Compilation of Annual National Reports to ASCOBANS

2014

Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas

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NEW MEASURES / ACTIONS TOWARDS MEETING THE OBJECTIVES OF THE CONSERVATION AND MANAGEMENT PLAN AND THE RESOLUTIONS OF THE MEETING OF PARTIES

A. HABITAT CONSERVATION AND MANAGEMENT

1 DIRECT INTERACTION WITH FISHERIES

1.1 Investigations of methods to reduce bycatch

BELGIUM
None
DENMARK
Nabe-Nielsen, J., Sibly, R. M., Tougaard, J., Teilmann, J., & Sveegaard, S. (2014). Effects of noise and bycatch on a Danish harbour porpoise population. Ecological Modelling, 272, 242–251.doi: http://dx.doi.org/10.1016/j.ecolmodel.2013.09.025
FINLAND
During the observation scheme 2006-2007 no bycatches were detected or porpoises sighted by the observers.
FRANCE
A programme named INPECMAM has been funded and agreed between the fishermen, the Iroise sea MPA, University of Brest, the National Natural History Museum and Oceanopolis to work on the by-catch of marine mammals (cetaceans and seals) and the depredation in set net fishery in the Iroise sea with also a social approach on these issues. The low result in observed by-catch don't allow, statistically, an extrapolation to estimate the by-catch of the set net fisheries in Iroise Sea .The final report should be available this summer. The perspective is to continue such research on this topics focusing on areas and period of risk. The national program OBSMER dedicated to all the observations on board includes the English channel set net fisheries which is not asked by the European regulation. This program is implemented by the ministry of agriculture and fisheries (Direction des Pêches Maritimes et de l'Aquaculture) and IFREMER. All the results are now included in the national report for regulation 812/2004. For set net and pelagic trawl fisheries, observers for the EC regulation (n° 812/2004) are deployed for vessels greater than 15 meters and through pilot studies for vessels less than 15 m. However it was not always possible to put observers on boats less than 8m for safety reason. During the year 2012, the effort dedicated to observation on board of vessels for the European Regulation 812/2004 represents 199 days at sea for static gears in ICES area VIII, and also 158 days at sea for towed gears in ICES areas VII & VIII. In addition 268 days at sea were dedicated to all kinds of set nets in areas concerned with pingers (zones IV and VII). Over all 625 fishing days were monitored at sea during the year 2012 for the Ascobans area. The monitoring scheme contained a higher number of days by assuming a coverage rate of 10% throughout the year for trawlers >= 15m, 5% for trawlers = 15 ms and 1% for vessels less than 15 m operating with set nets. In the Ascobans area, two different species of cetaceans were caught incidentally during the year 2012: *Delphinus delphis* (19 animals), *Phocoena phocoena* (6 animal). The bycatch was estimated on some segments of fleets. An estimate of 172 common dolphins *Delphinus delphis* was obtained for pair midwater trawling

in the area VIIeh and an estimate of 77 common dolphins for set nets in Western Channel. An estimate of 61 harbour porpoises *Phocoena phocoena* was calculated for set nets with vessels less than 15m in area VIIIb and 22 harbour porpoises for netters greater than 15m and working with large mesh size. The coefficients of variation are high on these estimates.

No catch of cetaceans have been observed in some segments well covered by observations. This was the case of the tuna pelagic trawl area VIII, pelagic trawling on small pelagic species in area VIIIb. No estimate has been made possible in some fisheries with set nets in English Channel and in south of North Sea. Analyses made on strandings demonstrate that the incidental catch of *Delphinus delphis* exist in some fisheries of the Bay of Biscay (van Canneyt et al., 2013), fisheries which are not well or enough observed at sea. It would be useful to improve the monitoring scheme to get enough samples in the potential contributors of cetacean incidental bycatch as PTM seabass trawling and set nets in the Bay of Biscay. In the North Sea/east of English Channel, an effort should be made to increase the samples of vessels.

An additional study of the last three years were also achieved. This study was included in the national report for 812/2004. A period of three years offers the advantage to increase the amount of observations for an analysis. The fisheries having the higher bycatch rate per cetacean species have been ranked but some samples remain low. A list of metiers having no cetacean bycatch after at least 50 observed days was also established. These results should help to improve the regulation.

Observations done in year 2013 have recorded 12 common dolphins in pelagic trawling and 4 porpoises. Non mandatory observations are still continuing on all set netters in the area dedicated to pingers by the regulation. The 2014 national report is under progress.

In 2014, a new synthesis on interactions between cetaceans and set nets in France will be achieved in order to provide some information to stakeholders in preparing the new European regulation. This synthesis uses all the observation data available since 2008. A final report should be made available in May 2014. The preliminary results indicate that the main cetacean bycatch is harbour porpoise *Phocoena phocoena* and that 80 % of the French bycatch of porpoises occurs in the monkfish trammel net fisheries and the sole trammel net fisheries of areas IV, VII and VIII. Some bycatch occur also with GNS gears mainly in area VIII. These results show that the EC regulation need to be improved to include the trammel nets in the mandatory list of set nets requiring pingers and/or observations on board.

GERMANY

Alternative fishing gear

NABU (Nature and Biodiversity Conservation Union) runs a research project on alternative gear types commissioned by the Federal Agency for Nature Conservation (BfN). The project aims to run test fisheries with automatic longlines and jigging machines and looks into potential test with baited pots in order to investigate their application and cost-effectiveness in German waters. Project goals are:

- Run test fisheries with different techniques in German Baltic waters
- Support innovative development of different gear types reconditions in German waters
- Prepare the ground for other techniques than gillnets
- Investigate catch rates and potential bycatch of seabirds and harbour porpoises, but also of undersized fishes
- Investigate cost-effectiveness of selected gear types
- Support sustainable fishery management in MPAs.

In November 2013 one vessel in the federal state of Schleswig-Holstein has been equipped with a complete set of an Oilwind longline system Type 07-22. Another vessel has been equipped with four DNG jigging machines. The project is accompanied by an intense monitoring and observer programme comparing new techniques with the established gillnet fishery. Test fisheries will be conducted until May 2015.

A close cooperation with fishermen and fisheries science (Thünen Institute) and international experts from Sweden and Poland has been established [Detleff, NABU; Pusch, BfN].

Acoustic Alerting Device “PAL” (Porpoise ALarm)

The Thünen Institute for Baltic Sea Fisheries (TI) (Rostock) and F³: Forschung.Fakten.Fantasie (Kiel), with financial support from the German Federal Ministry of Food and Agriculture (BMEL), are carrying out a project to develop and test a new type of acoustic deterrent device - a 'Porpoise ALarm' (PAL). The pingers that fishermen are currently using are potentially controversial as they are suspected of scaring porpoises away from feeding grounds creating a constant noise pollution. In contrast the PAL generates porpoise communication noises which in theory warn animals in the vicinity about the presence of nets, which in turn may reduce bycatch rates. To test their practicability and effectiveness, PAL devices were deployed on a small number of German and Danish commercial gillnet vessels while carrying out their normal fishing activities in the Baltic Sea for several months in 2013 and 2014. For the trials, specifically those fisheries were selected that are active in areas where higher bycatch rates of harbour porpoises could be expected. During these trials, bycatch of five harbour porpoises in 2013 and two in 2014 was observed. Due to the trials setup, the very limited number of observed fishing vessels and the low number of documented bycatch events, it is not possible to further extrapolate the results. First results concerning practicability and effectiveness of PAL are promising, but further development and trials are necessary. Thanks to additional funding from BMEL, this work will be carried over the years 2015- 2017 [von Dorrien, TI; Culik, F3].

LITHUANIA

There was no investigation of methods to reduce bycatch.

NETHERLANDS

IMARES Wageningen UR and Marine Science and Communication (MS & C) started a Remote Electronic Monitoring project in December 2012 to investigate bycatch of harbour porpoises by Dutch gill net fishery (targeting sole, seabass, cod, turbot and brill). This project will last until 2016 and includes the monitoring of 10 to 12 vessels. The project is funded by the Dutch Ministry of Economic Affairs.

POLAND

Operational Programme "Fisheries and Sea" 2014-2020 provides for the allocation of funds to alternative fishing gear.

WWF Poland, WWF Germany and WWF Denmark carry out the Baltic Smart Gear Development and testing of bycatch minimizing fishing gear Technologies project together. The aim of the project is to collect information on the possible technologies that could reduce the bycatch of marine mammals and birds in gillnets while preserving the effectiveness of nets at the current level. The next stage of the project, for which funds are currently raised, envisages a call for proposals for a technology that would attain the above goal. The winner will acquire funds for testing their gear on site. The Smart Gear project is financed by the Seed Money Facility under the EU Strategy for the Baltic Sea Region.

SWEDEN
Studies investigating alternative fishing gear such as cod pots and traps for species like pike-perch and herring have been carried out by the Department of Aquatic Resources, the Swedish University of Agriculture Science. Since July 2011 this research is conducted by the Department of Aquatic Resources of the Swedish University of Agricultural Sciences (SLU). A Swedish fishing gear company Carapax has planned a project with funding for the next year to develop a full-scale cod pot fishing method. The project mainly focuses on how to improve the construction of the pot as well solutions for better handling of the pots on board. The outcome of this project may be of interest to evaluate in terms of bycatch reduction as well as consequences for the fisheries. The Department of Aquatic Resources, the Swedish University of Agriculture Science has carried out a project to try and find out why cod pots do work and catch cod in certain areas and do not work in other areas. Parameters as prey in the area, current, state of the fish might impact. Studies investigating alternative fishing gear such as cod pots and traps for species like cod, pike-perch and herring have been carried out by the Department of Aquatic Resources, the Swedish University of Agriculture Science during 2014. File attached for more information. The attachments to this answer can be accessed as part of AC22/Inf.15.1.i: Ascobans_rapportering_20150827SK_Just_SV.docx - Alternative fishing gear short report Sweden 2014K_nigson_2013_Development_of_alternative_gear.pdf - Report to the Proceedings of the conference: Progress of marine conservation in Europe. It describes why and how Sweden are developing alternative fishing gear.K_nigson_2013_Development_of_alternative_gear.pdf - article on alternative fishing gear published in 2013. Describes efforts done by SLU.
UNITED KINGDOM
The two main species affected by fishing in UK waters are the harbour porpoise and the short-beaked common dolphin. All Reports to the European Commission on activities conducted by the UK under Regulation 812/2004 (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:150:0012:0031:EN:PDF), and under Article 12(4) of the Habitats Directive, provide details of the monitoring work undertaken in the UK and estimates of cetacean bycatch. The most recent reports on cetacean bycatch in UK waters submitted to the European Commission under the requirements of EC Regulation 812/2004 can be found on the Department for Environment Food and Rural Affairs (Defra) website: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18535. A dedicated cetacean bycatch monitoring programme is in place and operated by the Sea Mammal Research Unit (SMRU). Fisheries research laboratories operating fisheries observer programmes in the UK also provide data which are included in our assessment of cetacean bycatch. Whilst the UK observer scheme relies upon good collaborative links with industry, fisheries regulations have been enacted in England and Scotland to ensure that there is also a legal obligation for skippers and owners to allow observers on board when asked to do so. There is also an obligation under the DCF (in Northern Ireland) for offshore vessels to accommodate scientific observers when requested to do so and an active observer programme is run by AFBI. Additionally, the DARD Inshore Fisheries Work Programme deploys observers to inshore vessels, though there is no “obligation” and this is undertaken by AFBI through good relations with the industry. This programme aims to

maintain at least 42 observer days annually who will report cetacean bycatch from the Northern Ireland static gear fishery.

The principle area of concern for cetacean bycatch remains the south-western waters of the Western Channel and Celtic Sea. Monitoring remains focused in the SW to reflect bycatch risk, but has also been carried out to a lesser extent in the North and Irish Seas. As sufficient data are compiled, more robust estimates of current bycatch rates will become available. The latest UK cetacean by-catch report for 2014 as required under EU Regulation 812/2004 continues to indicate that porpoise bycatch rates may have increased slightly in recent years; the reasons for this are not understood.

Furthermore, unlike in previous years where estimates were only included for those fisheries where sufficient sampling had been undertaken (leading to bycatch estimates of around 700-800 porpoises per year), in 2013 and in 2014 estimates have been extrapolated to include all UK gillnet fisheries, whether they have been sampled or not, so as to provide an overall estimate for all UK vessels using gillnets in all areas. Estimates produced in this way are higher than those that were restricted to core fisheries and areas, but are also likely to be biased for several reasons. Overall estimates for 2014 were in the region of 1400 to 1700 porpoises.

However, due to the number of assumptions made there is significant uncertainty in the estimates and so they should to be treated with caution and considered conservative or absolute maximum values. Work is ongoing to try to refine the estimates by overcoming some of the statistical issues that are evident in the current analysis.

Efforts to reduce bycatch

During 2014, investigations on methods to reduce bycatch have been limited to continued monitoring of vessels using acoustic deterrent devices (ADDs), or ‘pingers’. The bass pair trawl fishery, which in the past has been a source of concern with respect to dolphin bycatch, was effectively ended in 2014 and no further monitoring of pinger effectiveness in that fishery has been undertaken. Monitoring of pingers has therefore been restricted to the offshore gillnet fleet that operates from Cornwall to maintain an overview of longer term effects of pingers on cetacean bycatch rates and seal depredation levels in these fisheries. A number of research projects have been carried out by the Scottish Government, including a project on ‘Evaluating and Assessing the Relative Effectiveness of Acoustic Deterrent Devices and other Non-Lethal Measures on Marine Mammals. The aim of this project was to carry out a comprehensive literature and data review on the capabilities of current and developing non-lethal measures for deterring marine mammals. The final report is now available at: http://www.gov.scot/Publications/2014/10/8271 Further details on this and other cetacean bycatch avoidance research undertaken by the Scottish Government can be found at http://www.scotland.gov.uk/Topics/marine/marineenvironment/species/19887/20826.

1.2 Implementation of methods to reduce bycatch

BELGIUM
See section on new legislation (D – 6.1.)
DENMARK
None
FINLAND
None
FRANCE
Modification of practices in pelagic trawling (headline at 5 m depth)
GERMANY
Since 17.12.2013 the voluntary agreement for the conservation of harbour porpoises and sea ducks in the Baltic Sea between the Landesfischereiverband (LFV) (Fishery Association of Schleswig-Holstein), the Fischereischutzverband (FSV) (Fishery Protection Union of Schleswig-Holstein), the Baltic Sea Info-Center Eckernförde (OIC) and the Ministry of Energy transition, Agriculture, Environment and Rural Areas Schleswig- Holstein (MELUR) is in force. This voluntary agreement mandates a reduction of the total length of gillnets to 4km for boats > 8m, to 3km for boats between 6 und 8m and for boats Within the whale sanctuary of the Wadden Sea in Schleswig-Holstein, the new federal state regulation (4th of December 2013) for coastal fishing excludes any gillnet fishing within the 3 nautical miles zone. Additionally, outside the 3 nautical miles zone, gillnet fishing is prohibited with gillnets with a length of > 1,3m from upper line (head rope) to the ground-line (footrope) and a mesh size of > 150mm [MELUR]
LITHUANIA
There was no implementation of methods to reduce bycatch
NETHERLANDS
In December 2013 the Coastal & Marine Union (EUCC) finished its study on bycatch mitigation within the project funded by the European Fisheries Fund and the Dutch Ministry of Economic Affairs: “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, a behavioural study on a porpoise at research facility SEAMARCO (‘BananaPinger’ Prototype) and an acoustic evaluation of the BananaPinger by SEAMARCO. The project was a close collaboration between the Dutch Fisheries Organisation, the Expert group on set net fishery, ten Dutch winter season set net fishermen and the Coastal & Marine Union. A short project film about the Harbour Porpoise in general, its current threats and bycatch mitigation was part of the project (http://studiobib.nl/documentaire-de-fluisteraars-van-de-zeecoastal-marine-union-eucc/). Summarizing it can be said already that the Banana Pinger seems to be a pinger which is good to use for fishermen in terms of practical handling on board. It seems to be robust for gill net fisheries. The acoustic evaluation of the Banana Pinger (follow up of the prototype) shows an avoidance response of the harbour porpoise, the distance varies with the background noise. Based on the acoustical evaluation however it is

recommended to further investigate the optimal spacing between the pingers. Please contact the EUCC for further questions on this study (project contact Marije Siemensma).

POLAND

In 2014, the National Marine Fisheries Research Institute (MIR-PIB) once again implemented the Monitoring Programme for Incidental Catches of Cetaceans (PMPPW, Polish: Program Monitorowania Przypadkowych Połowów Waleni) based on the obligations under Regulation (EC) 812/2004. In 2014, observations were carried out on 15 over 15m vessels operating in 5 ports and 10 boats in 5 ports. Under the Programme observers stayed in the sea for 134 days, including 65 days on vessels fishing with pelagic trawls and 69 days on cruises (including 11 days in below 15m vessels) when fishing was carried out with gillnets. Moreover, 11 days of observations were spent on fishing boats in the region of the Bay of Gdańsk. This was due to the fact that the region scheduled for monitoring (the Bay of Puck) was considered to be the place of the greatest abundance of porpoise (Kuklik I., K. Skóra. O morświnie. "Source: Hel Marine Station of the Institute of Oceanography, University of Gdansk (www.morswin.pl)") and in accordance with point 6 of the recitals to Regulation 812/2004 "should be given priority". Similarly to 2013, during the observations it turned out that in most vessels the fishing gear used in this area did not require bycatch monitoring under Regulation 812/2004.

During the monitoring of fishing with pelagic trawls and gillnets in the Baltic Sea carried out by the National Marine Fisheries Research Institute in 2014, no incidental catch and no cetaceans entangled in nets were observed. Observers did not record any cetacean in catches carried out with nets in the Bay of Puck.

Moreover, it needs to be noted that information on bycatches of protected species registered in log-books is submitted to the Fisheries Monitoring Centre. Sea fishing inspectors verify whether the captains of fishing vessels comply with the obligation to use pingers.

SWEDEN

At the Swedish south coast development and testing of new gear has been conducted. The South Coast Fishing Area (Sydkustens fiskeområde) operates experimental fishing project with seal-proof cod cages in collaboration with local fishermen and scientists at SLU. The goal of the South Coast Fishing Area is to develop future coastal fishing industries by initiating and supporting projects and greater integration between fish nutrition and other nutrition in the region. The business is collaboration between the municipalities of Sölvesborg, Kristianstad, Simrishamn and Ystad. In 2013 this project started collaborating with the Department of Aquatic Resources, the Swedish University of Agriculture Science to get a more scientific approach on the project. Several different models of pots have been tried out and the results are promising. The pots fish around 2 to 7,7 kg cod per emptying.

Fishermen in the south of the Kattegat have been offered pingers for free and been successfully using them in the gillnet fisheries for flatfish. Six fishers have been using pingers since March 2011.

During 2012, only one fisher, Kattegatt, was required to use pinger according to EC Regulation 812/2004.

UNITED KINGDOM

The UK continues to fully implement and enforce Council Regulation (EC) 812/2004 through the use of acoustic deterrent devices attached to fishing nets. Implementation of the regulation in the UK has involved close liaison with the industry and on-going monitoring and support to aid compliance. This has been led primarily by the MMO. Enforcement of the regulation at the quayside is carried out by MMO officers, the Marine Scotland Compliance

and Enforcement Unit. Further information can be found at http://www.marinemanagement.org.uk/fisheries/monitoring/regulations_cetaceans.htm Routine inspections of the UK over 12m gillnetter fleet resulted in three infringements relating to the correct use of pingers, which have subsequently been addressed. The MMO intends to conduct further trials into pinger detectors towards the end of 2015, to ensure that detectors uniformly perceive all types of pingers available on the market, and compliant under the Regulation or under derogation.

1.3 Other relevant information, including bycatch information from opportunistic sources

BELGIUM
No bycatches were reported, although the results of the investigations on stranded animals could demonstrate that bycatch takes place. The Belgian report on the Regulation 812/2004 (with data of calendar year 2013) is attached to this report (in Dutch).
DENMARK
After the scheme 2006-2007 porpoise bycatches have not been reported/detected or sightings of porpoises reported by the fisherman or by the fisheries authorities
FINLAND
After the scheme 2006-2007 porpoise bycatches have not been reported/detected or sightings of porpoises reported by the fisherman or by the fisheries authorities.
FRANCE
Standard examination carried out on cetacean stranding demonstrate that bycatch rates are strongly higher than the results provided by fisheries observation scheme, mainly for *Delphinus delphis* and *Phocoena phocoena*. Indeed, by catches still occur in several fisheries of the Bay of Biscay and English channel (Observatoire PELAGIS/ULR)), which are not well or enough observed at sea. It would be useful to improve the monitoring scheme to get enough samples in the potential contributors of cetacean incidental bycatch as PTM seabass trawling and set nets in the Bay of Biscay. In the North Sea/east of English Channel, an effort should be made to increase the samples of vessels. Moreover, causes of death observed on stranded animal should be used to evaluate by-catch rates. Since 2012 January 1st, a French ministerial regulation requires fishermen to report marine mammals by catch with the objective of contributing to scientific knowledge The aims of this regulation don't produce by catch estimates but should involve fishermen through scientific program on knowledge of the species: composition of catches, spatial and temporal distribution, etc.. End of 2012, a pilot program with four fishing ports (Atlantic and English Channel coast) began to assess the possibility of land by-caught animals for biological samples (diet, genetic, age, reproductive status, contaminant, …). These program is coordinated by PELAGIS/ULR (CRMM)Estimates of by-catch in set net and pelagic trawl fisheries
GERMANY
No further information
LITHUANIA
None

NETHERLANDS
None
POLAND
On 5 February 2014, a Polish fisherman reported a porpoise bycatch in his cod net (GNS). On 17 March 2014, a live porpoise was spotted in the Piast Canal swimming towards the Szczecin Lagoon. Moreover, on 27 June 2014, in the vicinity of Darłówek, a humpback whale was noticed.
SWEDEN
In 2010 the SBF bought altogether nine camera systems to place on board fishing boats, to investigate discard as well as marine mammal and bird bycatch. Four of them were placed on trawlers and five on smaller fishing boats fishing with gillnets. A large effort was put into this project but only one fisherman was willing to participate in the project even if they were offered incentives for participating. These systems were later taken over by the SwAM whom is responsible for the task since July 2011.
UNITED KINGDOM
Additional information on potential incidents of bycatch is also provided through necropsies carried out under the UK Cetacean Strandings Investigation Programme (CSIP).

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

BELGIUM
The Annex provided can be accessed as part of AC22/Inf.15.1.a
DENMARK
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0578:FIN:EN:HTML
FINLAND
None
FRANCE
A report is available from IFREMER for the year 2012. And for the period 2010-2012. The report for 2013 is not finished at this time.
GERMANY
No further information
LITHUANIA
The Annex provided can be accessed as part of AC22 Doc.15.1
NETHERLANDS
Report EU regulation 812/2004:

Couperus, A. S. 2015. Annual report on the implementation of Council Regulation (EC) No 812/2004 – 2013. p. 15. Ijmuiden. Centrum voor Visserijonderzoek (CVO) CVO report 15.001
POLAND
http://www.minrol.gov.pl/pol/Rybactwo/Rybołówstwomorskie/Raporty,opracowania,publikacje The above website presents Polish reports on the implementation of Council Regulation (EC) No 812/2004 in 2010, 2011, 2012 and 2013. The 2014 report will be uploaded to the website when finished and translated into English, which is scheduled for May 2015 at the latest.
SWEDEN
See Appendix 1. http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2013/WKBYC/wkbyc_2013.pdf#search=wgbyc Report from the Working Group on Bycatch.
UNITED KINGDOM
http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=185

2 REDUCTION OF DISTURBANCE

2.1 Anthropogenic Noise

BELGIUM
Relevant publications, posters, abstracts De Vreese, S., Doom, M., Haelters, J. & Cornillie, P., 2014. Heeft de uitwendige gehoorgang van walvisachtigen nog enige functie? [The external ear canal of cetaceans: vestigial or not?]. Vlaams Diergeneeskundig Tijdschrift 83(6): 284-292. Haelters, J.; Dulière, V.; Vigin, L. & Degraer, S., 2014. Towards a numerical model to simulate the observed displacement of harbour porpoises *Phocoena phocoena* due to pile driving in Belgian waters. Hydrobiologia Online First: 12 pp. hdl.handle.net/10.1007/s10750-014-2138-4. Haelters, J., Dulière, V., Vigin, L. & Degraer, S., 2014. Modelling the redistribution of harbour porpoises due to pile driving. Poster at the VLIZ Young Scientist's Day, 7 March 2014. Royal Belgian Institute of Natural Sciences: Oostende, Brussels. Haelters, J., Dulière, V, Vigin, L. & Degraer, S., 2014. Investigations scientifiques des marsouins dans le cadre de la construction des éoliennes en eaux belges. XVIème Séminaire du Réseau National Echouages. Nord-Dunkerque, France, 27-28 September 2014; presentation and abstract. Morell, M., Lenoir, M., Shadwick, R., Jauniaux, T., Dabin, W., Begeman, L., Ferreira, M., Iranzu, M., Degollada, E., Hernandez-Milian, G., Cazevieille, C., Fortuno, J.-M., Vogl, W., Puel, J.-L., André, M., 2014. Ultrastructure of the odontocete organ of corti: scanning and transmission electron microscopy. J. Com. Neurol. Morell, M., Lenoir, M., Shadwick, R., Piscitelli, M., Ostertag, S., Raverty, S., Jauniaux, T., Dabin, W., Begeman, L., Ferreira, M., Maestre, I., Degollada, E., Hernandez-Milian, G., Brownlow, A., Cazevieille, C., Fortuño, J.-M., Vogl, W., Puel, J.-L., André, M., 2014. Cochlear

ultrastructural high-frequency hearing adaptations in toothed whales. Meeting of the Association for Research in Otolaryngology
DENMARK
Hermannsen, Line, Kristian Beedholm, Jakob Tougaard, and Peter T. Madsen. "High Frequency Components of Ship Noise in Shallow Water with a Discussion of Implications for Harbour Porpoises (*Phocoena Phocoena*)." The Journal of the Acoustical Society of America 136, no. 4 (2014): 1640–53.
FINLAND
Finland has taken part in BIAS Life+ project. The aim for project is to support a regional assessment of the underwater sound in the Baltic Sea
FRANCE
IFREMER continues to apply mitigation measures on his seismic surveys, based on the classical international recommendations. The use of a PAM system is now being considered when high-power seismic sources are to be deployed. The order of a complete passive monitoring system is planned for early 2013. Study projects are being launched in France (about the monitoring and control of the anthropogenic noise in the sea) in the framework of the MSFD (Marine Strategy Framework Directive). Most noticeably, a synthesis report (Bilan des activites anthropiques generatrices de bruit sous-marin et de leur recente evolution en France Metropolitaine) has been produced by SHOM (the French Hydrography Service). However at this stage these works do not address directly the impact on the cetacean populations
GERMANY
Changes in harbour porpoise population density related to pile driving noise The project is funded by Vattenfall; project coordinator: BioConsult SH GmbH & Co KG, Husum, Germany; project partners: Aarhus University, Aarhus, Denmark. Duration: 01.11.2012 – 30.09.2015. A number of offshore wind farms were constructed along European coastal waters during the last years. Mostly, turbines were built on steel foundations being rammed into the sea floor by hydraulic hammers, thus causing considerable underwater noise during construction. Several studies demonstrated displacement of harbour porpoises (*Phocoena phocoena*) around construction sites during and up to three days after ramming. During construction of the offshore wind farm DanTysk', located in the German North Sea 70 km west of Sylt and consisting of 80 turbines built on monopile foundations, harbour porpoise activities before, during, and after pile driving were assessed by 18 passive acoustic data loggers (two C-POD stations with three C-PODs each, and three transects placed at different distances and directions from the construction area and consisting of four C-PODs each). These devices recorded porpoise echolocation clicks, thus providing information on the presence of these animals on a high temporal resolution. Within the project, porpoise reactions to ramming are to be analysed with respect to different noise levels, as well as to different temporal and spatial distances from ramming. Results will contribute to and improve DEPONS individual-based models (Disturbance Effects on the harbour porpoise Population in the North Sea; [Rose, Diederichs, Tougaard, Nabe-Nielsen & Nehls; BioConsult SH] Further information can be found at: http://depons.au.dk/

Evaluation and improvement of a big bubble curtain for mitigating underwater noise associated with piledriving activities

The project is funded by the Federal Ministry for Economic Affairs and Energy (BMWi); project coordinator:

BioConsult SH GmbH & Co KG, Husum; project partners: Hydrotechnik Lübeck GmbH, Lübeck; Itap GmbH,

Oldenburg; ISD, University of Hannover, Hannover; CREEM, University of St. Andrews, St Andrews, UK.

Duration: 01.07.2013 - 31.03.2015.

In the last years a number of offshore wind farms was constructed using prototypes of single, double, or linear bubble curtains to mitigate noise emissions from offshore piling and construction and thus to protect marine mammals from injuries of the auditory system.

Within the framework of this project, the set-up of the noise mitigation systems was improved, assuring save handling at sea, maximum efficiency to attenuate noise, and cost effective layout procedures during the construction of the offshore wind farm Global Tech I. The wind farm, under construction 170 km north of Borkum Island, consists of 80 wind turbines and a transformer station. During foundation work for the turbines (tripod construction), 240 piles with a diameter of 2.5 m were driven into the sediment by a hydraulic hammer.

To analyze the effects of the offshore piling activities on marine mammals, and to evaluate the mitigation capabilities of various bubble curtain configurations, a grid of up to 15 monitoring stations was installed.

These stations consisted of C-PODs to monitor harbour porpoise (*Phocoena phocoena*) activity, and hydroPhones to measure sound exposure levels at various distances. Distances between stations and construction sites varied from a few hundred meters (stations in the construction area) to 20 km, hence allowing the investigation of long distance and long-term changes in harbour porpoise behavior.

The 'Big Bubble Curtain' has been proven to be suitable as a noise mitigation system for pile driving, and its effectiveness has been greatly improved during this project by optimizing airflow and air pressure, as well as layout and maintenance procedure. Harbour porpoise activity and reactions to piling are currently analyzed

[Liesenjohann, Diederichs, Rose, Bellmann, Grunau, Rustemeier & Nehls; BioConsult SH].

Further information can be found at: www.hydroschall.de

Noise reduction technics

In 2014 all construction work for offshore windfarms in the German EEZ including pile driving used special technical systems for the noise reduction according to the incidental provision Nr. 14 of the licences given by BSH. At one of the wind farms 77 monopiles of 6 m diameter have been installed in water depths 24-28 m. The noise mitigation system (NMS) developed by the I H C, Netherlands was successfully deployed in all 77 installations. The value of SEL5 measured at 750 m distances from the pile driving site was kept constantly below 163 dB re 1 µPa and for about 75 % the values for the SEL5 were at 160 dB re 1 µPa. The maximal hammer energy was kept below 800 kJ.

A combination of two systems was used for pile driving noise reduction by a second offshore wind farm: the NMS-system by the IHC and a big bubble curtain system have been successfully deployed for the installation of 80 monopiles (6 m diameter) at 20-22 m water depth. The SEL5 value was kept constantly below the threshold with the lowest value at 152 dB re 1µPa. The duration of the installation of the monopiles was three months and a half. The third wind farm also chose a combination of two noise mitigation systems. A so called hydro sound damper (HSD) is used in combination with a big bubble curtain system. The

results show that the low frequencies can be effectively mitigated by using the HSD-system. In the reporting time three substations and two converter-platforms were also installed using in most cases big bubble curtain systems for noise mitigation. The SEL5 values were constantly kept at the threshold level and below this.

In summer 2014 BSH granted the first licence for one wind energy plant for research purposes based on a suction bucket foundation. The installation of the suction bucket foundation in one of the wind farms was successfully completed by the end of the summer [Boethling, BSH].

In 2014 the monitoring of the construction phase in the German EEZ[3] included hydroacoustic measurements at 750 m, 1.500 m and in vicinity to conservation sites (SCI) 4 as well as passive acoustic monitoring of the harbour porpoise activity combined with the hydroacoustic measurements.

For the passive acoustic monitoring for harbour porpoises C-PODs and SM2M devices have been deployed. The parallel deployment of the two systems in the field has shown that the data are comparable and SM2M is a good alternative for the monitoring of harbour porpoise activity.

To give an insight at recent developments of noise mitigation systems, noise reduction achieved by single mitigation systems or by the combination of technical systems, the effect of other technical components like the type and properties of hammers used but also to get a feeling about cost-effectiveness issues a workshop (in German) was organized in October 2014 by BSH.

http://www.bsh.de/de/Meeresnutzung/Wirtschaft/Windparks/Workshops/index.jsp#Schallschutz_10_2014

The presentations give an overview on the ongoing research and development of noise mitigation systems in Germany [Boethling, BSH].

Project: “Impacts of underwater noise on marine vertebrates”

The “underwater noise” project (Cluster 7 “Impacts of underwater noise on marine vertebrates”), funded by the Federal Agency for Nature Conservation (BfN), was continued, coordinated by the ITAW and in close cooperation with other research institutions (University Aarhus, Denmark, DWShipConsult, University St. Andrews, UK). It 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 harbour porpoises is investigated. The auditory study on harbour porpoises to validate the temporary threshold shift (TTS) level for impulsive noise was carried out. So far eight audiograms (twelve frequencies between 16 up to 160 kHz in 1/3 octave steps) of free-ranging harbour porpoises were collected and five animals were exposed to an airgun impulse to validate the temporary threshold shift value. The auditory thresholds were determined at 4 and 8 kHz. Furthermore, blood-samples were taken to evaluate sound induced stress in exposed porpoises. Thereby, a baseline for stress hormones and mRNA expression levels of cytokines and acute phase proteins in blood samples of harbour porpoises in different stress levels was established (Müller et al. 2013; BMC Veterinary Research 9:145; http://www.biomedcentral.com/1746-6148/9/145). In addition, so far nine porpoises in the natural environment have been equipped with new developed 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 noisy underwater events.

Furthermore, in order to complement the information about noise in the ocean, acoustic noise mapping in Natura 2000 protected areas of the North and Baltic Seas using stationary noise recording systems is carried out. Data was collected at different locations in the Baltic and

North Seas [Siebert, Seibel, Ruser, Unger, Lehnert ITAW; Wittekind, Schuster DWShipConsult; Teilmann, Miller, Madsen, Univ. Aarhus, Denmark; Johnson, Univ. St. Andrews, UK].

Monitoring of wind farm construction impacts

In concurrence with the Cluster 7, ITAW and DW-Shipconsult carried out a project in "Sylt Outer Reef" to estimate the impact of three ongoing wind farm constructions bordering this Natura 2000 site.

All positions were equipped in 2013 with noise loggers, recording in the audible range of humans, and C-PODs, recording the echolocation 'click' of harbour porpoise. In 2014 the project continued by deploying 11-12 positions in "Sylt Outer Reef" around the construction sites "Amrumbank West" and "Butendiek". First part of the project ended in 2014 with a final report on the assessment in 2013. The project will continue until 2015 and is funded by the BfN [Dähne, Rasmussen, Siebert; ITAW; Wittekind, Schuster; DW-Shipconsult].

Monitoring

Following the instructions for the German Navy on the protection of marine mammals and maritime habitats, 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 taking into account for the planning of the use of sonar systems during trials.

As part of a joint project of measuring underwater noise in the German North Sea, the deployment of click detectors (C-PODs) was continued in the area of the research platform FINO 3 to record harbour porpoise activity. A frequent presence of harbour porpoises could be observed. During pile driving activities in the harbour of the Eckernfoerder Bight, Baltic Sea, sound pressure levels (SPL) were measured to assess the range of sound levels in the area [BMVg].

LITHUANIA

There are no studies of anthropogenic noise done or ongoing

NETHERLANDS

TNO participates in the 3S-project, together with main partners FFI (Norway), SMRU (UK) and WHOI (USA) and several associate partners. Additional baseline data was gathered in 2014. In 2014 multiple publications appeared that address different aspects of the response of animals to sonar sound and compare this to other types of responses (e.g. killer whale playbacks).

In August 2014, TNO participated in a multidisciplinary study around the Island Jan Mayen, hosted by the Royal Netherlands Navy with the ocean patrol vessel HNLMS Zeeland. Some systematic whale sighting surveys were performed for a number of days. Many species were sighted, but in particular an unexpected large number of minke whales and killer whales was found. Near the coast harbour porpoises were observed. Northern bottlenose whales were not found to be present in this season.

ESOMM conference 2014. Frans-Peter Lam organized the international meeting Effects of Sound in the Ocean on Marine Mammals (ESOMM), held in September 2014 Amsterdam. Marije Siemensma (Marine Science and Communication) was co-organizer.

An impact assessment of effects of clearance of historical unexploded ordnance on the harbour porpoise in the Southern North Sea was carried out for the Netherlands Ministry of Defence. The work was carried out by a collaboration between TNO, IMARES and SEAMARCO. The ZKO project "Effects of underwater noise on fish and marine mammals in

the North Sea".[http://www.nwo.nl/projecten.nsf/pages/2300168538] is done in collaboration of TNO, IMARES and SEAMARCO.

The objective of one of the PhDs involved is to develop the knowledge required for calculating sound maps of biological relevance for the Dutch North Sea.

Michael Ainslie represents NL on the EC expert Technical Group Underwater Noise "TG Noise". This Working Group was set up by the EC to advise Member States on interpretation of Descriptor 11 and its two indicators (11.1.1 and 11.2.1).

In 2014 TNO has been involved in a large number of national and international meetings concerned with among others: acoustical terminology, noise from ships and pile driving, deep ocean ambient noise, noise reduction. This is done in the framework of an international network of experts.

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Dekeling R.P.A., Tasker M.L., Van der Graaf A.J., Ainslie M.A, Andersson M.H., André M., Borsani J.F., Brensing K., Castellote M., Cronin D., Dalen J., Folegot T., Leaper R., Pajala J., Redman P., Robinson S.P., Sigray P., Sutton G., Thomsen F., Werner S., Wittekind D. & Young J.V. (2014) Monitoring Guidance for Underwater Noise in European Seas, Part III: Background Information and Annexes, JRC Scientific and Policy Report UR 26557 EN, Publications Office of the European Union, Luxembourg, 2014, doi: 10.2788/29293

POLAND

The Institute of Oceanography (including the Marine Station), University of Gdansk, implements the Polish part of the project entitled BIAS: "Baltic Sea Information on Acoustic Soundscape". Its main objective is the implementation of descriptor 11 for GES from Annex to the Marine Strategy Framework Directive at the regional level of the Baltic Sea. The project is planned for September 2012 – August 2016. The sea bottom has been equipped with five sets of measurement devices whose purpose is to record the underwater noise produced by vessels in the Polish part of the Baltic Sea and to assess the impact of acoustic pressure on living organisms, mainly fish (the project is also implemented by the Development Foundation at the University of Gdansk).

In 2015, pilot monitoring of underwater noise will be carried out under the State Environmental Monitoring focusing on continuous underwater sounds and impulse underwater sounds. At the request of the General Inspectorate for Environmental Protection, the monitoring of underwater noise is carried out by the Institute of Meteorology and Water Management, Maritime Branch in Gdynia, and is financed by the National Fund for Environmental Protection and Water Management.

A non-mandatory (not required by the Community law) draft Ordinance of the Minister of the Environment on the scope and method of carrying out seawater monitoring, which includes the problems of noise and litter in marine environment, is under way.

SWEDEN

In the field of the European Marine Strategy Framework Directive, SwAM has participated in the EU Working for Good Environmental Status (GES WG), to develop the indicators for descriptor 11 (energy and noise).

FOI has published the report "Ambient Underwater Noise Levels at Norra Midsjöbanken during Construction of the Nord Stream Pipeline" which was funded by the Swedish Environment Protection Agency, SEPA, together with Nord Stream AG. It presents results from measurements of noise during the construction of the North Stream pipeline, which passes about 4 km off Norra Midsjöbanken which is a Nature 2000 area.

Measures included trenching activities as well as the ambient noise including shipping noise.

FOI has published the report "Skydd av marint liv vid användning av aktiv sonar" (Protection of marine life in connection with the use of active sonar; FOI-R--3716--SE, ISSN 1650-1942). It deals with generating knowhow on the effect of such noise and how to minimize these effects.

FOI has published the report "Akustiska miljöeffekter av svenska marinens aktiva sonarsystem" (Acoustic environmental effects of the Swedish Navy's active sonar systems; FOI-R--3504--SE, ISSN 1650-1942). It presents a summary of existing systems, the frequencies used and their relation to the audiogram of marine mammals residing Swedish waters. It also gives risk distances for behavioural effects as well as temporaryand permanent hearing threshold shifts.

FOI has published the report "Säker användning av militära sonarsystem - nationella handlingsregler och svensk lag" (Safe use of military sonar systems - national handling rules and Swedish law; FOI-R--3656--SE, ISSN 1650-1942). It presents guidelines on how to plan and implement military exercises where active sonar is included.

The 4th Naval warfare flotilla, part of the Swedish Armed Forces, has produced the "Maringeografisk biologikalender" (the Marine geographic biology calender), a planning tool for the Swedish Navy, with the aim at minimizing the negative effects of military activities on the marine ecosystems. It is presented as an ArcGIS-based map, on which layers with the distribution in time and space of different factors, e.g. protected areas, biological databases for fish, birds, seals, etc., can be shown. It is still under development, and e.g. the SAMBAH harbour porpoise distribution maps will be included when available.

UNITED KINGDOM

Most marine construction or development activities generating noise (e.g. piling) require the developer to apply for consent and carry out the necessary assessments e.g. Environmental Impact Assessments (EIA), Appropriate Assessments (AA) under the Habitats Directive. The Marine Management Organisation (MMO) is responsible for marine licensing in Welsh offshore waters and English waters. DECC also has a regulatory responsibility for UK waters in relation to the oil and gas sector and associated projects. In Scottish offshore and inshore waters Marine Scotland are the licensing body, in Welsh inshore waters it is Natural Resources Wales, and in Northern Ireland inshore waters it is the Department of Environment Northern Ireland (DOENI).See: https://www.gov.uk/how-marine-licensing-works

Noise mitigation measures may be required where there is a risk that the activity may disturb or harm cetaceans, including the need for Marine Mammal Observers, soft start, and delay of piling activity when cetaceans are present. Relevant guidance can be found on the UK government website (https://www.gov.uk/oil-and-gas-offshore-environmental-legislation). The MMO also has a voluntary notification system for non-Oil and –Gas geophysical surveys occurring in English waters, so that we have a record of these activities taking place and can make mitigation measures as appropriate. See: http://www.marinemanagement.org.uk/protecting/wildlife/geophysical.htm. A JNCC contract will be published in spring 2015 on the potential effects of seismic surveys on cetaceans. The report will analyse data from Marine Mammal Observer reports, submitted as part of the consenting regime for any seismic surveys within the United Kingdom Continental Shelf (UKCS), analysing data from 1994- 2010. The work will build on earlier analysis of Marine Mammal Observer reports (e.g. Stone and Tasker, 2006), but will allow for longer term analysis of potential effects of seismic activities on cetaceans, as well as general trends in the implementation of the JNCC seismic guidelines throughout this time period. See: http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Seismic%20Guidelines_August%202010.pdf

The UK is also required to meet obligations on impulsive sounds and ambient noise under the Marine Strategy Framework Directive (MSFD). The UK has been developing a noise registry which will collate and store records of activities that may generate impulsive sounds in the UK marine environment. This will aid regulators and industry in providing a clear picture

of the distribution in space and time of impulsive noise generating activities and help the UK to assess whether it is delivering Good Environmental Status (GES). Part two of the UK Marine Strategy outlining UK monitoring programmes was published in July 2014. The final part of the UK Marine Strategy, programmes of measures necessary to achieve GES, underwent public consultation which ended in April 2015 (https://consult.defra.gov.uk/marine/msfd-programme-of-measures). As a framework directive MSFD brings together activities to allow us to establish an overarching understanding of the status of our seas and the impact of any measures taken. In the UK, the programme of measures to achieve GES of cetaceans in UK waters includes:

• EC Habitats Directive 92/43/EEC and the Conservation of Habitats and Species Regulations

• International Whaling Commission (IWC): The Whaling Industry Regulation Act 1934, as amended by the Fisheries Act 1981.

• ASCOBANS (Agreement of the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas) (Daughter Agreement Under the Convention on Migratory Species)

• Convention on the International Trade of Endangered Species (CITES)

• Bycatch Measures: Implementation of EC Regulation 812/2004: South West Territorial Waters (prohibition of pair trawling) order 2004: Domestic legislation banning the seasonal use of pair trawls in English waters within the South West English Channel to prevent the bycatch of dolphin

• Guidance and codes of conduct: Guidance is also in place in the UK for marine users who are planning to carry out activities in the marine environment which have the potential to kill, injure or disturb a marine European Protected Species (i.e. any cetacean species). The JNCC, Natural England, Scottish Natural Heritage, and the Countryside Council for Wales have good practice guidelines and protocols in place for specific activities to minimize the risk of injury and reduce disturbance to cetaceans. The UK also continues to actively engage more widely on noise issues within Europe. The UK is currently Vice Chair of OSPAR (Oslo and Paris Conventions for the protection of the marine environment of the North-East Atlantic) and within this Convention is the Chair of the Biodiversity Committee (BDC) which considers cetaceans more generally. The UK also plays an active role in the ICG-MSFD which helps improve regional MSFD coordination and in the EIHA (Environmental Impacts of Human Activities) Committee which considers the impacts of marine noise. Additionally, The UK Underwater Sound Forum continues to provide an opportunity for industry, non-government organisations and other interested stakeholders to engage directly with Defra and Ministry of Defence (MoD) to discuss emerging issues and exchange information on the impacts of noise in the marine environment. Furthermore, marine plans are being developed across the UK (all areas should be covered by 2021) which are expected to provide guidance on managing noisy activities.

Other relevant work includes:

Dekeling, R. P. A., Tasker, M. L., Ainslie, M. A., Anderson, M., André, M., Castellote, M., Young, J. V. (2013). Monitoring Guidance for setting up underwater noise monitoring in European Seas - 2nd Report of the Technical Subgroup on Underwater Noise and other forms of energy (TSG Noise) (pp. 1–112).

Dekeling, R. P. A., Tasker, M. L., Ainslie, M. A., Anderson, M., André, M., Castellote, M., Young, J. V. (2013). Monitoring Guidance for setting up underwater noise monitoring in European Seas - 2nd Report of the Technical Subgroup on Underwater Noise and other forms of energy (TSG Noise) (pp. 1–112).

Merchant, N. D., Fristrup, K. M., Johnson, M. P., Tyack, P. L., Witt, M. J., Blondel, P., & Parks, S. E. (2014). Measuring acoustic habitats. Methods in Ecology and Evolution. doi:10.1111/2041-210X.

Merchant, N. D., Pirotta, E., Barton, T. R., & Thompson, P. M. (2014). Monitoring ship noise to assess the impact of coastal developments on marine mammals. Marine Pollution Bulletin, 78, 85–95. doi:10.1016/j.marpolbul.2013.10.058.

National Oceanographic and Atmospheric Administration. (2013). Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammals Acoustic Threshold Levels for Onset of Permanent and Temporary Threshold Shifts (pp. 1–83).

Robinson, S. P., Lepper, P. A., Hazelwood, R. A., & National Physics Laboratory. (2014). Good Practice Guide No. 133 Underwater Noise Measurement (pp. 1–97).

Simmonds, M.P., Dolman, S. J., Jasny, M., Parsons, E.C.M., Weilgart, L., Wright, A. J., Leaper, R. (2014). Marine noise pollution – increasing recognition but need for more practical action. Journal of Ocean Technology 04/2014; 9(1):71-90.

Thompson, D., Hall, A. J., Lonergan, M., B, M., & Northridge, S. (2013). Current state of knowledge of effects of offshore renewable energy generation devices on marine mammals and research requirements (pp. 1–110). St Andrews, Fife.

Tougaard, J., Wright, A. J., & Madsen, P. T. (2014). Cetacean noise criteria revisited in the light of proposed exposure limits for harbour porpoises. Marine Pollution Bulletin. doi:10.1016/j.marpolbul.2014.10.051.

Wilson, B., Benjamins, S., & Elliott, J. (2013). Using drifting passive echolocation loggers to study harbour porpoises in tidal-stream habitats. Endangered Species Research, 22(2), 125–143. doi:10.3354/esr00538.

Wright, A. J. (2014). Reducing Impacts of Noise from Human Activities on Cetaceans: Knowledge Gap Analysis and Recommendations

2.2 Ship Strike Incidents

Date	Species	Type of injury	Fatal injury (Yes / No)	Type of vessel (length, tonnage and speed)	Location (coordinates)	More information: (Name / Email)
BELGIUM						
None						
DENMARK						
None						
FINLAND						
None						
FRANCE						
None						
GERMANY						
None						
LITHUANIA						
None						
NETHERLANDS						
None					www.walvisstrandingen.nl	
POLAND						
No incidents						
SWEDEN						
None						
UNITED KINGDOM						
15/06/14	Short-beaked Common dolphin	Partially excised caudal peduncle (adjacent to insertion of tail flukes)	Yes	Unknown (diagnosed from necropsy of stranded animal)	Padstow, Cornwall, England	Rob Deaville (rob.deaville@ioz.ac.uk)
17/12/14	Sperm whale	Region of missing tissue from the right dorsal area	Yes	Unknown (diagnosed from necropsy of stranded animal)	Tain, Highland, Scotland	Rob Deaville (rob.deaville@ioz.ac.uk)
IWC Ship Strikes Working Group: Seventh progress report to the Conservation Committee - On pages 7-8 of this report, details of the work undertaken by the UK in relation to ship strikes is detailed						

2.3 Major Incidents Affecting Significant Numbers* of Cetaceans

	Date	Location	Type of incident	Further information
BELGIUM				
None				
DENMARK				
None				
FINLAND				
None				
FRANCE				
	January to March 2014	Atlantic Coast	Unusual Mortality Events period	80 common dolphins recorded in 3 months
	March and April 2014	English Channel Coast	Unusual Mortality Events period	75 harbour porpoises recorded in 2 months
GERMANY				
None				
LITHUANIA				
None				
NETHERLANDS				
None				
POLAND				
None				
SWEDEN				
None				
UNITED KINGDOM				
	16/02/14	St. Cyrus, Aberdeenshire, Scotland	Mass stranding	Two juvenile harbour porpoises found dead stranded in close proximity.
	10/03/14	Near Muness, Unst, Shetland, Scotland	Mass stranding	Two sperm whales (moderate-advanced decomposition) found dead stranded in close proximity.
	27/03/14	Bay of Holland, Stronsay, Scotland	Mass stranding	Three white-beaked dolphins (moderate-advanced decomposition) found dead stranded in close proximity

	Date	Location	Type of incident	Further information
	30/03/14	Aberdeen, Aberdeenshire	Mass stranding	Two harbour porpoises found dead stranded in close proximity
	24/07/14	Laggan Sands, Loch Buie, Mull, Scotland	Mass stranding	Fourteen short-beaked common dolphins mass (live) stranded. Twelve refloated by members of public in the vicinity.
	20/08/14	Sandscale Haws, Cumbria, England	Mass stranding	Two harbour porpoises found dead stranded in close proximity.
	29/08/14	Ornsay, Skye, Highland, Scotland	Mass stranding	Two northern bottlenose whales found dead stranded in close proximity.
	26/09/14	Balnakeil beach, Durness, Highland, Scotland	Mass stranding	Two white-beaked dolphins found live stranded in close proximity. Both refloated but one subsequently found dead stranded nearby.
	30/09/14	Balnakeil beach, Durness, Highland, Scotland	Mass stranding	Two Sowerby's beaked whales found dead stranded in close proximity.
	December 2014-January 2015**	Scotland and Northern Ireland (also contemporaneous strandings in Ireland)	Unusual mortality event	Over a 45 day period between 11 December 2014 and 30 January 2015, a total of 15 Cuvier's beaked whales stranded along the western seaboard of Ireland (n = 9) and Scotland (n = 6). It was not possible to determine the cause of death for any of the Cuvier's beaked whale carcasses that stranded in Ireland or Scotland from December 2014 to January 2015. This was due to a lack of a post-mortem scheme in Ireland and Northern Ireland, and the advanced state of decomposition of those carcases that stranded in Scotland. It is well documented that Cuvier's beaked whales are one of the most sensitive species to acoustic disturbance. However, a lack of data on sources of anthropogenic sounds over this time period prevents an independent and conclusive assessment. (Taken from the Joint Statement on an unusual mortality event of Cuvier's beaked whales in Ireland and Scotland from Hebridean Whale and Dolphin Trust, Irish Whale and Dolphin Group, Whale and Dolphin

	Date	Location	Type of incident	Further information
				Conservation and Humane Society International). Investigation of this potentially unusual mortality event is ongoing by the CSIP, IWDG and others.
	** Investigation of this event is on-going. Further details on this and other events in this table will be made available in the CSIP 2014 annual report, which will be published at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17835&FromSearch=Y&Publisher=1&SearchText=strandings&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description.			
*Two or more animals				

2.4 Pollution and Hazardous Substances

BELGIUM
No specific effects on small cetaceans washed ashore at the Belgian coast were investigated, although from selected stranded animals tissue samples were taken for further investigation of pollutant loads. Relevant publications, posters, abstracts Jauniaux, T., Haelters, J., Degraer, S. & Coignoul, F., 2014. Fatal plastic impaction in a minke whale (*Balaenoptera acutorostrata*). Abstract book of the 28th Annual Conference of the European Cetacean Society: Marine mammals as sentinels of a changing environment, Liège, Belgium, 5-9 April 2014: 168. Mahfouz, C., Henry, F., Courcot, L., Pezeril, S., Bouveroux, T., Dabin, W, Jauniaux, T., Khalaf, G., Amara, R., 2014. Harbour porpoises (*Phocoena phocoena*) stranded along the southern North Sea: an assessment through metallic contamination. Environmental Research 133: 266-273. Doi 10.1016/j.envres.2014.06.006. Mahfouz, C., Henry, F., Jauniaux, T., Khalaf, G., Amara, R., 2014. Organochlorines in harbour porpoises (*Phocoena phocoena*) stranded along the southern North Sea between 2010 – 2013. Environmental Science: Processes Impacts 16: 2774. Weijs, L., Jauniaux, T., Blust, R., Covaci, A., 2014. Baseline levels of Pops and Meo-PBDEs in melons, mandibular fat, blubber and liver of Harbour porpoises from the North Sea. 28th annual conference of the European Cetacean Society, Liege, Belgium.
DENMARK
Letcher RJ, S Chu a, MA. McKinney, GT. Tomy, C Sonne, R Dietz. Comparative hepatic in vitro depletion and metabolite formation of major perfluorooctane sulfonate precursors in arctic polar bear, beluga whale, and ringed seal. Chemosphere 112 (2014) 225–231.
FINLAND
None
FRANCE
Chemical pollution was evaluated in five species of small cetaceans that frequent the NW Iberian Peninsula waters: the common dolphin, the harbour porpoise, the bottlenose dolphin,

the striped dolphins and the longfinned pilot whale. To this aim, 14 trace elements (Ag, As, Cd, Co, Cu, Cr, Fe, Hg, Mn, Ni, Pb, Se, V, Zn), 32 congeners of polychlorinated biphenyl ethers (PCBs) and 9 congeners of polybrominated diphenyl ethers (PBDEs) were analysed in samples of the main storage tissues for these pollutants (i.e. liver, kidney and blubber) collected from stranded and/or by-caught animals along the NW Iberian Peninsula coast between 2004 and 2008. Fieldwork was conducted by members of the Spanish (Coordinadora para o estudo dos mamiferos marinos, CEMMA) and Portuguese (Sociedade Portuguesa de Vida Salvagem, SPVS) stranding networks and was part of the PhD project of P. Mendez Fernandez. This project was a collaboration between the university of La Rochelle, the University of Minho, in Braga Portugal, the marine laboratory of Scotland and the Spanish Oceanographic Institute (IEO) from Vigo, Spain. Differences related to biological factors such as age and sex and /or to ecological factors such as feeding habits or bioavailability of the various elements were observed in the bioaccumulation of the trace elements between the five species. Pilot whale and striped dolphin showed the highest concentrations of renal Cd (30 ± 26.9 and 10.3 ± 11.0 µg.g-1 wet weight respectively) and the highest concentrations of hepatic Hg (31.0 ± 59.5 and 22.9 ± 39.1 µg.g-1 wet weight respectively) and Se (16.9 ± 30.1 and 12.3 ± 17.2 µg.g-1 wet weight respectively). Comparing with other studies world-wide, the element concentrations (mercury and cadmium) found in Iberian toothed whales indicate that these populations are not specially threatened by Hg and Cd exposure in the area Méndez- Fernandez et al, 2014a). Concerning organic pollutants, of the five species studied, bottlenose dolphin and harbour porpoise showed the greatest concentrations of PCBs. Both species exceed the toxic threshold of 17 µg.g-1 lipid weight (PCB Aroclor equivalent) for health effects on marine mammals, for 100% and 75% of the individuals analysed, respectively. Overall, the PCB and PBDE levels observed in the North West Iberian Peninsula toothed whales were of the same order of magnitude or lower than those reported by previous studies in the NE Atlantic but higher than studies carried out in the southern Atlantic and Pacific Ocean (Méndez-Fernandez et al, 2014b).

GERMANY

Marine Debris

Aerial survey data (2010-2012) were analyzed in the course of a project funded by the German Federal Environment Agency (Umweltbundesamt) to gain information on the distribution of floating marine debris as major part of marine pollution. The impacts of marine macro debris, such as outer and inner injuries, on harbour porpoises will be analyzed next year by evaluating necropsy protocols drafted since 1990.

Furthermore, faeces samples of harbour porpoises collected during necropsies will be analyzed to provide information on the occurrence of microplastic particles in a top-predator species. [Unger, Siebert ITAW].

A review of harmful substances on marine mammals entitled “Development of concepts and methods for compilation and assessment of selected anthropogenic pressure in the context of the Marine Strategy Framework Directive” was conducted on behalf of, and funded by, the German Federal Environment Agency.[Wehrmeister, Siebert; ITAW]

LITHUANIA

No new measurements were taken.

NETHERLANDS

Contaminant concentrations (PCBs, organotin, PFOS) are analysed in beached *P. phocoena* (neonates and juveniles) (2007-ongoing). A pilot study shows that chemical profiles of harbour porpoises that beached in the Netherlands may differ from those stranding along the Danish coastline (Van den Heuvel-Greve et al., 2014).

Reference:

Van den Heuvel-Greve M.J., Kwadijk C. & Kotterman M. (2014) Contaminants in beached harbour porpoises in the Netherlands; blubber quality, neonates and chemical profiles (in Dutch). IMARES report C113/14.

POLAND

On 13 February, the CHEMSEA project was concluded. It was dedicated to the identification and reduction of threats related to dumped chemical weapons in the Baltic Sea. The project was co-financed by the European Union.

SWEDEN

The Swedish Museum of Natural History (SMNH) is carrying out a 3-year study on several contaminants in harbour porpoises from Swedish waters. The study was finished in 2012 and a report of the results should have been delivered to SwAM, but the report has been delayed.

The report was not delivered during 2014.

UNITED KINGDOM

During 2014 the results of an analysis of organophosphate flame retardant and plasticisers in blubber and liver tissues from 20 harbour porpoises stranded in the UK in 2012 was completed. This was the result of an on-going collaboration between Cefas, the UK Cetacean Strandings Investigation Programme (CSIP), and a number of other European partner organisations. Fourteen of the twenty compounds analysed were below the limits of quantification in all samples. Six could be quantified at maximum concentrations (in blubber) between 6.7 and 246 µg kg-1 wet weight, which is up to 50 times lower than historical peaks obtained for PBDEs and HBCD. Although these replacement flame retardants for PBDEs are being found in high levels in abiotic compartments in the environment, such as sediment, air and water, they are readily metabolised and these levels do not suggest a high level of concern regarding potential impacts to marine mammals and do not indicate that routine monitoring in UK porpoises is warranted at this time. A publication has been prepared and submitted to Marine Pollution Bulletin outlining this work. See: Alexandra Papachlimitzou; Jonathan L Barber; Sara Losada; Philippe Bersuder; Rob Deaville; Andrew Brownlow; Rod Penrose; Paul D Jepson; Robin J Law: Organophosphorus flame retardants (PFRs) and plasticisers in harbour porpoises (*Phocoena phocoena*) stranded or bycaught in the UK during 2012.

The study of temporal trends of PCBs in UK harbour porpoises was extended to include animals stranded up to the end of 2012 (now 1990-2012). PCB concentrations have shown no significant decline since 1997 following earlier reductions due to regulation of commercial use. Further reductions in PCB levels in UK waters are likely to take decades. Blubber PCB concentrations are still at toxicologically significant levels in many stranded harbour porpoises (Jepson et al 2005). This work was combined with the data collected in 2013 for bottlenose dolphins and killer whales (under ASCOBANS project reference SSFA2010-3, see below), and an unpublished data set of PCB results in striped dolphins from the Mediterranean, to produce a paper with PCB results from >1000 animals (still to be published). The results show that that several European cetacean species have very high mean blubber PCB concentrations likely to cause population declines and suppress population recovery. Further reductions in PCB inputs into the marine environment are undoubtedly needed to mitigate risk from PCB exposure in these species. In addition, PCB analysis was conducted on one historically stranded harbour porpoise from 1999 and 22 common dolphins stranded between 1998 and 2013 to expand a dataset used in an investigation of the relationship between contaminant burden and reproductive tract disorders being conducted by Sinead Murphy of the Institute of Zoology. Blubber

concentrations for most animals were above the threshold for onset of physiological effects in experimental marine mammal studies (Kannan et al, 2000). Finally, PCB levels were determined in a pilot whale from the 2012 mass stranding event, which was found to have blubber concentrations below the threshold for physiological effects. The final report under a small ASCOBANS project in 2010 (reference SSFA2010-3) was also submitted to the ASCOBANS Secretariat in 2014 (Jepson and Deaville 2014). In addition, during 2014, a publication was produced on levels of persistent organic pollutants in long-term mortality patterns of Caspian seals (Wilson et al. 2014).

• Jepson, P.D. and Deaville, R. (2014) Draft report on Project SSFA2010-3 “Pollutant exposure in coastal top predators: assessing current levels of exposure and toxic effects” (submitted to the ASCOBANS Secretariat)

• Wilson, S.C., Eybatov, T.M., Amano, M., Jepson, P.D. and Goodman, S.J. (2014) The roles of disease epidemiology and persistent organic pollutants in long-term mortality patterns in Caspian seals, Pusa caspica. PLOS ONE doi: 10.1371/journal.pone.0099265

2.5 Other Forms of Disturbance

BELGIUM
No new information
DENMARK
None
FINLAND
None
FRANCE
None
GERMANY
Ship strikes Marks that could be attributed to ship impacts were identified when conducting necropsies in order to contribute to the assessment of the potential impact of ship strikes on harbour porpoises in the North and Baltic Seas funded by the Ministry of Renewable Energies, Agriculture, Environment and Rural Areas of Schleswig-Holstein (MELUR) [Siebert, ITAW]. Ship noise Wild harbour porpoises were tagged with archival multi-sensor DTAG3 tags in order to assess the potential impact of shipping noise on the behaviour and energetics of free-ranging porpoises (for more details see Danish report). This work is part of the Cluster 7 and is funded by the BfN [Teilmann, Madsen Univ. Aarhus,Denmark]
LITHUANIA
None
NETHERLANDS
None

POLAND
WWF Poland is working on a continuation of the project entitled "Collecting ghost nets in the Baltic Sea" that comprises both active measures consisting in the removal of ghost nets from the Baltic Sea, and the development of tools that will reduce the amount of lost fishing gear and better means to identify the owners. Following fruitful cooperation with Lithuania, the project is to be continued with Estonia "Keep Estonian Sea Tidy", Swedish municipality Simirsham and WWF Germany. The project application will be submitted in response to the call for proposals to the Baltic Sea Region Programme (INTERREG). Moreover, the removal of ghost nets in the Baltic Sea is included in the Operational Programme "Fisheries and Sea 2014-2020". Polish fishermen from Kołobrzeg trained German fishermen from the region of Stralsund on the removal of abandoned fishing gear. Campaigns carried out in Germany in 2014 made it possible to remove 2 tons of ghost nets.
SWEDEN
None
UNITED KINGDOM
In the UK, wildlife licences are issued to control and monitor certain activities which may cause disturbance to cetaceans. In English and Welsh waters, the Marine Management Organisation (MMO) is the wildlife licensing authority and enforcement body for marine wildlife legislation, including disturbance offences. In Scottish waters, Marine Scotland has this responsibility. As wildlife licensing authorities, the MMO and Marine Scotland assess wildlife licence applications to ensure that any activity is permissible under UK law, that it will not impact on the Favourable Conservation Status of a protected species, and that there are no other suitable alternatives. Any wildlife licences issued to permit the disturbance of cetaceans will include conditions which minimise any disturbance to the greatest extent possible, and require 'end of licence reports' to be submitted on activities undertaken. Where enforcement action is necessary under marine wildlife legislation, this will be taken by police, the MMO, or Marine Scotland as appropriate. The MMO is also a proactive member of the Cornwall Marine Wildlife Group, which has established a register so disturbance incidents in the South West of England can be reported, recorded, and forwarded to the relevant enforcement authorities as necessary. A coastal code of conduct to reduce disturbance of marine species has also been created (see: http://www.cornwallwildlifetrust.org.uk/livingseas/cornwall_marine_and_coastal_code). The MMO also chairs the Partnership for Action Against Wildlife Crime (PAW) Marine Wildlife Working Group, which seeks to coordinate enforcement activities to tackle wildlife crime, including disturbance offences, under the relevant wildlife legislation. This group includes enforcement authorities and NGOs. See: http://www.marinemanagement.org.uk/protecting/wildlife/paw.htm. There is growing evidence that bottlenose dolphins may be affected by recreational activities within Cardigan Bay, West Wales, including within Cardigan Bay SAC. Abundance (from line transect surveys) within the SAC has declined since 2006 but it remains difficult to attribute a decline to any one cause; an inverse relationship between vessel numbers and dolphin encounter rates has been suggested; and in areas with high vessel traffic, social structure appears to be disrupted and whistle characteristics altered (Pierpoint et al., 2009; Veneruso & Evans, 2012a; Richardson, 2012; Thompson, 2012; Feingold & Evans, 2013). In Cardigan Bay, West Wales, mark-recapture abundance estimates of the bottlenose dolphin population in the last two years (2013 & 2014) reached lowest values since 2002 (Norrman et al., 2015). The latest estimate coincided with high emigration rates and a high probability of animals staying outside the Cardigan Bay SAC (Norrman et al., 2015). A study

around New Quay indicated that behavioural responses to vessels have significantly increased over the past five years, including both vertical and horizontal evasion (Hudson, 2014). Comparisons of residency between individuals in the local population revealed that residents display a degree of habituation to specific vessels, resulting in fewer response behaviours. However, surfacing intervals in the population as a whole decreased in the presence of vessels, with a greater effect on mother and calf pairs (Hudson, 2014). Diurnal and seasonal comparisons found that as vessel activity increased, dolphin sightings decreased, indicating that dolphins were engaging in short-term site avoidance (Hudson, 2014). Further research is required to substantiate these behavioural findings.

In November 2014, Marine Scotland reported on a study it had commissioned to investigate 'Estimates of Collision Risk of Harbour Porpoises and Marine Renewable Energy Devices at Sites of High Tidal-Stream Energy' (see http://www.gov.scot/Publications/2014/11/6894).The study had been commissioned to determine the possibility of marine vertebrates colliding with submerged tidal turbines used to extract energy from fast flowing tidal currents. The aim of the study was to assess how often porpoises occurred in two areas of immediate interest for tidal-stream development on the west coast of Scotland: the tidal narrows of the Sound of Islay (between the islands of Islay and Jura) and the Kyle Rhea (between Skye and the mainland).

• Ben Wilson, Steven Benjamins, Jim Elliott, Jonathan Gordon, Jamie Macaulay, Susannah Calderan, Nienke van Geel (2014) Estimates of Collision Risk of Harbour Porpoises and Marine Renewable Energy Devices at Sites of High Tidal-Stream Energy. http://www.gov.scot/Publications/2014/11/6894

• Feingold, D. and Evans, P.G.H. (2014) Bottlenose Dolphin and Harbour Porpoise Monitoring in Cardigan Bay and Pen Llyn a'r Sarnau Special Areas of Conservation 2011-2013. Natural Resources Wales Evidence Report Series No. 4. 124pp

• Pierpoint, C., Allan, L., Arnold, H., Evans, P., Perry, S., Wilberforce, L., and Baxter, J. (2009) Monitoring important coastal sites for bottlenose dolphin in Cardigan Bay, UK. Journal of the Marine Biological Association of the UK, 89: 1033-1043.

• Richardson, H. (2012) The effect of boat disturbance on the bottlenose dolphin (Tursiops truncatus) of Cardigan Bay in Wales. MSc thesis, University College London. 71pp.

• Thompson, K. (2012) Variations in Whistle Characteristics of Bottlenose Dolphins (Tursiops truncatus) in Cardigan Bay, Wales. MSc thesis, University of Bangor. 62pp.

• Veneruso G. and Evans P.G.H. (2012) Bottlenose dolphin and harbour porpoise monitoring in Cardigan Bay and Pen Llŷn a'r Sarnau Special Areas of Conservation. CCW Monitoring Report No. 95: 1-65.

Unexploded ordnance:

The UK has nothing to report on this issue for 2014. The UK's Ministry of Defence (MOD) follows the JNCC guidelines for minimising the risk of disturbance and injury to marine mammals whilst using explosives (2010) (see: http://jncc.defra.gov.uk/page-4900). However, the approach taken may differ from these guidelines should the safety of the disposal teams or the public otherwise be compromised.

3 MARINE PROTECTED AREAS FOR SMALL CETACEANS

3.1 Relevant Information

BELGIUM
A marine spatial plan for the Belgian part of the North Sea has been adopted on 20 March 2014. This plan has designated several marine protected areas. One of them, namely the "Vlaamse Banken", is dedicated to the protection of some valuable habitats and fifteen species, including the harbour porpoise. This designation, in the context of the European Natura 2000-legislation, will be followed by the adoption of conservation goals and a management plan to attain these goals.
DENMARK
In June 2011, Denmark began a monitoring program of the designated SACs (special areas of conservations, Natura2000) for harbour porpoises. Passive acoustic data loggers, 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. The Natura 2000 project aims to ensure endangered and valuable species. In this project 16 areas has been selected to protect the Harbour Porpoise. http://naturerhverv.dk/fiskeri/natura-2000-i-hav/marsvin/ http://www.naturstyrelsen.dk/Udgivelser/Aarstal/2013/Vandmiljoe_og_Natur_2012_NOVANA.html
FINLAND
None
FRANCE
Between October 2008 and February 2010, 95 marine Natura 2000 sites have been designated by France. Among all existing Natura 2000 sites in the ASCOBANS area, Bottlenose dolphin is listed in 39 and Harbour porpoise in 37, both on the Channel and Atlantic coast. The Management Plan of the Marine Protected Area in Iroise Sea (West Brittany) is applicable to the Natura 2000 sites of the Molene archipelago and Ouessant Creation on a new MPA ≪ Estuaires picards / mer d'Opale (English Channel-North Sea)≫ in December 2012. Creation of the MPA « Bassin d'Arcachon » in June 2014 Creation of the MPA « Parc naturel marin de l'estuaire de la Gironde et de la mer des Pertuis » in April 2015
GERMANY
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. Management Plan for harbour porpoises The process of developing national management plans for the 8 designated German Special Areas of Conservation / SACs (pursuant to the Habitats-Directive), protection measures for harbour porpoises the negotiations is not yet entirely finalized. The management of fisheries for the protection of harbour porpoises in SAC's can be developed only following the procedures of Article 11 und 18 of the EU-Regulation 1380/2013 on the Common Fisheries Policy. National proposals for such measures have to be presented to the Commission and the other Member States having an interest consisting of

either fishing opportunities or a fishery taking place in the area. If the initiating Member State and the other Member States agree on the measures they will be submitted as a “joint recommendation” to the Commission. The Commission shall adopt the measures, taking into account any available scientific advice, within three months from receipt of a complete request.

In addition, for harbour porpoises, as an Annex IV species of the habitats directive, conservation plans are being developed for the whole German North and Baltic Sea.

In 2014 German NGOs DNR, Greenpeace, WWF, NABU, DUH, BUND and WDC prepared an appeal to the court against the Federal Agency for Nature Conservation (BfN) - representing the German government – for not implementing necessary conservation measure in the Natura 2000 marine protected areas in the German EEZ. One focus area is the HD MPA “Oderbank-Pommersche Bucht” where harbour porpoises are regularly bycaught in gillnets. This appeal was placed 27th February 2015 [Ritter, WDC].

LITHUANIA

There are no protected areas for cetaceans established in Lithuania. No measures were taken to identify such areas because of lack of data on cetaceans in Lithuanian sea zone.

NETHERLANDS

In the Dutch Continental Shelf and Coastal Waters, six sites have been identified as marine protected areas. Three offshore areas; Dogger Bank (Doggersbank), Cleaver Bank (Klaverbank) and Frisian Front (Friese Front), and three in the coastal zone; Noordzeekustzone in the north and Voordelta 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 and Birds Directives. All of these marine protected areas, except the Voordelta and Frisian Front, have been designated as a special protection zone for the harbour porpoise. The three coastal areas were designated by the Dutch minster. The three offshore areas will follow later, probably by the end of 2015.

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”.

POLAND

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.

For four years, there have been 9 marine areas in Poland with the status of Baltic Sea Protected Areas under the Helsinki Convention – HELCOM BSPA, all within the borders of Natura 2000 sites. At least three of them – in the Bay of Pomerania, the Bay of Puck and in Ostoja Słowińska – have been considered crucial in terms of porpoise protection according to the current expert knowledge substantiated e.g. with historic occurrence of bycatches, observations of single specimens and data on dead porpoises washed up.

SWEDEN

In a report to the Swedish government, the Swedish Agency for Marine and Water Management, SwAM, has suggested the need for fishing regulations as a first-step measure in reaching conservations goals in the country’s marine protected areas.

The protection of marine areas is an important measure in ensuring that Sweden reaches its national environmental objectives. This action is also key in fulfilling the requirements put forth by a number of EU directives and international conventions.

Today, 6.3 percent of Sweden's marine waters are designated as protected areas. Included are marine nature reserves, marine habitat areas within the Natura 2000 network, and Sweden's marine national park Kosterhavet.

To ensure biodiversity in these areas, conservation goals are needed. According to goals established by the Swedish government to address biodiversity, 10 percent of the country's marine waters are to be protected by 2020, an increase of 570,000 hectares from today.

UNITED KINGDOM

It is believed that existing and planned measures on MPAs, including European Protected Sites, will contribute to achieving Good Environmental Status (the key objective of MSFD) for cetacean species. Although the UK will assess progress once all the targets and indicators for cetaceans are fully operational, assessments carried out under the Habitats Directive lend support to the robustness of existing and planned measures. There is a very strong element of working collaboratively at the regional level so we are working closely in OSPAR with other contracting parties on targets and measures for cetaceans. Further information on the implementation of the MSFD in Europe can be found on the European Commission website: http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/reports_en.htm.

The following MPAs in place in the UK which specifically name cetaceans as either a qualifying or non-qualifying feature:

Marine Protected Area	**Qualifying Cetacean Features**	**Non-qualifying Cetacean Features**
Cardigan Bay/Bae Ceredigion SAC	Bottlenose dolphin	Harbour porpoise
Moray Firth SAC	Bottlenose dolphin	Harbour porpoise
Skerries and Causeway SAC	Harbour porpoise	Bottlenose dolphin
Pen Llyn a`r Sarnau/ Lleyn Peninsula and the Sarnau SAC	Bottlenose dolphin	Harbour porpoise
UK section of Dogger Bank SAC	None	Harbour porpoise
Croker Carbonate Slabs SAC	None	Harbour porpoise
Pisces Reef Complex SAC	None	Harbour porpoise
Wight-Barfleur Reef SAC	None	Harbour porpoise and Bottlenose dolphin
Pobie Bank Reef SAC	None	Harbour porpoise
Solan Bank Reef SAC	None	Harbour porpoise
Sound of Barra SAC	None	Harbour porpoise and Bottlenose dolphin
Mousa SAC	None	Harbour porpoise
Solway Firth SAC	None	Harbour porpoise

Plymouth Sound and Estuaries SAC	None	Harbour porpoise and Bottlenose dolphin
Fal and Helford SAC	None	Harbour porpoise and Bottlenose dolphin
Lundy SAC	None	Harbour porpoise and Bottlenose dolphin
Pembrokeshire Marine/ Sir Benfro Forol SAC	None	Harbour porpoise and Bottlenose dolphin
Isles of Scilly Complex SAC	None	Harbour porpoise and Bottlenose dolphin
St Kilda SAC	None	Harbour porpoise and Bottlenose dolphin
Papa Stour SAC	None	Harbour porpoise
Loch nam Madadh SAC	None	Harbour porpoise
Lochs Duich, Long and Alsh Reefs SAC	None	Harbour porpoise
Sound of Arisaig (Loch Ailort to Loch Ceann Traigh) SAC	None	Harbour porpoise
Firth of Lorn SAC	None	Harbour porpoise
Ascrib, Isay and Dunvegan SAC	None	Harbour porpoise
Sullom Voe SAC	None	Harbour porpoise
Treshnish Isles SAC	None	Harbour porpoise
Firth of Tay & Eden Estuary SAC	None	Harbour porpoise and Bottlenose dolphin
Wyville Thomson Ridge SAC	None	Bottlenose dolphin
North West Rockall Bank SAC	None	Harbour porpoise
Haisborough, Hammond and Winterton SAC	None	Harbour porpoise
Inner Dowsing, Race Bank and North Ridge SAC	None	Harbour porpoise
The Maidens SAC	None	Harbour porpoise
Monach Islands SAC	None	Harbour porpoise

Other protected areas including other Special Areas of Conservation (SACs), Nature Conservation Marine Protected Areas (NC MPAs), and Marine Conservation Zones (MCZs) in place for other features in the UK (and the management measures associated with them) will also indirectly contribute to the conservation of cetaceans in UK waters. Site Information Centres now exist for all designated offshore sites, detailing site summary information, and regularly updated information on conservation objectives, data and management.

See: http://jncc.defra.gov.uk/page-6895.

Since 2013 the Joint Nature Conservation Committee (JNCC) has undertaken an analysis of the largest and most comprehensive set of data for harbour porpoise in UK waters, with the aim of identifying possible sites for SAC designation. The initial stages of this work completed in 2014 indicated that there are several potential sites around the UK. This work will continue

throughout 2015, during which time we expect that a formal consultation on the potential sites will be launched.

Scotland:

The Marine (Scotland) Act and Marine and Coastal Access Act includes new powers for Nature Conservation Marine Protected Areas (NC MPAs) in the seas around Scotland, to recognise features of national importance and meet international commitments for developing a network of MPAs. Scottish Natural Heritage (SNH) and the Joint Nature Conservation Committee, as part of the Marine Scotland-led Scottish MPA Project, so far designated 30 NC MPAs for a variety of marine habitats and species. These join the 29 MCZs designated in 2013 around England, Northern Ireland and Wales. Site information centres for the offshore sites can be viewed at: http://jncc.defra.gov.uk/page-5269. For further information on all NC MPA sites, visit the SNH webpages: http://www.gov.scot/Topics/marine/marine-environment/mpanetwork

Within Scottish territorial waters three species of cetaceans, Rissos dolphin, white-beaked dolphin and Minke whale were identified as MPA search features. White-beaked dolphin have been removed from consideration due to the inability to identify areas that could be considered essential to the species (see section 3.5 in http://www.snh.org.uk/pdfs/publications/commissioned_reports/780.pdf). SNH have now developed three MPA proposals for cetacean features including one site for Risso's dolphin and two sites for Minke whale. Further information can be found at http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/nationaldesignations/marine-protected-areas-(mpa)/scottish-mpa-network-advice/ Work was on-going to review four MPA search locations for these species and SNH have now completed their formal advice to Marine Scotland and this can be found at:

http://www.snh.org.uk/pdfs/publications/commissioned_reports/780.pdf Further information on this project can be found at http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/marineprotected-areas-(mpa)/ and http://www.scotland.gov.uk/Topics/marine/marine-environment/mpanetwork

WDC conducted boat based field surveys off the north-east coast of the Isle of Lewis, in the NE Lewis proposed MPA in 2014. WDC published a paper focusing on Risso's dolphins in the proposed MPA – Hodgins, N.K., Dolman, S.J. and Weir, C. (2014). Potential hybridism between free-ranging Risso's (*Grampus griseus*) and bottlenose dolphins (*Tursiops truncatus*) off north-east Lewis (Hebrides, UK)". Marine Biodiversity Records, 7, e97 doi:10.1017/S175526721400089X. WDC also provided acoustic data to enable the completion of the masters thesis: Brown, A. 2014. The significance of the east coast of the Isle of Lewis for the harbour porpoise (*Phocoena phocoena*). Edinburgh Napier University. WDC also published the report: The necessity of Management Options for effective harbour porpoise conservation in the UK: Case studies of emerging Areas of Concern (2015).

WDC manages the Shorewatch Programme which supports trained volunteers to collect effort-based sightings of bottlenose dolphins from sites within the Moray Firth SAC (as well as wider species at further sites around Scotland). This citizen science data can be demonstrated to show inter-annual and inter-site variation in bottlenose dolphin sightings within the SAC over time as shown in Embling, C., Walters A.E.M., and Dolman, S.J. (accepted). How much effort is enough? The power of citizen science to monitor trends in coastal cetacean species. Data collected from wider sites has contributed to WDC recommendations on Scottish proposed MPAs in NE Lewis for Risso's dolphins (and sandeels) and the Southern Trench and Sea of Hebrides for minke whales (and basking sharks).

Wales:

Natural Resources Wales (NRW) commissioned the monitoring of bottlenose dolphin in Cardigan Bay and Pen Llŷn a'r Sarnau Special Areas of Conservation in 2014. Using only

Capture Mark Recapture techniques, a much reduced abundance survey was completed because of limited funding (a contract report is being prepared).

Additionally, NRW commissioned WDC to conduct vantage-point and, where possible, boat-based surveys of Risso's dolphins off Bardsey Island (North Wales) (report in preparation). SWF continued to conduct boat-based line-transect surveys of bottlenose dolphins and harbour porpoise around Cardigan Bay and Pen Llyn a'r Sarnau SAC's and Isle of Anglesey, along with photo-ID studies of the dolphins. The project provides information on the distribution, population structure and abundance of dolphins, porpoises and seals in the region. Winter surveys also took place in the Anglesey area of North Wales to which the species disperses seasonally.

An updated bottlenose dolphin photo-identification catalogue comprising 513 individuals spanning the years 1990 to 2011 was published on behalf of Natural Resources Wales (Feingold & Evans, 2014a, b). The photo-ID studies in Cardigan Bay have found that peak calving occurs between July and September, when 76% of all births are recorded. Females give birth on average every three years (range 2-7 years). Using an open population model, birth rates in 2014 were 4.85% in Cardigan Bay SAC and 4.8% in the entire Cardigan

Bay. These compare with long-term averages of 7.5% in Cardigan Bay SAC and 8.5% in the entire Cardigan Bay. Calf mortality rates were calculated from a sample of 71 mother-calf pairs born between 2001 and 2013, and found higher rates in the first two years (15% in year one and 17% in year two) than in the third year (7%), with 60% of calves surviving into their fourth year (Norrman et al., 2015).

Northern Ireland:

The Department of Environment for Northern Ireland held a Marine Conservation Zone Workshop in March 2015 that presented proposed boundaries for Special Areas for Conservation for Harbour Porpoises Stakeholders. NGOs were invited to provide feedback.

You have attached the following documents to this answer.

MPAs_in_place_in_the_UK_which_specifically_name_cetaceans_as_either_a_qualifying_or_non-qualifying_feature.xls -MPAs in place in the UK which specifically name cetaceans as either a qualifying or non-qualifying feature

3.2 Sources of GIS data of the boundaries (and zoning, if applicable)

BELGIUM
laurence.vigin@naturalsciences.be
DENMARK
GIS data in relation to boundaries and Natura2000 areas can be found on the webpage of the Danish Ministry of the Environment: The information can be obtained through the following link: http://miljoegis.mim.dk/cbkort?selectorgroups=themecontainer%20Natura2000%20fredning&mapext=277608%206024994.2%201064040%206422715.8&layers=theme-gstdtkskaerm_daempet%20ef_fugle_bes_omr%20ramsar_omr%20ef_habitat_omr%20theme-pgnatura_2000_omraader&mapheight=969&mapwidth=1925&profile=miljoegis-natura2000 - Danish Natura2000 areas GIS data 2014
FINLAND
None

FRANCE
Ministere de l'Ecologie, du Developpement durable des transports et du Logement Mer Tour Sequoia 92055 La Defense CEDEX Natura 2000 network: camille.campeon@developpement-durable.gouv.fr Tel.: + 33 (01) 40 81 21 22 Agence des aires marines protegees President : Paul Giacobbi Directeur : Olivier LAROUSSINIE Adresse du siege et contact:Agence des aires marines protegees 16 quai de la Douane 29229 Brest Cedex 2 standard : +33 (0)2 98 33 87 67 Tel : +33 (0)2 98 33 87 77
GERMANY
www.HabitatMareNatura2000.de contains the needed delimitation of the protected sites, however with the traditional geographical maps instead of GIS [BfN].
LITHUANIA
None
NETHERLANDS
Noordzee http://www.noordzeeloket.nl/projecten/noordzee-natura-2000/ official GIS shapefiles for Natura 2000 gebieden: http://nationaalgeoregister.nl/geonetwork/srv/dut/search#|8829e5dd-c861-4639-a6c8-fdbb6e3440d2 database Natura 2000 species and habitats: http://www.synbiosys.alterra.nl/natura2000/default.aspx?main=natura2000 general information: www.natura2000.nl map of the European Natura 2000 network: http://natura2000.eea.europa.eu/# http://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;bkgd=5:1;mode=1;pos=1 1.754:54.605:4;theme=14:1:1;
POLAND
The General Directorate for Environmental Protection provides the exact borders of Natura 2000 sites (http://www.gdos.gov.pl/kontakt-3). These data are also presented at: http://natura2000.gdos.gov.pl/datafiles and http://geoserwis.gdos.gov.pl/mapy/
SWEDEN
None
UNITED KINGDOM
Details of all UK SACs can be found at http://jncc.defra.gov.uk/page-23. Details of designated NC MPAs and MCZs can be found on the respective lead agency sites. All offshore sites have a Site Information Centre hosted at http://jncc.defra.gov.uk/page-6895, and contain boundary information amongst all other available site information.

All inshore MCZs can be found at: https://www.gov.uk/government/collections/marine-conservation-zone-2013-designations#inshore-sites

All inshore and offshore NC MPAs can be found at: http://www.gov.scot/Topics/marine/marineenvironment/mpanetwork/developing/DesignationOrders

B. SURVEYS AND RESEARCH

4.1 Overview of Research on Abundance, Distribution and Population Structure

BELGIUM

In 2014 a record average density of 3.96 (3.21-4.88) harbour porpoises/km² was estimated in April (on the basis of aerial surveys performed by the RBINS) in an area covering most of Belgian waters (RBINS, unpublished data). Densities were much lower in September (0.45 animals/km² and in October (0.25 animals/km²).

During dedicated seabird counts (2661 km sailing) the Research Institute for Nature and Forest (INBO) counted 231 harbour porpoises. 74.9 % of all individuals were encountered during the period February-April, when uncorrected densities amounted to 0.16 animals/km2. No other cetacea were encountered during the ship based surveys.

Unlike in 2013, very few anecdotal observations were reported of harbour porpoises in inland waters (5 were reported, of in total 5 animals), despite a call by the NGO Natuurpunt to the public to pay special attention to porpoises.

On 13 November 2014, a pod of long-finned pilot whales (23-40 animals) was observed very close inshore off Blankenberge; the same pod had been observed on 10 November at Norfolk, UK, and it was observed again in southeast England until 20 November (Haelters, 2015). Only one observation of white-beaked dolphins was reported to the RBINS (2 animals). A large pod of bottlenose dolphins (around 35 animals) was observed near the border between Belgian and Dutch waters on 3 October (Verbelen, 2014). A solitary bottlenose dolphin was present off Knokke-Heist for two weeks in September (data RBINS, unpublished). During 2014, the RBINS continuously moored 3 to 4 porpoise detectors (C-PoDs) at selected locations.

Relevant publications, posters, abstracts

Bouveroux, T., Kiszka, J., Jauniaux, T., Pezeril, S., 2014. Direct evidence for grey seal (*Halichoerus grypus*) predation and scavenging on harbour porpoises (*Phocoena phocoena*). 28th annual conference of the European Cetacean Society, Liege, Belgium.

Brihaye, E.; Bouveroux, Th.; Degraer, S.; Dulière, V.; Haelters, J.; Pezeril, S. & Jauniaux, T., 2014. Where did common porpoise (*Phocoena phocoena*) come from before stranding? In: J. Mees et al. (Ed.). VLIZ Young Scientists' Day, Book of abstracts, Brugge, Belgium, 7 March 2014. VLIZ Special Publication 67: 23.

Fontaine, M., Roland, K., Calves, I., Austerlitz, F., Palstra, F., Tolley, K., Ryan, S., Ferreira, M., Jauniaux, T., Llavona, A, Oztürk, B., Oztürk, A., Ridoux, V., Rogan, E., Sequeira, M., Siebert, S., Vikingsson, G., Borrell, A., Michaux, J., Aguilar, A., 2014. Postglacial climate changes and rise of three ecotypes of harbour porpoises, *Phocoena phocoena*, in western Palearctic waters. Molecular Ecology.

Gilles, A., Viquerat, S., van Bemmelen, R., Haelters, J., Scheidat, M. & Aarts, G., 2014. Modelling harbour porpoise seasonal distribution in the North Sea. DEPONS, 2nd annual meeting, Edinburgh, UK, 26-27 November 2014, Conference Paper.

Haelters, J., 2015. Een school grienden Globicephala melas in de zuidelijke Noordzee [A pod of pilot whales in the southern North Sea]. De Strandvlo 35(1): 5-11.

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Loos, P., Jauniaux, T., Garigliany, M.-M., Bourgain, J.-L., Bouveroux, T., Coignoul, F., Haelters, J., Karpouzopoulos, J., Pezeril, S., Desmecht, D., 2014. Bite injuries of grey seals on harbour porpoises: the DNA proof. 28th annual conference of the European Cetacean Society, Liege, Belgium.

Mahfouz, C., Henry, F., Meziane, T., Caurant, F., Pezeril, S., Bouveroux, T., Jauniaux, T., Khalaf, G., Amara, R., 2014. Does prey availability influence harbour porpoises (*Phocoena phocoena*) diet, abundance and distribution? 28th annual conference of the European Cetacean Society, Liege, Belgium.

Verbelen, D., 2014. Reuzegroep tuimelaars gespot voor de Belgische kust [Large pod of bottlenose dolphins sighted off the Belgian coast]. Zoogdier 25(4): 22.

DENMARK

Viquerat S, Herr H, Gilles A, Peschko V, Siebert U, Sveegaard S, Teilmann J. (2014) Abundance of harbour porpoises (*Phocoena phocoena*) in the western Baltic, Belt Seas and Kattegat. Marine Biology 161:745-754.

FINLAND

Finland is taking part to SAMBAH (Static Acoustic Monitoring of the Baltic Sea Harbour porpoise) project (http://ww.sambah.org). The data collection and analysis are now mostly done and the project will be finalized in September 2015.

Dissemination activities have been done widely within the project, e.g. targeted meetings, press releases and media events, magazine articles, poster exhibitions in Särkänniemi Dolphinarium and Kotka Maretarium and a 20-minutes documentary movie about the project. The project and additional info on harbour porpoise have got good media coverage in national and local newspapers and on TV and radio channels.

FRANCE

Data collection of opportunistic sightings with database (PELAGIS/ULR, GECC, Oceanopolis).

Photo-identification of the coastal group of bottlenose dolphins: the photo-id catalog was uptaded (Oceanopolis Brest in Iroise Sea MPA).

The Normano-Breton Gulf population of bottlenose dolphins was estimated in summer 2010 as 420 animals (95% CI: 331-521) using mark-recapture analyses on photo-identification data. Biopsy samples were collected from 92 individuals between 2010 and 2012 and indicated that the dolphins are part of one genetic population. Stable isotopes analyses

indicated that they are organized in three ecological clusters that are consistent with social clusters (GECC & CEBC, Louis 2014).

Long term use of opportunistic boats to survey cetaceans in the southern Bay of Biscay (Centre de la Mer de Biarritz, CMB)Relationships between cetacean populations and climate change / fishing activities / prey abundance are studied: in 2014, these works has been used for the implementation of a large study on the impact of climate change in southern bay of Biscay, in order to evaluate the link between cetacean abundances at sea, the evolution of exploited fish stock and the oceano-climatic changes.

Systematic ship-based surveys were conducted on board the RV “Thalassa” with a top predator monitoring scheme since 2003. The primary aim of these cruises is to assess fish stocks in the Bay of Biscay and English Channel. The area surveyed was restricted to the continental shelf, and incursions on the shelf break were exceptional and only in the middle part of the Bay of Biscay. Sightings of top predators were recorded during daylight by a single and multi-target (cetaceans and sea birds) platform composed of two observers. During the 2014 surveys, 4 campaigns of IFREMER were concerned by the top predator monitoring scheme (PELAGIS/ULR):

- IBTS survey, Ifremer, PELAGIS/ULR: winter survey carried out yearly in January across the English Channel: (pelagic fish, plankton, physical parameters and top predators are recorded simultaneously): 16 days of sighting effort in 2014 ;

- PELGAS survey, Ifremer, PELAGIS/ULR : spring survey carried out yearly in May on the continental shelf of the Bay of Biscay (pelagic fish, plankton, physical parameters and top predators are recorded simultaneously): 90 days in 2014

-CAMANOC survey, Ifremer, PELAGIS/ULR : autumn survey carried out for the first time in September on the western English Channel (pelagic fish, plankton, physical parameters and top predators are recorded simultaneously): 75 days of sighting effort in partnership with the British NGO Marine-Life,

- EVHOE Program, Ifremer, PELAGIS/ULR: autumn demersal fish survey carried out yearly in October- November across the Bay of Biscay (top predators recorded on transit between trawl hauls): 60 days of sighting effort

The recorded sightings on these campaigns accumulated 164 observations of cetaceans (with recorded effort and sighting conditions) in the ASCOBANS area. Concurrently, sightings of seabirds, turtles, elasmobranches; litters and marine traffic have been recorded, providing an original overview of the annual distribution of the megafauna species and human activities in the ASCOBANS area.

SAMM Program: Two 4-months systematic aerial surveys of cetaceans and other megafauna (mainly seabirds) have been conducted by PELAGIS/ULR and AAMP from November 2011 to August 2012 to identify priority areas for the designation of future Natura 2000 sites in the French EEZ. The survey protocol follows a systematic zig-zag line transect pattern across 4 bathymetric strata: coastal, shelf, slope and oceanic. The survey area encompassed the French EEZ extended to the South of Bay of Biscay (Spanish EEZ) and the British Channel. Total survey effort was 48,600 km in winter and 53,200 km in summer in the ASCOBANS area. The project was completed in November 2014 (PELAGIS/ULR). Estimates of harbour porpoise abundance were identical in the Channel in both seasons (~26,000 individuals) whereas in the Atlantic, the estimate in summer (~20,000 individuals) was four times greater than in winter (~4,600 individual). Predicted densities showed an aggregation of harbour porpoise in the eastern Channel and southern North Sea in winter but low densities all along the coast down to the southern Bay of Biscay. In the summer, two areas of high predicted density were found: the southern North Sea and a broad region composed of the Celtic Sea, northern Bay of Biscay and western Channel. Common and striped dolphins were considered jointly because there were too many sightings that could not be identified at species level with any certainty. Estimated abundance varied from 290,000 individuals in winter to 690,000

in summer (this difference not significant). A small fraction was predicted to be present in the western Channel during the winter. Predicted habitat in winter included shelf waters of the Bay of Biscay, the western Channel and the Celtic Sea, predominantly parallel to the shelf break.

In summer, highest densities were predicted over the slope and in oceanic waters. No seasonal difference in bottlenose dolphin abundance was found (18,000 individuals in winter vs 11,000 in summer). Predicted densities followed the slope in both summer and winter and were the highest over the slope of the southern Bay of Biscay in winter. Lower densities were predicted across shelf habitats in the Celtic Sea, western Channel and Bay of Biscay. Concurrently, sightings of seabirds, turtles, elasmobranches; litters and marine traffic have been recorded, providing an original overview of the annual distribution of the megafauna species and human activities in the ASCOBANS area.

Marsac Program has been conducted as a baseline to determine the feasibility of use Static Acoustic Monitoring to monitor the harbour porpoise and other small odontocetes (small delphinids and bottlenose dolphins)along the Atlantic French coasts through two small scale acoustic observatories. Eight click detectors (C-PODs) were deployed in waters 16-55 m deep over a one year period (from July 2012 to March 2014, depending of the deployment site). In well-contrasted environment, five different mooring set-ups and their deployment and recovery procedures were tested. C-PODs were moored during almost 2206 days and acoustically monitored for the presence of cetaceans for 1488 days, which means 67% of the recording effort.

Heavy structures on the bottom without surface buoy and mooring line with acoustic release were the most effective design and are highly recommended for future SAM study in coastal waters. The acoustic data collected by CPODs have allowed to assess seasonal pattern of distribution of harbour porpoises and other small odontocetes (small delphinids and bottlenose dolphins) in the Marine Protected Area in Iroise Sea (West Brittany) and in the coastal waters in front of Arcachon Bay. The study proves a regular use of the Iroise Sea and waters offshore the Arcachon Bay by harbour porpoises and other cetaceans with seasonal pattern of occurrence consistent with previous visual surveys. Presence of porpoises and dolphins around the deployment sites was also influenced by the light regime and certain deployments sites were clearly important for foraging activity of species. In protected areas where there are limited funds to provide the legal monitoring requirements, this study underscores advantages of passive acoustic monitoring over visual surveys for monitoring echolocating cetaceans during all weather conditions with minimal staff requirements and relatively inexpensive setup costs.

Ferry observer surveys between Roscoff and Cork, Portsmouth and Santander (Orca/ Oceanopolis Brest/), using a standardized protocol.

Genetic study on harbour porpoise (collaboration between the university of Brest and Oceanopolis Brest). This work was presented successfully, end of September in the case of a PHD (student involved Alfonsi, E.). The analysis are undergoing with samples from the North Sea.

Restriction-site associated DNA tag (RAD-tag) applicability has been evaluated to conduct genome widescans for polymorphism across two cetacean species belonging to distinct families: the short-beaked common dolphin (*Delphinus delphis*) and the harbour porpoise (*Phocoena phocoena*). Results showed that cetaceans have undergone rapid diversification, and the estimated divergence time between the two families is relatively recent (14-19 MA). It has been shown that, for this level of divergence, a large number of orthologous loci can still be genotyped using this approach. This study constitutes one of the first empirical investigations using RAD-tag sequencing at this level of divergence and highlights the great potential of this approach in comparative studies and to address evolutionary questions (Viricel et al, 2014).

Forces shaping population structure and ecotype differentiation ('pelagic' and 'coastal') of bottlenose dolphins in the North-east Atlantic were investigated using complementary evolutionary and ecological approaches. Inference of population demographic history using approximate Bayesian computation indicated that coastal populations were likely founded by the Atlantic pelagic population after the Last Glacial Maxima probably as a result of newly available coastal ecological niches. Pelagic dolphins from the Atlantic and the Mediterranean Sea likely diverged during a period of high productivity in the Mediterranean Sea. Genetic differentiation between coastal and pelagic ecotypes may be maintained by niche specializations, as indicated by stable isotope and stomach content analyses, and social behaviour. The two ecotypes were only weakly morphologically segregated in contrast to other parts of the World Ocean (Louis et al. 2014).

Functional approaches in cetacean foraging ecology have been developed to go beyond traditional taxonomic framework in dietary studies, and to improve our knowledge of ecosystem functioning notably in the perspective of cetacean conservation and management. The relevance of a three-matrix approach in foraging ecology among a marine mammal community in the north-east Atlantic has been tested to identify the key functional traits shaping prey selection processes regardless of the taxonomy of both the predators and prey. The study reveals prey found in the diet of marine mammals possess functional traits which are directly and significantly linked to predator characteristics allowing the establishment of a functional typology of marine mammals-prey relationships. Prey selection of marine mammals was primarily shaped by physiological traits and then by morphological traits of both predators and prey, confirming that energetic costs of foraging strategies and muscular performance are major drivers of prey selection in marine mammals. Trait-based approaches proposed a new definition of cetacean needs which should provide an appealing framework to anticipate bottom-up effects on cetacean population dynamics in identifying the sensitivity of predators to the loss of prey key functional traits associated with shift in prey availability (Spitz et al., 2014).

GERMANY

Visual monitoring:

In 2014, four dedicated aerial surveys were carried out in the south ("Borkum Reef Ground") and in the northeastern part ("Sylt Outer Reef") of the German EEZ in the North Sea in order to assess abundance and distribution of harbour porpoises. In addition to these scheduled monitoring surveys, a small area of the German North Sea around the offshore windfarm "Butendiek" was surveyed separately, between 27th June and 22th July 2014, in order to investigate the effects of pile driving on the distribution of harbour porpoises.

These surveys are part of the German monitoring programme of Natura 2000 sites, funded by the BfN. [Siebert, Gilles, Viquerat; ITAW].

Results can be found at: http://www.bfn.de/0314_monitoringberichte.html

Acoustic monitoring Wadden Sea:

Within the framework of the monitoring programme of the Federal Government and the German coastal "Länder" (Bund-Länder-Messprogramm), 6 C-PODs were deployed throughout waters of Lower Saxony and Schleswig-Holstein during 2014 in order to monitor acoustic activities in the German Waddensea. This work is funded by Schleswig-Holstein's Government-Owned Company of Coastal Protection, National Parks and Ocean Protection (LKN-SH) and the Nationalpark office of Lower Saxony (NP-LS) and carried out by ITAW. [Dähne, Siebert, Meyer-Klaeden ITAW; Eskildsen LKN-SH; Czeck NP-LS]

Two C-POD stations were operating in 2014, one was installed in the vicinity of the island Minsener Oog and one at the mouth of the Jade Bay. It is planned to continue this monitoring

of seasonal activity of harbour porpoises in the Wadden Sea of Lower Saxony. A first comprehensive report will be available in early 2015 [Czeck, NDS-NLPV].

Static Acoustic Monitoring Baltic Sea

With the financial support from the Federal Agency for Nature Conservation (BfN), the German Oceanographic Museum (DMM) is conducting static acoustic monitoring of harbour porpoises using C-PODs (porpoise click detectors) in the Baltic Sea. Our long-term monitoring 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

[Gallus, DMM].

Further-Information:
http://www.deutschesmeeresmuseum.de/dmm/stiftungdeutschesmeeresmuseum/wissenschaft/schweinswale/forschungsprojekte/monitoring/

Results can be found under:

Benke, H. et al. 2014: Baltic Sea harbour porpoise populations: Status and conservation needs derived from recent survey results. Marine Ecology Progress Series 495:275–290.

http://www.bfn.de/0314_monitoringberichte.html

SAMBAH

The aim of the pan-Baltic project SAMBAH (Static Acoustic Monitoring of the Baltic Harbour Porpoise) 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. The SAMBAH project has collected two years of acoustic monitoring data (1.5.2011-31.4.2013) on the harbour porpoise in the Baltic Sea. Germany was responsible for 16 stations in the German waters. In 2014, scientists of the Oceanographic Museum have been involved in the data analyses. The international SAMBAH project has now estimated the number of harbour porpoises in the Baltic Sea to approximately 447 animals (95% confidence interval 90-997) [Gallus, DMM].

More information is available at:

http://www.deutschesmeeresmuseum.de/dmm/stiftungdeutschesmeeresmuseum/wissenschaft/schweinswale/forschungsprojekte/sambah/

Digital Surveys

In 2014 the investigation of harbour porpoise abundance and distribution in the frame of EIAs and monitoring of the construction and operation phase was switched from airplane-based surveys with observers at 183 m flight height to airplane-based digital surveys with video or still image systems at about 400 m flight height. The comparability of the data, the definition of minimal requirements and quality criteria are part of a research project (DigiTop) conducted by the Research and Technology Centre West Coast (FTZ) of the University of Kiel for the BSH.

Some information on digital survey activities in the German EEZ are found in the presentations given in the Workshop (in English) held in October 2014 at BSH, Hamburg: “Workshop on the Use of standardized Digital Survey Methods for Environmental Impact Assessment Studies in German Offshore Wind Farms” under:

http://www.bsh.de/de/Meeresnutzung/Wirtschaft/Windparks/Workshops/index.jsp#Digitale_Erfassung_10_2014 [Boethling, BSH].

Long-term monitoring of harbour porpoises (*Phocoena phocoena*) in the Pomeranian Bay, Baltic Sea.The project was conducted in co-operation with Deutsches Meeresmuseum

(Stefan Bräger, Anne Herrmann, Harald Benke, Ursula Verfuß und Jens Koblitz) und CREEM (Louise Burt, Len Thomas)

Increasing porpoise detection rates were recorded by passive acoustic monitoring in the Pomeranian Bay of the Baltic Sea over a period of eight years. From 2005 until 2012, two types of acoustic monitoring devices (so-called T-PODs and C-PODs) were deployed at 28 locations within an area of approx. 7000 km² to detect echo-locating harbour porpoises. Differences between POD type and individual devices were taken into account by determining and including calibration factors into statistical models. Predicted detection rates were obtained from a General Additive Model framework and averaged over all devices and all locations to compute an overall annual trend of porpoise presence within the Pomeranian Bay. The model revealed an exponential detection increase over the eight-year study, predominantly driven by the rise of a distinct annual summer/autumn peak, which is presumably connected to porpoises arriving from the Danish Belt Sea.

A much less pronounced winter peak increased only moderately over the study period and is assumed to represent the annual visit of Baltic proper porpoises in the study area. The increase of the summer/autumn peak over the years might be explained by either an increase in the Belt Sea population size or a spatial shift in their density distribution and expansion towards the southeastern end of its range or a combination of both.

Oxygen saturation near the bottom of the Arkona Basin showed a strong negative correlation with porpoise presence in the Pomeranian Bay during summer/autumn. This supports the hypothesis, that amongst other factors oxygen depletion in the Baltic Sea basins acts as driver and causes porpoises to leave the basins and to frequent the more oxygen rich areas of the shallow Pomeranian Bay during summer/autumn. Similarly, high concentrations of chlorophyll A during summer/autumn, representing periods of high primary production in

the Pomeranian Bay were positively correlated with porpoise detection rates during the study period. High primary production is likely to increase the occurrence of planctivorous prey species of harbour porpoises in the Pomeranian Bay [Diederichs, Kosarev, Wollheim, Brandt; Bio-Consult SH] To be published in MEPS.

Opportunistic sightings in the German rivers Elbe and Weser

Opportunistic sightings of harbour porpoises in the German rivers Elbe and Weser were collected in the framework of the PhD thesis of Denise Wenger: “Distribution, habitat use, health status and conservation of harbour porpoises (*Phocoena phocoena*) in the north German rivers Elbe and Weser”; University of Veterinary Medicine Hannover, Foundation/ Institute for Terrestrial and Aquatic Wildlife Research, ITAW / Apl. Prof. Dr. Ursula Siebert;

Results of an opportunistic sighting scheme implemented by Denise Wenger at GRD since 2007 including the collection of data on sightings of harbour porpoises in Germany’s rivers at the North Sea coast. Data show that harbour porpoises are increasingly regularly frequenting the rivers Elbe and Weser swimming up to the cities of Bremen and Hamburg in springtime during the months from early March through late May. The spatial-temporal pattern shown during the last years coincides with the pattern of the anadromous fish shoals of smelt (*Osmerus eperlanus*) and twaite shad (*Alosa fallax*) migrating from the North Sea upstream to their spawning grounds.

Sighting reports in 2014 (© D. Wenger, GRD/ITAW)

A. Elbe river:

In contrast to the previous year in 2014 just very few harbour porpoises have been sighted in the lower course of the Elbe river. The sightings were made from the 16th of April to the 24th of September. No clear temporal pattern like in the years before (Feb./March to May) was shown in 2014, but harbour porpoises showed up every month from the middle of April until the end of September. All together 8 sighting reports. In the Hamburg port area where in 2013 harbour porpoises have been observed from March through May over weeks (also

hunting prey; see report for ASCOBANS 2013), in 2014 in this area just 5 sighting reports were made: two middle of April (duo, single harbour porpoise), one in July (duo), one in August (2-3 harbour porpoises), one in September (single individual). The total number of thereby observed harbour porpoises was at least 8.

In the estuary further north near the river mouth and the city of Cuxhaven 3 sightings of single individuals were reported in May, July and August.

The fishermen along the Elbe river said that the migration of the smelt shoals upstream occurred in 2014 around four weeks earlier (end of January) than usually maybe due to the warm winter.

One dead harbour porpoise was found and examined (Hamburg State Institute for Hygiene and Environment). Publication in prep.; results and further studies within the context of a dissertation at the University of Veterinary Medicine Hannover, Foundation.

B. Weser river

Also in the Weser river in 2014 just few harbour porpoises were spotted. First sightings occurred as in the previous years at the end of February (23.2./26.2.14) with two single individuals near the cities of Brake and Nordenham, and two sightings in April, one far up the Weser near to the city of Bremen, one at Strohauser Plate (where an acoustic data logger, a C-POD, was installed).

One harbour porpoise was spotted in the river “Hunte” which flows into the Weser at Elsfleth, there is a known spawning ground of anadromous fish species. From near the city of Bremerhaven at the river mouth 3 sightings were reported with at least 8 (one group of 5-6) animals between beginning of April (5.5.14) and end of August (27.8.14).

4 reports came from the outer Weser estuary with 10 animals all together (one group of 6 porpoises). All together 11 sighting reports with at least 23 animals (two times groups of 5-6/6 animals) [Wenger, GRD].

For further information see: www.schweinswale.de

LITHUANIA

An implementation of the Management plan and the Action plan for the Baltic Harbour porpoise in Lithuanian Baltic Sea area which were prepared and adopted by order of Minister of Environment on 29 February 2012, covers the target to collect data of harbour porpoise registrations in Lithuanian Baltic Sea coastal waters.

Survey was carried out from 12 December, 2012 till 31 December, 2014. Fishermen were asked to submit information about the Baltic Harbour porpoise captured or observed in fishing nets. Interviewed more than 40 fishermen, but the collected data showed that fishermen have never seen harbour porpoises in the waters of the Republic of Lithuania.

NETHERLANDS

Aerial surveys to estimate the abundance of Harbour porpoises were conducted on the Dutch Continental Shelf in July 2014 (Geelhoed et al., 2014). These surveys were conducted along predetermined track lines using distance sampling methods in four areas: A “Dogger Bank”, B “Offshore”, C “Frisian Front” & D “Delta”. Between 11 and 16 July the entire Dutch Continental Shelf (DCS) was surveyed. 229 sightings of 273 individual Harbour Porpoises were collected. Porpoise densities varied between 0.37-3.08 animals/km² in the areas A-D. The overall density on the entire Dutch Continental Shelf was 1.29 animals/km². The total numbers of Harbour Porpoises on the Dutch Continental Shelf (areas A-D) in March were estimated at ca. 77 000 animals (C.I.: 43 000-154 000). In total 24 sightings of other marine mammal species were made. These comprised 24 sightings of in total 24 single seals, which remained unidentified except 1 Grey Seal *Halichoerus grypus* on 16 July. Three individual

Minke whales were seen on effort in the Dogger Bank area on 12 July. One pod of three White-beaked Dolphin was recorded the same day.

The NZG Marine Mammals Database is part of the Dutch Seabird Group (NZG) (established by Kees Camphuysen). Its aim is to collect all sightings 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: www.trekPhonePhonelen.nl

Strandings (live and dead) are collated in a database presented at the website www.walvisstrandingen.nl (see section C). Records of live sightings as well as dead animals are also found at www.waarneming.nl and www.telmee.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 2014 they continued their monitoring programme for the Stena ferry line platforms between Hoek van Holland and Harwich. In 2014, 245 harbour porpoises were counted. There were no undetermined individuals.

The Rugvin Foundation has been collecting data in the Oosterschelde using C-PODs (passive acoustic data loggers), on both sides of the storm surge barrier, that sits between the North Sea and the Oosterschelde. The project was finalized early 2014.

References:

Geelhoed S.C.V., Lagerveld S., Verdaat J.P. & Scheidat M. (2014) Marine mammal surveys in Dutch waters in 2014. IMARES Report number C180/14

POLAND

Yearlong monitoring of the coast with the involvement of volunteers trained by the Hel Marine Station, the so-called “Blue Patrol”, is continued. The project has been implemented since 2010 by WWF Poland together with the Marine Station of the Institute of Oceanography, University of Gdansk, under the name: "Support for the restitution and protection of Baltic Sea mammals in Poland", and since 2013 also with the KULING Waterbird Research Group under the name: "Protection of water bird and water mammal habitats". Under this project SMIOUG carried out research with C-POD hydroacoustic devices used for the registration of sounds emitted by porpoises. The project completion was planned for the end of 2014. The region of porpoise detection covers the area from the Vistula River mouth along the Vistula Spit up to the border of Russia. The project also encompassed the analysis of the fishing effort in the region of hydroacoustic studies of porpoise abundance (Southern Bay of Gdańsk) and of the correctness of fishing gear marking. Together with the Sea Fishing Inspectorate, works related to the removal of poaching gear were conducted.

The Blue Patrol is composed of 200 volunteers – its members monitor and intervene if water mammals or birds in need of help are observed. Cooperation between the network of volunteers operating in the area and a science and research institution – SMIOUG – allows for a suitable response to all threats concerning Baltic Sea mammals (including porpoises) found on beaches.

SWEDEN

A LIFE+ Nature application for the SAMBAH project was approved and the Grant Agreement was signed in November 2009 by the Kolmården Wildlife Park as the Coordinating Beneficiary. This project is running over five years (January 2010 – September 2015), and aims at producing an estimate of the total abundance and distribution of harbour porpoises in the Baltic Sea. The project is based upon data from passive acoustic porpoise echolocation loggers (CPODs) deployed from 1 May 2011 to 30 April 2013 at approximately 300 positions

at 5-80m in the Baltic Sea. All EU countries around the Baltic Sea participate in the project; Germany with separate funding.

Three types of experiments have been carried out for calculation of the CPOD detection function; (1), all partners have carried out playback trials emitting artificial harbour porpoise clicks at 0-300m from the CPODs in conjunction with their servicings, (2) the German Oceanographic Museum has lead an experiment in which a three-dimensional array has been deployed from a boat, drifting in an area where CPODs have been deployed and porpoises have been present, and (3) the Danish team has deployed CPODs on a line outside pound nets with porpoises trapped inside. In addition to these experiments, the Danish team has deployed acoustic tags on harbour porpoises to obtain data on their click rate. These data sets will be used as input to state of the art population density statistics, and subsequently allow for habitat modelling carried out by AquaBiota Water Research, Stockholm.

In 2013 the CPOD data collection and all experiments on supplementary data have been finished. The CPOD data has been quality controlled and a database for future storage of the data has been designed. Due to the delay in the CPOD data collection (originally planned from January 2010 to December 2012) the project end date has been extended from December 2014 to September 2015. All analyses will be finalized in 2014 and the public end-of-project conference will be held at Kolmården Wildlife Park on 8-9 December 2014.

The SAMBAH end-of-project conference was held on 8-9 December 2014 at Kolmarden Wildlife Park. Here, the final results of SAMBAH were presented, including abundance estimates and distribution maps of harbour porpoises in the Baltic Sea, and the use of the results in management were discussed.

On 9-10 December there was a national workshop dedicated to Swedish marine Environment managing bodies. Please visit www.sambah.org for more information.

You have attached the following documents to this answer: SAMBAH-news-2014-08.pdf - SAMBAH news August 2014

UNITED KINGDOM

In 2006, the Joint Cetacean Protocol (JCP) project (see http://jncc.defra.gov.uk/page-5657) was initiated. The JCP assembled disparate effort-related cetacean sightings datasets from all major sources covering north-west European Atlantic waters e.g. SCANS I & II; CODA surveys; ESAS; SWF; Atlantic Research Coalition (ARC). It also included data from non-governmental and marine renewable industry sources. Three analyses of the JCP data resource have been completed to date, with the Phase III analysis producing species specific density layers at the UK scale. The final outputs were modelled density surfaces for seven species averaged over time, with associated uncertainty, The report and associated products from this analysis are due to be published by summer 2015. A meeting of the JCP steering group will be scheduled when a publication date is set for the JCP report package.

Natural Resources Wales (NRW) commissioned the monitoring of bottlenose dolphin in Cardigan Bay and Pen Llŷn a'r Sarnau Special Areas of Conservation in 2014. Using only Capture Mark Recapture techniques, a much reduced abundance survey was completed because of limited funding (a contract report is being prepared). Additionally, NRW commissioned WDC to conduct vantage-point and, where possible, boat-based surveys of Risso's dolphins off Bardsey Island (North Wales) (report in preparation).

Systematic offshore vessel-based surveys were conducted by SWF in various parts of the UK (Irish Sea, Hebrides, Grampian Region, Shetland, and Eastern England), and regular systematic land-based watches took place in locations all around the British Isles. Most effort was between April and October. An analysis of the land watch data from 1990-2014 (funded by JNCC) was undertaken to identify coastal hotspots for harbour porpoise and bottlenose dolphin for consideration as potential SACs (Evans et al., 2015). These also revealed both

seasonal and long-term trends for the two species at a regional and overall UK scale, with significant increases in harbour porpoise in coastal waters from Northumberland round to South Devon, and in bottlenose dolphin from the southern Moray Firth to Northumberland between 1990 and 2014. Sightings survey data collected by SWF over the last twenty years contributed to a study to identify discrete and persistent areas of relatively high harbour porpoise density around the UK with a view to identifying areas for potential SACs for the species (Heinanen & Skøv, 2015).

WDC conducted photo-ID surveys for Risso's dolphin, harbour porpoise and other marine species off the Isle of Lewis in Scotland in 2014 and from Bardsey Island in North Wales in 2014. Additionally, the WDC Shorewatch Programme has collected effort-based cetacean sightings from Spey Bay since 2005 and from wider sites around Scotland since 2010 (www.whales.org/shorewatch). WDC holds records of more than 30,000 effort-based cetacean watches by trained observers. The Shorewatch database will go live in 2015 and will be fully web-accessible for trained volunteers with reduced accessibility for the wider public. In accordance with SNH funding, all recorded sightings are made fully available to the public through the NBN gateway (www.nbn.org.uk/).

See also:

• J. Clark: https://www.researchgate.net/researcher/2008938739_J_Clark/

• M.N. DeBoer: https://www.researchgate.net/researcher/2018822782_M_N_DeBoer/

• M.F. Lepold: https://www.researchgate.net/researcher/2020300894_MF_Lepold/

• M.P. Simmonds: https://www.researchgate.net/researcher/47639344_MP_Simmonds/

• M.P. Simmonds, M Green, V James and S Eisfeld. 2014. Assessing the Cardigan Bay bottlenose dolphin SACs. ECOS 34(3/4): 46-55.

• P.J.H. Reijnders: https://www.researchgate.net/researcher/2019021308_PJH_Reijnders/

• G. Aarts 2014. The influence of topographical and dynamic cyclic variables in the distribution of small cetaceans in a shallow coastal system. Plos ONE 9(1): e86331.

4.2 New Technological Developments

BELGIUM
No new information
DENMARK
None
FINLAND
None
FRANCE
None
GERMANY
Tagging In concurrence with the Cluster 7, DTAG3 tags were implemented with a fastloc GPS receiver, as well as with an ARGOS transmitter. GPS positions are recorded throughout the deployment and captures are stored, whereas the ARGIS system turns on when the tag

releases and is only used for tag recovery (for more information see Danish report).This work is funded by the BfN [Teilmann, Madsen Univ. Aarhus, Denmark; Johnson Univ. St Andrews, UK].

Effectiveness of real-time detection of harbour porpoises

Noise emissions from offshore pile driving of turbine foundations regularly exceed the sound level at which harbour porpoises suffer temporary threshold shifts (TTS). Therefore, harbour porpoises are to be deterred from the vicinity of the construction site before the start of noise intense activities, and the efficacy of this procedure is to be documented by C-PODs. However, C-POD data can only be viewed after C-POD recovery. To enable immediate initiation of mitigation procedures in case of porpoise presence, a real-time monitoring tool is needed. Therefore Seiche Ltd. (UK) developed the wireless detection system (WDS), which sends porpoise detection data in real-time from the remote recording device to a receiving station on board a ship. The WDS was tested during the installation of 48 piles of the windfarm NordseeOst in the German North Sea. Some porpoises were detected by the WDS, which lead to the immediate redeployment of the seal-scarer, which proved to be successful.

Furthermore, the performance of the WDS was tested and compared to that of the C-POD. Simultaneous deployments of the C-POD and WDS at the windfarm NordseeOst revealed that both instruments recorded generally similar data. Most porpoise detections (73-89 %) on one device were also recorded by the other within ± 6 min. Visual observations of porpoises compared to the acoustic recordings on the WDS and C-POD revealed a maximum detection radius for the WDS of 194 m when single clicks and click trains are considered and of 140 m if only click trains are taken into account. In comparison, the mean maximum detection range for the C-POD (which only detects clicks in trains) was 106 m. Both devices recorded no or only very few detections when porpoises were at distances greater than 200 m. Of 80 tracks when porpoises approached the WDS and C-POD closer than 200 m, 39 tracks (49 %) were recorded by the WDS and 32 tracks (40 %) were recorded by the C-POD. Porpoises had to spend on average 271 sec within a 200 m radius of the WDS and 398 sec within a 200 m radius of the C-POD in order to be acoustically detected with a 50 % probability. Several parameters significantly affected detection probability with most recordings when porpoises were swimming towards the WDS and C-POD, were feeding, and occurring in a group size of two (mostly mother calf pairs).

It was found that the WDS was comparable to the C-POD in terms of porpoise detection probability and detection range. The WDS proved to be a very useful tool for real-time monitoring of harbour porpoises within the danger zone around pile driving. It currently is the only remote real-time monitoring tool for porpoises that has successfully been tested under field conditions [Höschle, Gelippi, Pierpoint, Kosarev, Diederichs, Nehls; Bio-Consult SH]. High definition video technique – new technique provides excellent data on marine mammals for impact studies Increasing human activities at sea require solid data on marine mammal distribution and abundance in order to balance economic activities with conservation demands In order to obtain unbiased survey data high definition video techniques have been developed offering the possibility to cover large areas by high definition imaging with a resolution of 2 cm. A flight altitude of 549 m allows surveying in offshore wind farms which will be closed for conventional survey flights for safety reasons. Digital aerial surveying will thus replace conventional survey techniques in the near future. However, surveying marine mammals by digital imaging is often discussed as being a challenge due to the fact that animals spent most of the time under the sea surface.

In several studies in the German Bight, North Sea, we conducted high definition video surveys on harbour porpoise and harbour seals. The videos provided high sighting rates of both surfacing and submerged animals and the techniques proves to be highly useful for surveys on small cetaceans. Sighting rates and densities of harbour porpoises will be compared between conventional visual survey method and digital video technique and the quality of the different survey techniques will be discussed. On few selected pictures

exceptional observations could be made like fish balls surrounded by a group of porpoises [Diederichs, Büttger, Weiß, Nehls; Bio-Consult SH].
LITHUANIA
None
NETHERLANDS
None
POLAND
None
SWEDEN
SLU have conducted behavioural studies on cods at the entrance of cod pots. The goal is to produce useful results to develop more catch efficient cod pots. This work has continued in cooperation with a project on cod pots by the South Baltic Flag.
UNITED KINGDOM
The Sea Mammal Research Unit (SMRU) has continued to develop and refine new methods to track porpoises underwater using three dimensional drifting wide aperture passive acoustic arrays with funding from the Scottish Government. Improved towed arrays are also being developed to estimate porpoise density more accurately, by localising trains of echolocation clicks. A shore-based digiscoping project (funded by Environment Wales) has been in operation within Cardigan Bay SAC, collecting images for the long-term photo-ID monitoring project. See http://www.seawatchfoundation.org.uk/cardigan-bay-monitoring-project/ WDC organised a workshop at the International Marine Conservation Committee (IMCC) on noise reduction technologies for pile driving in 2014

4.3 Other Relevant Research

BELGIUM
None
DENMARK
Nweeia MT, Eichmiller FC, Hauschka PV, Donahue GA, Orr JR, Ferguson SH, Watt CA, Mead JG, Potter CW, Dietz R, Giuseppetti AA, Black SR, Trachtenberg AJ, Kuo WP 2014. Sensory Ability in the Narwhal Tooth Organ System. The Anatomical Record 297:599–617. DOI 10.1002/ar.22886 Berga AS, Wright AJ, Galatius A, Sveegaard S, Teilmann J. 2015. Do larger tag packages alter diving behaviour in harbour porpoises. Marine Mammal Science, in press.
FINLAND
None
FRANCE
None

GERMANY
A study about the detection and classification of marine mammal signatures (= phonograms) was continued, with the focus on the improvement of the classification algorithms and processing of signatures in real-time. New bioacoustic data were integrated into a marine mammal data base (containing sightings, strandings, worldwide maps of occurrence and characteristics). Acoustic samples of sperm whales were used within a study to investigate the automated estimation of the number of individuals from acoustic recordings, using clustering and grouping techniques of the click signatures. The detection probability of harbour porpoises at the surface was investigated with a mounted digital video camera at the research platform FINO 3 during a pilot study, using automated image processing algorithms. A new towed hydroPhone array for the acoustic detection of marine mammals was further tested during a research trial. For the use within the German Navy an html-based atlas of marine mammals was further developed, containing information on species characteristics, behaviour, abundance, distribution and acoustics [BMVg]. Stranding Monitoring In Schleswig-Holstein all stranded cetaceans from the North and Baltic Seas were collected by the local stranding network. Necropsies were conducted to assess the health status and identify anthropogenic effects on cetaceans in the North and Baltic Seas. In addition, reproduction biology, age, genetic structure and feeding ecology were studied [Siebert, ITAW]. The collection of information on harbour porpoises found dead was continued in 2014; the number of dead animals in the district of Cuxhaven amounted to 2 carcasses [Pund, LAVES].Collection of information about harbour porpoises found dead at the coast of Lower Saxony was continued. The number of harbour porpoises found dead at the coast of Lower Saxony amounted to 49 carcasses in 2014. This total also included the carcasses mentioned in 4.3 & 5 from LAVES report [Czeck, NDS-NLPV]. The data since 1983 are available at: http://www.nationalparkwattenmeer.de/sites/default/files/media/pdf/schweinswal_totfunde_2014_0.pdf
LITHUANIA
None
NETHERLANDS
None
POLAND
In 2012, the University of Gdansk commenced the construction of a modern research vessel designed e.g. for the observation of marine mammals and related hydroacoustic tests. Construction works are to conclude in 2015.
SWEDEN
None
UNITED KINGDOM
The following publications have been supplied by Northern Ireland DoE, CSIP, SWF, WDC:

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Banguera-Hinestroza, E., Evans, P.G.H., Mirimin, L., Reid, R.J., Mikkelsen, B., Couperus, A.S., Deaville, R.,

Rogan, E and Hoelzel, A.R. (2014) Phylogeography and population dynamics of the white-sided dolphin in the North Atlantic Conservation Genetics DOI 10.1007/s10592-014-0578-z.

Barratclough A., Jepson P.D., Hamilton P.K., Miller C.A., Wilson K., Moore M.J. (2014) how much does a swimming, underweight, entangled right whale (*Eubalaena glacialis*) weigh? Calculating the weight at sea, to facilitate accurate dosing of sedatives to enable disentanglement. Marine Mammal Science doi: 10.1111/mms.12132.

Brown, A. 2014. The significance of the east coast of the Isle of Lewis for the harbour porpoise (Phocoena phocoena). Edinburgh Napier University.

Davison, N.J., Barnett, J.E.F., Koylass, M., Whatmore, A.M., Perkins, M.W., Deaville, R.C. and Jepson, P.D. (2014) Helicobacter cetorum infection in striped dolphin (*Stenella coeruleoalba*), Atlantic white-sided dolphin (*Lagenorhynchus acutus*), and short-beaked common dolphin (*Delphinus delphis*) from the southwest coast of England. Journal of Wildlife Diseases doi: http://dx.doi.org/10.7589/2013-02-047

Dolman, S.J., Tetley, M.J., Eisfeld-Pierantonio, S.M., Green, M., Read, F., Ritter, F. and Evans, P.G.H. (2015). The necessity of Management Options for effective harbour porpoise conservation in the UK: Case studies of emerging Areas of Concern. A WDC Report.

Embling, C., Walters A.E.M., and Dolman, S.J. (2015). How much effort is enough? The power of citizen science to monitor trends in coastal cetacean species. Global Ecology and Conservation. (3), pp. 867–877.

Evans, P.G.H., Anderwald, P., and Wright, A.J. (2014) Marine mammal research: its relationship to other scientific disciplines and to wider society. Journal of the Marine Biological Association of the UK, 94: 1073- 1077.

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Evans, P.G.H., Pierce, G.J., Veneruso, G., Weir, C.R., Gibas, D., Anderwald, P., and Santos, M.B. (2015) Identification whether persistent areas of harbour porpoise and bottlenose dolphin are supported by available evidence. JNCC Report No. 543. Joint Nature Conservation Committee, Peterborough. 147pp.

Evans, P.G.H. and Bjørge, A. (2014) Impacts of climate change on marine mammals. Marine Climate Change Impacts Partnership (MCCIP) Science Review: 134-148.

Feingold, D. and Evans, P.G.H. (2014a) Bottlenose Dolphin and Harbour Porpoise Monitoring in Cardigan Bay and Pen Llŷn a'r Sarnau Special Areas of Conservation 2011-2013. NRW Evidence Report Series Report No. 4. Natural Resources Wales, Bangor. 124pp.

Feingold, D. and Evans, P.G.H. (2014b) Connectivity of Bottlenose Dolphins in Welsh Waters: North Wales Photo-Monitoring Interim Report. NRW Evidence Report Series Report No. 5. Natural Resources Wales, Bangor.

Fernández, R., Pierce, G.J., MacLeod, C.D., Brownlow, A., Reid, B., Rogan, E., Addink, M., Deaville, R., Jepson P.D. and Santos, M.B. (2014) Strandings of northern bottlenose whale (*Hyperoodon ampullatus*) in the NE Atlantic: seasonality and stomach contents. Journal of the Marine Biological Association of the United Kingdom http://dx.doi.org/10.1017/S002531541300180X

García-Párraga D, Crespo-Picazo JL, Bernaldo de Quirós Y, Cervera V, Martí-Bonmati L, Díaz-Delgado J, Arbelo M, Moore MJ, Jepson PD, Fernández A. 2014. Decompression sickness ('the bends') in sea turtles (2014) Diseases of Aquatic Organisms 111(3):191-205

Heinanen, S. and Skøv, H. (2015) The identification of discrete and persistent areas of relatively high harbour porpoise density in the wider UK marine area. JNCC Report No. 544. Joint Nature Conservation Committee, Peterborough. 108pp.

Hintner, K. (2014) The Magic Dolphin. Creative Conservation, Milton Keynes. 124pp. ISBN 978-0-9930819-0-3.

Hodgins, N.K., Dolman, S.J. and Weir, C. 2014. Potential hybridism between free-ranging Risso's (*Grampus griseus*) and bottlenose dolphins (*Tursiops truncatus*) off north-east Lewis (Hebrides, UK)". Marine Biodiversity Records, 7, e97 doi:10.1017/S175526721400089X.

Hudson, T.A. (2014) Bottlenose dolphin (*Tursiops truncatus*) responses to vessel activities in New Quay Bay. MSc thesis, University of Bangor. 72pp.

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Learmonth, J.A., Murphy, S., Luque, P.L., Reid, R.J., Patterson, I.A.P., Brownlow, A., Ross, H.M., Barley, J.P., Begoña Santos, M., Pierce, G.J. (2014) Life history of harbour porpoises (*Phocoena phocoena*) in Scottish (UK) waters. Marine Mammal Science 30, 1427-1455.

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Louis, M., Fontaine, M.C., Spitz, J., Schlund, E., Dabin, W., Deaville, R., Caurant, F., Cherel, Y., Guinet, C. and Benoit, S.B. (2014) Ecological opportunities and specializations shaped genetic divergence in a highly mobile marine top predator. Proc. Roy, Soc. B 281, 20141558.

Massey, D. (2014) Whistle variations within the bottlenose dolphin population of Cardigan Bay, Wales. MScthesis, University of Bangor. 57pp.

McClellan, C. M., Brereton, T., Dell'Amico, F., Johns, D. G., Cucknell, A.-C., Patrick, S. C. Godley, B. J. (2014). Understanding the distribution of marine megafauna in the English channel region: identifying key habitats for conservation within the busiest seaway on earth. PloS one, 9(2), e89720. doi:10.1371/journal.pone.0089720Metcalfe, M., Macklin, G., & Perry. (2014). The ShoreFin Report 2014 (pp. 1–36).

Murphy, S., Perrott, M., McVee, J., Read, F., and Stockin, K. A. (2015). Deposition of growth layer groups indentine tissue of captive common dolphins *Delphinus delphis*. NAMMCO Scientific Publication Volume 10: Age estimation of marine mammals with a focus on monodontids. doi: http://dx.doi.org/10.7557/3.3017

Murphy, S. 2014. A preliminary report from the Joint ACCOBAMS/ASCOBANS Working Group on the Marine Strategy Framework Directive (MSFD). Report to the 21st ASCOBANS

Advisory Committee Meeting, 29th September – 1st October, Gothenburg, Sweden. AC21/Doc.13.3.1 (WG)

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Peltier H., Dabin, W., Jepson P.D., Deaville, R., Van Canneyt, O., Daniel, P. and Ridoux, V. (2014) The contribution of stranding data to monitoring and conservation strategies for cetaceans: developing spatially explicit mortality indicators for common dolphins in the eastern North Atlantic. Ecological Indicators 39; 203– 214.

Peña, A. Vergara (2014) Temporal changes in site usage by bottlenose dolphins (*Tursiops truncatus*) in New Quay Bay, Wales. MSc thesis, University of Bangor. 90pp.

Stevens, A. (2014) A photo-ID study of the Risso's dolphin (*Grampus griseus*) in Welsh coastal waters and the use of Maxent modeling to examine the environmental determinants of spatial and temporal distribution in the Irish Sea. MSc thesis, University of Bangor. 97pp.

Van Bressem, M.-F., Duignan, P.J., Banyard, A., Barbieri, M., Colegrove, K.M., De Guise, S., Di Guardo, G., Dobson, A., Domingo, M., Fauquier, D., Fernandez, A., Goldstein, T., Grenfell, B., Groch, K.R., Gulland, F., Jensen, B.A., Jepson, P.D., Hall, A., Kuiken, T., Mazzariol, S., Morris, S.E., Nielsen, O., Raga, J.A., Rowles, T.K., Saliki, J., Sierra, E., Stephens, N., Stone, B., Tomo, I., Wang, J., Waltzek, T. and Wellehan, J.F. (2014) Cetacean Morbillivirus: Current Knowledge and Future Directions. Viruses 6, 5145-5181

Van Elk, C.E., van de Bilt, M.W.G., Jauniaux, T., Hiemstra, S., van Run, P.R.W.A., Foster, G., Oesterhaus, A.D.M.E. and Kuiken, T. (2014) Is dolphin morbillivirus virulent for white beaked dolphins (*Lagenorhynchus albirostris*)? Veterinary Pathology 51(6) 1174-1182

Wilson, S.C., Eybatov, T.M., Amano, M., Jepson, P.D. and Goodman, S.J. (2014) The roles of disease epidemiology and persistent organic pollutants in long-term mortality patterns in Caspian seals, *Pusa caspica*. PLOS ONE doi: 10.1371/journal.pone.0099265

C. USE OF BY-CATCHES AND STRANDINGS

5 POST-MORTEM RESEARCH SCHEMES

5.1 Contact Details

5.2 Methodology

5.3 Samples

5.4 Database

5.5 Additional Information

BELGIUM
Contact details of research institutions / focal point
RBINS (MARECO) ULg (see general information)
Methodology used (reference, e.g. publication, protocol)
No new information since 2009
Collection of samples (type, preservation method)
See strandings protocol; references in previous reports
Database (Number of data sets by species, years covered, software used, online access)
All sightings and strandings are taken up in a database, partly online on http://www.mumm.ac.be/EN/Management/Nature/search_strandings.php and http://www.naturalsciences.be/en/science/template/2472 Tissues are recorded in a tissue database (not online yet).
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
No new information
DENMARK
Contact details of research institutions / focal point
The National Veterinary Institute (DTU-VET), Bülowsvej 27, 1870 Frederiksberg C, Denmark The Fisheries and Maritime Museum, Tarphagevej 2, 6710 Esbjerg V, Denmark. Contact person: Lasse Fast Jensen, Phone +45 76122000, Email: lfj@fimus.dk
Methodology used (reference, e.g. publication, protocol)
None

Collection of samples (type, preservation method)
The National Veterinary Institute, necropsies (contact: Mette Sif Hansen, mesi@vet.dtu.dk)Collection of samples for: Parasitology (lung, intestines, diapraghma) Storage (lung and spleen). Other tissues on indication. Collection of samples to Aarhus University (contact: Anders Galatius, agj@dmu.dk): teeth, muscle, skin, blubber, liver, kidney, stomach contents, urine, blood, spleen, gonads/reproductive organs, lung, diapraghma, faeces Collection of samples to The Fisheries and Maritime Museum (contact: Lasse Fast Jensen, lfj@fimus.dk): teeth, muscle, skin, blubber, liver, kidney, stomach contents, urine, blood, spleen, gonads/reproductive organs, lung, diapraghma, faeces
Database (Number of data sets by species, years covered, software used, online access)
None
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
Necropsy findings of marine mammals are reported on an annual basis in a report (in Danish) from DTU-VET for the Danish Nature Agency. The latest available report covers 2013. http://www.vildtsundhed.dk/Om-Vildtsundhed-dk/Aarsrapporter The following Web links/URLs was attached to this answer. Necropsy report - Necropsy findings of marine mammals are reported on an annual basis in a report (in Danish) from DTU-VET for the Danish Nature Agency. The latest available report covers 2013.

FINLAND
Contact details of research institutions / focal point
None
Methodology used (reference, e.g. publication, protocol)
None
Collection of samples (type, preservation method)
None
Database (Number of data sets by species, years covered, software used, online access)
None
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
None

FRANCE
Contact details of research institutions / focal point
French stranding network is nationally coordinated by PELAGIS/ULR under an agreement with the Ministry in charge of the Environment. Local voluntary observers, generally under local supervision by various institutions or NGOs (Oceanopolis, GEFMA, GMN, CMNF, Picardie Nature, ONCFS…), have been trained to process stranded cetaceans under a common standardized protocol. An annual synthesis of all strandings reported in France is produced by PELAGIS/ULR. Statistics of stranding for the coasts of France in the ASCOBANS region in 2014 indicate more than 1 930 cetaceans reported. These standings concerned 10 species and are composed of 49 % of common dolphin, 36 % of harbour porpoise, 7 % of striped dolphin, 6 % of bottlenose dolphin and 2 % other species. Stranding data provides information on death causes, demographic structure (age and reproductive status), diet (stomach content), trophic levels (stable isotopes) and subpopulation structure or movement pattern (genetic, stable isotopes, heavy metals and contaminants). A total exceeds 360 individuals were sampled according 3 levels of exams/sampling (see 5.3) Observatoire PELAGIS/ULR, Universite de La Rochelle, La Rochelle PELAGIS/ULR
Methodology used (reference, e.g. publication, protocol)
Standardized protocol derived from ECS necropsy workshop 2005 (Jauniaux, T. Beans, C; and Dabin W. 2005. Stranding, Necropsy and sampling: Collection data, sampling level end techniques)
Collection of samples (type, preservation method)
Standardized protocol on cetacean strandings includes 3 levels according to the animal decomposition state, necropsy means and skills available (biologist / veterinarian) - Level 1 : teeth and external samples (skin, blubber) - Level 2 : level 1 + gonads and samples of internal organs (liver, kidney, stomach contains,…) - Level 3 : level 2 + samples for pathological analyses In 2014, the sampling on cetacean strandings includes (data gathering uncompleted at the time of writing this report) : - Level 1 : 284 individuals from 8 species - Level 2 : 77 individuals from 8 species - Level 3 : 3 individuals from 3 species Biodemographics samples : gonads (formalin/frozen) and teeth (frozen) Diet and feeding ecology: stomach contains (frozen) and blubber fatty acids and stable isotope (frozen)Genetics: skin and kidney (frozen and alcohol) Toxicologic: heavy metal and POP’s analysis on muscle, liver and kidney (frozen with specific packaging) Parasitology (alcohol) Histopathology (formalin)

Bacteriology and virology (frozen)
Database (Number of data sets by species, years covered, software used, online access)
Database (number of data sets by species, years covered, software used, online access) National stranding data base (1972-2014) contains a total of 17 100 records of cetacean strandings in the ASCOBANS area, and 930 records from 10 species in 2014. In 2014 the national database was migrated to an webdatase system (php myadmin)
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
http://www.observatoire-pelagis.cnrs.fr/catalogueSI/ (metadata catalogs)

GERMANY
Contact details of research institutions / focal point
Contact details of research institutions and focal point Schleswig-Holstein (SH): Terrestrial and Aquatic Wildlife Research (ITAW) of the 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 (sichtungen@meeresmuseum.de), Phone: +49 (0)3831 2650 333, Fax: +49 (0)3837 2650 209, 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 [Siebert, ITAW, Schwarz-Kaack, MELUR]. Necropsies were only conducted on porpoises from the Baltic and North MV: Basic biological and anatomical data were collected and registered. Necropsy was performed occasionally. LS: Metric measurements of harbour porpoise carcasses in Lower Saxony (District of Cuxhaven) were taken. Due to advanced decomposition of the carcasses no necropsy examinations could be performed in 2014.
Collection of samples (type, preservation method)
SH: Pathological samples were partly taken on porpoises from the Baltic Sea and North Sea. MV: Pathological samples will be collected and examined during necropsy if required. LS: Due to advanced decomposition of the carcasses no samples could be taken in 2014
Database (Number of data sets by species, years covered, software used, online access)
SH: MySql, PostgreSQL, Access, Excel

In 2014, 63 dead harbour porpoises were found at the coasts of SH in the North Sea and 98 were found at the coast of SH in the Baltic Sea

Between 1990 and 2014 the following number of data sets has been collected per species (data recorded until 19.01.15):

Phocoena phocoena: 3.536

Delphinus delphis: 8

Lagenorhynchus albirostris: 26

Lagenorhynchus acutus: 2

Stenella caeruleoalba: 1

Delphinapterus leucas: 1

Delphinapterus ampullatus: 1

Physeter macrocephalus: 7

Balaenoptera acutorostrata: 7

Balaenoptera physalus: 6

Globicephala melas: 3

Tursiops truncatus: 1

Mesoplodon bidens: 1

MV: Data were collected and registered in Access database and Excel.

In 2014, 31 dead harbour porpoises were found at the coasts of MV.

LS: The number of dead animals in the district of Cuxhaven amounted to 2 carcasses: Metric data from 1 carcass were collected and registered in the IFF Cuxhaven. Due to severe decay of the second carcass no data could be collected.

Further 3 carcasses outside of the Cuxhaven district were reported from the NLWKN to the IFF Cuxhaven.

Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)

The German Oceanographic Museum collects information about incidental stranding and sightings (see at http://www.deutschesmeeresmuseumde/dmm/stiftungdeutschesmeeresmuseum/wissenschaft/schweinswale/sichtungen/sichtungmelde

LITHUANIA

Contact details of research institutions / focal point

No post-mortem researches were performed.

Methodology used (reference, e.g. publication, protocol)

None

Collection of samples (type, preservation method)
None
Database (Number of data sets by species, years covered, software used, online access)
None
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
None

NETHERLANDS
Contact details of research institutions / focal point
Department of Pathobiology, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 1, 3584 CL Utrecht, The Netherlands. 0031 30 253 3591
Methodology used (reference, e.g. publication, protocol)
T. Kuiken, M. García Hartmann M Proceedings of the first ECS workshop on cetacean pathology; dissection techniques and tissue sampling. ECS Newsletter 17, (1991) Special Issue. 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. Depending on the type of research formalin-fixed, paraffin-embedded, or frozen to -20ºC (-80ºC for virology research) 2. Gastric contents (frozen to -20ºC handed to IMARES) 3. Liver, fat and muscle (frozen to -20ºC handed to IMARES) 4. Skin (ethanol) 5. Teeth (water or frozen to -20ºC handed to IMARES) 6. Parasites (70% alcohol) 7. Swabs from the genital openings
Database (Number of data sets by species, years covered, software used, online access)
Excel, 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 2014, 581 animals were stranded: 573 harbour porpoises, 2 fin whales, 1 short-beaked common dolphin and 1 long-finned pilot whale were registered. Furthermore, bone segments were found of orca (1 lower jaw), common bottle nose dolphin (1 lower jaw), white beaked dolphin (1 lower jaw) and a common minke whale (1 skull).

POLAND
Contact details of research institutions / focal point
Hel Marine Station, Institute of Oceanography, University of Gdańsk, Iwona Pawliczka, iwona.pvp@ug.edu.pl
Methodology used (reference, e.g. publication, protocol)
Post-mortem analyses are being conducted according to procedures described in: Kuiken, T. and Hartmann, M.G. (1993). Dissection techniques and tissue sampling. Proceedings of the ECS Workshop, Leiden
Collection of samples (type, preservation method)
The Hel Marine Station, Institute of Oceanography, University of Gdańsk collects, as part of its statutory activity, data on dead porpoises and dolphins from either bycatch or stranded onshore. The dead specimens, upon their arrival at the Station, are being subject to analyses within the scope limited by the status of the remains. The standard scope of sampling covers: - Species determination; -Localization of deadly event; -Establishing factual and supposed cause of death; - Ascertaining of the body length and mass; -Sex ascertaining; -Fat tissue sampling for genetic examination; -Teeth sampling for age determination; -A full post-mortem analysis and storage of biological samples according to Kuiken &Hartmann, 1993.
Database (Number of data sets by species, years covered, software used, online access)
Data have been entered into the standard Access database since 1988. There is no on-line access to this base.

Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
An electronic atlas of mammals distribution in Poland has been prepared and updated, under the title “Atlas of Mammals in Poland” (Polish: Atlas ssaków Polski) (developed by the Institute of Nature Conservation of the Polish Academy of Sciences) Link: http://www.iop.krakow.pl/ssaki/Katalog.aspx) The atlas also includes data on the discoveries of dead or bycaught cetaceans and their distribution (the data are introduced by SMIOUG based on its database). An example concerning the porpoise: link: http://www.iop.krakow.pl/ssaki/Gatunek.aspx?spID=183

SWEDEN
Contact details of research institutions / focal point
Anna Roos, Department of Contaminant research, Swedish Museum of Natural History, PO Box 50007, SE-104 05 Stockholm. anna.roos@nrm.se
Methodology used (reference, e.g. publication, protocol)
Using a common protocol made for cetaceans.
Collection of samples (type, preservation method)
The Baltic Sea, up to Skanör/Måkläppen: Basically samples from all carcasses were collected, and if the carcass was not too rotten SMNH made a full autopsy. Skin, blubber, muscular tissue, kidney, liver, brain, lung, spleen, stomach, intestines teeth etc. are taken and stored deep frozen in SMNH’s Environmental Specimen Bank (ESB). Porpoises found in 2011 have autopsied by pathologists at The National Veterinary Institute (SVA) together with personnel from SMNH. All of the carcasses were from the Baltic Sea (including the Kattegat). In addition, eleven stranded porpoises were sampled by GNM. Samples (dorsal fin, blubber, lower jaw) were sent to ESB. Seven of the specimen originated from the Baltic Sea. No report have been delivered by SMNH in 2012. In 2013 there were 6 harbour porpoises reported, all from the Swedish west coast. They were all nonsexually mature. Three of them could be considered as by-catch (found on the beach with injuries from fishing nets + drowned) We have got reports on 7 harbour porpoises found dead from the Swedish westcoast and 1 from the Baltic sea during 2014. This time we can´t tell if they died from drowning/bycatch or from any other cause.
Database (Number of data sets by species, years covered, software used, online access)
The SMNH has a database of porpoise samples from 1972 until today, and consist of more than 700 specimens. Software: MySQL. No online access yet. Data include: species, location, cause of death, blubber thickness (several places), length, weight, weight of several organs etc. The SMNH also has a database on reported live (and dead) animals, all published on line at www.nrm.se/tumlare.

Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
The SMNH host a web page where the public can report sightings of live porpoises: www.nrm.se/tumlare.

UNITED KINGDOM
Contact details of research institutions / focal point
UK Cetacean Strandings Investigation Programme (CSIP). Contact point – Rob Deaville, Institute of Zoology, Regents Park, London, NW1 4RY, ENGLAND. rob.deaville@ioz.ac.uk, www.ukstrandings.org Natural Resources Wales – Dr Thomas Stringell, Senior Marine Mammal Ecologist tom.stringell@naturalresourceswales.gov.uk
Methodology used (reference, e.g. publication, protocol)
Methodology in Deaville and Jepson et al (2011) followed; Deaville and Jepson (compilers) (2011) CSIP Final Report for the period 1st January 2005-31st December 2010. Pp 1-98 http://randd.defra.gov.uk/Document.aspx?Document=FinalCSIPReport2005-2010_finalversion061211released[1].pdf To note: There is an on-going collaboration between CSIP, the RSPCA, others, into the investigation of methods for humane euthanasia of cetaceans.
Collection of samples (type, preservation method)
A range of samples are routinely collected according to the method of Deaville and Jepson et al (2011). A variety of tissues are routinely sampled for any bacteriological, virological and/or histopathological investigations when deemed appropriate. A number of preservation methods are employed; • stored frozen at -20oC or -80oC; • stored in 70% ethanol (parasites); • or in 10% buffered formalin (fixed samples)
Database (Number of data sets by species, years covered, software used, online access)
The CSIP holds data on nearly 11700 cetaceans which were reported stranded around the UK between 1990 and 2013. In addition, detailed pathological data is also held on over 3300 UK stranded cetaceans which were necropsied by the CSIP during the same period. Data collected on strandings and during necropsies are routinely recorded in a web-accessed relational database (http://data.ukstrandings.org). A proportion of data held on this system is also made available to the public via a Defra funded portal, the NBN gateway (www.nbn.org.uk/).
Additional Information (e.g. website addresses, intellectual property rights, possibility of a central database)
The CSIP is co-funded by Defra, Scottish Government, and Welsh Government, with additional funding also provided by Natural Resources Wales. Further information on the CSIP is available at www.ukstrandings

5.6 Number of Necropsies Carried out in Reporting Period:

Species	Number	Recorded cause of death
BELGIUM		
Phocoena phocoena	*+ 60*	
DENMARK		
Phocoena phocoena	1	By-caught, autopsied at DTU-Vet
Globicephala melas	1	No apparent cause of death
Lagenorhynchus albirostris	3	Were emaciated with chronic peritonitis. 1 was emaciated with worn teeth. DTU-Vet examined material from the dolphins
FINLAND		
None		
FRANCE		
Phocoena phocoena		For the reporting period, 930 cetaceans are recorded by the national stranding network in the French part of the ASCOBANS area: - 787 were examined by the stranding network - 449 the exam added samples - and 75 necropsies documented the cause of death Data is currently gathered and archived but the detail isn't still known at the date of this report
GERMANY		
Phocoena phocoena	SH: 161 / MV: 15 / LS:	MV: Recorded strandings only partially to be necropsied; recorded cause of death: drawn, parasitic diseases, bacterial infection, pneumonia, dystocia
LITHUANIA		
None		
NETHERLANDS		
Phocoena phocoena	23	see section 5.7
POLAND		
Phocoena phocoena	6	unrecorded

Species	Number	Recorded cause of death
SWEDEN		
None	None	None
UNITED KINGDOM		
Phocoena phocoena	60	Bottlenose Dolphin Attack (n=12), Starvation (n=6), Bycatch (n=6), Physical Trauma (n=3), Pneumonia, Parasitic (n=3), Dystocia & Stillborn (n=3), Generalised Bacterial Infection (n=3), Others (n=3), Generalised Mycotic Infection (n=2), Starvation (neonate) (n=2), Gastritis and/or Enteritis (n=2), Live Stranding (n=1), Entanglement (n=1), Not Established (n=2), pending (n=11)
Tursiops truncatus	8	Live Stranding (n=1), (Meningo)encephalitis (n=1), Gastritis and/or Enteritis (n=1), Starvation (n=1), Neonatal Death (n=1), Others (n=1), Not Established (n=2)
Delphinus delphis	15	Live Stranding (n=3), Others (n=2), Starvation (n=1), Physical Trauma (n=1), Physical Trauma, Boat/Ship Strike (n=1), Bottlenose Dolphin Attack (n=1), Generalised Bacterial Infection (n=1), Gastritis and/or Enteritis (n=1), Starvation (neonate) (n=1), (Meningo)encephalitis (n=1), Not Established (n=1), pending (n=1)
Stenella coeruleoalba	5	(Meningo)encephalitis (n=3), Starvation (n=1), pending (n=1)
Grampus griseus	5	Generalised Bacterial Infection (n=1)
Globicephala melas	3	Live Stranding (n=2), (Meningo)encephalitis (n=1)
Lagenorhynchus albirostris	7	Live Stranding (n=3), Pneumonia, Bacterial (n=1), Pneumonia, Parasitic (n=1), Physical Trauma (n=1), Not Established (n=1)
Orcinus orca	1	Others (n=1)
Hyperoodon ampullatus	2	Live Stranding (n=2)
Mesoplodon bidens	2	Live Stranding (n=2)
Kogia breviceps	1	Generalised Bacterial Infection (n=1)
Others	3, Physeter microcephalus	Live Stranding (n=2), Physical Trauma, Boat/Ship Strike (n=1)
Others	3, Balaenoptera acutorostrata	Others (n=2), Generalised Bacterial Infection (n=1)

Species	Number	Recorded cause of death
Others	1, Megaptera novaeangliae	Entanglement (known) (n=1)
Others	1, Ziphius cavirostris	Live Stranding (n=1)

5.7 Other relevant information on post-mortem / strandings schemes

BELGIUM

In total, 130 porpoises washed ashore in 2014. A large proportion of the stranded animals was not collected due to the state of decomposition, due to an inaccessible location, or due to the fact that they were not found.

Many animals were in a condition that did not allow drawing conclusions about the cause of death. Six animals washed ashore alive: 2 were returned to sea immediately, 2 died shortly after stranding, and 2 were transported by RBINS towards the Harderwijk rehabilitation centre (1 was released in 2015, the other one will not be released due to health issues and the fact that it concerned a very young animal at stranding). Three strandings were reported from inland waters (possibly one animal had stranded already during 2013), a number much lower than in 2013. Detailed data are not available yet, but preliminary data indicate that at least 13 of the animals that had washed ashore along the coast had died due to bycatch in fishing gear. None of the bycaught animals were reported by fishermen, but there are indications that bycatch occurred in both recreational set net fisheries on the beach and in professional fisheries, both inside and outside Belgian waters. Eleven animals showed signs of death due to an attack by a grey seal.

Necropsy workshop

An international necropsy workshop was organized (8th Cetacean Necropsy Workshop) at the university of Liège (30 June–1 July 2014). A number of harbour porpoises were autopsied. The main subjects were autopsy techniques, including the dissection of the inner ear of cetaceans. The workshop was extended to 2 July for brainstorming about a new necropsy protocol and on assessing grey seal predation on other marine mammals.

Relevant publications, posters, abstracts

Alonso-Velasco, E., Jauniaux, T., Michel, P., Godfroid, J., Fretin, D., 2014. Brucella surveillance in stranded marine mammals from the south of the North Sea. Is the marine wildlife a potential reservoir of brucellosis for humans? 28th annual conference of the European Cetacean Society, Liege, Belgium.

Brihaye, E.; Bouveroux, Th.; Degraer, S.; Dulière, V.; Haelters, J.; Pezeril, S. & Jauniaux, T., 2014. Strandings of the common porpoise (*Phocoena phocoena*) in the southern North Sea: what did they die of, where did they come from? Abstract book of the 28th Annual Conference of the European Cetacean Society: Marine mammals as sentinels of a changing environment, Liège, Belgium, 5-9 April 2014: 112.

Jauniaux, T., Garigliany, M-M., Loos, P., Bourgain, J-L., Bouveroux, T., Coignoul, F., Haelters, J., Karpouzopoulos, J., Pezeril, S. & Desmecht, D., 2014. Bite injuries of grey seals (*Halichoerus grypus*) on harbour porpoises (*Phocoena phocoena*). PLoS ONE 9(12): e108993. doi:10.1371/journal.pone.0108993

van de Velde, N., Devleesschauwer, B., Decraeye, S., Barnett, J., Begeman, L., Brownlow, A., Davison, N., IJzer, J., Jauniaux, T., Hiemstra, S., Siebert, U., Dorny, P., 2014.

Toxoplasma gondii in marine mammals. 28th annual conference of the European Cetacean Society, Liege, Belgium.

van Elk, C.E., van de Bildt, M.W.G., Jauniaux, T. , Gröne, A., Hiemstra, S., van Run, P.R.W.A., Foster, G., Meerbeek, J., Osterhaus, A.D.M.E. and Kuiken, T., 2014. Is dolphin morbillivirus virulent for white-beaked dolphins (*Lagenorhynchus albirostris*)? Veterinary Pathology, DOI: 10.1177/0300985813516643

DENMARK

Preliminary stranding data for 2014 collected by The Fisheries and Maritime Museum, Tarphagevej 2, 6710 Esbjerg V, Denmark. Contact person: Lasse Fast Jensen, Phone +45 76122000, Email: lfj@fimus.dk.

Harbour Porpoise (*Phocoena phocoena*): 108

White Beaked Dolphin (*Lagenorhynchus albirostris*): 2

Pilot whale (*Globicephala melas*): 1

Data might still be subjected to changes.

FINLAND

None

FRANCE

A new paper was recently accepted for publication in Environmental Science and Policy and aimed to provide a context for the interpretation of marine megafauna stranding data, in order to assess the achievement of specific objectives against Good Environmental Status criteria in context of EU Marine Strategy Framework Directive or other regional agreements. The first step is to construct an a priori spatial distribution under a null hypothesis H0. The drift prediction of these theoretical carcasses would provide time series of strandings expected under the null hypothesis. The reverse drift of observed strandings would highlight mortality areas of stranded animals. The correction of these areas by the probability of getting stranded according to drift conditions would provide an estimated distribution of dead animals inferred from strandings. The differences between expected and observed situations constitute anomalies and highlight cases where inferred distribution departs from the a priori spatial distribution. This work proposes several population indicators that can be used anywhere in the world and can be applied for all large marine vertebrates found stranded. The integration of these indicators in MSFD and various regional agreements could provide cost-effective and relevant information on protected species. According to these results, new methodology was developed to compare parameters and bycatch estimates provided by observer programs in France and UK national reports and those inferred from stranding data. Bycatch estimates were estimated from stranding data, correcting effectives for drift conditions (using a drift prediction model) and probability of being buoyant. Observer programs on fishing vessels allowed to identify the specificity of the interaction between common dolphins and fishing gears, and provided low estimates of annual bycaught animals (around 550 animals.year-1). However, observer programs are hindered by logistical and administrative constraints and the sampling scheme seems not well designed for marine mammal bycatches. Bycatch numbers inferred from strandings suggested very high levels, ranging from 3,650 dolphins.year-1 [2,250-7,000] to 4,700 [3,850-5,750] dolphins.year-1 depending on methodological choices. The main advantage of these source of data is the large spatial scale irrespective of administrative boundaries. Diverging estimates between observer programs and stranding interpretation can set off very different management consequences: observer programs suggested sustainable situation for common dolphins whereas estimates based on strandings highlighted a very worrying and unsustainable process. These results demonstrated the complementarity of these approaches and the

importance of consider bycatch through different source of data in order to have a bigger view of this worrying phenomenon.
GERMANY
No other relevant information
LITHUANIA
None
NETHERLANDS
23 harbour porpoises from 2014 were necropsied at the Department of Pathobiology of the University of Utrecht. These were 7 adults, 9 juveniles and 7 neonates. 12 were male, 11 were female. Of the six adult females 4 were lactating and one was pregnant. The cause of death was: bycatch (5 in total; 2 certain, 1 highly probable, one possible); Grey seal attack (6); infectious disease (8); lack of food (4 in total; 2 emaciation with one unknown cause and one with severe parasites, also 2 cases of starvation of neonates) and 1 case of birth problems. An additional 28 animals from the region of the Oosterschelde and Westerschelde were analysed specifically for diet research. Between January and December 2014 Electronic Monitoring systems have been installed on a number of Dutch set net vessels. During this time two bycaught animals have been called in by fishermen and brought ashore for further pathological research. Both animals were juvenile males. Necropsy findings suggest that asphyxiation as a result of bycatch was the cause of death.
POLAND
Table. Data concerning the date, location, length, sex, place of finding the porpoises and place of samples storage. Source: WWF/SMIOUG report data base – year 2014 Date Length Sex Place of finding Place of samples storage 05.02.2014 122cm Male porpoise Unieście Hel Marine Station 20.06.2014 100cm Male porpoise Beach in Międzywodzie Hel Marine Station 11.07.2014 147cm Male porpoise Bay of Puck Hel Marine Station 6.08.2014 87cm Male porpoise Dąbki, Darłowo Hel Marine Station 27.08.2014 165cm Female porpoise Darłowo harbour Hel Marine Station 13.12.2014 nd Male porpoise Bay of Puck, Hel Hel Marine Station
SWEDEN
We have got reports on 7 harbour porpoises found dead from the Swedish westcoast and 1 from the Baltic sea during 2014. This time we can´t tell if they died from drowning/bycatch or from any other cause.
UNITED KINGDOM
NB Causes of death in some individuals contained in the above table are provisional and pending the results of follow up analyses. Finalised causes of death will be given in the CSIP 2014 annual report to Defra and the Devolved Administrations in the UK, which will be published at: http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Proje

ctID=17835&FromSearch=Y&Publisher=1&SearchText=strandings&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description.

The CSIP Annual Report to Defra for the period 1st January-31st December 2013 (compiled by R. Deaville, 2014) may be accessed via the following link:

http://sciencesearch.defra.gov.uk/Document.aspx?Document=12306_UKCSIPAnnualReport2013_Final.pdf

The Scottish Marine Animal Strandings Scheme is an on-going project which provides a systematic and coordinated approach to the surveillance of marine animal strandings. It builds on the wider UK Cetacean Strandings Investigation Programme (CSIP) which is supported by Scottish Government. It aims to collate, analyse and report data for all cetacean, marine turtle, seal and basking shark strandings around the Scottish coast; to determine the causes of death; and to undertake surveillance on the incidence of disease in stranded cetaceans in order to identify any substantial new threats to their conservation status. See: http://www.strandings.org/

Northern Ireland's Department of the Environment (DoE) Marine Division also record cetacean strandings along the Northern Irish coast. Any stranding records submitted directly to the Irish Whale and Dolphin Group are forwarded to the DoE Marine Division and vice versa

D. LEGISLATION

6.1 Relevant New Legislation, Regulations and Guidelines

BELGIUM
The Government of Flanders took the decision to prohibit the recreational use of different types of gill and trammel nets on the beach as a protective measure for marine mammals in the intertidal zone. Flanders will contribute to the protection of sea mammals by diminishing the bycatch risk within its borders. The principle goal of this measure is the protection of the harbour porpoise. This new legislation also forms an answer to the infringement procedure (DG ENV 3801/12/ENVI, procedure 2014/4014) the European Commission introduced against Belgium concerning the adequate protection of harbour porpoises as mentioned in the Habitats Directive. [Information from 2015: the decision to ban the recreational use of gill and trammel nets on the beach was taken by the Flemish government on 13 March 2015, and it was published in the Belgian Official Journal on 25 March 2015.]
DENMARK
The Danish Nature Agency has drafted a new Action plan for stranded cetaceans in Denmark in 2012. Natura 2000 as described in section A
FINLAND
None

FRANCE
A new legislation on marine mammals was released in July 2011 clarifying the disturbance and the harassment. There is also an article on the necessity to declare any by-catch to help the research. There are also provisions for the protection of the habitat of the species.
GERMANY
Noise reduction concept https://www.bfn.de/fileadmin/MDB/documents/themen/erneuerbareenergien/Strategie_Positionspapiere/schallschutzkonzept_BMU
LITHUANIA
The Management plan and the Action plan for the Baltic Harbour porpoise in Lithuanian Baltic Sea area were prepared and adopted by order of Minister of Environment on 29 February 2012. The implementation of the plan started at the beginning of 2013 and concluded at the end of 2014. The main aim of the plan was to improve the knowledge on a state of the Baltic Harbour porpoise in Lithuanian Baltic Sea area by implementation of information actions, e.g. installation of information boards in the coastal area, publishing booklets and creation of a video film about the species, inquiry of fishermen about bycatch, arrangement of lectures for fishermen.
NETHERLANDS
Marine Science and Communication and IMARES provided an internal report on the current status of the implementation of the Dutch harbour porpoise conservation plan (Camphuysen & Siemensma, 2011) for the Ministry of Economic Affairs. References: 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. Ministerie van Infrastructuur en Milieu ism Ministerie van Economische Zaken, Landbouw en Innovatie (2014) Ontwerp Mariene strategie voor het Nederlandse deel van de Noordzee 2012-2020 Deel 2. KRM-Monitoringprogramma
POLAND
A non-mandatory (not required by the Community law) draft Ordinance of the Minister of the Environment on the scope and method of carrying out seawater monitoring, which includes the problems of noise and litter in marine environment, is under way. Works are also carried out on the programme of seawater monitoring developed pursuant to Article 155c of the Act – Water Law, in line with Article 11 of the Marine Strategy Framework Directive, which envisages the extension of the State Environmental Monitoring to include research on species and habitats in marine areas. The previously mentioned Operational Programme "Fisheries and Sea 2014-2020" comprises proposals on testing and introducing alternative fishing gear that reduces bycatch and on removing lost nets from the Baltic Sea. The implementation of OP RYBY [FISH] 2014–2020 is to contribute to a reduced impact of fisheries on the marine environment, including the avoidance and reduction, as far as possible, of unwanted catches.
SWEDEN
During 2010 SEPA started developing national guidelines for underwater noise and marine mammals. This responsibility for the guidelines has now shifted to the SwAM. A background

report that SEPA commissioned by AquaBiota Water Research which has been received by the SwAM. The guidelines do not cover noise from vessels, but will be useful during constructions of windparks, pipelines, blastings, etc. SwAM has not approved the report in 2012.

UNITED KINGDOM

In February 2015 it was announced that the Aberdeen Harbour Board, East Grampian Coastal Partnership, Police Scotland and Scottish Natural Heritage have developed the Code of Practice with advice from WDC in order to protect the resident pod of bottlenose dolphins regularly found around the converging currents at the mouth of the busy harbour. Please refer to the following links:

http://www.aberdeen-harbour.co.uk/news/news-and-events/new-code-launched-to-protect-dolphins-ataberdeen-harbour/

http://www.marinecode.org/

http://uk.whales.org/news/2015/02/new-code-launched-to-protect-dolphins-in-aberdeen

E. INFORMATION AND EDUCATION

7.1 Public Awareness and Education

BELGIUM

Web based initiatives

Initiatives towards the public to record, report and distribute marine mammal sightings continue: www.waarnemingen.be is an initiative of Natuurpunt Studie vzw and Stichting Natuurinformatie that collects records of observations of species of different taxonomic groups, including cetaceans, from volunteers. In 2014, 265 observations of in total 507 harbour porpoises were reported to this website, peaking in February with 64 observations (189 animals).

Natuurpunt raises public awareness by www.natuurbericht.be, providing short notes on the occurrence of biodiversity, including cetaceans, in Flanders and the Belgian part of the North Sea. In 2014, items were published on the launched appeal to count harbour porpoises in the rivers Schelde and Rupel; on 30 beached harbour porpoises in the first trimester of 2014; on the first harbour porpoise seen in the river Schelde in 2014; on the new agreement of the federal government planning a better legislative protection for the harbour porpoise by imposing a ban on gill-nets; on a big group of bottlenose dolphins seen along the Belgian coastline and on a pod of long-finned pilot whales in Belgian waters.

www.zeezoogdieren.org is an ongoing initiative by Frank Wagemans (Natuurpunt) and Jaap van der Hiele (EHBZ Zuidwest) that gives ad hoc information of noteworthy facts of marine mammals from Dutch and Belgian waters. The RBINS manages an online database on strandings and selected sighting records: www.mumm.ac.be/EN/Management/Nature/search_strandings.php, and www.naturalsciences.be/en/science/template/2472

Marine mammals in the press

Marine mammals regularly featured in newspapers, radio and television, with items covering harbour porpoises inland, collisions between vessels and cetaceans, bycatch, bottlenose dolphin and pilot whale sightings, predation of grey seals on harbour porpoises, etc.

Several actions from the public and NGO's in the press (a.o. "Warrelniet" campaign, in which a number of famous Belgians participated) were held in an effort to persuade the Flemish Government to ban the recreational use of gill and trammel nets on the beach.

ECS Conference

The University of Liège hosted the annual conference of the European Cetacean Society in 2014 (5 to 9 April), supported by the University of Antwerp, the Catholic University of Louvain, the University of Ghent and the Royal Belgian Institute of Natural Sciences. The theme was: "Marine mammals as sentinels of a changing environment". The programme included two days of workshops and three days of plenary sessions. More than 350 people participated.

Relevant publications, posters, abstracts

Mirgaux, S. & Haelters, J., 2014. La Belgique se bat pour la protection des baleines à la Commission Baleinière Internationale. Educ-News 46 (nov-déc 2014): 10-

DENMARK

Fjord&Bælt in Kerteminde, Denmark, houses three harbour porpoise for research and public display. The centre is visited by more than 55,000 guests every year, including more than 7,000 school children. A long range of Danish and international media teams (TV, radio, newspapers, home pages) visit the centre every year and usually focus their outreach on harbour porpoise research and conservation. Fjord&Bælt works closely together with the University of Southern Denmark, and University of Århus.

FINLAND

Finland has continued the harbour porpoise sighting campaign in 2014. The results will be added later.

The Ministry of the Environment and the Ministry of Agriculture and Forestry have established a common practice of recommending fishermen to avoid fishing with nets in coastal areas where harbour porpoises have been sighted.

FRANCE

Public conferences and exhibitions (Oceanopolis-Brest and PELAGIS/ULR)

National stranding network: training for volunteers and national meeting (PELAGIS/ULR)

Observer training in the frame of fishing observation scheme, council regulation 812/04 (PELAGIS/ULR)

Regional stranding network: training for volunteers and annual meeting (LEMM/Oceanopolis) Educational workshops on cetaceans implemented for schools by the Education Department/ (Oceanopolis)

Movie on cetaceans and ferries survey produced by Brittany Ferries and Oceanopolis broadcasted onboard the ferries+ conference on board

New exhibition on cetaceans: National Museum Paris, partnership Oceanopolis. An itinerant version circulates in Europe.

GERMANY

Publications in the BMUB-Journal "Umwelt"

An article about under-water noise protection of harbour porpoises ("Lärmschutz für die Wale in der Nordsee") was published in "Umwelt" (March 2014 / page 6 -10).

A further article about “POD”-research in the Baltic Sea (“Mit PODS auf der Pirsch”/ appeared in “Umwelt” (September 2014 / page 44 -47) [Schall, BMUB].

Incidental Sightings Project

The German Oceanographic Museum is responsible for the “sailor on the lookout for harbour porpoises” project. This project includes registration of sightings of harbour porpoises and the dead porpoises Found. By the webpage of the museum and on our flyers of the projects we provide information on sightings of porpoises and dead animals and explain what people should do if they encounter a porpoise or find one dead. It is possible to contact us by App OstSeeTiere, post, Email or Phone [Gallus, DMM]. http://www.deutschesmeeresmuseum.de/dmm/stiftungdeutschesmeeresmuseum/wissenschaft/schweinswale/sichtungen/

Exhibitions at the German Oceanographic Museum

Ghost nets

In 2013, the German Oceanographic Museum, together with WWF and archaeomare e. V. and the financial support of the Swiss Drosos foundation started a project on ghost nets in the Baltic Sea. For one year, divers documented 28 barriers (mostly wrecks) around the island Rügen where nets got lost. In summer 2014 the results of the project where shown in the framework of a touring exhibition in the German Oceanographic Museum Stralsund. Also, the WWF started to collect the ghost nets of that area and will continue in 2015 [Gallus, DMM].

Information can be found at:

http://www.wwf.de/themen-projekte/projektregionen/ostsee/geisternetze-bergen/

http://www.wwf.de/themen-projekte/projektregionen/ostsee/schluss-mit-geisternetzen-von-der-idee-bis-zurbergung/

“Kein Plastik Meer” no plastic ocean

Within the framework of the theme year “Kein Plastik Meer” (no plastic ocean) the German Oceanographic Museum as well as the Ozeaneum started the exhibition „Mensch Müll ·Meer“ Man - Waste – Ocean) which is shown simultaneous in 14 different European countries [Gallus, DMM].

http://www.deutsches-meeresmuseum.de/dmm/kein-plastik-meer/kein-plastik-meer-im-meeresmuseum/

http://www.deutsches-meeresmuseum.de/dmm/kein-plastik-meer/kein-plastik-meer-im-ozeaneum/

Exhibition “The last 300”

WDC, NABU, OceanCare and ASCOBANS partnered to set up an exhibition on the conservation of the harbour porpoise in the proper Baltic sea, based on the creativity competition that took place in 2013/14. The title is “Die letzten 300” (“The last 300”) referring to the few remaining harbour porpoise in the central Baltic sea. Patron of the exhibition is German environmental minister Dr. Barbara Hendricks. The winning contributions of the competition were presented in person to the Minister on 09 July 2014. In 2014 a Video Welcome address of Minister Hendricks for the inauguration of the exhibition was produced. This inauguration took place on 15 January 2015, with representatives from the German Ministry for Environment, Federal Agencies, scientists and the general public. A theater play dedicated to the harbour porpoise was presented as a premiere (see www.brehms-tierleben.com).The exhibition can be visited in the Oceanographic Museum in Stralsund until 19 April 2015. See also: www.schweinswal.eu [Ritter, WDC].

"Walheimat"

WDC Germany since 2012 is running the campaign "Walheimat" centered around hp conservation in German waters, with materials being produced, a dedicated website section on www.whales.org and a variety of activities. The public facing part of the campaign is backed by WDC representatives being present at conferences, expert groups and discussion panels (see http://de.whales.org/kampagnen/chronik-derkampagne-walheimat-sichere-schutzgebiete-jetzt) .

Activities by WDC Germany are embedded in the international WDC campaign "Homes for Whales", where harbour porpoise research is taking place around Britain and regularly reports on conservation issues and scientific studies are published [Ritter, WDC].

School lab

In the framework of the cooperation between the Kieler Forschungswerkstatt (a school lab at the University of Kiel) and the ITAW Büsum, several modules and learning units for environmental education of school students have been developed over the past three years. The overall topic of these units is the ecology of marine mammals, especially bioacoustics in connection with marine mammals.

The contents of these units are applied in several events for school students, teachers and teachers-to-be, such as summer academies (for students from grade 6 to 8) or advanced teacher trainings. For school classes attending the marine science program in the school lab (duration: 2/3 day), there is also the opportunity to learn a lot about marine mammals. For this purpose, an acoustic station with hearing experiments was developed in the school lab and is now running for students from grades 5 to 13.

An additional module is about to be integrated into this unit in February 2015. The unit is about underwater acoustics and sound reduction under water in connection with offshore pile-driving.

However, the school lab also supports and fosters project work of individual students who are specially gifted. Currently, there is a female student from high school (grade 12), who prepares a special learning achievement report, dealing with the topic "morbilliviruses in marine mammals", in particular the phocine distemper virus in harbour seals. Another female student (grade 11) is preparing a one-year-project-report on "cumulative effects of parasites and anthropogenic influences on marine mammals". Therefore, she attended the Institute for Terrestrial and Aquatic Wildlife Research in Büsum several times for a participation in a dissection of dead stranded marine mammals and some PCR-analyses of marine mammal parasites in the lab under guidance of Dr. Kristina Lehnert [Witte, CAU Kiel].

LITHUANIA

Various implementation activities of the Management plan and the Action plan for the Baltic Harbour porpoise in Lithuanian Baltic Sea had made until the end of 2014. Short movie about the Baltic Harbour porpoise was created. For the first time it was demonstrated in Lithuanian Sea Museum during the International Day of the Baltic Harbour Porpoise. Moreover it was introduced to the public through regional televisions and various public information portals in 2014. On a website of Lithuanian Ministry of Environment everyone can find active hyperlink to watch the film about the Baltic Harbour porpoise (http://youtu.be/WQYP5T0SCbs). At the same website it is possible to find information about harbour porpoise biology, ecology, history of observations in Lithuania, international status of protection and threats (in Lithuanian language: http://www.am.lt/VI/index.php#a/12443). Two different types of brochures have been made. Attractive design brochure in shape of harbour porpoise contain short information, interesting and important facts for the public. Brochures distributed free of charge in Palanga, Šventoji, Nida tourist information centres (3000 pcs). Another brochure

with more specific information and practical design (brochure is waterproof and with a useful string designed to hang on board) dedicated to fishermen (200 pcs).

In order to inform the wider public, have been prepared and periodically published information about the Baltic Harbour porpoise in popular public information web pages. An educative lecture was presented in nongovernmental environmental organization - the Baltic Environmental Forum. Three information boards about the Baltic Harbour porpoise were installed in the coastal area of Šventoji, Palanga and Nida. The International Harbour Porpoise Day was celebrated on 16th May 2014 at the Lithuanian Sea Museum. Celebration of the International Harbour Porpoise Day started with educational games in old vessel with the presence of experienced ship captain. The creative workshop was held in ethnographic homestead. The Museum demonstrated a film about the Baltic Harbour porpoise for a first time and after that educative lectures about how important to maintain a good ecological condition of Baltic Sea were held.

NETHERLANDS

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 is part of the ECNC group http://www.ecncgroup.eu which is the European Expertise Centre for Biodiversity and Sustainability. In 2013 they established the ‘Healthy Seas, a Journey from Waste to Wear’ initiative in collaboration with Aquafil and Star Sock, which continued in 2014. The main objective of the Healthy Seas initiative is to remove waste, in particular fishing nets and other marine litter, from the seas for the purpose of recycling these into textile products.

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” has continued in 2014 and aims to make visitors of the National Park aware of porpoises in the Oosterschelde (http://www.np-oosterschelde.nl/). In September 2012 a brochure as one of the project results has been presented to visitor of the National Park Oosterschelde. Focus of this brochure is to teach visitors where to observe Harbour Porpoises, from either boat or land and how to recognise this small whale. Furthermore the brochure informs about the Harbour Porpoise in general.

The Rugvin Foundation also informs the public via posters on the Stena Line ferries about how to observe harbour porpoises (see B, 4.1).

In 2011, the North Sea Foundation, a Dutch NGO, has initiated two projects to raise awareness on marine litter, MyBeach http://www.mybeach.info/ and Coastwatch http://www.coastwatch.nl. MyBeach is a special area at the beach, next to a beach pavilion, where visitors keep the beach clean. You can recognize this area by information boards, bins and beach flags. Beach cleanups and litter counts are organized here, with use of the ‘Strandscanner’, a special app for the smartPhone to count specific litter items. This project continued in 2014.

POLAND

On 18 May 2014, the Marine Station of the Institute of Oceanography, University of Gdańsk, prepared an awareness-raising stand located on the premises of the "Blue Village" next to the "Porpoise's House". The organisation of an annual open-air event combined with an information campaign dedicated to the Baltic harbour porpoise is one of the implemented elements of the Bonn Convention and the ASCOBANS Agreement.

The exhibition accompanying the celebrations of the International Day of the Baltic Harbour Porpoise showcased the equipment used in research, e.g. the POD acoustic detector. It also included devices used for active protection of these animals, i.e. pingers and marine mammal-friendly fishing gear – cod cages. It was also possible to receive free awareness-raising materials and gadgets. http://www.hel.ug.edu.pl/aktu/2014/XII_MDBM.htm

On 22 June 2014 in Brzeżno, Our Earth Foundation organised a Baltic Sea environmental picnic under the motto: "Explore, love, protect the Baltic Sea". The picnic was also attended by the employees of the Marine Station, who presented information e.g. on porpoise protection. http://www.hel.ug.edu.pl/aktu/2014/sprzatanie_baltyku_2014.htm

On 16 December 2014 in Warsaw, a meeting was held organised by WWF Poland, financed with EU funds, as well as by the National Fund for Environmental Protection and Water Management. The meeting was dedicated to the popularisation of the SAMBAH project results. It was attended by representatives of public administration, scientists, representatives of fishermen and NGOs, as well as invited guests from Finland, Sweden and Germany. The results of the SAMBAH project were the topic of several articles in regional and national press. http://www.wwf.pl/?15580/Prawie-450-kuzynow-delfina-w-Baltyku

Knowledge about porpoises is disseminated, and the ASCOBANS Agreement is promoted at www.morswin.pl.

SWEDEN

The Kolmården Wildlife Park, in the dolphinarium, has a one-day program “Närkontakt Delfin” (Dolphin Close Encounters), available on demand to pre-booked groups. It offers an in-depth lecture on dolphin biology in general and also gives updated information on the dire situation of the Baltic harbour porpoise. A special SAMBAH exhibition is presented to all visitors to the Lagoona, one of the public display areas of the Dolphinarium. In addition the staff of Kolmarden has given lectures on SAMBAH for special tour groups at the dolphinarium and during conferences. The main dolphin show, called LIFE. presents a strong message about the grave effects of pollution on the marine eco systems.

There are two different websites and database systems for reporting of harbour porpoises and cetacean in general: one is the web site of SMNH accessible for the public to report live harbour porpoises, the other is the Species Gateway (Artportalen).

The report form of SMNH's web site is relatively simple which make it relatively easy for almost anyone to complete a report (www.nrm.se/tumlare). Statistics from 2012 have not been compiled but in 2011 at least 177 reports were submitted. Most of the reports came from the Swedish west coast. All reports are quality controlled before being published on the web. The web page also includes photos, and a couple of very interesting films of porpoises playing around a small boat. Data from the SMNH’s database have not been submitted to the HELCOM/ASCOBANS Harbour porpoise database and map service. However, SwAM have asked SMNH to complete that.

Species Gateway (Artportalen) is an independent site by the Swedish Species Information Centre at the SLU for collecting sightings of species (www.artportalen.se/default.asp). The site is open to anyone who wishes to contribute their data and is more detailed in data, relative to that one of the SMNH. It also demands relatively more of the observer to be complete the report, than in the SMNH’s database. Beside the option to report cetaceans in the reporting system for mammals, Amphibians and Reptiles, there are reporting systems for all organism groups. The data can be used by anyone – the general public, scientists, organisations and authorities. All observations are published first and are verified later by authorized persons within the organisations.

Data of the two databases are not directly exchangeable but information to some extent has been transferred to the SMNH. Booth reporting databases has been developed by support from SEPA. However, the authorities should consider which of the organizations that will

have national responsibility for receiving reports. Therefore SwAM initiated a meeting regarding this in 2012, which was held in 2013. Both parties agreed to make a joint interface and the data should be stored in a way to make it easier to execute statistical reports from SAMBAH's web site (www.sambah.org) gives general information about the project's objectives, activities, methodologies etc.

Harbour porpoise day 18 of May 2014 at "Naturum Kullaberg": 19 of May there was activities around

The SAMBAH end-of-project conference was held on 8-9 December 2014 at Kolmarden Wildlife Park. Here, the final results of SAMBAH were presented, including abundance estimates and distribution maps of harbour porpoises in the Baltic Sea, and the use of the results in management were discussed.

On 9-10 December there was a national workshop dedicated to Swedish marine environment managing bodies. Please visit www.sambah.org for more information.

UNITED KINGDOM

CSIP staff from the Zoological Society of London (ZSL) ran a CSIP exhibit at Whalefest in Brighton over 14th-16th March 2014 (featuring skeletal and pathological material from the programme) and also helped the ASCOBANS Secretariat facilitate an exhibit on marine debris, using material gathered from Brighton beach. Approximately 8000 people attended Whalefest over the weekend.

CSIP staff from the Natural History Museum (NHM) and ZSL helped run exhibits on UK strandings/cetaceans at 'Science Uncovered' at the NHM on 26th September 2014. Skeletal material, parasites and fixed material was on display, along with video footage of necropsies carried out at ZSL. Over 10000 people attended on the evening.

The role of ASCOBANS was publicized throughout both events. The work of the CSIP in the UK (and the role of ASCOBANS) has also been publicized during 2014 through numerous presentations, demonstration necropsies and social media activity by CSIP staff e.g. http://www.facebook.com/pages/Cetacean-Strandings-Investigation-Programme-Kstrandings/142706582438320

The thirteenth annual National Whale & Dolphin Watch week was organised by Sea Watch Foundation between 26 July and 3 August 2014. Dedicated effort-based watches were conducted at over 100 sites and onboard thirteen vessels around the British Isles from Shetland to the Isle of Scilly and Channel Islands.

Around three hundred persons participated directly in the event with over 900 hours of observation effort, resulting in 1150 sightings (totalling 5,426 individuals) involving eleven cetacean species (in descending order of frequency: harbour porpoise, bottlenose dolphin, minke whale, short-beaked common dolphin, whitebeaked dolphin, killer whale, Risso's dolphin, humpback whale, fin whale, long-finned pilot whale, and pygmy sperm whale). The event received widespread regional and national media coverage. A full report was published (see http://www.seawatchfoundation.org.uk/wp-content/uploads/2015/03/NWDW2014.pdf (James,2014)).

Sea Watch continued to run a Dolphin Adoption scheme aimed particularly at children, to encourage them to take on individual responsibility for safeguarding photo-identified dolphins and to follow their fortunes. An educational book about bottlenose dolphins, aimed at children, was published (Hintner 2014).

Other educational and public awareness programmes were undertaken throughout the UK, with displays, lectures and training courses. Sea Watch also participated in the World Whale Conference held in Brighton on 15-16 March 2014, with talks, species ID demonstrations and exhibits.

Whale and Dolphin Conservation (WDC) reached out to more than 100,000 people through its Wildlife Centres and Shorewatch volunteer programme in Scotland. 5,000 children participated in WDC's education programme, also based in Scotland. In the city of Aberdeen, WDC organised a large outdoor public art event (in partnership with the ARCHIE Foundation and events company Wild in Art) which raised awareness of the dolphins off the east coast of Scotland. The event's dolphin trail was seen by tens of thousands of people and included a school's educational programme that 33 schools participated in. In south west England, a project with all 21 schools local to WDC's office in Chippenham also reached out to almost 4000 children through a series of assembly sessions and creative workshops, followed by a three-week exhibition of the children's work in the town. WDC have also continued to provide advice, ideas and assistance with facts, proofing and language to the development of the ASCOBANS website Kids Zone section.

The Irish Whale and Dolphin Group held its annual Whale Watch Ireland event on the 24th August 2014 with more than 700 people covering 20 sites around Ireland and Northern Ireland. This resulted in sightings of three cetacean species; harbour porpoise, shortbeaked common dolphin & bottlenose dolphin.

ASCOBANS is mentioned in the MSFD Programme of Measures Consultation Document in the Annex on D1, 4, 6 Marine Mammals. It was also mentioned at the related stakeholder events (London 17th Feb and Cardiff 6th Mar). Additionally, whilst not ASCOBANS-specific, Celtic Seas Partnership have set up two task groups to support delivery of the MSFD: one on Marine litter, which aims to support the development of Eco-schools and generally raise awareness of the causes and problems of marine litter, and one on underwater

POSSIBLE DIFFICULTIES ENCOUNTERED IN IMPLEMENTING THE AGREEMENT

BELGIUM
No new information.
DENMARK
None
FINLAND
None
FRANCE
None
GERMANY
No difficulties to report
LITHUANIA
The main difficulties originate that there is no data on presence of cetaceans in the marine waters of Lithuania. Common Bottlenose Dolphin (*Tursiops truncatus*) was recorded two times - one dead individual was found in 1998 and two animals were observed in 2007. According to the information of The IUCN Red List of Threatened Species it may be the best way to consider the Common Bottlenose Dolphin as extralimital in all Baltic Sea. The last records of two harbour porpoise findings (as bycatch) were in 2001 and 2003. No harbour porpoises were detected during the marine mammals' inventory in 2007-2009, which was a part of the LIFE project "Marine Protected Areas in the Eastern Baltic Sea". Survey was carried out from 12 December, 2012 till 31 December, 2014. Fishermen were asked to submit information about the Baltic Harbour porpoise captured or observed in fishing nets. Interviewed more than 40 fishermen, but the collected data showed that fishermen have never seen harbour porpoises in the waters of the Republic of Lithuania.
NETHERLANDS
None
POLAND
None
SWEDEN
None
UNITED KINGDOM
None