Agenda Item 2 Annual National Reports 2011

Document 2-07

Annual National Report
The Netherlands

Action Requested

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

Submitted by The Netherlands

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: The Netherlands	Period covered: January 2011 to December 2011 (unless stated differently)
	Date of report: 13 March 2012

Report submitted by:	
Name: Meike Scheidat & Martine van den Heuvel Greve	Function: Researcher
Organization: IMARES	Address: P.O. Box 68; 1970 AB IJmuiden; The Netherlands
Telephone / Fax: +31 317 487 108	Email: meike.scheidat@wur.nl
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

EL & I (Dutch Ministry of Economic Affairs, Agriculture and Innovation); P.O.Box 20401, 2500 EK The Hague, The Netherlands. email contact: f.r.vandijken@mineleni.nl

IMARES Institute for Marine Resource and Ecosystem Studies, Dept. Ecosystems; P.O. Box 167, 1790 AD Den Burg, The Netherlands. Email contact: mscheidat@wur.nl

NIOZ Royal Netherlands Institute for Sea Research, Landsdiep 4, 1791 SZ ‘t Horntje, The

Netherlands. Email contact: Kees.Camphuysen@nioz.nl

SEAMARCO (Sea Mammal Research Company); Applied research for marine conservation Julianalaan 46, 3843 CC Harderwijk, The Netherlands; Tel (Office): +31-(0)341-456252; E-mail contact: researchteam@zonnet.nl

Stichting Rugvin; Jeruzalem 31a; 6881 JL Velp; the Netherlands; Tel: (+31) (0)26-3635444; rugvin@planet.nl; www.rugvin.nl

TNO, Netherlands Organisation for Applied Scientific Research; P.O. Box 96864, 2509 JG The Hague, The Netherlands; Phone +31 (0)88-8664119; email contact: Frans-Peter.Lam@tno.nl

Stichting de Noordzee. Natuur, Ruimtelijke Ordening. Drieharingstraat 25. 3511 BH Utrecht, The Netherlands. Phone +31 302340016. Email contact: m.deruiter@noordzee.nl; www.noordzee.nl

Naturalis Netherlands Centre for Biodiversity Naturalis. Postbus 9517, 2300 RA Leiden, The Netherlands. +31 71 568 76 00. www.naturalis.nl: guido.keijl@ncbnaturalis.nl; database walvisstrandingen.nl

EHBZ strandingen network. Zeehondencrèche Lenie 't Hart, Hoofdstraat 94a, 9968 AG Pieterburen, The Netherlands +31595526526

Department of Pathobiology, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 1, 3584 CL Utrecht. Email contact: a.groene@uu.nl
Coastal & Marine Union (EUCC). P.O. Box 11232, 2301 EE Leiden, The Netherlands; phone +31 71 5122900. www.eucc.net. Email contact: m.siemensma@kustenzee.nl

Marine Science & Communication. Bosstraat 123, 3971 XC Driebergen, The Netherlands; phone +31(6)16830430. Email contact: m.siemensma@msandc.nl

SOSDolfijn. Postbus 293, 3840 AG Harderwijk, The Netherlands. phone +31 341 467438. Email contact: Eligius Everaarts: Eligius.Everaarts@sosdolfijn.nl

Ministerie van Verkeer en Waterstaat, DG Water. Postbus 20901, 2500 EX Den Haag, The Netherlands. Email contact: Rene.dekeling@minvenw.nl

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

In 2011 the Coastal & Marine Union (EUCC) continued its study on bycatch mitigation within a new project funded by the European Fisheries Fund: "bycatch mitigation harbour porpoise". The main aim is to mitigate bycatch of harbour porpoises in the winter set net fishery on cod, turbot and brill in collaboration with the industry. The workability and efficiency of a new pinger (Bananapinger Fishtek UK) and a DDD acoustic device are investigated using both field trials and a behavioural study on a porpoise in captivity at research facility SEAMARCO. The project also aims to: monitor bycatch, facilitate the landing of bycaught porpoises, exchange knowledge, conduct parallel pinger trials and to explore innovative methods to reduce bycatch. The project is a close collaboration between the Dutch Fisheries Organisation (Nederlandse Vissersbond), the Expert group on set net fishery (Kenniskring Staand want), ten Dutch winter season set net fishermen and the Coastal & Marine Union. The project is funded by the Dutch Ministry of Economics, Agriculture and Innovation (EL&I) and the European Fisheries fund (EFF). In order to study the effect of the acoustic deterrents porpoise detectors have been installed on the nets in 2011 in cooperation with IMARES and this will continue in 2012.

Preliminary results indicate that the mooring of c-pods can be carried out by set gill net fishermen. However, the data collected during this study in terms of the number of simultaneous days of c-pods with – and without pingers, were not sufficient to draw conclusions on possible behaviour of avoidance – or attraction by porpoises in the vicinity of pingers.

In December 2011 a seminar "Fish traps in the North Sea - a viable option?" was organised. This seminar was an initiative of ILVO Fisheries and Marine Science & Communication and was facilitated and financed by the Fisheries Knowledge Groups of LEI and IMARES, part of Wageningen UR (University & Research centre). The purpose of this one-day seminar was to exchange information regarding the use of fish traps as alternative fishing gear to prevent porpoise bycatch. A variety of experts from all over Europe (Sweden, France, Germany, UK and Belgium) shared their practical experiences and gave fishermen the opportunity to learn more about this fishing technique. There were about 50 attendees. A report of the seminar and more information can be found at:

http://www.kenniskringvisserij.wur.nl/NL/nieuwsagenda/nieuws/

Viskooien_kunnen_duurzame_vis_verbinden_met_duurzame_energie.htm

Implementation of methods to reduce bycatch

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

In cooperation with the Coastal & Marine Union (EUCC) and IMARES a Closed Circuit TV system has been implemented in December on board of one set net fish cutter (targeting cod, turbot and brill),in the bycatch mitigation project of EUCC. One specimen of a bycatch incident involved has been brought ashore for necropsy (see C.5 Post-mortem research schemes).

Bram Couperus is serving as chair of ICES expert group Working Group on the Bycatch of Endangered Species (WGBYC).

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

Report EU regulation 812/2004:

Couperus, A.S. 2011. Annual Report of the Netherlands to the European Commission on the implementation of Council Regulation 812/2004 on cetacean bycatch. CVO Report 11.006

2 Reduction of Disturbance

2.1 Anthropogenic Noise

Please reference and briefly summarise any studies undertaken

TNO participates in the 3S-project, together with FFI (Norway), SMRU (UK) and WHOI (USA). In 2011 the first of a new series of experiments took place near Spitsbergen to perform BRS (Behavioural Response Studies) in order to study the behavioural effects of sonar sound on whales (1 to 30 June 2011). Target species are: Northern bottlenose whales, minke whales and humpback whales (Kvadsheim et al. 2011). Future experiments are scheduled for 2012 and 2013. Observations (and descriptions) of previous 3S-experiments (2006-2010) have been collected in a new technical report (Miller et al. 2011). Previous target species were Killer whale, (long-finned) pilot whale and sperm whale. Analysis and publication of results are in progress.

From 5 to 8 September 2011 the 4th ESOMM conference (Effects of Sound in the Ocean on Marine Mammals) was organised in Amsterdam. About 100 delegates from governments, science and industry participated to this event, focusing on sonar effects, but also addressing other underwater sound sources. ESOMM was organized by TNO (together with

NL-MOD and MS&C) and hosted by the Royal Netherlands Navy.

Within the EDA (European Defence Agency) TNO, together with other partners (GER, NOR, ITA, UK), is developing a marine mammal database. This database should become available for participating nations in order to improve accuracy and efficacy of mitigation measures for naval sonar operations. This EDA-PoMM project (Protection of Marine Mammals) is to be finalized in 2013.

The NL-mitigation software for naval operations SAKAMATA has been introduced to the fleet of the Royal Netherlands Navy (RNLN) in 2010. Currently the software is being upgraded to improve user interface and implement latest research results. This new version of the SAKAMATA software is scheduled to be delivered end of 2012. New algorithms for implementing sound exposure calculations and efficacy of ramp-up schemes for sonar transmissions will be published in the course of 2012.

The release of Whale FM took place end of 2011 (http://whale.fm). This website, as initiated by TNO (dr. Sander von Benda-Beckmann), is asking volunteers on the internet to help classifying marine mammal sounds ("crowd sourcing"). Several press agencies and radio stations showed their interest soon after the release of this website. First classification results are already included in a scientific paper that is submitted for publication. These preliminary findings are promising, but more conclusive results are to be awaited.

Measurements of pre-construction work ambient noise were made in 2008 in the Maasvlakte as an environmental impact assessment (Dreschler et al. 2009). They are published at www.noordzeeloket.nl in early 2012; measurements of noise during construction and of dredger source levels (de Jong et al. 2010) were made in 2009 and published at www.noordzeeloket.nl in early 2012. See also relevant ASA and UAM papers. (Ainslie & de Jong 2011, Ainslie et al 2011a, Ainslie et al 2011b).

TNO is participating in the ISO Working Group that is developing a standard for measuring sound radiated from ships. A Publically Available Specification (PAS) produced by this Working Group, closely based on ANSI Standard S12.64, was published in February 2012 and is now available from ISO (http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=59403)

Pile driving noise: A finite element model of sound radiated from an impact pile driver has been developed and tested (de Jong, Zampolli et al. 2011). In collaboration with other European projects, a draft measurement plan has been written, available from the author (de Jong et al 2011).

Piling noise measurements were carried out as part of the FLOW project with IHC (Jansen et al. 2011).

SEAMARCO continued their research examining the hearing thresholds of harbour porpoises after exposure to sounds of various levels and durations (Kastelein et al. 2011). TNO contributes to these studies. Effects of noisebands on temporary threshold shift studies have been studied. A start has been made to study the effect of pile driving sounds.

The ZKO project “Effects of underwater noise on fish and marine mammals in the North Sea” led by IMARES, in collaboration with TNO, SEAMARCO and University of Leiden. [http://www.nwo.nl/projecten.nsf/pages/2300168538] has started.

A method to quantify the environmental cost of different underwater sound sources, and compare different sources on a like with like basis, was developed in collaboration with RWS (Ainslie & Dekeling 2011).

TNO participated in the meeting of Aug-Sep 2011 of the International Quiet Ocean Experiment (IQOE), and has contributed to the draft Science Plan that will be published in 2012.

Michael Ainslie represents NL on the EC expert Technical Sub-group Underwater Noise “TSG Noise”. The final report of the TSG Noise was published in February 2012 (van de Graaf et al. 2012). In collaboration with other projects in Europe, a standard terminology for underwater sound (AHEWGTUS 2011) has been proposed. The TSG report recommends the standard be adopted by all MS. The IQOE draft science plan also refers to the standard.

References:

Ainslie MA, de Jong CAF (2011) The influence of changing sea conditions on shipping noise, including effects of wind, fish and climate change, Proc IOA Vol 33, Pt 5, pp 51-55.

Ainslie MA, de Jong CAF, J Dreschler (2011) Effects of bladdered fish on ambient noise measurements close to the Port of Rotterdam, Fourth Underwater Acoustics Measurements: Technologies and Results, 20-24 June 2011, pp 723-730.

Ainslie MA, RPA Dekeling (2011) The environmental cost of marine sound sources, Fourth Underwater Acoustics Measurements: Technologies and Results, 20-24 June 2011, pp 703-710.

Ainslie MA (2012) Potential causes of increasing low frequency ocean noise levels, J. Acoust. Soc. Am. Volume 129, Issue 4, p 2497. Proceedings of Meetings in Acoustics, Vol. 12, 070004.

Ainslie MA, CAF de Jong, J Dreschler, W Groen, PA van Walree (2011) Effect of dredging, traffic, wind and fish on ambient noise measurements close to the Port of Rotterdam, J. Acoust. Soc. Am. Volume 129, Issue 4, pp. 2462-2462.

de Jong CAF, MA Ainslie, EW Jansen, BAJ Quesson (2011) Standards for measurement and reporting of underwater sound: application to the source level of trailing suction hopper dredgers, J. Acoust. Soc. Am. Volume 129, Issue 4, pp. 2461-2461.

de Jong CAF, M Zampolli MA Ainslie, EW Jansen, L Fillinger, FM Middeldorp, RZ Hazelwood, SP Robinson, B Jung (2011) Pile driving noise: source level and sound generation mechanisms, J. Acoust. Soc. Am. Volume 129, Issue 4, pp. 2461-2461.

Kastelein RA, Steen N, de Jong C, Wensveen PJ and Verboom WC (2011) “Effect of broadband-noise masking on the behavioral response of a harbor porpoise (*Phocoena phocoena*) to 1-s duration 6-7 kHz sonar up-sweeps,” J. Acoust. Soc. Am. 129, 2307-2315.

Kastelein RA, Hoek L and de Jong CAF (2011) “Hearing thresholds of a harbor porpoise (*Phocoena phocoena*) for sweeps (1-2 kHz and 6-7 kHz bands) mimicking naval sonar signals,” J. Acoust. Soc.

Am. 129, 3393-3399.

Kastelein RA, Hoek L and de Jong CAF (2011) "Hearing thresholds of a harbor porpoise (*Phocoena phocoena*) for helicopter dipping sonar signals (1.43-1.33 kHz) (L),"J. Acoust. Soc. Am. **130**, 679-682.

Kastelein RA, Jennings N (2011) Impacts of Anthropogenic Sounds on *Phocoena phocoena* (the Harbor Porpoise). In Effects of Noise on Aquatic Life (Popper, A. N. and Hawkins, A. eds). Springer Science+Business Media, LLC, New York.

Theobald P, Robinson SP, Ainslie MA, de Jong CAF and PA Lepper (2011) Measurement of the underwater noise levels generated from marine piling associated with the installation of offshore wind turbines, J. Acoust. Soc. Am. Volume 129, Issue 4, pp. 2461-2461.

von Benda-Beckmann, Ainslie MA, Wensveen, Miller, Kvadsheim, Tyack, Lam, te Raa (2011) Theoretical assessment of ramp-up efficacy on marine mammals. ESOMM conference, Amsterdam.

Reports:

AHEWGTUS (2011) Ad-hoc European Working Group on Terminology for Underwater Sound (AHEWGTUS), Standard for measurement and monitoring of underwater noise, Part I: physical quantities and their units, TNO report TNO-DV 2011 C235, edited by M A Ainslie, September 2011

de Jong CAF, MA Ainslie (2011) Standard for measurement and monitoring of underwater noise, Part II: procedures for measuring underwater noise in connection with offshore wind farm licensing, TNO report TNO-DV 2011 C251, September 2011.

de Jong CAF, MA Ainslie, J Dreschler, E Jansen, E Heemskerk, W Groen (2010) Underwater noise of trailing suction hopper dredgers at Maasvlakte 2: Analysis of source levels and background noise, TNO report TNO-DV 2010 C335, November 2010.

Dreschler J, MA Ainslie, WHM Groen, Measurements of underwater background noise Maasvlakte 2, TNO report TNO-DV 2009 C212, May 2009.

Jansen HW, de Jong CAF & FM Middeldorp, Measurement results of the underwater piling noise experiment at Kinderdijk, TNO report TNO-RPT-2011-00546

H W Jansen, P J G van Beek, W H M Groen & M van Spellen, Measurement of the acoustic insertion loss of various configurations of the IHC underwater piling noise mitigation screen, TNO report TNO-DV 2011 C381

Other reports:

Kvadsheim, Miller, Doksæter, Visser, Kleivane, van IJsselmuide, Samarra, Wensveen, Curé, Hickmott and Dekeling (2011) Behavioural response studies of cetaceans to naval sonar signals in Norwegian waters - 3S-2011 cruise report. FFI-rapport 2011/01289. http://www.ffi.no/no/Rapporter/11-01289.pdf

Lam, Dekeling and Siemensma (2011) Abstract book and presentations. 4th ESOMM conference, Amsterdam.

Miller, P, R Antunes, A C Alves, P Wensveen, P Kvadsheim, L Kleivane, N Nordlund, FP Lam, S van IJsselmuide, F Visser, P Tyack (2011) The 3S experiments: studying the behavioural effects of naval sonar on killer whales (Orcinus orca), sperm whales (Physeter macrocephalus), and long-finned pilot

whales (Globicephala melas) in Norwegian waters. SOI-technical report, SOI-2011-001 http://soi.st-andrews.ac.uk/documents/424.pdf

Van der Graaf AJ, Ainslie MA, André M, Brensing K, Dalen J, Dekeling RPA, Robinson S, Tasker ML, Thomsen F, Werner S (2012). European Marine Strategy Framework Directive - Good Environmental Status (MSFD GES): Report of the Technical Subgroup on Underwater noise and other forms of energy, February 2012.

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)

There were no known ship strikes.

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

P*lease 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.*

IMARES continues its study on concentrations and distribution of contaminants in beached harbour porpoises with a focus on PCBs, PBDEs, PFOS, TBT, and chemical fingerprinting (GC-GC-MS). In 2011 a first report was finalized on redistribution processes of organic contaminants in harbour porpoises due to starvation.

References:

van den Heuvel-Greve MJ, Glorius S, Bierman S, Kotterman M (2011). Chapter 3: Contaminant distribution in harbour porpoises, *Phocoena phocoena*, stranded along the Dutch coast, pp 60-97. In: M Leopold, M Scheidat, M van den Heuvel-Greve, O Jansen, A Beerman, G Aarts, M Kotterman, S Glorius, S Bierman, M Kotterman, H Verdaat (2011). Abundance, strandings and food ecology of harbour porpoises. IMARES report, May 31 2011.

2.5 Other Forms of Disturbance

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

IMARES finalized a study on the possible impact of an operating wind farm off the North Sea coast of The Netherlands (close to Egmond at Sea). The outcome has provided reference data on occurrence and distribution of harbour porpoises in the wind farm area and two reference areas before and after construction. The results of the study indicate that harbour porpoises use the area of the wind farm after construction (Scheidat et al. 2011).

In 2010, IMARES finalized a CPOD study on the possible impact of the Prinses Amalia Wind farm on harbour porpoises during the second year of operation . The report is expected to be released in 2012.

From spring 2009 until December 2011 onwards an on-going Passive Acoustic Monitoring study using CPODs is conducted in the Ems estuary (close to the border between Germany and the Netherlands) by IMARES. The aim is to monitor changes in abundance (and behaviour) of harbour porpoises in relation to building activities associated with the extension of the harbour in the Eemshaven, and the deepening of the estuary for traffic.

References:

Lindeboom, HJ et al. 2011 Short-term ecological effects of an offshore wind farm in the Dutch coastal zone; a compilation doi:10.1088/1748-9326/6/3/035101

Scheidat M, Tougaard J, Brasseur S, Carstensen J, Van Polanen-Petel T, Teilmann J and Reijnders P 2011 Harbour porpoises (*Phocoena phocoena*) and wind farms: a case study in the Dutch North Sea Environ. Res. Lett. 6 025102

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 the Dutch Continental Shelf and Coastal Waters four sites have been identified as marine protected areas: two offshore, i.c. Dogger Bank (Doggersbank) and Cleaver Bank (Klaverbank) and two in the coastal zone, i.c. Noordzeekustzone in the north and Vlakte van de Raan in the south. These areas have been notified to the EU commission as Special Areas of Conservation (SACs) under the European Habitats Directives. The two coastal

areas were designated by the Dutch minister in 2011. The offshore areas will be designated before the end of 2012.

The areas will also be reported to the OSPAR Secretariat as MPA's according to the OSPAR Convention. These future SACs will also be designated for small cetaceans, but additional measures for their protection are unlikely, because the protection of the harbour porpoise will cover the whole Dutch EEZ The conservation target will probably be formulated as follows: “Maintain the extent and quality of the habitat in order to maintain the population in a sustainable condition”.

http://www2.minlnv.nl/thema/groen/natuur/natura2000_2006/noordzee_4habitatrlg/Inspraak_aanmelding.htm

http://www.noordzeenatura2000.nl/index.php?option=com_docman&task=cat_view&gid=57&Itemid=89

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

More information on the marine Natura2000 sites in the Netherlands can be obtained at: http://www.noordzeenatura2000.nl/

B. SURVEYS AND RESEARCH

4.1 Overview of Research on Abundance, Distribution and Population Structure

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

In 2011 IMARES reported on a series of aerial surveys of harbour porpoises on the Dutch Continental Shelf in July 2010 and October/November 2010 and March 2011, under the umbrella of the Shortlist Masterplan Wind. These surveys resulted in the first abundance estimates of porpoise for the entire Dutch North Sea waters (Geelhoed et al. 2011). A paper on the aerial surveys from 2008 till the SMW surveys was published (Scheidat et al. 2012).

The NZG Marine Mammal Database is part of the Dutch Seabird Group (NZG) (established by Kees Camphuysen). Its aim is to collect all sighting of marine mammals in and around The Netherlands. The main number of sightings come from two research programs: seawatching and offshore seabird surveys. More information is available at:

http://home.planet.nl/~camphuys/Cetacea.html as well as at www.trektellen.nl.

Strandings (live and dead) are collated in a database presented at the webpage www.walvisstrandingen.nl (see section C). Records of live sightings as well as dead animals are also found at www.waarneming.nl.

The Rugvin Foundation is a volunteer-based organisation conducting cetacean surveys in

the Southern North Sea and Oosterschelde and member of the Atlantic Research Coalition (ARC). In 2010 they continued their monitoring programme from the Stena ferry line platforms between Hoek van Holland and Harwich. In 2010, 207 porpoise sightings with 403 individuals were counted. It was the first year without sightings of White-beaked Dolphins. They also conducted a porpoise survey on the Oosterschelde to establish the (minimum) number of Harbour Porpoises and calves throughout the year. In 2010 15 porpoises including calves were counted. Additionally acoustic monitoring of the storm surge barrier in the Oosterschelde was conducted using C-PODs.

As part of the 3S-2011 experiment, a substantial area near Spitsbergen has been surveyed (visual and PAM) by TNO for Northern Bottlenose whales in June 2011. See Kvadsheim et al 2011 for survey effort and 2.1 for description of 3S-project. Previous experiments have been further analysed and presented/published (see below).

References:

Geelhoed S, Scheidat M, Aarts G, Bemmelen R van, Janinhoff N, Verdaat H & Witte R, (2011) Shortlist Masterplan Wind Aerial surveys of harbour porpoises on the Dutch Continental Shelf. Report number C103/11. IMARES Wageningen.

Lam FP, von Benda-Beckmann S, van IJsselmuide S, van Spellen M (2011) Recent developments of detection-classification-localization (DCL) technology; how far can we get exploiting passive acoustics? 4th ESOMM conference

Leopold M, Scheidat M, van den Heuvel-Greve M, Jansen O, Beerman A, Aarts G, Kotterman M, Glorius S, Bierman S, Kotterman M, Verdaat H (2011). Abundance, strandings and food ecology of harbour porpoises. IMARES report, May 31 2011.

Moretti DJ, Lam FPA, von Benda-Beckmann AM, Thomas L, McCarthy E, Ward J, Dilley A (2011) The efficacy of a towed array based line transect survey of Blainville's beaked whales using baseline data from the Atlantic Undersea Test and Evaluation Center (AUTEC) array. Abstract submitted to DCLDE workshop, Oregon, Aug.2011.

Scheidat M, Verdaat H and Aarts G (2012) Using aerial surveys to estimate density and distribution of harbour porpoises in Dutch waters. J Sea Res 69:1-7.

von Benda-Beckmann AM, Rankin S, Beerens SP, van Zon AT, Lam FPA (2011) Comparative study of towed array baselines for instantaneous localization of marine mammals. Abstract submitted to DCLDE workshop, Oregon, Aug.2011.

4.2 New Technological Developments

Please provide a brief summary of any relevant information

TNO has built and tested improvements of the acoustic marine mammal detection array *Delphinus*. This new configuration was first tested at sea along the Norwegian coast in

Feb.2011 in advance of the 3S-2011 BRS experiment, see also 2.1. Improvements include a longer baseline of high frequency hydrophones, in order to better estimate direction and range of detected sounds. Also a prototype triplet-hydrophone has been designed to be integrated in the *Delphinus* towed array. This triplet should be capable to discriminate between the leftward/rightward detection of mammal sounds. Software of the *Delphinus* system has been upgraded to display detection of marine mammals in a geographical display in real time.

4.3 Other Relevant Research

Please provide a brief summary of any relevant information

C. USE OF BY-CATCHES AND STRANDINGS

5 Post-Mortem Research Schemes

Contact details of research institutions / focal point	Department of Pathobiology, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 1, 3584 CL Utrecht, 030 253 3591
Methodology used (reference, e.g. publication, protocol)	Adapted from: T. Kuiken, Diagnosis of By-Catch in Cetaceans, Proceedings of the 2nd BCS Workshop on Cetacean Pathology, Montpellier, France 1994. European Cetacean Society Newsletter, 26:38-43 and protocols provided by Jauniaux and Siebert
Collection of samples (type, preservation method)	Depending on conservation state: 1. a variety of specific organs/tissues or tissues with pathologic changes, formalin-fixed, paraffin-embedded 2. gastric contents (frozen handed to Imares) 3. liver, fat and muscle (-20) 4. skin (ethanol) 5. teeth (water)
Database (Number of data sets by species, years covered, software	Excel, Access

used, online access)	
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)	All strandings are collated in a database and shown on the website of Naturalis (www.walvisstrandingen.nl). In 2011 849 Harbour Porpoises, 4 White-beaked Dolphins, 1 white-beaked or white-sided dolphin, 1 Short-beaked Common Dolphin, 1 Minke Whale, 2 sperm whales (1 subfossil vertebra, 1 live pushed back), 1 Sowerby's Beaked Whale (vertebra), 1 fin whale were registered.

5.1 Number of Necropsies Carried out in Reporting Period:

Species	Recorded cause of death
Harbour porpoise	Between December 2010 and November 2011 274 harbour porpoises were necropsied at the Department of Pathobiology of the University of Utrecht. Of these the percentage of bycatch was between 10 and 37%. For the whole period of the study (2009 to 2011) the bycatch percentage is between 12 and 33%. Other causes of death included: infectious disease (21%), emaciation (19%), starvation (5%), other (5%), trauma (7%) and unknown (13%). The research is on-going, so these numbers are preliminary. During the research time period two peaks could be seen. In February the main cause of death was by-catch and trauma. In the summer months the main cause of death was emaciation and starvation.

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

Update Rapid Alert System – the Netherlands

In the last ten years, the number of stranded harbour porpoises on the Dutch coast increased. Since 2008 also 'damaged' harbour porpoises strand on our coast, different from regular strandings. To determine the size of the problem and decide what the best solutions are, a cooperation between nature conservation organizations, rehabilitation centres, governments, researchers, fishermen and the KLPD started in 2009 and the North Sea Foundation was assigned by the Ministry of Economic Affairs, Agriculture & Innovation to

bring together stakeholders, to design and coordinate a so called Rapid Alert System (RAS).

The main goal of RAS is to find solutions in case of abnormal strandings, such as peak strandings or stranding of damaged carcasses. Between 2009 and 2011 several meetings, including a big workshop in 2010, were organized to bring together stakeholders. In 2011 a very high number of harbour porpoises stranded in July and August, people from the RAS working group called for action and a stakeholder meeting was organized. The University of Utrecht together with (inter)national scientists then researched many carcasses over a week time. So far, an obvious cause of death has not been found.

To determine the origin of the stranded porpoises, a student at IMARES is currently researching whether a model of the BMM and Delft 3D model can be used for backtracking.

The Rapid Alert System has improved the communication between stakeholders substantially and in the last couple of years several activities were undertaken by stakeholders to find causes of death. There are still many questions and the RAS could be an helpful tool to find solutions. However, in 2012 there is no coordinator for the Rapid Alert System.

Reference:

Gröne, A, Begeman, L, Hiemstra S 2011. Postmortaal onderzoek van bruinvissen in Nederlandse wateren 2009 – 2011. Report for the Ministerie van Economische Zaken, Landbouw & Innovatie. Verplichtingnummer: 140000353; Relatienummer 101710.

D. LEGISLATION

6.1 Relevant New Legislation, Regulations and Guidelines

Please provide any relevant information.

The Dutch Ministry of Economics, Agriculture and Innovation (EL&I) commissioned the writing of a “Harbour porpoise species conservation plan: towards a favourable conservation status” (Camphuysen & Siemensma 2011). The aim of this conservation plan is to improve or at least maintain the current conservation status of Harbour Porpoises in North Sea waters under Dutch jurisdiction. Given the mobility of porpoises and the seasonality in their widespread occurrence throughout the Dutch sector of the North Sea, a generic conservation plan rather than an area based approach was considered more appropriate. An important component of this plan was to provide a summary of scientific evidence on existing or expected (negative) population level effects of potential threats. A comprehensive stakeholder consultation has been part of the project. Based on available scientific evidence and experiences in other countries, mitigation measures and suggestions for urgently needed additional scientific research have been formulated. The plan recommends to establish an observer scheme on all passive gear fleets to assess bycatch rates according to internationally accepted protocols, to investigate alternative gear or set-net modification, to use pingers (controlled) when bycatch is identified, to facilitate bycatch landing, to control illegal fisheries, to amend EC 812/2004 and to evaluate the effectiveness

of mitigation measures. Regarding the adverse effects of impulsive underwater noise (detonation, seismic, pile driving) a system of standards and protocols to mitigate and investigate the impact should be developed and implemented. A national scientific research group will be established to deal with aspects such as research needs, research quality and evaluation of the quality and conclusions of reports. The conservation plan has been presented to the State Secretary of the Ministry of EL&I in November 2011. Currently an implementation plan is developed by the Ministry.

Concerning the Marine Strategy Framework Directive (MSFD), in the Initial Assessment report the currently available information is described on the abundance, distribution and habitat use of harbour porpoises on the Dutch Continental Shelf. In the report on the description of a Good Environmental Status, the present state at species level is described for e.g. harbour porpoises, leading to a definition for Good Environmental Status for Biodiversity. In the Targets & Indicators report the number of harbour porpoises is proposed as one of the indicators for GES 1 Biodiversity - 1.2 Population size. Also the OSPAR EcoQO on by-catch levels is proposed as one of the indicators for GES 4 Food webs - 4.3.1 Abundance trends of functionally important selected groups/species. In the Dutch Marine Strategy, that is currently under development, a final selection of the proposed targets & indicators will be made.

References

Boon AR, Prins TC, Slijkerman DME, Schipper CA (2011) Environmental targets and associated indicators. Implementation of the Marine Strategy Framework Directive for the Dutch part of the North Sea: background document 3. Deltares rapport, IMARES rapport C128/11.

Camphuysen CJ & ML Siemensma (2011) Conservation plan for the Harbour Porpoise Phocoena phocoena in The Netherlands: towards a favourable conservation status. NIOZ Report 2011-07, Royal Netherlands Institute for Sea Research, Texel.

Prins TC, Slijkerman DME, de Mesel I, Schipper CA, van den Heuvel-Greve MJ (2011) Initial Assessment. Implementation of the Marine Strategy Framework Directive for the Dutch part of the North Sea. Background document 1 (of 3). Deltares-IMARES report.

Prins TC, Slijkerman DME, Schipper CA, van den Heuvel-Greve MJ (2011) Determination of Good Environmental Status. Implementation of the Marine Strategy Framework Directive for the Dutch part of the North Sea. Background document 2 (of 3). Deltares-IMARES report.

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.

Vereniging Kust & Zee, the Dutch section of the Coastal & Marine Union (EUCC) annually publishes the printed “Kust en Zeegids”. Furthermore the EUCC regularly distributes digital

newsletters with relevant information on their projects. It also communicates news through its website www.kustenzee.nl and www.eucc.nl. The EUCC has an exhibition centre on the Pier of Scheveningen, The Hague (Kust&Zee x-Pierience) which officially opened in March 2011.

IVN Consulentschap Zeeland, the National Park Oosterschelde in collaboration with Rugvin Foundation and Marine Science & Communication initiated a project on the Harbour Porpoise in the Oosterschelde Estuary. The project "Welcome Porpoise" will continue in 2012 and aims to make visitors of the National Park aware of porpoises in the Oosterschelde (http://www.np-oosterschelde.nl/).

POSSIBLE DIFFICULTIES ENCOUNTERED IN IMPLEMENTING THE AGREEMENT

Please provide any relevant information.

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

UNEP/CMS/ASCOBANS Secretariat

UN Campus

Hermann-Ehlers-Str. 10

53113 Bonn

Germany

Tel: +49 228 815 2416

Fax: +49 228 815 2440

Email: ascobans@ascobans.org