

Annex N

Report of the *Ad hoc* Working Group on a Greenlandic Research Programme

Members: Donovan (Chair), Hiby, Landa, Witting, Clapham, Øien, Zeh.

1. INTRODUCTION

The Working Group had been established by the sub-committee on Aboriginal Subsistence Whaling (Annex F). The background to the proposal is summarised in the report of that sub-committee and that of the SWG on the AWMP (Annex E) and is not repeated here. The Group took as its starting point the discussion in Annex F. It **agreed** that it was not possible to develop a full, costed research programme in the time available at this meeting. It therefore concentrated on discussing a mechanism to ensure that the necessary work be carried out intersessionally to allow the Committee to develop such a proposal at its next Annual Meeting.

2. DISCUSSION

The Group recognised that the primary objective of the research programme is to provide information that will narrow the range of plausible hypotheses to be considered in the development of an *SLA* for the minke and fin whales taken by Greenland. It stressed the need for the programme's interaction with *SLA* development, particularly with respect to data requirements (both in terms of the nature and quality of the data). It noted the ongoing research outlined in the information paper produced by Born (1999), especially the genetic study.

The Group discussed issues raised surrounding the possibility of a large-scale biopsy sampling programme (see Annex F, item 7). It agreed that there was great potential in being able to obtain large numbers of individually identified animals (via DNA genotyping) in terms of information on stock identity, sub-stock structure and absolute abundance. It also recognised the additional value of being able to involve the hunters in the project. It agreed that there were a number of issues that needed to be addressed before deciding whether or not to initiate a full project, and if so, the design of such a project. Some of these are briefly summarised below.

2.1 Feasibility of collecting a large number of biopsy samples from minke and fin whales

The Group **recommends** that a feasibility study be carried out this summer off Greenland. In order to assist in that process, it recommends that a *Larsen* gun and darts be purchased by the IWC. Landa and Witting agreed to arrange for field trials. It will certainly be possible to carry out trials

for minke whales and the possibility of carrying out trials for fin whales will be investigated.

The remaining items can be examined by an intersessional steering group. This Working Group suggests that at least the following be included in such a group: Donovan, Hiby, Landa, Witting, Clapham, Øien, Zeh, Cooke, Kleivane, Bérubé and Palka. This group includes members of the AWMP as well as the AS sub-committee. It also includes members familiar with mark-recapture estimates, genetics, aerial surveys, ship surveys, *SLA* development and use of individual identification data. The items below are given merely to highlight the types of issues to be considered. They are not intended to represent an exhaustive list. Developing such a list will be one of the initial tasks of the intersessional steering group.

2.2 Power analyses

One use of the marking data is to provide a mark-recapture estimate. In addition to an abundance estimate itself, it may also provide, particularly in conjunction with distance-based abundance estimates, information on the total population size 'available' to the Greenlandic fisheries and hence on stock identity. With respect to abundance it is clear that a power analysis to examine likely sample sizes and associated confidence intervals is required.

2.3 Potential confounding factors

There are a number of well-known assumptions made when estimating abundance using mark-recapture techniques (e.g. see Hammond, 1985; the photo-identification volume, etc.). These will require investigation for the Greenlandic situation. They will include discussion of *inter alia*: the many implications of using hunters (either opportunistically during whaling operations, after whaling operations have ceased, in conjunction with a scientific survey) to obtain the samples. Witting and Landa agreed to present a discussion paper to the group reviewing the operational nature of whaling in Greenland. There are both theoretical and practical issues to be discussed by the group in this regard.

2.4 Analysis of samples

The biopsy samples should be used in a number of ways: (1) microsatellite-based genotyping to identify individuals; (2) determination of the sex of the animal; and (3) population genetic analyses. Information on the cost of such analyses and the archiving of the results needs to be obtained.

2.5 Other sampling

The value of collecting samples from areas of the North Atlantic other than off West Greenland (e.g. northern Canada, East Greenland, the central North Atlantic and

Iceland) is emphasised and the potential for obtaining them needs to be examined (e.g. on 'platforms of opportunity'). An inventory of existing samples and published analyses for both minke and fin whales should be compiled.

2.6 Absolute abundance estimates

The Group agreed that it was important to try to obtain an estimate of absolute abundance for minke and fin whales off West Greenland. This has value in at least two ways: (1) for comparison with the last estimates obtained over 10 years ago; and (2) for comparison with a mark-recapture estimate. There are a number of aspects to be investigated including: (1) ensuring comparability with previous estimates both in terms of methodology and personnel; (2) timing of surveys with respect to the proposed NASS survey (see item 5.5); (3)

area coverage; (4) resources required; (5) combination of partial data from several years; and (6) aeroplanes and/or ships.

2.7 Telemetry

The Group agreed that the cost-effectiveness of satellite tagging be investigated. It looked forward to receiving the results of an existing feasibility study and noted the value of cooperating with researchers from other areas where reasonable success rates have been obtained for at least some baleen whale species.

REFERENCE

- Born, E.W. 1999. Large cetaceans in Greenland: A primer for development of research plans. (Unpublished manuscript). 19pp. [Available from the author, e-mail: ewb@dmu.dk].
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