

**GERMANY, PROGRESS REPORT ON CETACEAN RESEARCH,  
MAY 2006 TO APRIL 2007**

compiled by

Karl-Hermann Kock<sup>1)</sup>, Ursula Siebert<sup>2)</sup> & Harald Benke<sup>3)</sup>

<sup>1)</sup> Institut für Seefischerei, Bundesforschungsanstalt für Fischerei, Palmaille 9, D-22767 Hamburg,

<sup>2)</sup> Forschungs- und Technologiezentrum Westküste, Werftstraße 6, D-25761 Büsum

<sup>3)</sup> Deutsches Meeresmuseum, Katharinenberg 14-20, D-18439 Stralsund

This report summarizes information on various fields of cetacean research and historical aspects of whaling .

## **1. Species and Stocks Studied**

Common name	Scientific name	Area/stock	Items referred to
Harbour porpoise	<i>Phocoena phocoena</i>	Baltic Sea	2., 4.2, 4.3, 4.4, 5., 7.1, 8., 9.
Harbour porpoise	<i>Phocoena phocoena</i>	North Sea	2., 4.2, 4.3, 4.4, 5., 7., 8., 9.
Various species		worldwide	9.

## **2. Sightings data**

### **2.1 Field work**

Line transect surveys on small cetaceans, primarily harbour porpoise, were conducted during winter and late spring 2006 in all parts of the German EEZ of the North Sea and the Baltic.

Since summer 2002, a public awareness campaign is addressing yachts people in the Baltic to report opportunistic sightings of harbour porpoise. Most of these sightings were confined to the western Baltic Sea. By 2003, the programme was well established in yachting circles. Over 3000 sightings were reported in 2006. In addition to scientific data this information will serve as a basis for the designation of protected areas for harbour porpoise.

The German Oceanographic Museum in Stralsund deployed up to 42 porpoise detectors (TPODS) in the German part of the Baltic from Kiel Bight to the Pomeranian Bay in 2006.

The purpose of the deployment was to study the habitat use of harbour porpoise more closely. Results showed evidence of significant geographic differences and seasonal changes in habitat use with a prominent decline in occurrence of porpoises from west to east, and lower occurrence in winter than in summer (Verfuss et al., 2007). The findings indicated geographic differences and seasonal changes in the relative porpoise density. The project is part of the implementation of the ASCOBANS 'Recovery Plan for Harbour Porpoise in the Baltic (Jastarnia Plan). Within the project the GOM is focusing on the habitat use of harbour porpoise in the Pomeranian Bay in 2007.

## 2.2 Analyses/development of techniques

Data on harbour porpoise in the German EEZ and North Sea are currently being analyzed.

## **3. Marking data**

### 3.1 Field Work

#### 3. 1.1 + 2 NATURAL AND ARTIFICIAL MARKING DATA

No marking using artificial marks was conducted. As a result, no photographs of whales of one of the IWC management area/stocks are currently held which can be utilized in photo ID studies.

#### 3. 1. 3 TELEMETRY DATA

No new developments were available. A study has been conducted to compare echolocation of coastal and oceanic dolphins in collaboration with Danish scientists (Akamatsu et al., 2007).

## **4. Tissue/biological samples collected**

### 4.1 Biopsy samples

No biopsy samples were collected

#### 4.2 Samples from by-catches

Species	Area/stock	2006: total no. of individuals	Archived	Tissue Types(s)	Contact person
Harbour porpoise	Baltic Sea Schleswig-Holstein	3	3	all organs, central nervous system, skeletal system	U. Siebert
Harbour porpoise	North Sea Schleswig-Holstein	0	0		
Harbour porpoise	Baltic Sea Meckl.-Prepom.	6	6	All organs, central nervous system, skeletal system	H. Benke

#### 4.3 Samples from stranded animals

Species	Area/stock	2006: total no. of individuals	Archived	Tissue Type(s)	Contact person
Harbour porpoise	North Sea Schleswig-Holstein	126	15	Different tissues for histopathology, toxicology, genetics	U. Siebert
Common Dolphin	North Sea Schleswig-Holstein	1	1	Different tissues for histopathology, toxicology, genetics	U. Siebert
White beaked dolphin	North Sea Schleswig-Holstein	1	1	Different tissues for histopathology, toxicology, genetics	U. Siebert
Harbour porpoise	Lower Saxony	42	42	Lung, liver, different tissues	M. Stede

	Baltic Sea Schleswig-Holstein	51	2	Different tissues for histopathology, toxicology, genetics	U. Siebert
	Baltic Sea Meckl.- Prepomerania	38	28	Skeleton, various tissues	H. Benke

#### 4.4 Analyses carried out

The Research and Technology Centre Büsum of the University of Kiel continued its investigations on histology, electron microscopy and anatomy of the nasal apparatus of harbour porpoise and its possible means for the production of ultrasound.

An audiometry study has been carried out at the Research and Technology Centre Büsum of the University of Kiel as part of the project MINOSplus on harbour seals (*Phoca vitulina*) and harbour porpoise (*Phocoena phocoena*). The aim of the study is to obtain data on the auditory sensitivity as well as the auditory capacity of the animal's hearing. The reason why such experiments are conducted is the proposed construction of offshore windmills and their potential noise pollution in German waters of the North Sea and the Baltic. Pathological investigations of the inner and middle ear of harbour porpoise have been conducted in order to investigate the potential impact of pingers on the hearing abilities of the porpoises.

The development and testing of effective mitigation methods for sound induced impacts on marine mammals is the topic of an ongoing study at the FTZ Westküste which is funded by the European Union and the State of Schleswig-Holstein. An air-bubble curtain has been tested for its sound absorption in Kerteminde harbour (Denmark) during construction work to replace the harbour wall. Attenuation of the ramming impulse noise due to the air-bubble curtain was observed up to 19 dB. While the harbour porpoises which are housed within the harbour in a semi-natural pool at a nearby research facility initially showed clear avoidance reactions to the sound emissions of the construction work, they returned to their normal behaviour after installation and use of the air-bubble curtain.

As part of the national monitoring funded by the State Ministry of Environment, Nature Protection and Agriculture of Schleswig - Holstein cetaceans stranded or by-caught were

systematically investigated. These investigations include necropsies, histology, immunohistology, microbiology, serology, parasitology, virology, age determination and more.

In cooperation with the GKSS-Geesthacht, cytokines were analyzed by real-time PCR in the blood of harbour porpoise from Danish waters as well as from animals held in captivity. Cell lines were established from organs of freshly dead harbour porpoise. The ribosomal DNS of different lung nematodes of harbour porpoise were analyzed and sequences from different regions were compared.

## **5. Pollution studies**

At the GKSS Research Centre in Geesthacht, metals and metalloids were analyzed by total X-ray fluorescence spectrometry (TXRF) and inductively coupled plasma-mass spectrometer (ICP-MS) in liver and muscle tissue of harbour porpoise taken as by-catch in the North Sea and the Baltic.

## **6. Statistics for large cetaceans**

### **6.1 Corrections to earlier years**

No corrections to earlier years have been made

### **6.2 Direct catches**

Germany was not engaged in any whaling activity neither commercial nor aboriginal nor under scientific permits

#### **6.3.1 Anthropogenic mortality of large whales for the calendar year 2006**

No anthropogenic mortality of large cetaceans was observed in 2006

#### **6.3.2 Observed or reported ship strikes of large whales**

No ship strikes of large whales were being reported in 2006

### 6.3.3 Fishery by-catch of large whales

No large whales has been taken as by-catch in fisheries

## 7. Statistics for small cetaceans

### 7.1 Corrections to earlier years

No corrections to earlier years have been made

### 7.2 Direct catches of small cetaceans for the calendar year 2006

No small cetaceans were taken in a directed fishery in Germany.

### 7.3 Fishery by-catch of small cetaceans

Species	Area/stock	Incidental Mortality			Live capture
		Reported	Estim. total	Source	
Harbour porpoise	North Sea	0	unknown		
Harbour porpoise	Baltic Sea Schleswig- Holstein	3	unknown	gill net	none
Harbour porpoise	Baltic Sea Mecklenburg- Prepomerania	6	unknown	gill net	none

## 8. Strandings in 2006

Species	Total	North Sea Lower Saxony	North Sea Schl.-Holstein	Baltic Schl.- Holstein	Baltic Mec.-Prepomm.
Harbour porpoise	284	70 <sup>1)</sup>	124	51	39
White-beaked dolphin	1	1	1		
Striped dolphin	1		1		
Fin whale	2	1 <sup>2)</sup>			1
Minke whale	1				1

1) In addition, 2 harbour porpoises (mother + calf) stranded alive. They were released alive subsequently in deeper water

2) length: 17 m

## 9. Other studies and analyses

Species	Area/stock	Type of investigation	Contact address <sup>*)</sup>
Harbour porpoise	North Sea/Baltic Sea/Black Sea /North Atlantic	Stock structure, genetics	R. Tiedemann
Harbour porpoise	Belts, Baltic Sea	Stock discrimination	H. Benke
Harbour porpoise	Belt Sea, Baltic Sea	Reproduction, age structure, health status	H. Benke, U. Siebert,
Harbour porpoise	North Sea/Baltic	Pathology, life history, toxicology, stock identity, habitat use, telemetry, Impact of sounds, nutrition	U. Siebert
Harbour porpoise	North Sea	Histological, anatomical investigation of the nasal diverticula, ear pathology	S. Prah
Harbour porpoise, other small cetaceans	North Sea/Baltic	Distribution and abundance, aerial surveys	M. Scheidat, H. Herr

Harbour porpoise, other small cetaceans	North Sea/Baltic	Anthropogenic impacts	H. Herr, U. Siebert, K. Lucke, S. Prahl
Harbour porpoise	North Sea/Baltic	Habitat use, distribution and abundance, nutrition	A. Gilles
Harbour porpoise	North Sea/Baltic	Impact of sounds	K. Lucke
Harbour porpoise	North Sea, Baltic Sea	Acoustic surveys, porpoise detectors (PODs)	U. Verfuss, C. Honnef, A. Meding J. Rye
Harbour porpoise	Baltic	Creation of a management – orientated data base	U. Westerberg M. Scheidat, U. Siebert
Harbour porpoise	North Sea	Acoustic surveys, porpoise detectors (PODs)	U. Siebert J. Rye
Harbour porpoise	Baltic, North Sea	Telemetry	U. Siebert, K. Lucke
Harbour porpoise	North Sea/Baltic	Pathology, Immunology, Virology	H. Seibel
Harbour porpoise	North Sea/Baltic	Life History	I. Hasselmeier
Harbour porpoise	North Sea/Baltic	Parasitology	K. Lehnert
Harbour porpoise	North Sea	Recovery Plan	S. Eisfeld K.-H. Kock
Harbour porpoise	North Sea/Baltic	Incidental sightings, data bases	U. Siebert M. Rademaker S. Mueller S. Sonnenschmidt
Harbour porpoise	North Sea/Baltic	Immunology, Pollutants	A. Kakuschke
Harbour porpoise	North Sea/Baltic	Primary cell culture, Pollutants	V. Hellwig
Harbour porpoise	North Sea, Baltic	Feeding ecology	A. Gilles, U. Siebert
Harbour porpoise	North Sea, Denmark	Distribution and abundance	F. Thomsen, W. Piper
Harbour porpoise	Europe	Assesment of impact of offshore windfarm noise	F. Thomsen, W. Piper
Killer whale	Canada	Acoustic communication	F. Thomsen



Bottlenose dolphin, short-finned pilot whale, Atlantic spotted dolphin, rough-toothed dolphin	La Gomera	Abundance, distribution, behaviour, Photo-ID	F. Ritter
Bottlenose dolphin, short-finned pilot whale, Atlantic spotted dolphin, rough-toothed dolphin	La Gomera	Land-based estimation of abundance and distribution	F. Ritter
Toothed whales, <i>Stenella</i>	worldwide	Morphology, development, evolution	S. Huggenberger

\*) contact addresses see section 12

## History of Whaling

Studies on the history of whaling were continued under the auspices of the 'Deutsches Schiffahrtsmuseum' and associated researchers and groups and dealt primarily with medieval whaling in northern Europe.

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Akamatsu et al., 2007

Verfuss et al., 2007 (see below)

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## 12. Contact addresses

Benke, H., Director, Deutsches Meeresmuseum, Katharinenberg 14-20, D-18439 Stralsund, e-mail  
[Harald.Benke@meeresmuseum.de](mailto:Harald.Benke@meeresmuseum.de)

Stefan Bräger, Bundesamt für Naturschutz, FG I 3.2 Meeres- und Küstennaturschutz, Insel Vilm, 18581 Putbus (Rügen), e-mail: [stefan.braeger@bfn-vilm.de](mailto:stefan.braeger@bfn-vilm.de) and Deutsches Meeresmuseum, Katharinenberg 14 – 20, D-18439 Stralsund, e-mail [stefan.braeger@meeresmuseum.de](mailto:stefan.braeger@meeresmuseum.de)

Czeck, Richard, Nationalparkverwaltung Nds Wattenmeer, Virchowstrasse, D-26382 Wilhelmshaven, e-mail  
[richard.czeck@br-we.niedersachsen.de](mailto:richard.czeck@br-we.niedersachsen.de)

Dähne, M., Deutsches Meeresmuseum, Katharinenberg 14 – 20, D-18439 Stralsund, e-mail  
[michael.daehne@meeresmuseum.de](mailto:michael.daehne@meeresmuseum.de)

Deimer, P., Gesellschaft zum Schutz der Meeressäugtiere, Garstedter Weg 4, Hasloh, e-mail [pdeimer@gsm-ev.de](mailto:pdeimer@gsm-ev.de)

Wolfgang Dinter, Bundesamt für Naturschutz, FG I 3.2 Meeres- und Küstennaturschutz, Insel Vilm, 18581 Putbus (Rügen), e-mail: [wolfgang.dinter@bfn-vilm.de](mailto:wolfgang.dinter@bfn-vilm.de)

Fonfara, S., Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Werftstrasse 6, D-25761 Büsum, e-mail [Fonfara@ftz-west.uni-kiel.de](mailto:Fonfara@ftz-west.uni-kiel.de)

Gilles, A., Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Werftstrasse 6, D-25761 Büsum, e-mail [Gilles@ftz-west.uni-kiel.de](mailto:Gilles@ftz-west.uni-kiel.de)

Hasselmeier, I., Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Werftstrasse 6, D-25761 Büsum, e-mail [IHassel@ftz-west.uni-kiel.de](mailto:IHassel@ftz-west.uni-kiel.de)

Honnef, C.G., Deutsches Meeresmuseum, Katharinenberg 14 – 20, D-18439 Stralsund, e-mail [christopher.honnef@meeresmuseum.de](mailto:christopher.honnef@meeresmuseum.de)

Kock, K.-H., Institut für Seefischerei, Bundesforschungsanstalt für Fischerei, Palmaille 9, D-22767 Hamburg, e-mail [karl-hermann.kock@ish.bfa-fisch.de](mailto:karl-hermann.kock@ish.bfa-fisch.de)

Lucke, K., Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Wertfstrasse 6, D-25761 Büsum, e-mail [lucke@ftz-west.uni-kiel.de](mailto:lucke@ftz-west.uni-kiel.de)

Meding, A., Deutsches Meeresmuseum, Katharinenberg 14 – 20, D-18439 Stralsund, e-mail [anja.meding@meeresmuseum.de](mailto:anja.meding@meeresmuseum.de)

Prahl, S., Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Wertfstrasse 6, D-25761 Büsum, e-mail [prahl@ftz-west.uni-kiel.de](mailto:prahl@ftz-west.uni-kiel.de)

Ritter, F., M.E.E.R. e.V., Bundesallee 123, 12161 Berlin, e-mail [meer@infocanarias.com](mailto:meer@infocanarias.com)

Rye Hansen, Jacob, Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Wertfstrasse 6, D-25761 Büsum, e-mail [jacob.rye-hansen@ftz-west.uni-kiel.de](mailto:jacob.rye-hansen@ftz-west.uni-kiel.de)

Scheidat, M., Forschungs – und Technologiezentrum Westküste der Christian Albrechts Universität Kiel, Wertfstrasse 6, D-25761 Büsum, e-mail [scheidat@ftz-west.uni-kiel.de](mailto:scheidat@ftz-west.uni-kiel.de)

Siebert, U., Forschungs- und Technologiezentrum Westküste der Christian-Albrecht-Universität Kiel, Wertfstraße 6, D-25761 Büsum, e-mail [siebert@ftz-west.uni-kiel.de](mailto:siebert@ftz-west.uni-kiel.de)

Schnall, U., Barthelmess, K., Deutsches Schiffahrtsmuseum. Hans Scharoun Platz 1, D-27568 Bremerhaven.

Tiedemann, R. Universität Potsdam, Institut für Biochemie und Biologie, Evolutionsbiologie/Spezielle Zoologie, Karl-Liebknecht-Strasse 24 – 25, Haus 25, D-14 476 Golm. e-mail [tiedemann@rz.uni-potsdam.de](mailto:tiedemann@rz.uni-potsdam.de)

Verfuss, U. Deutsches Meeresmuseum, Katharinenberg 14-20, D-18439 Stralsund, e-mail [ursula.verfuss@meeresmuseum.de](mailto:ursula.verfuss@meeresmuseum.de)