

SWEDEN. PROGRESS REPORT ON CETACEAN RESEARCH, APRIL 2001 TO APRIL 2002, WITH STATISTICAL DATA FOR THE CALENDAR YEAR 2001

Compiled by Per Berggren

This report summarises information obtained from:

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1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Harbour porpoise	<i>Phocoena phocoena</i>	Swedish Skagerrak, Kattegat and Baltic Seas	4.2, 4.3, 7.1, 9
Minke whale	<i>Balaenoptera acutorostrata</i>	Swedish Skagerrak Sea	4.3
Indo-Pacific bottlenose dolphin	<i>Tursiops aduncus</i>	Zanzibar, Tanzania	2.1.1, 3.1.1, 4.2
Indo-Pacific humpback dolphin	<i>Sousa chinensis</i>	Zanzibar, Tanzania	2.1.1, 3.1.1, 4.2
Spinner dolphin	<i>Stenella longirostris</i>	Zanzibar, Tanzania	4.2
Spotted dolphin	<i>Stenella attenuata</i>	Zanzibar, Tanzania	4.2
Rissos dolphin	<i>Grampus griseus</i>	Zanzibar, Tanzania	4.2
Sperm whale	<i>Physeter macrocephalus</i>	Zanzibar, Tanzania	4.3
Pygmy sperm whale	<i>Kogia breviceps</i>	Zanzibar, Tanzania	4.3
Humpback whale	<i>Megaptera novaeangliae</i>	Zanzibar, Tanzania	4.3

2. Sightings data

2.1 Field work

2.1.1 Systematic

Photo-identification, ecology and behaviour studies of bottlenose dolphins and humpback dolphins in Menai Bay, Zanzibar, Tanzania, January – March 2002. (SU).

3. Marking data

3.1 Field work

3.1.1 Natural marking data

Analyses of photo-identification data collected 1999 – 2002 of Indo-Pacific bottlenose dolphins and humpback dolphins in Menai Bay, Zanzibar, Tanzania. Preliminary analyses indicate that about 170 bottlenose and 60 humpback dolphins form resident populations in Menai Bay. Contact person Eva Stensland. (SU).

4. Tissue/biological samples collected

Swedish legislation demand that harbour porpoises bycaught or found stranded in the Baltic Sea should be retrieved and submitted to the Swedish Museum of Natural History in Stockholm whereas porpoises from other areas only need to be reported. Although some porpoises from the Skagerrak and Kattegat Seas and Öresund are submitted to the Natural History Museum in Göteborg on a voluntary basis.

Bycaught and stranded cetaceans around Zanzibar, Tanzania were collected by the Institute of Marine Sciences (IMS), University of Dar es Salaam. This work is part of a collaborative project between Stockholm University and IMS and funded through the Swedish International Development Agency (Sida). The project was initiated in 1998 and is aimed at assessing the status of marine mammals in Zanzibar and Tanzania. For more information on this project contact Per Berggren.

4.2 Samples from directed catches or by-catches

Common name	Area/stock(s)	No. collected	Archived Y/N	Tissue Type (s)	Contact person/ institute
Harbour porpoise	Swedish Skagerrak Sea	2	Y	Skin, blubber, muscle, liver, stomach, reproductive organ, brain, & skeleton.	P. Rudd
	Baltic Sea	1	Y		P. Berggren
Bottlenose dolphin	Zanzibar, Tanzania	11	Y		P. Berggren
Humpback dolphin	Zanzibar, Tanzania	5	Y		P. Berggren
Spinner dolphin	Zanzibar, Tanzania	19	Y		P. Berggren
Rissos dolphin	Zanzibar, Tanzania	11	Y		P. Berggren
Spotted dolphin	Zanzibar, Tanzania	4	Y		P. Berggren

4.3 Samples from stranded animals

Common name	Area/stock(s)	1999: no. collected	Archived Y/N	Tissue Type (s)	Contact person/ institute
Harbour porpoise	Swedish Skagerrak and Kattegat Seas, and Öresund	6*	Y	Dorsal fin and teeth	P. Rudd
Minke whale	Swedish Skagerrak Sea	2*	N		P. Rudd

* 1 found dead floating.

5. Pollution studies

None

6. Statistics for large cetaceans

None

7. Statistics for small cetaceans

7.1 For the calendar year 2000

Common name	Area/stock(s)	Incidental mortality Reported*	Type of fishery
Harbour porpoise	Baltic Sea	1	Gillnet
	Swedish Skagerrak Sea	2	1 Gillnet and 1 trawl.

*Incidental reports. No independent observer programme was in force in 2001.

9. Other studies and analyses

A field experiment funded by the European Commission (Directorate General for Fisheries) was conducted in Bloody Bay, Isle of Mull, West Scotland, UK between 3 April and 13 June 2001 (SC/54/SM2). The objectives were; to investigate the extent of the habitat degradation caused by pingers by looking at the spatial distribution of porpoises in the presence of pingers, and to determine whether porpoises attempt to swim through nets where malfunctioning pingers create an acoustic gap. Acoustic and visual monitoring of harbour porpoises was conducted around a simulated gillnet set in water around 40m deep and equipped with acoustic alarms (pingers). The experimental set-up consisted of eight Dukane NetMark 1000™ pingers evenly distributed along a 700m lead line. Porpoise click detectors (PODs) were also deployed on the lead line between the silent pingers and among the active pingers. Single PODs were also deployed perpendicular to the active pingers at distances of 250, 500 and 750m. The experiment area was surveyed from a land site with an 80m elevation using naked eye, binoculars and a theodolite to determine porpoise distribution and surface movements. The results showed that pingers significantly reduced the number of porpoises within 500m from the simulated net. The results further indicated that this deterrence method is not sensitive to a few malfunctioning devices, although this will depend on the distance between pingers. The area of reduced porpoise activity was larger than observed in previous studies, implying greater possible impact through exclusion of porpoises from critical habitat or effects on their movement patterns.

Studies of the effect on captive harbour porpoises of different deterrent sounds of varying durations (from inter-active pingers triggered by the sonar of the porpoises) and of "acoustic fog" were conducted as means of excluding porpoises from the vicinity of gillnets in order to avoid bycatch (Lockyer et al. 2001). This study was funded by the European Commission (Directorate General XIV). The preliminary results indicated that the concept of an interactive pinger is functional, and that it is possible to alert porpoises by means of synthesized porpoise sonar click trains, even when they are engaged in foraging (bottom grubbing). When the pinger was triggered by porpoises' sonar, the animals backed off as with a beacon mode pinger.

10. Literature cited

11. Publications

11.1 Published or 'In Press' papers only

Andersen, L., Ruzzante, D.E. Walton, M., Berggren, P., Bjørge, A. and Lockyer, C. 2001. Conservation genetics of harbour porpoises, *Phocoena phocoena*, in eastern and central North Atlantic. *J. Cons. Genetics*. 2: 309-324.

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Carlström, J. Berggren, P., Dinnétz, F. and Börjesson, P. 2002. A field experiment of acoustic alarms (pingers) to reduce harbour porpoise by-catch in bottom set gill-nets. *ICES J. Marine Science*. In press.

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Lockyer, C., Desportes, G., Amundin, M. and Goodson, D. (2001): The tail of EPIC - Elimination of harbour Porpoise Incidental Catch. Final report to the European Commission of Project No DG XIV 97/00006.