

NETHERLANDS PROGRESS REPORT ON CETACEAN RESEARCH, MAY 1999 TO MAY 2000, WITH STATISTICAL DATA FOR THE CALENDAR YEAR 1999

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This report summarises information obtained from: Alterra, the Harderwijk Marine Animal Park (HMAP), the Leiden Center for Environmental Sciences (CML), the National Institute for Coastal and Marine Management (RIKZ), the Netherlands Institute for Sea Research/the Dutch Seabird Group/Camphuysen Seabird Research Consultancy (NIOZ/NZG/CSR), the National Museum of Natural History (Naturalis), the Netherlands Institute for Fisheries Research (RIVO-DLO).

1. Species and stocks studied

Scientific name	Common name	Area/stock(s)	Items referred to
<i>Balaenoptera acutorostrata</i>	Minke whale	North Sea, South Africa	2.1.2
<i>Balaenoptera borealis</i>	Sei whale	Africa	2.1.1
<i>Balaenoptera edeni</i>	Bryde's whale	Africa, South Africa	2.1.1, 2.1.2
<i>Balaenoptera physalus</i>	Fin whale	North Sea, Africa	2.1.1, 2.1.2
<i>Cephalorhynchus heavisidii</i>	Heaviside's dolphin	South Africa	2.1.2
<i>Delphinus delphis</i>	Common dolphin	North Sea, Africa	2.1.1, 2.1.2
<i>Delphinus delphis delphis</i>	Short-beaked common dolphin	Africa	2.1.1
<i>Eubalaena australis</i>	Southern right whale	Africa, South Africa	2.1.1, 2.1.2
<i>Globicephala macrorhynchus</i>	Short-finned Pilot whale	Africa	2.1.1
<i>Globicephala melas</i>	Long-finned Pilot whale	Africa	2.1.1
<i>Lagenorhynchus acutus</i>	White-sided dolphin	North Sea	2.1.1, 2.1.2
<i>Lagenorhynchus albirostris</i>	White-beaked dolphin	North Sea	2.1.1, 2.1.2
<i>Phocoena phocoena</i>	Harbour porpoise	North Sea	2.1.1, 2.1.2, 7, 9
<i>Physeter macrocephalus</i>	Sperm whale	Africa	2.1.1, 9
<i>Stenella attenuata</i>	Pantropical spotted dolphin	Africa	2.1.1
<i>Stenella clymene</i>	Short-snouted Spinner dolphin	Africa	2.1.1
<i>Stenella coeruleoalba</i>	Striped dolphin	Africa	2.1.1
<i>Stenella longirostris</i>	Long-snouted Spinner dolphin	Africa	2.1.1
<i>Tursiops truncatus</i>	Bottlenose dolphin	North Sea, Africa, South Africa	2.1.2, 9
<i>Ziphius cavirostris</i>	Cuvier's beaked whale	Africa	2.1.1

2. Sightings data

2.1 Field work

2.1.1 SYSTEMATIC

Ship-based surveys coastal upwelling system off West Africa: Cadiz (Spain) - Dakar (Senegal), January 2000, and oceanic surveys between Walvisbaai (Namibia) and Cape Town (South Africa), February 2000, with systematic surveys and behavioural observations of seabirds and cetaceans (RV *Pelagia*).

Sei or Bryde's Whale	<i>Balaenoptera borealis / edeni</i>	Africa
Fin Whale	<i>Balaenoptera physalus</i>	Africa
Common / Striped Dolphin	<i>Delphinus / Stenella</i>	Africa
Common Dolphin	<i>Delphinus delphis</i>	Africa
Short-beaked Common Dolphin	<i>Delphinus delphis delphis</i>	Africa
Southern Right Whale	<i>Eubalaena australis</i>	Africa
Short-finned Pilot Whale	<i>Globicephala macrorhynchus</i>	Africa
Long-finned Pilot	<i>Globicephala melas</i>	Africa

Whale		
Northern Bottlenose Whale	<i>Hyperoodon ampullatus</i>	Africa
Sperm Whale	<i>Physeter macrocephalus</i>	Africa
Pantropical Spotted Dolphin	<i>Stenella attenuata</i>	Africa
Short-snouted Spinner Dolphin	<i>Stenella clymene</i>	Africa
Striped Dolphin	<i>Stenella coeruleoalba</i>	Africa
Long-snouted Spinner Dolphin	<i>Stenella longirostris</i>	Africa
Bottlenose Dolphin	<i>Tursiops truncatus</i>	Africa
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>	Africa

Continuation coastal sightings monitoring programme (Marine Mammal Database, Dutch Seabird Group and CSR *Consultancy*).

The monitoring programme of long-term quantitative trends and changes in the spatial distribution patterns of marine mammals and seabirds at the Dutch part of the North Sea has been continued. Surveys are performed bimonthly by flying fixed routes over the area. A survey is done in three successive days and covers about 300-500 km² (RIKZ).

2.1.2 OPPORTUNISTIC, PLATFORMS OF OPPORTUNITY

Coastal sightings survey Cape Province, South Africa, August 1999 (NZG/CSR)

<i>Balaenoptera acutorostrata</i>	Dwergvinvis	North Sea
<i>Balaenoptera physalus</i>	Gewone Vinvis	North Sea
<i>Delphinus delphis</i>	Gewone Dolfijn	North Sea
<i>Lagenorhynchus acutus</i>	Witflankdolfijn	North Sea
<i>Lagenorhynchus albirostris</i>	Witsnuitdolfijn	North Sea
<i>Phocoena phocoena</i>	Bruinvis	North Sea
<i>Tursiops truncatus</i>	Tuimelaar	North Sea
<i>Eubalaena australis</i>	Zuidkaper	South Africa
<i>Balaenoptera acutorostrata</i>	Dwergvinvis	South Africa
<i>Tursiops truncatus</i>	Tuimelaar	South Africa
<i>Cephalorhynchus heavisidii</i>	Heaviside Dolfijn	South Africa
<i>Balaenoptera edeni</i>	Bryde's Vinvis	South Africa

A ship-based survey ("platform of opportunity") of cetaceans in the NW Indian Ocean and Red Sea has been carried out (Naturalis).

2.2 Analyses/development of techniques

Monitoring data: seasonally number of sightings per 1000 km² are calculated. All single records (also blank data) are related to sea depth and distance to the coastline. Seasonal patterns in densities and depth relations are performed using bootstrap methods. Generalise linear and additive models (GLMs and GAMs) extend the linear model for the trend in universal block kriging models to interpolate spatial data to perform bi-monthly distribution patterns for the whole Dutch Continental Shelf. Modelling results showed that due to the linear sampling and the clustered distribution of the animals, a reliable calculation of a total population in the area cannot be made (RIKZ).

7. Statistics for small cetaceans

7.1 For the calendar year 1999.

None available

7.2 Earlier years' statistics

Number of pods / 1000 km² observed on the Dutch part of the North Sea (Witte et al. 1998, see 2.1.1.) (RIKZ)

1985	3,72
1986	3,40
1987	7,97
1988	n.a.
1989	n.a.
1990	1,26
1991	3,05
1992	2,57
1993	10,76
1994	7,68
1995	10,99
1996	35,50
1997	23,86

8. Strandings

The focal institution in the Netherlands for live strandings is HMAP, for dead animals Naturalis.

9. Other studies and analyses

Bycatch prevention

Research on improving gillnet detectability by small cetaceans through their echolocation system has been continued. It was found that for bottlenose dolphins, under high noise conditions and approaching the net perpendicular, the 90% detection range varied between 25 and 55m. For harbour porpoise, under low noise conditions and approaching the net perpendicular, the detection range varied between 3 and 6m, depending on the net type. At other angles of approach, the detection ranges are shorter (HMAP, RIVO).

Pollution

The final editing of the Special Issue of the IWC J. Cetacean Res. Manage. "Chemical Pollutants and Cetaceans" has been completed and was issued in December 1999. The co-ordination of the IWC-Research Programme to Investigate Pollutant Cause-effect Relationships in Cetaceans- POLLUTION 2000+, has been continued. The Programme is further developed and the first field trials by project participants have started (Alterra).

Pathology, life history

Studies of the pathology, virology, life history and stomach contents of stranded, and a few bycaught, white-beaked dolphins and harbour porpoise were continued. The animals were dissected and sampled for future research.

Registration of strandings was continued (Naturalis).

Photo-id catalogue

A photo-CD, containing 2081 photos of sperm whales has been issued. The photo-id analysis is performed on basis of wavelet transforms of the contour (CML, in collaboration with IFAW).

11. Publications

11.1 published

Baptist, H.J.M., R.H. Witte & P.A. Wolf 1998. Harbour porpoise *Phocoena phocoena* monitoring on the Dutch sector of the North Sea: 105-108. In P.G.H. Evans, E.C.M. Parsons & S.L. Clark (eds), European Research on Cetaceans - 11. Proceedings of the eleventh annual conference of the European Cetacean Society, Stralsund, Germany 10-12 March 1997.

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- IFAW/CML 1999. The North Atlantic and Mediterranean Sperm Whale Catalog, Version 1.0. 1999. International Fund for Animal Welfare, Centre of Environmental Science, Leiden University, The Netherlands.
- Jauniaux, T., M. García Hartmann & F. Coignoul 1999. Postmortem examination and tissues sampling of sperm whales *Physeter macrocephalus*: appendix [i-ii], 1-25. In S. Tougaard & C.C. Kinze (eds), Proceedings from the workshop Sperm whale strandings in the North Sea. The event - the action - the aftermath. Rømø, Denmark 26-27 May 1998. - Fisheries and Maritime Museum, Esbjerg, Biological Papers, 1.
- Kastelein, R.A., W.W.L. Au & D. de Haan 2000. Detection distances of bottom-set gillnets by harbour porpoises (*phocoena phocoena*) and bottlenose dolphins (*Tursiops truncatus*). Mar. Environm. Res. 49: 359-375.
- Kompanje, E.J.O. 1999. Considerations on the comparative pathology of the vertebrae in Mysticeti and Odontoceti; evidence for the occurrence of discarthrosis, zygarthrosis, infectious spondylitis and spondyloarthritis. - Zoologische Mededelingen Leiden, 73: 99-130.
- Reijnders, P.J.H., G.P. Donovan, A. Aguilar & A. Bjørge 1999. Report of the workshop on chemical pollution and cetaceans. In P.J.H. Reijnders, A. Aguilar & G.P. Donovan (eds), Chemical Pollutants and Cetaceans. J. Cetacean Res. Manage (Special Issue 1), 1-42.
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- Smeenk, C. 1999. A historical review. In S. Tougaard & C.C. Kinze (eds), Proceedings from the workshop Sperm whale strandings in the North Sea. The event - the action - the aftermath. Rømø, Denmark 26-27 May 1998. - Fisheries and Maritime Museum, Esbjerg, Biological Papers 1: 6-9.
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11.2 Unpublished literature

Witte, R.H. & C.M. Berrevoets, 1999. Monitoring zeevogels en zeezoogdieren op het NCP, 1997/98. Een exploratieve data-analyse. Werkdocument RIKZ/IT-99.852x. National Institute for Coastal and Marine Management. Middelburg, the Netherlands.