



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*

To: Paul J. Howard, Executive Director
From: Steve Cadrin, Chairman, Scientific and Statistical Committee
Date: June 23, 2010

Subject: Acceptable Biological Catch of Red Crab, including Discards and Females

The Scientific and Statistical Committee (SSC) was asked to: 1) Review the information provided by the Red Crab Plan Development Team on historical dead discards of red crab in the directed trap fishery and in bycatch fisheries and recommend an ABC that includes both landings and dead discards; and 2) Review the information provided by the Red Crab PDT and develop recommendations concerning the potential inclusion of female red crab landings in the Acceptable Biological Catch (ABC).

On April 28, 2010 the SSC provided the following recommendations to the Council:

1. *Given the data-poor condition of the assessment of the red crab fishery, OFL cannot be estimated;*
2. *Landings of male red crabs should be limited to an interim 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.*

On June 22, 2010 the SSC reviewed information and associated presentations developed by the Red Crab PDT:

1. PDT discussion paper titled: "Options for Potential Female Red Crab Harvest for Inclusion in the ABC and ACL."
2. PDT discussion paper titled: "Estimates of Historical Discards and Discard Mortality Rates in Fisheries for which Red Crab is Caught Incidentally."
3. PDT discussion paper titled: "PDT Analysis of Dead Discards and Potential Female Allowable Landings to be added to the Interim ABC for Red Crab."
4. "Escape ring selectivity, bycatch, and discard survivability in the New England fishery for deep-water red crab, *Chaceon quinquedentatus*", S. M. L. Tallack

National Standard 1 Guidelines indicate that ABC should include removals from all sources: "*Catch includes fish that are retained for any purpose, as well as mortality of fish that are discarded.*" Therefore, conformance with NS1 guidelines would require that the ABC for red crab be increased to include the volume of dead discards and female landings.

Term of Reference #1 – Dead Discards

The PDT reviewed data concerning discards and discard mortality from a variety of sources. Those sources include the 2006 stock assessment, the Report of the Data Poor Stocks Working Group, the 2009 SAFE Report, and data from observed trips in both the directed red crab fishery and for

fisheries for which red crab discards have been recorded. The SSC concludes that the available monitoring data on magnitude of discards and research on discard mortality are inadequate for reliably estimating the magnitude of dead discards. Therefore, despite guidance on including dead discards in catch limits, the best scientific information available for deriving ABC is the time series of landings.

Term of Reference #2 Female Landings

In response to a request from the red crab industry and from red crab researchers, the National Marine Fisheries Service approved an exempted fishery permit (EFP) that exempts four vessels from the prohibition on landing more than one standard tote of female crab per trip. The EFP allows for landing of no more than 1 million lb of female red crab over two years. The long-term purpose of the EFP is sustainable female landings, but it is not clear whether the experimental fishery will support an evaluation of sustainable female landings.

The basis of the SSC's previous recommendation on ABC is that there is no evidence of population depletion since the beginning of the fishery, and the time series of male landings provides an estimate of sustainable yield of males only. This inference of sustainability is conditional on the male-only fishing strategy that existed during the observed time series. If the Council desires that the ABC include landings of females, the SSC would need to reconsider the inference of sustainability and derive a new scientific basis for the ABC recommendation. For example, results from the experimental female fishery, current cooperative research projects, and the monitoring required as a condition of the Marine Stewardship Council certification should be examined.

The Fishery Management Plan for deep sea red crab prohibits the landings of females, and the Council has not explicitly decided to revise that management strategy. Allowing the landing of females is being considered through an experimental fishery. Therefore, results of the experiment and other research should be evaluated in comparison to the performance of the male-only harvest strategy.

The SSC repeats its previous recommendations:

- 1. Landings of male red crabs should be limited to an interim ABC of 1775 mt; and**
- 2. Sustainability of future landings at or below the recommended ABC is conditional on not exceeding past discard rates;**

In response to the terms of reference, the SSC recommends that:

- 1. Inclusion of dead discards in red crab catch limits requires improved monitoring of the magnitude of discards and research on discard mortality.**
- 2. Including female landings of red crab in catch limits requires an evaluation of sustainability of a male and female fishery and a more explicit decision on management strategy.**