

Monitoring small cetaceans in the coastal and open waters of the European Atlantic and North Sea – North west Europe

1. Policy Objective & Theme

- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space

2. Key Approaches

- Knowledge-based

3. Experiences that can be exchanged

The monitoring methodology and development of a management framework for determining safe limits of by-catch of small cetaceans to determine what, if any, measures need to be taken to improve their conservation status.

4. Overview of the case

Three small cetacean species were monitored using visual and acoustic methods to determine their abundance and distribution. A computer-based tool was developed to determine limits to by-catch that should be safe even in the face of the uncertainties of their populations. A management framework for determining safe limits of by-catch of small cetaceans including an application for the harbour porpoise was written.

5. Context and Objectives

a) Context

The incidental capture and killing of small cetaceans during fishing activities is a major threat to their conservation. The species considered most at risk in northwest European waters are the harbour porpoise (*Phocoena phocoena*), which can be trapped in bottom-set gillnet fisheries, and the common dolphin (*Delphinus delphis*), which can be trapped in pelagic trawl fisheries. Results from a number of studies indicate that the current levels of by-catch are unsustainable, but there is a lack of up-to-date estimates of overall abundance of the cetacean species affected. The first comprehensive survey of small cetacean abundance in the North Sea and adjacent waters (SCANS), was completed in 1994, and the results have been widely used by the international community. However, it is important to repeat such estimates of overall abundance at ten-year intervals.

There are three major constraints to assessing the current impact of by-catch on small cetaceans and, therefore, to determining the extent of measures that need to be taken to reduce levels to recover populations to, or maintain, favourable conservation status: the lack of recent abundance estimates; the lack of a management framework for setting safe by-catch limits; and the lack of well-developed and cost-effective methods for monitoring populations to determine whether or not conservation objectives are being met. If this information were available, together with information on levels of by-catch from monitoring programmes, Member States would be in a position to assess the impact of by-catch and take measures, as necessary, to ensure favourable conservation status of small cetacean populations.

b) Objectives

The objective was to estimate small cetacean abundance in the North Sea and European Atlantic continental shelf waters,

and to allow the assessment and management of bycatch and other anthropogenic threats through the development of improved methods for monitoring and a robust management framework, thus defining a clear course of action to allow populations to recover to, and maintain, favourable conservation status.

6. Implementation of the ICZM Approach (i.e. management, tools, resources)

a) Management

The Sea Mammal Research Unit (SMRU) is located in the University of St Andrews. It is a University Collaborative Centre of the Natural Environment Research Council (NERC). It currently has about 60 staff and has an international reputation for survey design and the estimation of population abundance. It co-ordinated eleven partners in 10 countries who co-operated in this work.

b) Tools

The research used both airborne and shipboard survey methods to cover all Atlantic shelf waters under European jurisdiction. The latter used acoustic surveys using hydrophones to detect cetacean communication. This enabled survey work at night and in poor weather conditions. There was a pilot phase to test equipment and methodologies, before undertaking a full survey in July 2005. Altogether, seven ships and three aircraft surveyed the entire European Atlantic continental shelf. The key species surveyed were harbour porpoise, common dolphin and bottle-nosed dolphin (*Tursiops truncatus*). In addition to providing up-to-date reliable estimates of the overall abundance of a number of cetacean species, the methodologies for more frequent monitoring activities to be undertaken between major surveys were also developed.

The initiative produced several key results including: a review and development of visual and acoustic methods for collecting and analysing data from surveys; fieldwork manuals for data collection; trained visual and acoustic observers from many European countries; and the completion of shipboard and aerial surveys in the North Sea and European Atlantic. It also generated robust estimates of abundance for harbour porpoise, white-beaked, bottlenose and common dolphin, and minke whale for the entire European Atlantic continental shelf and recommendations for monitoring small cetacean populations, including an analysis to investigate the power of different methods to detect population trends and to assess the cost-effectiveness of these methods. A management framework for determining safe limits of by-catch of small cetaceans including an application for the harbour porpoise was written. This was a computer-based tool to determine limits to by-catch that should be safe even in the face of the uncertainties of their populations (the precautionary principle). The initiative also developed a robust mechanism for estimating abundance for future monitoring. This is necessary since large-scale abundance surveys are extremely expensive and can only be conducted every 10 years or so. Therefore, it is necessary to monitor abundance more frequently using a number of different, cheaper options. The results were made available on a website.

7. Cost and resources

The total budget was €3,113,260 of which there was a Life contribution of €1,537,639.

8. Effectiveness (i.e. were the foreseen goals/objectives of the work reached?)

The work outlines the steps that will be necessary to achieve compliance with the Habitats Directive. However, while these tools are highly appropriate for achieving conservation objectives required for the Member States under the Habitats Directive, in order to progress this agenda policy-makers need to agree on the conservation and management priorities for the species in question. There are still difficulties involved in resolving possible conflicts of interest between fisheries and environmental stakeholders.

9. Success and Fail factors

The development of improved methods for monitoring, and of a robust management framework, should help define a clear course of action to allow populations to recover and to maintain favourable conservation status. The monitoring followed the

previous SCANS methodology and provided an opportunity to observe how distribution and abundance has changed in the intervening decade.

10. Unforeseen outcomes

The tool developed for determining safe limits to by-catch can be adapted to other species e.g. the limit to by-catches of the common dolphin by pelagic trawls.

11. Prepared by

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12. Verified by

It has not been possible to verify this case.

13. Sources

- Small cetaceans in the European Atlantic and North Sea (undated) LIFE04 NAT/GB/000245. Laymans Report
- LIFE04NAT/GB/000245 (2006) FINAL REPORT
- www.Biology.st-andrews.ac.uk/scans2 (here all the Technical Appendices to the Final Report can be found).



NS-Atl - small cetaceans - laymans report (7.54 MB) 



SCANS final report (1.49 MB)  