

## Recommendations to the Council from the 73<sup>rd</sup> Meeting of the Scientific and Statistical Committee

## Crustaceans

Council Office Conference Room Honolulu, Hawaii 22-24 February 2000

The SSC heard presentations by NMFS Honolulu Lab on the status of the NWHI lobster fishery and stocks and on the proposed harvest guideline for the current year.

The SSC reviewed the current assessment results for spiny and slipper lobster in the NWHI in which the exploitable population size is estimated at 1.5 million individuals for year 2000. The SSC also reviewed the preliminary results from tagging conducted in 1998-99 which indicated a possible bias in the stock size estimates. The data indicate a fishing mortality for spiny lobsters of 0.21 for Necker Island in 1999, higher than the value of 0.14 used in the assessment model. Assuming that the tagging results for spiny lobsters at Necker Island are indicative of a general bias in the assessment model estimates, an adjustment factor of 0.14/0.21 = 0.67 could be applied to the model abundance estimate to calculate a "bias-adjusted" abundance estimate of 1.0 million lobsters in the exploitable population be applied to compute the harvest quota for the 2000 fishing season.

The SSC reviewed the overfishing definitions in documents 4B2 and 4B1 The target fishing mortality of F=0.14 is substantially below the estimate of  $F_{msy}$ =0.72 and also well below the F= M=0.456 policy based on yield per recruit. In addition, the fisheries literature provides strong support for the risk-averse characteristic of constant harvest rate policies. Therefore, the SSC believes that the constant harvest rate policy, as defined in Amendment 9, is conservative and precautionary. The SSC recommends the quota for NWHI lobster catch be set at 130,000 lobsters in 2000 (a quota similar to that used in 1994) based on an exploitable population of 1,000,000 lobsters and a 13% harvest rate. Bank specific quotas, computed by partitioning the overall quota amongst banks based on relative abundance estimates provided by NMFS, are: Necker Island– 38,870; Maro Reef– 56,957; Gardner Pinnacles– 19,304; all remaining banks– 14,869.

Tagging data are potentially useful for estimating fishing mortality and population size. Closure of the fishery would be premature and effectively terminate the NMFS lobster tagging study. The SSC strongly recommends maintaining the fishery in the NWHI to improve the value of the tagging experiment. The SSC also recommends expansion of the tagging program to include both *Panulirus marginatus* (spiny) and *Scyllarides squammosus* (slipper) at all significantly fished banks.

The SSC reviewed the results of the current NMFS lobster assessment model and found it deficient in several areas. Combining species is not appropriate when it is well known that the distribution and life history of the species is different and the fishermen are able to deploy traps in a way to "target" one species or another. Age structure data are not used and the spatial resolution of the model is not appropriate to the fishery or its management. The SSC recommends that the current model be replaced with a fully integrated model that captures the dynamics of both species, includes age and growth information and recruitment trends, and has appropriate spatial structure and population movement.

The SSC reviewed the information presented by the Hawaiian Monk Seals Recovery Team (HMSRT) on the status of the Hawaiian monk seals and by the Fish and Wildlife Service on the environmental problems at French Frigate Shoals. The SSC saw no evidence of food limitation in the monk seal population. Concern was expressed over the mis-representation of results from fatty acid signature studies of monk seal tissue that prematurely suggest a proportionally high level of importance of lobster in their diet. Girth at weaning and survival of pups have increased over the last two years. The data presented suggested some optimism for the continued recovery of monk seal populations in all areas except at French Frigate Shoals, where the recovery of the population would appear to be heavily dependent on continued improved survival of pups from age 1 to 2. The SSC recommends that Council commend the HMSRT for the excellent job it has done to enhance the recovery of the Hawaiian Monk Seal. The SSC further recommends that HMSRT implement population projection models to forecast possible recovery trajectories. The SSC requests that a full report be provided at its next meeting that includes a rigorous analysis of the fatty acid study of diet item importance to seals.

The SSC also noted that the Council might critically review the number of existing NWHI Crustaceans FMP fishing permits. It would appear that the extant 15 permits, of which only about half are active in any given year, may represent some degree of over-capacity.

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