

# **REPORT OF THE 10<sup>TH</sup> MEETING OF THE ASCOBANS NORTH SEA GROUP**

**Online Meeting**

**18-19 January 2022**



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

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## REPORT OF THE 10<sup>TH</sup> MEETING OF THE ASCOBANS NORTH SEA GROUP

### 1. Opening of the Meeting

#### 1.1. Welcome and announcements

ASCOBANS Coordinator, Jenny Renell welcomed everyone to the tenth meeting of the North Sea Group<sup>1</sup> (NSG10) and Tine Lindberg-Roncari (Secretariat) ran through some housekeeping items, including the [Online Meeting Protocol](#). The Chair, Peter Evans (Sea Watch Foundation), also welcomed everyone and called NSG10 to order.

#### 1.2. Adoption of the Agenda

The Chair noted that, to accommodate presenters' availability, some agenda items had to be moved around. With these edits, the [provisional agenda](#) and [provisional annotated agenda and schedule were adopted](#).

### 2. Implementation Review: Bycatch

#### 2.1. Implementation of existing regulations on bycatch of cetaceans (Action 2)

Agenda Items from 2.1 to 2.4 were discussed together and are reported under this section of the report.

The Chair introduced these Agenda Items by presenting a table summarising the information which was presented at the last International Council for the Exploration of the Sea Working Group on Bycatch of Protected Species (ICES WGBYC) meeting in 2021. Submission of data had improved overall, with all countries having submitted data on fishing effort, monitoring effort and bycatch events. The quality of data was still quite variable, however, as in many cases countries were extrapolating from fishing effort as there was limited monitoring effort.

He then outlined a comparison of fishing effort that had been tasked by the European Commission (EC) (Evans et al., 2021<sup>2</sup>). They had used Automatic Identification Systems (AIS) as a data source on the basis that while the alternative, Vessel Monitoring System (VMS), was more secure and reliable, AIS data were more accessible, with greater possibility of usage by vessels <12 metres. As a test, they made a comparison between the data submitted using VMS to ICES with what they had derived from AIS data. With the AIS data they took advantage of algorithms developed by Global Fishing Watch to estimate fishing hours, and compared the results with the VMS submissions to ICES. The comparison (2015-18) indicated that the hotspots of effort were consistently similar between AIS and VMS, which was encouraging.

The report to the European Commission included maps with country and overall summaries of fishing effort by gear type using the EU vessel register. There remain several uncertainties since not all vessels registered the gear they were using (a particular issue for fleets carrying more than one gear), and some had misassigned the gear being used. Using the call signs for each vessel it was possible to obtain publicly accessible information on catches. He outlined fishing effort by country and gear type in the North Sea.

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<sup>1</sup> Steering Group of the ASCOBANS Conservation Plan for Harbour porpoises (*Phocoena phocoena L.*) in the North Sea (i.e. [North Sea Plan](#)).

<sup>2</sup> Evans et al. (2021) [Risk Mapping of Bycatch of Protected Species in Fishing Activities](#).

Gear types which were problematic for harbour porpoise included set gill nets, GNS, and trammel nets, GTR. The UK, France, Belgium, Germany, Denmark and Norway were the main countries gillnetting in the North Sea. Gillnetting effort was greatest in the English Channel, off the coasts of the Netherlands and Germany, and in the Skagerrak north of Denmark. For more details, he referred members to the report, that had been circulated via email before the meeting.

The Chair then did a tour-de-table asking countries for an update.

Cat Bell (UK) reported that the UK was trialling bycatch mitigation measures in the southwest of England as this was a known hotspot for bycatch. They were trialling lights and two types of pingers, both alone and in combination, with small vessels. They were approximately a year into these trials and the analysis was still being done. For the past year, they had been developing a passive acoustic reflector, designed to try and make the nets more acoustically reflective. This had been designed by a UK tech company co-designing with the fishing industry on the basis it would be more likely to be successful with fishermen. The net had a float on the top designed to be significantly more reflective acoustically than others. There had been tank trials, and sea trials were expected to start in the next couple of months.

Defra was in the process of publishing the UK Bycatch Mitigation Initiative document outlining five objectives with a shared UK vision that each UK fisheries policy authority would apply.

The UK Bycatch Monitoring Programme contract was due to expire at the end of March 2022 and was out to tender with a closing date of mid-February 2022. The previous Bycatch Monitoring Programme was designed and developed based on the previous Regulation (EC) 812/2004 which had now been repealed and replaced with new technical measures, which had been retained within UK law. They could think differently now that the UK was not just reporting against Regulation 812/2004 reporting requirements, so they were encouraging bidders to think outside the box and use different monitoring tools. There would be a trial period of three years to test the workability, and then a longer contract after that.

The Chair asked if there were plans to increase bycatch monitoring such as through Remote Electronic Monitoring (REM), with Ms Bell responding that it would depend on the bids, but they had encouraged the use of electronic and alternative monitoring beyond observers to increase the coverage and to try and create a more comprehensive view. The Chair asked whether they were planning to do more trials using individual VMS on small vessels. Ms Bell was not sure as this was driven by the Marine Management Organisation (MMO), but she could find out.

Sarah Dolman (WDC) asked whether monitoring and mitigation measures would cover the non-UK fleet fishing in UK waters and Ms Bell explained that the UK fisheries teams were looking into what is possible legally, but they would expect that non-UK fishers would need to abide by the same rules. The Chair acknowledged that this was a widespread issue not particular to the UK and that there were a lot of countries fishing in other EEZs.

The Chair provided an update from France on behalf of Sami Hassani (France) who could not attend:

- A working group on incidental catches was set up in the Marine Protected Area (MPA) of the Iroise Sea. They were working closely with fishermen in the area and an observation programme was being carried out by the fishing authority, the Departmental Committee of Fisheries of Finistère, and SINAY. Between April 2020 and March 2021, approximately a minimum of 110 fishing operations out of 140-150 have been monitored by the MPA.
- At the national level, ObsMer programme was continuing. The data were available by request to the Marine Fisheries Directorate (IFREMER). A summary note would be available in 2022 on cetacean bycatch data in ObsMer and the data should then be publicly available. ObsMer data had two biases: it was provided on a voluntary basis and only on vessels of >12m. They were therefore looking into making REM more widespread.
- Bycatch reporting was mandatory through the amended Regulation on Marine Mammals, 2011.

- The report of the aerial surveys (SAMM-II from January to March 2021), which had been presented by Vincent Ridoux at the 26<sup>th</sup> Meeting of the Advisory Committee, would be available soon.

Jan Haelters could not join the meeting for this Agenda Item, but the Chair noted that the fishing fleet in Belgium was quite small, with many small vessels and very little gillnetting using large vessels.

Jip Vrooman (the Netherlands) reported that the Dutch REM project had completed with no plans to continue or restart and that there were no trials underway with pingers or other measures. There was some gillnetting, but mainly small vessels (<15m) and part-time fishing also operated in the Netherlands, but bycatch numbers were not high. She also highlighted the CIBBRiNA<sup>3</sup> project which had been submitted to the EU LIFE funding call. In response to a question from the Chair, Ms Vrooman explained that, even though there were regulations, fishing was largely allowed in MPAs except in certain seasons.

Ms Dolman pointed out there were many trials happening in many different places, which were not being scaled-up to fleet level which she felt was one of the setbacks in bycatch mitigation. The Chair noted that these trials were often done as part of a research project with an incentive for the vessels participating and were not set up as a fleet-wide incentive. Ms Vrooman also noted the challenge of privacy and confidentiality for fishermen in REM as well as funding challenges.

Signe Sveegaard (Denmark) noted that ICES WGBYC had tried to combine effort across countries, notably for the NAMMCO meeting in 2019, but found that the data between countries was not comparable and so it was difficult to get comparable data between fishing fleets. DTU Aqua published a report in 2021 and found that many countries only report days at sea which hindered comparison as the number of kilometres of net put out was not comparable across different sizes of boat. The Chair also highlighted the number of different variables and how difficult it was to compare across countries.

Sara Königson (Sweden) wondered whether the question was about implementing REMs into the Data Collection Framework (DCF), which had been done in Denmark and in Sweden, or about estimating bycatch mortality which was done by ICES on a Europe-wide level. Pinger mitigation trials were more complex, and this was one of the purposes of the CIBBRiNA project, which involved many countries setting up trials together to try and get more comprehensive and broader mitigation trials. A data call had been put out in advance of the ICES Workshop on Mortality of Marine Mammals (WKMOMMA), asking for more detailed data to be able to do more multivariate analysis, and this had been quite successful.

Patricia Brtnik (Germany) [reported](#) that there was not much monitoring in Germany beyond what was mandatory. On bycatch mitigation, she referred to the longstanding Wadden Sea sanctuary where gillnet fishing was prohibited within three nautical miles as well as other regulations being in place outside this boundary. She did not yet have information on the outcomes of the protracted negotiations that had been going on over what mitigation would be implemented in the MPAs within the German EEZ.

Concerning new research, two projects had started in November/December 2021, continuing the STELLA<sup>4</sup> II project investigating alternative fishing techniques: the first aimed at continuing research on pearl nets using PODs to assess behaviour in relation to the capture of targeted species and bycatch mitigation of harbour porpoises; and the second to monitor PALs in the Baltic Sea, focusing on their effectiveness and observing whether there was habituation or changes in behaviour. She hoped that Michael Dähne would give an update on this for the Jastarnia Group (JG), as well as on STELLA. The Chair noted that most of these activities were in the Baltic and not in the North Sea, and that it would be interesting to see whether any of this would work in the North Sea.

<sup>3</sup> Coordinated Development and Implementation of Best Practice in Bycatch Reduction in the North Atlantic Region

<sup>4</sup> STELLA<sup>4</sup> netzfischerei – Lösungs - Ansätze ('Development of alternative management approaches and fishing gear and techniques towards minimizing conflicts in gill net fisheries and conservation objectives and subjects of protection in the EEZ of the Baltic Sea')

Ursula Krampe (EC) asked whether she was correct in that there was now another project replacing the PAL project, but Ms Brtnik clarified that the projects were looking at a combination of pearls and PALs. Ms Krampe also asked about a report from Sweden concerning bycatch under the LIFE project which was published in 2021, that concluded harbour porpoises were doing “less badly” than a few years ago. Kylie Owen (Sweden) clarified that they had carried out a research project in 2021 comparing the results from the SAMBAH<sup>5</sup> project (2011-2013) with Swedish monitoring data, and found that there was an increased detection rate, but this was for the critically endangered Baltic Proper harbour porpoise and was not related to the North Sea – it also did not relate to bycatch. At three of the Swedish stations there had been a 25% increase in the detection rate, but it was not clear if this was reflecting an increase in abundance. This was raised in the previous JG meeting, calling for more research as the SAMBAH II project application to the LIFE programme was rejected last year on the basis that it was not considered “good value for money”. SAMBAH II is planned to have 300 stations across the Baltic Proper and includes several actions working towards obtaining an abundance estimate from passive acoustic data and understanding the spatial distribution of threats. The budget to do the passive acoustic monitoring alone was approximately €8m and there was still no funding for this. Ms Krampe asked when the application was rejected, with Ms Owen saying May 2021. Ms Krampe said she would follow up on this.

Ms Sveegaard reported on REM monitoring in Denmark of fishing vessels which started in 2010, and which was now a consistent part of national bycatch monitoring on about nine vessels, mostly in inner Danish waters. In December 2021, DTU Aqua summarised the findings data in a [report](#) and the Danish bycatch effort was found to be just under 300,000 animals with half this number in the North Sea. However, the REM information was obtained from just one vessel so there was a huge range of uncertainty. It was still a huge step forward. The main bycatch was in the third quarter of the year and the mesh size, fishing depth and distance to shore were main influences on how much bycatch there was. On mitigation DTU Aqua had been doing trials on the gillnet pearls and rattle pingers, inspired by an African study using bottles with stones which rattled when there is a current. There has been some effect but the study was not yet completed. In response to a question from the Chair she confirmed that the North Sea data was separated from the Danish Baltic.

On Agenda Item 2.1, Sara Königson (Sweden) reported that no vessel had been fishing during the time periods or with gears obliged to use pingers. On Agenda Item 2.2 (establishment of bycatch observation programmes on small vessels), a pilot observer project took place in 2017-2019 in the South Baltic, the Sound and Kattegat, with around 97 observer days, looking at porpoises, other marine mammals and birds; from 2020-2021, there had been a pilot project on Mobile Electronic Monitoring (MEM) to obtain the randomised data needed, with approximately ten fishermen and a minimum of 476 monitored days, with several boats using the same system. From 2022, the MEM would be implemented in the Swedish DCF in gillnet fisheries in Skagerrak, Kattegat, the Sound and the Baltic.

On Agenda Item 2.3 (regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch) Ms Königson [presented](#) on the Workshop on Estimation of Mortality of Marine Mammals due to Bycatch (WKMOMA), which investigated the bycatch mortality rates of grey seals and some cetacean species in OSPAR areas. They had made a large data call and she summarized the results again saying that it was challenging to get randomized data as it came mainly from a single vessel. In the Greater North Sea, the population threshold was 1,622. Most of the data on bycatch mortalities in the North Sea came from Danish REM from this one vessel on the Danish coast that was the main collector of data, so it was not possible to get randomised data.

On Agenda Item 2.4 (review of current pingers, development of alternative pingers and gear modifications) Ms Königson [reported](#) on the evaluation underway since 2021, comparing Future Ocean Pingers and Banana Pingers in a commercial fishery. The preliminary results were that both did reduce bycatch but that the Future Oceans pingers were more effective, even though the Banana pinger was more practical to use. They had also evaluated harbour porpoise presence around a

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<sup>5</sup> Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise

pinger developed by Maritime Technology and had asked for a pinger that seals could not hear. Sweden would be participating in the CIBBRiNA project, developing alternative gears for catching flatfish (plaice and turbot) and focusing on flatfish as the cod fisheries were very limited and regulated in the South Baltic. Sweden also had other ongoing gear development.

The Chair asked whether mobile REM was economic. Ms Königson said the cost for the system was cheap (approximately €400 for one system) but there was a cost for the follow-up collection and storing of data and analysis. However, compared to having onboard observers they had quadrupled the number of observer days. She noted that she was supposed to have a meeting with Chalmers University of Technology and AI Sweden (a centre for Artificial Intelligence), to develop event software to try and use machine learning to analyse the data. The Chair recalled from the Dutch REM programme that the deployment had a substantial cost associated with it. Ms Königson said they were using a different system as the Dutch system required them to have a technician putting the camera on the boats, which was expensive, and also to buy into the software, so they were developing a simpler system. The Chair welcomed this information and recalled that when ASCOBANS contracted Grant Course to do a [cost-benefit analysis](#), the conclusion was that it was going to be more cost effective in the long run and produce better data with more REM operating.

Ms Dolman welcomed this information on the mobile REM. She asked about the figures in the report from WKMOMA, noting that the threshold was 1,622 harbour porpoises, and the lowest level of combined bycatch of different gears was 1,627. Thus, even the lowest numbers in the North Sea indicated the threshold was being exceeded. Ms Königson agreed but said that ICES did not want to accept the data yet because it came from a single ship. The Chair suggested there should be an action point from the meeting on this issue. Ms Königson suggested it could also be about the terms of reference of the workshop as they were asking to compare the data with thresholds that ICES were not able to comment on.

The Chair presented the harbour porpoise risk maps that they had produced for the EC, using fishing effort (hours) data from AIS on static gillnetting activity. He noted that they included data from 2010-15 on harbour porpoise density but highlighted some risk areas where attention should be paid to include monitoring and mitigation, namely SW Skagerrak, west of the Sylt Outer Reef, and the Dutch and Belgian waters through to the Dover Strait. There was seasonal variability in terms of risk which needed to be explored further and with more recent detail. He hoped that the CIBBRiNA project would address this. He also noted that WKMOMA 2021 referred to harbour porpoise bycatch estimates and that the removals limits algorithm (RLA) approach tried to be precautionary but came close to the values at the lower levels that were picked up from these bycatch calculations.

Arne Bjørge (Norway) reported that Norway had recently published estimates for bycatch of harbour porpoise and submitted a paper<sup>6</sup> on large pinger trials in coastal gillnet fisheries with 3,500 net km days – 50% with pingers and 50% without – resulting in a bycatch reduction of 95% with pingers. Based on that paper, Norway had made pingers mandatory in the largest cod fisheries in the Vestfjord at the Lofoten Islands. There were some pinger failures and so on and so they had not yet fully evaluated the effect on bycatch in commercial fisheries. The Chair asked whether they could extract a bycatch rate for the North Sea from this and Mr Bjørge said this was possible as they had divided the fisheries into four statistical regions, one being the North Sea coast of Norway waters. The Chair welcomed the fact that the pingers had worked so efficiently and noted that in general it was not the effectiveness of pingers in question but whether they were deployed and operated appropriately (e.g. all pingers functioning and at the correct spacing) in a commercial fishery.

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<sup>6</sup> Moan, A. & Bjørge, A. (2022). Pingers reduce harbour porpoise bycatch in Norwegian gillnet fisheries, with little impact on day-to-day fishing operations. Fisheries Research, in press.

**2.2. Establishment of bycatch observation programmes (Action 3)**

*The Agenda Item is reported on under Item 2.1 above.*

**2.3. Regular evaluation of all fisheries with respect to extent of harbour porpoise bycatch (Action 4)**

*The Agenda Item is reported on under Item 2.1 above.*

**2.4. Review of current pingers, development of alternative pingers and gear modifications (Action 5)**

*The Agenda Item is reported on under Item 2.1 above.*

**2.5. Finalize a management procedure approach for determining maximum allowable bycatch limits (Action 6)**

The Chair introduced this item. The OSPAR Marine Mammal Expert Group (OMMEG) had been looking at determining maximum allowable bycatch limits using RLA as the preferred method for reaching a threshold and applying a preliminary conservation method adapted from the ASCOBANS method (80% of carrying capacity). Much of this was done through OSPAR and in this context ASCOBANS was planning to have two workshops: one technical workshop to revisit conservation objectives and the different approaches with a small group of people who were technically involved to try and reach agreement from an ASCOBANS conservation perspective; and a wider workshop to sign off on a decision on conservation objectives qualitatively and quantitatively, building upon the work of OMMEG and others. ASCOBANS needed to agree on a workable conservation objective for all species within its remit as well as the appropriate models to apply for different species (since RLA is data demanding).

Ms Owen mentioned that Sweden were using the OMMEG method which had adapted RLA and PBR from the US Marine Mammal Protection Act 1972 conservation objective that assumed a 50% of K with a 95% probability from the original ASCOBANS conservation objective which is an 80% of K with an 80% probability. They were applying the PBR to the Belt Sea population. The use of the ASCOBANS CO is what made the calculated mortality threshold for the NS (and Belt Sea) much more conservative compared to the US. The Chair mentioned that Bangor University had been running a variety of models in Wales, on behalf of Natural Resources Wales, for six different species of marine mammals – grey seal, harbour porpoise, bottlenose dolphin, common dolphin, and minke whale - and examined the population demographic responses for populations in the Celtic Sea. He referred to a published report<sup>7</sup> and that they were preparing a supplement. He noted that there was not full sign off on what should be a conservation objective that is sufficiently precautionary and hoped this could be addressed in the upcoming proposed workshops.

Ms Dolman highlighted that there was uncertainty in the different models and that the data were often quite poor so urged being careful about terminology. The long-term goal of ASCOBANS was to bring down bycatch to zero and therefore the aim should be that all populations be below thresholds. On cumulative impacts, she highlighted that there was a lot of wind development planned and happening in the North Sea and urged bearing this in mind, and on management units (MU) for harbour porpoise in the North Sea, there may not just one MU for harbour porpoise, so it was important to consider how to deal with this in considering the bycatch limit in the North Sea. The Chair said that although only one MU was currently recognised for porpoises in the North Sea, there was evidence for further sub-structuring, and so there would be value in revisiting this issue but this likely required new data and analysis. It should also be noted that ASCOBANS conservation objectives may not always align with those of a management authority. Ms Dolman pointed out that the intention behind EC Reg 2019/1241 was to minimise and eliminate bycatch across Europe, so ASCOBANS was in line with that.

<sup>7</sup> Evans, P.G.H. and Cordes, L. (2021) *Review of Population Modelling Approaches for Marine Mammals: Recommendations for Regulatory Applications*. Natural Resources Wales Report Series. 122pp.

Ms Brtnik referred to a publication on testing of PBR and RLA control rules in a Management Strategy Framework<sup>8</sup>. The Chair referred to another paper in which they had run the data for North Sea porpoises, but he did not know which data they were using and whether it was the same used for WKMOMA or whether they had used the NAMMCO or WGBYC estimate.

Ms Owen asked when the workshops were scheduled and highlighted Ms Dolman's point about where the bycatch estimates were higher than thresholds, urging not to water down the conservation objectives. Ms Königson informed she was writing an article with Lotte Kindt-Larsen looking at bycatch mortality from the Danish fisheries in the North Sea, but it did not include data from the other Member States in the North Sea. The Chair wondered whether the outputs from that workshop were going to be revisited to enable a data correction as the Eastern Channel was not well monitored and yet it was clear from strandings that it was causing bycatch. Ms Dolman agreed that this is what they had seen from the data discussed in WKMOMA. The Chair proposed this was a priority and emphasised the need for improved monitoring in high-risk areas.

Mark Simmonds (OceanCare) referred to the long-standing tension within ASCOBANS around sustainability limits/conservation objectives and emphasised the need for ASCOBANS to conserve the species under its remit, and supported Ms Dolman and Ms Owen making sure that any revision of the ASCOBANS conservation objective has the best interest of the species, not stakeholders, in mind.

The Chair informed that the workshops would be under the auspices of the ASCOBANS/ACCOBAMS Joint Bycatch WG with the technical workshop expected sometime in 2023 (preferably in the spring) and involving modellers, all who had been applying modelling methods to assess what conservation objectives were practical from a modelling perspective. The wider decision-making workshop would follow, and encompass issues such as societal ones as well as distinguishing between limits and triggers for action with the overriding priority being to drive bycatch down to zero.

Mr Simmonds pointed that the US PBR was underpinned by a very different legal and scientific situation to that in Europe so was concerned about making comparisons between the two. The Chair noted that RLA required a lot of data that for several species were not available and so there was a need to make best guesses. PBR did not require this so much but there were also issues with use of PBR so there was a need to set some conservation objectives.

Ms Owen reminded that there was a problem with the ASCOBANS objective in that there was only a need to maintain or achieve 80% carrying capacity without any timeframe or probability. She agreed that this was a gap in the conservation objectives which had been raised many times in the past and there was a need to carry out this process. The Chair agreed there were various issues around the percentage of carrying capacity and the level of uncertainty and there was therefore a need to resolve this.

Ms Krampe said it was difficult to translate "carrying capacity" into different languages and asked for a definition, with the Chair responding that carrying capacity was "the maximum population size that the ecosystem can support for that population." A carrying capacity was likely to change over time as the ecosystem within which a population lives changes over time, and so the number of animals it can support (i.e. carrying capacity) also varies. What tended to be used was the highest value of a population that was obtained in a time series but that too was estimated.

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<sup>8</sup> Genu et al. (2021) Evaluating Strategies for Managing Anthropogenic Mortality on Marine Mammals: An R Implementation with the Package RLA. *Front. Mar. Sci.* 8:795953. [doi: 10.3389/fmars.2021.795953](https://doi.org/10.3389/fmars.2021.795953)

### 3. Implementation Review: Research

#### 3.5. Investigation of the effects of anthropogenic sounds on harbour porpoises (Action 11)

Sónia Mendes (Joint Nature Conservation Committee, JNCC, UK) [presented](#) on a UK example of noise management in MPAs in relation to harbour porpoise Special Areas of Conservation (SACs) through an approach to impulsive noise management. SACs have persistent higher densities of harbour porpoise, probably because of good foraging opportunities or other environmental factors in that area. Some areas have been identified as SACs despite a certain level of local disturbance from underwater noise. This was particularly so for the Southern North Sea SAC, a busy place with many offshore wind farms, oil and gas exploration and clearing of unexploded ordnance (UXO). There was therefore potential conflict between trying to maintain a favourable status and continuing activities. There was a need to set the protection higher in these areas.

In May 2020, therefore, JNCC and others published [Guidance for assessing the significance of noise disturbance against Conservation Objectives of Harbour porpoise SACs](#). The Guidance had two main elements:

- Area/time noise limits where noise disturbance within an SAC from a plan/project individually or in combination should not displace harbour porpoise from more than an average of 10% of the relevant area of the site over a season and no more than 20% of the relevant areas of the site in any given day. This advice incentivised companies to look at alternatives and undertake activities in seasons with lower porpoise densities; and
- Effective deterrent ranges (EDRs). The guidance recommended the use of fixed ranges (distance from sound) for assessments, mostly based on empirical evidence. These distances were intended to be precautionary with flexibility to use other distances if new evidence arises. The largest of those distances was 26km for monopile driving without mitigation and high-ordered UXO clearances and the smaller, 5kms for geophysical surveys involving sub-bottom profilers.

These principles could be applied in environmental assessments and could be helpful in identifying crunch seasons. Ms Mendes gave an example of an assessment undertaken by the regulator a few years previously where worst case scenarios were looked at, identifying seasons where operations would need to be modified. In Summer 2019, communication between companies and regulators led to a series of measures being developed, such as reducing the numbers of UXOS detonated each day, daily UXO detonations within 5km of a central point, and a seismic survey delayed to the winter when densities of harbour porpoises were expected to be lower.

An important element of the JNCC guidance was to look at compliance. It was possible to retrospectively look at impulsive noise in the SAC using data from the UK Marine Noise Registry which is a database of events recording where and when noisy activities take place. Companies are mandated to submit data to this registry. They reviewed six years of data by investigating the daily and seasonal disturbance footprints, distribution of noise events in time and space for different sources, and the contribution of different noise sources to the disturbed area.

She outlined some results. There were variations ranging from 0 days of noise in winter 2015/6 to 107 days in summer 2018. The thresholds were not exceeded except for one day in summer 2015. It was also possible to retrospectively consider the spatial distribution of noise sources. On the contribution of different activities, seismic surveys dominated in terms of the area disturbed. In the winter, piling dominated the noisy landscape. In combining summer and winter, seismic dominated overall. In terms of days of noise though, the clear winner was sub-bottom profilers, these totalled 248 days over the 6 years. This was likely to be an underestimate as, unlike for oil and gas surveys, these were associated with industries other than oil and gas which were unlicensed as submission to the register is voluntary.

The benefits of retrospective and forward looks were that: they could be used to support assessment, planning, management and monitoring: they could be used for compliance monitoring; there was a

potential to overlay noise pressure with species distribution; could identify spatial and seasonal patterns of past activities to help better planning and regulation to avoid significant disturbance; and it was possible to standardise and speed up cumulative assessments of planned activities, helping with regulation and management.

JNCC was currently upgrading the registry and planning to develop tools to allow regulators and industry to undertake assessments to help management directly on the registry.

In summary, the 10/20% noise limit approach applied equally to all industries, was pragmatic in recognising that harbour porpoise habitats within these sites should be able to cope with a certain level of noise disturbance whilst still providing those important functions for which they were designated, and was relatively simple but relied on good environmental impact assessments, good regulation, good reporting and monitoring; incentivised industry to look for less noisy alternatives and other ways to reduce their disturbance footprint in time and space; and would be reviewed regularly to see if it was working at reducing noise in the sites, if it was feasible and if it was based on the best available evidence.

The Chair noted that the harbour porpoise data were based on the Heinänen & Skov (2015) analysis and asked if JNCC was planning to incorporate more dynamic means of monitoring populations and their likely exposures to these noise sources. Ms Mendes agreed that monitoring was essential and confirmed that JNCC relied on the seasonality that was picked up in that analysis but if there is no monitoring then JNCC would not know if that seasonality, which has such an influence on management, holds with time. JNCC had submitted a proposal to the UK government for long-term regular acoustic monitoring of the SAC and hoped that this will be successful. As part of conditions of consent some of the windfarms had been doing their own monitoring. Scottish Power had an analysis which they were finalising which would hopefully be the first evidence for the Southern North Sea of the effects on harbour porpoise from piling. If the acoustic monitoring proposal failed, another option would be through the Joint Cetacean Data programme that aims to bring together a variety of different data sources. The predecessor of this was used to identify these SACs and so would be a potential for analysis in the future but could be biased as it came from areas that were being developed or had been developed. The Chair said that acoustic monitoring was good for temporal resolution but not for spatial resolution and suggested it would be useful to include visual monitoring too. Sea Watch Foundation/Bangor University had been collating data from different sources to try and update the surveys which had been undertaken, incorporating other environmental parameters to try to fill in the gaps and address potential biases. There were coastal sites along the east coast of England, for example, that were being monitored on a regular basis that gave some information.

Mr Haelters noted that Belgium also had sub-bottom profilers and believed that they were very high frequency and directional, and operated at around 400 kHz. He wondered what was known specifically about the effects of these. Ms Mendes suggested some of the high frequency ones might be more like multi-beam sonars and that sub-bottom profilers (sparkers, boomers, pingers and chirp) could be relatively high frequency but in the UK, were around 3 or 4 kHz so were within the range of the EU Marine Strategy Framework Directive (MSFD) that, while the UK was no longer required to monitor and report on, they still were. Directionality was key as they might be so directional that there would be little impact horizontally, but they also used several pings per second so there was still concern about exposure. There are few measurements in the field and a myriad of different types of equipment. They were highly regulated in the US with a study having been carried out there which JNCC was awaiting the final report on and still pushing for measurements in the field of these sub-bottom profilers. Some of these surveys were carried out by unmanned vehicles so it was not so easy to have onboard marine mammal observers applying mitigation measures. If they were found to have a lot of horizontal noise, then there would be a need to consider impact on the animals. Ms Mendes asked the meeting participants to share data if they had it.

Ms Sveegaard welcomed that there was a start on trying to set limits on disturbance. She asked for elaboration on where the 10% and 20% thresholds had come from. The JG had considered having a conference to discuss this to set standards across Europe as now it was up to each individual activity. Ms Mendes agreed that there were so many activities planned that it was not possible to keep noise concentrated to a few days. On the thresholds, she explained that they had come from the ASCOBANS conservation objectives – to do with the 80% carrying capacity. She referred to a

[background report](https://data.jncc.gov.uk/data/2e60a9a0-4366-4971-9327-2bc409e09784/JNCC-Report-653-FINAL-WEB.pdf) (https://data.jncc.gov.uk/data/2e60a9a0-4366-4971-9327-2bc409e09784/JNCC-Report-653-FINAL-WEB.pdf) on the JNCC website that explains where the thresholds come from. The idea was to maintain carrying capacity at 80% so there could be a 20% area of habitat that could temporarily be affected by noise. Ms Sveegaard wondered how such a threshold could be calculated, with Ms Mendes referring to an ongoing UK funded project, under Defra's Offshore Wind Enabling Actions Programme currently looking at this principle and how to use it and they were awaiting results.

Ms Owen asked for any updates on whether there was a winter survey planned which might be useful for management of seasonal areas, with Ms Mendes explaining that this was still being worked on but agreed that it was important.

The Chair highlighted that analysis of collated survey data sets had indicated seasonal shifts in porpoise abundance within the North Sea; they were in the process of refining that analysis which would then be published.

Ms Dolman stressed that, given all the uncertainties, monitoring was critical, and was concerned that there was no cohesive monitoring strategy despite the SAC having been in place for several years. She urged that there should be some burden on noise producers to do some monitoring and wondered how much this had been discussed. On mitigation, she wondered whether noise reduction was a primary method for bringing down noise levels in the SAC or whether acoustic deterrent devices were the main method as she had concerns about those. Ms Mendes said a combination of both were used on a case-by-case basis. In terms of disturbance, noise limits were used to incentivise regulation by industry using noise abatement, looking for alternatives, or seasonal choices. There was quite a bit of work ongoing, funded by Defra through the Offshore Wind Enabling Actions Programme, looking into how noise abatement could be more incentivised for use in the SACs. The regulator BEIS was also looking at the constraints in the UK on applying noise abatement more widely.

The UK government was actively looking at these areas to further incentivise the application of less noisy alternatives. There had been discussions on monitoring for a long time. It was hard to get industry to pay for monitoring. The Offshore Renewables Joint Industry Programme (ORJIP) had funded work on noise measurements from piling and modelling and were currently working on a scope of work for further work in that field. However, monitoring was expensive, and Ms Mendes suggested it would be good to have a consortium that could provide this monitoring. The regulator Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) had a big research programme and some of the funding might come from industry, but she had not seen so much monitoring coming out of that. The easier monitoring to pin on a project was monitoring animals during piling which could clearly be linked to the activity, but it had also not been easy to get this from industry and only some, such as Scottish Power, had done some. As nature conservation advisors, they were constantly asking for this, and she welcomed ideas from the meeting.

The Chair said that he had urged the Department of Trade and Industry years ago to change licensing arrangements so there would be a common pool of funding. Ten years ago, he and Len Thomas had also done a cost analysis<sup>9</sup> of how much it would be to do this for the whole of the UK EEZ for JNCC, but this had not led anywhere. It did not work to have piecemeal monitoring and it would be better to follow the more strategic way it had been done by other countries.

Ms Houtman asked to what extent activities from neighbouring countries were considered, with Ms Mendes explaining that the register only collected data from UK waters. She referred to the ICES OSPAR Impulsive Noise Register for data from other countries, but pointed out that there were gaps, including due to navies' reluctance to include data, although the UK Royal Navy did provide data from all declassified activities to the UK registry. There were no foreign windfarms adjacent to the SAC but ideally, they would have been taken into consideration if there were some.

<sup>9</sup> Evans, P.G.H. and Thomas, L. (2011) Estimation of costs associated with implementing a dedicated cetacean surveillance scheme in UK. *Joint Nature Conservation Committee Commissioned Report*. 45pp.

The Chair shared a slide on the ICES Impulsive Noise Register, noting there was a time lag as there was virtually no data for 2021, but even so there were data gaps and there was a need to try and address this, so that it could be more timely and consistent across countries.

Ms Mendes also mentioned [ORJIP](#) had a report coming out looking at noise measurements from piling and noise propagation modelling, and risk assessments. She also highlighted the DEFRA Offshore Wind Enabling Actions Programme with much ongoing work and a project advisory board which met regularly. Recently, the Crown Estate had published an [Evidence Register](#) which was a database of all the evidence gaps relating to offshore wind which they hoped to expand to include other countries gaps and projects. Scottish Power was organising a conference including talks on projects coming to conclusion soon, including the project on harbour porpoise monitoring during piling in the North Sea and also work in Scotland on the offshore windfarms. She agreed to provide links to be included in the report.

There followed a tour-de-table from other countries on recent developments.

Ms Vrooman reported on the Netherlands new windfarm which was almost complete in Borssele near the border with Belgium, with harbour porpoise activity being measured during construction and continuing after completion. Once the construction phase was complete, the data would be analysed. This was similar to the Gemini windfarm where monitoring was being continued during operation. The possibility of tagging some harbour porpoise was being explored and they were working on a knowledge base. The Dutch government was going to develop an action plan for a tagging pilot which Wageningen Marine Research were involved in. The Chair noted that tagging required capture of animals and, whereas this could be undertaken opportunistically if animals were being freed from Pound nets (as in Denmark), in the North Sea it would be more difficult and could lead to welfare issues. Ms Vrooman mentioned that they were working with Denmark and would start with a phased approach, with rehabilitated harbour porpoise and later by catching porpoise, if necessary, in more secluded areas.

Ms Brtnik reported on a new 3-year Aarhus University project funded by the Federal Agency for Nature Conservation (BfN) in Germany on underwater noise effects with a focus on continuous noise from vessels which would also contribute to Environmental Objective 6 of the MSFD. The project aimed to investigate thresholds of individual behaviour reaction of harbour porpoise to vessel noises and other significant noise events; investigate additional energetic demands of harbour porpoise due to vessel noise; make recommendations for noise mitigation measures; and evaluate current knowledge of mitigation. She also reported on another project on UXO underwater explosions in which BfN and the German navy were developing guidelines on mitigation of impacts of UXO in the framework of trainings the navy conducts.

The Chair referred to a paper on blast trauma<sup>10</sup> and noted that NSG9 had made a recommendation on UXO and wondered what the German government was doing about this. Ms Brtnik said there were discussions going on and a WG among different institutions, including the navy, in Germany were researching this and trying to find mitigation measures but so far there was no mandatory framework.

Mr Haelters noted that there was no focused research on underwater noise and its effects in Belgium. There was continued monitoring of offshore windfarm impacts with the building having finished for the first zone but continued monitoring using PODs. They had had a meeting with military in December and talked about UXO demolition. The military had said that taking UXO to land was not an option for safety reasons, bubble windows were also not an option for budgetary and technical difficulties, but they always inspected a zone visually before destroying an explosive and used a seal scarer prior to demolition.

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<sup>10</sup> Siebert U, Stürznickel J, Schaffeld T, Oheim R, Rolvien T, Prenger-Berninghoff E, Wohlsein P, Lakemeyer J, Rohner S and Schick LA (2022). Blast injury on harbour porpoises (*Phocoena phocoena*) from the Baltic Sea after explosions of deposits of World War II ammunition. *Environ. Int.*, 159, 107014.

Mr Haelters also reported on LFAS (low frequency active sonar) and MFAS (mid frequency active sonar), noting these were not really an issue for the North Sea but an issue for the Belgian navy. He had been told that the navy were following NATO guidelines, and these could be made available on request to NATO if adjusted by NATO to eliminate sensitive information. On board Belgian frigates they had the SAKAMATA protocol. In response to a question from the Chair, he confirmed that they were using these in the Atlantic and mainly in the NATO framework.

Ms Sveegaard said that Denmark was also part of the “Under Water Noise Effects – UWE” project with the University of Hannover in Germany, on tagging of harbour porpoise to see how they react to various impacts. She also highlighted the [JOMOPANS project](#) on joint monitoring of noise in the North Sea. There was a conference at the end of 2021 and reports from that would soon be published. They were also involved in the [final analysis from the TANGO project](#) which had involved rerouting of the shipping lane in the Kattegat to see how this would affect the soundscape of underwater noise as well as harbour porpoises. She also highlighted the [SATURN project](#) looking at the effect of ship noise on individual populations of marine mammals and involved tagging of harbour porpoises and assessing how they reacted to these different impacts especially ships.

Finally, she highlighted another project which had just completed at the TYRA construction, an oil and gas platform in the North Sea, studying and monitoring the effect of piling of two new jacket foundations. This was similar to pile driving for windfarms but was the first time it had been studied at an oil and gas platform.

Ms Owen provided an update from Sweden on the TANGO project, noting that they were hoping to have the analysis and results of this by Spring/Summer 2022. Even though it was in the Kattegat, the most southern part of the North Sea population distribution range is within the Kattegat region, the results were applicable to harbour porpoise occurrence and behaviour so would be relevant for others.

Mr Bjørge explained that he was not involved in research on sound but Lisa Sibling, Institute of Marine Science Norway, and Petter Kvadsheim, Defence Research Institute would be the contact points. The Chair recalled that a by-product of the JOMOPANS project was that the analysis on continuous noise showed the area in southwestern Norway that formed the Norwegian Deep as having higher predicted noise levels. It would be interesting to know if any further work had been done around that. Mr Bjørge said he would forward the question. In addition, he said seal scarers produced in Norway were being used by Belgian and Norwegian navies. Ms Sveegaard noted that Denmark was adding another noise station at Gule Rev (between Norway and Denmark) in Skagerrak, and deploying five more C-PODs in that area.

The Chair pointed out that there was an [ESOMM meeting](#) coming up again which focused on sonar but also other sources of noise particularly seismic, hosted by Duke University in March 2022 and that abstracts were already being received for that.

Mr Simmonds highlighted the amount of interest in furthering understanding of the hearing reactions and capacities of harbour porpoises, with many papers already having been published and a lot of knowledge available. He was concerned that this ongoing research could be used by political leaders to justify delaying action to know more. He also expressed concern that any invasive research may be reacted to less than positively. The Chair took his first point that the area of noise was fertile for research and less so for conservation action in terms of mitigation but noted there was still a lot to be studied and understood. He hoped that the two could go alongside each other and he thought the meeting could flag this up. Ideally, there would be international action on this as noise crosses national boundaries, in particular seismic and shipping noise, so there was a need to look at this internationally. The Chair also repeated that the ICES OSPAR Impulsive Noise Register should be more up-to-date, consistent, and utilised.

Ms Owen highlighted there was still a lot not known in setting thresholds and managing the nuanced nature of noise and emphasised that there is a real need to have a workshop to agree on a national approach and national precautionary thresholds based on a unified suggestion for countries to follow.

### 3.1. Monitoring trends in distribution and abundance of harbour porpoises in the region (Action 7)

The Chair carried out a tour-de-table for countries to provide updates on this agenda item.

The Chair provided an update from France as Mr Hassani could not attend. He outlined results of surveys as part of SAMM-II between January–March 2021, covering the Channel and showing harbour porpoise in the Channel in Spring 2021. 20,000km of effort had been covered, of which 30% had High-Def camera coverage to confirm species ID and group size estimates. A preliminary report was available and the full report would be published soon<sup>11</sup>. Ms Krampe noted that she had not yet seen a consolidated report for 2021, and the Chair said that 2021 was not yet on the Pelagos website. Ms Krampe queried whether they had consolidated the 2020-2021 winter season, with the Chair noting that at NSG9 they had covered 2020 and they both agreed to check on this.

Mr Haelters noted that Belgium had undertaken two aerial surveys, in June and September 2020. They only observed harbour porpoises, as white-beaked dolphins had disappeared 10 years previously. Densities were not very high, with 0.6 porpoises per km<sup>2</sup>. No aerial survey was performed in April due to COVID when usually the density was 1 porpoise per km<sup>2</sup>. The results of the surveys were reported and would be taken up in the OSPAR work for the quality status report. They were awaiting 2021 reports.

With respect to the UK, the Chair noted that Nikki Taylor could not attend. He highlighted that there had been some digital aerial surveys in east Scottish waters and those were being analysed but otherwise survey effort had been associated with offshore renewable energy and not the same sort of surveys as being undertaken by other North Sea countries, so they were pressing for this.

Ms Vrooman had nothing further to report from the Netherlands because of the 3-year survey cycle now meaning the next survey would happen in 2023 in spring and summer. She would present an update on the Wadden Sea under Agenda Item 4.1.

Ms Brtnik reported that digital aerial surveys were going on in Germany, but that the results from 2021 have not yet been published and only the results from 2020 are available in the ICES report.

Ms Sveegaard provided an update on Denmark who were also part of SCANS-IV which would be happening soon. Since 2011, they had been doing annual surveys in the southern North Sea in Skagerrak. In general, in the southern North Sea there is a lot of variation in porpoise numbers but no obvious trend. However, in Skagerrak there had been declines in numbers since 2011 and she would update on this under Agenda Item 4.3.

Ms Owen provided an update on Sweden, noting they were also involved in SCANS-IV and that, while they did not have passive acoustic monitoring and aerial surveys for the North Sea, they were evaluating their programme on the Belt Sea population and making some recommendations which may incorporate a PAM programme in the Skagerrak depending on the outcome of the analysis. The Swedish Museum of Natural History (collaborating with Anita Gilles from TiHO (Germany)) had organised a HELCOM/OSPAR workshop to discuss the methods used to detect a trend in abundance to try to harmonise the methods used to monitor trends in abundance in the North Sea and Belt Sea.

Ms Sveegaard reported that Denmark was starting a monitoring programme with C-PODs in Skagerrak and monitoring a new Future Energy Island project in Denmark where they would create an artificial island in the North Sea consisting of two windfarms and an island combining all the energy and deliver it to other countries and Denmark across the sea. The Chair asked if there was a wide array of PAM in the North Sea, with Ms Sveegaard explaining that there were 14 stations for the Future Energy Island with a mix of noise loggers and other cetacean loggers and C-Pods and in

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<sup>11</sup> <https://www.observatoire-pelagis.cnrs.fr/pelagis-2/les-programmes/samm/>

Skagerrak there were five C-PODs and 1 noise logger and hopefully two sound traps to record cetaceans.

Mr Bjørge reported that in Norway, Deanna Leonard and Nils Øien had published<sup>12</sup> a population estimate based on the Norwegian mosaic surveys from 2013-2018, and found approximately ¼ million porpoises in the areas covered by the surveys. For the northern North Sea and western part of the central North Sea part of the survey they had found close to 155,000 porpoises. The eastern part of the central North Sea and the southern North Sea were not covered. The Norwegian mosaic surveys would continue for another six-year period and there would be updates on the estimates to hopefully provide trends in abundance. In response to a question from the Chair, Mr Bjørge explained that these did not incorporate animals in the fjords. There were high densities in the fjords, but the total number was not so high because of the small area.

The Chair noted that the UK did not cover the north-west part of the North Sea well and the north-east part was covered by the Norwegian surveys not by the UK. He suggested it would be good to revisit that area in more detail.

### **3.2. Review of the stock structure of harbour porpoises in the region (Action 8)**

The Chair did a tour-de-table although most countries did not have anything new to update.

Ms Sveegaard reported that she would report further on the research which had been carried out in Denmark under Agenda Item 4.3 when Ms Vrooman presented on the Wadden Sea, where further research was needed, suggesting this could be an action point from NSG10. The Chair said it was hard to consider the stock structure in the North Sea without a better sampling programme and filling in the gaps in the north-eastern sector of the North Sea.

Mr Bjørge said there was no more recent data than had been presented at the joint IMR/NAMMCO workshop (of December 2018).

### **3.3. Collection of incidental porpoise catch data through stranding networks (Action 9)**

The Chair conducted a tour-de-table asking countries to report on collection of incidental porpoise catch data through stranding networks.

Mr Haelters reported that there were only a few porpoises bycaught among stranded animals in Belgian waters. There was a new legislation in development on gillnet fisheries on the beach as two porpoises were caught in something that looked like a gillnet but was not. The legislation would implement a better definition of a gillnet and which nets were allowed on the beach. While there were hardly any gillnet fisheries, there were some on the beaches.

Ms Vrooman had nothing further to report as Lonneke IJsseldijk would be giving an update in Agenda Item 3.4.

Ms Brtnik reported that for Germany data from 2021 are not yet published/available. There is an established and dedicated stranding monitoring programme in Schleswig-Holstein but for Lower Saxony there was only opportunistic monitoring so far, although there are plans for establishing a dedicated monitoring programme for Lower Saxony. She also referred to a publication<sup>13</sup> collating historical data from 1600 to 2017 on cetacean strandings along the German North Sea coast.

The Chair noted Denmark, as Ms Sveegaard had to step out, did not have the same consolidated stranding network but there were data being utilised in publications.

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<sup>12</sup> Leonard & Øien (2020). Estimated Abundances of Cetacean Species in the Northeast Atlantic from Norwegian Shipboard Surveys Conducted in 2014–2018. <https://doi.org/10.7557/3.4694>

<sup>13</sup> Kinze et al. (2021): Cetacean strandings along the German North Sea coastline 1604 - 2017 <https://doi:10.1017/S0025315421000503>

Ms Owen updated that in Sweden records of dead harbour porpoises were collected through a form at the Swedish Museum of Natural History and samples were collected in collaboration between the National Veterinary Institute and the Swedish Museum of Natural History. They aimed to collect 30 animals per year, and in 2021 they had collected 42. The cause of death was determined but she did not yet know the figures for bycatch from 2021. In response to a question from the Chair, she explained that they separated out the North Sea from the Baltic according to where they were found and genetic analysis (in some cases).

Mr Bjørge said that Norway's coastline mainly consisted of deep cliffs and thus there was no stranding programme in Norway.

The Chair was not aware of any stranding report from the UK since NSG9. Overall, the proportion had been going down as fishing effort was declining. Ms Bell reported the breakdown of numbers for England with two harbour porpoises being diagnosed as bycatch stranded on the north Kent coast but otherwise the numbers were not relevant to the North Sea. She did not have the numbers for Scotland which would probably be more relevant for the North Sea. The Chair said they had been trying to keep track of strandings by regions and encouraged people to update the table (8.2) in the Progress Report. Some of the reporting on bycatch for stranding schemes had been done by WGMME and some within WGBYC and there was going to be a session at the next WGMME meeting in February 2022 to try to bring together some of the people involved in strandings to rationalise how this should be reviewed within ICES in terms of how much should fall within WGMME and how much within WGBYC.

Mr Simmonds referred to the UK stranding network CSIP seminar the previous week about their work in celebration of the network's 30-year anniversary. He encouraged people to watch the [recording](#).

The Chair urged members to review the draft progress report and send any edits to him to update.

### **3.4. Investigation of the health nutritional status and diet of harbour porpoises (Action 10)**

Lonneke Ijsseldijk [presented](#) on her stranding research at the University of Utrecht as well as necropsies in the Netherlands, together with an update on the unusual mortality event of harbour porpoises in the Netherlands in the summer of 2021.

#### The international porpoise stranding investigation

The international porpoise stranding investigation had been commissioned by the Netherlands government, with the research having been completed approximately three years previously. The research covered data from 1990-2017 from the North Sea from Belgium, Denmark, Germany, the Netherlands, and the UK. There was a total of 16,181 porpoise strandings and Ms Ijsseldijk showed a graph of cumulative stranding numbers. The analysis had not been done by country as they had wanted to analyse similar survey blocks to SCANS to provide a comparison. They did not have stranding data for one part of Germany (Lower Saxony).

The results indicated an increase in strandings over the years in regions covering the eastern of Scotland and eastern of England, with the same pattern in the German and Danish numbers. In the southern North Sea, a sudden and steep increase in strandings occurred since 2005. Generally, there were more strandings on the east coast of the North Sea than on the west coast. Seasonality was constant over time, with the first 10 years being quite similar to the previous 10 years. In Scotland and England, the peak in strandings was mostly in spring. In southern areas there were two peaks in spring and late summer, and in German and Danish waters the peak in strandings was in summer (June/July).

When they assessed the length of the animals, there were differences in the distribution of the different age classes of the porpoises. In most regions there were peaks in juvenile aged animals which was not uncommon as they were living independently for the first time. Especially in the

southern areas on the Dutch coast there were lots of juveniles which corresponded to their seasonality where peak strandings were in March. Potentially the German and Danish North Sea was important for calving and then later in August there were more neonate strandings on the coast of the Netherlands. This was quite basic data but was a starting point for analysis and had been quite challenging as there was lots of data and many databases to work with.

Turning to future prospects, Ms IJsseldijk suggested there was potential to add data such as on nutritional condition, causes of death, health status, contaminants, and so on. This information was available in stranding schemes from necropsies and a start had been made in the Netherlands. It would also be interesting to consider data on anthropogenic activities, and additionally they had not yet added drift and other environmental factors. Adding cause of death data came with difficulties with databases such as what categories to select and they had not done this in the 'international' way, following the Necropsy Protocol<sup>14</sup>, but had done it differently as the cause of death definition was different in different countries. She suggested there was a need for discussion if there was a drive to work internationally on this issue.

### Necropsies

Ms IJsseldijk then reported on necropsies in the Netherlands.

They had focused on the Netherlands, monitoring causes of death. In the Netherlands, contaminant and diet studies were done at Wageningen and the Tissue Bank was held at Utrecht University. Typically, they had between 50-100 stranded porpoises per year that they investigated; they would perform necropsies on the freshest animals. Ms IJsseldijk had completed a [PhD study](#) in 2021, including a chapter on anthropogenic causes of death. She carried out gross pathology and histopathology, and included data on diet and marine debris analysis which was available for 612 harbour porpoises, whereas they had carried out 1800+ necropsies since 2006. Decomposition was the limiting factor for including more cases.

Bycatch was the largest category of anthropogenic causes of death, mainly affecting juvenile animals (17%). Infectious disease was the largest category in general (32.5%) but was mainly in adult porpoises. She showed a graph plotting the probability of anthropogenic cause of death against length, indicating that it was mainly juveniles that died from anthropogenic causes and adults died more often of infectious disease. There was an age specific pattern in why or how animals died. Other causes of death included trauma, likely from collisions (2%) and ingestion of and entanglement in marine debris (0.3%). Out of the 600+ cases there was only a small number of animals where they could assess the inner ear abnormalities (undertaken by Maria Morell in Germany) – in the Netherlands, 2/50 had signs of hearing damage which was likely due to an anthropogenic cause. Decomposition was again an issue, with the fixation of the inner ears needing to be done within 18 hours of death.

Ms IJsseldijk analysed temporal trends in cause of death within the Netherlands. She highlighted bycatch, corrected for the number of cases per year, indicating peaks in 2008 and a decreasing trend since. Infectious disease remained relatively constant over the years whereas there was a seasonal peak in March and again in the autumn, corresponding to when the animals occurred in the waters. It would be interesting to carry out this analysis for other areas across the North Sea.

Finally, she referred to a focus study on bycaught harbour porpoise that came directly from gillnets, which had not been included in the previous study. In her PhD, she had assessed 25 bycatch criteria gained from the literature. She carried out an assessment on the 12 porpoises they had retrieved from gillnets, testing which of the criteria in literature were applicable to these samples. She found that there were a few things to take into consideration when assessing bycatch on stranded mammals. In most bycatch cases, there were superficial incisions, encircling imprints and recent feeding, and she also frequently observed pulmonary oedema and organ congestion. Notably, favourable health status, absence of disease or good nutritional condition did not apply. This may

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<sup>14</sup> See annex of ASCOBANS Resolution 8.10 (Rev.MOP9)

reflect an overall reduced fitness of harbour porpoises inhabiting the southern North Sea or a higher chance of a debilitated porpoise being bycaught, and could result in an underestimation of bycatch rates when assessing stranded animals. The control case numbers were still very low, and it was important to get these cases in to assess their health too.

Mr Simmonds asked what sort of damage was seen in the inner ear abnormalities, with Ms IJsseldijk highlighting damage to the hair cells – seen by electron microscopy. She agreed that there could be other damage that she had not been able to detect since other methods (such as micro-CT scanning) are not routinely applied in the Netherlands.

Ms Sveegaard referred to the map of stranding distribution in the North Sea and asked if the effort was comparable when there were so few strandings in the western part of the North Sea compared to the Danish/Swedish coast. Ms IJsseldijk explained that they knew that the people involved in the study from Denmark were the only ones who noticed an increase in effort since 2000 or even later because of the lack of a stranding scheme before that. The UK had had a longer post-mortem programme (for 30 years) so their effort seemed to be relatively constant over time, same for the stranding records in the Netherlands. What was difficult to quantify was the effect of the rise in mobile phones, for example, as one would expect a similar steep increase across the regions with widespread use of mobile phones, but the sudden increase in strandings in the southern area seemed to be less likely due to effort. Ms Sveegaard pointed out that some of the UK coastline was steep and did not form beaches as in Denmark. Ms IJsseldijk was also interested to consider the impact of wind/drift.

The Chair wondered if there were plans to incorporate drift analysis including prevailing conditions, with Ms IJsseldijk noting that they wanted to do so but had not continued that investigation yet. Marlene Belchay had done a lot of drift modelling, but this had not been done in the Netherlands before. She noted she would speak more about this in relation to the unusual mortality event in the Netherlands.

The Chair also asked if there was any indication that young animals were moving to shallower areas after birth. Ms IJsseldijk explained that they had seen that in the southern areas where there was a peak in March and August, corresponding to warmer temperatures. They had seen an increase in strandings of juvenile males in the Netherlands in March and the summer, but could not say whether this was due to changes in habitat use. The Chair noted that with sightings data there were some areas showing strong seasonal movements from offshore to coastal waters, for example between July and September when porpoise calves were learning to feed semi-independently which made sense to do in shallower waters. Ms IJsseldijk said it would be interesting to look at prey distribution. They preyed on small fish some of which were not caught commercially and therefore had not been mapped. They had also considered water temperature, which might make a difference for a juvenile porpoise. The Chair said some porpoise strandings in the Scottish waters appeared to be the result of hypothermia in neonates.

#### Unusual mass mortality in the Netherlands in August 2021

Ms IJsseldijk briefed the meeting on what had happened during the unusual mass mortality event in the Netherlands in August 2021, explaining that it was still under investigation. There had been nearly 200 strandings of harbour porpoise on the Dutch Wadden Sea Islands at the end of August. Normally there were 600 strandings per year in the Dutch coast, so 200 in 10 days was high, even though August was generally a busy month. There had been a peak in strandings, of mainly juvenile porpoises in 2011, which lasted an entire month along the mainland coast. In 2021, however, the time period was shorter with a higher number and including many adult porpoises. The carcasses seemed to be in a similar state of decomposition. They had been dead for a while and took time to wash up. They collected 22 from three islands for post-mortem investigation and ancillary testing. This was commissioned by the government as a separate project. The decomposition was so advanced that they needed to take a different approach.

Ms Ijsseldijk and Mardik Leopold (University of Wageningen) focused on the investigations on the carcasses. The government took the lead on running the drift model and collating the anthropogenic activities in the weeks prior to the strandings event. They used a drift model based on humans when people fall overboard or get lost at sea as this was the only one available. She estimated the time of death based on the porpoises' state of decomposition. The origin was found to be likely north of the Frisian Front given the dominant northern winds in August, assuming they died in the same period of time.

There were no unusual activities except for an explosion in the south of the Netherlands in early August. The advanced state of decomposition limited the ability to do full post-mortem examination, but they could do macroscopic investigations. The necropsies indicated that most animals seemed to be in good nutritional condition, reproductively active (pregnant or lactating), had a mild number of parasites, and had not recently fed, so a subacute cause of death seemed most likely. They carried out ancillary testing for diet analysis, finding that half had empty stomachs while others contained a very small number of worn otoliths; some had horse mackerel that only occurs around the Frisian Front, which was another clue pointing to that area. There was no marine debris ingested.

They tested for harmful algal blooms as this had in the past caused mass strandings. Most marine toxins were negative and only one sample contained saxitoxin, but the concentration was very low. They also tested for a range of viruses by PCR including influenza, SARS-CoV19, morbillivirus, and herpes virus. There was one porpoise with a positive PCR for herpesvirus in the brain, which could have impacted this individual, but this did not seem to explain the mortality event at large. They could not do any histology due to the advanced state of decomposition. The Erasmus Medical Centre was undertaking a search for other or novel viruses, and this was ongoing.

They also cultured livers, resulting in a finding of *Erysipelothrix rhusiopathiae* in 75% of the livers. This bacterium is not commonly found in marine mammals, but generally found in pigs. In pigs, it could cause diamond skin disease and result in septicaemia. There had been no previous reports of an unusual cetacean mass stranding due to *Erysipelothrix rhusiopathiae*. This could be the first, and was currently the prime suspect for cause of mortality. It was not clear how the animals had picked up that bacterium. It could be more present in fish than known, it could live in the skin of prey and then cause infection, so they got hold of some specimens of fish catches from the approximate area, and currently PCRs for further investigation are conducted.

They were also aware that there had been mass strandings of seabirds at the same time in Scotland, so this could be related. Ms Houtman noted that the seabird strandings were of guillemots and puffins.

In response to a question from the Chair as to whether they had noted any instances of unusual mortality amongst fish, Ms Ijsseldijk said they had not.

Ms Houtman asked about the age and sex proportions in the stranded porpoises compared to the previous unusual mortality event in 2011, with Ms Ijsseldijk saying that this was the striking difference in that it was mainly adults, particularly adult females that were recently pregnant which can make them more prone to infectious disease. Normally, there would not be the predominant winds observed this time, so this could have been a confounding factor, as without the strong northern winds, we would likely not have found these animals stranded.

The Chair asked if they would do any analysis on the skulls which could be an indication of the source of the animals and Ms Ijsseldijk welcomed this suggestion, explaining that 10 animals had gone through a CT Scanner, and that they had DNA samples but not the skulls, to clarify whether they were local animals or not. He also said it was interesting that there was no evidence that they had fed, with Ms Ijsseldijk noting that it fitted well with septicaemia as they would still be in a good nutritional state with an empty stomach.

Ms Houtman asked whether anthropogenic causes had been ruled out at this stage, with Ms Ijsseldijk saying it had not yet completely been ruled out, but they could not go much further. Ursula

Siebert's cochlear analysis<sup>15</sup> could be done but there was no funding for the required micro-CT scanning. It seemed unlikely as there were no reports of activities in that area at that time, but it could not be ruled out. There could also be other animals that did not come to landfall. The explosion would need to have been extensive to cause this number of animals, so it seemed unlikely.

The Chair thanked her and did a quick tour-de-table on any new information on this Agenda Item.

Mr Haelters reported that Belgium had a fairly stable number of around 70 stranded animals per year. They were still awaiting necropsy results and a diet study was carried out as a Master's project and noted that the study was in the progress report. The UK and the Netherlands had nothing further to report.

For Germany, Ms Brtnik reported that the stranding network continued to conduct investigations on health and nutritional status. She also reported on two new studies: one developing a monitoring assessment concept for pollutant load in marine mammals for the Baltic and North Sea; and the second consortium developing indicator pathogens in marine mammals for the assessment of anthropogenic impacts.

Ms Sveegaard reported that in Denmark they collected 20 porpoises per year over the whole country which were being analysed for health and fat measurements and the stranding network was functioning to record strandings.

Ms Owen noted there had been necropsies carried out across Sweden to do diet analysis, but no studies had been published yet.

### **3.6. Collection and archiving of data on anthropogenic activities and development of a GIS (Action 12)**

The Chair presented a modelling study by Matthew Saunders (2021) looking at contaminant concentrations in water and sediment for the North Sea for lead, cadmium, mercury, PAHs, and PCBs indicating some patterns. He shared maps with areas in red having higher concentrations. Mr Saunders had collated PCB levels in harbour porpoise in the North and Celtic Seas, modelled PCB concentrations, suggesting that areas where harbour porpoise would be at highest risk were along the Dutch and German coasts, in particular the area around the Wadden Sea. Some contaminants showed high levels around southern Scandinavia. The Chair suggested this was an approach worth taking further with more data.

He then did a tour-de-table asking countries for updates on this Agenda Item.

- Mr Haelters said that Belgium would assist soon within OSPAR's Hazardous Substances and Eutrophication Committee (HASEC) in the development of a pollutant indicator for marine mammals (harbour porpoises and seals).
- Ms Bell was not aware of anything in the UK except perhaps to do with offshore wind activities.
- Ms Vrooman was not sure of any activities in the Netherlands, except that there were a lot of data and the government had done some mapping.
- Ms Brtnik said that Germany had a marine data infrastructure (<https://www.mdi-de.org/>) which she had presented to NSG9.
- Ms Sveegaard said her colleagues were analysing some of the stranded porpoises for PCBs in Denmark, but the report had not yet been released.
- Ms Owen was not aware of any update for Sweden on this issue.

<sup>15</sup> Siebert, U., Stürznickel, J., Schaffeld, T., Oheim, R., Rolvien, T., Prenger-Berninghoff, E., ... & Morell, M. (2022). Blast injury on harbour porpoises (*Phocoena phocoena*) from the Baltic Sea after explosions of deposits of World War II ammunition. *Environment international*, 159, 107014

The Chair reported that they had been working on using AIS vessel data for the North Sea and looking at the types of vessels and trends both overall and within MPAs. They had a paper in review. It did not capture recreational vessel activity, however, for which they were doing some visual monitoring.

#### **4. Other activities contributing to the conservation of the harbour porpoise in the North Sea**

##### **4.1. Review of abundance trends observed in Danish North Sea and Skagerrak**

Ms Sveegaard [presented](#) a review of aerial monitoring of harbour porpoises in Danish waters that they had been conducting since 2011. The national monitoring through annual aerial surveys aimed to cover and provide a trend or a status for the five Danish MPAs (Natura 2000 sites), with two in the Wadden Sea and three in the Skagerrak area. The aerial surveys also showed several other species including minke whale. They would also be putting out C-PODs in the Skagerrak to obtain more consistent observations. From the 2020 data, it was possible to see many more porpoises in the southern North Sea.

She shared graphs on the North Sea and Skagerrak highlighting the large variations across the area but pointed out that it was a small section of a large population so may be the result of movement. In general, porpoises in the southern North Sea seemed to be stable or have a positive trend. For Skagerrak, she explained that since SCANS-III, a consistent survey method was being used and a steep declining trend was now being observed which so far was unexplained. Genetically, the Skagerrak animals were part of the North Sea population and travelled all the way along the coast of Norway to the UK. This population was not doing well. A recent [DTU Aqua report on bycatch](#) indicated it was an area of high bycatch.

Ms Sveegaard highlighted a comparative study by Aarhus University on PCBs in porpoises in the Kattegat and Belt Seas, comparing three time periods: 1980-1990, 1996-1998 and 2010-2020. This was not yet published but they had found a significant decline over time.

Ms Brtnik asked whether she was planning any further investigation into possible reasons for the decline. Ms Sveegaard said that they were not sure how to do this beyond trying to compare with the bycatch numbers or perhaps with the ICES herring surveys in the area. They were trying to supplement aerial surveys by carrying out some acoustic surveys as the aerial survey was just one day per year. The Chair noted that it was an important herring area. He wondered whether some of that population travelled as far as Shetland, with Ms Sveegaard confirming that they did. The Chair noted a decline had also been recorded in Shetland, although this had been partly attributed to the poor recruitment of sandeels in that region.

##### **4.2. New surveys from Range States**

The Chair asked about the iVMS programme in UK, and Ms Day offered to get further information from the Marine Management Organisation .

##### **4.3 Update from the Wadden Sea**

Ms Vrooman [presented](#) on a paper submitted to a Marine Biodiversity special issue on the Wadden Sea: harbour porpoises in the Wadden Sea: where do they come from and where do they go? Using current knowledge for successful trilateral monitoring in the World Heritage site (WHS).

The Wadden Sea Plan covered three marine mammal species belonging to the ecosystem component: the harbour porpoise, grey seal, and harbour seal. The Plan identified two conservation and management targets for the harbour porpoise: viable stock and natural reproductive capacity; and that habitat quality should be adequate for the conservation of the species. For harbour porpoises, the population was considered part of the North Sea population and was not being monitored as a distinct population. The harbour porpoise is an important part of public outreach

activities in the area, as one of the big five - it is on the logo for the Wadden Sea. There were two management targets: viable stocks with an actual reproductive capacity, and conservation of habitat quality.

Ms Vrooman highlighted that the monitoring criteria necessary to assess these targets had not yet been clearly defined and this was a key element of the research.

Four types of monitoring were carried out: aerial surveys, stranding networks, passive acoustic monitoring and satellite telemetry. Hardly any of these covered the entire Wadden Sea area. Starting with aerial surveys, in the northern WHS Wadden Sea both effort and harbour porpoise summer density was highest off the coast of Sylt, in the cetacean conservation area. Calf sightings occurred both in North Sea waters and the inner and outer Wadden Sea. Aerial surveys on the inside of the islands were tricky because of turbidity. In the southern part, effort in Lower Saxony was quite high but lower in the Netherlands, and absent inside of the Dutch islands. Harbour porpoise summer density in Lower Saxony and the Netherlands was highest off the western Dutch islands Texel, Vlieland and Terschelling, and off the German island Borkum.

Moving to stranding data from the three countries, in Denmark and Germany there was a clear peak in the summer with a high proportion of calves. For the Netherlands, strandings were a bit more stable over the year, with a peak in March and summer. Considering total strandings per year, with data going back to 1990, for the northern part, Denmark had very few reported strandings, whilst Schleswig-Holstein in Germany had a lot more. Lower Saxony did not have a stranding network as yet, so recordings were not available. The strandings on the inside of the islands seemed to have decreased in the last decade. In Germany, there had been a small increase but strandings were fairly stable.

Spatially, most strandings occurred on the Island of Sylt with a strong increase there in the number of strandings. Considering whether this might be related to effort, Ms IJsseldijk 'S research had found that effort had not increased. Most strandings occurred on the islands of Texel and Vlieland so this was in line with what they found in the aerial surveys.

On passive acoustic monitoring, there were six stations in Germany gathering data. Harbour porpoise acoustic detections varied between locations but were fairly stable over time. They also showed a relationship to season and to tide, but were variable between stations.

Finally, on telemetry data, they looked at Danish data from 1997-2019 from 124 porpoises which were tagged in the inner Danish waters and six in the Wadden Sea. The porpoises tagged in the inner Danish waters ventured quite far whilst the six tagged in the Wadden Sea stayed in the Wadden Sea most of the time.

Ms Vrooman concluded with some recommendations, that can be found in the [presentation](#). She summarised by highlighting:

- Why talk about porpoises in the WHS Wadden Sea: they are an integral part of the Wadden Sea WHS outreach and contribute to WH Outstanding Universal Values; and the framework aims to assess viability, reproductive capacity, and habitat quality.
- What do we know: regular occurrence; linked to season and tides; there are shifts in occurrence over time; and satellite telemetry indicates a degree of residency.
- How can we assess them: through identification of criteria to monitor; use the most suitable methods; and a coordinated trilateral approach.

The Chair noted that the German aerial surveys indicated that the number of animals around Sylt had declined in contrast to Borkum reef, suggesting some movement between them. Ms Vrooman agreed that there seemed to be a southward movement in general, so the population had not necessarily changed but had moved.

[Conservation of harbour porpoise in the Wadden Sea World Heritage Site](#)

Kristine Meise (Common Wadden Sea Secretariat, CWSS) [presented](#). In 2017, the CWSS had received a letter from ASCOBANS AC suggesting giving more attention to the harbour porpoise in the Wadden Sea. As a result, in 2018, harbour porpoises were mentioned in the Leeuwarden Declaration (Paragraph 16). In 2019, a workshop “Bright Future? Harbour porpoises in the Wadden Sea” was held, and then in 2020, the harbour porpoise had been integrated into the TORs for the trilateral Expert Group (EG) on Seals, and the group’s name was changed to the trilateral EG on Marine Mammals (EGMM).

In bi-annual meetings of the EGMM, they discussed how to trilaterally proceed with harbour porpoise. There were existing monitoring programmes in the Wadden Sea with telemetry, aerial surveys, stranding networks, passive acoustic monitoring, and *ad libitum* observations, but they were not consistent across the Wadden Sea. There was a QSR on Marine Mammals to be published in 2022 (Scheidat *et al.*).

The CWSS had participated in the 15<sup>th</sup> International Scientific Wadden Sea Symposium, and submitted a [poster](#) together with the ASCOBANS Secretariat, looking at potential ways to have a closer collaboration. The draft recommendations from the Symposium were being finalised but Ms Meise highlighted the following which had resulted from the findings that Ms Vrooman had outlined that there appeared to be harbour porpoise resident in the Wadden Sea:

- On research: Evidence from telemetry data suggests that individual harbour porpoises are resident in the Wadden Sea. Further information on the genetic structure, distribution and habitat use is needed to understand connectivity between the Wadden Sea and the North Sea as well as their specific resource needs and the role as top predators in the Wadden Sea ecosystem.
- On management: Create and enforce protected areas for marine mammals, free of any anthropogenic disturbance, based on the scientific evidence for the location of key habitats.

Sharing a table on monitoring methods, Ms Meise noted that the way forward was to define which parameters needed to be monitored to assess changes in the status of the harbour porpoise population in the Wadden Sea; discuss which monitoring methods were most suited to measure these parameters; agree how the monitoring in the different regions needed to be adjusted; and conduct a stranding network workshop with relevant experts for harbour porpoises and seals, hopefully in 2022.

The Chair noted that the Wadden Sea might have a mix of resident animals and others, and suggested it might be useful to do whole genomic analysis to understand this better. Ms Meise said the challenge was that the easiest way to get samples was from stranded animals and they did not know where those stranded animals were from. This was the argument for setting up a stranding network. The Chair suggested taking samples from the most freshly stranded animals as at least those may be local, but he also noted that some animals may have recognisable markings and could be tracked over time. This has proved possible with some in the UK. Ms Owen suggested also looking at the tagged animals, asking whether they took genetic samples at the time of tagging. Ms Meise said samples existed in Denmark and Schleswig Holstein, but was not sure about the six animals that were tagged. Ms Sveegaard confirmed samples had been taken, but they did not have the results as yet.

## **5. Overall progress in the implementation of the Conservation Plan (Action 1)**

### **5.1. Review of the proposed criteria for assessment of progress for the different actions**

*Agenda Items 5 and 5.1 were discussed together so are reported under this Item.*

The Chair introduced this Item on the [Conservation Plan](#). He again invited members to contribute to the Progress Report and to send comments in writing to him and fill in any gaps in the relevant parts of the Progress Report.

## Review of the proposed criteria for assessment of progress for the different actions

The Chair presented the implementation table and status assessment criteria. At NSG9, a lengthy discussion had taken place on revising these, and so a new version, trying to incorporate all those suggestions, was included in the draft Progress Report that had been circulated to participants before the meeting. The aim was to more robustly examine how countries are progressing on specific actions, to better identify gaps or weaknesses that need addressing. Only by doing so can countries truly make the Conservation Plan effective.

**Action 2** (implementation of existing regulations on bycatch of cetaceans): there had been a change from EC Reg. 2019/1241 in that countries were reporting through EU-MAP and some provisions of Reg. 812/2004 had been carried over. Reporting under the new regulation was every three years. As identified by ICES WGBYC, the quality and scope of the reports from Member States remained variable. Few countries had dedicated observer programmes, instead relying on sampling under the DCF which was likely to underestimate bycatch as sampling was not targeted to high-risk métiers, and observers did not necessarily have the relevant experience or opportunities to target observation of species such as harbour porpoise.

Eunice Pinn (Seafish) noted that previous requirements for Reg. 812/2004 were carried over but the new regulation applied to all vessels and requires everyone to meet their international commitments, which includes the ASCOBANS resolution to eliminate bycatch where possible. The Chair noted that the emphasis was also on a more regional approach.

**Action 3** (establishment of bycatch observation programmes on small vessels (<15m) and recreational fisheries): previously under Reg. 812/2004 small vessel and recreational net fisheries known to cause porpoise bycatch were not adequately monitored which was a major deficiency throughout the North Sea. Useful work had been done in Norway on this. The Chair highlighted that the UK initiative to use iVMS in England on small vessels was to be welcomed and should be considered on a wider scale and by other range states.

**Action 4** (regular evaluation of all fisheries with respect to the extent of harbour porpoise bycatch): better data were required on fishing effort (expressed in appropriate units preferably at a finer scale than days at sea). There was a need to find ways to improve on the rates. Sampling of bycatch rates (by visual observers or REM) needed to be increased and more targeted. Parties were urged to ensure that there was significant improvement in the consistency of bycatch data at a regional scale through the EU-MAP. WGBYC had felt that currently people on board doing the monitoring had other duties and therefore might not monitor bycatch adequately and REM could help with this.

**Action 5** (review of current pingers, deployment of alternative pingers and gear modification): Pingers had been mandatory in certain gillnet fisheries, but their use had not been implemented by all countries and the level of enforcement had been very variable between countries. There was a need for more research. However, pingers could be very effective, if applied correctly. Some consideration of potential negative impacts remains necessary if they displaced animals when applied over a wide area. Other approaches needed to be investigated such as move-on procedures and these would be explored if the CIBBRiNA project was funded.

Ms Owen said this had been raised in the JG where navies were concerned and would not allow pingers to be used. There was a need for an alternative in case there were security issues raised outside the Baltic and other regions in the future. The Chair said there were going to be meetings with some naval representatives to look into this a bit further.

Ms Dolman urged also considering temporary spatial closures or more permanent measures and asked that the title of the Action be changed so it did not just refer to pingers. The Chair explained that the Action Points themselves could not be revised at this point but could be considered in the review and update of the Conservation Plan.

**Action 6** (finalise a management procedure approach for determining maximum allowable bycatch limits in the region): there was a need to agree a consistent and well-defined conservation objective across the region and to set environmental limits and triggers over a practical time-scale. A variety of approaches exist to determine maximum allowable bycatch limits for a population, although OMMEG had already settled on RLA, and OSPAR were using a provisional conservation objective. Given the series of assumptions for input parameters, the application of both RLA and PBR approaches concluded that current levels of bycatch in the North Sea was not causing serious depletion of the harbour porpoise population. The Chair hoped that the proposed workshops discussed under Agenda Item xxx would reach some general agreement on this.

Ms Dolman referred back to the conversation about how thresholds should be used as an upper limit and that there needed to be work below that level to eliminate bycatch as well as continuing to bring bycatch down. Similar to Action 5, the Chair said this could be discussed more under Agenda Item xxx under the review of the Conservation Plan.

Ms Owen raised an issue with wording “current levels of bycatch in the North Sea was not causing serious depletion” and proposed instead “current estimates suggest that bycatch is higher than the proposed threshold” as the current levels were above and suggest they were a problem. This revision was agreed.

**Action 7** (monitoring trends in distribution and abundance of harbour porpoises in the region): The Chair had included the SCANS-III estimate for the harbour porpoise population in the North Sea. There had been no significant change detected since the 1990s but there was some indication from the more regional SCANS surveys of a decline in the eastern North Sea and a corresponding increase in the SW. Aerial surveys were undertaken on a seasonal and annual basis in the southern North Sea by several countries. Winter months remained less well-covered, as were areas in the central and northern North Sea. Parties were urged to fill these gaps and to undertake a regular programme of monitoring across their EEZ within the North Sea. He noted that this would be a big challenge for the UK. He hoped that SCANS-IV in summer 2022 would fill in further gaps.

**Action 8** (review of stock structure of harbour porpoises within the region): a single MU was currently recognised for harbour porpoise in the North Sea, mainly based on DNA analysis. A change to the boundary halfway down into the Kattegat had been agreed and others had suggested some level of sub-structuring in the North Sea. The main problem was that samples were patchy so it was hard to extrapolate but it was recommended to explore potential sub-structuring using a variety of approaches within the entire North Sea on an E/W and N/S axis, taking into account ecological and oceanographic parameters.

The Chair invited members to review the Implementation Table: Progress on Actions by Country 2021 in the Progress Report before discussion on Day 2.

#### Overall progress on implementation of the Action Plan

The Chair presented the Implementation Table: Progress on Actions by Country explaining that after introducing the Implementation Plan they had developed the criteria which were currently being reviewed. He again invited members to send him an email if there were any points in the Implementation Table which needed to be changed.

**Action 2:** the table contained a record of whether countries had vessels which required pingers and if so how many. He invited input to ensure the numbers were correct. It was available in Excel.

Ms Königson asked which years the table covered. The Chair said it was for the latest year as it was being reviewed annually.

Ms Vrooman noted that in the Netherlands in general there were no pingers required except for some of the Natura 2000 sites which would require a slightly different formulation. The Chair proposed adding another line specific to Natura 2000 sites. He also pointed out that some countries did not

know for sure if their vessels were using pingers which should also be included. On enforcement, there was a focus on high-risk fisheries which needed to be defined but it mainly referred to static nets and so there was a need to define that. There was also a line on dedicated observers and monitoring programmes.

Ms Sveegaard suggested there should be a description of what is meant by each line as they would need to forward the table to the Fisheries Ministry. The Chair referred to the Criteria and suggested these would address this, but asked that feedback be given on this once they had both documents.

Ms Carlén suggested aligning the headings in the Table and the Criteria to make clear which criteria apply to which, and the Chair said he would give this more thought.

Ms Königson suggested the challenge of completing such tables was the difference between countries and their objectives, such as what full enforcement meant to each country. She suggested clearly defining full enforcement. The Chair proposed including more specifics to highlight the criteria, for example, using a hydrophone to detect whether pingers were working and recording vessels and she agreed this could work. She noted that the Actions might change to reflect any change to the Conservation Plan. She also noted that reporting under the Reg 2019/1241 was problematic, for example in relation to observer programmes. The Chair invited her to review the Table and Criteria to see if she could address this issue and she agreed.

**Action 3:** The Chair wondered whether Actions 2 and 3 could be combined and suggested considering that when reviewing the Conservation Plan. He outlined the criteria for scoring suggesting that the words “robust estimate” be removed from the score 2. There were no comments.

**Action 4:** On this Action, the Chair noted that they were currently relying on the percentage of days at sea observed and outlined the scoring. He wondered whether the scoring worked as it could allow for countries that were not doing all the relevant fisheries but could still say they had a robust estimate under score 2.

Ms Königson asked if this was on the national level which the Chair confirmed. She also noted most countries were reported as having no cetacean schemes appended to the DCF, and that they did report bycatch in their DCF monitored species but suggested the question was still whether they had increased their monitoring in those fisheries with high risk of bycatch of porpoises, or were they still monitoring the same fisheries which had been monitored within the DCF i.e. the DCF was still focusing on trawl fisheries for example. The Chair agreed this was an issue and proposed splitting this into two separate questions. Ms Königson suggested having separate criteria for these two, and said she would reflect on this and make a proposal.

**Action 5:** The Chair ran through the various measures, including the deployment of working deterrent devices regularly checked for compliance and the removal of ghost nets, and outlined the related criteria scoring. Ms Owen highlighted that the table should reflect exactly what was written with the criteria and the Chair explained that they were all reflected in the table in the Progress Report whereas the presentation was not showing all of them.

The Chair outlined the scoring for **Actions 6 – 10** on which there were no comments.

**Action 11:** On monitoring levels of continuous noise and impulsive noise, Ms Owen thought there was a need to do the measurements first, so the data would be needed first, and score 3 would need to come before a score 2. The Chair explained that a score 2 was a theoretical map of sound levels without the need for data but actually having a network of microphones or PAMs to measure ambient noise would give a better picture even though there might still need to be some modelling. Ms Owen felt it was still a little ambiguous on what would achieve a score 2 or a score 3, and the Chair agreed he would change the wording to clarify this, noting it would have to be at an adequate level to improve on the modelling.

On mitigation, Ms Houtman asked to include “across country EEZs” as noise mitigation also affected cross-boundaries and working towards a more unified approach. The Chair explained that the intention here was to record it country-by-country to enable individual countries to respond. While there was a need to look at the wider picture, the purpose of the table was to enable countries to report. The Chair proposed having another criterion dealing with noise exposure criteria consistency.

**Action 12:** The Chair pointed out that this could be separated out into different activities but currently it was more general. On this Action, Ms Houtman asked whether score 3 could include that countries were using the data to inform their policy decisions based on the GIS data they had collected, and the Chair agreed.

The Chair invited people to review the table further and email him any input by the end of January 2022, following which he would make revisions and circulate for final comments.

## 6. Liaison with other organisations

The Chair introduced this item, noting the continuing need to consider liaison with fisheries bodies, and to consider further recommendations. Several members of the SG including the Chair were members of ICES WGBYK, and similarly involved in ICES WGMME. He had participated in meetings for the fisheries regional coordination groups, along with Ida Carlèn - the JG Chair, and the Secretariat. He had also attended the NAMMCO WGBYK meeting. It was focused primarily on seals but there was some discussion on harbour porpoise. There had not been much contact with the Marine Stewardship Council, partly due to recent change of staff.

## 7. Planned review of the Conservation Plan

The Chair introduced this item, noting that the North Sea Conservation Plan would need to be ready for MOP9 in 2024 and so would ideally be put to the NSG by mid-2023 so it could be tabled 90 days before the MOP. It was agreed that the Secretariat would draft a tender for review by the NSG and circulate in spring 2022.

Ms Königson asked whether they were just reviewing the Actions or whether there should first be a review of what had happened under the Conservation Plan, including a budget. The Chair explained that at NSG9 they had agreed that they were up-to-date on the current actions but that there was a need to review the Plan as to whether there were any actions missing and whether any should be modified. The Secretariat said they could consider whether they wanted to hire a consultant to carry out the review and said that there was already a voluntary contribution for this work if needed. The Chair suggested this would be clearer once they had done an initial review together.

The meeting considered each of the Conservation Plan Actions in turn:

**Action 1:** it was agreed there was no need for revision.

**Actions 2 and 3:** The Chair proposed amalgamating these rather than having two separate actions. Ms Pinn proposed deleting 3 because of the change in the way that the regulations were now phrased as monitoring was now required. Ms Königson proposed listing all the relevant regulations and specifying what they are suggesting with regards to cetaceans. If this were done, there would be no need to have Action 3. The Chair suggested having an Action title reflecting both elements and noted they are aligned with ASCOBANS objectives to reduce bycatch and monitor species. He agreed to circulate a suggested form of words. Ms Königson proposed that the Action title should be implementation and the route to that goal.

**Action 4:** Graham Pierce (Spain) asked whether the observation programmes involved dedicated observers or fisheries observer programmes. Reg. 2019/1241 does not require dedicated observers, and he suggested it would still be useful to have dedicated observers. Whether observation may be

required under the new Regulation did not remove the need to have Action 4. The Chair agreed that there was still a need to include it in the list of actions, The criteria would need to include whether the observer programme is dedicated or not. The Chair proposed changing the wording to “to achieve robust bycatch estimates.”

**Action 5:** The Chair wondered whether they should broaden this to all forms of mitigation. Ms Owen supported this and noted that Ms Dolman had also suggested it. She also proposed including “with the aim of driving bycatch down to zero.” The Chair wanted to keep in mind concerns which had been expressed about not enabling governments to take minimum action.

**Action 6:** The Chair wondered if the management procedure approach should include reference to conservation objectives. Ms Owen suggested it should reflect more about how to put the management approach in place and enforcing it. The Chair said there was a dichotomy about having a management approach but not losing sight of the need to bring bycatch down to zero and whether they should be more explicit that it was not just about maximum allowable removals. He said he would propose some different wording.

For **Actions 7 and 8** there were no proposed changes.

**Action 9:** The Chair wondered whether they wanted to make collection of incidental catch data through stranding networks in the region a specific action related to bycatch, or broaden it. Ms Owen supported making it broader as a stranding network was beneficial to much more than catch data such as “collection of strandings information data for use in future research and management decisions” which could include bycatch data.

**Action 10:** The Chair wondered if this should be combined with Action 9. Ms Sveegaard proposed keeping it separate as in Denmark it is divided in different budgets. Ms Owen, supported by Ms Sveegaard, proposed keeping both given the way the criteria were worded, and that Action 9 should focus on the collection of samples and Action 10 on the processes and analyses that come out of those collections. Ms Houtman proposed including something on policy implications in Action 10 such as “use to inform management/policy.” The Chair agreed but pointed out that most Actions were to inform management. The Chair proposed this should now be high priority.

**Action 11:** The Chair wondered whether to make the distinction between continuous and impulsive noise. Ms Owen did not see the need to specify as long as the criteria were divided up into impulsive and continuous. She proposed that it should become high priority rather than medium as it was, and the Chair agreed. Ms Houtman wondered if mitigation should be included in the criteria, which the Chair agreed for both Action 10 and 11.

**Action 12:** On this, Ms Carlén suggested there were other institutions that collected data on anthropogenic activities and other environmental data so wondered if it need not be included. The Chair agreed that more countries were moving to marine spatial planning and collecting data on activities, with some good data and some not so much, for example there was not so much on recreational activities. He wondered whether it was more that ASCOBANS should be utilising those data rather than collecting and archiving them. Ms Carlen referred to EMODNET for European-wide data and, supported by Ms Pinn, proposed it was unnecessary to store more data. The Chair asked for feedback on whether it should be deleted or whether there should be an action about looking at trends from these datasets.

The Chair asked for feedback on whether there was anything obvious missing from these actions. Ms Owen noticed a lack of harmonised methods across countries but suggested adding an action to facilitate and encourage stronger harmonised action across the regions and management. The Chair noted that it was included in many of the actions and the Implementation Table to some extent addressed this. He felt it would be more appropriate to keep it in the various actions rather than as a separate action on harmonisation as there would be a need to refer to each action to see how to harmonise them. Ms Owen referred to Ms Sveegaard’s suggestion for a workshop to discuss options, and agree on ways forward on this, and wondered whether there was a way to encourage countries

to participate in such workshops to show they are trying to contribute to a harmonised effort. The Chair agreed that it was something to pay attention to but was not sure a separate action was needed.

The Chair then asked for thoughts on to what extent they had addressed a review of the Conservation Plan. He did not see that there was any major topic to be included that would change the existing Conservation Plan. The Secretariat suggested they could consider revisiting the text of the Conservation Plan in light of a literature review. The Chair said that this was needed but was fairly straight-forward. The Secretariat explained that this review had already been foreseen in the Work Programme, so the next step was for the NSG to decide whether to outsource the work and if so, to ask the Secretariat to circulate an expression of interest as there was some funding available. The Chair asked for views on this and whether it should be done within or outside the NSG. Ms Carlén, supported by Ms Königson, noted that when they did the Jastarnia Plan update a few years ago it had been done by Julia Carlström and suggested that it be announced as a consultancy. The Secretariat said they could include in the ToR that it was highly recommended that the person already knows well the work of the steering group.

Ms Owen passed on from Julia Carlström (who was unable to participate in the meeting) that the review should be done after SCANS-IV so that data could be included. The Secretariat said it would just need to be ready for MOP10. Ms Pinn felt that the work could start and then include the results from SCANS-IV once they were ready.

## **8. Review of Recommendations from the North Sea Group**

The Chair introduced the NSG9 recommendations together with the draft recommendations from NSG10 that he had prepared with the Secretariat, and invited country comments. The agreed recommendations, which were intersessionally endorsed by the ASCOBANS Advisory Committee, are included in Annex 2 to this report.

## **9. Any other business**

The Secretariat announced that the CMS Aquatic Species team were advertising internship positions with the deadline 28 January 2022, and encouraged members to spread the word. She also congratulated the Chair on being awarded a professorship by Bangor University the previous week.

Ms Brtnik informed that Oliver Schall (Germany) had asked her to pass on that the German Ministry of Environment was preparing a letter about the mass killing of Atlantic white-sided dolphins in the Faroe Islands in 2021, based on the letter from ASCOBANS AC, and the one from the International Whaling Commission (IWC).

## **10. Next Meeting of the North Sea Group**

The Secretariat suggested the next meeting should not be scheduled in 2022, hoping to aim for a face-to-face meeting in 2023 but otherwise online. There were no ASCOBANS meetings scheduled yet and therefore no possibility for back-to-back meetings. She proposed that January 2023 would be the earliest possible date and 31 January - 1 February was agreed.

## **11. Close of Meeting**

After the customary expression of thanks to all those that had contributed to the success of the meeting, the Chair declared proceedings of the tenth meeting of the North Sea Group closed at 15.27 CET.

## **Annex 1: Priority Recommendations**

### **PRIORITY RECOMMENDATIONS FROM THE 10<sup>TH</sup> MEETING OF THE NORTH SEA GROUP**

*(Adopted by the Advisory Committee)*

#### **Evaluation on fisheries with respect to extent of porpoise bycatch**

1. Parties and Non-Party Range States to focus monitoring and mitigation effort on high-risk fisheries and areas bearing in mind that the latest bycatch estimates for porpoises in the North Sea indicate the annual numbers bycaught likely exceed thresholds indicated from RLA analysis<sup>16</sup>. There still remains great uncertainty around all bycatch estimates in the region.

#### **Finalise a management procedure approach for determining maximum allowable bycatch limits in the region**

2. Attention is needed to revise the current ASCOBANS conservation objectives to incorporate a timeframe for their achievement, and in any management procedure approach to take account of the long-term objective to drive anthropogenic removals towards zero
3. Parties, Non-Party Range States, and relevant national bodies to engage and take into regard stakeholder interests, in particular the fishing industry, to reach common solutions to fulfil conservation aims.

#### **Development of alternative pingers and gear modifications (including other mitigation measures)**

4. Parties to support further investigations of approaches to mitigate harbour porpoise bycatch taking into account potential adverse impacts on other taxa such as birds and seals.
5. Parties to support the testing of bycatch mitigation actions at a fleet level and implement those that have proved to be effective and practical.
6. Parties to support more research on the behaviour of harbour porpoises around fishing gear, especially static nets, including their sensory capabilities and auditory health, for a better understanding of factors leading to bycatch.

#### **Monitoring trends in distribution and abundance**

7. Parties are encouraged to collaborate on analyses of regional trends in porpoise distribution and abundance at a North Sea-wide scale and examine potential explanations for any observed changes.
8. The North Sea Group to note any information on trends in abundance and distribution from the forthcoming OSPAR QSR2023 and consider the implications of the findings.

#### **Investigation of the health, nutritional status and diet**

9. Parties are encouraged to do collaborative research on the extent and potential reasons for grey seal predation on harbour porpoises.

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<sup>16</sup> ICES workshop on mortality of marine mammals (WKMOMA) 2021.

10. Parties to facilitate rapid collaboration with stranding networks in the event of an unusual mortality event to identify potential causes of death. These should include new potential sources such as bacterial infections, e.g. *Erysipelothrix rhusiopathiae*.
11. Parties are encouraged to further support North Sea-wide monitoring of life history parameters through the collection and analysis of stranded and bycaught animals in order to assess evidence of temporal changes in those parameters and explore links to anthropogenic drivers.

#### **Investigation of the effects of anthropogenic sounds on harbour porpoises**

12. In the light of recent studies demonstrating acoustic trauma in porpoises due to explosions in the Baltic, serious concern is expressed over similar activities occurring in the North Sea. Surviving animals might have impaired hearing which, among other things, could affect their ability to detect nets and find prey. The Secretariat is asked to bring these studies to the attention of all North Sea States and relevant bodies carrying out explosions.
13. Parties to make every effort to mitigate the effects on porpoises of activities involving explosions.
14. Collaborative studies are encouraged to quantify the impact of both impulsive and continuous noise on harbour porpoises.
15. Parties and Non-Party Range States to encourage research to establish the population level impacts of noise levels and exposure duration.
16. Parties and Non-Party Range States to encourage international harmonisation of noise thresholds for regulatory purposes.

## Annex 2: List of Participants

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