

Agenda Item 14.4

Implementation of the ASCOBANS Triennial Work Plan (2007-2009)

Review of New Information on Population Distribution, Sizes and Structures

SCANS II Results, CODA Project and TNASS

Document 22

**TNASS Status Report**

**Action Requested**

- take note of recent developments

Submitted by

NAMMCO



**NOTE:**  
**IN THE INTERESTS OF ECONOMY, DELEGATES ARE KINDLY REMINDED TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING**



## Trans North Atlantic Sightings Survey - TNASS

(<http://www.nammco.no/Nammco/Mainpage/Tnass/>)

TNASS aims at estimating the summer distribution and absolute abundance of cetacean populations in the North Atlantic between approximately 40°N to 80°N and between Norway and Canada. The synoptic trans-Atlantic overview over the largest area ever covered by a coordinated survey (over 1,600,000 nm<sup>2</sup>) will represent a considerable enhancement of our understanding of cetacean populations in the North Atlantic, and especially its Arctic part.

Comparison with previous North Atlantic Sighting Surveys (1987, 1989, 1995 and 2001) will provide information on trends in abundance and changes in distribution over a 20-year period. Trends in abundance provide a stronger scientific basis than single estimates for management programmes aiming at maintaining the sustainability of cetacean populations subject to human removal. The information will be used directly in the management programs of NAMMCO (North Atlantic Marine Mammal Commission), the IWC (International Whaling Commission) and national agencies to determine sustainable levels of removal (direct, by-catch or other).

TNASS also takes advantage of other surveys occurring in the same period in adjacent areas (ICES Redfish, Russian-Norwegian pelagic and ECO-MAR surveys, called TNASS extension) to increase the coverage by approximately 400,000 nm<sup>2</sup> and obtain better information on distribution and relative abundance.

Simultaneously and in coordination with T-NASS the European and the American waters, south-east and southwest of the TNASS area, will be covered by the European CODA, coordinated by the Sea Mammal Research Unit, and the American SNESSA, coordinated by the NMFS - Woods Hole.

The project is scheduled to run for 31 months in 2006-2008. The abundance survey will be conducted around July 2007 and the present budget is 4,200,000 €.

Survey methods will be standardized among platforms and participating countries. Six dedicated vessels and four planes will use standard line transect and/or cue counting methods, incorporating state of the art methods successfully implemented under the EU SCANS-II project (LIFE Program).

In addition to the production of scientific reports, articles and conference presentations, TNASS includes a plan for dissemination to the general public, with a website active during the survey, the distribution of a non technical report, press releases and a possible documentary film.

### T-NASS Status Report December 2007

Dedicated cetacean shipboard sightings surveys were conducted from 7 vessels (1 Faroese, 3 Icelandic, 2 Norwegian) from June 25 to August 6, 2007 while dedicated aerial survey were conducted from 5 planes (3 Canadian, 1 Greenlandic, 1 Icelandic) between June 20 and October 1, 2007 with a total a total of 79 observer positions. In addition, ten observers were placed on fishery surveys occurring simultaneously to TNASS in adjacent areas, the ICES Redfish survey in the Irminger Sea (one Russian and one German vessels), MarEco survey on the Mid Atlantic Ridge (one UK vessel) and Norwegian Pelagic survey in the Norwegian sea (two Norwegian vessels). Russia participated also by sending observers both to the shipboard and the shipboard extension survey.

Line transect methods and/or cue counting, when possible with a double platform setup, were used to collect visual data. Passive acoustic data were also collected from five of the vessels (the three Icelandic, the Faroese and the MarEco vessels), with emphasis on recording of sperm whale acoustic signals.

For the first time, a trans North Atlantic survey was achieved, adding to the NASS area, areas to the west of Greenland and the eastern coast of Canada. The 12 platforms of the core survey covered over 54.000 nm of transects in effort in an area of about 1.8 mill. sq.nm, spanning from the Eastern Barents Sea to the East coast of Canada and from 78°N in the north to 52°N in the east and 42°N in the west to the south. This represents the largest coordinated whale survey today. TNASS observers placed on opportunistic surveys (MarEco, ICES Redfish and Norwegian pelagic) added a supplementary effort of 5,253 nm, in the Irminger Sea, the Norwegian Sea and the Mid Atlantic Ridge.

Cetacean encounters numbered in total over 3.000 with an apparent variation in frequency between blocks and areas. Nineteen cetacean species were observed, with overall fin whale, common minke whale, humpback whale, white beaked dolphin and harbour porpoise as the preliminary top five species in numbers of sightings. Other marine megafauna like seals and large shark and fish species were also recorded. The only bird survey conducted in coordination with T-NASS was carried out from the MarEco vessel.

T-NASS was coordinated in timing, coverage (spatial contiguity) and methodology both with the European CODA survey (Cetacean Offshore Distribution and Abundance in the European Atlantic, coordinated by the Sea Mammal Research Unit, University of St. Andrews), and the American SNESSA survey (Southern New England to Scotian Shelf Abundance survey, coordinated by the National Marine Fisheries Service, NMFS, Woods Hole), conducted respectively to the South East and South West of the TNASS core area. The coordinators of CODA and SNESSA are members of the T-NASS Planning Committee, which will also coordinate and supervise the analysis of the data. The Scientific Committee of the International Whaling Commission endorsed T-NASS at its 2006 meeting and plays an advisory role to the project. T-NASS is a component project of the International Polar Year (#1136), as a sub-project of the umbrella project ESSAR - Ecosystem Studies of Sub-Arctic and Arctic Regions (#155).

The present status of the project is data entering and validation, and analysis is started for some areas and species. Abundance estimates will first be calculated from the data collected using standard line transect method, followed by double platform analysis when data is sufficient and later spatial modelling. Assessment of trends will be done by comparison with the earlier NASS surveys. A coordination and co-operation is planned with CODA and SNESSA, especially in terms of spatial modelling. The next T-NASS meeting is planned for April 2008, previous to the NAMMCO Scientific Committee Meeting, so T-NASS results can be presented there.

### **Objectives - listed in order of priority**

1. To estimate absolute abundance of cetacean species in Northern North Atlantic waters to provide information that can be used (along with information on trends, see 2) in a management framework to recommend safe catch limits, both direct and indirect, for cetacean species which are subjected to aboriginal, direct or indirect catch in the Nordic areas.
2. This will support the definition of a clear course of action to allow populations to recover to or maintain a favourable conservation status.
3. To assess trends in distribution and abundance by comparison with the results of previous North Atlantic Sightings Surveys (NASS).

4. To map summer distribution of as many cetacean species as possible, especially those of poorly known status such as blue, right, sperm and beaked whales, and other large marine species such as leather back turtles, in as large as possible an area of the Northern Atlantic (among others by conducting an acoustic survey parallel to the visual survey).

### **A unique project**

The synoptic distribution and estimates obtained by combining results from the three simultaneous and coordinated, and thus compatible, surveys - T-NASS, CODA and SNESSA - will represent a considerable enhancement of our understanding of cetacean populations in the North Atlantic, and thus contribute to maintaining or recreating favourable conservation status of cetacean species. The unique opportunity to get almost complete coverage of the northern North Atlantic reduces tremendously the bias/doubt that might arise from the possible movements of the whales between surveyed and non-surveyed areas that arises in cases when the survey area does not cover the distribution range of the target species. The opportunity of being able to place observers on three major non-whale surveys in areas adjacent to the T-NASS core area, again increases the area simultaneously surveyed, thus adding to the value of the overall survey.

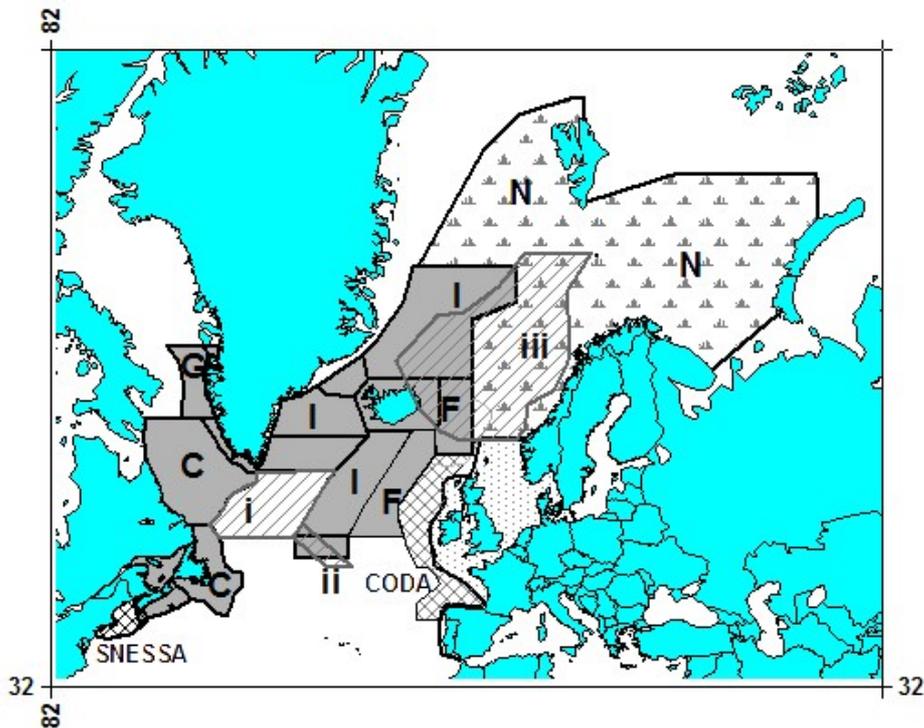
Tight coordination of the participating surveys will increase the value of each survey and the validity and usefulness of the estimates obtained. In this way, T-NASS and associated surveys will become much more than the sum of their components. Despite previous efforts at coordination, this opportunity has never arisen before, and may never be available again.

T-NASS and associated surveys will represent the largest ever coordinated and simultaneous effort for estimating cetacean population.

### **Actions, Areas and Means**

The TNASS project will estimate the abundance of cetacean populations in the Northern North Atlantic from survey data collected during summer 2007. Comparison with previous North Atlantic Sighting Surveys (NASS) will provide estimates of trends in abundance and changes in distribution in areas that have been covered by several surveys. This will provide a much stronger scientific basis for a risk assessment and management programme aiming at maintaining the sustainability of cetacean populations subject to direct and indirect catches.

The northern boundary will be approximately 80°N and the southern limit will be approximately 40°N. The TNASS will cover areas to the west of Greenland and the North eastern coast of Canada that have not been covered in earlier surveys, providing a full trans-Atlantic coverage for the first time.



*Planned survey area for the T-NASS, showing the main survey area (grey), survey extensions (diagonal hatched) and associated surveys (cross hatched). C - Canada; G - Greenland; I - Iceland; F - Faroes; N - Norway (swamp area - an unknown portion of this area will be surveyed this year); i. - ICES Redfish survey extension; ii. - MAR-ECO survey extension; iii. - Norwegian/Russian Ecosystem Survey extension*

The waters south east of the TNASS area will be surveyed simultaneously as part of the Cetacean Offshore Distribution and Abundance in the European Atlantic (European CODA project, coordinated by the Sea Mammal Research Unit, University of St. Andrews), while the water southwest will be covered by the Southern New England to Scotian Shelf Abundance survey (American SNESSA project, conducted by the National Marine Fisheries Service, Woods Hole). Together, these three coordinated surveys will provide the first complete synoptic coverage of the northern North Atlantic, an absolute unique opportunity that may never be available again. For gaining, at low cost, information on areas adjacent to the core survey area, especially with regards of mapping summer distribution, TNASS has taken advantage of other surveys occurring in the same period in adjacent areas and has got permission to place dedicated whale observers on the ICES Red Fish survey vessels (3) in the Irminger sea, on the Russian-Norwegian ecosystem survey vessels (3) in the Norwegian sea, and on one of the two MAR-ECO survey vessels on the Atlantic Ridge.

The TNASS surveys will be conducted using standard shipboard (both visual and passive acoustic) and aerial survey techniques. Survey methods will take into account the methodological development in visual and passive acoustic methods successfully implemented under the EU SCANS-II project (LIFE Program) and further developed for the upcoming EU CODA project.

Survey methods will be standardised among all platforms and participating countries, though encompassing the differences in national target species. The timing, coverage and survey methodologies of the TNASS, CODA and SNESSA surveys will be co-ordinated, such that the data will be compatible and synoptic estimates can be produced. The coordination of these surveys will greatly enhance their individual value, thus providing the best possible value in terms of information for money spent.