NORWAY - PROGRESS REPORT ON MARINE MAMMALS 2013

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I INTRODUCTION

This report summarizes Norwegian research on pinnipeds and cetaceans conducted in 2013. The research presented here was conducted at, or by representatives and associated groups of:

The Institute of Marine Research (IMR);
The University of Tromsø – The Arctic University of Norway/ Department of Arctic and Marine Biology (UiT-AMB);
Norges Arktiske Universitet, Forskningsgruppe for arktisk infeksjonsbiologi (AIB);
The Norwegian Polar Institute (NPI);
National Institute of Nutrition and Seafood Research (NIFES);
University of Oslo/Natural History Museum (NHM).

II RESEARCH BY SPECIES 2013

PINNIPEDS

Harp seals *Phoca groenlandica*
In the period 18 March to 1 April 2012 IMR conducted aerial surveys in the Greenland Sea pack ice (the West Ice), to assess the pup production of the Greenland Sea population of **harp** and **hooded seals**. Two fixed-wing aircrafts, stationed at Constable Pynt (East Greenland) and Akureyri (Iceland), were used for reconnaissance flights and photographic surveys along transects over the whelping areas. A helicopter, operated from the applied expedition vessel (M/V "Nordsyssel") also flew reconnaissance flights, and was subsequently used for monitoring the distribution of seal patches and age-staging of the pups. On 28 March, a total of 27 photo transects, spacing 3 nautical miles, were flown using both aircrafts in the area between 70°43'N / 18° 31' - 18° 15' W and 72° 01'N / 17° 29' - 17° 28 W. All transects were flown with cameras operating to ensure about 80-90 % coverage of the area along each transect line, resulting in a total of 2792 photos shot. The survey resulted in a total pup production estimate for harp seals of 89 590 (SE = 12 310, CV = 13.7%), which is lower than estimates obtained in similar surveys in 2002 and 2007. (IMR)

Studies of **hooded seals** and **harp seals** from the Greenland Sea stock were conducted during a research cruise with R/V "Helmer Hanssen" in the Greenland Sea between 15 March and 2 April 2013. Seven adult female and 11 newborn hooded seals were culled for various scientific purposes: collection of brain tissue samples for continued studies of mechanisms underlying neuronal tolerance to lack of oxygen (hypoxia) (collaboration with Dr. T. Burmester, Zoologisches Institut und Museum, Universität Hamburg, Germany); anatomical studies of sensory organs and functions (collaboration with Dr. Martin Witt, University of Rostock, Germany); anatomical studies of trachea for understanding of respiratory physiology in relation to diving in pinnipeds (collaboration with Dr. Andreas Fahlman, Texas A & M University, USA). In addition, samples and data were collected for other scientific projects at other Norwegian institutes that report separately. (UiT-AMB)

Hooded seals *Cystophora cristata*
During the aerial surveys conducted in the Greenland Sea pack ice in 2012 data were also collected from hooded seal patches. The total estimate of hooded seal pup production was 13 655 (SE = 1 900, CV = 13.9%), which is lower than estimates obtained from comparable surveys in 2005 and 2007. (IMR)

To assess possible reasons for the apparent difficulties faced by the population of Greenland Sea **hooded seals** is a challenge. Based on new Norwegian reproductive samples collected in moulting patches off Southeast Greenland in July 2008 and July 2009, mean age at maturity was estimated at 3.7 (CI=0.1) years, which is considerably lower than the previous estimate of 4.6 years based on Russian moulting patch