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Workshop on Beaufort Sea Beluga

Executive Summary
by Dr. Douglas Wartzok

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Vancouver, B.C.

Fisheries Joint Management Committee
Box 2120
Inuvik, NWT
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Preface

The Fisheries Joint Management Committee (FJMC) was established in 1986 under the terms of the Inuvialuit Final Agreement (IFA), to advise the Minister of Fisheries and Oceans and the Inuvialuit on fisheries management and related issues in the Inuvialuit Settlement Region (ISR). The FJMC, together with DFO and the Inuvik, Aklavik and Tuktoyaktuk Hunters and Trappers Committees, prepared and ratified the "Beaufort Sea Beluga Management Plan" in 1991. The goals of this Plan are:

1) to maintain a thriving population of beluga in the Beaufort Sea, and

2) to provide for the optimum sustainable harvest of beluga by Inuvialuit.

The Fisheries Joint Management Committee, together with the Environmental Studies Research Funds and the Department of Fisheries and Oceans, hosted a workshop to examine stock status and other aspects relating to Beaufort Sea beluga. Since current information suggests that this is a transbounary stock, it was essential to involve hunters and the appropriate agencies from both Alaska and the Inuvialuit Settlement Region of Canada.

Given the current data gaps regarding definition of the management unit and it's reproductive parameters, FJMC is not yet in a position to proceed with implementation of certain aspects of the Beluga Management Plan. For this reason, the workshop was held to reach concensus with respect to the following specific goals:

1) to determine the present status of the beluga stock summering in the Beaufort Sea,

2) to identify the best methods of continued monitoring of the stock in response to human activities and environmental changes, and,

3) to define research priorities.

Thirty-one participants, representing a cross-section of resource users, government agencies and technical advisors, met in Vancouver, B.C. from February 3-6, 1992.

The Executive Summary was prepared by the facilitator during the workshop, reviewed by all participants, and finalized on February 6, 1992. It thus represents the concensus of the participants at the conclusion of the workshop. A more detailed report from the workshop will be forthcoming later in 1992.

The organizers wish to thank the facilitator, and all participants for their insightful contributions during the workshop.

Robert K. Bell
Chairman, FJMC

Present Status

The provisional beluga stock summering in the Beaufort Sea is considered to be a healthy stock. This assessment is based on the estimated size of the population, the age structure of the population, the relatively low present harvest, and the absence of currently defined environmental threats. The stock is estimated to be 21,000 (confidence limits of 15,000 - 27,000) based on the 1984 offshore survey which covered 5% of the survey area. This estimate is not inconsistent with results from other surveys.

These data were corrected using the line transect sightability function and a conservative estimate of 50% of the animals being below the surface. No variance was associated with the submerged animal fraction. Other factors which make the estimate a conservative one include the survey altitude of 300 m from which gray animals and small animals are difficult to detect, and the limitation of the survey to only a portion of the Beaufort Sea stock range; in particular, the inshore areas were not included. Unknown, but substantial, numbers of animals remained in the inshore areas at the time of the survey.

Continuing Assessment

The assessment of present status has indicated that the provisional Beaufort Sea beluga stock is currently healthy. Future factors that could influence the status of this stock include human activity that displaces beluga from favored habitats (e.g., industry, fishing and unregulated tourism), major environmental changes (e.g., global warming) and harvesting in excess of sustainable levels. The harvest provides a unique opportunity to monitor the population on a continuing, cost-effective basis.

The harvest can provide accurate, long-term data on numbers and locations of animals taken, hunting loss rates, age and size structure of the harvest, female reproductive history, and individual condition indices such as blubber thickness. This approach of continuing assessment is preferred for the following reasons: such data have

tracked changes in other marine mammal populations (e.g., seals and walrus); there is a high probability of acquiring these data each year; this data set is less vulnerable to vagaries of funding; and the primary management tool becomes a cooperative venture with the users.

A harvest monitoring program is currently in place which provides the data indicated above on an annual basis. This program should be enhanced and the data thus obtained should be analyzed annually. In addition samples should continue to be taken for toxicological and genetics studies. These samples are not as immediately critical for assessing stock status and thus the recommendation is for analysis on a timely basis, but not an annual requirement. Systematized ancillary observations of each individual in the catch can be of immeasurable assistance in interpreting collected data. To be an effective tool, the on-going program of native participant training needs to be continued and supplemented with debriefing sessions at the end of the season and timely feedback on the interpretation of the data from the previous season.

Aerial surveys should be conducted on a seven year schedule with two consecutive years of surveys followed by a hiatus of five years. This schedule allows for continuity among experienced survey participants. The details of the aerial surveys are given under funding priority 3 below.

Research Priorities

The first priority is an emphasis on building the data base on the Beaufort Sea beluga stock through a better use of data already in hand, data readily available, and data easily acquired. This priority includes: an enhancement of the current native field monitor/collector training program; an intensified effort to maximize the current data return from the harvest; the processing of all currently held collections; a summarization of data already collected on distribution and movements; a comparison of the Beaufort Sea stock data with complementary data obtained on other stocks; and an effort to visit communities and record traditional knowledge about beluga, particularly from the elders.

The second priority is satellite tagging. Such a program could address the following outstanding issues of Beaufort Sea beluga management: movements of individuals between inshore and offshore habitats; movements of individuals through Canadian, Alaskan and Siberian waters; movements of individuals between provisional stock boundaries; survey correction factors such as proportion of time at the surface in various habitats and at various seasons; and feeding inferences. This information can serve as an important adjunct to planning aerial surveys and photogrammetry studies. Components of the satellite tracking work will be complementary to the genetic analysis currently being funded under this unique opportunity.

The third priority should be an aerial survey of the inshore and offshore belugas in the eastern Beaufort Sea. This survey would be the first complete survey of the reported summering range of these animals. The survey should be planned to occur at the time of the year when distribution and behavior of the whales would lead to estimates with minimum variances. The planning of the survey will benefit from the knowledge of the hunters as well as data from satellite tags. Offshore coverage should be 10% and inshore coverage 50%. Aerial surveys should include sufficient air time to determine observer bias. The resulting animal counts should be corrected for proportion of whales visible, observer biases, decrease in detectability of whales with increasing distance from the survey transect, and other quantifiable environmental and behavioral factors. Photographic and high-resolution video options should be explored as adjuncts to the visual surveys.

FJMC/DFO/ESRF Beaufort Beluga Workshop
Feb. 3-6, 1992 Vancouver
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FJMC/DFO/ESRF Beaufort Beluga Workshop
Feb. 3-6, 1992 Vancouver
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