

**SWEDEN. PROGRESS REPORT ON CETACEAN RESEARCH, APRIL 2005 TO APRIL 2006, WITH
STATISTICAL DATA FOR THE CALENDAR YEAR 2005**

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This report summarises information obtained from: Stockholm University (SU), Department of Zoology, SE-106 91 Stockholm, Gothenburg Natural History Museum (GNM), Box 7283, SE-402 35 Göteborg, Swedish Museum of Natural History (NRM), SE-104 05 Stockholm, Kolmårdens Djurpark (KD), S-618 92 Kolmården and Institute of Marine Sciences (IMS), University of Dar es Salaam, P.O. Box 668, Zanzibar, Tanzania.

1. Species and stocks studied

Common name	Scientific name	Area/stock(s)	Items referred to
Harbour porpoise	<i>Phocoena phocoena</i>	Skagerrak, Kattegat, Öresund and Baltic Sea	2.1.2, 4.2, 4.3, 5, 7.3.1, 7.3.3, 9
White-beaked dolphin	<i>Lagenorhynchus albirostris</i>	Skagerrak Sea	4.3, 7.3.1
Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>	Skagerrak Sea	4.3, 7.3.1
Fin whale	<i>Balaenoptera physalus</i>	Skagerrak Sea	6.2.1
Indo-Pacific Bottlenose dolphin	<i>Tursiops aduncus</i>	Zanzibar, Tanzania	3.1.1, 4.1, 4.2
Spinner dolphin	<i>Stenella longirostris</i>	Zanzibar, Tanzania	4.2
Indo-Pacific Humpback dolphin	<i>Sousa chinensis</i>	Zanzibar, Tanzania	3.1.1, 4.1, 4.2
Humpback whale	<i>Megaptera novaeangliae</i>	Zanzibar, Tanzania	3.1.1, 4.1

2. Sightings data

2.1 Field work

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

Opportunistic sightings were reported to a website run by NRM. 127 sightings of harbour porpoises in Swedish coastal waters and one sighting of two common dolphins in the Kattegat Sea were submitted to the website during 2005.

3. Marking data

3.1 Field work

3.1.1 NATURAL MARKING DATA

Mark-recapture analyses (using the software Mark) was conducted on photo-identification data collected between 1999 – 2002 of Indo-Pacific bottlenose and humpback dolphins off the south coast of Zanzibar, Tanzania. Latest available abundance estimates based on data from 2002, bottlenose dolphins 136 (95% CI 124-172) and humpback dolphins 63 (95% CI 57-95).

Species	Feature	Area /stock (s)	Calendar year / season no. photographed	Catalogued Y/N	Catalogue total	Contact person/ institute
I.P. Bottlenose dolphin	Dorsal fin/body	Zanzibar	0	-	170	P. Berggren, SU
I.P. Humpback dolphin	Dorsal fin/body	Zanzibar	0	-	70	P. Berggren, SU
Humpback whale	Fluke/dorsal fin	Zanzibar	0	-	6	P. Berggren, SU

4. Tissue/biological samples collected

4.1 Biopsy samples

Species	Area/stock(s)	Calendar year/ season no. collected	Archived (Y/N)	No. analysed	Total holdings	Contact person/ institute
Humpback whale	Zanzibar	0	Y	0	3	P. Berggren, SU
I.P. Bottlenose dolphin	Zanzibar	0	Y	*	47	P. Berggren, SU
I.P. Humpback dolphin	Zanzibar	0	Y	*	6	P. Berggren, SU

* MtDNA and micro satellite analyses ongoing.

4.2 Samples from by-catches

Species	Area/stock(s)	Calendar year/ season no. collected	Archived (Y/N)	Tissue Type (s)	Contact person/ institute
Harbour porpoise	Swedish Skagerrak Sea	3	Y	All tissues ¹	NRM/anna.roos@nrm.se
Harbour porpoise	Swedish Kattegat Sea	1	Y	All tissues ¹	NRM/anna.roos@nrm.se
Harbour porpoise	Swedish Baltic Sea	2	Y	All tissues ¹	NRM/anna.roos@nrm.se
Harbour porpoise	Swedish Skagerrak Sea	1	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
Harbour porpoise	Swedish Kattegat Sea	2	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
Harbour porpoise	Swedish Öresund	3	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
Harbour porpoise	Swedish Baltic Sea	1	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
I.P Bottlenose dolphin	Zanzibar, Tanzania	6	Y	All tissues ²	IMS / omar@ims.udsm.ac.tz
Spinner dolphin	Zanzibar, Tanzania	2	Y	All tissues ²	IMS / omar@ims.udsm.ac.tz
I.P. Humpback dolphin	Zanzibar, Tanzania	4	Y	All tissues ²	IMS / omar@ims.udsm.ac.tz

¹Full set of samples including blubber, muscle, liver, kidney, adrenals & lung.

²Full set of samples including blubber, muscle, liver, kidney, brain, stomach, reproductive organs.

4.3 Samples from stranded animals

Species	Area/stock	Calendar year/ season total	Archived (Y/N)	Tissue type(s)*	Contact person/institute
Harbour porpoise	Swedish Skagerrak Sea	3	Y	All*	NRM/anna.roos@nrm.se
Harbour porpoise	Swedish Kattegat Sea	1	Y	All*	NRM/anna.roos@nrm.se
Harbour porpoise	Swedish Baltic Sea	2	Y	All*	NRM/anna.roos@nrm.se
Harbour porpoise	Swedish Skagerrak Sea	3	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
Harbour porpoise	Swedish Kattegat Sea	7	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
Harbour porpoise	Swedish Öresund	6	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
White beaked dolphin	Swedish Skagerrak Sea	4	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se
White sided dolphin	Swedish Skagerrak Sea	1	Y	Teeth & dorsal fin	anders.m.nilsson@vregion.se

*Full set of samples including blubber, muscle, liver, kidney, adrenals & lung.

5. Pollution studies

A study of organochlorines in 45 harbour porpoises from Swedish, Polish and German waters was initiated by NRM in collaboration with Lund University, Sweden.

6. Statistics for large cetaceans

6.2.1 STRANDINGS OR DEAD WHALES ENCOUNTERED AT SEA

Whale species	Sex	Location	Cause of death	Det.	Source or contact institution, contact
Fin whale	F	Hönö Island, Skagerrak Sea	Unknown	U	GNM / anders.m.nilsson@vgregion.se

7. Statistics for small cetaceans

7.1 For the calendar year 2005

7.3.1 STRANDINGS OR DEAD SMALL CETACEANS ENCOUNTERED AT SEA

Species	Sex	Location	Cause of death	Det.	Source or contact institution
Harbour porpoises	F	55° 59' 737"N, 12° 44' 360"E	Probably boat collision	V	NRM / anna.roos@nrm.se
Harbour porpoises	F	55° 25' 272"N, 13° 49' 253"E	Unknown	U	NRM / anna.roos@nrm.se
Harbour porpoises	F	55° 52' 843"N, 12° 48' 810"E	Large abscesses	V	NRM / anna.roos@nrm.se
Harbour porpoises	M	58° 52' 251"N, 11° 7' 197"E	Unkn, possibly starvation	U	NRM / anna.roos@nrm.se
Harbour porpoises	U	Tjärnö, Skagerrak	Unknown	U	GNM*
Harbour porpoises	U	Raftö, Skagerrak	Unknown	U	GNM*
Harbour porpoises	F	Göteborg, Skagerrak	Unknown	U	GNM*
Harbour porpoises	M	56° 49' N, 12° 37'E	Unknown	U	GNM*
Harbour porpoises	U	Falkenberg, Kattegat	Unknown	U	GNM*
Harbour porpoises	U	Haverdal, Kattegat	Unknown	U	GNM*
Harbour porpoises	U	Lagaoset, Kattegat	Unknown	U	GNM*
Harbour porpoises	U	Mellbystrand, Kattegat	Unknown	U	GNM*
Harbour porpoises	U	Mellbystrand, Kattegat	Unknown	U	GNM*
Harbour porpoises	F	Skälderviken, Kattegat	Unknown	U	GNM*
Harbour porpoises	U	Årnåshalvön, Kattegat	Unknown	U	GNM*
Harbour porpoises	U	Helsingborg, Öresund	Unknown	U	GNM*
Harbour porpoises	F	Helsingborg, Öresund	Unknown	U	GNM*
Harbour porpoises	F	Sjöbobadet, Öresund	Unknown	U	GNM*
Harbour porpoises	F	Örbyängar, Öresund	Unknown	U	GNM*
Harbour porpoises	F	Örbyängar, Öresund	Unknown	U	GNM*
Harbour porpoises	F	Skälderviken, Kattegat	Unknown	U	GNM*
White sided dolph	M	Trönningstrand, Kattegatt	Unknown	U	GNM*
White beaked dolph	U	Hälleviksstrand, Skagerrak	Unknown	U	GNM*
White beaked dolph	U	Gullholmen, Skagerrak	Unknown	U	GNM*
White beaked dolph	F	Marstrand, Skagerrak	Unknown	U	GNM*
White beaked dolph	U	Tjurviksbukten, Skagerrak	Unknown	U	GNM*

*GNM / anders.m.nilsson@vgregion.se

7.3.3 FISHERY BYCATCH

Species	Sex	Date	Location	Fate	Targeted fish species	Gear	How observed	Source or contact
H. porpoise	U	20051019	57°00'N; 12°08'E	D	Nephrops	TBS	DA	GNM*
H. porpoise	F	20050614	Grötvik, Kattegat	D	Unknown	GN	DA	GNM*
H. porpoise	M	20050817	Ystad, Baltic Sea	D	Cod	GNS	DA	GNM*
H. porpoise	F	20050730	Gettarevet, Öresund	D	Cod	GNS	DA	GNM*
H. porpoise	F	20050730	Gettarevet, Öresund	D	Cod	GNS	DA	GNM*
H. porpoise	U	20050728	Bäckviken, Öresund	D	Unknown	GN	DA	GNM*

*GNM / anders.m.nilsson@vgregion.se

9. Other studies and analyses

KD participated in the Nordic Interactive Pinger for Porpoise Entanglement Reduction project (NIPPER). The objective of NIPPER was to test an interactive pinger (IP), which emits deterrent sounds only when activated by porpoise sonar, in a set-up simulating a 400m long bottom-set gillnet. Accessory goals of the project were to collect data for calculation of sonar source levels of wild porpoises and data on their acoustic activity in the wild, parameters that are needed to optimise the design of the interactive pinger and its porpoise detection function. Field trials were conducted in August 2004, and May and September 2005, in the waters off the Island of Funen, Denmark. Wild porpoises' reactions to the IP array were compared to their reactions when the IP array was replaced by beacon-mode pingers. No difference in reactions was observed. Since the IPs emit 1-7% of the amount of displacement sounds emitted by traditional beacon mode pingers, they may provide a more environmentally friendly alternative to the latter. The final report of NIPPER will be available by mid-2006.

11. Publications

11.1 Published or 'In Press' papers only

Amir, O.A., Berggren, P., Ndaru, S. G. M. and Jiddawi, N.S. 2005. Feeding ecology of the Indo-Pacific bottlenose dolphin (*Tursiops aduncus*) incidentally caught in the gillnet fisheries off Zanzibar, Tanzania. *J. Estuarine Coastal and Shelf Science* 63: 429-437.

Amir, O.A., Jiddawi, N.S. and Berggren, P. 2005. The Occurrence and Distribution of Dolphins in Zanzibar, Tanzania. *Western Indian Ocean J. Mar. Sci.* 4: 85-93.

Sargeant, B., Mann, J., Berggren, P. and Krutzen, M. 2005. Specialization and development of beach hunting, a rare foraging behavior, by wild bottlenose dolphins (*Tursiops* sp.). *Can. J. Zool.* 83:1400-1410.

Stensland, E., Särnblad, A., Carlén, I., Bignert, A. and Berggren P. 2006. Population size, distribution and behaviour of Indo-pacific bottlenose (*Tursiops aduncus*) and humpback (*Sousa chinensis*) dolphins off the south coast of Zanzibar. *Mar. Mamm. Sci. In Press.*