The PDT demonstrated that the Depletion-Adjusted Average Catch model developed by the Data Poor Stocks Working Group provides an estimate of sustainable yield that underestimates maximum sustainable yield (MSY).
- Therefore, the information available for red crab is insufficient to estimate MSY or OFL.



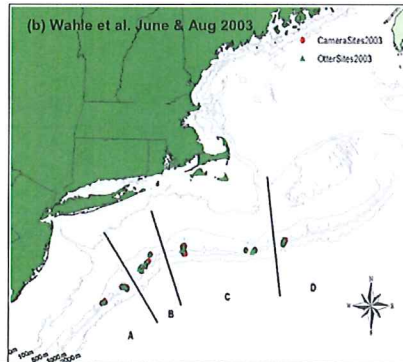
Depletion-Adjusted Average Catch

- In lieu of an estimate of OFL, the SSC recommendation for an interim ABC is based on the long-term average landings of males, which is the same result as provided by Depletion Adjusted Average Catch model that assumes no depletion.



Depletion-Adjusted Average Catch

- The two survey estimates of abundance and their variance do not provide evidence of significant depletion from 1974 to 2003-2005.
- The SSC concludes that an interim ABC based on long-term average landings is safely below an overfishing threshold and adequately accounts for scientific uncertainty.



Red Crab Discards

- Historical landings of male red crab and historical discarding practices appear to be sustainable.
- Sustainability of future catches at or below the recommended ABC is conditional on not exceeding past discard rates.
- Estimates of discards would be needed to provide advice on total catch.
- If the ABC is intended to include total catch, it would have to be increased to include discards



Scientific Uncertainty

- A research plan is needed to improve the scientific basis of management.
- Specifically, estimates of Maximum Sustainable Yield and Overfishing Limit (OFL) are needed to replace the interim ABC recommendation so that an ABC control rule can be based on OFL, its uncertainty and the Council's desired risk tolerance.



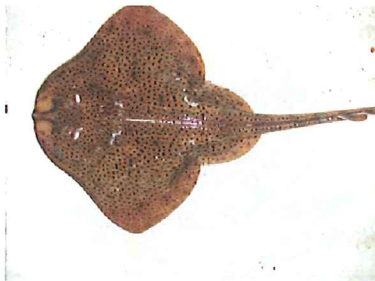
SSC Recommendations

1. Given the data-poor condition of the assessment of the red crab fishery, the overfishing limit (OFL) cannot be estimated;
2. Landings of male red crabs should be limited to an interim Acceptable Biological Catch (ABC) of 1775 mt;
3. Sustainability of future landings at or below the recommended ABC is conditional on not exceeding past discard rates; and
4. Estimates of discards will be needed to provide advice on total catch.



Skates Term of Reference

- Update the skate complex Acceptable Biological Catch (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.



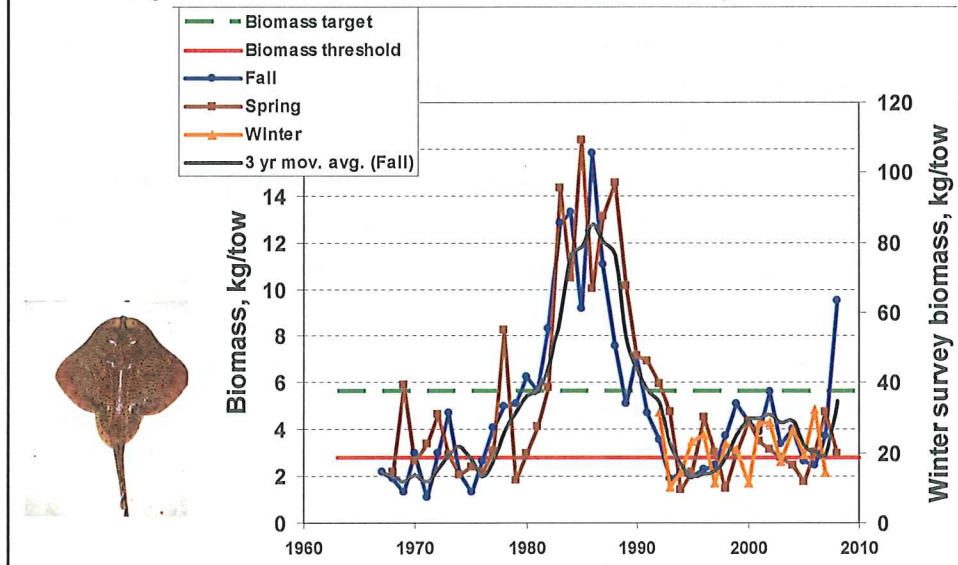
Skates – Previous Recommendations

- February 2009:
 - The ABC 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.
- September 2009:
 - 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.



Fall 2008 Survey Data

- Survey catch of winter skate substantially increased.



Fall 2008 Survey Data

- 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.



Fall 2008 Survey Data



- 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.

Updated ABC



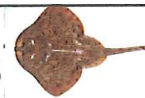
- The SSC recommends that the ABC be revised to account for updated survey information.
- The previously recommended method for deriving an interim ABC is the product of the median observed exploitation index and the most recent three-year average of the multispecies skate survey index.
- The SSC accepts the updated survey data as the best scientific information available for managing fisheries on the Northeast skate complex.
- 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.

Challenges for Management

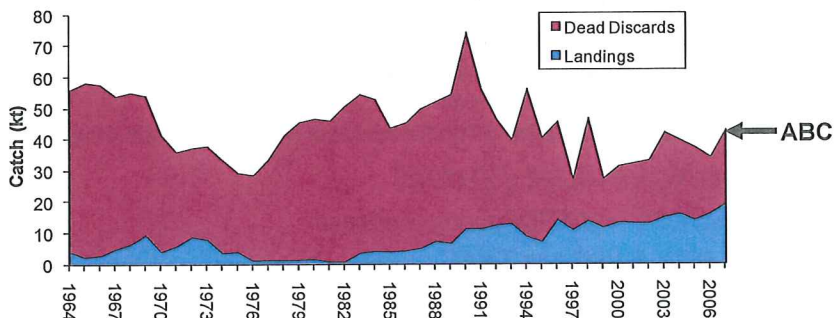


- Several new challenges concerning skate management are expected to arise in the future.
 - Old and new survey systems need calibration.
 - Discarding of skates may increase.
 - Life histories and geographic ranges vary among species:
 - Northern species (thorny and smooth) are overfished;
 - Southern species (rosette and clearnose) are not overfished;
 - Target species (winter and little), as well as barndoor are rebuilding and are most likely transboundary resources.
- Future management of skate fisheries should include consideration of treating species separately or as geographic groups of species.

Skate Recommendations



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.



Ecosystem-Based Fishery Management

- The 1st draft of the SSC policy paper on EBFM was reviewed.
- Contents of Draft:
 - Need for ecosystem-based fisheries management
 - Options for implementation of EBFM
 - An 'incremental approach' (e.g., evaluation of habitat impact associated with alternative scallop closed areas)
 - An holistic approach (e.g., aggregate species production models)
 - A blended approach
 - Institutional structures
 - Recommendations and next steps
- 2nd draft to be reviewed at June SSC meeting.

Upcoming SSC Schedule

- *June 21-22, Portland*
 - *Salmon ABC*
 - *Research priorities*
 - *ABC control rules*
 - *Ecosystem-Based Fishery Management Policy Paper*
- *Late August-Early September (3-day meeting)*
 - *Scallop ABC recommendation*
 - *Groundfish ABC recommendations*
 - *Pollock ABC (review SARC results) – possibly earlier?*
 - *GBYT ABC (review TRAC results)*
 - *Index-based ABCs (review calibration workshop and recent survey data)*
- *October-November (2-day)*
 - *Monkfish OFL and ABC recommendation*
 - *Spring 2011 SARC and TRAC*
 - *SSC Procedures and 2011 agenda*