

**Draft 17-11-2009****A GENETIC COMPARISON OF WEST GREENLAND AND BAFFIN ISLAND (CANADA) WALRUSES: MANAGEMENT IMPLICATIONS**

LISELOTTE W. ANDERSEN<sup>1</sup>, ERIK W. BORN<sup>2</sup>, ROBERT E.A. STEWART<sup>3</sup>, RUNE DIETZ<sup>4</sup>,  
D. W. DOIDGE<sup>5</sup>, CLEMENT LANTHIER<sup>6</sup>

<sup>1</sup> National Environmental Research Institute and University of Aarhus, Department of Wildlife Ecology and Biodiversity, Grønnvej 12, DK-8410 Rønde, Denmark

<sup>2</sup> Greenland Institute of Natural Resources, P.O. Box 570, DK-3900, Greenland

<sup>3</sup> Department of Fisheries and Oceans, University of Crescent 501, Winnipeg, Manitoba R3T 2N6, Canada

<sup>4</sup> National Environmental Research Institute and University of Aarhus, Department of Arctic Environment, Frederiksborgvej 399, DK-4000 Roskilde, Denmark

<sup>5</sup> Nunavut Research Centre, Makivik Corporation P.O. Box 179, Kuujuaq, Québec J0M 1C0, Canada

<sup>6</sup> Calgary Zoological Society, 1300 Zoo Road N.E., Calgary, Alberta T2E 7V6, Canada

**Abstract**

Walrus are subject to relatively intense exploitation in West Greenland. However, the demographic identity of the exploited stock and it's connection with walrus in neighbouring areas is not fully known, hampering the determination of sustainable harvest levels. It has been suggested that walrus in West Greenland are connected with walrus at SE Baffin Island (Canada) where they are also hunted for subsistence purposes. To determine the relationship between walrus in these two areas we conducted a genetic analysis including recent samples from West Greenland, the Davis Strait-Baffin Bay region (i.e. Southeast Baffin Island), Hudson Strait in Canada, and Northwest Greenland. Seventeen microsatellite markers were applied to all samples. Samples from West Greenland and Southeast Baffin Island were also analysed using D-loop variation. Walrus in West Greenland and at Southeast Baffin Island did not differ from each other but differed from both Northwest Greenland and East Hudson Strait walrus, genetically. The findings support the notion that there are subsists within the range of walrus in the Hudson Strait-Davis Strait-Baffin Bay region, and indicate that sustainable catch levels in Southeast Baffin Island and in West Greenland must be set in the light of the finding that the same stock is exploited in these two areas.

**Key words:** Walrus, *Odobenus rosmarus*, stock identity, genetic comparison, DNA analysis, Canada, Greenland