Agenda Item 2 Annual National Reports 2011

Document 2-05

Annual National Report Germany

Action Requested

- Briefly present highlights from reports (max. 5 minutes)
- Take note of the information submitted
- Comment

Submitted by Germany

NOTE:
IN THE INTERESTS OF ECONOMY, DELEGATES ARE KINDLY REMINDED TO BRING THEIR OWN COPIES OF DOCUMENTS TO THE MEETING

Revised Format for the ASCOBANS Annual National Reports

General Information

Name of Party:	Period covered: 2011
Germany	Date of report: 15 March 2012

Report submitted by:	
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Any changes in coordinating authority or appointed member of advisory committee:	

List of national authorities, organizations, research centres and rescue centres active in the field of study and conservation of cetaceans, including contact details

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Federal Agency for Nature Conservation (BfN), AST Vilm, D-18581 Putbus

Federal Maritime and Hydrographic Agency (BSH), Bernhard-Nocht-Str. 78, D-20359 Hamburg

Projektträger Jülich (PTJ), Department for Wind Energy, Forschungszentrum Jülich GmbH, Wilhelm-Johnen-Straße, D-52425 Jülich

National Park Administration Wadden Sea of Lower Saxony(NP-LS), Virchowstr. 1, D-26382 Wilhelmshaven

Institute of Terrestrial and Aquatic Wildlife Research (ITAW) of University of Veterinary Medicine Hannover (TiHo), Foundation, Werftstr. 6, D-25761 Büsum

German Oceanographic Museum (DMM), Katharinenberg 14-20, D-18439 Stralsund

Johann Heinrich von Thünen Institute for Sea Fisheries (vTI), Palmaille 9, D-22767 Hamburg

BioConsult SH GmbH & Co.KG, Brinckmannstr. 31, D-25813 Husum

Biola, Gotenstraße 4, D-20097 Hamburg

Society for Dolphin Conservation Germany (GRD), Kornwegerstr. 37, D-81375 München

Society for the Conservation of Marine Mammals (GSM), Garstedter Weg 4, D-25474 Hasloh

Ostsee Info-Center Eckernförde (OIC), Jungfernstieg 110, D-24340 Eckernförde

Active Region Ostseeküste - fisheries working group, Ellernbrook, D-24235 Stein

Lower Saxony State Office for Consumer Protection and Food Safety (LAVES), Institute for Fish and Fishery Products, Schleusenstr. 1, D-27472 Cuxhaven

NEW Measures / Action Towards Meeting the Objectives of the Conservation and Management Plan and the Resolutions of the Meeting of Parties

Please feel free to add more rows to tables if the space provided is not sufficient.

A. HABITAT CONSERVATION AND MANAGEMENT

1 Direct Interaction with Fisheries

Investigations of methods to reduce bycatch

Three vessels <12m from the fishing port Freest were equipped with video cameras in order to monitor by-catch in a fishery east of the island of Rügen. [Kock, vTI]

Implementation of methods to reduce bycatch

Pingers in vessels >12 m length according to EU Regulation 812/2004. [Kock, vTI]

Please provide any other relevant information, including bycatch information from opportunistic sources.

5 pilot whales by-caught in pelagic trawls on mackerel in ICES area VIIh (Biskaya). [Kock, vTI]

A pilot study funded by the BfN was conducted to detect areas of higher by-catch conflict in the German Baltic. Contacts with fishermen were established to test alternative fishing gear and first tests were conducted. Seasonal and geographical variation of strandings and by-catches until 2010 were investigated. [Siebert, ITAW]

In the frame of the project “Harbour Porpoise Friendly Eckernförde Bay” of the Ostsee-Infocenter 5 by-caught harbour porpoises were collected anonymously from fishermen. Gear and location data was collected. 60 pingers were given for free to participating fishermen in a small-scale coastal fishery not falling under obligations in regulation 812/2004. 7 out of 12 fishermen in Eckernförde agreed to use pingers voluntarily and provide information on by-catch. [Müller, OIC]

A so far unsuccessful small scale test of baited pots was conducted (10 catch days). [Müller, OIC]

In addition to the GSM’s public awareness project “Sailors on the Look-out for Harbour Porpoises” people are increasingly reporting strandings (some of which likely by-catch). The data are automatically forwarded to authorities and the strandings network. If possible, their location is also registered and published in the sightings map of BfN/GSM. This project has been handed over from GSM to the German Maritime Museum in Stralsund. [Deimer, GSM]

In addition, please attach or provide link to your country’s Report under EC Regulation 812/2004.

2 Reduction of Disturbance

2.1 Anthropogenic Noise

Following the instructions for the German Navy on the protection of marine mammals and maritime habitats that were enacted in September 2007, marine mammal sightings are collected continuously by the German fleet and recorded in a database to improve knowledge about the distribution and habitat use of abundant species. This information is taken into account for the planning of the use of sonar systems during trials. [Puffpaff, BMVg]

To reduce the risk for marine mammals during explosions (disposal of old ammunition in the

Baltic Sea), the effect of an air bubble curtain for the attenuation of shock waves was further investigated. [Puffpaff, BMVg]

An international, 3 years project "PoMM" within the European Defence Agency (EDA) to establish a common marine mammal database for risk assessment was continued, it will contain sighting records, probabilities of occurrence, habitat use and species' characteristics. [Puffpaff, BMVg] - It started in August 2010 and aims to protect marine mammals against the impact of active sonar and maintain the ability to operate active sonar at the same time. In work package 1 (WP 1) a comprehensive marine mammal database, being essential for risk mitigation tools, will be established. In WP2 special investigations on marine mammal acoustics will be carried out. The database will provide knowledge on marine mammals with focus on abundance, seasonal distribution and density of different species in areas of operational interest for European Navies. The database will be used in the planning as well as operational phases, to avoid negative impact on marine mammals by military active sonars.

The database consists of four parts:

- **encyclopedia:** species' characteristics, dictionary of methods and units, position and time of object, information on data source
- **observations :** information on sightings, cetacean groups and individuals, examination results, sighting effort
- **distribution maps:** gridded and polygon maps of abundance, seasonal distribution and density of different species
- **acoustics:** information on vocalization and recording

WP 1 consists of the work elements (WE) 1.1 Definition of Database Characteristics (almost finished), WE 2.1 Collection and Description of Basis Data Sets, WE 1.3 Development of In- and Output Tools and WE 1.4 Construction of Common Database
The aims of WP 2 are to develop tools and concepts for acoustic detection (WE2.1) and to provide a tool for the acoustic classification of marine mammals considering particularly the most critical groups and species. Participating institutions are from following countries: Germany, Norway, United Kingdom, Netherlands, Italy and Sweden. [Siebert, ITAW]

An auditory study on harbour porpoises was continued to validate the temporary threshold shift (TTS) level for impulsive noise. This project is conducted by the ITAW in cooperation with NERI (Denmark) and Fjord&Baelt (Denmark) and aims at testing the acoustic tolerance in another captive harbour porpoise as well as free-ranging animals. In 2011, 3 audiograms of free-ranging harbour porpoises were collected and one animal was exposed to an airgun impulse to validate the TTS value measured in captivity. Furthermore blood-samples were taken to evaluate sound induced stress in the exposed animal. [Siebert, ITAW]

A small stacked air bubble curtain system was tested for its efficiency to mitigate underwater noise effects in Kiel Harbour. Higher attenuation levels were achieved with a carefully designed pipe layout and increased air flow rates. [Siebert, ITAW]

A new project (Cluster 7 "Underwater noise", funded by the BfN), coordinated by the ITAW, in close cooperation with the BfN and other research institutions (University Aarhus, Denmark, DW ShipConsult, Germany, University Liege, Belgium), covers a broad spectrum of diverse and varied tasks. The main goal is to develop verifiable norms for the estimation of the impact of underwater noise on marine organisms. In distinct subprojects the hearing sensitivity of harbor porpoises and seals is investigated as well as study approaches about

possible damage of fish by impulsive acoustic stimuli are developed in cooperation with national and international partners. Moreover, the acoustic tolerance limit of harbor porpoises for impulsive noise from pile driving and possible stress reactions caused by anthropogenic underwater noise are investigated. In addition, seals and porpoises in the natural environment will be equipped with automatic data loggers capable to record the current sonic load in the water. The goal of such research is to gain improved knowledge about possible behavioral changes (escape reactions, changes in diving behavior or emigration from noisy areas) after noise impacts. Furthermore, in order to complement information about noise in the sea, there will be an acoustic noise mapping in Natura 2000 protected areas of the North and Baltic Seas using stationary noise recording systems. [Siebert, ITAW]

Research project **VSM (Vertical Shaft Machine)**: "Further development of the VSM technology for the installation of offshore foundations for wind turbines"; funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU) under the project ref. no. 0325233; project coordinator: HERRENKNECHT AG, Schwanau; duration: 01.12.2010 - 31.07.2012. [Verfuß, PTJ]

Research project **ESRa**: "Evaluation of systems for ramming noise mitigation at a test pile"; funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU) under the project ref. no. 0325307; project coordinator: RWE Offshore Logistics Company GmbH, Hamburg; project partners: Bard Engineering; DONG Energy; EnBW Erneuerbare Energien; E.ON Climate Renewables; EWE Energie; Stadtwerke München (SWM); Vattenfall; duration: 01.03.2011 - 31.12.2011. [Verfuß, PTJ]

Collaborative research project **HYDROSCHALL-OFF BW II (Borkum West II)**: "Development, deployment and evaluation of a big bubble curtain for mitigating underwater noise associated with pile-driving activities", funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU) under the project ref. no. 0325309A/B/C; project coordinator: BioConsult-SH GmbH & Co KG, Husum; project partners: Hydrotechnik Lübeck GmbH, Lübeck; Itap GmbH, Oldenburg; duration: 01.04.2011 - 31.12.2012. [Verfuß, PTJ] - At this offshore wind farm the efficiency and its further development of the "Big Bubble Curtain (BBC)" as noise mitigation measurement is tested. Noise measurements were undertaken at different distances to the piling location. Using passive acoustic monitoring (C-PODs), the temporal and spatial response of harbour porpoises to the piling noise was also studied. During ramming of 28 foundations (up to February 2012), first results show that the BBC led to a clear reduction of noise. Final results will be presented in 2012. [Hoeschle, BioConsult SH]

Collaborative research project **HYDROSCHALL-OFF BO1 (BARD Offshore 1):** "Development, deployment and evaluation of a small bubble curtain for mitigating pile-driving noise associated with the installation of offshore foundations for wind turbines ", funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU) under the project ref. no. 0325334A/B/C; project coordinator: BARD Engineering GmbH, Emden; project partners: BARD Building GmbH, Emden; Cuxhaven Steel Construction GmbH, Cuxhaven; duration: 01.05.2011 - 30.06.2012. [Verfuß, PTJ]

Research project **Hydro Sound Dampers**: "Development, test, deployment and evaluation of hydro sound dampers (HSD) for mitigating underwater noise caused by pile-driving activities associated with the installation of offshore foundations for wind turbines"; funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU)

under the project ref. no. 0325365; project coordinator: Technische Universität Braunschweig, Braunschweig; duration: 01.09.2011 - 31.08.2014. [Verfuß, PTJ]

Collaborative research project **BORA**: "Development of a model for the prognosis of underwater noise caused by pile-driving activities associated with the installation of offshore foundations for wind turbines"; funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU) under the project ref. no. 0325421A; project coordinator: Technische Universität Hamburg-Harburg, Hamburg; duration: 01.11.2011 - 31.10.2015 [Verfuß, PTJ]

Testing the effects of an acoustic harassment device on the behaviour of harbour porpoises (funded by BMU; FKZ: 0325141). In order to avoid hearing damage in harbour porpoises and seals, acoustic harassment devices (AHDs) are used to deter them before the start of pile driving. Since there is too little information so far to judge if the deterring effect is sufficient, the temporal and spatial effect of a Lofitech seal scarer on harbour porpoises was tested using passive acoustic monitoring (C-PODs), aerial surveys and visual observations. Sound measurements at various distances were carried out. The seal scarer emits pulses at 14 kHz (SL ca. 189dB re 1 µPa). C-POD-data indicated that porpoise echolocation signals were significantly reduced up to a distance of 7 km from the AHD. These effects decreased with distance. An aerial survey indicated that the animals left the area around the seal scarer rather than reducing their acoustic activity only. A response study revealed clear avoidance reactions by porpoises out to the maximum studied distance of 2.4 km. Sighting rates of porpoises significantly declined within a 1 km observation radius. Minimum observed approach distance during 28 hours of seal scarer activity was 700 m. Findings further indicate a substantial individual variation in the response: Visual observations showed in some cases no reaction to the seal scarer. During the C-POD-study in the North Sea occasional porpoise signals were recorded at close distances to the seal scarer. Reasons for this can be different motivational states or different environmental conditions. However, the clear deterring effect in the vicinity shows, that the deployment of a seal scarer during offshore pile driving activities can greatly reduce the risk of physical injury posed to harbour porpoises by offshore pile driving. [Hoeschle, BioConsult SH]

In 2010 started the environmental monitoring of the operational phase at the first German offshore wind farm the test site "alpha ventus" with a total of 12 offshore wind energy plants approximately 45 km north of the island of Borkum (water depth ca. 30 m). In 2011 monitoring was carried out in the second year of operation phase. The monitoring program "Standard Investigation of the Impacts of Offshore Wind Turbines on the Marine Environment" (StUK3) was conducted according to the licensing conditions set by the Federal Maritime and Hydrographic Agency (BSH) – see: http://www.bsh.de/en/Products/Books/Standard/index.jsp.
Underwater sound measurements were conducted during operation of the turbines for "alpha ventus" according to the measurement descriptions in StUK3 and in addition to that in the framework of a research project on ecological aspects of wind farms, so called "StUKplus" coordinated by the Federal Maritime and Hydrographic Agency (BSH) and funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety (BMU). More information may be found in German under: http://www.bsh.de/de/Meeresnutzung/Wirtschaft/Windparks/StUKplus/stukplustext.jsp
Furthermore, the German licensing authority BSH organized an international workshop dealing with aspects of the standardisation on underwater sound measurements (Hamburg 8-9 June 2011, in the frame of the StUKplus project). Based on the sound measurement experiences made with the installation of offshore wind farms in European waters scientists, authorities and agencies from the Netherlands, UK, Germany, Sweden and Denmark discussed about the standardisation of underwater sound measurements to make sure that

the data revealed are comparable and based on common procedures. Establishing standard measurement procedures is the prerequisite for assessing possible impact of impulsive sound on marine mammals. Up to now there is a large divergence in applied terminology, technical methodology, data processing and evaluation of underwater impulsive sound [Boethling & Blasche, BSH]

In the frame of this StUK 3 project, after a baseline study and proximate operational monitoring, the effect of the 12 operational turbines on harbour porpoises were studied with a combination of visual surveys and passive acoustic monitoring using T-PODs and C-PODs deployed at different distances to the wind farm. Harbour porpoises were continuously recorded in the area “alpha ventus”. The relative density of porpoises was quite low in the wind farm area, their seasonal occurrence was consistent over four study years. The seasonal pattern showed high detection rates in spring (March and April), followed by low detection rates from May to July and again high detection in autumn/winter. In order to prove if operational turbines have scaring effects on porpoises due to noise emission during high wind speed, a preliminary analysis of relative porpoise activity and turbine power output was performed. The results did not provide any evidence that harbour porpoises were deterred from operating wind turbines due to noise emission. [Hoeschle, BioConsult SH]

Following further on-going studies on harbour porpoises are conducted by BioConsult SH. Results will be presented/published after finalisation: (1) Case study on potential barrier effects of the Great Belt Bridge, Denmark, on harbour porpoises. (2) Monitoring the potential disturbance and displacement effects on harbour porpoises caused by construction activities of the Nord Stream pipeline in the Pomeranian Bight using stationary acoustic monitoring devices (PODs). [Hoeschle, BioConsult SH]

Publication based on the project “Harbour porpoise response to pile driving at the Horns Rev II offshore windfarm in the Danish North Sea” (finished in 2009): Brandt, M. J., Diederichs, A., Betke, K. & Nehls G (2011): Responses of harbour porpoises to pile driving at the Horns Rev II offshore wind farm in the Danish North Sea. Mar Ecol Prog Ser 421:205–16. [Hoeschle, BioConsult SH]

2.2 Ship Strike Incidents

Please list all known incidents and for each, provide the following information:

Date	Species	Type of injury	Fatal injury (Yes / No)	Type of vessel (length, tonnage and speed)	Location (coordinates)	More information: (Name / Email)

2.3 Major Incidents Affecting Significant Numbers* of Cetaceans

Date	Location	Type of incident	Further Information

**Two or more animals*

2.4 Pollution and Hazardous Substances

Please report on main types of pollution and hazardous substances (including source, location and observed effects on cetaceans). Please provide information on any new measures taken to reduce pollution likely to have an impact.

2.5 Other Forms of Disturbance

Please provide any other relevant information, e.g. relating to recreational activities affecting cetaceans.

3 Marine Protected Areas for Small Cetaceans

Within the process of developing national management plans for the 8 designated German SACs, protection measures for marine mammals/harbour porpoises are being designed and proposed to authorities. For harbour porpoises, as an Annex IV species of the habitats directive, in addition conservation plans are being developed for the whole German North and Baltic Sea (BfN, ITAW). [Siebert, ITAW]
Please indicate where GIS data of the boundaries (and zoning, if applicable) can be obtained (contact email / website).

B. SURVEYS AND RESEARCH

4.1 Overview of Research on Abundance, Distribution and Population Structure

The following dedicated visual surveys to assess abundance and distribution of harbour porpoises were conducted by the ITAW: In 2011, four dedicated aerial surveys were carried out in the south-western part of the German North Sea and in parts of neighbouring Dutch waters as part of the research around the offshore wind test field “Alpha Ventus”. Between April and September 2011, a total of 5,900 km were covered on effort and a total of 613 harbour porpoise sightings (729 individuals, of these 29 calves) were recorded. The highest density has been estimated in Juli 2011 the lowest in September 2011. In April 2011 a ship survey (double platform) was conducted in the area of the test field (study area 2,110 km^2). During 1,368 km on effort a total of 406 harbour porpoise groups with 570 individuals were sighted (249 sightings by tracker and 157 sightings by primary observers). This research is funded by the Federal Environment Ministry (BMU) and coordinated by the Federal Agency for Shipping and Hydrography (BSH) within the “StUKplus-Project”. Two aerial surveys were carried out in the north-eastern part of the German North Sea, in the area of the SCI *Sylt Outer Reef*. In June 2011, an effort of 1.607 km could be achieved and a total of 531 harbour porpoise sightings (736 individuals, of these 102 calves) were recorded. In July 2011, effort has been comparable with 1.610 km, but the sighting rate was much lower: a total of 183 sightings

with 241 individuals (of these 28 calves) were recorded. During the survey off the East Frisian Islands (including SCI *Borkum Reef Ground)* in March 2011, 126 sightings with 141 harbour porpoises were recorded. During the survey in May 2011 332 sightings with 357 porpoises were recorded, most animals were sighted north and west of Borkum. In comparison with earlier surveys conducted in the same area since 2002, the density estimated for March and May 2011 belong to the highest for that area. This indicates an ongoing increase of porpoise density in the southern North Sea.

In the German Baltic Sea and in parts of Danish waters, one aerial survey has been conducted in summer 2011. In June 2011, 33 sightings with 38 porpoises were recorded. Relatively few sightings were recorded in the Kiel Bight. Compared with surveys conducted since 2002, densities are decreasing in the Kiel Bight since May 2010. Porpoise density in the Fehmarn Belt area and Mecklenburg Bight varies strongly since 2002.

In order to enhance the data basis for the evaluation of the status of small cetaceans in North Sea offshore areas, a unique survey of marine mammals in the area of the Dogger Bank was conducted in August 2011. The first international aerial survey covering the entire Dogger Bank area and adjacent slopes (study area 66,768 km^2) with a high spatial resolution was accomplished successfully in late summer 2011. It shows that harbour porpoises strongly frequent the area during that time of the year. Other small cetaceans, like minke whales and white-beaked dolphins, were only rarely recorded. During 5,997 km effort 771 harbour porpoise sightings with 1,104 animals were recorded, including 97 calves. Most sightings were recorded along the slopes and fewer animals were sighted at the Dogger Bank itself. Acoustic data on harbour porpoise presence in the Dogger Bank area, gathered during ship surveys using a towed hydrophone (IFAW), were additionally processed and analysed. Acoustic surveys were conducted in the area of the Dogger Bank during summer 2005, 2006 and 2008. During 14,602 km on effort 362 porpoise detections were recorded (on average 0.025 detections were recorded per km). Most harbour porpoises were detected in the eastern part and at the slopes of the Dogger Bank area.

These surveys are part of the German monitoring programme of Natura 2000 sites, funded by the Federal Agency for Nature Conservation (BfN). [Siebert, ITAW]

In Fall 2011 a monitoring scheme with four CPOD-stations in the German Wadden Sea was established by the Nationalpark Wattenmeer. The ITAW is carrying out the work. Three positions are in the Schleswig-Holstein Wadden Sea and one in the Lower Saxony Wadden Sea. [Siebert, ITAW]

In November 2011 a first C-POD was installed in the outer Jade. It is planned, to observe activities of harbour porpoises all the year at this station. This action is a result of the combined efforts of the National Park Administration of Schleswig-Holstein and Lower Saxony to monitor the presence of harbour porpoises in coastal waters using C-PODS. Between October 2009 and August 2010 the Waterways and Shipping Administration of the Federal Government installed several C-PODs in the Ems estuary to research the presence of harbor porpoises. A description of the project is available at: http://www.wsv.de/wsd-nw/service/pdf/heft44/Beitrag_10.pdf The combined effort of the county of Wesermarsch and the Society for Dolphin Conservation Germany (GRD) to detect harbour porpoises entering the river Weser (opportunistic sightings scheme in place since 2007) is still ongoing. See: http://www.delphinschutz.org/projekte/weser/schweinswal_sichtungen_in_weser_und_elbe_2011.htm [Czeck, NP-LS] - 23 sightings with 48 harbour porpoises were reported by sailors, boaters, hikers and local residents in 2011. [Wenger, GRD]

With the financial support from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Agency for Nature Conservation, the German Oceanographic Museum is conducting static acoustic monitoring of harbour porpoises using T-PODs and C-PODs (porpoise click detectors) in the Baltic Sea. Our long-term dataset (2002 to 2007)

consisting of data from a network with up to 42 POD positions, has shown seasonal and geographical patterns of harbour porpoises revealing annually migration behaviour. Furthermore, the study highlighted that the harbour porpoise still occurs in the entire German Baltic Sea despite the dramatic decline of the population.
Between 2008 and 2011 the study was continued with only 12 positions, all within the German exclusive economic zone (EEZ). Results from 2010 confirmed the findings of previous years with higher porpoise detection rates for the western part of the German Baltic compared to the positions in the East as well as a seasonal increase in porpoise registrations during summer and a decrease in the winter period. Since 2009, the C-POD, the digital successor of the T-POD, has replaced older click detectors. The recent porpoise monitoring project and the SAMBAH (Static Acoustic Monitoring of the BAltic Harbor Porpoise) project are using C-PODs. The aim of this pan-Baltic project is to initiate a best practice methodology and to provide data for reliable assessments of distribution and habitat use for this species to allow an appropriate designation of protected areas for this species within the NATURA 2000 network as well as other relevant mitigation measurement. More information is available at http://www.meeremuseum.de/wissenschaft/forschungsprojekte.html [Gallus, DMM]

A further on-going study on the occurrence and distribution of harbour porpoises in the Fehmarnbelt area is conducted by BioConsult SH. Results will be presented/published after finalisation. [Hoeschle, BioConsult SH]

New data for a marine mammal data base (containing sightings, strandings, worldwide maps of occurrence and characteristics of 126 species) were integrated from freely available and provided sources. For the use within the German Fleet, new marine mammal identification tables were introduced to provide support for collecting and recording sightings data of the abundant species in different sea areas. An acoustic and visual survey of marine mammals in the Azores front area was conducted to test and evaluate new passive acoustic monitoring equipment and to compare methods for estimating abundance. [Puffpaff, BMVg]

4.2 New Technological Developments

The COSAMM project is an investigation of the comparability of the various static passive acoustic monitoring methods used for detection of harbour porpoises and other toothed whales. All available click detectors for harbour porpoises are compared in this project. This is done in order to make representative and comparable statements on the abundance of harbour porpoise, despite the deployment of different devices. [Gallus, DMM]

A new technical design for an air bubble curtain system was developed and tested in 2010 by the ITAW in cooperation with FH Kiel. This system is intended to be used as a sound mitigation method during pile driving installations of offshore wind turbines. [Siebert, ITAW]

The impact of devices attached to animals remains a challenge in telemetry studies of dolphins. A concept of novel tag design for small cetaceans was elaborated and tested using computer aided design and computer fluid dynamics methods. It was hypothesized that the hydrodynamic design of a tag could provide stable attachment to the dorsal fin by means of resultant hydrodynamic force appearing when a dolphin is swimming. It was shown that in 33 of 35 CFD scenarios the streamlined shape of a tag generates the lift force that facilitates keeping a tag attached to the fin. Throughout the set of calculations the tag-associated drag coefficient does not exceed 4%, which indicates low impact. Data obtained present a baseline for the further development of non-invasive dolphin telemetry tags. [Siebert, ITAW]

4.3 Other Relevant Research

Since January 2010 a net of POD-stations each consisting of four marking buoys and three POD-devices was established by offshore wind farm operating companies to fulfil the licencing conditions of BSH and StUK according to which acoustic monitoring of the activity and habitat use of harbour porpoises is required for all EIAs and monitoring activities for Offshore wind farms (http://www.bsh.de/en/Products/Books/Standard/index.jsp). The main objective of the POD-net is the continuous monitoring of gradients in the habitat use and activity of harbour porpoises. By the end of 2011 the POD-net was extended to 22 stations. Up to now positive experiences could be gathered with the POD-net. The data evaluation and analysis will follow. [Boethling, BSH]

Predictive models of harbour porpoise distribution to assess the extent of potential conflicts and to support conservation and management plans were developed. A range of oceanographic parameters and generalised additive models were used to predict harbour porpoise density and to investigate seasonal shifts in porpoise distribution in relation to several static and dynamic predictors. Porpoises aggregated in distinct hot spots within their seasonal range, but the importance of key habitat descriptors varied between seasons. Predictors explaining most of the variance were the hydrographical parameter 'residual current' and proxies for primary production and fronts (chlorophyll and nutri- ents) as well as the interaction 'distance to coast/water depth'. Porpoises preferred areas with stronger currents and concentrated in areas where fronts are likely. These models improve the understanding of determinants of harbour porpoise habitat in the North Sea as a whole and inform management frameworks to determine safe limits of anthropogenic impacts (see: Gilles et al. 2011, Endangered Species Research), [Siebert, ITAW]

Project name DFG SI 1542/1, a part of the DFG-SPP-1207; „Strömungsbeeinflussung in Natur und Technik" program. Morphology of dolphin skin and its potential role in drag reduction of swimming dolphin was studied. Computer aided design models of common dolphin and harbour porpoise were constructed to study hydrodynamics of fast- and slow swimming small cetaceans. Flow parameters were calculated for the species-specific range of swimming velocities. Correlation between skin structure and stream-wise distribution of friction coefficient was found. The data obtained can be used in further development of compliant walls to reduce friction drag in transport. [Siebert, ITAW]

Collection of information about incidental strandings and opportunistic sightings is continued [Czeck, NP-LS]

A study about the classification of marine mammal acoustic signatures with methods of speech recognition (e.g. Hidden Markov Models) was continued. The study will go on within a European Defence Agency (EDA) project for the improvement of detection and classification methods for marine mammals. [Puffpaff, BMVg]

A new hydrophone system for passive acoustic monitoring was tested during sea trials. [Puffpaff, BMVg]

C. USE OF BY-CATCHES AND STRANDINGS

5 Post-Mortem Research Schemes

Contact details of research institutions / focal point	Schleswig-Holstein (SH): Terrestrial and Aquatic Wildlife Research (ITAW) of University of Veterinary Medicine Hannover (TiHo), Foundation, Werftstr. 6, D-25761 Büsum

	Mecklenburg – West Pomerania (MV): German Oceanographic Museum, Katharinenberg 14-20, D-18439 Stralsund Lower Saxony (LS): National Park Authority, LAVES-Institute for Fish & Fishery Products Cuxhaven (only district of Cuxhaven)
Methodology used (reference, e.g. publication, protocol)	SH: Measurements were taken in metric system. No funding for necropsies MV: Basic biological and anatomical data were collected and registered. Necropsy is performed occasionally. LS: metric measurements were taken of carcasses found by official bodies in the area of Cuxhaven. Necropsies will be performed due to the carcass condition. No necropsies in 2011.
Collection of samples (type, preservation method)	SH: No funding for sampling. MV: Pathological samples will be collected and examined during necropsy if required. LS: No samples could be taken from carcasses in 2011 due to decomposition.
Database (Number of data sets by species, years covered, software used, online access)	SH: MySql, Postgresql, Access, Excel Between 1990 and 2011 the following number of data sets has been collected per species (data recorded until 15.02.12): *Phocoena phocoena*: 2982 *Delphinus delphis*: 7 *Lagenorhynchus albirostris*: 26 *Lagenorhynchus acutus*: 2 *Stenella caeruleoalba*: 1 *Delphinapterus leucas*: 1 *Delphinapterus ampullatus*: 1 *Physeter macrocephalus*: 7 *Balaenoptera acutorostrata*: 6 *Balaenoptera physalus*:6 *Globicephala melaena*: 3 *Tursiops truncatus*: 1 *Mesoplodon bidens*: 1 MV: Data were collected and registered in Access database and Excel. Between 1990 and 2011 468 dead harbour porpoises were found at the coasts of MV, 33 harbour porpoises in 2011. LS: Metric data on carcasses found were collected and registered for report to ASCOBANS. 55 carcasses of harbour

	porpoises were registered in LS in 2011.
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)	MV: The German Oceanographic Museum is collecting information about incidental strandings and sightings (see at http://www.meeresmusem.de/wissenschaft.html)

5.1 Number of Necropsies Carried out in Reporting Period:

Species	Recorded cause of death
Phocoena phocoena	SH: No funding for determination of causes of death MV: 4 necropsies in 2010, 5 in 2011. Recorded strandings only partially to be necropsied; recorded cause of death: drowned, parasitic diseases, bacterial infection, pneumonia, dystocia LS: metric measurements were taken of carcasses found and reported by official bodies in the area of Cuxhaven. Necropsies will be performed due to the carcass condition. No necropsies in 2011.

Please provide any other relevant information on post-mortem / stranding schemes.

D. LEGISLATION

6.1 Relevant New Legislation, Regulations and Guidelines

Please provide any relevant information.

E. INFORMATION AND EDUCATION

7.1 Public Awareness and Education

A request (“Kleine Anfrage”) from the German Parliament (Bundestag) for information about the

implementation of ASCOBANS and the protection of Small Cetaceans in Germany was answered by the Federal Government. The answers to the 40 questions posed by the MoP Undine Kurth et al. were published 17.2.2011 in "Bundestagsdrucksache 17 / 4733 -. [Schall, BMU]

The annual German Voluntary Contribution to ASCOBANS of 25.600,-€ was mostly dedicated to public awareness issues. [Schall, BMU]

Within the framework of a research project aiming at a better implementation of the Integrated Coastal Zone Management ICZM (supported by the Federal Agency for Environment and the Federal Ministry for Environment, Nature Conservation and Nuclear Safety) the competition "Lust op dat Meer" with several pilot projects was realized. The pilot project "Harbour Porpoise Friendly Eckernförde Bay" is meant to stabilize the population of harbour porpoises in Eckernförde Bay by avoiding bycatch in gillnet fishing. 7 out of 12 fishing companies took part on a voluntary basis. A list of procedures was developed and implemented with those companies (e.g. pick-up service for bycatch at sea, providing pingers for gillnets, testing of alternative fishing methods). Participating companies are allowed to use the official logo designed for this project as a mean of advertising ("harbour porpoise friendly fishery"). The project was accompanied by an exhibition on harbour porpoises including a static hydrophone with live broadcast of sounds from the Eckernförde Bay, and sound level as well as frequency analysis. It contributes effectively to the protection of the cetaceans and improves the image of the participating fisheries as well as the region itself. There is a noticeable interest among experts as well as the general public. The project also proves that the ICZM as a means of voluntary communication and management practices is well suited to point at possible solutions for existing conflicts incorporating all relevant stakeholders. [Köchling, BMU; Müller, OIC]

In 2011, the German Oceanographic Museum became responsible for the project "Sailors on the lookout for harbour porpoises in the Baltic Sea at large – Kattegat, Belt Sea, Sound, Western Baltic and Baltic Proper" which was previous a project by the Society for the Conservation of Marine Mammals (GSM). This project is well-respected and already known to a wide public especially along the coast of the Baltic Sea region. It includes registration of sightings of harbour porpoises and the findings of dead porpoises. Through the webpage of the museum and on their flyers on projects the museum provides information on porpoise sightings (http://www.meeresmuseum.de/wissenschaft/sichtungen.html) and dead animals (http://www.meeresmuseum.de/wissenschaft/totfunde.html). The flyers explain what people should do if they encounter a porpoise or find one dead. It is possible to contact the museum by post, email or telephone. The sightings data are posted on-line, and BfN is regularly publishing the map with the annual data, see http://www.bfn.de/habitatmare/en/downloads-schweinswalsichtungen-gsm.php. The sightings map is interactive (all information can be accessed by a simple click). [Gallus, DMM; Deimer, GSM]

Several press releases on Baltic Sea harbour porpoises were published in the course of the year and interviews were given to media upon request. [Deimer, GSM]

The "active region Ostseeküste" held a workshop on alternative fishing methods which have the potential to reduce by-catch of harbour porpoises and seabirds and possibilities for eco-labelling of small scale fisheries. Fishermen, gear technologists, fishing and conservation authorities as well as environmental NGOs were participating. [Sturm, Active Region "Ostseeküste"]

POSSIBLE DIFFICULTIES ENCOUNTERED IN IMPLEMENTING THE AGREEMENT

Please provide any relevant information.

Please return this form, preferably by e-mail, to:

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