NORWAY - PROGRESS REPORT ON MARINE MAMMALS 2022

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I. INTRODUCTION

This report summarizes the bulk of Norwegian research on pinnipeds and cetaceans conducted in 2022 and conveyed to the compilators. The research presented here was conducted at, or by representatives and associated groups of:

The Institute of Marine Research (IMR): www.hi.no
The Norwegian Polar Institute (NPI): www.npolar.no
University of Tromsø – The Arctic University of Norway, Department of Arctic and Marine Biology, Research group Arctic Ghemoecology & Physiology (UiT-AMB-AGP):
http://arctichaemoecology.andphysiology.blogspot.com/
University of Tromsø – The Arctic University of Norway, Department of Arctic and Marine Biology (UiT): www.uit.no
University of Oslo (UiO): www.uio.no
Akvaplan-niva (APN): www.akvaplan.niva.no
Directorate of Fisheries, Sea Surveillance Unit (SSU): www.fiskeridir.no
Norwegian Orca Survey (NOS): www.norwegianorcasurvey.com
WhaleThea (WTh): www.whalethea.no

II. RESEARCH BY SPECIES 2021

PINNIPEDS

Harp (Pagophilus groenlandicus) and **Hooded seals** (Cystophora cristata)

The assessment model currently in use for **harp** and **hooded seals** is a deterministic, age-structured population model. It uses historical catch data, reproductive data, and estimates of pup production to estimate the current total population. Development of these models was initiated when pup production estimates became available in the late 1980s – subsequently the availability of data has increased, and the time series now spans more than 30 years. The deterministic model treats several of the input data as exactly known (e.g. reproductive parameters) and interpolates these data linearly across periods when observed data are lacking. In addition, it only estimates three parameters: initial population size and pup and adult mortalities. The model is therefore very inflexible, and unable to adequately account for rapid changes in e.g. pup production. While the model appears to give a relatively reliable reflection of current population status, it obviously fails to generate reliable future population trajectories over time. ICES and NAMMCO have recommended that further model development should be undertaken to improve its performance and a formal benchmark process is now underway and will be concluded within 2023. A first modelling workshop with seal scientists from the entire North Atlantic, was held in the autumn of 2020 to discuss current models and suggest ways of improvements. One way forward considered was to link the seal models more tightly to other ecological variables, for example variations in important