Report of the Scientific Committee *ad hoc* Working Group on Grey Seals *Halichoerus grypus*

Tórshavn 5-8 February 1996

1-3. Opening procedures

The *ad hoc* Working Group on Grey Seals met at the Nordic House in Tórshavn, Faroe Islands, 5-8 February 1996. The Chairman, Arne Bjørge, welcomed participants (listed in Appendix 1).

The Working Group had as its terms of reference the Council's request for advice on grey seals (*Halichoerus grypus*) which was to:

> "... review and assess abundance and stock levels of grey seals (*Halichoerus grypus*) in the North Atlantic, with an emphasis on their role in the marine ecosystem in general, and their significance as a source of parasitical infestations in fish in particular."

The Working Group adopted the agenda and decided to review the available working papers area by area (see List of documents, p. 16). For the general discussion, conclusions and recommendations, the Working Group decided to discuss all areas by topic.

Invited experts D.Thompson (UK) and M. Hammill (Canada) assisted the Chairman as rapporteurs.

4. Review of grey seal stocks

4.1 Stock Identity and Breeding Distribution

The grey seal (*Halichoerus grypus*) is a medium sized phocid found throughout the temperate waters of the North Atlantic. Three distinct populations are recognized: the western North Atlantic, the eastern North Atlantic, and the Baltic Sea grey seals. An examination of mitochondrial DNA variation in samples from Canada, Norway and the Baltic Sea found no shared haplotypes between the eastern and western Atlantic (Boskovic *et al.* submitted). According to this study, the distances between these two populations suggest that they diverged 1.0-1.2 million years ago. Nucleotide divergence between Baltic Sea and Norwegian grey seals, estimated to be around 0.7%, suggests that separation of Baltic and Northeast Atlantic grey seals took place around 350 thousand years ago based on standard divergence measures (Boskovic *et al.* submitted). The Working Group commented that if the separation of Northeast Atlantic and Baltic grey seals was established by the formation of the semi-enclosed Baltic Sea, the separation may be a more recent phenomenon due to the postglacial history of the Baltic Sea basin.

In the Northwest Atlantic two major groups of grey seals are recognized, based on the location of their whelping patches. The largest group breeds on Sable Island, a 60 km long sand bar located approximately 150 km to the east of Nova Scotia. The second group, known as the non-Sable Island grey seals, is made up of animals that breed on the small islands along the eastern shore of Nova Scotia and animals that whelp on the drifting pack ice in the Gulf of St Lawrence (Mansfield and Beck 1977). Recently a new breeding site was established at the Cape Cod Peninsula in USA. Although animals from both groups show strong philopatry to their whelping sites, considerable overlap occurs between the two groups in their distribution outside of the breeding season (Stobo *et al.* 1990; Lavigueur and Hammill 1993). An