

# North Pacific Fishery Management Council

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Scientific Statistical Committee  
January 13-15, 1986  
Sitka, Alaska

The Scientific and Statistical Committee met in Sitka, Alaska on January 13-15, 1986. Members present were:

Donald Rosenberg, Chairman	Richard Marasco, Vice Chairman
Phil Mundy	Tom Northup
Bill Aron	Doug Eggers
John Burns	Terry Quinn
Don Bevan	Larry Hreha

## C-2 SSC Appointment and Officers

The SSC requests that the Council confirm the two nominees to fill the vacancies on the SSC. Dr. Phil Mundy, who is the Chief Fisheries Scientist with the Alaska Department of Fish and Game, and Dr. Terry Quinn, who is with the Fisheries program at the University of Alaska-Juneau. The backgrounds and current positions of these individuals will greatly enhance the deliberation of the SSC.

The SSC would like to recognize the contributions that Dr. Steven Langdon and Scott Marshall have made to our deliberations.

The SSC requests that the Council also confirm the following: Donald Rosenberg for Chairman and Richard Marasco for Vice Chairman.

## C-3 Crab/Halibut Interceptions in Bristol Bay Pot Sanctuary

The SSC reviewed the document entitled "A Biological and Economic Analysis of the Bycatch of Prohibited Species in the Bering Sea Area I: Joint Venture Flounder Fishery" dated January 1986, developed by Jerry Reeves and Joe Terry of the NWAFC-Seattle. We also received a presentation by the authors summarizing the documents. Our analysis also included a review of Addendum 2 prepared by the Council staff.

The SSC would like to compliment the authors of the report. We find the document very useful in our analysis of the Status of Stocks and the various proposals to control interception of king crab and halibut.

## Status of Stocks

The 1985 NMFS crab survey indicated that the abundance of both prerecruit and legal males remains low relative to historical levels. The abundance of fertilized females is at a historical low of seven million plus or minus three million crabs. This is considered below the optimum abundance of fertilized females which is in the range of 24 to 44 million.

It is noted that the spawner/recruit analysis indicated that the low levels of spawners in the early 1970s provided high levels of recruits. However, environmental and prey relationships may be substantially different than those in the early 1970s, plus the current estimates of the spawning stock is at the lowest level observed.

The SSC finds that the population is depressed, that the recruitment level is low, and the prerecruit abundance is declining. The SSC is particularly concerned with the declining numbers of females.

The SSC finds the current status of stocks indicates that the management of red king crab must be approached in a conservative manner.

## Proposal on Controlling Interception

The SSC believes that maximization of the economic value from the use of all fisheries resources present in the Eastern Bering Sea is a reasonable goal subject to constraints imposed by the MFCMA and appropriate FMPs. A management scheme that leads to the realization of this goal will result in bycatch. The critical question is how much bycatch should be allowed? Data and analysis are presently not available to definitely answer this question. The report prepared by Reeves and Terry (1986) provides an indication of what the upper bound on the bycatch is for female red king crab in the joint venture flounder fishery.

The SSC has indicated a concern over the status of red king crab and finds that protection measures are warranted. Protection can be provided by employing:

1. Time/Area closures
2. A Bycatch Ceiling
3. Combination of a Bycatch Ceiling and Time/Area Closure

Given our inability to monitor bycatch in domestic operations, the SSC finds that time/area closures are the appropriate management measures at this time.

To assist the Council in its evaluation of the various proposals, the SSC analyzed the proposals in light of information on crab distribution and potential displacement of the trawl fishery. Our analysis is contained in Table 1. Comments on this table are:

Column 1. Percent of Female King Crab Population within the Proposed Closure (1984-85).

This column gives a degree of relative protection of the various proposals to the red female king crab population. It was developed using

the 1984-85 average percent distribution of red female king crabs in the trawl survey.

Column 2. King Crab Bycatch CAP

This column provides the bycatch limit CAP on all king crab as provided in the various proposals.

Column 3. Percentage of C. bairdi population within the Proposed Closure. (1984-1985)

This column gives the degree of relative protection of the various proposals to the C. bairdi stocks. It was developed using the 1985 survey data for small males, prerecruit males and females. The data on large males was not available.

Column 4. 1985 MRC Flounder Fishery Catch Displacement (In Percent).

This column gives relative displacement of the Marine Resources Company joint venture flounder fishery if it had occurred under the various proposals. The data used is in the Council staff analysis provided in Addendum 2 to the Reeves and Terry report. The SSC attempted to get an expansion of this analysis to all groundfish activities that would occur in the area. In the time available this analysis could not be completed. These estimates should be used in judging the relative restrictions of each proposal with regard to the flounder fishery only. No inference can be made regarding the input on any other trawl fishery.

Column 5. Tanner Crab CAP

This column indicates if a bycatch limit (CAP) for Tanner Crab is provided for in the proposal.

We wish to point out that the column concerning Tanner crab does not provide very useful information in choosing among alternative proposals. Most of the C. bairdi population is outside of the area and there is little variation in the degree of protection provided by the various proposals.

None of the proposals specifically address the question of the benefits of removing crab predators. We are unable to quantify the effects of such removals. Additionally, Reeves and Terry point out the difficulty in applying their analysis because the results are not stable over time and space. The SSC did note that in some inshore areas a fairly consistent pattern exists in at least two out of the three years examined. In those areas the analysis indicates that the value of the bycatch exceeds the value of the flounder. These areas are east of 162°W, south of 56°30'N and east of 160°W, north of 56°30'N. The SSC noted that these areas have not been considered under most of the proposals.

Two other issues will face the Council in the near future. First, we do not believe that we will be able to evaluate the success or failure of the measures taken. Second, our current analysis is based upon joint venture data

and its observer validation. In the future we will be unable analyze such problems as we face today because of the deletion of our data base coinciding with Americanization. Finally, the SSC did not analyze the impact of these proposals on the halibut resources. Currently the SSC is not concerned over the status of this resource.

#### C-9 Other Business

The SSC discussed the need to define many of the terms used within the Council family. The SSC has a group which has been working on these definitions. We feel that the need for these definitions is critical. Our working group will meet prior to the next SSC meeting and the SSC plans to undertake a review of those definitions at our next meeting.

#### D-2 Tanner Crab Fishery Management Plan

The SSC received a presentation on the Status of Stocks for C. bairdi from Jerry Reeves and Robert Otto of the NWAFC. The information presented is summarized in the document entitled "Status of Bering Sea Crab Stocks in 1985" dated January 1986, by the NWAFC.

The abundance of prerecruit and legal male C. bairdi has for the past eleven years been declining. We noted that females greater than 84mm, prerecruit males and legal males are at the lowest abundance ever observed. Based on 1985 prerecruit abundance, no improvement in the stock is expected. The SSC also noted that for the past two years the industry has been unable to harvest the ABC and that the current catches are well below those that existed at the time the plan was implemented. Given these trends, the SSC has concern for the status of this resource.

The SSC has noted that the plan specifies that ABC is calculated by applying an exploitation rate of 40% to the biomass of the legal males. Under the plan, the ABC for the 1986 fishing season is 2.0 to 4.0 million pounds. The plan states that when Tanner crab stocks have declined to levels below that capable of producing MSY, management measures should promote rebuilding. The MSY in the plan is 32 million pounds. The SSC believes that the stocks are below the level that can produce MSY. The SSC suggests that if it is the Council's desire to maximize the potential for rebuilding then the 1986 harvest level should be set at zero. This recommendation is based upon the status of stocks for C. bairdi and does not take into account the question of the incidental catches of red king crab in a C. bairdi fishery. The SSC estimates that for every one million pounds of bairdi harvested, approximately 250,000 female red king crab will be caught during the molting period.

#### D-3 Gulf of Alaska Groundfish Fishery Management Plan

The SSC reviewed the report entitled "Conservation Concern of the Kodiak King Crab Resource: A Discussion of Management Options" prepared by the Alaska Department of Fish and Game and the National Marine Fisheries Service, dated January 8, 1986.

The SSC reviewed the status of Kodiak king crab stocks. We recognize that the abundance of red king crab is at low levels. The SSC is concerned about the

status of these king crab stocks and recommend that the Council seek to minimize mortality on these stocks.

The SSC was concerned that the data presented in the report did not support the closures described. Discussion with Alaska Department of Fish and Game representatives helped to clarify the reason for this lack of data. Because of this lack of specific information the SSC was unable to examine the proposed closures, their degree of protection to crab stocks, and costs associated with potential groundfish fishery displacement. We understood that the AP is developing a modified proposal. Although the SSC has not had the opportunity to review that final proposal for a time/area closure we recommend that the Council give it serious consideration.

D-4 Bering Sea/Aleutian Islands Groundfish FMP

The SSC reviewed the Bering Sea/Aleutian Islands Groundfish FMP proposed amendments for 1986 and the plan team ratings and comments. The SSC concurs with the teams recommendation that high priority for the next year be given to the development of amendments for Proposal 4 (Field Order Authority), Proposal 6 (Independent Allocation to DAP, JVP and TALFF) and proposal 10 (DAP Priority/Flexibility). The SSC does not believe, in light of decreasing funding and staff and team work loads, that the other proposals (which would require plan amendment) are of sufficient priority for action at this time.

TABLE 1. SSC Analysis of Yellowfin Sole/King Crab Closure Proposals<sup>1/</sup>

<u>Proposals</u>	Percent of Female King Crab Population Within The Proposed Closure (1984-85)	King Crab Bycatch CAP	Percent of <u>C. Bairdi</u> Population Within The Proposed Closure <sup>3/</sup> (1984-85)	1985 MRC Flounder Fishery Catch Displacement (In Percent) <sup>4/</sup>	Tanner Crab CAP <sup>6/</sup>
IA	91		43	86	
IB, IIIC.2, IVA	97		40	97	
IIB	<u>2/</u>	155,000	<u>2/</u>	73	yes
IIIA, IVB	96		35	92	
IVC	99		40	92	
Consolidated Trawl	73-85 <sup>5/</sup>	155,000	25-32	73	yes

1/ The impact of the proposals on halibut was not examined in detail because the status of the stock was not a concern.

2/ The proposal will close an area after June 1. It is not possible to calculate a comparable percentage.

3/ Includes only small males, prerecruit males, and females.

4/ These data are for the MRC flounder fishery only and were developed using information for 1985.

5/ 73% was derived by excluding geographical squares containing the 25-fathom line and 85% includes the squares.

6/ Applied to joint venture flounder fishery only.