

Agenda Item 2.2.1

Implementation of the Harbour Porpoise Action Plans

Conservation Plan for Harbour Porpoises in the North Sea

Report and Action Points of the North Sea Group

Document 2.2.1.c

Interim Report on the Implementation of the ASCOBANS North Sea Conservation Plan for Harbour Porpoises

Action Requested

- Take note
- Give guidance

Submitted by

Secretariat



**NOTE:
DELEGATES ARE KINDLY REMINDED TO BRING THEIR OWN COPIES OF DOCUMENTS
TO THE MEETING**

**INTERIM REPORT ON
THE IMPLEMENTATION OF THE ASCOBANS NORTH SEA CONSERVATION PLAN FOR
HARBOUR PORPOISES - 5
with focus on progress in implementation of Actions 1,3,4,7 & 8 and attempt of
characterizing recreational fisheries in CPHPNS area (ICES areas IIIaN, IV, VIIed)**

August 2013

**Geneviève Desportes
Coordinator of the ASCOBANS North Sea Conservation Plan for Harbour Porpoises**

Introduction

- 1 Activity report
 - 1.1 ASCOBANS meetings
 - 1.2 External meetings
- 2 Characterisation of the fisheries in the CPHPNS area and risk to porpoises.
 - 2.1 Characterisation of fisheries
 - 2.1.1 *Professional/commercial fisheries or fishing as prime income*
 - 2.1.2 *Part-time fishing or fishing as a secondary income*
 - 2.1.3 *Recreational fisheries*
 - 2.1.4 *Ghost fisheries*
 - 2.2 Conclusion
 - 2.3 Proposed Recommendations
- 3 Progress accomplished in the implementation of the Conservation Plan
 - 3.1 Summary of status/progress made in the implementation of ACTIONS 2, 5, 6, 9-12
 - 3.1.1 *Proposed Recommendations*
 - 3.2 ACTION 1: Implementation of the Conservation Plan: Coordinator and Steering Committee
 - A1.1 *Target*
 - A1.1.1 Steering Committee
 - A1.1.2 Coordinator
 - A1.2 *Tasks*
 - A1.3 *Conclusion: progress accomplished in the implementation of CPHPNS Action 1 since 2009*
 - A1.4 *Proposed Recommendations*
 - 3.3 ACTION 3: Establishment of bycatch observation programmes on small vessel (<15m) and recreational fisheries
 - A3.1 *Context*
 - A3.1.1 Legal framework
 - A3.1.2 Importance of the <15 m-fleet in the CPHPNS area and bycatch risk
 - A3.2 *Status over the development and implementation of bycatch observation programmes on small professional vessels (<15m) in the CPHPNS area - VIIed, IV and IIIaN - since 2009*
 - A3.2.1 Development of monitoring methods
 - A3.2.2 Implementation of monitoring programmes
 - A3.3 *Status over the development of a system involving small vessel fishermen to maximise the reporting/delivery of bycaught porpoises since 2009*
 - A3.4 *Status over the collection of effort and bycatch data and mitigation measures in semi-professional and recreational fisheries (RF) and in the CPHPNS area since 2009*
 - A3.5 *Conclusion: progress accomplished in the implementation of CPHPNS Action 3 since 2009*
 - A3.6 *Proposed Recommendations*
 - 3.4 ACTION 4: Regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch
 - A4.1 *Legal context*
 - A4.2 *Status over the regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch*
 - A4.2.1 Smaller vessels fisheries (<15m)
 - A4.2.2 Larger vessel fisheries with mandatory monitoring schemes using observers under CR (EC) 812/2004
 - A4.2.3 Other larger fisheries
 - A4.2.4 Problem in using the DCF monitoring programme
 - A4.3 *Information on bycatch rate in the NS fisheries*

A4.3.1 Trawl fisheries

A4.3.2 North Sea Gillnet fisheries

A4.4 Information from strandings

A4.5 Conclusion: progress accomplished in the implementation of CPHPNS Action 4 since 2009

A4.6 Proposed Recommendations

3.5 ACTION 7: Monitoring trends in distribution and abundance of harbour porpoises in the region

A7.1 Context

A7.1.1 Legal framework

A7.1.2 Situation until 2009

A7.2 Status over monitoring trends in distribution and abundance of harbor porpoises in the CP area since 2009

A7.3 Conclusion: progress realised in the implementation of CPHPNS Action 3 since 2009

A7.4 Proposed Recommendations

3.6 ACTION 8: Review of the stock structure of harbour porpoises in the region

A8.1 Context

A8.2 Review of HP population structure in the North Sea

A8.2.1 Skeletal & tooth ultrastructure variation

A8.2.2 Genetic analyses

A8.2.3 Dietary Studies

A8.2.4 Stable Isotope Studies

A8.2.5 Contaminant Loads

A8.2.6 Telemetry

A8.2.7 Conclusions

A8.2.8 Recommendations

A8.3 Conclusion: progress accomplished in the implementation of CP Action 8 since 2009

A8.4 Proposed Recommendations

3.7 Summary of progress in the implementation of the ASCOBANS CPHPNS

3.8 Suggestion for maximising the chance of implementation of the CPHPNS

4 Points proposed for inclusion in coordinator Work Plan

Conclusion

REFERENCES

APPENDICES

Appendix 1. – Coordination of the NSCP - List of activities carried out in the Period March 2012 to July 2013

Appendix 2. – List of marine commercial and recreational fisheries practiced in the NSMS and estimation of the bycatch risk to porpoises (expert opinion)

Appendix 3. – Collation of recommendations proposed under this review.

ANNEXES

Annex 1. - Action Points and recommendations/suggestions from the NSSG

Part 1. Action Points for the North Sea Steering Group and status of completion

Part 2. Action Points for the Coordinator of the CPHPNS and status of completion.

Part 3. Recommendations/suggestions from NSSG for amending the CPHPNS.

Part 4. Recommendation from NSSG on EU input and for amending EU fisheries regulations regarding bycatch.

Part 5. Recommendation from the NSSG to the NSMS (and AC).

Annex 2. – Characteristics of the Marine Recreational Fisheries in the North Sea

Introduction

The North Sea Steering Group (NSSG) met twice since it was established in 2010 by AC17, in May 2011 and March 2012. Its task is *“Promote and coordinate the implementation of the Conservation Plan for Harbour Porpoises in the North Sea, gather information on its implementation and the results obtained, inform the public and evaluate the effectiveness of the Plan every three years to update it”*. At its different meeting, it has given itself Action Points (AP), of which the list and completion status is given in Annex 1, part 1. It has also started making recommendation in the view of a future revision of the ASCOBANS Conservation Plan for Harbour Porpoises in the North Sea (CPHPNS)(Annex 1, part 3). It has also made recommendations for amending EU fisheries regulations regarding bycatch (Annex 1, part 4) and has provided recommendation to the North Sea Member States (NSMS) (Annex 1, part 5).

One of the tasks of the NSSG and the coordinator is to review the progress in the implementation of the CPHPNS. This is done, based on the report provided by the coordinator and other supplementary information brought by the delegates.

The coordinator was assigned specific AP by the NSSG at its last meeting, March 2012, and conference call, December 2012 (see list of AP in Annex 1, part 2). The ones not dealing with the output of the meetings themselves are the following:

AP2012-06M: Prepare a document to investigate whether further coordination and possibly standardising of national monitoring of abundance and trends is feasible between North Sea countries. The coordinator will summarise progress and options.

AP2012-07M: Work on a draft summary table on the type of fisheries that are or are not allowed in particular areas/zones focusing on types of fisheries that are most likely to have harbour porpoise bycatch. North Sea countries will assist in completing this table (Next meeting).

AP2012-01D: Collect information on what type of fisheries is allowed in each country, in connection to bycatch (Next meeting).

AP2012-03D: Set up a list of main focal points for the implementation of the conservation plan and NSSG members will add or comment on this.

The Interim Report - 4 to the Conference Call (AC20/Doc.2.2.1.b) dealt quite in detail with AP2012-06M and with progress in the implementation of CPHPNS Action 2 & 4. This report will report on the activity of the coordinator since the last meeting in March 2012, focus on AP2012-07M/AP201201D and continue reporting on the progress accomplished in the implementation of the CPHPNS. It will focus on Action 1, 3, 4, 7, and 8.

1 Activity report

The contacts established and pursued and the actions taken are listed in Appendix 1. During the activity period, March 2012 – July 2013, GD participated in the following meetings:

1.1 ASCOBANS meetings

- 2nd Meeting of the NSSG, Galway, Ireland, 19 March 2012
- ASCOBANS AC20, Galway, Ireland, 20-22 March 2012
- Conference call meeting with the chair of the NSSG chair, November 2, 2012
- Conference call meeting of the NSSG, December 13, 2012
- 9th Meeting of the Jastarnia Group in Gothenburg, Sweden, April 16-18.

1.2 External meetings

- Harbor Porpoise Symposium “Protecting the ‘Dutch whale’ *Phocoena phocoena* – Crossing boundaries” organized in Amsterdam by the North Sea Foundation on 18 October 2012.
- SCANS III Kick off meeting in Edinburgh, 17-18 December 2012
- Meeting of the ICES Working Group on Protected Species (ICES WGBYC), Copenhagen, Denmark, 4-8 February 2013
- SAMBAH Stakeholder Workshop, Gothenburg, Sweden, 15 April 2013
- 7th meeting of the Danish Natura 2000 Dialogforum, Copenhagen, Denmark, 27 June 2013

Contributing to promoting the CPHPNS to stake holders is one of the tasks attributed to the CPHPNS coordinator. Besides participating to these external meetings, GD contributed to the Harbour Porpoise Symposium in Holland with a presentation “International Harbour Porpoise Conservation”, presenting the legal background of harbor porpoise conservation in Europe and the CPHPNS, and giving an update on its implementation. She also prepared input to a presentation of the North Sea Action Plan and its implementation to be given by James Gray at an IWC meeting on conservation and management plans. Together with the Chair of the NSSG, she prepared a presentation of the CPHPNS and the major challenges in its implementation to be included in the ASCOBANS 20th Anniversary Book.

GD did not attend any NSRAC meeting in 2012. The still unclear situation in the NS, with a lack of overview of the bycatch pressure and the relative contribution of different fisheries segments, combined to a lack of a solid trend in abundance, would have prevented to deliver clear messages and requests.

She became observer in the Danish stakeholder forum, the Natura 2000 DialogForum, initiated in 2010 by the Fishery Agency of the Ministry of Food, Agriculture and Fisheries, for promoting dialog on the fishery management of Natura 2000 sites. Participate to this forum the Ministries of Food, Agriculture and Fisheries and Environment, the research institutions, the environmental NGOs and the fisheries organisations, both professional and recreational. GD participated to the DialogForum 7th meeting, see AC20/Doc.14.1.a for further detail on the meeting.

If such initiative exists in other NSMS, they would represent good fora where promoting the CPHPNS and getting experience in the best way of establishing a cooperation with the fishing sector - professional, semi-professional and recreational. Attendance and reporting to ASCOBANS could be done either by the NS Coordinator or members of the NSSG. One advantage of such forum over the NSRAC is that it also includes representatives for coastal inshore fisheries, usually using smaller vessels, and recreational fisheries.

2 Characterisation of the fisheries in the CPHPNS area and risk to porpoises.

Action Points AP2012-07M and AP2012-01D deal with the same issue, collating in a summary form, with the assistance of the NSMS, information on the type of fisheries, commercial, recreational and part-time fishing, that are or are not allowed in particular areas/zones focusing on fisheries that are most likely to have harbour porpoise bycatch.

The sources were:

- National legislations and local laws and statutes (when in an accessible language),
- Effort data reported to the ICES Working group on Protected Species (ICES WGBYC), related to fishing effort and monitoring of bycatch in the national fleets,
- Description of fisheries in the reports of the ICES groups dealing with recreational fisheries (WKSMRF 2009, PGRFS 2010, 2011 and WGRFS 2012),
- National Programme proposals 2011-2013 for the collection of basic fisheries data based on EU Council Regulation 199/2008, Commission Regulation 665/2008 and Commission Decision 2010/93/EU,
- Published sources (e.g. web-sites and journal articles)
- NSSG Delegates, asked to provide
 - National definitions on professional, part-time and recreational fishing,
 - Information on fisheries (professional and recreational) and associated by-catch risk.

The NSSG delegates were asked to fill in a template over the status (allowed, prohibited, restricted, not used...) of fishing gears (categories according to FAO 1980 and used in EU regulations¹) in three different marine zones (Intertidal zone (IZ), territorial waters (TW, within 12 nm) below IZ and Exclusive Economic Zone beyond TW) both for professional and recreational fisheries.

They were also asked to identify the risk (by expert opinion) for harbour porpoises by each fishing métier. For coherence, the definition of risk and the rating was chosen to be the same than the one used by the Workshop on Bycatch of Cetaceans and other Protected Species (ICES WKBYC 2013, Table 6), i.e. the likelihood of bycatch - and not the population level risk, with the following rating

- 3 - high risk
- 2 - some risk
- 1 - low risk

A supplementary level was, however, added: 0, no reported bycatch

For the professional fisheries, the spreadsheet was pre-filled taking the information on professional fisheries contained in the bycatch database of the ICES WGBYC 2013 (using the year 2010-2011) and in the national programme proposals 2011-2013 for the collection of basic fisheries data to the EU, as well as the risk attributed to each métier by the ICES WKBYC 2013. This should provide a good overview on the professional fisheries going on in the period 2010-2013. The delegates were asked to check the entries and were welcomed to change the risk rating for the different métiers.

2.1 Characterisation of fisheries

The information proved difficult to get. Answers were only received from DE, NL, BE, FR, UK and partly from SE. There happened to be discrepancies between the information received from the delegates and the information contained in the ICES databases/reports, even about professional fisheries (especially in the case of DE and NL).

If commercial fishing is defined as catching for sale and profit in all NSMS, recreational fishing can include (Norway, Netherlands) or not include (Sweden, Denmark, Germany, Belgium, France and UK), sale, barter

¹ E.g. Commission Decision of 18 December 2009 (2010/93/EU) adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011-2013

or trade of all or part of the catch. Part-time fishing is included into commercial fishing, although possibly subjected to different provisions, especially regarding the reporting of the catch and the attribution of quotas for TAC species. Subsistence fishing (non-angling recreational fishing), although not purely 'recreational', is including within recreational fishing. National technical measures, effort regulations, minimum landing size, seasonal and area closures, prohibited species and gear design specifications usually govern both commercial and recreational fishing in all NSMS.

2.1.1 Professional/commercial fisheries or fishing as prime income

The information provided by the delegates related to professional fisheries in their countries can be found in Appendix 2 (Table 1). Delegates grossly agree with the picture given by the WKBYC 2013, with regards of gear categories used and the associated risk to porpoises. It was noticed however that there were lots of entries of 1 (low likelihood of bycatch) in the risk assigned by ICES WKBYC (2013). For many of these gears (such as hand-lines, trolled lines, pots etc), there are likely no reported bycatch of porpoises. It was felt that these should be 0's, i.e. no reported bycatch or maybe even better 0/1, meaning no reported bycatch and low probability. For some gears the probability of bycatch was likely to be so low that it might be better termed "no likely risk" rather than low risk or no reported bycatch. Several countries had indeed used the ranking '0' in their spreadsheet.

Not surprisingly, and in agreement with the information reported to and by the ICES SG/WGBYC since the group started, the likelihood of bycatch of harbour porpoises by trawling was considered low, if not absent, with mid water trawls being the most likely to have bycatch. Bottom trawl had however been considered as the major gear causing by-catch in the Skagerrak by Sweden in 2004 (ASCOBANS 2004), with an estimated 80 catches a year, while pelagic trawls were estimated to catch about 20 porpoises a year in the Kattegat. Since 2005, ICES SG/WGBYC reports on 2 harbour porpoises caught in pelagic trawls, 1 in 2008 (NL, ICES WGBYC 2010) and 1 in 2010 (FR, ICES WGBYC 2012) and 1 porpoise caught in bottom trawl in 2008 (USA, ICES SGBYC 2009). As also concluded by ICES WKREV812 (2010), monitoring of these fisheries (require by CR (EU) 812/2004 in some areas) are clearly not relevant for harbour porpoise bycatch.

Gears under the categories 'Dredges', 'Hook & Lines', 'Lift nets', 'Traps', 'Surrounding nets' and 'Seine nets', where also attributed a low likelihood (0 or 1) of harbour porpoise bycatch, when practised.

In the category 'Gillnets & entangling nets', 'Fixed gillnets' (GNF) and 'Encircling nets' (GNC) were not used in DE and NL and not rated by FR and BE. UK attributed a risk 0 to GNC and 2 to GNF (used under special licence). 'Set gillnet' (GNS), 'Trammel-net' (GTR) and 'Driftnet' (GND) were attributed a high likelihood of bycatch, although GND were only used by UK and FR (rare) and only in TW. Existence of illegal drift-netting in commercial fisheries was mentioned by BE both in EEZ and TW.

DE reported that in Germany there was only information available about fisheries in the EEZ but not for TW and that fishing there did not have to be reported (P. Brtnik pers. Com.).

2.1.2 Part-time fishing or fishing as a secondary income

There is no part-time fishing in BE (J. Haelters, pers. com.). In the other NSMS, part-time fishers are considered as commercial fishers and subjected to the same rules (e.g. effort and gear limitation) and need a licence in all NSMS, although national definitions differ – both in terms of minimum percentage of gross income from fishing (GI-fishing) needed to be licenced as part-time fisher and maximum percentage of GI which can come from fishing (Table 1). In UK and FR, and SE except for the maximum of 20% of GI from fishing, there is no legal distinction between full time and part time fishing, the same rules applies and in particular the obligation of reporting landings and days at sea, although not the amount of gear used. In NL, effort, and landings over 50 kg, have to be reported. In DK, landings have to be reported, but not effort, while part-time fishers seem not to have any reporting obligations in DE. As a mean of comparison, EU

exemption from registration of first sale fish for “private consumption” only applies to purchases of less than 30kg in any day (CR (EC) 1224/2009², Art. 59, p.24).

In all NSMS, except BE, there is part-time fishing with set gillnet going on in the North Sea. The non-reporting of effort in some countries, and sometimes landings, makes it problematic to evaluate the bycatch pressure that part-time fishing represents. Part-time fishing is often conducted from smaller boats, and by the same token in more coastal areas, where harbour porpoises are known to be abundant. Rubsch and Kock (2004) concluded in their study of part-time fishing in the German Baltic that “most part - time fishermen endanger harbour porpoise because they set gillnets in shallow coastal waters which harbour porpoise do prefer”. They estimated part-time fishing for being responsible for 27% of the estimated bycatch.

Table 1. Definition and characteristics of full-time and part-time fishing in NSMS.

GI-fishing, gross income from fishing. Sources: delegates and websites

	Full-time fishing	Part-time fishing	Source
All	Licence needed	Licence needed	
SE	Catch and effort to be reported to SwAM ³ for all areas, but some vessels over 10m under a special permission and covered by effort regime	GI-fishing<20% Catch and effort to be reported to SwAM ⁴ for all areas, but some vessels over 10m under a special permission and covered by effort regime	S. Brockmarck, pers. com.
DK	GI-fishing > 60%	5%>GI-fishing<60% Catch to be reported Effort not to be reported No gear restriction compared to full-time fishing Landing quotas reduced compared to full-time fishing Right to Part-time fishing is strictly personal. Use of paid or unpaid help is not allowed	Ministry websites ^{5,6}
DE	Catches/Effort not to be reported if taken from TW	No limits for GI-fishing Catches not to be reported Effort not to be reported	P. Brtnik, pers.com.
NL	No difference in regulation for part-fishing and full time fishing All fishermen have to report catch exceeding 50kg Catch and effort to be reported in the EU log book (Ministry of Economic Affairs) and fish to be sold via the standard fish auction No difference between TW and EEZ fishing No difference in regulation that full time fishing		M. van den Heuvel Greve, pers. com.
BE	Catch and effort to be reported for all using European or national logbook	No part-time fishing	J. Haelters, pers. com.
FR	No definition for Part-time fishing, no limit in percent of GI Catch and effort to be reported. National log book should be used if European logbook is not used (smaller vessels).		Y. Morizur, pers. com.
UK	No definition for Part-time fishing, no limit in percent of GI All sales have to be registered and reported to Defra Days at sea to be reported, but not e.g. quantity of net used (Vessel size limit of 10m and above for reporting abandoned in 2005)		M. Tasker, pers. com.

The UK experience is worth recalling. The UK used to have a vessel size limit on reporting, with an assumption that vessels below 10m were only fishing a certain percentage of the TAC. When the law on registration of buying and selling fish came in in 2005⁷, that covered all sales, it was rapidly found that the

² CR (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF>

³ SwAM: Swedish Agency for Marine and Water Management

⁴ SwAM: Swedish Agency for Marine and Water Management

⁵ <http://naturerhverv.fvm.dk/bierhvervsfiskere.aspx?ID=16838>

⁶ http://naturerhverv.fvm.dk/aktuelle_reguleringer_for_mindre_aktive_fartoejer.aspx?ID=16831

⁷ <http://www.legislation.gov.uk/uksi/2005/1605/contents/made>

percentage estimate was a factor of 10 wrong. In other words those “inefficient” small vessels were catching ten times as much as was thought (M. Tasker, pers. com.). A question, which comes to mind, is whether this greater than expected catch efficiency could also concern bycatch. As it has been pointed out, bycatch is not a matter of vessel length, but of type and amount of gear in use.

2.1.3 Recreational fisheries

The likely significant impact of recreational fisheries on fish stocks, and therefore their scale, has become more in focus in the last decade, setting in evidence that issues and threats, as well as solution, are similar in commercial and recreational fisheries (e.g. Cooke & Cowx 2006). Effort has been made to describe and assess the importance of these fisheries. Marine Recreational Fisheries (MRF) remain, however, a bit of a grey area in most countries. The EU Data Collection Framework (EC 199/2008) defines recreational fisheries as “non-commercial fishing activities exploiting living aquatic resources for recreation or sport.” A range of other definitions of recreational fishing are given in Pawson *et al.* (2007, 2008).

Legal definitions, primary and secondary national legislation pertaining to marine recreational fishing vary between European MS (Pawson *et al.* 2007, 2008 for review), even within the North Sea, as vary the ownership and access to coastal waters/fisheries.

Table 2 summarises the characteristics of Marine Recreational Fisheries (MRF) in the North Sea for NSMS, with focus on items relevant to the bycatch risk to porpoises. Supplementary information, extracted from Dawson *et al.* (2007, 2008), the reports of the ICES groups focusing on Recreational Fisheries (ICES WKSMRF 2009, ICES PGRFS 2010, 2011, ICES WGRFS 2012) or provided by delegates, is provided in Annex 2. The list of the different kind of recreational fisheries practiced in the different NS MS and the estimation of their bycatch risk to porpoises can be found in Appendix 2 (table2) of the report, based on the input of the NSSG delegates (SE and DK missing).

Licensing arrangements, the type and amount of gear that can be used or carried onboard a vessel and the size of the catch that can be taken varies in the different NSMS. Although in most countries the main distinction from commercial fisheries lies in recreational fishers being prohibited from selling any catch (Pawson 2007, 2008), sale is allowed in two of the eight NSMS, Norway and the Netherlands. Recreational fishers in NSMS are not obliged to report their catches, although France has recently initiated a programme of voluntary reporting of maritime recreational fishing activities (See under the review of CPHPNS Action 3, Point 3.3).

Restriction in effort through limitation of the type, amount and size of gear that can be taken onboard compared to the allowance in commercial fisheries is general, at the exception of SE and UK. The limitation of effort through a daily bag limit exists only in France and in the UK for some species. Differences also arise between what is not forbidden and what is actually practiced. For example UK laws do not *per se* forbid the usage of trawl in RF, but trawling makes little sense when catches cannot be sold.

Recreational fishing can be divided into three broad categories:

- Angling using rod & reel or hand-lines (this may include spearing of fish by divers, and hand-gathering of shellfish)
- Small scale trawling
- Fishing with “passive” gears including nets, traps, pots & creels, and long-lines

Like for commercial fisheries, it is within this last category that a high risk to porpoises is found, associated with gill and trammel nets.

In all NSMS, at the exception of DE and maybe in NL), net-fishing with gillnet and trammel-net is allowed in MRF, and known to take porpoises. In UK, it is assumed, however, that non-angling recreational fishing activities, although permitted, are very limited. In many countries, it is also known that illegal recreational fishing with nets, like driftnets, takes place and bycatch occurs.

Table 2. Some characteristics of Marine Recreational Fisheries (MRF) in the North Sea for NSMS, with focus on items relevant to the bycatch risk to porpoises. Sources, Pawson et al 2007, 2008, ICES WKSMMRF 2009, ICES PGRFS (2010, 2011), pers. com. from S. Brockmark, P. Brtnik, J. Haelters, A. Kingston, C. Pusch, ministries websites)

	Recreational fishing
NO	No licence, free recreational fishing Sale permitted No daily bag limit Gear restriction: allowed only handlines or rod-and-lines, or nets with a maximum total length of 210 m , long lines with up to 300 hooks or in a maximum of 20 pots or traps.
SE	"All fishing done without a commercial fishing license or professional degree on the basis of private law" No licence No sale allowed (since 2011). No daily bag limit Gear (type and amount) and area restriction <ul style="list-style-type: none"> • Subsistence fishing using nets, fish-traps, creels, cages and long lines, with the catch primarily used within the household – freely permitted along the west and south coast of Sweden on public waters beyond 300m from the shore • Sport-fishing using a rod, hook and line with the catch used within the household –freely permitted along the coastline.
DK	Fee-paid state licence (between 18 and 65 yrs) No sale allowed No daily bag limits Restriction on gear type and amount both for sports (angling) and spare-time fishers (passive gear) MRF: a maximum of 6 gears, with a maximum of 3 nets, of the following types: rods & lines, set nets (maximum length 45m) , long lines (maximum 100 hooks), fyke nets and pots. Restriction on mesh size and placement.
DE	Fishing done without a registered fishing vessel. Fishing ticket required and allocated upon a fishing ticket examination No sale allowed No daily bag limit Catches do not need to be documented nor reported. Gear restriction with variation between states, but set nets not allowed in the North Sea Gears allowed are rod and line, fyke net, beam trawl, lift and push net, and also in Niedersachsen long-line and poundnet
NL	No licence or permit required for angling, except in Lake Grevelingen. Licence needed for using gill nets (the maximum length is 30 meter) and fykes - for some areas along the Dutch coast (Waddensea, Eems, Dollard, Oosterschelde, Westerschelde, but not between Den Helder and The Hague). Use of gillnets, fyke nets and long-lines might have been banned in MRF since 2011, but information not verified. Sale permitted No daily bag limits
BE	No licence No sale allowed No daily bag limits Gear restriction, with static gear not allowed from boat . Trawling allowed within 3 nm off the coast Beach gill- and tanglenet is allowed above the low water line.
FR	From a boat, the shoreline or by diving. No licence needed, except for underwater RF. No sale allowed Daily bag limits. Species restriction Exclusion zones around artificial structures Gear restriction both from shore (nets used only under special authorisation) and from boat: Hand or pole-lines with in total a maximum of 12 hooks, 2 long lines equipped each with a maximum of 30 hooks ; 2 shellfish pots ; 1 spear ; 1 landing net, 1 trammel net or set gillnet with a maximal length and height of 50 m and 2m respectively when fishing.
UK	No licence No sale allowed Daily bag limits for some species (e.g. shellfish) No restriction on gear , any ordinary mode of fishing can be adopted, provided that fishing is exercised reasonably and in accordance with statute law. Net fishing (enmeshing and encircling- gillnet, trammel net and seine) and trawling are allowed and practiced, but participation is thought to be very low compared to angling.

The effort represented by set net fishing, associated with by-catch risk to porpoises, is not known. There is little control over the effort spent and the quantity actually caught in MRF, and the definition of 'personal needs' is open to interpretation, as illustrates humorously this sentence from an anonymous Belgian source - "Recreational fishermen in Belgium have a very good appetite: even if one catches around 1000 kg of sole and plaice in two months, or 15 kg of sea bass and cod 80 times per year, or 2000 kg of shrimp per year, he eats it all himself!" Recreational catches happen to exceed personal needs and be sold on the blackfish market in likely all NSMS. The number of recreational fishers can be known from the number of licences sold, when these are compulsory, although fishing without licence might also occur. A Danish MRF survey showed that in 2009, 28% of passive gear fishers (fyke nets and gill-nets) were fishing without a licence, adding to the 34,000 fishers having issued the compulsory license (Sparrevohn and Storr-Paulsen 2010).

Since 2009, the European Union demands from their member states to monitor the catches by recreational fisheries of stocks subject to recovery plans⁸. The EU Data Collection Framework (EC Regulations 199/2008⁹ and EC Decision 2010/93/EU¹⁰) requires member States to establish monitoring programmes of recreational fisheries for several key species (cod, European seabass, eels, salmon and bluefin tuna depending on ICES areas). As a response, ICES PG/WGRFS has developed methodologies for marine recreational fisheries sampling programmes and presently coordinates such surveys in most European member States (See ICES WGRFS 2012 for a list of current/most recent marine recreational fishing surveys). Effort/impact data must therefore be, or shortly become, available for at least some of the recreational net fisheries with risk to porpoises. This opportunity should be used for assessing the impact of recreational net-fishing to harbour porpoise bycatch.

2.1.4 Ghost fisheries

Derelict fishing gear, sometimes referred to as "ghost gear" or "ghost nets" is any discarded, lost, or abandoned, fishing gear in the environment. They represent one of the main types of debris impacting the marine environment today. Ghost fishing is largely confined to passive gear such as gill- and trammel nets, wreck nets and traps (FAO 2005-2013).

Several recovering projects have seen the light in the last decade in the North Sea, showing that ghost nets are potentially a problem in this area. The Dutch Expedition Brown Ridge¹¹ at the initiative of "Health Seas – a journey from waste to wear" has recently recovered 2000 kilos of fishing nets from the wrecks on the Brown Ridge in the North Sea and continues cleaning wrecks there. Instead of being dumped, the nets recovered have the possibility of being recycled¹², transformed and regenerated into ECONYL® yarn¹³, a high-quality raw material used to create new products, such as socks, swimwear, underwear, carpets, etc.

Ghost fisheries are not mentioned in the CPHPNS, although it is known to be a problem also affecting porpoises in the North Sea (e.g. Camphuysen and Siemensma 2011). In their review Brown et al (2005) concluded that in relation to the total number of nets being used in EU waters, the rates of permanent net loss appear to be rather low (<1% of nets deployed), largely because most nets are deployed in shallow waters, and that a significant proportion of such nets are recovered. But because the total length of nets being set was high, the total length of netting permanently lost might be significant, although exact figures were not available and knowledge about the extent of ghost fishing was limited.

⁸ CR (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF>

⁹ CR (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:060:0001:0012:EN:PDF>

¹⁰ CD 2010/93/EU of 18 December 2009 adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011-2013

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:041:0008:0071:EN:PDF>

¹¹ <http://healthyseas.org/diving-expedition-recovers-1500-kilo-nets-from-the-brown-ridge/>

¹² <http://www.ghostfishing.org/recycling-of-salvaged-fishing-gear-with-healthy-seas/>

¹³ <http://www.econyl.com/en/index.html>

The NSMS should envisage including recommendation 13 of the Jastarnia Plan “Investigate the prevalence of derelict (“ghost”) gear and the feasibility of its removal” as an Action Point to the CPHPNS. Besides trying to identify the extent of the problem in the North Sea, NSMS could also act for mitigating it, as many nets are not lost by accident but are deliberately discarded at sea, as a cheap disposal. Facilities and incentives should be provided to allow old nets to be disposed of on land.

The NSMS should support the recommendations of the Jastarnia Group 2013 concerning derelict gear and adopt Action Points 14 & 15 (AC20/Doc.2.1.1) for the North Sea:

AP 14. Parties should collect data on the extent of ghost nets in their waters, including net types and locations. Regular assessments should then be made of the total quantities of nets lost or discarded, taking account of the distribution of different types of fisheries.

AP 15. Taking into consideration the future requirements under the MSFD, Parties should implement mitigation measures for ghost nets, such as regular clean-ups, provision of disposal containers at ports, deposit systems, mandatory reporting of lost gear, marking of nets etc. Wherever possible fishing communities and other relevant stakeholders should be actively involved.

2.2 Conclusion

All NSMS practice commercial full-time and part-time fishing associated with a high likelihood of bycatch for porpoises, using gillnet and trammel net both in TW and beyond in their EEZ. Some drift netting also associated with a high likelihood of bycatch is legally also practised in TW by UK and FR. Catch if not effort has to be reported for part-time fisheries, although maybe not in DE where reporting obligation seems to be lacking.

All NSMS, at the exception of DE and maybe NL, have MRF associated with a high likelihood of bycatch using gillnets and trammel nets. Except in BE, where recreational net fisheries are not allowed from a vessel, both these gears may be used from a vessel or from the shore. Limited knowledge seems to exist on the effort associated with these fisheries. Surveys are presently carried out by all NSMS under the DCF in at least some of these recreational fisheries. These surveys, however, do not seem to include a component on marine mammal bycatch. As a consequence the risk these fisheries represent at a population level for harbour porpoises has not been assessed in any NSMS.

Ghost fishing has not been considered in the CPHPNS, but it is recommended that its extent is assessed for the North Sea and incentives to proper disposal and recycling of old nets given and that a related Action Point be included in a revised CPHPNS.

2.3 Proposed Recommendations

To NSMS

- Collect effort data in recreational and semi-professional fisheries with a likelihood of bycatch for harbor porpoises. **[See also Action 3]**
- Investigate the possibility of using the DCF surveys coordinated by ICES WGRFS for obtaining effort data in MRF and the possibility of integrating in future surveys a marine mammal bycatch component. **[See also Action 3]**

To NSMS and for revising CPHPNS

- Assess the extent of ghost nets in the NS, including net types and locations. Regular assessments should then be made of the total quantities of nets lost or discarded, taking account of the distribution of different types of fisheries.
- Implement mitigation measures for ghost nets, such as regular clean-ups, provision of disposal containers at ports, deposit systems, mandatory reporting of lost gear, marking of nets etc. Wherever possible fishing communities and other relevant stakeholders should be actively involved.

3 Progress accomplished in the implementation of the Conservation Plan

Under this report we consider in detail the progress accomplished under Action 1, 3, 4, 7 and 8. Only a short summary is given for Action 2, 5, 6, 9-12.

3.1 Summary of status/progress made in the implementation of ACTIONS 2, 5, 6, 9-12.

Progress made under **Action 2: Implementation of existing regulations on bycatch of cetaceans** has been reviewed in the December 2012 Interim report (Desportes 2013, AC20/Doc.2.2.1.b) and will not be considered under this report.

Review of the progress made under **Action 5: Review of current pingers, development of alternative pingers and gear modifications** falls within the remit of the ICES Working Group on Protected Species, which annually review new developments. Reviewing progress made in these domains was also within the tasks AC19 gave the ASCOBANS Bycatch Working Group, and we refer to the report of this group (AC20/Doc.3.1.1.a) to which contributed the NS coordinator. Most of the new initiatives and developments are not specific to the NS and mostly do not happen within the CPHPNS area.

Progress made under **Action 6: Finalise a management procedure approach for determining maximum allowable bycatch limits in the region** will not be reviewed in detail within this report. It falls somewhat within the remit of the ASCOBANS MFSD working Group. Work has been ongoing or is underway in different fora, including SCANS II and CODA projects, ICES WGBYC, WKREC812 and WKBYC 2013. A review of recent development is given in the report of the ASCOBANS Bycatch Working Group ((AC20/Doc.3.1.1.a). Work has been ongoing in the Netherlands (Scheidat et al 2013) for Dutch waters and the UK in a more general framework.

The ICES WGBYC 2013 was asked from the EU to answer a request for proposing “effective ways to define limits or threshold reference points to bycatch that could be incorporated into management targets under the reformed CFP”. The answer was initiated by ICES WGBYC (2013) and completed by a special workshop ICES WKBYC (2013). The subsequent advices provided by ICES to the EU¹⁴ can be seen at AC20/Doc.3.1.c. The essence of the answer was that ICES had reviewed the existing procedures to establish limits and reference points (CLA, PBR and 1.7%) several times in the past decade and that in all cases the choice of the most appropriate procedure depended on choices by managers in defining precisely the conservation objectives.

Needs for explicit conservation and management objectives and lack of these had been underlined by ICES in 2009 and 2010. This is also outlined in AC20/Doc.3.1.2.a ‘Societal decisions required for the determination of safe bycatch limits for harbour porpoise, common dolphin and bottlenose dolphin’.

Work is ongoing at the Sea Mammal Research Unit, University of St. Andrews, UK, to further explore management procedure approaches and particularly investigate aspects of deriving mortality limits by spatial areas. The project aims to generate robust, safe limits to bycatch that will enable specified conservation objectives to be met, which will allow the impact of marine mammal bycatch in commercial fisheries to be assessed and managed. However the ongoing work emphasises the need for clearer specification of conservation objectives with an associated level of certainty, the timeframe over which such objectives should be met and the management units for each species that are to be used.

The NSSG is asked to contribute to the definition of these conservation objectives at its next meeting under agenda Point 4.b.ii. Unless these are specified it is difficult to develop useful simulation scenarios and progress under Action 6 of the CPHPNS.

14

http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/Special%20requests/EU_bycatch%20of%20cetaceans%20and%20other%20protected%20species.pdf

Review of progress made under

- **Action 9: Collection of incidental porpoise catch data through stranding networks**
- **Action 11: Investigate the effects of anthropogenic sounds on harbour porpoises**
- **Action 12: Collection and archiving of data on anthropogenic activities and development of a GIS**

falls within the remit of or are addressed to some extent by other ASCOBANS Working Groups (Underwater Noise, Pollution and Marine Debris Working Groups) and have not been so far given priority.

Review of progress made under **Action 10: Investigation of the health, nutritional status and diet of harbour porpoises in the region** has been started in collaboration with Sinead Murphy, but is not completed yet and will therefore be integrated in the next Interim Report. At present a review of the effects of anthropogenic activities on life history has been completed.

The collation of published material shows that most of the basic information existing on life history parameters, like pregnancy rates and average age at attainment of sexual maturity, has been published before the adoption of the CPHPNS in 2009 and that newer data seems missing, while investigation on the health, diet and nutritional status have been the object of many recent studies.

3.1.1 Proposed Recommendations

To NSMS and AC

- Take the decisions required for the determination of safe bycatch limits for harbour porpoise concerning specification of clear conservation objectives with an associated level of certainty, the timeframe over which such objectives should be met and the management units for each species that are to be used.
- Support the projects aiming at generating safe bycatch limits that will enable specified conservation objectives to be met, and will allow the impact of harbour porpoise bycatch in commercial fisheries to be assessed and managed.

3.2 ACTION 1: Implementation of the Conservation Plan: Coordinator and Steering Committee

Target

Appointment of a Steering Committee for the Conservation Plan and the appointment of a suitably qualified full-time co-ordinator (needs a conservation science background) for the Conservation Plan (with an appropriate budget)

Tasks

- 1 Document and collate existing international and national regulations and guidelines that are relevant to the conservation and management of harbour porpoises in the North Sea and to provide this collation to all stakeholders.
- 2 To promote and explain the Conservation Plan to relevant stakeholders, including:
 - International and supranational bodies
 - Range states
 - Appropriate industry representatives incl. fisheries, hydrocarbon exploration, shipping etc
 - Appropriate local authorities
 - NGOs
- 3 To develop mechanisms to ensure that the Actions given in the Conservation Plan are implemented including the organisation of scientific workshops
- 4 To make a recommendation for the evolution of some EU fishery regulations: data collection regulation, electronic logbooks, etc. in order to get the most appropriate data from effective fishing effort
- 5 To co-ordinate the collection of and collation of appropriate data on anthropogenic activities in a format that will facilitate its use in a GIS context
- 6 *Not relevant (To manage the Conservation Plan Fund)*
- 7 To develop progress reports on the implementation
- 8 To arrange for periodic reviews of the Conservation Plan

Priority

- **importance:** **essential**
- **feasibility:** **high if political will is there**

A1.1 Target

A1.1.1 Steering Committee

The Conservation Plan for the Harbour Porpoise in the North Sea (CPHPNS - ASCOBANS 2009a) was adopted by ASCOBANS MOP6 (ASCOBANS 2009b). The next Advisory Committee (AC17) was requested to decide on the composition and mode of operation of a North Sea Plan Working (or Steering) Group. The Group would, supported by a Coordinator (dependent on the availability of funding) and the Secretariat, ensure the implementation of Activity 8 in the Triennium Work Plan 2010-2012:

“Promote and coordinate the implementation of the Conservation Plan for Harbour Porpoises in the North Sea, gather information on its implementation and the results obtained, inform the public and evaluate the effectiveness of the Plan every three years to update it”.

AC17 established a Steering Group ((NSSG) for the Conservation Plan of the harbour Porpoise in the North Sea (AP 3, ASCOBANS 2010a, Point 36 & 37) and ToRs for the group were agreed upon (ASCOBANS 2010 b). The tasks of the SG were defined as:

- Evaluate progress of development and implementation of the Plan, specifically with regards to each of the 12 actions as defined in the Plan;
- Promote and coordinate the implementation of the Conservation Plan for Harbour Porpoises in the North Sea
- Gather information on its implementation and the results obtained
- Inform the public and evaluate the effectiveness of the Plan every three years to make recommendations for updating it

The SG held its first meeting in May 2011 (one-hour meeting) in conjunction with AC 18 (ASCOBANS 2012a). An activity report for the period October 2010- April 2011 (ASCOBANS 2011a) was presented and Action Points for the new NS coordinator were defined. The second (half day) meeting of the SG was hold in April

2012, back to back with AC19 (ASCOBANS 2013). A Conference Call was held on 13 December 2012 (Anonym 2013). The third (full day) meeting will take place on 26 August 2013, in connection with AC20.

In the absence of a SG, the two first coordinator reports were presented to and discussed by the AC (AC 17 & 18, Point 4.2.2), while the subsequent one was/will be presented to and discussed by the NSSG, while only summaries were/will be presented to the AC.

A1.1.2 Coordinator

ASCOBANS MOP6, which adopted the Conservation Plan for the Harbour Porpoise in the North Sea, also stressed the need to appoint a part-time coordinator to progress the implementation of the Plan.

Part-time coordinators were subsequently appointed for a short term part time contract (27 working days) issued in 2009 and running until May 2011.

Germany funded the temporary part-time North Sea Plan Coordinator in 2011 (AC17 AP 26, ASCOBANS 2010a).

A new contract was issued in July 2011 for a period of 18 months (after decision by the AC18 Advisory Committee (AP 20) to extend the contract from 12 to 18 months, using budget savings from 2010).

AC 19 agreed to extend the contract for the North Sea Plan Coordinator for a further six months on the same conditions. The time period was later extended to the end of October to cover AC20.

At MOP6 the UK announced a voluntary contribution most of which would be earmarked for the continuation of the NS coordinator post.

The coordinators have prepared and delivered five interim reports (Leaper & Papastavrou 2010, 2011, Desportes 2012, 2013a, present), focusing each on different aspects of the implementation of the Conservation Plan, and particularly of Actions 1-6 and 7-10.

A1.2 Tasks

Uneven but steady progress has been made in fulfilling the 7 tasks (Task 6 has become obsolete) defined in the Plan for the NSSG and the coordinator, especially in Tasks 1 and 7.

- Task 1 of collating regulations has been/is done, but needs continual updating, and no much effort has been done in providing the collation to stakeholders, outside the ASCOBANS forum.
- Task 2 of promoting the CP to stakeholders is probably the task which has least progressed, but see remarks under Point A1. 3.
- Task 3 of developing mechanisms for insuring the implantation of the CP has not formally been done, but recommendations have been/are made to NSMS.
- Regarding Task 4, some recommendations to the evolution of some EU fishery regulations have come up, but more work need to be done and recommendations formalised. This task falls within the remit of a more specialized group, the ICES WGBYC.
- Task 5 of coordinating the collection of anthropogenic activities has not been done at the level of NSSG or coordinators, but work has been done within countries with some external coordination. This task would deserve immediate further effort.
- Task 6 is obsolete
- Task 7 has been/is carried out by the coordinators and provided to the NSSG for review
- Task 8 has not been implemented but it was decided at the 2d meeting of the NSSG that the next review of the Plan should be prepared in time for MoP8 in 2015. Upcoming recommendations will be, however, collected.

A1.3 Conclusion: progress accomplished in the implementation of CPHPNS Action 1 since 2009

Both a Steering Group and coordinators have been appointed, the later though on part-time basis supported by ASCOBANS general funds and by specific countries, DE and UK. Action 1 can therefore be said to be implemented, with special support from DE and UK, although the funds for the coordinator position are not secured on a long-term basis.

Progress has been made in fulfilling the 6 tasks given to the NSSG/Coordinator, although further progress remains necessary for all of them. A more formally organized and regular flow of information between the NSSG and the coordinator would facilitate such a progress.

Special effort should be made in promoting the Plan, but the success of this necessitates the delivering of very clear and concise messages or very clear information and requests, relating to the targeted stakeholder group. This in turn requires having a much clearer image of the overall situation in the NS regarding harbor porpoise conservation. In the Fisheries sectors for example, the message needs to be based on hard facts on the bycatch situation, clearly defining and positioning the real hot-spots in terms of sustainability. It must include information which allows an individual fisherman to easily relate his own 'limited' by catch to the general problematic and allows him to propose solution.

"I have only caught two porpoises in three years and I know from other semi-professional and professional fishermen, both large and small boat-owners, as it is the same they observe." (Funen's (DK) local daily newspaper, Fyens Siftstidende, 07-03-12, Debat).

Promoting the CP is a context-specific activity, which requires the close involvement of NSSG members, and their local appreciation and feeling of the local/national situation.

A1.4 Proposed Recommendations

To NSSG

- Insure a mechanism of regular flow of information between the NSSG and the coordinator.
- Develop a strategy for promoting the Plan and its implementation to relevant stakeholders (as listed under Task 2), in particular in the fisheries sector and affiliated interest organizations.

3.3 ACTION 3: Establishment of bycatch observation programmes on small vessel (<15m) and recreational fisheries

Description of action – (Extracts)

- **specific objective:** address bycatch in fisheries in small vessel fisheries
- **target:** to further develop methods to observe and mitigate bycatch (including implementation monitoring) in small vessel fisheries [*commercial, semi-professional or recreational*].

9 method:

- further develop and implement a scientifically robust system for remote monitoring on vessels where placing onboard of observers is not feasible
- develop a system involving small vessel fishermen to maximise the reporting/delivery of bycaught porpoises
- collect effort data on recreational fisheries (e.g. number, length, soak time of nets), seek information on bycatch, and determine and apply appropriate mitigation techniques

- **implementation-timeline:** **2008-2010**

Priority

- **importance:** **high**
- **feasibility:** **high**

A3.1 Context

A3.1.1 Legal framework

As underlined by ICES WGBYC (2011), bycatch monitoring of vessels lesser than 15 m is a requirement under the HD article 12 *“MS shall establish a system to monitor the incidental capture and killing of the animal species listed in Annex IV. In the light of the information gathered, MS shall take further research or conservation measures as required to ensure that incidental capture and killing does not have a significant negative impact on the species concerned.”*

Under CR (EC) 812/2004¹⁵, the establishment of bycatch observation programmes on small vessel (<15m) is not an obligation, but *“MS shall take the necessary steps to collect scientific data on incidental catches of cetaceans for vessels with an overall length less than 15 m and involved in fisheries defined in Annex III paragraph 3 by means of appropriate scientific studies or pilot projects”*. In the CPHPNS area, the fisheries concerned are: drifnets in areas IV and VIled and pelagic trawls in areas VIIed, IV and IIIa, there are no requirements for gillnets or entangling nets and therefore no mandatory by-catch monitoring programme for any vessel under 15m. Vessels under 12m are, however, not required to use pingers/AD.

ACTION 3 of the CPHPNS is wider in its scope than EC 812/2004, stipulating only the vessel size and enlarging the target group to all kind of fisheries – professional and recreational. The task was given high priority, as Action nr. 3, with *Importance* and *Feasibility* both rated as high.

Also CR (EC) 199/2008¹⁶ mandates both a Community-wide and nationally-based programme of data collection from fishing vessels, with no qualifications based on vessel size, explicitly referring also to recreational fisheries, and stipulating that *‘self-sampling programme should be established, designed and controlled by the body in charge of the national programme, when vessels cannot, for lack of space or safety reasons, take samplers onboard’* (Article 11). Similar requirements pertaining both to smaller vessels and to recreational fisheries exist also in CR (EC) 1224/2009¹⁷ and CD 2010/93/EU¹⁸.

¹⁵ CR (EC) No 812/2004 of 26.4.2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:150:0012:0031:EN:PDF>

¹⁶ CR (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community Framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:060:0001:0012:EN:PDF>

¹⁷ CR (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF>

It is therefore expected that NS MS have given high priority to the task since 2009.

A3.1.2 Importance of the lesser-than-15 m fleet in the CPHPNS area and bycatch risk

ICES WKREV812 (2010) gives an idea of the proportion of the fleet composed of vessels less than 12 m in length (Table A3.1). Supplementary information is obtained from other sources:

- Kock 2010: The German gillnet fleet in the North Sea was in 2008 composed of 51 vessels, of which 30 < 7.5m, 20 between 7.5m and 15 m, and a single one over 15m, i.e. 98% below 15m
- S. Northridge in litt.¹⁹: Of the 622 UK registered fishing vessels using gillnets in 2010 in Areas VIIefghj, only 22 of these were over 12m.
- Directorate of Fisheries, Denmark (2011): In 2010, Danish gillnetters in area VIId, IV and IIIaN conducted 10307 d.a.s., of which 6403 by vessels under 15m, i.e., 62%. In 2011 the proportion was similar (64%, AgriFish 2012).
- Ifremer-SIH (2011, 2013): In the area North Sea – Channel, 91% and 87% of the netters (exclusive and mixte) were below 12m in the French netter fleet in 2008 and 2011 respectively.

Table A3.1: Nbr of vessels <12m in NS MS professional fishing fleets, taken from ICES WKREV812 (2010)

ALL GEAR TYPES: includes but not limited to static nets				
Nation	<12m	>12m	Fleet Size	% <12m
Denmark	2317	512	2829	82%
Germany	1358	363	1721	79%
Sweden	1169	232	1401	83%
GILLNETTERS ONLY				
UK	1462	40	1502	97%
France Atlantic	744	144	888	84%

Clearly, as underlined by Northridge (2011), the European professional fishing fleet constitutes mainly vessels under 12m, with more than 79% in the North Sea range States, all gear type combined. To the professional fishing fleet of vessels under 12m, should be added the fleet of 12-15m fleet segment, as well as the fleet of semi-professional and recreational fishing vessels, of which the large majority is also under 15m.

Bycatch is responsive to gear type and effort and not to vessel length and numerous studies in different maritime areas have indeed clearly showed that smaller vessels also take porpoises (e.g., Rubsch and Kock, 2004, Hardy and Tregenza 2010, Bjørge et al 2011, 2012, Morizur et al 2011, 2012, Kindt-Larsen and Dalskov 2010, Kindt-Larsen et al 2012, ICES WGBYC 2012). Interestingly France noted in its national annual report related to CR (EC) 812/2004 “*The observations at sea demonstrate that the greater part of the porpoise bycatch occurs in the fleet segment of less than 15 m, probably because they work more inshore*”(ICES WGBYC 2009).

A3.2 Status over the development and implementation of bycatch observation programmes on small professional vessels (<15m) in the CPHPNS area - VIIed, IV and IIIaN - since 2009

A3.2.1 Development of monitoring methods

Monitoring measures alternative to onboard observers, their advantages and problems, have been reviewed by the Joint NAMMCO/ICES Workshop on observation schemes for bycatch of mammals and birds (ICES WKOSBOMB 2010).

¹⁸ ComD 2010/93/EU of 18 December 2009 adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011-2013

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:041:0008:0071:EN:PDF>

¹⁹ Simon Northridge, Acoustic deterrents in UK gillnet fisheries: acoustic deterrents_UK_Northridge.pdf

As reviewed by Desportes (2012 - AC20/Doc.2.2.1.b), the use of remote electronic monitoring (REM) using CCTV cameras for documenting marine mammal and bird bycatch started being tested in 2008 by SE (Tilander & Lunneryd 2010, Anonym 2011), shortly followed by DK (Kindt-Larsen & Dalskov 2010; Kindt-Larsen et al 2011, 2012), then the Netherlands (Couperus 2012) and Germany (Oesterwind & Zimmermann 2013). It has proved to be a very cost-effective and reliable method for documenting marine mammal bycatch with many advantages over for observer monitoring (ICES WGBYC 2011, 2012, Kindt-Larsen et al 2012) - provided that fishers can be persuaded to adopt the system. The main advantages includes reliability, full coverage of all net hauls, control of use of pinger although not their functionality, low-cost compared to on-board observers, storage of the original bycatch event, no observer effect. EM system provided a better approximation to the total bycatch than fishermen's records and better than normal DCF observers.

To date control boxes have been/are set up on a covered wheel houses, but it would be possible to design a weather-proof cover, so the system could be installed on even smaller vessels. However, it is likely not worthwhile fitting cameras to vessels that are at sea for only a few days each year.

NO (Bjørge et al 2011, 2013) developed a method for characterising and quantifying bycatch from the fleet of small coastal gillnetters (<15m) targeting anglerfish and cod in Norwegian coastal waters (a. o. in area IVa and IIIaN) without taking observers on-board (except for control). Two vessels per fishing area were selected and contracted for providing detailed data on effort and catch of target and all non-target species, including marine mammals and birds, therefore constituting a reference fleet. A model was developed for predicting bycatch for the targeted fleet. The IWC SC (IWC 2011) acknowledged the approach as a useful alternative for estimating bycatch when vessels were too small to carry observers, providing advice for improving the data collection (increase in observation coverage in each statistical area, contracted vessels in combination with placement of observers on the larger of the small vessels).

A3.2.2 Implementation of monitoring programmes

The implementation of bycatch observation programmes on smaller vessels is reviewed by ICES (ICES SGBYC 2009, ICES WGBYC 2010, 2012, 2013), with focus on requirements under EC 812/2004, although other programmes are also reviewed.

As detailed in Desportes (2012 - AC20/Doc.2.2.1.b), observation programmes/projects on smaller vessels have been/are conducted by NS MS using

- **onboard observers:**
 - **NL** (ICES SGBYC 2010),
 - **FR** (Morizur et al 2011, 2012),
 - **UK** (Northridge et al 2011)
- **remote electronic monitoring, REM**, using CCTV:
 - **SE** (Tilander and Lunneryd 2010, ICES WGBYC 2012),
 - **DK** (ICES WKOSBOMB 2010, Kindt-Larsen & Dalskov 2010, Kindt-Larsen et al 2011, 2012),
 - **DE** (Oesterwind and Zimmermann 2013),
 - **NL** (ICES WGBYC 2012, 2013, Couperus 2012, Scheidat & Siemensma, pers. com.)
- **a separate observation platform:**
 - **DE** (ICES WGBYC 2011)
- **a reference fleet** reporting under contract, RUC:
 - **NO** (Bjørge 2011, 2013)

The projects/programmes conducted in the CPHPNS area by the MS are detailed in Table A3.2. Only NO, DK, NL, FR and UK have conducted monitoring programmes/projects in the CPHPNS area on smaller vessels. SE and DE, as well as DK, have conducted projects in the Baltic while BE has not carried out any projects.

Although the effort in monitoring the smaller segment of the fleet has developed in the last years, going from an experimental stage to longer terms studies, using both traditional means and newly developed

alternative, most of the programmes have been at low effort level and generally not representative of the targeted fleet. Raising bycatch rates has not been attempted, except in the coastal gillnet fisheries targeting monkfish and cod in NO and some segments of the French gillnet fisheries in the Channel (VIIed) and area IVc.

Reliable bycatch data are therefore not available in any NSMS for the lesser segment of the professional fleet in the CPHPNS area. The current NL programme, initiated in December 2012 and which should run for 3 years, is expected, however, to provide a coverage adequate to a reliable extrapolation to the fleet level and therefore reliable bycatch data for the Dutch commercial set-net fishery.

Table A3.2: Monitoring projects conducted in the NS (IIIaN, IV, VIIed) on vessels under 15m length. References can be found in the above text. TM, midwater trawls; T, trawls; GN, gillnets; GEN, Gillnets and entangling nets; GTR, trammel nets; BC HP, bycatch of harbour porpoises reported.

MS	Period	Program	Nbr of vessel / type	Coverage	Type	Area	Vessel size m	BC HP
NO	2006-8	CRF	6 GN		RUC	Coastal in IIIaN, IVa	<15	+
DK	2008-9	Fully doc. fisheries	1 GN	116 das	REM	IIIaN	14	1
	2010-1		6 GTR/GEN	276 das	REM	IIIaN, IV + 23	10-15	39
	2011	DCF	GNS, LL, SV, TB	Low	OBS	IIIaNS, IV	<15	no
NL	2008		3 GTR	48 das	OBS		<10	1
	2011	DCF	1GN	24 das	REM		<10	6
	2011	DCF	GTR	3	OBS	IVc	<15	1
	2012-5		12 GTN	High	REM	IVc (east)	<15	na
FR	2006		GN, TM	TM 5%, GN 1% in VII	OBS	VII	>8, <15	no
	2007		TM		OBS	VII	>8, <15	no
	2008-10	FilManCet	GN	VIIe 82%, VIIId+ IVc 100%	OBS	VIIed, IVc	7-15	+
	2010	DCF	TM			VII, VIII		
	2010-	Obsmer	OTM, PTM, GN	2011: TM 5%, GN 1%	OBS	IVc, VIIe	7-<15	+
UK	2005-6	Reg 812	TM, GND	GND 10% in VIIe	OBS	VII		
	2005-6	HD 12	GEN		OBS	IV, VIIe		
	2008		PTM bass	Low cov	OBS	VIIe		+
	2010		7 T, GN	T 0.6%, GN 0.4%	OBS	IV, VII	<15	
	2011	DCF	GTR, GNS		OBS	VIIed	<15	

A3.3 Status over the development of a system involving small vessel fishermen to maximise the reporting/delivery of bycaught porpoises since 2009

The NSSG did not report on this question, but some have put some effort in developing systems to maximise the reporting/delivery of bycaught porpoises.

In NL, the project of the Coastal & Marine Union (EUCC) “bycatch mitigation harbour porpoise, conducted in collaboration with the Dutch Fisheries Organisation (Nederlandse Vissersbond), the Expert Group on Set Net Fishery (Kenniskring Staand want) and 10 winter-season set net fishermen, includes in its aim facilitating the landing of bycaught porpoises (AC20/Doc.13g.rev.1, Point 1.1).

In FR a ministerial regulation requires since January 2012 fishermen to report marine mammal bycatch with the objective of involving the fishermen in increasing knowledge on species: composition of catches, spatial and temporal distribution, etc (AC20/Doc.13d, Point 1.3). At the end of 2012, a pilot program with four fishing ports (Atlantic and English Channel coast), coordinated by PELAGIS/ULR (CRMM), began to assess the possibility of land by-caught animals for biological samples (diet, genetic, age, reproductive status, contaminant, etc).

DK reported in its latest annual report on the implementation of CR (EC) 812/2004 (Agrifish 2012) under point 3.4.1 *Indicators of bycatch based on other data (strandings, interviews)* that "A new initiative was launched in spring 2012, with the reporting by inspectors of bycatch of harbour porpoise in recreational fisheries as well as for vessels below 12 meters. Fishery inspectors are now required to report any bycatch in the inspection report/ logbook." Supplementary information regarding the practical implementation of this initiative and the regularity and reliability of the information collected was not provided upon request and it is at the moment impossible to estimate the scope and reliability of the project.

With regard to the delivery of bycaught porpoises, with or without incentives, the Jastarnia Group was unclear whether it was legal or not under EU law or CITES rules (AC20/Doc.2.1.1), Point 5.1.2.2). Article 12 of the Habitats Directive seemed explicit in prohibiting the sale, *exchange or transportation* of listed species. Article 16 however allows derogations "in the interest of protecting wild fauna and flora and conserving natural habitats". The ASCOBANS Secretariat is working in producing a list and analysis of legislative provisions concerning incentives.

The information that could be obtained from bycaught animals is invaluable as freshly bycaught specimens are a better source of data than stranded carcasses that had started to decompose and of which the origin is unknown. The NSSG may make recommendation for changing laws, if they should prevent such collection.

A3.4 Status over the collection of effort and bycatch data and mitigation measures in semi-professional and recreational fisheries (RF) and in the CPHPNS area since 2009

The list of the different kind of Marine Recreational Fishing (MRF) practiced in the different NSMS and the estimation of their bycatch risk to porpoises can be found in Appendix 2 (Table2). As mentioned under Point 2.1.3, all NSMS, except Germany (and maybe NL) where recreational set net-fishing is not allowed in the NS, practised in the NS some forms for recreational fishing representing risk to porpoises, like gillnetting or drift-netting either from the beach or from vessel, although the level is likely low in the UK (Dawson et al 2007). In most countries, it is also known that illegal fishing with nets takes place, also taking porpoises.

Information/answers about the implementation of Action 3 relative to recreational fisheries were obtained from all NSMS (Table A3.3). This implementation is not relevant anymore for DE (and maybe NL) where there is no recreational fishing with risk for porpoises. Only FR and DK seem to have made some effort in implementing this part of Action 3, related to recreational fisheries. The Belgian Annual Report (AC20/Doc.13a, Point 1.3) mentioned that bycatch in recreational fisheries was the subject of a question to Belgium from the European Commission and was also the subject of discussions in the Flemish parliament and in several coastal communities, but no further information is provided. It also mentioned that recreational set net fisheries from the beach were the source of part of the bycatch.

Denmark reported on a new initiative launched in spring 2012 – see Point 3 above.

In France, interviews in the population have been carried out for some years in an attempt of identifying and qualifying the fishing pressure of recreational fisheries (Y. Morizur pers. comm.). The analysis should identify whether the length of the nets used could be estimated from these interviews. The questionnaire was not an *ad hoc* questionnaire on bycatch, but was made for quantifying the species caught, the cost of fishing and some other economic aspects and contained 17 pages. A comparison between the impact of

recreational and commercial fishing was conducted from the results. The report is presently under review and was not communicated.

Besides this initiative, the French Ministry for Ecology, Sustainable Development and Energy has signed in July 2010 together with the Ministry of Agriculture and Fisheries and stakeholders involved with recreational fisheries and nature protection a charter of commitment and objectives for an eco-responsible maritime recreational fishery²⁰. This charter²¹ makes provision in its article 5 for the voluntary reporting of the maritime recreational fishing activities. This collaboration between authorities and recreational fishers aimed at improving knowledge of the impact of recreational fishing on fish stock and biodiversity in order to better preserving these marine resources. The site allowing recreational fishermen to report on their fishing activities was open 1 July 2012²². It also informs on the legislation and rules for recreational fishing in different area as well as good practices.

As mentioned under Point 2.1.3, the EU Data Collection Framework (DCF) required quantifying RF catches for some species, such as cod, bluefin tuna and eels. Responding to a growing interest in the impact of marine recreational fishing and to this requirement, characterization of RF has been initiated (Pawson et al 2007, ICES WKSMRF 2009) and effort surveys have been/are developed and conducted in EU countries under the coordination of ICES (see e.g. Toivonen et al 2004 for the Nordic countries, Sparrevojn & Storr-Paulsen 2010 in DK, Ifremer 2009 and Herfaut et al 2013 in FR, ICES WKSMRF 2009, ICES PGRFS 2010, 2011, ICES WGRFS 2012). These should supply recreational fishery data and estimates into the ICES stock assessment and advisory process. These data, however, have not been at present used in relation to marine mammal and harbour porpoise bycatch, which they could. The surveys conducted do not seem to have included question about bycatch of marine mammal, but this could be done in the future. This would allow a comparison of the commercial and recreational pressure regarding bycatch and whether/when/where taking care of the latter should be prioritised.

NSMS do not have bycatch data for recreational nor part-time fishing, although bycatches of harbour porpoises are known to occur, as incidental reports and delivery of carcasses clearly illustrate it. BE mentions “Recreational static gear fisheries using boats is not allowed in Belgium. The only recreational fishery with static gear concerns beach gill- and tangle net fisheries. Between March and May several km of such nets are placed along the Belgian shoreline (they are or should be emptied twice a day during low tide). Information on bycatch of harbour porpoises is mostly only available from indirect evidence (no reporting), but can be estimated at between 3 to 10 animals per year (j. Haelters, pers. comm.).

Table A3.3: Programmes implemented by MS in the CPHPNS area for collecting effort and bycatch data in recreational fisheries and mitigated bycatch if required.

	Effort data	Bycatch data	Mitigation	Reference
NO				
SE	None	None	none	S. Brockmark, pers. comm.
DK	None	Yes, from Spring 2012	none	Agrifish 2012
DE	Na, recreational fishing with nets is not allowed in NS			P. Brtnik, pers. comm.
NL	None, coming in 2014	none, coming in 2014	none	M. Scheidat, pers. comm.
BE	None, guesstimate	none	none	J. Haelters, pers. comm.
FR	Interview, estimation	indirectly	none	Y. Morizur, pers. comm..
UK	None, but non-angling MRF supposed to be at a very low level			K. MacLeod, pers. comm.

NSMS did not report on any initiative towards the mitigation of harbour porpoise bycatch in semi-professional and RF since 2009. In 2001 in Belgium a Royal Decree was issued banning recreational fishing

²⁰ <http://pechedeloisir.application.developpement-durable.gouv.fr/dpl/accueil.jsp>

²¹ Full text of the charter available at

http://www.developpement-durable.gouv.fr/IMG/pdf/CHARTRE_peche_maritime_de_loisir_eco-responsable_signee_-2.pdf

²² <http://www.developpement-durable.gouv.fr/Declarez-pechez.html>.

with gill nets below the low water line (Belgian official journal of 14 February 2002), as a measure to protect marine mammals and particularly porpoises. This came about because most nets used in recreational beach fisheries in Belgium were set from March to May to catch sole, and this coincided with many dead porpoises being washed ashore along the Belgian coast (Dawson et al 2007). From March to May 2004, of 23 dead porpoises found on Belgian beaches, at least nine appeared to be bycaught and at least five were considered to have drowned in nets used in recreational fisheries from the beach. A meeting in June 2004 between MUMM and the authorities did not lead to further mitigation measures (AC12/Doc.15(S), Belgium). The situation continuing, further measures were taken by the Fisheries Minister in 2006 (JO 28 Dec 2006), limiting the kind of nets, their height and length (AC14/Doc.19(P)), as well as later in some local legislation (AC16/Doc.43(P)). The subsequent Belgian annual reports do not make mention further mitigation measures in MRF. However bycatch in recreational fisheries was again the subject of a question to Belgium from the European Commission, DG ENV (15 June 2012; ENV.A.1/MV/ts) and the subject of discussions in the Flemish parliament and in several coastal communities (AC20/DOC.13.1(P)).

A3.5 Conclusion: progress accomplished in the implementation of CPHPNS Action 3 since 2009

Alternatives to using observers have been developed and validated and are now at hands: REM using CCTV cameras and use of a reference fleet. Both methods have proved their feasibility and can be used on the smallest vessels and are susceptible of an immediate wider implementation.

The monitoring of bycatch in the lesser segment of the fleet has developed in recent years in most countries, although not always in the CPHPNS area (DK and DE). The effort has however remained at low effort levels and extrapolation to the targeted fisheries has mostly not been possible. The newly implemented Dutch programme is expected to allowed extrapolation.

Little effort has been/is put in trying to estimate the scope of semi-professional and recreational fisheries in relation to bycatch, and only by FR and DK. No mitigation measure seems to have been taken in MRF since 2009.

In conclusion: some progress has been made in implementing Action 3, but none of the NS MS have at present

- reliable overall bycatch data for fisheries <15m, although usable monitoring methods have been developed;
- effort data in relation to bycatch data for the MRF with risk to porpoises (not relevant for DE and maybe NL).

The lack of monitoring in the pelagic smaller trawl fishery is likely not crucial, as the monitoring which has been done in vessel under 15 m as well as larger has shown, that trawlers represent a very low bycatch risk to harbour porpoises.

The lack of implementation of representative monitoring in the gillnet fisheries for vessel under 15m is much more problematic, as many studies have shown that this segment can take porpoises in significant numbers (e.g. Hardy and Tregenza 2010, Bjørge et al 2013, Morizur et al 2011, 2012, Kindt-Larsen et al 2012). This, combined to the fact that this segment contributes the majority of the fleet effort in all NSMS, makes it is impossible to have at present reliable bycatch estimate in the CPHPNS area.

A3.6 Proposed Recommendations

To NSMS

- Assess the bycatch pressure in recreational and semi-professional fisheries with a high likelihood of bycatch for porpoises, for assessing the bycatch pressure in relation to that of commercial fisheries. **[See also Action 4]**
- Implement immediately monitoring programmes in the smallest gillnet fisheries, as methods are now at hand, with a percentage of coverage of the total effort reasonably high and representative of targeted fleets. CCTV monitoring programmes of wider scope of smaller vessels, like in the Netherlands, should definitely be promoted. **[See also Action 4]**
- **[All except DE and maybe NL]** Collect effort data in recreational fisheries with a likelihood of bycatch for harbor porpoises. **[As under Point 2.3 of main report]**
- **[All except DE]** Collect effort data in semi-professional fisheries with a likelihood of bycatch for harbor porpoises. **[As under Point 2.3 of main report]**
- Investigate the possibility of using the DCF surveys coordinated by ICES WGRFS for obtaining effort data in MRF and the possibility of integrating in future surveys a marine mammal bycatch component. **[As under Point 2.3 of main report]**
- Develop and implement mitigation measures, when necessary.

The 3 first recommendations are essential in obtaining a reliable picture of the bycatch pressure in the CPHPNS area.

For revising CPHPNS

- Pelagic trawling in the North Sea accounts for relatively few days at sea compared with those in the Atlantic or compared with gillnet fishing. Monitoring these fisheries, also in the lesser segment, could easily be scaled back as bycatch rates appear to be too low to be of concern.

Regarding upcoming EU fisheries regulation under CFP

- Compulsory monitoring of the smaller segment of the fleet must be incorporated into the revised CFP. For further detail, see recommendation under Action 4.

3.4 ACTION 4: Regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch

Description of action – (Extracts)	
<ul style="list-style-type: none"> • specific objective: evaluate bycatch levels in all relevant fisheries • rationale: although mitigation measures are in place for some fisheries, it is essential to assess, at regular intervals, whether those measures are achieving the desired goals or require adjustment • target: to estimate levels of bycatch of harbour porpoises in the North Sea at regular intervals to enable mitigation measures to be reviewed and if necessary modified • method: analyse data provided by Range States/Parties from observer schemes and elsewhere (e.g. from strandings, see Action 9) on bycatch and fishery data and incorporate this into a population dynamics modelling framework • implementation-timeline: immediate, and at intervals of 3-5 years 	
Priority	
<ul style="list-style-type: none"> • importance: high • feasibility: high/medium 	

A4.1 Legal context

Under CR (EC) 812/2004, mandatory monitoring schemes using observers are only required for vessels with an overall length of 15 m or over, and only for some areas and under specific conditions, as given in Table A4.1 for the North Sea. There is also specification for the level of coverage that must be achieved, according to fleet size. The collection of scientific data on incidental catches of cetaceans for vessels lesser than 15 m is also only required for the same fisheries.

Table A4.1. List of North Sea fisheries requiring monitoring under CR (EC) 812/2004. Only vessels with an overall length of 15 m or over are concerned.

Area	Gear
ICES sub area IV and divisions IIIa, and VIIed	Pelagic trawls (single and pairs)
ICES divisions VIIed	High-opening trawls
ICES sub area IV and divisions VIIed	Driftnets

This means, in particular, that there is no mandatory nor ‘scientific’ monitoring for any gillnet fisheries in the CPHPNS area, not even in ICES area IV, where a high bycatch rate had been estimated in the nineties.

EU Member States are however obliged to develop national programmes for monitoring fisheries, including on board monitoring, under Article 3 of Council Regulation 199/2008, Commission Regulation 665/2008²³ and the Annex of Commission Decision 2010/93/EU. National plans include detailed data on fleet capacity and fishing effort by métier and fishing area.

Bycatch monitoring is however a requirement under the HD Article 12 “MS shall establish a system to monitor the incidental capture and killing of the animal species listed in Annex IV”.

The scope of Action 4 of the ASCOBANS CPHPNS is similar to that of HD and asking for a ‘*regular evaluation of all fisheries*’. The task comes as Action nr. 4, with *Importance* rated as high, but acknowledging that feasibility is maybe not straight forward. It stipulates that this evaluation should be immediate – i.e. starting in 2009, and renewed at intervals of 3-5 years.

It is therefore expected that NSMS have given a high priority to the task and that the evaluation of all fisheries in relation to HP bycatch has been done at least once, if not twice, since the adoption of the CPHPNS in 2009.

²³ ComR (EC) No 665/2008 of 14 July 2008 laying down detailed rules for the application of Council Regulation (EC) No 199/2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:186:0003:0005:EN:PDF>

A4.2 Status over the regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch

Since 2009, ICES WGBYC (ICES SGBYC 2009, 2010, ICES WGBYC 2011, 2012, 2013) has routinely assessed available data on incidental catches of cetaceans including in the annual national reports submitted to the Commission by Member States and other supplementary information collected nationally. Based on this information, AC20/DOC.2.2.1.b initiated a review of the information existing for the NS, both in terms of the implementation of monitoring schemes and of the bycatch information obtained.

A4.2.1 Smaller vessels fisheries (<15m)

Monitoring of bycatch in the smaller segment of the fleet has been reviewed in detail under Action 3, both for professional and recreational fisheries. The conclusion was that although the monitoring efforts in the lesser segment had developed in recent years:

Only NO, FR and UK, and now the NL, have had /have some long-term monitoring programs of the smaller vessels fisheries in the NS.

To date, the effort had remained at low effort levels and extrapolation to the targeted fisheries had only been possible in very few segments (mostly by NO and FR).

Consequently, there does not exist in any NSMS an overview of the bycatch pressure for any smaller vessel fisheries. This should be modulated by the fact, that the little monitoring which has been carried out in the smaller trawlers indicate that these, as the larger ones, do represent a low risk to harbour porpoises.

A4.2.2 Larger vessel fisheries with mandatory monitoring schemes using observers under CR (EC) 812/2004

As listed in Table A4.1, the fisheries concerned in the CPHPNS area are only pelagic trawls, high opening trawls and driftnets. Not all countries have implemented the required monitoring programmes (Table A4.2).

BE reported that there is no vessel falling under the monitoring requirement and has not implemented any dedicated bycatch monitoring programme.

DE and NL have not implemented any dedicated marine mammal observer programs, but have conducted some monitoring of the required segments through the DCR/DCF (Data Collection Framework for on board discards and catch sampling), providing the scientific observers with the additional task of noting the bycatch of marine mammals.

FR and UK have combined both dedicated monitoring and DCF monitoring.

SE and DK have not had dedicated monitoring program in pelagic trawl fisheries, after their 2006-2008 programme.

Table A4.2. Monitoring schemes established in the NS by NSMS in the period 2008-2011 for vessel > 15 m.

Sources: ICES SG/WGBYC 2009-2013.

	Dedicated cetacean observer scheme (TM under 812/2004, if not specified)	Cetacean observer scheme as part of DCF (TM, TB, GN, SV)	Comments
SE	Yes (2006-2008) No (2009, 2010, 2011)	No (2009, 2010)	No EU report in 2013 for 2011
DK	Yes (2006-2008) No (2009, 2010, 2011)	Yes (2010, 2011)	
DE	No (all years)	YES (2008, 2010, 2011) No (2009)	DCF only covers some trip from those requiring monitoring No EU report in 2010 for 2008, in 2013 for 2011
NL	No (all years)	Yes (2008, 2009, 2010, 2011)	
BE	No (all years)	No (2009, 2010, 2011)	Obs. during research cruises for discard/biological sampling No report in 2009 for 2007
FR	Yes, since 2008 TM + GN	Yes (2010,2011)	
UK	Yes, since 2005, TM + GN	Yes (2010, 2011)	Protected species monitoring

A4.2.3 Other larger fisheries

There is no mandatory monitoring of the gillnet fisheries in the CPHPNS (ICES area VIIed, IV, IIIaN) under CR (EC) 812/2004.

Only FR and UK have had some dedicated observer monitoring programmes in these fisheries beside what the regulation requires, since 2005 for the UK and 2008 for FR (Filmancet project). All gillnet fleets have however not been sampled and the coverage has usually remained at a low level, only permitting extrapolation to a few of the targeted fleet segments (mostly by FR).

DK has not had a dedicated monitoring programme in the NS gillnet fishery since its 1992-2001 programme revealing high level of bycatch.

Except BE and SE, all countries, including FR and UK, have done some monitoring through the DCR/DCF programme in gillnet fisheries, however mostly at a very low and not representative level.

There is also monitoring in other fisheries through the DCF programme, such as seine, dredge, bottom trawl, traps hooks and line, but so far without registered bycatch of harbour porpoise.

A4.2.4 Problem in using the DCF monitoring programme

NSMS are either using observers deployed under the DCF programme for fulfilling their monitoring obligations under Regulation 812/2004, or are using such observers to augment a dedicated observer scheme. ICES WGBYC (2011) noted that *'While such observers are undoubtedly providing useful information, some difficulties have also arisen. In fisheries where bycatch is a rare event, and there is much other sampling work to be conducted by the observer, bycatch events may be easily missed due to the priority of other tasks'*. Some of the problems mentioned are that the many different tasks the observers have to perform have very different aims as well as practical locations - discard, biological sampling (sometimes under deck) and bycatch monitoring incl. monitoring of bycatch falling off the net. PETS (Protected and Endangered Species) monitoring is not always mandated under the DCF (e.g. CR (EC) 199/2008), although recorded by some. It is not always clearly specified in protocols, rising concerns regarding data consistency and validation, with e.g. the problem in differentiating between "0" bycatch and "not recorded". If bycatch monitoring is done under the DCF, ICES WGBYC 2013 emphasizes the need for strict protocols and priorities for the observers (limiting the tasks), for proper training and for an adequate sampling manual and review of problems and solutions.

There are also conflicting priorities in allocation of métiers, as the DCF program's main purpose is to monitor discards of fish. Net fisheries have little fish discard and have low national priority under the DCF in any country, but are the gears most associated to the bycatch of harbor porpoises. E.g. in DK in 2011, the bulk of the DCF observer coverage was in bottom trawls and Danish seine as these fisheries have been shown to have the largest quantities of discard (Danish Annual Report 2012 to the EU regarding the year 2011). This explains in part why gillnet fisheries have been so poorly covered by programmes using DCF observers for monitoring cetacean bycatch.

A4.3 Information on bycatch rate in the NS fisheries

Over the last number of years, WGBYC has annually assessed available data on incidental catches of cetaceans including in the national annual reports submitted to the Commission by MS on the implementation of CR (EC) No 812/2004 and other supplementary information collected nationally.

A4.3.1 Trawl fisheries

As mentioned under Point 2.1.1, some bycatches of cetaceans in pelagic trawls in the North Sea have been reported in the past (Couperus, 1997) and bottom trawl was considered as the major gear causing by-catch in the Skagerrak by Sweden in 2004 (ASCOBANS 2004). However, there has been no bycatches reported in recent years, although there have been a high number of days monitored in the North Sea and the Channel on Danish, Dutch, French and UK pelagic trawlers. The ICES SG/WGBYC database has only two records of porpoise bycaught in pelagic trawls since 2005 (NL 2008, FR 2010).

The reason for SE and DK for not continuing the monitoring programs from 2006-2008 was that the observer schemes, even with a relatively high coverage (up to 7% in DK), had no bycatch detections. Such low/0 bycatch rates of harbour porpoises in pelagic trawl fisheries, but also bottom trawl fisheries, were also observed in recent years by FR, UK and NL in the North Sea, as well as other countries in other European seas, although these métiers can take other cetacean species. See e.g. ICES WKREV812 (2011), which concludes *'There appears to be little evidence that trawl (including pelagic trawl) fisheries provides a threat to harbour porpoises in the Baltic or elsewhere suggesting that any observational effort should be placed on gillnet fisheries'*.

Also pelagic trawling in the North Sea accounts for relatively few days at sea compared with those in the Atlantic or compared with gillnet fishing. ICES WKREV812 (2011) concluded *'Concerning pelagic trawl fisheries, it is clear that most of these present little or limited threat to cetacean populations and a large number of fishing trips and days at sea have been monitored under Regulation 812/2004 without any cetacean bycatch having been observed. There is a clear case to refocus monitoring activity'*. This suggests that especially in the case of for harbour porpoises bycatch rates are likely too low to be of concern and that monitoring these fisheries could easily be scaled back.

A4.3.2 North Sea Gillnet fisheries

Gillnets (or set nets) are clearly the gear type most frequently associated with bycatch records of harbour porpoises. Although gillnet fisheries in the North Sea likely represent in the order of 10 times more d.a.s than pelagic trawl fisheries (ICES WKREV812), there is no mandatory monitoring of the gillnet fisheries in the CPHPNS area. Almost all of the EU gillnet fisheries in the North Sea are conducted without representative bycatch monitoring programmes, and no recent estimates of total porpoise bycatch exist for the area.

The lack of mandatory monitoring programme in the NS was likely due to the fact that CR (EC) 812/2004 made pingers mandatory on most bottom-set gillnet or entangling net in area IIIa, IV and VIIed, This concerns, however, only vessel above 12 m in length, while the vast majority of the fleet in any NS country is under 12 m (see under Action 3, Point A3.1.2 for details), and therefore not required to use pingers. Also the degree of compliance to the use of pingers is unclear and poorly documented, as is their reliability and their mitigating effect on a longer time frame. No information is provided by NSMS on how often pingers are inspected. Some countries have even difficulties identifying the number of vessels needing pingers (See AC20/DOC.2.2.1.b and Northridge 20011 for a review of the problem).

ICES WKREV812 (2011) provided some crude yardstick as to the overall amount of registered gillnet effort in the North Sea and Skagerrak (Table A4.3). DK totalised 32% of the total number of days at sea (d.a.s) and maybe over 50% of landing live weight, while Norway and UK totalised respectively to 20 and 18%.

The Norwegian bycatch has been estimated for two coastal gillnet fisheries for the period 2006–2008 (Bjørge et al 2011, 2013), and the high level of bycatch observed led to increase monitoring of a wider part of the fleet (A. Bjørge, pers. com.).

The situation for the UK fisheries in the North Sea remains unclear due to relatively low levels of observer coverage in recent years (Northridge et al 2011, 2012, ICES WGBYC 2013).

There has not been any dedicated monitoring effort in the Danish gillnet fishery in the NS since 2001 and only very low DCF coverage, although very high levels of bycatch were observed in the nineties, with over 7,000 porpoises taken in the peak year 1994. Worth noting is that this fishery seemed then to have had in that period a higher bycatch rate than those reported later for other fisheries, with an average tonnage of fish landed per porpoise as low as 1.7, compared with 5 tonnes in the UK and 6.4 in Norway (ICES WKREV812 2011). As no monitoring has been done since, it is difficult to say whether this difference in bycatch rate might have been time-related or due to a specific Danish way of fishing. The fishery has experienced a three-fold decrease since 1997 (with over 5,300 porpoises taken then) and may have changed in character (see AC20/DOC.2.2.1.b for details) and pinger (should) have been implemented. It is clear than bycatch rates from the nineties cannot be used to date as indicator of bycatch rate in the Danish gillnet fishery, but present numbers are crucially missing. That especially when there is no

information on the degree of compliance to the regulation and half of the fleet is under 12 m and not required using pinger.

Clearly, without some reliable bycatch estimate for 50% of the NS gillnet fleet, it will be difficult to get a comprehensive and reliable overview on the bycatch of harbour porpoise in gillnet fisheries in the CPHPNS areas, and by the same token to assess the conservation risk to the population.

Table A4.3. Summary of reported gillnet effort by gillnetters vessels from NSMS fishing in the North Sea and Skagerrak. ('latest year', mainly 2009) (from Table 6, WKREV812 2011)

Day at sea	NO	SE	DK	DE	NL	BE	FR	UK
34,559	20	3	32	3	10	1	6	18

A4.4 Information from strandings

Jan Haelters notes in AC20/DOC.3.1.1.a that '*several reports indicate that seasonal harbour porpoise densities in the southern part of the North Sea and the eastern part of the Channel appear still to be increasing. These increases have been attributed to an overall southerly shift in distribution consistent with patterns observed between 1994 and 2005 by the SCANS and SCANSII surveys. As there are local areas of high intensity fishing using static gear in these areas, there is a need for monitoring for potential bycatch problems*'.

Increase in strandings of harbour porpoises in NL, BE and UK in the last years illustrate the existence of bycatch in coastal fisheries, but have not been so far been linked to changes in fishing effort or actual bycatch rates. Low stranding rates are not necessarily equivalent of low bycatch rates in an area. Bycatch information (spatial distribution of the bycatch, fishery métier, etc.) is not directly available with strandings. A recent study (Peltier et al 20102) aims, however, at improving the ecological significance of cetacean stranding data by a better understanding of the drifting process in order to relate stranding locations distributed along the coastline to the likely areas where dolphins had died. This could then provide relevant low-cost information on mortality areas at sea, relative densities and distribution. The work was based on the use of the drift model MOTHY developed by Météo-France. Using the same kind of modeling, Peltier et al (2013) estimate stranding anomalies of harbour porpoises, i.e. the difference between expected strandings and observed strandings, which then constitute the stranding data series corrected for drift conditions. The seasonal decomposition of stranding anomaly suggested that drift conditions did not explain observed seasonal variations of porpoise strandings. Long-term stranding anomalies increased first in the southern North Sea, the Channel and Bay of Biscay coasts, and finally the eastern North Sea. The hypothesis of changes in porpoise distribution was consistent with local visual surveys, mostly SCANS surveys (1994 and 2005) and Peltier et al (2013) concluded that this represented a new indicator for applying to cetacean populations.

A4.5 Conclusion: progress accomplished in the implementation of CPHPNS Action 4 since 2009

In conclusion: progress has been made in evaluating bycatch in some fisheries, thus in implementing Action 4, but a regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch is far to have been and to be carried out or planned - that not even for fisheries associated with high bycatch rates and susceptible to represent a risk at the population level such as set-net fisheries. Therefore accurate estimates of incidental catches levels are not available although significant incidental catches have been consistently reported in several NS fisheries by several NSMS .

NSMS have at present

- A reliable overview of bycatch in pelagic trawl fisheries, which do not represent a risk to harbour porpoises
- No overview in set-net fisheries associated with high bycatch rates. This is missing in
 - The larger segment of the fleet, where pingers are mandatory, but where compliance to the regulation and long-term effect have not been/are not systematically monitored;

- The smaller segment (<15m), although usable monitoring methods have been developed;
- Recreational and part-time coastal fisheries.

The key issues remain reliably determining the bycatch pressure in

- All static net fisheries, regardless of vessel size and including the segment where pingers are mandatory;
- Recreational and semiprofessional fisheries, both coastal and more offshore.

ICES WGBYC has reiterated year after year since it started its work in 2008 that there is no comprehensive information on the bycatch of harbour porpoise in fisheries in EU waters, including the North sea. There is not sufficient sampling in the right fisheries or areas to enable sound management decisions. NSMS reports to the Commission indicate low or no bycatch in NS waters but scientific evidence from at-sea observer schemes or from post-mortem analysis of stranded animals continues to indicate significant interactions between fisheries and harbour porpoises. As an example, Dutch data for the period 2009-2011 indicate that 12–33% of strandings showed sign of fishery interaction (ICES WGBYC 2013).

Mitigation measures are in place for some fisheries, but whether those measures are achieving the desired goals or require adjustment has not been reliably monitored in the CPHPNS area.

Clearly, the defined monitoring scheme under CR (EC) 812/2004 is problematic, when all gillnet fisheries – the most problematic fisheries in relation to harbor porpoise bycatch - are exempted of any monitoring and when NSMS keep mostly to date to the mandatory monitoring under CR (EC) 812/2004 and disregard their monitoring obligation under HD, focussing on Natura 2000 sites and disregarding the very relevant wider measures.

Also both ICES and STECF (European Commission 2011) point out that the inconsistencies found in the information provided by MS limit the extent of any assessment as to how the Regulation is being implemented. WGBYC has met problems in populated a common bycatch and fishing effort database, because data are not provided in the required format, in terms of metric or ICES subdivisions grouping. E.g. prior to the 2013 meeting, among NSMS only Denmark, France, Netherlands and UK provided data in the required common data format. German data were not provided using d.a.s, the common effort metric used by the group and could not therefore be used, while no data were available for Belgium (ICES WGBYC 2013).

A *Bycatch Risk Approach* (BRA) was developed initially for cetaceans by ICES WKREV812 (2011) and is also used in the project DEFINEIT (Northridge et al 2012) on several bycaught species in order to identify areas and fisheries posing the greatest likely conservation threat to bycaught species, among them the harbour porpoise. The approach splits the population numbers of each protected species into different Management Areas (MA) and calculates take limits of species by area for any bycatch threshold level used. By using an expected bycatch rate (numbers per day or per unit of catch) multiplied by the total fishing effort, an approximate total number of bycaught animals can be estimated for each fishery and compared with any proposed take limit. If this method might be used without having bycatch data for all fisheries, it still requires good effort data for all fisheries and good bycatch data for at least main type of fisheries. The data format must allow collated them in a useful manner, i.e. they must use a pre-defined format and geographical stratification. This data so far do not exist for all fisheries, not even at the NS level.

In 2011, Northridge conclude *'that these totals provide only a very patchy overview of total cetacean bycatches in Europe for several reasons: firstly, for several fisheries even where bycatches have been observed, data have been deemed too patchy or unrepresentative to provide a reliable bycatch estimate; secondly because only a minority of fisheries has been sampled, and thirdly because most of the attention is being devoted to over 15m vessels that form a minority of the fleet, for gillnets at least.'* As ICES WGBYC repeatedly points out, the situation was such when it started its review and has not changed much since.

A4.6 Proposed Recommendations

To NSMS

- Assess the bycatch pressure in recreational and semi-professional fisheries with a high likelihood of bycatch for porpoises, for assessing the bycatch pressure in relation to that of commercial fisheries. **[As under Action 3]**
- **[All and especially DK and UK]** Initiate the immediate assessment of the bycatch pressure in the NS set net fisheries in by
 - implementing representative programmes in the larger vessel fisheries parallel to the use of pingers.
 - implementing representative monitoring programmes in the smaller vessels gillnet fisheries in the NS, as methods are now at hands. **[As under Action 3]**
- **[All and especially BE and DE]** Report effort and bycatch data to the Commission / STECF / WGBYC
- **[All and especially BE and DE]** When reporting effort and bycatch data to the Commission / STECF / WGBYC, follow the required reporting format in terms of metrics, fleet aggregation and areas grouping. The fleet segmentation level should follow the classification set out in the DCF and be at a monthly rather than quarterly resolution.
- Report bycatch data, so they can be aggregated in zones corresponding to the different ASCOBANS Plans (e.g., not aggregated all ICES VII subareas or aggregated VII and VIII together)
- Implement post-implementation monitoring for assessing temporal trends in compliance and efficacy of mitigation method.
- Coordinate implementation of monitoring programmes under CR (EC) 812/2004 and HD, and with other MS, to render them more cost-effective and not redundant.

For revising CPHPNS

- Action 4 should pertain not to *ALL* fisheries but to *RELEVANT* fisheries, i.e., those estimated to could represent a risk at the population levels.

Regarding upcoming EU fisheries regulations under CFP

- The bycatch monitoring issue should be tackled in a different way, and follow recommendation of ICES WKBYC (2011) that bycatch monitoring schemes should have more flexible targets, not necessarily with the aim of providing total bycatch estimates with predetermined CVs, but should rather ascertain whether or not bycatch rates in specific fisheries are likely to represent a conservation problem, i.e., whether or not bycatch levels exceed a pre-specified threshold or reference limit. This would allow not overburdening MS with excessive monitoring requirements.
- Assessing the need for mitigation method should be based on indicators such as area, season, mesh size, gear/net type and not on vessel size.
- Static fisheries should be part of the mandatory monitoring schemes
- **[As under Action 3]** Compulsory monitoring of the smaller segment of the fleet must be incorporated into the revised CFP, including smaller vessels and recreational fisheries. To these effects, the use of CCTV monitoring should be recommended. To avoid any bias, it could simply become mandatory in (at least) any professional fisheries. The actual analysis of the data could still follow a monitoring scheme providing the desired coverage level for each specific fishery.
- The mandatory monitoring in pelagic trawling in the NS should be scaled down.
- Requirements on both monitoring and implementation of mitigation should be made in a flexible way for ensuring that member states can react to shifts in distribution, as they have been observed in the NS.

3.5 **ACTION 7: Monitoring trends in distribution and abundance of harbour porpoises in the region**

Short Description of action

- 10 **specific objective:** to monitor whether the management actions of the Conservation Plan are meeting the management objectives with respect to abundance and distribution
- 11 **specific threats to be mitigated:** the combined effects of anthropogenic activities
 - **rationale:** without monitoring it is impossible to evaluate the success or otherwise of the Conservation Plan and to determine whether modifications are needed
 - **target:** to provide regular information on the abundance and distribution of harbour porpoises in the region as input into the management procedure approach discussed under Action 6 , to provide information relevant to evaluating mitigation measures including a comparison of the relative distribution of animals with anthropogenic activity (see Action 7)
 - **method:** build upon the advances made by the SCANS II project and the recommendations therein to develop an agreed monitoring programme (involving one or more scientific workshops) and to implement it
 - **implementation-timeline:** begin immediately with **aim for completion of the design of the programme by 2010** after which it is implemented

Priority

- **importance:** **high**
- **feasibility:** **high**

A7.1 Context

A7.1.1 Legal framework

Marine mammal monitoring programmes in the EU are mandated by several regulations, directives and agreements, besides ASCOBANS notably the Habitats Directive (HD), the Marine Strategy Framework Directive (MSFD) and OSPAR Eco-QOs (Review of these obligations can be found in ICES WGMME reports, e.g. WGMME 2013).

The HD (92/43/EEC) requires EU MS to maintain, or restore, at a favorable conservation status species listed in Annex II and present in the Natura 2000 network, such as the harbor porpoise (also listed in Annex IV) . Management plans of Natura 2000 areas must ensure that the abundance of porpoises within the areas is stable or increasing and that the total abundance of harbour porpoises within national borders should not decline.

MSFD (2008/56/EC) requires EU Member States to determine Good Environmental Status (GES) for their marine waters (Article 9) and establish environmental targets and indicators in order to guide progress towards achieving GES (Article 10). Marine strategies for achieving GES across regions and sub-regions need to be coherent, coordinated and have common approaches, including monitoring (Article 5.2).

The objective of COHPNS ACTION 7 is to generate distribution and abundance information both at CP area –scale and at national-scales , but in a coordinated and coherent manner, in order to being able to assess population-level effects of anthropogenic activities and evaluate mitigation measures.

A7.1.2 Situation until 2009

Two large-scale decadal surveys covering the North Sea were carried out in 1994 and 2005 (Hammond et al 2002, 2013, SCANS-II 2008). Although harbor porpoise estimates were not significantly different between the surveys, they set in evidence a large-scale southward shift in distribution with the main concentration in the North Sea having shifted from the northwest in 1994 to the southwest in 2005.

A systematic change in distribution over this period is corroborated by the increases in sightings of porpoises from the coasts of Germany, the Netherlands, Belgium, UK and France over the last decade, as well as a dramatic increase in the number of strandings (Camphuysen 2004, 2011, Jauniaux et al 2008, Gilles et al 2009, 2011, Haelters and Camphuysen 2009, Jung et al 2009, for a review of trends see Evans 2010).

Data from two Norwegian dedicated sightings surveys show a 10-fold decline in sighting rates of harbor porpoises in the northern North Sea (56°-62° N) between 2004 and 2009 (Øien 2005, 2010), suggesting that porpoise density in this area is still low and may have further decreased.

Does the observed distributional southerly shift alone explain the observed reduced density in the northern North Sea or were other factors involved? How has the situation evolved since 2009, when several reports indicate that seasonal harbour porpoise densities in the southern part of the North Sea and the eastern part of the Channel appear still to be increasing (J. Haelters, pers. comm. AC20/Doc.3.1.1.a).

Both the importance and the feasibility of monitoring trends in distribution and abundance of harbor porpoises in the NS were rated as high in the Plan, it is therefore expected that NS MS have given high priority to the task since 2009.

A7.2 Status over monitoring trends in distribution and abundance of harbor porpoises in the CP area since 2009

Dedicated regular national/regional/site monitoring efforts targeting harbor porpoises become quite intensive from 2009 onwards in the CP area, responding to different monitoring drivers ranging from monitoring requirement under the HD and impact-surveys, using techniques ranging from visual survey, acoustic monitoring, satellite tracking and lately high definition digital imagery.

The development and implementation of population monitoring programmes in the CP area since 2005 has been reviewed in details in the previous interim report (Desportes 2013), with among other the compilation of the catalogue of dedicated line transect sightings surveys conducted in the CP area. It covered large areas of the south-eastern North Sea, spreading over different times of the year, but with an absence of regular effort in the western and central North Sea, as well as eastern northern North Sea and Skagerrak.

Dedicated population monitoring effort encompassing porpoises in the CPHPNS area since 2009:

- Sweden has not conducted any monitoring effort (since 2005).
- Denmark has conducted since 2011 an annual July survey of its five porpoise NS SACs areas and supported the joint DE-NL August 2011 august survey on the Dogger Bank.
- DE, NL and BE have conducted multiple surveys within their EEZ area, sometimes covering its totality (in 2009 and 2012 for DE, at least once a year since 2012 for NL, several times a year for BE). See Desportes 2013a (AC20/Doc.2.2.1.b, Appendix 2) for details.
- DE and NL conducted a joint survey in August 2011 on the Dogger Bank, supported by DK and UK.
- FR has conducted smaller surveys in area IVc and covered the whole Channel twice in 2011-2012, but the programme which should cover two whole years has been terminated after the first year.
- UK has not conducted any larger monitoring effort, but supported the joint DE-NL August 2011 august survey on the Dogger Bank.

This monitoring has taken place mostly on a national basis, with little coordination and without the development of an overall monitoring strategy. Results have been analysed at the same scale, with no meta-analysis attempted, not even using the larger surveys conducted under the requirement of the HD, although most of the larger surveys have been carried out as aerial sightings surveys and followed the protocols developed by SCANS II, and even if detailed protocols may somewhat vary.

To this population monitoring effort should be added the effort made in monitoring marine renewable energy developments, which unfortunately is also carried out without broader coordination, sometimes not even at a national or neighbouring scale here again preventing data pooling, see ICES WGMME (2013) for an analysis.

In the aim of producing robust estimates of cetacean density, distribution and population trends for cetacean species occurring in NW European waters - thereby harbor porpoises in the CPHPNS area, the UK

Joint Cetacean Protocol (JCP, <http://jncc.defra.gov.uk/page-5657>) brings together effort-related cetacean sightings data from a variety of sources including large scale international surveys (SCANS, SCANS-II, CODA), surveys based on platforms of opportunity (e.g. ESAS cetacean data), as well as more localised non-governmental data (e.g. SeaWatch data) and industry data. Phase III of the project covered the European Atlantic area for seven species, thereby the harbor porpoise in the CP area. Unfortunately the project met some analytical difficulties and has not been released (Paxton et al). To date, however, only large-scale survey data and UK data are included in the project.

The JNCC has contracted a further analysis of data to look for persistent, high density areas in UK waters for harbour porpoise and bottlenose dolphins. The Final report for this work is due early 2014.

A7.3 Conclusion: progress realised in the implementation of CPHPNS Action 3 since 2009

Whether progress has been accomplished in the implementation of Action 7 depends somewhat on a stricter or wider interpretation of the Action.

Monitoring efforts, direct or indirect, have been accomplished by most NSMS except SE, but no new trend in distribution and abundance of harbour porpoises in the CPHPNS area has become available, not even for partial medium-sized areas such as southern, central or northern NS. It is expected, however, that Phase III of the JCP will provide information on trends of harbor porpoises in the area. The next SCANS survey is expected to be carried out in 2016, continuing the time-series of large-scale decadal surveys in the NS initiated in 1994 (See the project introduction AC20/Doc.4.1.a).

Although the monitoring accomplished represents a considerable investment in terms of scientist time and money, covering in the contiguous areas over 202,000 km², it only provides to date information of seasonal and yearly trends in a patchwork of relatively small areas, at the maximum at the national EEZ-scale. Data cannot be combined because timings differ and usually correspond to the peak abundance of the species in each area. Any national waters in the North Sea cover a very small part of the distribution range of the harbour porpoise and a trend in abundance in time and space in any of those will not necessarily reflect an actual trend in abundance of the overall North Sea population.

Clearly the advances made by the SCANS II project and the recommendations therein to develop an agreed monitoring programme have been very little use and a global monitoring programme has not been designed and implemented by 2010, as required by CPHPNS Action 7.

A7.4 Proposed Recommendations

MS are presently shaping their monitoring schemes under the HD and MSFD. A nested monitoring strategy over several years should be developed, where focus on national monitoring drivers would alternate with focus on providing abundance estimate over a larger, biologically meaningful area every three-four years, and where smaller- and medium-scale monitoring could get integrated with regularly repeated large-scale cross-boundary decadal cetacean surveys, such as the SCANS ones. Implementation of such a strategy would be particularly straight forward for neighbouring countries presently employing similar monitoring protocols, such as Belgium, the Netherlands, Germany and Denmark.

Also, the July SCANS decadal surveys provide robust abundance estimate of harbour porpoises at the North Sea level, but do not provide estimates at the national level. Monitoring performed in Germany, Holland and Belgium covers from time to time their entire EEZ. It would be therefore interesting to investigate whether SCANS survey blocks could be designed for covering, not national waters that are too small an area for such type survey, but combined national areas, as for example Belgium, Dutch and German waters. Such larger cooperative July survey could then be carried out every three-four years, and included every 9/10 years in the overall decadal population survey (SCANS).

Coordination between monitoring programmes is clearly required under MSFD:

- Article 5.2: [MS marine strategies] *are coherent and coordinated across the marine region or sub-region concerned*
- Article 11.1: *Monitoring programmes shall be compatible within marine regions or sub-regions*
- Article 11.2(a): (MS shall endeavor to ensure that) *monitoring methods are consistent across the marine region or sub-region, so as to facilitate comparability of monitoring results.*

SCANS III represents a unique opportunity of informing best practice for monitoring as required by the Habitats Directive and as input to common indicators under the MSFD to inform on status at the necessary spatial scale (See objective 4, AC20/Doc.4.1.a), with smaller monitoring exercise also informing trends at the population-level.

To NSMS

- Develop and implement nested monitoring strategy, so information on population trends in abundance can also be generated between large scale decadal surveys, while national reporting obligation are fulfilled.
- Support by all means the realization and success of SCANS III.
- Develop a framework, so the JCP programme can be continued and extended to data from the whole NS in the future, and contribute with data from non-UK waters, similarly collected from dedicated surveys or platforms of opportunity.
- Endorsed and act upon the following recommendations of the ICES WGMME:
 - 2012 - WGMME **recommends** a cooperative monitoring approach for marine renewable energy developments is taken, which combines small-scale monitoring efforts with large-scale cross-boundary marine mammal surveys in order to provide information at a spatial and temporal scale relevant to marine mammals.
 - 2013 - WGMME **recommends** that MS develop international collaborative monitoring strategies for marine mammals in order to meet the surveillance requirements of the Habitats Directive.

3.6 ACTION 8: Review of the stock structure of harbour porpoises in the region

Short Description of action

- 12 **specific objective:** to review stock structure and movements of harbour porpoises in the region
- 13 **specific threats to be mitigated:** essential information to be able to evaluate threats caused by anthropogenic activities
 - **rationale:** such information is fundamental to the management procedure approach outlines in Action 6
 - **target:** to provide information on the stock structure and movements of harbour porpoises in the region that can be used in the management procedure
 - **method:** to fully review the available data (from a suite of techniques including, genetics, telemetry, distribution, bycatches) and to provide appropriate information on plausible hypotheses for use in the management procedure and, if needed, to suggest research to reduce uncertainty (via a scientific workshop)
 - **implementation-timeline:** to be completed in time for use by scientists in the management procedure

Priority

- **importance:** high
- **feasibility:** high

A8.1 Context

The understanding of the population structure of harbour porpoises in the NS is critical if the long-term conservation in the North Sea is to be effective. The precise assessment of the potential impact of regional/local threats requires a clear understanding of the population structure and population size in the affected regions, which can then be fed into management procedures. It is generally agreed that population distinctiveness should be based on concepts of both ecological and genetic exchangeability. In the past, the tendency has been to assume one large MU, and then to subdivide this once differences have been detected by various methods. However, a precautionary approach is to start with a number of smaller MUs based upon preliminary evidence of differences, and then to pool these once one has data to show the differences are unlikely to be significant.

Defining population structure of porpoises in the NS has not proved a straightforward exercise, as different studies, although generally agreeing on some kind of substructuring, revealed different patterns and intensities. Drawing lines which can be used in the management framework and demarcate management units on a geographical basis has proved so far difficult.

The ASCOBANS-HELCOM Small Cetaceans Population Structure Workshop held in 2007 by 24 specialists in marine mammal genetics and ecology (Evans et al 2009) reviewed all literature up to 2007 also assessing unpublished data, although not including Thatcher's MSc thesis (2005) nor the Das et al (2007) report. Based on several lines of evidence and adopting a precautionary approach, the WS recommended a subdivision of the North Sea in North-eastern North Sea & Skagerrak on one side and South-western North Sea & Eastern Channel on the other side, the western Channel being grouped with the Celtic Sea + South-west Ireland and Irish Sea with the following specifications:

- Division of the NS into two MUs along a median (at this stage arbitrary) line, running NNW-SSE;
- Inclusion of the Shetland Islands, Skagerrak and northern Kattegat within the Northeastern NS MU;
- Northern boundary shift of the Northeastern NS MU along the Norwegian coast;
- Inner Danish Waters MU to include part of the Kattegat, all of the Danish Belt seas, and the Western Baltic.

Most of the differences that were reported by this workshop, between e.g. Dutch and Danish North Sea and Danish and British North Sea were from studies undertaken, and data obtained, in the 1980s and early 90s, i.e. before the movement of animals from the northern north sea to the southern north sea (between SCANS I and II). Another problem with these studies, and the subsequent ones, is that sample size is sometimes restricted in some areas and particularly border ones, and that the precise origin of the animals, from strandings but also from bycatch, cannot be inferred with certainty.

Since the ASCOBANS-HELCOM WS only a few studies concerning population structure of harbour porpoises in the NS and/or adjacent waters have been carried out or published, namely Wiemann et al 2010 (Baltic

sea and adjacent waters), Sveegaard et al (2011, Danish waters), Alfonsi et al (2012, French Atlantic coast) and De Luna et al (2012, NS and adjacent seas), Galatius et al (2012, Baltic region).

ICES WGMME discussed stock structure in the NE Atlantic, including the NS, at meetings in 2009, 2010, 2012 and 2013. In 2010, WGMME had endorsed the MUs for harbour porpoise proposed by the ASCOBANS-HELCOM workshop, supporting the splitting the North Sea in two MUs. In 2012, WGMME revisited its conclusion and considered that the splitting of the NS in two MUs was not supported by the data and recommended a single MU in the NS constituted of ICES area IV, IIIaN, VIId. In 2013, however, the group concluded that *'Regarding the North Sea, WGMME recognized that it may be appropriate to consider more than one MU in this area. The difficulty was in knowing where to place any boundary, especially taking into account ICES divisions. A single MU for the North Sea is recommended but it is also suggested that the option of more than one MU in the North Sea continues be explored in ongoing work to develop management models for setting safe limits to bycatch'*.

A8.2 Review of HP population structure in the North Sea

Under this point, P.G. Evans and A.R. Hoesel summarize and update from the ASCOBANS-HELCOM Population Structure Workshop (Evans et al 2009) the lines of evidence used for examining population structure in harbour porpoises in the NS and adjacent waters.

A8.2.1 Skeletal & tooth ultrastructure variation

Yurick and Gaskin (1987) conducted a study of metric and non-metric skull characters on 101 porpoises from the eastern Atlantic, North Sea and Baltic, and found some indication of segregation in the North Sea into Dutch coastal, eastern North Sea and Baltic subpopulations. However, sample sizes from each area were too small at that time for a statistical analysis.

Kinze (1985, 1990), using a larger sample size, demonstrated non-metric differences between 548 porpoise skulls collected from the Dutch and German North Sea; between the German and Danish North Sea; and between the Swedish Skagerrak and Inner Danish Waters (Danish Skagerrak and western Baltic).

A study of tooth dentinal and cemental ultrastructure and Growth Layer Group (GLG) characteristics by Lockyer (1999), using eight different mineralization anomaly characteristics for comparison, found significant differences between porpoises from each of the following areas: northern, central and southern North Sea.

Most recently, De Luna *et al.* (2012) measured 16 traits on 462 porpoise skulls from three different regions in the eastern North Atlantic (Norwegian, n=50: Barents Sea = 21, Norwegian Sea = 9, Norwegian North Sea = 20); Danish, n=93: Danish North Sea = 11, Skagerrak = 2, Kattegat = 41, Belts Seas = 38, Baltic Proper = 1); British, n=319: British North Sea = 113, Irish Sea-Wales-West England-West Scotland = 107, English Channel-Southern England = 13). Discriminant function analysis was performed for the assignment of individuals by skull morphometry, and four characters were found to be highly significant ($p < 0.001$), three of them reflecting the length and width of the buccal (oral) cavity, and the fourth reflecting the size of the orbit. Three populations were successfully classified: British, Danish, and Norwegian, with by far the strongest discrimination between Norway and the other two regions. They interpreted this as reflecting differences in foraging behaviour, British and Danish porpoises foraging in relatively shallow waters preying mainly on benthic species, whereas Norwegian porpoises were taking mainly mesopelagic and pelagic fish.

A8.2.2 Genetic analyses

Walton (1997), using single locus mtDNA to examine samples from around the British Isles (Ireland/Celtic Shelf, n=64; Irish Sea, n=56; West Scotland, n=18; northern North Sea including Northern Isles, n=105; southern North Sea including the Dutch coast, n=73; and English Channel, n=11), found significant differences between northern and southern North Sea porpoises (and between northern North Sea and Celtic Shelf/Irish Sea animals). Since mtDNA is maternally inherited, he concluded that these differences reflected limited movement amongst females.

Indication of some sub-structuring within the North Sea came also from the study by Tolley *et al.* (1999), where they analysed porpoise samples from the Barents Sea (n=20), northern North Sea west of Norway (n=16), and British northern North Sea (n=35), using a single locus mtDNA marker. They found differences between the Norwegian and British North Sea, but only when samples from Shetland had been excluded, suggesting that the latter may be more closely connected to southern Scandinavia.

Andersen *et al.* (2001) examined 807 porpoises in a study using 12 microsatellite loci from throughout the central and eastern North Atlantic to the Baltic Sea. Multilocus tests for allele frequency differences, assignment tests, population structure estimates (F_{ST}) and genetic distance measures (D_{LR} and D_C) all indicated six genetically differentiated populations/sub-populations after pooling sub-samples within regions. Two regions significantly differentiated from one another were the British (western) North Sea (n=131) vs Danish (eastern) North Sea (including Skagerrak) (n=151).

Wiemann *et al.* (2010) analysed 497 porpoise samples from the Danish & German North Sea (n=94), Skagerrak (n=42), Kattegat (n=85), Belts Seas (n=187), and Inner Baltic Sea (n=89), sequenced at mitochondrial Control Region, with 305 of these typed at 15 polymorphic microsatellite loci. They found clear evidence of a population split between the Skagerrak and the Belt Seas, with a transition zone in the Kattegat area. This was particularly evident in significant frequency shifts of the most abundant mitochondrial haplotypes. A particular haplotype almost absent in the North Sea was the most abundant in the Belt Seas and Inner Baltic Sea. Microsatellites yielded a similar pattern.

De Luna *et al.* (2012) recently examined eight microsatellite DNA loci in 338 porpoises from Norway, Denmark and the British Isles, and found each of the three areas to be distinct (using assignment tests, implemented in the software STRUCTURE, and F_{ST}). Values of F_{ST} ranged from 0.04 for the comparison between the British Isles and Denmark, to 0.05 for the comparisons between Norway and Denmark, and Norway and Britain (in all three cases, P was <0.001). Their sample sizes from the Skagerrak (n=2) and Danish North Sea (n=11) were too small to be able to determine whether these should be separated from inner Danish waters.

A8.2.3 Dietary Studies

There are many studies (for example, Rae, 1965, 1973; Desportes, 1985; Lick, 1991; Aarefjord *et al.*, 1995; Berrow and Rogan, 1995; Malinga and Kuklik 1996; Martin, 1996; Benke *et al.*, 1998, Vikingsson *et al.*, 2003; Borjesson *et al.*, 2003; Lockyer *et al.*, 2003; Lockyer and Andreason, 2004; Santos *et al.*, 2004, 2005; Fontaine *et al.*, 2007) that have shown differences in diet for porpoises between regions in the North Atlantic, North Sea and Baltic.

Differences in diet were found between porpoises feeding in the relative shallow waters of the southern North Sea and those in the northern North Sea, Skagerrak and waters west of Norway, with porpoises in the former region feeding predominantly on demersal or benthic prey and those in the latter on pelagic prey (Aarefjord *et al.*, 1995; Bjørge, 2003).

A8.2.4 Stable Isotope Studies

Das *et al.* (2003) conducted a stable isotope study (using $\delta^{13}C$ and $\delta^{15}N$) of porpoises from the southern North Sea (n=49), and compared these with samples from the German North Sea (n=11), German Baltic (n=8), Denmark (n=15), Norway (n=23), and Iceland (n=11). They found that geographic location significantly affected the $\delta^{13}C$ and $\delta^{15}N$ measurements obtained (independent of body condition). Porpoises from the German North Sea displayed significantly higher $\delta^{15}N$ values than porpoises from elsewhere (ANOVA, $P < 0.001$). Porpoises from the Belgian and French coasts had significantly enriched ^{13}C values compared to individuals from Denmark, the German Baltic, Norway and Iceland ($P < 0.005$).

These results suggest that porpoises from the German North Sea are feeding at a higher trophic level than individuals from other locations examined. Porpoises from the German Baltic, Danish and Belgian coasts displayed similar $\delta^{15}N$ values whereas $\delta^{13}C$ values varied widely between locations. Trophic positions were

estimated according to the model described by Lesage *et al.* (2001), for porpoises from the southern North Sea, German Baltic and Norway coasts, for which $\delta^{15}\text{N}$ values in the particulate organic matter were available. A mean trophic position of 3.4 was calculated for porpoises from the Belgian part of the southern North Sea. Assuming a similar $\delta^{15}\text{N}$ value of around 9‰ for the German North Sea particulate organic matter, porpoises from this area occupy a trophic position of 3.7, i.e. somewhat higher than off the Belgian coast. By contrast, porpoises from Norwegian coasts display a lower trophic position of 3.2.

The depletion in $\delta^{13}\text{C}$ that was observed for individuals from Norway (and Iceland) was thought to be related to a more offshore feeding, as the continental shelf area is considerably reduced along these coasts compared with the southern North Sea. These results are enhanced by the high hepatic and renal cadmium concentrations observed in porpoises from Norway and Iceland (Das *et al.*, 2004), suggesting a significant contribution of oceanic cephalopods in their diet.

A8.2.5 Contaminant Loads

In a study of trace metal levels, porpoises from the southwestern North Sea (n=49) were compared with those from the German North Sea (n=11), German Baltic (n=8), Denmark (n=15), Norway (n=23), and Iceland (n=11) (Das *et al.*, 2004). They found that porpoises collected along the southern North Sea coast (Belgian and German sectors) generally had significantly higher ($P < 0.05$) zinc and mercury concentrations compared to samples collected from the German Baltic, Denmark, Norway and Iceland.

In another study, five trace elements (Cd, Cu, Hg, Se, Zn) were measured in the kidneys and liver of 104 porpoises stranded between 1997-2003 along the coasts of France (n=24), Spain (Galicia) (n=3), Ireland (n=22), Scotland (n=36), and the Netherlands (n=19) (Lahaye *et al.*, 2007). Generally, relatively low concentrations of toxic elements were found. Elevated cadmium levels in Scottish porpoises were related to their feeding preference, an apparent increase of cephalopods in their diet having been observed with latitude (Santos and Pierce, 2003; Santos *et al.*, 2004). Significant geographic differences were observed in hepatic zinc concentrations, with elevated levels in porpoises from the Netherlands, which the authors thought may relate to their poor health status. Variation in metal concentrations within porpoises from the North Sea was thought to reflect a long-term segregation between animals from northern (Scotland) and southern areas (the Netherlands).

A8.2.6 Telemetry

In Danish waters, a satellite telemetry study indicated that animals in the northern Kattegat, the Skagerrak and north-eastern North Sea may consist of one continuum of porpoises while the inner Danish Waters from the northern Kattegat south through the Belt Seas to the western Baltic appear to consist of another group (Teilmann *et al.*, 2008; Sveegaard *et al.*, 2011). This was based upon 63 radio-tagged porpoises over a period of 11 years (1997-2007), after being incidentally caught in pound nets in Danish waters from Skagen to Gedser.

The satellite telemetry study showed that mature female porpoises (n=8) ranged on average about the same distances as mature males (n=10), although adult females from Danish waters were never recorded over in the western North Sea. Porpoises tagged in Skagen moved seasonally from the northern Kattegat and Skagerrak northwards as far as the Shetland Islands, generally travelling up the eastern sector of the North Sea west of Norway; they did not range at all into the southern portion of the North Sea.

A8.2.7 Conclusions

There are several signals from different lines of evidence to suggest that porpoises in the North Sea exhibit substructuring. In particular, porpoises from the southwestern North Sea appear to differ significantly from those in the northeastern North Sea. There may be further substructuring between northern and southern North Sea and western vs eastern North Sea but it is difficult to determine where the division may lie given that different authors have used different sampling divisions and the precise origins of the samples are not necessarily known. Most studies indicate greater philopatry for females than male porpoises.

A number of authors allude to differences in ecology between animals from the northeastern and southern/western North Sea, particularly with respect to feeding. In recent years, seascape genetics has been used increasingly to account for differentiation observed between cetacean populations. In the absence of actual physical barriers, it has been shown in a number of studies of various cetacean species that differences in ocean current systems and/or bathymetry parallel observed genetic differences. In the North Sea, the northeastern sector (from Shetland east to northern Denmark) is significantly deeper than the central and southernmost sectors (Fig. A8.1). Current systems also show differences between the two regions both in terms of strength and circulation patterns (Fig. A8.2). The central part of the North Sea represents an intermediate zone between the two regions, with respect to both bathymetry and ocean circulation (Figs A8.1 & A8.2).

If porpoises in the northeastern North Sea are feeding mainly upon pelagic prey (for which skull characteristics, particularly of the buccal cavity, have developed) whilst those in the southernmost North Sea are taking fish primarily off the bottom (with equivalent changes to the size of the buccal cavity), then these should be considered as separate management units with a potential boundary following bathymetric and oceanographic changes.

However, De Luna *et al.* (2012) and Andersen *et al.* (2001) found significant differences between porpoises from the British North Sea and those from the Danish North Sea, as well as differences between porpoises from Norway and both the Danish North Sea and the British North Sea. Wiemann *et al.* (2010) also showed significant substructuring between the Danish North Sea and Norway. Thus, the presence of three Management Units, as indicated in Fig. A8.3, should be considered.

Management Units are generally recommended as a more precautionary approach to conservation. The implications of not recognising signals for differentiation are particularly relevant to the North Sea. Impacts of human activities may differ between regions (e.g. levels of bycatch may be high in the north-east, low in the west); status changes may be different (e.g. potentially little change in the western/southern North Sea but decline in the northern/northeast sector); whilst the design of abundance surveys, if they do not take such differences into account, could lead to misleading results.

A8.2.8 Recommendations

Four main recommendations arise from consideration of the published evidence:

- 1) The North Sea should not be considered as a single Management Unit;
- 2) It would be useful to obtain further samples for some of the boundary areas – Danish vs Norwegian Skagerrak, northern Kattegat, southern vs western Norway, Shetland vs Orkney/Scottish mainland, for analysis using a range of approaches (skull morphology, genetics, etc);
- 3) The possibility of further substructuring should be explored in the central North Sea from the Danish and north German coasts across to Eastern Britain since there are signals of differentiation on an east-west as well as north-south axis;
- 4) Analyses are best conducted on samples where the precise original location is known. This is obviously not possible with most stranded animals sampled, but even with individuals that have been bycaught, since fishing vessels may travel over wide areas, care needs to be taken to ensure that the precise location of that bycaught animal is recorded.

A8.3 Conclusion: progress accomplished in the implementation of CP Action 8 since 2009

ICES WGMME has been the only forum where the stock structure of harbour porpoises in the NS has been openly reviewed since 2009, and very limited new information has been available to the Group since 2009. This work should be supplemented by a discussion in a more specialized forum, supported by access to new data in different domains, and coming especially from boundary areas and based on well geographically defined samples.

A8.4 Proposed Recommendations

To NSMS

- Establish a North Sea wide free access database of samples, so problems with low sample size in different areas can be overcome, possibly in connection with the NS stranding database.
- Further investigate the population structure using several approaches, focusing on increasing sample size in boundary areas.
- If using earlier and recent samples, analyze results, differentiating between sample from before the southward shift in distribution and after.
- Give with precision the origin of the samples, and if using stranding animal, the likely origin of the animal using drift modeling.
- Adopt a precautionary approach, and consider using more than one MU in the NS, when assessing safe bycatch limits.
- Support the exploration of the significance of more than one MU in the NS through simulations as part of the development of the bycatch management procedures.
- Use the outputs of the simulations as the basis for determining whether or not more than one MU is appropriate in the North Sea until further information becomes available.
- Explore the possibility of further substructuring in the central North Sea from the Danish and north German coasts across to Eastern Britain since there are signals of differentiation on an east-west as well as north-south axis.

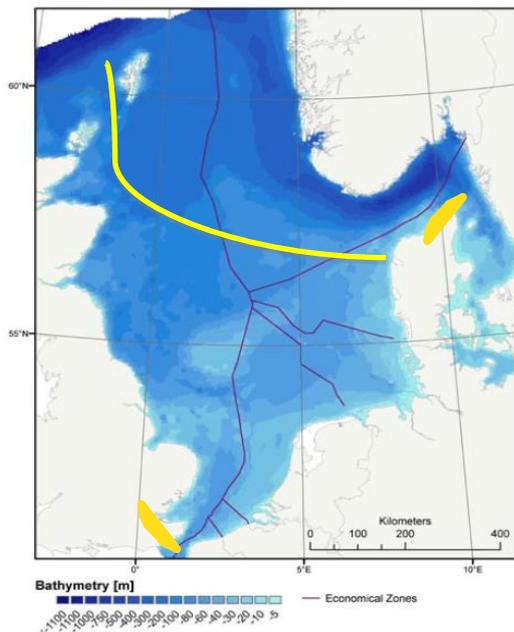


Fig. A8.1. Proposed Management Unit divisions in relation to bathymetry

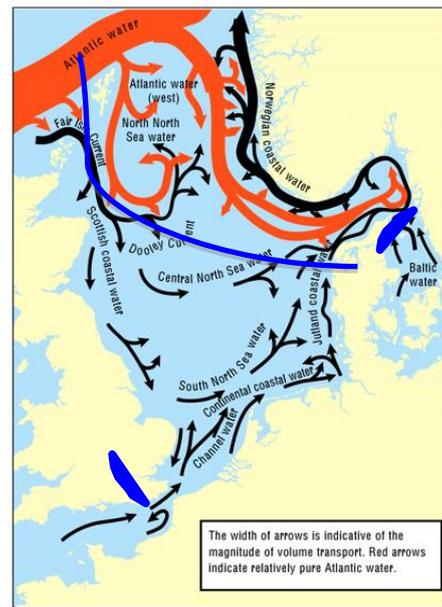


Fig. A8.2. Proposed Management Unit divisions in relation to major currents

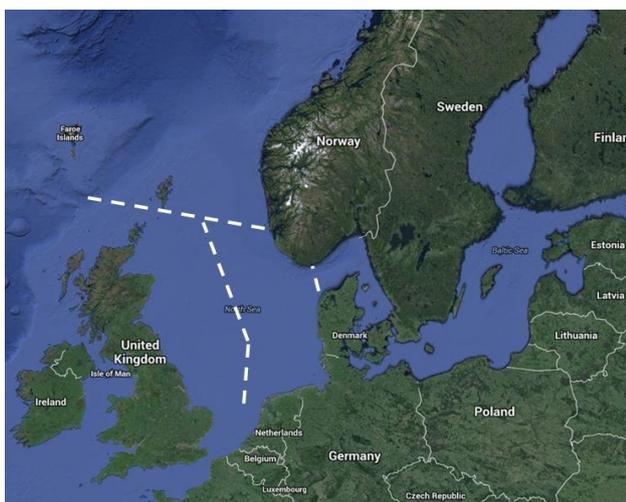


Fig. A8.3. Alternative Management Units for Porpoises in the North Sea, based on De Luna *et al.* (2012), Weimann *et al.* (2010), and Andersen *et al.* (2001)

3.7 Summary of progress in the implementation of the ASCOBANS CPHPNS

Table 6 presents a qualitative summary assessment of the progress realised by the NSMS in implementing the 12 actions defined in the CPHPNS. The table is based on the version adopted by the NSSG at its second meeting (March 2012), but moving from a binary scale (progress / no progress) to a -1 to 3 scale.

Except for Action 2, the summary encompasses more or less the period since the adoption of the plan, giving though more weight to new activities, as an example NL gets a 2 for Action 3 for having initiated a big scale long-term monitoring of (mostly) smaller gillnet with CCTV cameras in December 2012, although they had only done little monitoring of this segment before.

Table xx. Qualitative assessment of progress in the implementation of the ASCOBANS North Sea Conservation Plan for Harbour Porpoise (August 2013). Except for Action 2 (regulation), the scale is as follows: na = not applicable; -1, situation is less good than at the adoption of the plan in 2009, 0 = no progress, 1 = small progress or at experimental level; 2, steady progress; 3, fully implemented. Com., comments.

Comments

1. UK: Detection units are being developed for enforcement. Full implementation expected in 2013.

2. DK: 10-15 (fresh) porpoises from the area Wadden Sea-North Sea-Skagerrak are collected per year and necropsied to determine the cause of death, this from March 2012 onwards.

D: In Lower Saxony, there has never been a proper stranding network nor any systematic sampling or investigation of strandings.

In Schleswig Holstein in 2010-2012, there has only been funding for biological basic measurements.

3. UK: data from MMO observations on seismic survey vessels has been collected for many years. A summary report collecting the results and demonstrating the effectiveness of the soft start approach will be published early 2013. A sound register as part of the MSFD work is under development.

Conservation Plan for HP in the North Sea: Actions		Priority		SE	DK	D	NL	BE	FR	UK	NO
1	Implementation of the CP: co-ordinator and Steering Committee	High		2: Coord part time, task of C and NSSG not completed							
2	Implementation of existing regulations on bycatch of cetaceans - e.g. EC 812/2004 & Habitat Directive (HD) (* Table 1ab, ICES WGBYC 2013 for year 2011)	High	*No. vessels w. pingers requ.	yes	24	yes	0	1	116	30	na
			* % vessels using pingers	0	100	?	na	0	0	?	
			Enforcement policy	0	0	0	na	na	na	0	
			Dedicated observer prog	0	0	0	0	0	yes	yes	
			Monitoring under HD	0	0	0	0	0	0	yes	
3	Establishment of BYC observation programmes on small vessel (<15m) and recreational fisheries in NS	High	Professional	0	1	0	2	0	2	1	2
			Recreational	0	0	0	0	0	1?	na	0
4	Regular evaluation of relevant fisheries, extent of HP BYC Gillnet fisheries >15 m vessels, dedicated Not required dedicated observer schemes Through DCF/DCR observer schemes	High		0	0	0	0	0	0	0	0
				0	0	0	0	0	1	1	0
				0	0	0	yes	0	yes	yes	na
				0	yes	yes	yes	yes	yes	yes	
5	Review of current pingers, dev. of altern.pingers and gear modif.	High		2	2	2	2	na	1	2	na
6	Finalise a management procedure approach for determining maximum allowable bycatch limits	High		General progress: SCANS II & WGMME, WKBYC							0
				0	0	0	1	0	0	2	
7	Monitoring trends in distribution and abundance of HP in NS	High	Large scale	0							0
			Reg/survey	0	SACs	3	3	3	2-	1	1
			Reg/Model	0	0	0	0	0	0	2	
8	Review of the stock structure of HP in NS	High		1	1	1	0	0	1	1	?
9	Collection of incidental HP data through stranding networks	Medium		1	-1	-1	3	3	1	3	0
10	Investigation of the health, nutritional status and diet of HP in NS	Medium	(Diet in DK, NL, BE)	0	2	2	2	2	1	2	3
11	Investigation of the effects of anthropogenic sounds on HP	Medium		0	2	3	1	1	0	2	?
12	Collection and archiving of data on anthropogenic activities and development of a GIS	Medium		0	0	1	1	1	0	2	

Com.

1

2

3.8 Suggestion for maximising the chance of implementation of the CPHPNS

Three NSMS - SE, DK and DE - have obligations under three regional ASCOBANS Conservation/Recovery Plans for harbour porpoises, the plans for the North Sea, the Baltic and the so called Gap Area, Western Baltic, Belt Sea and Kattegat. The conservation status and the surrounding situation is different in the three areas, but some of the problems, and likely solution, are the same. By the same token, some of the recommendations are similar, both those written in the plans as such, as recommendations (Jastarnia Plan, Gap Area Plan) or as Action Point (North Sea Plan), and those later emitted by the Steering Group of the plans.

More functional synergy between the three plans might help maximizing the chance of implementation of the three plans and speed up the implementation process, at least, if not more, by a better flow of information and ideas and maybe more independent overview over the situations. It could also avoid duplication of tasks which are not –only- ‘linked’ to a specific area, e.g. the review of development of new technics, alternative gears, mitigation and monitoring methods, their long-term effect, the best way of doing things, e.g. the involvement of stakeholders, investigating detrimental effects, developing public awareness, etc.

Participation overlap between the Baltic and NS groups is actually very limited. The recent participation of the North Sea Plan coordinator is a step forward, as would be the exchange of any future plan coordinators. But one could also imagine the groups meeting at the same time or back to back, at least from time to time, and hold some common sessions, although keeping the meetings separated.

Making clear – somewhere and somehow – that some of the Action Points emanating from the three Groups are similar would likely also be helpful. As an example a few recommendations emanating from the last meeting of the Jastarnia (JG) and Gap (GG) Groups (AC20/Doc.2.1.1) have been lifted below. Making the convergence of action more clear - and visible - may reinforce the pressure on those in charge of make sure than the plans are implemented.

Taken from the Report of the 9TH Meeting of the ASCOBANS JASTARNIA Group (2013)

- **JG AP 12)** Noting the successful application of cod pots in Sweden, Parties should undertake or continue efforts to test and implement pots, traps and other porpoise-friendly gear.
- **JG AP 13)** Given the positive experiences in the Danish fishery, Parties should implement video surveillance widely in order to document bycatch of porpoises and identify and implement effective mitigation measures, and at the same time reduce discards of fish. Currently video surveillance is the most accurate measure for bycatch estimates and total documentation of the fishery, applicable also to small vessels, and meets the requirements of Article 12 of the Habitats Directive.
- **GG AP 25)** National Coordinators should provide an overview of measures currently ongoing in their countries to actively engage fishing communities and other stakeholders in the implementation of the Plan, in order to identify existing gaps and lessons learnt of interest to all Parties. Parties should provide the funding required for measures needed to fill the gaps. Parties should explore the possibility of obtaining EU funding for this purpose.
- **GG AP 28)** Parties should allocate resources for a study aimed at obtaining an overview of promising alternative fishing gear and practices and provide funding for related research as needed.
- **GG AP 30)** Parties and the EU should be mindful of the need to observe the principles of the FAO Code of Conduct for Responsible Fisheries. National authorities should make fishermen aware of the Code of Conduct and the principles it contains.

4 Points proposed for inclusion in coordinator Work Plan

Based on this and earlier partial implementation review it is suggested that among other tasks, the following tasks be included in the Work Plan of the coordinator

- Finalising the review of Action 10
- Carrying out the review of Action 9
- Developing briefing notes on ASCOBANS positions regarding bycatch
- Developing some template to be used in the communication to stakeholders and interest organization
- Developing, with the help of members of the NSSG, a database of information on fishing effort in the NS (métiers, size of vessels, area of fishing, effort, use of pingers)
- Updating the collation of international and national regulations and guidelines that are relevant to the conservation and management of harbour porpoises in the North Sea and present them in a user-friendly format for communication to stakeholders

Conclusion

As the past and present reviews of the task implementation of the CPHPNS show, if there has been progress in the implementation of the plan, it is far to be fully implemented five years after being adopted. In some domains, in particular Action 4, it seems that not much progress has been made since then in the North Sea, even more so if the scope of the Action, instead of covering all fisheries, is restricted to relevant fisheries, i.e., net fisheries. The conservation status of the harbour porpoise in the North Sea remains unclear, with very patchy information in most domains, not the least regarding bycatch.

The recommendations proposed under this review are collated under Appendix 3 and should be carefully considered by the NSSG and may be prioritised. The Group should discuss in depth which strategy would be the best for speeding up the implementation process, and maybe more important for getting implemented the Actions which would allow to clarify the conservation status of the harbour porpoise in the North Sea. Without such a clarification, it is difficult to communicate the plan to stakeholders, in particular those affiliated to the fisheries sector, and therefore to progress in the implementation of effective and balanced mitigation measures.

With such background, it is essential that all efforts be made for ensuring the successful completion of SCANS III, not only a third synoptic survey of the North Sea in the near future, but also the assessment of the impact of direct mortality caused by human activities and the development of a best practice guide for monitoring.

REFERENCES

- Anonym. 2013. Minutes of the conference call (December 13, 2012) of the ASCOBANS Steering Group for the Conservation Plan for Harbour porpoises in the North Sea. 6pp. unpublished.
http://workspace.ascobans.org/sites/ascobans/files/Final%20minutes%20conference%20call%20NSSG_13-12-12.pdf
- Aarefjord, H., Bjørge, A., Kinze, C.C., and Lindstedt, I. 1995. Diet of the harbour porpoise (*Phocoena phocoena*) in Scandinavian waters. *Reports of the International Whaling Commission* (Special Issue 16): 231-22.
- Alfonsi, E., Hassani, S., Carpentier, F.-G., Le Clec'h, J.-Y., Dabin, W., Van Canneyt, O., Fontaine, M.C. & Jung, J.-L. 2012. A European melting pot of harbour porpoise in the French Atlantic coasts inferred from mitochondrial and nuclear data. *PLoS ONE* 7(9): e44425. doi:10.1371/journal.pone.0044425
- Andersen, L.W., Ruzzante, D.E., Walton, M., Berggren, P., Bjørge, A. and Lockyer, C. 2001. Conservation genetics of the harbour porpoise, *Phocoena phocoena*, in eastern and central North Atlantic. *Conservation Genetics*, 2: 309-324.
- ASCOBANS. 2009a. Report of the 6TH Meeting of the Parties to ASCOBANS. UN Campus, Bonn, Germany 16-18 September 2009.
http://www.ascobans.org/pdf/mops/MOP6_Report_inclAnnexes_final.pdf
- ASCOBANS. 2009b. ASCOBANS Conservation Plan for Harbour Porpoises (*Phocoena phocoena* L.) in the North Sea.
http://www.ascobans.org/pdf/ASCOBANS_NorthSeaPlan_MOP6.pdf
- ASCONANS. 2010a. Report of the 17th meeting of the ASCOBANS Advisory Committee. 72pp.
http://www.ascobans.org/pdf/ac17/AC17_Report_withAnnexes.pdf
- ASCOBANS. 2010b. Terms of Reference for the Steering Group for the ASCOBANS Conservation Plan for Harbour Porpoises in the North Sea. Annex 7, pages 61-62. In Report of the 17TH Meeting of the ASCOBANS Advisory Committee.
http://www.ascobans.org/pdf/ac17/AC17_Report_withAnnexes.pdf
- ASCOBANS. 2011a. Activity report of the Steering Group for the Conservation Plan for the Harbour Porpoise in the North Sea: October 2010 – April 2011. ASCOBANS AC18/Doc.4-05. 4pp.
http://www.ascobans.org/pdf/ac18/AC18_4-05_ReportNorthSeaGroup.pdf
- ASCOBANS. 2011b. Report of the 18th meeting of the ASCOBANS Advisory Committee. 72pp.
http://www.ascobans.org/pdf/ac18/ASCOBANS_AC18_Report_inclAnnexes.pdf
- ASCOBANS. 2012a. Report of the 1st meeting of the Steering Group for the Conservation Plan for the Harbour Porpoise in the North Sea. ASCOBANS AC19/Doc. 4-04 (S). 6pp.
http://www.ascobans.org/pdf/ac19/AC19_4-04_Report_NorthSeaGroup1.pdf
- ASCOBANS. 2012b. Report of the 6TH Meeting of the Parties to ASCOBANS. Brighton, United Kingdom 22-24 October 2012. 106pp.
http://www.ascobans.org/pdf/mops/MOP7_Report_inclAnnexes.pdf
- ASCOBANS. 2013. Report of the 2nd Meeting of the Steering Group for the Conservation Plan for the Harbour Porpoise in the North Sea. ASCOBANS AC20/Doc.2.2.1.a. 15pp.
http://www.ascobans.org/pdf/ac20/AC20_2.2.1.a_Report_NorthSeaGroup2.pdf
- Desportes, G. 2012. Interim report on the implementation of the ASCOBANS North Sea Conservation Plan for Harbor Porpoises - 3. ASCOBANS AC19/Doc. 4-05 (S). 46pp.
http://www.ascobans.org/pdf/ac19/AC19_4-05_Report_NorthSeaCoordinator.pdf
- ASCOBANS. 2004. Annual national reports submitted to the Secretariat as of 27 April 2004 (Belgium, Germany, Sweden, UK). Document AC11/Doc. 30(S) presented at the 11th Advisory Committee meeting to ASCOBANS, Jastrzebia Góra, Poland, 27 – 29 April, 2004.
- AgriFish. 2012. Annual report on the implementation of Council Regulation (EC) No 812/20041 – 2011 – Denmark. 10pp.
- Anonym. 2011. Swedish Annual National Report to ASCOBANS for 2010. Document ASCOBANS AC18_2-09 rev.1. 6pp.
http://www.ascobans.org/pdf/ac18/AC18_2-09_rev1_NationalReportSweden.pdf
- Benke, H., Siebert, U., Lick, R., Bandomir, B., and Weiss, R. (1998) The current status of harbour porpoises (*Phocoena phocoena*) in German waters. *Arch. Fish. Mar. Res.*, 46: 97-123.
- Berrow, S.D. and Rogan, E. 1995. Stomach contents of harbour porpoise and dolphins in Irish waters. *European Research on Cetaceans*, 9: 179-181.
- Bjørge, A. 2003. The harbour porpoise (*Phocoena phocoena*) in the North Atlantic: Variability in habitat use, trophic ecology and contaminant exposure. *NAMMCO Scientific Publications*, 5:223-228.
- Bjørge, A., Godøy, H. and Skern-Mauritzen, M. 2011. Estimated bycatch of harbour porpoise *Phocoena phocoena* in two coastal fisheries in Norway. IWC SC63/SM18.
- Bjørge, A., Skern-Mauritzen, M. and Rossman, M.C. 2013. Estimated bycatch of harbour porpoise (*Phocoena phocoena*) in two coastal gillnet fisheries in Norway, 2006–2008. Mitigation and implications for conservation. *Biological Conservation* 161: 164–173.
- Börjesson, P., Berggren, P., and Ganning, B. 2003. Diet of harbor porpoises in the Kattegat and Skagerrak seas: accounting for individual variation and sample size. *Marine Mammal Science*, 19: 38-58.
- Brown J., Macfadyen, G., Huntington, T., Magnus, J. and Tumilty, J. 2005. Ghost Fishing by Lost Fishing Gear. Final Report to DG Fisheries and Maritime Affairs of the European Commission. Fish/2004/20. Institute for European Environmental Policy / Poseidon Aquatic Resource Management Ltd joint report.
http://ec.europa.eu/fisheries/documentation/studies/ghostfishing_en.pdf
- Camphuysen, C.J. 2004. The return of the harbour porpoise (*Phocoena phocoena*) in Dutch coastal waters. *Lutra*, 47: 113-122.
- Camphuysen, C.J. 2011. Recent trends and spatial patterns in nearshore sightings of Harbour Porpoises (*Phocoena phocoena*) in the Netherlands (Southern Bight, North Sea), 1990-2010. *Lutra* 54(1): 37-44.
- Couperus, A. S. 1997. Bycatch of marine mammals and discards in pelagic fisheries. *Journal of Northwest Atlantic Fishery Science* 22: 209–218.

- Couperus, A.S. 2012. Annual report on the implementation of Council Regulation (EC) No 812/20041 – 2011 – Netherlands. CVO report: 12.008, WOT-05-406-004-IMARES-3, 16pp.
- Das, K., Drouguet, O., Fontaine, M., Holsbeek, L., Jauniaux, T., Michaux, J., Joiris, C. & Bouquegneau, J.-M. 2007. Viability of the Northeast Atlantic harbour porpoise and seal population (genetic and ecological study). Final Study EV/46. Scientific support plan for a sustainable development policy. Politique Scientifique Fédérale.
- Das, K., Lepoint, G., Leroy, Y., and Bouquegneau, J.M. 2003. Marine mammals from the southern North Sea: feeding ecology data from $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ measurements. *Marine Ecology Progress Series*, 263: 287-298.
- Das, K., Siebert, U., Fontaine, M., Jauniaux, T., Holsbeek, L., and Bouquegneau, J.M. 2004. Ecological and pathological factors related to trace metal concentrations in harbour porpoises *Phocoena phocoena* from the North Sea and adjacent waters. *Marine Ecology Progress Series*, 281: 283-295.
- De Luna, C. J., Goodman, S. J., Thatcher, O., Jepson, P. D., Andersen, L., Tolley, K. & Hoelzel, A. R. 2012. Phenotypic and genetic divergence among harbour porpoise populations associated with habitat regions in the North Sea and adjacent seas. *J. Evol. Biol.* 25: 674–681.
- Desportes, G. 1985. *La nutrition des odontocètes en Atlantique nord-est (côtes Françaises & Îles Féroë)*. Thèse de doctorat de troisième cycle, Université de Poitiers, 190pp.
- Desportes, G. 2012. Interim report on the implementation of the ASCOBANS North Sea Conservation Plan for Harbor Porpoises - 3. ASCOBANS AC19/Doc. 4-05 (S). 46pp.
http://www.ascobans.org/pdf/ac19/AC19_4-05_Report_NorthSeaCoordinator.pdf
- Desportes, G. 2013a. Interim report on the implementation of the ASCOBANS North Sea Conservation Plan for Harbor Porpoises – 4, with focus on bycatch situation and population monitoring. ASCOBANS AC20/Doc.2.2.1.b. 44pp.
http://www.ascobans.org/pdf/ac20/AC20_2.2.1.b_Report_NorthSeaCoordinator.pdf
- Desportes, G. 2013b. Interim report on the implementation of the ASCOBANS North Sea Conservation Plan for harbor porpoises – 4, with focus on bycatch situation and population monitoring. ASCOBANS AC20/Doc.2.2.1.b. 44pp. Present report.
- Directorate of Fisheries. 2011. Annual report on the implementation of Council Regulation (EC) No 812/20041 – 2010 – Denmark. 8pp.
- European Commission. 2011. Communication from the Commission to the European Parliament and the Council on the implementation of certain provisions of Council Regulation (EC) No 812/2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98. COM (2011) 578. 9pp.
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0578:FIN:EN:PDF>
- Evans, P.G.H. 2010. Review of Trend Analyses in the ASCOBANS Area. ASCOBANS AC17/Doc. 6-08 (S). 68pp.
- Evans P.G.H., Andersen, L., Bjorge, A., Fontaine, M., Galatius, A., Kinze, C.C., Lockyer, C., De Luna, C., Pierce, G., Sveegaard, S., Teilmann, J., Tiedemann, R. and Walton, M. 2009. Harbour Porpoise *Phocoena phocoena*. In: Evans P.G.H. & J. Teilmann (eds) Report of the ASCOBANS / HELCOM small cetacean population structure workshop. ASCOBANS Bonn, Germany.
- FAO. 1990. Definition and Classification of Fishing gear categories", FAO Fisheries Technical Paper 222 Rev..I. Rome, 1990.
<ftp://ftp.fao.org/docrep/fao/008/t0367t/t0367t00.pdf>
- FAO 2005-2013. World inventory of fisheries. Ghost fishing. Issues Fact Sheets. Text by Andrew Smith. In: *FAO Fisheries and Aquaculture Department* [online]. Rome. Updated 27 May 2005. [Cited 12 August 2013].
<http://www.fao.org/fishery/topic/14798/en>
- Fontaine MC, Tolley KA, Michaux JR, Birkun A, Ferreira M, et al. 2010. Genetic and historic evidence for climate-driven population fragmentation in a top cetacean predator: the harbour porpoises in European water. *P Roy Soc Lond B* 277: 2829–2837. doi:10.1098/rspb.2010.0412.
- Fontaine, M.C., Tolley, K.A., Siebert, U., Gobert, S., Lepoint, G., Bouquegneau, J.-M., and Das, K. 2007. Long-term feeding ecology and habitat use in harbour porpoises *Phocoena phocoena* from Scandinavian waters inferred from trace elements and stable isotopes. *BMC Ecology*, 7: 1 (doi 10.1186/1472-6785-7-1).
- Galatius, A, Kinze, C-C and Teilmann, J. 2012. Population structure of harbour porpoises in the Baltic region: evidence of separation based on geometric morphometric comparisons. *Journal of the Marine Biological Association of the United Kingdom* 92. pp 1669-1676. doi:10.1017/S0025315412000513
- Gilles, A., Scheidat, M., and Siebert, U. 2009. Seasonal distribution of harbour porpoises and possible interference of offshore wind farms in the German North Sea. *Marine Ecology Progress Series* 383: 295–307.
- Gilles, A., Peschko, V. and Siebert, U. 2011. Monitoringbericht 2010–2011. Marine Säugetiere und Seevögel in der deutschen AWZ von Nord- und Ostsee. Teilbericht marine Säugetiere - Visuelle Erfassung von Schweinswalen und akustische Erfassung im Seegebiet Doggerbank. Final report for the Federal Agency of Nature Conservation, p 5–73 (+ appendix). (in German, English summary) http://www.bfn.de/habitatmare/en/downloads/monitoring/BfN_Meeremonitoring_marine_Saeugetiere_AWZ_2010-2011.pdf
- Hammond P.S., Berggren P., Benke H., Borchers D.L., Collet A., Heide-Jorgensen M.P., Heimlich S. Hiby A.R., Leopold M.F. and Oien N. 2002. Abundance of Harbour Porpoises and other cetaceans in the North Sea and adjacent waters. *J. Appl. Ecol.* 39: 361-376.
- Hammond, P.S., Macleod, K., Berggren, P., Borchers, D., Burt, L., Cañadas, A., Desportes, G., Donovan, G.P., Gilles, A., Gillespie, D., Gordon, J., Hiby, L., Kuklik, I., Leaper, R., Lehnert, K., Leopold, L., Lovell, P., Øien, N., Paxton, C.G., Ridoux, V., Rogan, E., Samarra, F., Scheidat, M., Sequeira, M., Siebert, U., Skov, H., Swift, R., Tasker, M-L, Teilmann, J., Van Canneyt, O. & Vázquez, J.A. In press. Cetacean abundance and distribution in European Atlantic shelf waters to inform conservation and management. *Biological Conservation* 164: 107-122.
- Haelters, J. and Camphuysen, C.J. 2009. *The harbour porpoise in the southern North Sea. Abundance, threats and research & management proposals*. IFAW, Brussels, Belgium and den Haag, The Netherlands. 56pp.

- Hardy, T. and Tregenza, N. 2010. Can acoustic deterrent devices reduce by-catch in the Cornish inshore gillnet fishery? Final Report to the Marine and Fisheries Agency. 26pp. unpublished.
<http://www.marinemanagement.org.uk/fisheries/funding/documents/fcf-pinger-trial.pdf>
- Herfaut, J., Levrel, H., Thébauda, O. and Véron, G. 2013. The nationwide assessment of marine recreational fishing: A French example. *Ocean & Coastal Management* 78 : 121–131. <http://dx.doi.org/10.1016/j.ocecoaman.2013.02.026>
- ICES WGMME. 2009. Report of the Working Group on Marine Mammal Ecology. February 2–6 2009, Vigo, Spain.
- ICES WGMME. 2010. Report of the Working Group on Marine Mammal Ecology. April 12–15 2010, Horta, The Azores. ICES CM 2010/ACOM:24. 210pp.
- ICES WGMME. 2012. Report of the Working Group on Marine Mammal Ecology. 5–8 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:27. 140pp.
- ICES WGMME. 2013. Report of the Working Group on Marine Mammal Ecology. 4–7 February 2013, Paris, France. ICES CM 2013/ACOM:26. 115pp.
- ICES PGRFS. 2010. Report of the Planning Group on Recreational Fisheries. 7-11 June 2010. Bergen, Norway. ICES CM 2010/ACOM:34. 168pp.
- ICES PGRFS. 2011. Report of the Planning Group on Recreational Fisheries Surveys. 2-6 May 2011. Esporles, Spain. ICES CM 2011/ACOM:23. 111pp.
- ICES SGBYC. 2010. Report of the Study Group on Bycatch of Protected Species, 1–4 February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:25. 123pp.
- ICES WGBYC. 2011. Report of the Working Group on the Bycatch of Protected Species. 1–4 February 2011, Copenhagen, Denmark. ICES CM 2010/ACOM:26. 75pp.
- ICES WGBYC. 2012. Report of the Working Group on the Bycatch of Protected Species. 7–10 February 2012, Copenhagen, Denmark. ICES CM 2010/ACOM:28. 65pp.
- ICES WGBYC. 2013. Report of the Working Group on the Bycatch of Protected Species. 4–8 February 2013, Copenhagen, Denmark. ICES CM 2010/ACOM:27. 73pp.
- ICES WGRFS. 2012. Report of the Working Group on Recreational Fisheries Surveys. 7 – 11 May 2012. Esporles, Spain. ICES CM 2012/ACOM:23. 55pp.
- ICES WKREV812. 2010. Report of the Workshop to Evaluate Aspects of EC Regulation 812/2004. ICES CM 2010/ACOM:66. 67pp.
- ICES WKSMBF. 2009. Report of the Workshop on Sampling Methods for Recreational Fisheries. 14–17 April 2009, Nantes, France. ICES CM 2009/ACOM:41. 231pp.
- ICES WKOSBOMB. 2010. Report of the Joint NAMMCO/ICES Workshop on observation schemes for bycatch of mammals and birds. ICES CM 2010/ACOM: 33.
- Ifremer. 2009. Synthèse des résultats finaux de l'enquête Ifremer sur la pêche de loisir. Rapport DPMA-Ifremer, avril 2009. http://www.agriculture.gouv.fr/zopeclass1.cedre.nexen.net/sections/magazine/dossiers/littoral-peche-loisir/ifremer-se-penche-sur/downloadFile/FichierAttache_1_f0/synthese_finale_peche_recreative.pdf?nocache=1247037882.01
- Ifremer – SIH. 2010. *Synthèse des flottilles de pêche 2008 - Flotte Mer du Nord - Manche - Atlantique - Méditerranée*. Ifremer Centre de Brest. 262pp. <http://archimer.ifremer.fr/doc/00003/11456/>
- Ifremer – SIH. 2013. *Synthèse des flottilles de pêche 2012 - Flotte Mer du Nord - Manche - Atlantique - Méditerranée*. Ifremer Centre de Brest. 296pp. http://www.ifremer.fr/sih-resource-public/Publications/Syntheses/Synthese_flottilles_de_peche/2011/COMP_SYNTHESE_FLOTTILLE_2011.pdf
- IWC. 2011. Report of the Scientific Committee - Annex L: Standing Sub-Committee on Small Cetaceans. *J. Cetacean Res. Manage.* 13 (suppl.), 2012.
- ICES WGMME. 2012. Report of the Working Group on Marine Mammal Ecology. 5–8 March 2012 Copenhagen, Denmark ICES CM 2012/ACOM:27. 146pp.
- ICES WGMME. 2013. Report of the Working Group on Marine Mammal Ecology. 4–7 February 2013 Paris, France. ICES CM 2013/ACOM:26. 117pp.
- Jauniaux T., Berguerie H. Camphuysen C.J., Daoust P-Y. Drouguet O., Ghisbain T., Garcia-Hartmann M., Grondin A., Haelters J., Jacques T., Kiszka J., Leopold M., Pezeril S., Schnitzler J., and Coignoul F. 2008. Causes of death of harbor porpoises (*Phocoena phocoena*) stranded on the continental coastline of the southern North Sea (Belgium, France, and Dutch coasts) between 1990 and 2007. ICES Annual Meeting, Halifax, Nova Scotia.
- Jung, J-L., Stephan, E., Louis, M., Alfonsi, E., Liret, C., Carpentier, F-G. and Hassani, S. 2009. Harbour porpoise (*Phocoena phocoena*) in north-western France: aerial survey, opportunistic sightings and strandings monitoring. *Journal of the Marine Biological Association of the United Kingdom*, 89: 1045- 1050. SCANS II. 2008. Small Cetaceans in the European Atlantic and North Sea. Final Report submitted to the European Commission under project LIFE04NAT/GB/000245, Available from SMRU, University of St Andrews, St Andrews, UK.
- Kindt-Larsen, L. and Dalskov, J. 2010. Pilot study of marine mammal bycatch by use of an Electronic Monitoring System. Report for DTU Aqua, January 2010.
- Kindt-Larsen, L., Kirkegaard, E., and Dalskov, J. 2011. Fully documented fishery: a tool to support a catch quota management system. *ICES J Mar Sci* 68: 1606–1610.
- Kindt-Larsen, L., Dalskov, J., Stage, B. and Larsen, F. 2012. Observing incidental harbour porpoise *Phocoena phocoena* bycatch by remote electronic monitoring. *Endangered Species Research*. 19: 75–83. http://www.int-res.com/articles/esr_oa/n019p075.pdf
- Kinze, C.C. (1985) Intraspecific variation in Baltic and North Sea harbour porpoises (*Phocoena phocoena* L. 1758)). *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening* 146: 63-74.
- Kinze, C.C. (1990) *The harbour porpoise Phocoena phocoena, (L. 1758)): stock identification and migration patterns in Danish and adjacent waters*. PhD thesis, University of Copenhagen, Denmark.
- Kock, H.O. 2010. Natura 2000 and the Common Fishery Policy – Note. EP – IP/B/PECH/IC/2009-88. PE 438.602. 106pp.

- <http://www.europarl.europa.eu/committees/de/pech/studiesdownload.html?languageDocument=EN&file=32391>.
- Leaper, R. and Papastavrou, V. 2010. Interim report on progress to develop further the ASCOBANS Conservation Plan for Harbor Porpois in the North Sea. ASCOBANS AC17/Doc. 4-05 (S) rev 1. 13pp.
http://www.ascobans.org/pdf/ac17/AC17_4-05_rev1_NorthSeaPlan_InterimProgressReport.pdf
- Leaper, R. and Papastavrou, V. 2011. Final report on progress to develop further the ASCOBANS Conservation Plan for Harbor Porpois in the North Sea. ASCOBANS AC18/Doc.4-06 (S). 7pp.
http://www.ascobans.org/pdf/ac18/AC18_4-06_ReportNorthSeaCoordinators.pdf
- Lesage, V., Hammil, M.O., and Kovacs, K.M. 2001. Marine mammals and the community structure of the Estuary and Gulf of St Lawrence, Canada: evidence from stable isotope analysis. *Marine Ecology Progress Series*, 210: 203-221.
- Lick, R.R. 1991. Parasites from the digestive tract and food analysis of harbour porpoise *Phocoena phocoena* from German coastal waters. *European Research on Cetaceans*, 5: 65-68.
- Lockyer, C. 1999. Application of a new method to investigate population structure in the harbour porpoise, *Phocoena phocoena*, with special reference to the North and Baltic Seas. *Journal of Cetacean Research and Management*, 1(3): 297-304.
- Lockyer, C. and Andreasen, H. 2004. Diet of harbour porpoises (*Phocoena phocoena*) in Danish waters. *European Research on Cetaceans*, 15: 260-268.
- Lockyer, C., Desportes, G., Anderson, K., Labberté, S., U. Siebert. 2003. Monitoring growth and energy utilisation of the harbour porpoise (*Phocoena phocoena*) in human care. *NAMMCO Scientific Publications*, 5: 107-120.
- Malinga, M. and Kuklik, I. 1996. Food consumption of harbour porpoises (*Phocoena phocoena*) in Polish waters of the Baltic Sea. *European Research on Cetaceans*, 10: 60.
- Martin, A.R. 1996. The diet of harbour porpoises (*Phocoena phocoena*) in British waters. IWC document SC/47/SM48.
- Morizur, Y., Demaneche, S., Dube, B., Gaudou, O. and Dimeet, J. 2012. Les captures accidentelles de cétacés dans les pêches professionnelles françaises en 2011: Contribution au rapport national sur la mise en oeuvre du règlement européen (CE) No 812/2004 – (année 2011). R.INT.STH/LBH/2012.
- Morizur, Y., Gaudou, O., Miossec, D., Toulhoat, L., and Gambin, C. 2011. Captures accidentelles françaises de mammifères marins sur les filets calés en Manche-mer du Nord et en zones CIEM VII. Observations réalisées durant les deux années du projet FilManCet ainsi que dans le cadre d' Obsmer. <http://archimer.ifremer.fr/doc/00035/14666/>
- Northridge, S. 2011. An overview of the state of bycatch monitoring and mitigation measures being implemented in European fisheries. IWC SC/63/SM21.
- Northridge, S., Kingston, Al and Thomas, L. 2011. Annual report on the implementation of Council Regulation (EC) No 812/2004 – 2010. 24pp. Unpublished.
- Northridge, S., Kingston, Al and Thomas, L. 2012. Annual report on the implementation of Council Regulation (EC) No 812/2004 – 2011. 21pp. Unpublished.
- Northridge, S., Coram, Al. and Kingston, Al. 2012. SMRU Contribution to the DefinelT Final Report. Task 3.2.2: The susceptibility of sensitive species through analysis of their distribution and the overlap with relevant fishing effort distribution. Sea Mammal Research Unit. June 2012. Unpublished
- Oesterwind, D., and Zimmermann, C. 2013. Pilot study on the documentation of bycatch of seabirds and marine mammals in the gill net fishery of the PO Freest. Intermediate Report 2011. Presented tot he ICES WGBYC, Copenhagen, February 2013. Available from the authors.
- Øien, N. 2005. Report of the Norwegian 2004 survey for minke whales in the North Sea and southern Norwegian Sea. *Paper SC/57/O10,IWC Scientific Committee, May 2005*.
- Øien, N. 2010. Report of the Norwegian 2009 survey for minke whales within the Small Management Area EN – the North Sea. IWC SC/62/RMP7: 6pp.
- Pawson, M.G., Tingley, D., Padda, G. and Glenn, H. 2007. Final report of EU contract FISH/2004/011 on "Sport Fisheries" (or Marine Recreational Fisheries) in the EU. Prepared for The European Commission Directorate-General for Fisheries.
- Pawson, M.G., Glenn, H. and Padda, G. 2008. The definition of marine recreational fishing in Europe. *Marine Policy* 32, 339–350.
- Paxton, C.G.M., Scott-Hayward, L., Mackenzie, M., Rexstad, E. & Thomas, L. 2013. Revised Phase III Data Analysis of Joint Cetacean Protocol Data Resource. Final report to The Joint Nature Conservation Committee. Contract number C11-0207-0421 (unpublished).
- Peltier H, Baagøe HJ, Camphuysen KCJ, Czeck R, Dabin W, et al. (2013) The Stranding Anomaly as Population Indicator: The Case of Harbour Porpoise *Phocoena phocoena* in North-Western Europe. *PLoS ONE* 8(4): e62180.
- Peltier, H., Dabin, W., Daniel, P., Van Canneyt, O., Dorémus, G., Huon, M. and Ridoux, V. 2012. The significance of stranding data as indicators of cetacean populations at sea: Modelling the drift of cetacean carcasses. *Ecological Indicators* 18: 278–290.
- Rae, B.B. 1965. The food of the common porpoise (*Phocaena phocaena*). *Journal of Zoology*, London, 146: 114-122.
- Rae, B.B. 1973. Additional notes on the food of the common porpoise (*Phocoena phocoena*). *Journal of Zoology*, London, 169: 127-131.
- Rubsch, S. and Kock, K.-H. 2004. German part-time fishermen in the Baltic Sea and their by-catch of harbor porpoise. ASCOBANS AC11/Doc.10.(P).14pp.
- Santos, M.B. and Pierce, G.J. 2003. The diet of harbour porpoise (*Phocoena phocoena*) in the eastern North Atlantic. *Oceanography and Marine Biology: an Annual Review*, 2003, 41: 355-390.
- Santos, M.B., Pierce, G.J., Learmonth, J.A., Reid, R.J., Ross, H.M., Patterson, I.A.P., Reid, D.G., and Beare, D. 2004. Variability in the diet of harbor porpoises (*Phocoena phocoena*) in Scottish waters 1992-2003. *Marine Mammal Science*, 20: 1-27.
- Sparrevohn, C.R., Storr-Paulsen, M. 2010. Åle- og torskefangst ved rekreativt fiskeri i Danmark. Undersøgelsesdesign og fangster i 2009. DTU Aqua-rapport nr. 217-2010. Charlottenlund. Institut for Akvatiske Ressourcer, Danmarks Tekniske Universitet, 24 p. [in Danish]

- Sveegaard, S., Teilmann, J., Tougaard, J., Dietz, R., Mouritsen, K.N., Desportes, G. and Siebert, U. 2011. High-density areas for harbor porpoises (*Phocoena phocoena*) identified by satellite tracking. *Marine Mammal Science* 27: 230-246.
- Teilmann, J., Sveegaard, S., Dietz, R., Petersen, I.K., Berggren, P., and Desportes, G. 2008. *High density areas for harbour porpoises in Danish waters*. National Environmental Research Institute, University of Aarhus. 84pp. NERI Technical Report No. 657. <http://www.dmu.dk/Pub/FR657.pdf>.
- Tilander, D. and S.G. Lunneryd, 2010. Pilot Studies of Electronic Monitoring (EM) system for fisheries control of smaller vessels. Paper presented to the Third meeting of ICES Study Group for Bycatch of Protected Species, Copenhagen, February 1–4, 2010.
- Toivonen, A. L., Roth, E., Navrud, S., Gudbergsson, G., Appelblad, H., Bengtsson, B. and Tuunainen, P. 2004. The economic value of recreational fisheries in Nordic countries. *Fisheries Management and Ecology*, 11:1-14.
- Tolley, K.A. and Heldal, H.E. 2002. Inferring ecological separation from regional differences in radioactive caesium in harbour porpoises, *Phocoena phocoena*. *Marine Ecology Progress Series*, 228: 301-309.
- Tolley, K.A., Rosel, P.E., Walton, M., Bjørge, A., and Øien, N. 1999. Genetic population structure of harbour porpoises (*Phocoena phocoena*) in the North Sea and Norwegian waters. *Journal of Cetacean Research and Management*, 1: 265-274.
- Vikingsson, G.A., Ólafsdóttir, D., and Sigurjónsson, J. 2003. Geographical and seasonal variation in the diet of harbour porpoises (*Phocoena phocoena*) in Icelandic coastal waters. *NAMMCO Scientific Publications*, 5: 243-270.
- Walton, M.J. 1997. Population structure of harbour porpoises *Phocoena phocoena* in the seas around the UK and adjacent waters. *Proceedings of the Royal Society of London Series B*, 264: 89-94.
- Wiemann, A., Andersen, L.W., Berggren, P., Siebert, U., Benke, H., Teilmann, J., Lockyer, C., Pawliczka, I., Skóra, K., Roos, A., Lyrholm, T., Paulus, K.B., Ketmaier, V. and Tiedemann, R. 2010. Mitochondrial Control Region and microsatellite analyses on harbour porpoise (*Phocoena phocoena*) unravel population differentiation in the Baltic Sea and adjacent waters, *Conservation Genetics* 11:195–211.
- Yurick, D.B. and Gaskin, D.E. 1987. Morphometric and meristic comparisons of skulls of harbour porpoise *Phocoena phocoena* (L.) from the North Atlantic and the North Pacific. *Ophelia*, 27: 53-75.

APPENDICES

Appendix 1. – Coordination of the NSCP - List of activities carried out in the Period March 2012 to July 2013

Appendix 2. – List of marine commercial and recreational fisheries practiced in the NSMS and estimation of the bycatch risk to porpoises (expert opinion)

Table 1. List of commercial fisheries and risk to porpoises

Table 2. List of recreational fisheries and risk to porpoises

Appendix 3. – Collation of recommendations proposed under this review.

Appendix 1. – Coordination of the NSCP - List of activities carried out in the Period March 2012 to July 2013

Contact pursued with the

- ASCOBANS Secretariat and the North Sea SG chair.
- Delegates and member from the North Sea SG.
- Scientists and NGOs from NS countries involved with harbour porpoise work, by-catch and population monitoring.
- Scientists involved in the preparation of SCANS III.
- Scientists involved in the ICES WGBYC 2013 and WKBYC 2013
- AgriFish, the Danish agency in charge among others of communicating with professional fishers and fisheries association on the problem of bycatch and bycatch mitigation.
- Dutch scientists in charge of developing the Dutch monitoring programme in the NS, both with regards to obligations to ASCOBANS and EU Natura 2000.

Actions taken

- Participation in the 2nd Meeting of the NSSG, Galway, Ireland, 19 March 2012
- Participation in the ASCOBANS AC20, Galway, Ireland, 20-22 March 2012
- Requests for further information to the North Sea SG delegates⁴
- Continuing collating international and national regulations and guidelines regarding anthropogenic activities, as well as information on their implementation and enforcement in the different NS Sea range states.
- Collating the supplementary information on the implementation in the different North Sea range states of the 12 Action points identified in the Conservation Plan, related in the annual national progress reports made available for AC19.
- Collating new information on actual bycatch in different North Sea fisheries, based on the reports of the of the ICES SG/WGBYC, in order to produce a more manageable North Sea overview of knowledge and gaps, both in bycatch reporting and monitoring, thus allowing the group to discuss necessary actions to promote the implementation of the plan.
- Collating information on harbor porpoise survey efforts carried out in the North Sea since SCANS II (2005) or planned in the near future to promote a synergy and a standardisation between the current national monitoring programmes of NSMS (Sources: published and grey literature, information from delegates and scientists and NGOs involved). Preparing a catalogue and mapping of the population monitoring effort in the NS.
- Collating information on the type of fisheries which are allowed or not allowed (but sometimes performed) in the different NS MS in the 3 maritime zones - beach zone, territorial waters and EEZ - differentiating between recreational and professional fisheries and providing an estimated bycatch risk for each fisheries (Sources: websites, ICES WGBYC database, ICES PG/WGRFS reports)
- Preparing a presentation on the NS Conservation Plan for HP and the status of its implementation to be presented at the Harbor Porpoise Symposium organized in Amsterdam by the North Sea Foundation on October 18, 2012 and participating to Symposium.
- Preparing the Interim Report-4 to the NSSG in preparation to a Conference Call on 13 December 2012, focusing on 1) the present knowledge on bycatch and its monitoring in the NS, 2) effort population monitoring carried out in the North Sea since 2005 and planned until 2015 (potential year of SCANS III).
- Conference call meeting with the chair of the NSSG chair, November 2, 2012.
- Conference call meeting of the NSSG, December 13, 2012
- Preparation, and circulation, of the final report, by incorporating the comments /corrections /suggestions received from the members of the NSSG.
- Preparation to and participation in the SCANS III Kick off meeting in Edinburgh, 17-18 December 2012
- Preparation to and participation in the ICES WGBYC in Copenhagen, February 4-8, as well as subsequent supplementary work on the answers to ICES request on advice. "Assess the extent to

which current fishery monitoring schemes, including among other things those conducted under the DCF and Regulation 812/2004, provide an acceptable means of assessing the nature and scale of cetaceans and other protected species bycatch. Consider alternative means and other sources of data that could be used to improve our understanding of the conservation threat posed to cetaceans and protected species by bycatch in European fisheries.”

- Participation in discussion regarding the preparation of SCANS III (project and application).
- Preparation to and participation in the SAMBAH Stakeholder Workshop and the 9th Meeting of the Jastarnia Group in Gothenburg, Sweden, April 15-18.
- Preparing input to a presentation on the North Sea Action Plan and its implementation to be given by James Gray at an IWC meeting on conservation and management plans
- Preparing an overview of the North Sea Natura 2000 areas.
- Preparing a report reviewing the status of the implementation of the 12 Action Points of the NSCP in view of the 3th meeting of the NSSG on August 26 in Warsaw, Poland.
- Preparation of the agenda for the 3d meeting of the NSSG
- Participation in the 7th meeting of the Danish **Natura 2000** Dialogforum, Copenhagen, Denmark, 27 June 2013

Appendix 2. – List of marine commercial and recreational fisheries practiced in the NSMS and estimation of the bycatch risk to porpoises (expert opinion)

Abbreviations

Gears according to FAO 1980

Fishery Zone & Segment

IZ	Intertidal or littoral zone above low water mark
TW	Territorial waters, below low water mark
EEZ	Economic Exclusive Zone below TW
NS	North sea
EC	Eastern Channel
WC	Western Channel
SH	Schleswig- Holstein
Nds	Niedersachen

Usage in IZ, TW and EEZ

	usage not possible in the area
na	not authorised
na1	not authorised, but known to be used
nu	<i>not used with no specification on authorisation</i>
0	not used but not forbidden
1	used & authorised
1s	used under special permission
1p	used, but not allowed in the whole area

Bycatch Risk to porpoises (expert opinion):

likelihood of bycatch

(and not population level risk)

(as defined in WKBYC 2013, Table 6)

0	no reported bycatch
0/1	no likely risk
1	low risk, as in WKBYC
2	some risk, as in WKBYC
	3 high risk, as in WKBYC
	no risk, as not used
	status disagreement between different sources
*	but animals usually alive

Table 1. North Sea Commercial Fisheries in North Sea Member States and risk to porpoises

Metier		From WKBYC 2013 (Tables 6 & 9)			DE			NL			BE			FR			UK		
		Risk	NS+EC	WC	Risk	EEZ	TW	Risk	EEZ	TW	Risk	EEZ	TW	Risk	EEZ	TW	Risk	EEZ	TW
			Usage	Usage		Usage	Usage		Usage	Usage		Usage	Usage		Usage	Usage		Usage	Usage
Dredges	Boat dredge [DRB]	1	1	1	1	0	0	1	1				1	1	1	1	1p	1p	
Trawls	Bottom otter trawl [OTB]	1	1	1	1	1	1	1	1	1	0	1	1	1-	1	1	1	1p	1p
	Bottom pair trawl [PTB]	1	1	1	1	0	0	1	1	1	0	1	1	1-	0	1	1	1p	1p
	Beam trawl [TBB]	1	1	1	1	1	1	1	1	1	0	1	1	1-	1	1	1	1p	1p
	Multi-rig otter trawl [OTT]	1	1	1	1	0	0	1	1	1	0	1	1	1-	0	1	1	1p	1p
	Midwater otter trawl [OTM]	1	1	1	1	1	1	1	1	1	0	1	1	1+	1	1p	1	1p	1p
	Pelagic pair trawl [PTM]	1	1	1	1	0	0	1	1	1	0	1	1	1+	1	1p	1	1p	1p
Hooks & Lines	Hand and Pole lines [LHP] [LHM]	1	1	1	1	0	0	1	1	1	0	1	1	1	1	1	0/1	1	1
	Trolling lines [LTL]	1	0	1	1	0	0	1	0	0				0	0	0	0/1	0	1
	Drifting longlines [LLD]	1	0	1	1	0	0	1	0	0				0	1	1	0/1	0	0
	Set longlines [LLS]	1	1	1	1	0	0	1	1	1				0	1	1	0/1	1	1
Lift nets	Lift nets from boat [LNB]	not defined			0	0	0	0	0			nu	nu		0	0	0	0	0
Traps	Pots and Traps [FPO]	1	1	1	1	0	0	1	1	1	0	1 rare	1 rare	0	1	1	0/1	1	1
	Fykenets [FYK]	1	1	0	1	0	0	1	1	1		0	0	0	1	1	0/1	0	1s
	Stationary uncovered poundnets [FPN]	1	0	0			0	1		1			nu			0			1s
Gillnets & entangling nets	Driftnet [GND]	3	1	1	3	0	0	3	0	0	2	na1	na1	3	na	1rare	3	0	1
	Set gillnet [GNS]	3	1	1	3	1	1	3	1	1	2	1	1	3	1	1	3	1	1
	Fixed gillnets [GNF] - on stakes	not defined					0	0			0						2		1s
	Encircling gillnet [GNC]	not defined					0	0			0						0		1
	Trammelnet [GTR]	3	1	1	3	1	1	3	1	1	2	1	1	3	1	1	3	1	1
Surrounding nets	Purse-seine [PS]	1	1	1	1	0	0	1	1	1		nu	nu		0	0	1	1	1
Seine nets	Fly shooting seine [SSC] - Scottish seines	1	1	1	1	0	0	1	1	1		nu	nu	1	1	1	1	1	1
	Anchored seine [SDN] - Danish seines	1	1	1	1	0	0	1	1	1		nu	nu		0	0	1	1	1
	Pair seine [SPR]	1	9	9	1	0	0	1	0	0		nu	nu		0	0	1	1	1
	Beach seine [SB]	1	0	1	1		0	0		0			nu			0	1		0

Table 2. North Sea Marine Recreational Fisheries (MRF) in North Sea Member States and risk to porpoises

Metiers (International Standard Statistical Classification of Fishing Gear - ISSCFG, 29 July 1980)		DE			NL			BE			FR			UK		
		risk	TW	IZ	risk	TW	IZ	risk	TW	IZ	risk	TW	IZ	risk	TW	IZ
Dredges	Boat dredge [DRB]		na		1	0						na			0	
Trawls	Bottom otter trawl [OTB]		na		1	0		0	1			na			0	
	Bottom pair trawl [PTB]		na		1	0		0	1			na			0	
	Beam trawl [TBB]	0	1		1	0		0	1			na			0	
	Multi-rig otter trawl [OTT]		na		1	0		0	1			na			0	
	Midwater otter trawl [OTM]		na		1	0		0	nu			na			0	
	Pelagic pair trawl [PTM]		na		1	0		0				na			0	
Hooks & Lines	Hand and Pole lines [LHP] [LHM]	0	1	1	1	1	1	0	1	1	0	1	1	0/1	1	1
	Trolling lines [LTL]		na	na	1	0	0				0	1	1		0	0
	Drifting longlines [LLD]	0	0	0	1	0	0				0	1	1		0	0
	Set longlines [LLS]	0	0	0	1	1	1				0	1	1		0	0
Lift nets	Lift nets [LN]	0	1SH	1SH	0	0	0		nu	nu	0	1	1		0	0
Traps	Pots and Traps [FPO]		na	na	1	0	0	0	1 (rare)	1 (rare)	0	1	1	0/1	1	1
	Pole stow net	0	1	1												
	Fykenets [FYK]	0	1	1	1	0	0		0	1	0	1	1		0	0
	Stationary uncovered poundnets [FPN]	2*	1Nds		1	0			nu			0			0	
Gillnets & entangling nets	Driftnet [GND]		na	na	3	0	0	2	na1	na1		na	na	3	1	1
	Set gillnet [GNS]		na	na	3	1	1		na	1	3	1	1s	3	1	1
	Fixed gillnets [GNF] - on stakes		na	na	0	0	1		na	na		na	na		0	0
	Encircling gillnet [GNC]		na	na	0	0	0		na	na		na	na		0	0
	Trammelnet [GTR]		na	na	3	0	0		na	na	3	1	1s		0	0
Surrounding nets	Purse-seine [PS]		na		1	0			nu			na			0	
Seine nets	Fly shooting seine [SSC] - Scottish seines		na		1	0			nu			na			0	
	Anchored seine [SDN] - Danish seines		na		1	0			nu			na			0	
	Pair seine [SPR]		na		1	0			nu			na			0	
	Beach seine [SB]		na	na	0	0	?		nu	nu		na	na		0	1

Appendix 3. – Collation of recommendations proposed under this review.

To NSSG

ACTION 1

- Insure a mechanism of regular flow of information between the NSSG and the coordinator.
- Develop a strategy for promoting the Plan and its implementation to relevant stakeholders (as listed under Task 2), in particular in the fisheries sector and affiliated interest organizations.

To NSMS and AC

General

- Assess the extent of ghost nets in the NS, including net types and locations. Regular assessments should then be made of the total quantities of nets lost or discarded, taking account of the distribution of different types of fisheries.
- Implement mitigation measures for ghost nets, such as regular clean-ups, provision of disposal containers at ports, deposit systems, mandatory reporting of lost gear, marking of nets etc. Wherever possible fishing communities and other relevant stakeholders should be actively involved.

ACTION 3

- Assess the bycatch pressure in recreational and semi-professional fisheries with a high likelihood of bycatch for porpoises, for assessing the bycatch pressure in relation to that of commercial fisheries.
- **[All except DE and maybe NL]** Collect effort data in recreational fisheries with a likelihood of bycatch for harbor porpoises.
- **[All except DE]** Collect effort data in semi-professional fisheries with a likelihood of bycatch for harbor porpoises.
- Investigate the possibility of using the DCF surveys coordinated by ICES WGRFS for obtaining effort data in MRF and the possibility of integrating in future surveys a marine mammal bycatch component. **[As under Point 2.3 of main report]**
- Develop and implement mitigation measures, when necessary.

ACTION 4

- **[All and especially DK and UK]** Initiate the immediate assessment of the bycatch pressure in the NS set net fisheries in by
 - implementing representative programmes in the larger vessel fisheries parallel to the use of pingers.
 - implementing representative monitoring programmes in the smaller vessels gillnet fisheries in the NS, as methods are now at hands, , with a percentage of coverage of the total effort reasonably high and representative of targeted fleets. CCTV monitoring programmes of wider scope of smaller vessels, like in the Netherlands, should definitely be promoted.
- **[All and especially BE and DE]** Report effort and bycatch data to the Commission / STECF / WGBYC
- **[All and especially BE and DE]** When reporting effort and bycatch data to the Commission / STECF / WGBYC, follow the required reporting format in terms of metrics, fleet aggregation and areas grouping. The fleet segmentation level should follows the classification set out in the DCF and be at a monthly rather than quarterly resolution.
- Report bycatch data, so they can be aggregated in zones corresponding to the different ASCOBANS Plans (e.g., not aggregated all ICES VII subareas or aggregated VII and VIII together)

- Implement post-implementation monitoring for assessing temporal trends in compliance and efficacy of mitigation method.
- Coordinate implementation of monitoring programmes under CR (EC) 812/2004 and HD, and with other MS, to render them more cost-effective and not redundant.

ACTION 6

- Take the decisions required for the determination of safe bycatch limits for harbour porpoise concerning specification of clear conservation objectives with an associated level of certainty, the timeframe over which such objectives should be met and the management units for each species that are to be used.
- Support the projects aiming at generating safe bycatch limits that will enable specified conservation objectives to be met, and will allow the impact of harbour porpoise bycatch in commercial fisheries to be assessed and managed.

ACTION 7

- Develop and implement nested monitoring strategy, so information on population trends in abundance can also be generated between large scale decadal surveys, while national reporting obligation are fulfilled.
- Support by all means the realization and success of SCANS III.
- Develop a framework, so the JCP programme can be continued and extended to data from the whole NS in the future, and contribute with data from non-UK waters, similarly collected from dedicated surveys or platforms of opportunity.
- Endorsed and act upon the following recommendations of the ICES WGMME:
 - 2012 - WGMME **recommends** a cooperative monitoring approach for marine renewable energy developments is taken, which combines small-scale monitoring efforts with large-scale cross-boundary marine mammal surveys in order to provide information at a spatial and temporal scale relevant to marine mammals.
 - 2013 - WGMME **recommends** that MS develop international collaborative monitoring strategies for marine mammals in order to meet the surveillance requirements of the Habitats Directive.

ACTION 8

- Establish a North Sea wide free access database of samples, so problems with low sample size in different areas can be overcome, possibly in connection with the NS stranding database.
- Further investigate the population structure using several approaches, focusing on increasing sample size in boundary areas.
- If using earlier and recent samples, analyze results, differentiating between sample from before the southward shift in distribution and after.
- Give with precision the origin of the samples, and if using stranding animal, the likely origin of the animal using drift modeling.
- Adopt a precautionary approach, and consider using more than one MU in the NS, when assessing safe bycatch limits.
- Support the exploration of the significance of more than one MU in the NS through simulations as part of the development of the bycatch management procedures.
- Use the outputs of the simulations as the basis for determining whether or not more than one MU is appropriate in the North Sea until further information becomes available.
- Explore the possibility of further substructuring in the central North Sea from the Danish and north German coasts across to Eastern Britain since there are signals of differentiation on an east-west as well as north-south axis.

For revising CPHPNS

New Action Point

- Assess the extent of ghost nets in the NS, including net types and locations. Regular assessments should then be made of the total quantities of nets lost or discarded, taking account of the distribution of different types of fisheries.
- Implement mitigation measures for ghost nets, such as regular clean-ups, provision of disposal containers at ports, deposit systems, mandatory reporting of lost gear, marking of nets etc. Wherever possible fishing communities and other relevant stakeholders should be actively involved.

ACTION 3

- Pelagic trawling in the North Sea accounts for relatively few days at sea compared with those in the Atlantic or compared with gillnet fishing. Monitoring these fisheries, also in the lesser segment, could easily be scaled back as bycatch rates appear to be too low to be of concern.

ACTION 4

- Action 4 should pertain not to *ALL* fisheries but to *RELEVANT* fisheries, i.e., those estimated to could represent a risk at the population levels.

Regarding upcoming EU fisheries regulation under CFP

- The bycatch monitoring issue should be tackled in a different way, and follow recommendation of ICES WKBYC (2011) that bycatch monitoring schemes should have more flexible targets, not necessarily with the aim of providing total bycatch estimates with predetermined CVs, but should rather ascertain whether or not bycatch rates in specific fisheries are likely to represent a conservation problem, i.e., whether or not bycatch levels exceed a pre-specified threshold or reference limit. This would allow not overburdening MS with excessive monitoring requirements.
- Assessing the need for mitigation method should be based on indicators such as area, season, mesh size, gear/net type and not on vessel size.
- Static fisheries should be part of the mandatory monitoring schemes
- Compulsory monitoring of the smaller segment of the fleet must be incorporated into the revised CFP, including smaller vessels and recreational fisheries. To these effects, the use of CCTV monitoring should be recommended. To avoid any bias, it could simply become mandatory in (at least) any professional fisheries. The actual analysis of the data could still follow a monitoring scheme providing the desired coverage level for each specific fishery.
- The mandatory monitoring in pelagic trawling in the NS should be scaled down.
- Requirements on both monitoring and implementation of mitigation should be made in a flexible way for ensuring that member states can react to shifts in distribution, as they have been observed in the NS.

ANNEXES

Annex 1. - Action Points and recommendations/suggestions from the NSSG

- Part 1. Action Points for the North Sea Steering Group and status of completion**
- Part 2. Action Points for the Coordinator of the CPHPNS and status of completion.**
- Part 3. Recommendations/suggestions from NSSG for amending the CPHPNS.**
- Part 4. Recommendation from NSSG on EU input and for amending EU fisheries regulations regarding bycatch.**
- Part5. Recommendation from the NSSG to the NSMS (and AC).**

Annex 2. – Characteristics of the Marine Recreational Fisheries in the North Sea

Annex 1. – Action Points and recommendations/suggestions from the NSSG

Annex 1 part 1. Action Points for the North Sea Steering Group and status of completion. (Status: Completed, pending, postponed, obsolete, ongoing, replaced, cancelled...)

AP 2011	Action	Deadline	Status
AP2011-01	The chair of the SG will contact Elizabeth Guttenstein (European Commission) about contacts to relevant [stakeholders] organisations to participate in the NS SG		
AP2011-02	The chair of the SG invites the regional advisory council (RAC) secretary to send a representative		
AP2011-03	The chair will contact the secretariat for possibilities for funding industry representatives to attend a SG meeting.		completed: AC decide case/case
AP2011-04	Each country will conduct and submit an inventory on the activities in regard to harbour porpoise conservation in the NS, identifying the key persons involved. Format will be guided by the 12 action points identified in the NSAP (to be submitted to the new NS coordinator with a CC to the SG chair)	Dec 20 2011	completed
AP2011-05	The chair of the SG will ask the new NS Plan Coordinator to attend the NSRAC meeting in France, Boulogne-sur-Mer, France, October 10-11 2011. The chair of the SG will initiate contact to the NS RAC and announce the attendance and ensure the option for a ca. 15 min presentation to the meeting participants.		completed
AP2011-06	The new NSAP coordinator will be asked to prepare a paper that highlights the aspects of the Marine Strategy Framework Directive (MSFD) relevant for the NSSG.		postponed
AP2011-07	SG shall give guidance to the coordinator in preparing the paper as mentioned under AP06		postponed
AP2011-08	The chair will contact the Secretariat on the options to have a SG and AC meeting at a venue that facilitates fisheries' involvement.	a.s.a.p	Ok, NSSG free to suggest venues
AP 2012	Action	Deadline	Status
AP2012-01M	All countries to email comments or additions to the draft text for the ASCOBANS 20th Anniversary Volume regarding the NS conservation plan to Geneviève and Martine.	Mar 22 2012, 6 PM	obsolete
AP2012-02M	All countries to identify the appropriate contact people/persons within the country, check the activity report of the coordinator, and give additions and editions as required, especially with regards to appendices 2, 3, 4 and 5.	30 Apr 2012	obsolete
AP2012-03M	All countries to respond promptly to more detailed request for (detailed) information by the coordinator. Countries can respond whether this information can be found in the annual national report or whether additional, more detailed information will be send to the coordinator.	As requested by the coordinator	ongoing
AP2012-04M	All North Sea countries interested in a printed copy of the Dutch Conservation Plan for harbour porpoises (in English) to send postal details to Sanne van Sluis. A copy of the report will then be sent. Also, any details of missing information for the Dutch report, particularly related research, to be sent to Sanne van Sluis and Marije Siemensma.	N.a.	completed
AP2012-05M	All North Sea countries to update the information provided on SACs in the North Sea, including the conservation objectives specific to the species/site and state of implementation.	30 April 2012	ongoing
AP2012-07M	Assist GD in completing a draft summary table on the type of fisheries that are or are not allowed in particular areas/zones focusing on types of fisheries that are most likely to have harbour porpoise bycatch	Next meeting	completed
AP2012-02D	Comment to GD on rating as listed for each country in the Excel-file on the progress made of the implementation of the conservation plan in the NS	31 Dec 2012	obsolete
AP2012-03D	Add or comment on the list of main focal points for the implementation of the conservation plan set up by GD	-	
AP2012-04D	Factual changes to the interim report circulated prior to the conference call (e.g. numbers of bycatch) to be send to GD	17 Dec 2012	obsolete
AP2012-06D	Comments to the updated version of the interim report to be send to GD	11 Jan 2013	obsolete

Annex 1, part 2. Action Points for the Coordinator of the NSAP and status of completion.
(Status: Completed, pending, postponed, obsolete, ongoing, replaced, cancelled...)

AP 2012	Action	Deadline	Status
	The actions as described in the ToRs for the coordinator of the NS plan as prioritised at the 3 rd meeting of the SG		
AP2012-06M	Prepare a document to investigate whether further coordination and possibly standardising of national monitoring of abundance and trends is feasible between North Sea countries. Summarise progress and options	Next meeting	Completed (Desportes 2013, present)
AP2012-07M	Work on a draft summary table on the type of fisheries that are or are not allowed in particular areas/zones focusing on types of fisheries that are most likely to have harbour porpoise bycatch	Next meeting	Completed (Desportes present)
AP2012-01D	Collect information on what type of fisheries is allowed in each country, in connection to bycatch	Next meeting	Completed (Desportes present)
AP2012-03D	Set-up a list of main focal points for the implementation of the CP	-	
AP2012-05D	Update and circulate a next version of the interim report	31 Dec 2012	completed

Annex 1, part 3. Recommendations/suggestions from NSSG for amending the CPHPNS.

Meetings	Suggestions
NSSG 2011	0
NSSG 2012M	Action 4 should read: Regular evaluation of <u>relevant</u> [delete <i>all</i>] fisheries with respect to the extent of harbour porpoise bycatch
	To evaluate and update the NS Conservation Plan for harbour porpoises for the next triennium (2015)
NSSG 2012D	0

Annex 1, part 4. Recommendation from NSSG on EU input and for amending EU fisheries regulations regarding bycatch.

Meetings	Suggestions
NSSG 2011	0
NSSG 2012M	To require monitoring of HP bycatch for smaller vessels (<15m) and recreational fisheries as a part of the reform of the CFP
	To stress the need for EC funding for monitoring population size and necropsy of stranded animals.
NSSG 2012D	Monitoring of bycatch of porpoises is needed for smaller (<12 m) vessels as this type of fisheries is important for bycatch and the current trend is an increase of the number of smaller vessels at sea.
	Monitoring of bycatch can be conducted using electronic monitoring and/or observers aboard. In order to have this work, it should be mandatory to have a monitoring scheme and video in place.
	Monitoring of bycatch is still needed when pinger are applied, e.g. to check efficiency of pingers in mitigating bycatch

Annex 1, part 5.

Recommendation from the NSSG to the NSMS (and AC).

	Suggestions	Status
NSSG 2011	0	
NSSG 2012M	To underline the necessity and promote a follow up of the SCANS II project in order to have a good and recent (static) estimate of harbour porpoise abundance and distribution in the NS, and a better idea on trends (based on 3 points 1995, 2005 and 2015?).	
	To promote the synergy between current national monitoring programmes on harbour porpoise distribution and abundance between North Sea countries.	
	To allow for the coordinator of the North Sea plan attending at least one NSRAC meeting per year to get further acquainted with the network and be able promote more in general the North Sea conservation plan.	
	To have the coordinator of the North Sea plan as an observer of all relevant working groups (bycatch and noise) within ASCOBANS to prevent duplication of work and exchange information between the working groups and NS plan.	Completed
	The secretariat is asked to arrange for the coordinator to be included in the mailing list of all relevant working groups within ASCOBANS e.g. bycatch and noise.	Completed
	A similar working relation can be established with the ICES working groups (WG-BYC and WG-MME).	
	To continue the position of coordinator of the North Sea plan after 2012 to be able to proceed efficiently on activity 8 of Triennium work plan 2010-2012 and activity 9 of the Triennium work plan 2013-2015: "Evaluate progress in the implementation of the Conservation Plan for Harbour Porpoises in the North Sea, establish further implementation priorities, carry out the periodic review of the Plan and promote the implementation of the Plan".	
NSSG 2012D	Monitoring of bycatch of porpoises is needed for smaller (<12 m) vessels as this type of fisheries is important for bycatch and the current trend is an increase of the number of smaller vessels at sea.	
	Monitoring of bycatch can be conducted using electronic monitoring and/or observers aboard. In order to have this work, it should be mandatory to have a monitoring scheme and video in place.	
	All North Sea countries need to study the fishing effort of recreational fishery in combination with bycatch pressure, as done by France.	
	To enlarge the UK project to assess population trends based on existing monitoring data to get population trends based on current international monitoring. This may be used as a starting point for SCANS-III.	
	To stimulate the coordination of international monitoring and assess where we can do more together	
	To conduct a SCANS-III survey for providing information on trends in abundance of harbour porpoises at a larger scale.	
	To identify areas for special attention for harbour porpoises (e.g. protected areas, areas of concern).	
	To improve the monitoring effort in the northern part of the North Sea (mainly north-western).	
	The NSSG highlights the value of such a North Sea stranding database for harbour porpoises.	

Annex 2. – Characteristics of the Marine Recreational Fisheries in the North Sea – extracts from Dawson et al (2007, 2008) and other sources (ICES WKSMRF 2009, ICES PGRFS 2010, 2011 and ICES WGRFS 2012, delegates)

Norway:

Recreational fishing is free in the sea, and is an important part of the right of free access (Right of Access from the Sea to the Sky, 1995). Recreational fishing may only be conducted using handlines or rod-and-line, or nets with a maximum total length of 210 metres, long lines with up to 300 hooks or in a maximum of 20 pots or traps (More restrictive provisions apply for non-Norwegian citizens, only allowed to use rod and lines). (Pawson et al 2007)

Sweden:

Coastal fisheries in Sweden are state-owned, except all water within 300m of the coast and islands, which is private property and requires the consent of the owner .

Recreational fishing takes two forms: subsistence fishing that involves equipment such as nets, fish-traps, creels, cages and long lines, with the catch primarily used within the household; and sport-fishing that involves fishing with a rod, hook and line for recreational purposes with the catch used within the household. Neither activity constitutes part of the Swedish right of public access, although sport fishing is freely permitted along the coastline, and subsistence fishing is freely permitted along the west and south coast of Sweden. Commercial sea fishing requires the vessel to be licensed and at least one fisher per vessel to hold a personal fishing license, being generally free to use any legally approved type of gear and in any quantity. Without such a license, there are restrictions on the amount and type of gear that can be used.

In the ranking of use of fishing gear (from most important (1), to least important), gillnets are ranked 2, after rod and lines or handlines ranked 1.

Denmark:

Recreational fishing in Danish territorial waters requires a fee-paid state license, which permits the holder to use rod and reel, hook, line and sinker, but otherwise to fish free of charge. Recreational fishermen can be distinguished either as those who fish in their spare time using a restricted number of passive gears (nets or fish traps) in marine waters, generally for home consumption or local bartering, or those using rod and line in marine or fresh water areas. Recreational fisheries are restricted to 6 gear types (rod and line, gill net, long lines, other standing gear, nets and traps) and management varies depending on location and type of gear.

In order to fish commercially, a person must be an authorised full-time/part-time fisher and the vessel must be registered as a fishing vessel and granted a license.

Fishing with gillnets closer than 100 meters from the low water line is prohibited.

Recreational fishermen can be divided into 1) anglers using rod and reel for fishing and 2) non-anglers using fixed gears such as gillnets and fykenets. Neither of these two groups of fishermen is allowed to sell their catches. Before recreational fishing - angling as well as non-angling - can be carried out legally, a permit has to be purchased.

In the ranking of use of fishing gear (from most important (1), to least important), gillnet and trap were ranked 1, at the same level than rod and lines or handlines.

The fishery is leisure based and it is illegal to sell the catch. There are restrictions to the effort, as it is only allowed to fish with a maximum of either 3 gill-nets plus 3 fykenets or a total of 6 fykenets. The maximum length of gillnets are 45 m and they are not allowed to be closer than a 100 m from the coastline.

Germany:

Both the German Federal and State Governments have legislative responsibilities for sea fishing. In Schleswig-Holstein, fishing is free in territorial waters with a hand-held fishing rod or drop net up to 1m², otherwise anyone over 12 years old requires a valid fishing ticket, with the prerequisite of successfully completing a fishing ticket examination. In Niedersachsen, fishing for fish and crabs in territorial waters is free, though a permit is required to take shellfish. A fishing ticket is required, for which the applicant needs to be at least 14 years old and have passed a fishing ticket examination. Anyone who wishes to fish commercially for species that are subject to EU effort limitation (virtually all commercially caught species) requires a license, of which there are two forms according to the species fished, a general fishing license (all types of fishery, fishing without restrictions) and an individual fishing licenses with an individual catch limit attached for species for which the national quota allocation is too small to permit unlimited fishing.

In Germany, recreational fishermen can be divided into two groups: **anglers, using rods** for fishing, and **leisure fishermen** which are allowed to fish with limited numbers and sizes of **passive commercial gears** like gillnets, longlines, eel pots or traps.

Set nets are not allowed for recreational use in the North Sea

(from Christian Pusch)

Schleswig-Holstein (SH):

In 2012 in the North Sea waters of SH 514 "hobbyfishers" were registered

These are allowed to use the following types of gears -mainly in wadden sea or estuarine waters:

- 4 eel fykes or 2 double eel fykes
- 3 m beam trawl
- lift net 2m x 2m
- 2 m wide push net

Niedersachsen (Nds)

In Nds no registration is required for hobbyfishers. Fishing for crabs, shrimp and fish (only species without a catch quota) is allowed for everybody.

Certain fishing gears are generally allowed in Nds for recreational fishers, these are e. g.:

- eel fykes and double eel fykes,
- pole stow net up to 2 m
- longlines (to date not in use, but allowed).
- large traps such as pound nets are generally allowed but need authorisation by maritime authorities
- 2 pound nets are in use in the Jade estuary (Bundgarn net type)
- further allowed is 1 beam trawl up to 3 m length, or a number of beam trawls of up to 4 m total length
- drop net 2m x 2m

Netherlands:

Sport fishers are defined principally by gear, as individuals who fishes with one or two rods or a bobber – a hook less line to which is attached a number of worms. Gill nets and fyke nets, for example are not considered to be gear for a sports fisher. Marine recreational fishing requires no license or permit. A large proportion of the fish caught by MRF are consumed, though a small quantity is sold.

For non angling recreational fisheries, a licence is needed for some areas along the Dutch coast (Waddensea, Eems, Dollard, Oosterschelde, Westerschelde) to fish with gill nets (the maximum length is 30 meter) and fykes on a recreational basis. However for the Dutch coast between Den Helder and The Hague, no license is needed.

In the ranking of use of fishing gear (from most important (1), to least important), gillnet and fykes were ranked 2, after rod and lines or handlines ranked 1.

From 2011 onwards, the use of fyke nets and long-lines by recreational fishers in marine waters has been banned. The future of the recreational gillnet fishery in coastal waters is currently under review by the Ministry of Economic Affairs, Agriculture and Innovation. [Information not confirmed]

Belgium:

A license is not required to fish recreationally at sea, which is free of charge. Recreational fishers may operate from the shore, from a boat, or by wading. In addition to angling, a number of other methods are authorized such as bow nets, eel pots and crayfish traps. Since 2001, there has been a ban on recreational beach fishing using all gill nets (trammel nets, set nets, fixed gillnets en drift nets) below the low water line to protect marine mammals, although recreational fishers can use other types of net on the beach. There is no limit on the amount of fishing days for Recreational fishermen. The catches are not allowed to be sold or commercialised in any other way (Article 5 of the Royal Warrant of August 14th 1989).

The marine recreational fishery in Belgium is regulated by European Regulations, National legislation and possibly municipality regulations. The regulation depends on the type of fishery.

In Belgium, marine recreational fishing mainly comprises the following types of activities:

- Recreational fishing for brown shrimp (*Crangon crangon*) with small towed fishing gear in the Belgian territorial waters.
- Sea-angling from vessels (privately owned or chartered).
- Beach-fishing with static gears.
- Wade-fishing for brown shrimp with small towed nets in the surf zone.

Passive on the beach

Minimum mesh size, mesh size measurement (use of a calliper), MLS. In some municipalities, nets need to be tagged so that they can be identified

- a) Flat" nets that get dug in.
- b) Ankerkuilen, Karten netten, fykes
- c) Trammel nets

Recreational vessels equipped with trawling

Only within 3 miles off the coast for those that have no certificate of registry, for the owners or users of these vessels, it is not allowed to fish on and to carry on the vessel, species for which, according to EU regulation, TAC or quota are applicable. The net types allowed are specified only for shrimps. Use of sieve net from Dec to May. By catch needs to be thrown overboard immediately. It is forbidden to use twin trawl and/or flapper.

- a) Vessels smaller than 8m: Bottom trawlers, but only on 1 side and with restrictions in size of the nets.
- b) Vessels larger than 8m: Bordennet, but only on 1 side.

In the ranking of use of fishing gear (1, most important to 7, least used), rod and lines or handlines were ranked 1 followed by gillnet ranked 2, and seine and trawl both ranked 3.

France:

Recreational fishing is defined as fishing for the exclusive consumption by the fisher and his family of the catch, which cannot be sold or exposed for sale.

It can be undertaken from a boat, from the shoreline, or by diving. Registration is only required for underwater recreational fishing.

There are measures specific to recreational fishers, which include restrictions on the type and quantity of gear that can be used by an individual, the species caught, daily bag limits and exclusion zones around artificial structures.

All French vessels require a licence for commercial fishing while commercial fishing without a vessel also requires authorization from the local Prefect to use fixed gears and shore fishers require a permit or commercial licence.

UK:

The legal framework governing commercial and recreational sea fishing in the UK is a composite of common law and statute. The public has the right to fish in tidal waters and the sea up to mean high water of ordinary tides, except in certain areas. Thus, the public may lay lines, draw nets and adopt any other ordinary mode of fishing, provided that fishing is exercised in accordance with statute law. The right of public fishery and its associated rights incorporate both recreational and commercial fishing, between which the distinction in the UK is through statute law that require licences for 'fishing for profit', which incorporates the sale of any catch.

The catch from recreational sea fishing cannot be sold.

There is no licensing scheme for MRF. Recreational fishers can fish for most species unrestricted, but boat fishers (recreational and commercial alike) are subject to bans on landings of TAC species (e.g. cod) where implemented.

Net (enmeshing and encircling) fishing

Gill nets includes, tangle nets and trammels and can be fished on the surface or on the bottom, fished static or drifted

This metier can be locally popular, including in some cases by tourists, although legislative controls, which may not be particularly widely published, may deter some potential participants. It includes bottom and surface set nets (fixed and/or drift) targeting flat and roundfish and potentially macrocrustaceans, as well as occasional seining including sand eel seining, which may be practiced by RSA as a method of capturing bait. There are likely to be regional variations in level and types of activity, possibly dependent on local conditions and species availability. The number of participants is likely to be low relative angling.

Trawling

This metier is very limited for recreational use as it generally requires reasonably roomy and powerful boats and there is substantial legislation (technical measures), not widely publicised, which may deter some people from trawling recreationally. Nonetheless, there is likely to be some very limited targeting of whitefish and beam-trawling for shrimps in areas where they are abundant. Participation is thought to be very low.