

Agenda Item 2

Annual National Reports 2011

Document 2-02

**Annual National Report  
Denmark**

**Action Requested**

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

Submitted by

Denmark



**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**

<b>Name of Party:</b> Denmark	<b>Period covered:</b> 2011
	<b>Date of report:</b> 14 <sup>th</sup> of March, 2012

<b>Report submitted by:</b>	
<b>Name:</b> Magnus Wahlberg, Ph. D.	<b>Function:</b> Chief Scientist
<b>Organization:</b> Fjord&Bælt	<b>Address:</b> Margrethes Plads 1
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<b>Any changes in coordinating authority or appointed member of advisory committee</b>	

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

- DTU AQUA, National Institute of Aquatic Resources, Section of Coastal Ecology, Technical University of Denmark, Charlottenlund Slot, Jægersborg Allé 1, 2920 Charlottenlund, Denmark. Contact person: Finn Larsen, phone +4535883496, email: *fl@aqua.dtu.dk*
- The Fisheries and Maritime Museum, Tarphagevej 2, 6710 Esbjerg V, Denmark. Contact person: Lasse Fast Jensen, phone +4576122000, email: *lfj@fimus.dk*
- Fjord&Bælt and Marine Biological Research Center, University of Southern Denmark, Margrethes Plads 1, 5300 Kerteminde, Denmark. Contact person: Magnus Wahlberg, phone: +4542131548, email: *magnus@fjord-baelt.dk*
- Department of Bioscience, Aarhus University, Frederiksborgvej 399, 4000 Roskilde, Denmark. Contact person: Jonas Teilmann, phone +4587158494, email: *jte@dmu.dk*

**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**

<p><b>Investigations of methods to reduce bycatch</b></p> <p>The Danish National Institute for Aquatic Resources conducted research on the effects of alerting signals on harbour porpoises at Reersø, Denmark. However, the signals employed did not elicit any response from the porpoises.</p>
<p><b>Implementation of methods to reduce bycatch</b></p>
<p><b>Please provide any other relevant information, including bycatch information from opportunistic sources.</b></p>

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

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0578:FIN:EN:HTML>

**2 Reduction of Disturbance**

**2.1 Anthropogenic Noise**

<p><b>Please reference and briefly summarise any studies undertaken</b></p> <p>The effect of underwater noise from shipping on harbour porpoises has been investigated under the BaltSeaPlan. The report soon will be published at:  <a href="http://www.baltseaplan.eu/index.php/Home;1/1">http://www.baltseaplan.eu/index.php/Home;1/1</a></p>
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**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**

Please provide any relevant information on measures taken to identify, implement and manage protected areas for cetaceans, including MPAs designated under the Habitats Directive and MPAs planned or established within the framework of OSPAR or HELCOM.

In June 2011, Denmark began a monitoring program of the designated SACs (special areas of conservations, Natura2000) for harbour porpoises. Passive acoustic dataloggers, CPODs, have been deployed in two SACs, an acoustic porpoise survey has been conducted in the Inner Danish waters, two aerial surveys have been performed covering SACs: one in the North Sea and one in Skagerrak.

Please indicate where GIS data of the boundaries (and zoning, if applicable) can be obtained (contact email / website).

Contact: Signe Sveegaard, *sign@dmu.dk*

## ***B. SURVEYS AND RESEARCH***

### **4.1 Overview of Research on Abundance, Distribution and Population Structure**

**Please provide a brief summary of (and reference to) any national work.**

- The SAMBAH project to estimate abundance and distribution of harbour porpoises in the Baltic Sea by static acoustic monitoring is running in the data collection phase. Analysis of data starts in 2013.
- Acoustic surveys have been used to confirm high density areas obtained from telemetry data. This improves the confidence in our data on how porpoises are distributed in Danish waters:

Sveegaard, S., Teilmann, J., Tougaard, J., Berggren, P., Mouritsen, K.N., Gillespie, D. 2011. Acoustic surveys confirm the high-density areas of harbour porpoises found by satellite tracking. *ICES Journal of Marine Science*, 68(5), 929-936.

- Satellite telemetry data have been used to define high density areas of porpoises. These areas have been helpful in determining the newly established Danish marine Nature2000 areas.

Sveegaard, S., Teilmann, J., Tougaard, J., Dietz, R., Mouritsen, K. N., Desportes, G., Siebert, U. 2011. High-density areas for harbor porpoises (*Phocoena phocoena*) identified by satellite tracking. *Marine Mammal Science* 27(1), 230-246.

### **4.2 New Technological Developments**

Please provide a brief summary of any relevant information

- A FastLoc GPS incl. 3D behavioural data logger package have been developed and deployed on two harbour porpoises. This is the first time such detailed behaviour has been recorded from a small cetacean. In addition, 6 porpoises were tagged with acoustic tags (A-tags) in combination with Argos satellite tags. An additional 2 porpoises were tagged with satellite tags.
- The Danish National Institute for Aquatic Resources also conducted a trial of CCTV equipment to monitor catches onboard gillnet vessels of length 10-14 m. The equipment worked well and was used to document not only fish discards but also bycatch of marine mammals and seabirds. All this was obtained at a much lower cost than using onboard observers. Using a camera tracking the nets while breaking the water during hauling documented that a number of porpoises fell out of the nets before being detected by the people on deck.

- Two trials were made to determine the threshold for temporary threshold shift development in the hearing system of wild harbour porpoises when exposed to an air-gun (and pile driving-like) sound source. The project is funded and coordinated by Professor Ursula Siebert, Forschungs- und Technologiezentrum Büsum, Germany, [Ursula.Siebert@tiho-hannover.de](mailto:Ursula.Siebert@tiho-hannover.de) but also has a Danish partner (Jonas Teilmann, Aarhus University, [jte@dmu.dk](mailto:jte@dmu.dk)). Results from the project will be available in 2012 or 2013.

### 4.3 Other Relevant Research

**Please provide a brief summary of any relevant information**

- The Danish National Institute for Aquatic Resources conducted research on the range at which pingers are effectively deterring harbour porpoises. Experiments with an Aquamark100 pinger at Reersø, Denmark, suggested an effect out to at least 1600 m, while a similar experiment in St Andrews Bay, Scotland, suggested an effect to only 400 m.
- Tissue healing in porpoises in relation to satellite tagging has been investigated:  
  
Sonne, C., Teilmann, J., Wright, A. J., Dietz, R., Leifsson, P. S. 2012. Tissue healing in two harbor porpoises (*Phocoena phocoena*) following long-term satellite transmitter attachment. *Marine Mammal Science*, in press.
- Temporal and life history related trends of perfluorochemicals in porpoises have been investigated:  
  
Galatius, A., Dietz, R., Rigét, F. F., Sonne, C., Kinze, C. C., Lockyer, C., Bossi, R. 2011. Temporal and life history related trends of perfluorochemicals in harbor porpoises from the Danish North Sea. *Marine Pollution Bulletin* 62(7), 1476-1483.
- Research into a detection function for static acoustic dataloggers:  
  
Kyhn, L. A., Tougaard, J., Thomas, L., Duve, L. R., Stenback, J., Amundin, M., Desportes, G. 2012. From echolocation clicks to animal density – acoustic sampling of harbour porpoises with static dataloggers. *Journal of the Acoustical Society of America*, 131(1), 550-560.
- Research into the correlation of porpoise and prey fish distributions:  
  
Sveegaard, S., Teilmann, J., Andreasen, H., Mouritsen, K. N., Jeppesen, J. P., Kinze, C. C. 2012. Correlation between the seasonal distribution of harbour porpoises and their prey in the Sound, Baltic Sea. *Marine Biology*, in press.

- Studies of the impact of wind farms on porpoises:

Scheidat, M., Tougaard, J., Brasseur, S., Carstensen, J., van Polanen Petel, T., Teilmann, J., Reijnders, P. 2011. Harbour porpoises (*Phocoena phocoena*) and wind farms: a case study in the Dutch North Sea. *Environmental Research Letters*, 6(2), 025102.
- Thyroid and stress hormones in free-ranging and captive porpoises:

Siebert, U., Pozniak, B., Hansen, Kirstin A., Nordstrom, G., Teilmann, J., van Elk, Niels, Vossen, A., Dietz, R. 2011. Investigations of Thyroid and Stress Hormones in Free-Ranging and Captive Harbor Porpoises (*Phocoena phocoena*): A Pilot Study. *Aquatic Mammals* 37(4), 443-453.
- Life history parameters of white-beaked dolphins:

Galatius, A., Jansen, O. E., Kinze, C. C. 2012. Parameters of growth and reproduction of white-beaked dolphins (*Lagenorhynchus albirostris*) from the North Sea. *Marine Mammal Science*, in press.
- Geographic variation of harbor porpoise skull shape and ontogeny:

Galatius, A., Goldin, P. 2011. Geographic variation of skeletal ontogeny and skull shape in the harbour porpoise (*Phocoena phocoena*). *Canadian Journal of Zoology* 89, 869-879.
- Inter-specific variation of porpoise skull shape and ontogeny:

Galatius, A., Berta, A., Frandsen, M., Schou, M., Goodall, R., Natalie P. 2011. Interspecific variation of ontogeny and skull shape among porpoises (*Phocoenidae*). *Journal of Morphology* 272(2), 136-148.
- Study of how porpoises regulate their hearing during echolocation:

Linnenschmidt, M., Beedholm, K., Wahlberg, M., Kristensen, J. H., Nachtigall, P. E. 2012. Keeping returns optimal: gain control elicited by dynamic hearing thresholds in a harbour porpoise. *Proceedings of the Royal Society B*, doi 10.1098/rspb.2011.2465.
- Study of how porpoises react to gillnets:

Nielsen, T. P., Wahlberg, M., Heikillä, S., Jensen, M., Sabinsky, P., Dabelsteen, T. 2012. Swimming patterns of wild harbour porpoises (*Phocoena phocoena*) show detection and avoidance of gill nets at very long ranges. *Marine Ecology Progress Series*, in press.
- New measurements of the sound beam pattern of porpoises:

Koblitz, J., Wahlberg, M., Stilz, P., Madsen, P., Beedholm, K., Schnitzler, H.-U. 2012. Asymmetry and dynamics of a narrow sonar beam in an echolocating harbour porpoise. *Journal of the Acoustical Society of America*, in press.

*C. USE OF BY-CATCHES AND STRANDINGS*

**5 Post-Mortem Research Schemes**

Contact details of research institutions / focal point	<ul style="list-style-type: none"> <li>Department of Bioscience, Aarhus University, Frederiksborgvej 399, 4000 Roskilde, Denmark. Phone +4528710372, email: <i>agj@dmu.dk</i></li> <li>The Fisheries and Maritime Museum, Tarphagevej 2, 6710 Esbjerg V, Denmark. Phone +4576122000, email: <i>lfj@fimus.dk</i></li> </ul>
Methodology used (reference, e.g. publication, protocol)	We use our standard protocol, which has not been published
Collection of samples (type, preservation method)	<ul style="list-style-type: none"> <li>Aarhus University: Teeth, muscle, skin, blubber, liver, kidney, stomach contents, urine, blood, spleen, gonads, lung, diaphragm, faeces</li> <li>The Fisheries and Maritime Museum: some of the above.</li> </ul>
Database (Number of data sets by species, years covered, software used, online access)	A database is planned. No online access.
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)	<p>Strandings of marine mammals are reported on an annual basis in a report (in Danish) from the Danish Nature Agency. The latest available report covers 2010:  <a href="http://www.naturstyrelsen.dk/Udgivelser/Aarstal/2011/Strandede_havpattedyr_i_Danmark.htm">http://www.naturstyrelsen.dk/Udgivelser/Aarstal/2011/Strandede_havpattedyr_i_Danmark.htm</a></p> <p>Future reports will be uploaded at:  <a href="http://www.naturstyrelsen.dk/Udgivelser/Aarstal/">http://www.naturstyrelsen.dk/Udgivelser/Aarstal/</a></p>

**5.1 Number of Necropsies Carried out in Reporting Period:**

<b>Species</b>	<b>Recorded cause of death</b>
Harbour porpoise, N= 4	1 bycaught, 3 not yet determined
Whitebeaked dolphin, N=2	Not yet determined

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.

- The Danish Nature Agency has drafted a new Action plan for stranded cetaceans in Denmark. The plan was in public hearing in the autumn of 2011. The final version is expected to be published in 2012.
- The preliminary analysis of the total number of stranded cetaceans in Denmark in 2011: 91 harbour porpoises, 6 whitebeaked dolphins, 1 unknown dolphin, 1 sperm whale, 1 minke whale.

#### *E. INFORMATION AND EDUCATION*

##### **7.1 Public Awareness and Education**

Please report on any public awareness and education activities to implement or promote the Agreement to the general public and to fishermen.

Fjord&Bælt in Kerteminde, Denmark, houses four harbour porpoise (3 live-caught and 1 born in the facility) for research and public display. The center is visited by more than 50,000 guests every year, including more than 5,000 school children. A long range of Danish and international media teams (TV, radio, newspapers, home pages) visit the center every year and usually focus their outreach on harbour porpoise research and conservation. Fjord&Bælt is hosting the yearly meeting about harbour porpoise conservation by the Danish Nature Agency. The meeting includes government representatives, scientists, legislators, and NGOs and creates local media interest.

There is special focus on research and conservation efforts of harbour porpoises during a number of arrangements in Kerteminde, such as the Day of the Baltic Porpoise, two yearly science festivals, and 'special events', scheduled by Fjord&Bælt with regular intervals. In 2011 Fjord&Bælt developed a theatre performance for young children about harbour porpoise conservation in particular and marine protection in general. The performance was a large success and has been shown both in Denmark and Greenland. In 2012 there are until now performances planned in Kerteminde, Svendborg and Middelfart.

#### *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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