

Annex T

Report of the Working Group on the Greenland Research Programme

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Last year the Committee requested a costed research programme that will enable the Committee to provide satisfactory advice to the Commission as soon as possible. At a minimum this programme should address questions of stock identity and abundance, where the focus should allow the AWMP SWG to narrow down the range of plausible trial scenarios. This year the sub-committee received several papers detailing a research programme (SC/52/AS2, 4, 6, 7 and 21). These papers were reviewed by the Working Group.

Considerable discussion centred on determining what types of information were most needed to narrow down the range of trial scenarios to develop and test a *Strike Limit Algorithm* for minke and fin whales in Greenland waters. The Working Group concluded that information on minke and fin whales was equally important and population structure and abundance information were also equally important. With respect to the latter it is particularly important to be able to interpret what the abundance estimates mean in terms of animals available to the fishery. The important stock-structure question is: do the fin and/or minke whales found off Greenland compose separate feeding aggregations or are they part of a larger dynamic stock? If progress is to be made in the short term, research on stock structure and on abundance should be conducted. In making its recommendations below it recognised the identification of the types of data that may become available will in itself be of value to those attempting to develop SLAs for the Greenlandic fisheries.

The Working Group welcomed the proposed research being undertaken by Greenland and recommended modifications to the proposed research programme. In addition to the work already proposed to obtain samples and details of the whales taken in the fishery, it should concentrate on research targeting population structure and abundance during the summers of 2000 and 2001. Given the well-known problems associated with working in such regions, it was recognised that a large proportion of the early research programme must include feasibility studies. This is particularly true with respect to further examining the feasibility of being able to undertake large scale biopsy sampling of animals in Greenlandic waters with the cooperation of hunters. Given that, it is difficult to make firm longer term plans. In addition to the sample collection, the Working Group **recommended** the following.

- (1) The inshore surveys in SC/52/AS6 should be conducted during the 2000 season as an integral portion of the research programme. The results from this pilot study

should be reported to the e-mail intersessional group as soon as possible, and be reported to the AWMP Intersessional Workshop to be held in December 2000. In addition to the protocols proposed in SC/52/AS6, important issues to be considered for the 2000 surveys and beyond include: (a) improved training of personnel that will be surveying for whales to improve the quality of the data; and (b) the creation of a set of two-hour track lines before the survey season and a pre-defined randomised rule for selecting the block and track lines. The latter is essential to enable a better statistical analysis of the results and thereby improve the ability to interpret them and determine whether the approach is likely to lead to sufficiently reliable abundance indices.

- (2) Noting the potential of large-scale (*ca* 100 animals per annum) biopsy sampling to contribute information on population structure, movements, site fidelity and abundance, as well as more 'traditional' genetic analyses, the feasibility trial of biopsy sampling (SC/52/AS1) should be repeated on a larger scale during 2000. The design of the feasibility study should be specified in advance and must use a more stable platform (such as a small whaling vessel), an experienced captain and preferably an experienced biopsy sampler and an extended period of training with the Larsen gun. If it proves to be successful, then considerable effort needs to be put into place to design a practical as well as theoretically sound large-scale biopsy sampling effort. This will include an examination of the likely theoretical issues that will occur in any analysis of the data. Such an effort will clearly need at least two years of major sampling.
- (3) Continuation of the pilot study already being funded by Greenland on satellite tracking. If it proves successful, this should be expanded into a larger scale research study that should target both minke and fin whales in 2001. At least some tags should include record time-at-depth so abundance survey counts can be bias-corrected. Before a 2001 study occurs there must be a careful consideration of the spatial and temporal distribution of tag deployment. The results of the 2000 pilot study should be considered at the intersessional AWMP workshop as well as being circulated as soon as possible by e-mail.
- (4) From the information obtained in 2000 and 2001, consideration should be given to the possibility of carrying out a larger-scale abundance survey in 2002. The area to be covered by such a survey will need to be determined by the results of the biopsy and satellite

programmes should they prove to be successful. It seems likely that the study area would probably include West Greenland inshore and offshore waters and the extreme southern East Greenland waters (it seems unlikely that the present management border at Cap Farvel corresponds to a real division). It is expected this would comprise an offshore shipboard line transect survey and an inshore cue-counting aerial survey. With a suitably designed protocol in place, the shipboard survey would also offer opportunities for extending biopsy sampling and satellite tagging into offshore waters. Given the need to await the results of the 2000 and 2001 studies, no detailed estimated budget is included here. However, the Working Group notes that such a survey is expensive and total costs may well be of the order of £300-400,000.

- (5) To complete the investigation of large-scale relationships (SC/52/AS8-11), the minke and fin whale samples from other regions within the eastern North Atlantic, such as Atlantic Canada and the USA should be sought and analysed. Potential sources include incidental takes, strandings and other cetacean research programmes already in place. Kingsley agreed to investigate sources of Canadian samples and Palka will do the same for the USA.

The Working Group noted the Greenlandic work already being funded and drew up a tentative additional research budget. As noted above the direction the overall programme will take is to a large extent dependent on the results of feasibility studies. This will be discussed further at the intersessional AWMP Workshop.

Table 1
Estimated budget for the IWC financial year 2000/2001.

Item	Amount
Autumn 2000 - biopsy feasibility study	
Ship time (3 weeks)	£12,000
Larsen biopsy sampling guns and accessories (2)	£2,000
Contract for experienced biopsy marksman and travel	£3,000
Analysis and reporting	£1,000
Total	£18,000
Summer 2001 - contingent on feasibility studies	
Ship time and personnel	£25,000
Satellite tags and download links	£16,000
Data analysis	£2,000
Biopsy sampling, darts and supplies	£1,000
Analysis of data and reporting	£2,000
Total	£46,000