REPORT
OF THE 3RD MEETING OF THE
ASCOBANS COMMON DOLPHIN GROUP

Online

15-16 November 2022

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

UNEP/ASCOBANS Secretariat, UN Campus, Platz der Vereinten Nationen 1, 53113 Bonn, Germany
Tel. +49 228 815 2416 | ascobans.secretariat@ascobans.org | www.ascobans.org

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1. Opening of the Meeting

1.1. Welcome and Announcements

Jenny Renell (Secretariat) welcomed everyone, noting that the last time they had met face-to-face was in 2019 and hoping it would be possible to meet in person for CDG4. She ran through some housekeeping issues, outlined the Online Meeting Protocol and handed the floor to the CDG Co-chair, Sinead Murphy (Atlantic Technological University (ATU), Ireland).

Ms Murphy also welcomed everyone to the meeting, noting the busy agenda and highlighting that several PhD students would present on their work on the North Atlantic common dolphin on Day 2.

1.2. Adoption of the Agenda

Ms Murphy outlined the Provisional Annotated Agenda and Schedule (ASCOBANS/CDG3/Doc.1.2b) and reminded the group that she and Florence Caurant (La Rochelle University, France) would co-chair the meeting. In addition to the country reports already included in the agenda, she requested updates be provided from Spain, Ireland and Portugal, noted some changes to the order of items, and asked whether anyone had any other items to add to the agenda.

Catarina Eira (Universidade de Aveiro, Portugal) informed that she would provide some information on common dolphin strandings in Portugal under agenda item 2.3.

2. Overview of progress in SAP implementation

2.1. Update to the achievements table

Ms Murphy (Co-chair) explained that the Species Action Plan (SAP) Parties (France and the UK) were required to complete an 'Achievements Table' in relation to the SAP Actions, with traffic light colour coding, to identify data gaps, actions and funding going forward. She invited France and the UK to provide an update on their achievements.

France

Ms Caurant (Co-chair) presented the 'Achievements Table' for France, while noting some elements would be picked up later in the meeting. Monitoring projects included: deployment of 20 Remote Electronic Monitors (REM) on set gillnets/trammel nets; increased observer efforts on pair trawls and net métiers in winter; and spatial analysis of strandings (areas of mortality and overlap with fishing effort for 2010-2019, updated in 2020 and 2021). Projects on bycatch rates included: assessment of temporal and spatial variations and evaluation of mitigation measures; the DELphinus MOuvements GEStion (DELMOGES) project (2022-2025); and the LICADO project (2019-2022) aimed at characterising fishing gear and fishing practices, which was nearly completed.

France had participated in the fourth Small Cetaceans in European Atlantic waters and the North Sea survey (SCANS-IV) and carried out an annual ecosystem survey. At the international level, France participated in different working groups (WGs) of the International Council for the Exploration

of the Sea (ICES) including the WG on Bycatch of Protected Species (WGBYC) and the Workshop on fisheries Emergency Measures to minimize Bycatch of short-beaked common dolphins in the Bay of Biscay and harbour porpoise in the Baltic Sea (WKEMBYC-II) and within the OSPAR Marine Mammal Expert Group (OMMEG), France co-led on two OSPAR biodiversity indicators 'Abundance and Distribution of Cetaceans' and 'Marine Mammal By-catch'. For the latter, the mPBR framework approach was employed producing a threshold of approximately 980 common dolphins.

Ms Murphy asked for more information about the bycatch observer programme and Ms Caurant said that, under the OBSCAMe project, 20 boats were now equipped with REM covering 3% of the fleet, an increase from the 1% previously covered. The objective was to deploy REM in 100 boats.

The UK

Ms Taylor provided an update on the UK 'Achievements Table' including on:

- An ongoing comprehensive strandings surveillance programme contributing to some of the actions, with a dedicated team in South-West (SW) England;
- Development of the Bycatch Evidence Evaluation Protocol (BEEP) looking at use of a protocol to identify evidence of bycatch in stranded animals using trained volunteers;
- The UK contribution to the SCANS-IV survey; and
- That the ICES Joint Cetacean Data Programme (JCDP) WG, responsible for the JCDP cetacean database, was going to work in collaboration with WGBYC and the WG on Marine Mammal Ecology (WGMME) within ICES. The hope was that building on the JCDP database would generate additional data to draw on for the seasonality aspects not being considered by the SCANS surveys.

She also highlighted several activities, while noting some might be picked up in more detail later in the meeting, including:

- The Clean Catch UK programme aiming to bring together stakeholders involved in bycatch work to have a more holistic approach to tackling bycatch in identifying research needs, mitigation trials and recommendations for mitigation options. A pilot programme in SW England was currently trialling mitigation techniques.
- A new 10-year rolling contract for the Bycatch Monitoring Programme which aimed to find ways to increase monitoring coverage through techniques such as REM;
- Publication of the UK Sensitive Marine Species Bycatch Mitigation Initiative which gives a high-level view of priorities with the next steps being to tackle these priorities;
- UK involvement in working towards agreement on threshold setting methods under OSPAR through OMMEG; and
- Planned PhD research in SW England on marine mammal bycatch: "Marine Mammal bycatch in SW England: Taking a holistic approach to assess causes, impacts and evidence-based solutions".

Ms Murphy ran through the Summary of Actions table and noted that the UK would be flagging 'green' on many of the actions. She also commented that although neither France nor the UK had mentioned work on anthropogenic sound specifically for common dolphins, there might be broader-scope work being done on this issue. There was also work being done on hazardous substances in the NE Atlantic, with case studies being carried out on anthropogenic activities that lead to death and adverse health effects. She invited the UK to complete the Achievements Table.

Ms Caurant referenced a study by SHOM on methodologies in assessment of cumulative impact. She asked for more information on the UK's development of the bycatch evidence protocol as France was also trying to improve this with the help of veterinarians. Robert Deaville (Institute of Zoology/Zoological Society of London) explained that BEEP had been run by the Cornwall Wildlife Trust for around 15 years in the UK and had been started in response to budget cuts which meant that there could not be as many post-mortems. It was citizen science-led with some veterinarian

oversight and the volunteer scheme in Cornwall had been testing animals which did not get to post-mortem.

Ms Taylor updated that in the UK, work on the effects of noise tended to have a harbour porpoise focus as there were marine protected areas (MPAs) and special areas of conservation (SACs) for harbour porpoise. This work could be widely applicable and an indicator for Marine Strategy in tandem with the EU MFSD around noise was being developed. She suggested it would be helpful to have a rationalisation of what information was available to make it more species-specific in relation to common dolphin.

Peter Evans (Sea Watch Foundation) referenced further work on noise, including: ambient noise and Delphinidae (primarily common dolphins) monitoring in Western Scotland and Northern Ireland through the COMPASS[1] and SAMOSAS[2] projects using acoustic detectors; a gap analysis under the POSEIDON[3] project, to identify areas and seasons where there was low coverage leading to a series of aerial surveys in England and Wales (in Autumn and early Spring) and hopefully in Scotland; a density distribution analysis for the Irish Sea and the Western end of the English Channel by Sea Watch Foundation funded by Natural Resources Wales; and population modelling looking at the potential responses of anthropogenic mortality on the population dynamics of common dolphins and other species in the Irish Sea, which had just been published.

Discussion then focused on the need for review of the individual tasks under the Action Table and the role of the proposed CDG Coordinator. Ms Renell announced that Ms Murphy had been selected as the Coordinator and congratulated her on the post, noting the paperwork was in progress.

Ms Murphy then invited Non-Party Range States (Ireland, Portugal and Spain) to provide an update on work undertaken in their waters.

Ireland

Ms Murphy (Co-chair) gave an update of ongoing work in Ireland. She noted that presentations will be made over the two-day meeting on strandings (Stephanie Levesque, Irish Whale and Dolphin Group strandings coordinator), the ObSERVE aerial surveys (Emer Rogan, University College Cork) and other presentations will be given during the session on hazardous substances, causes of mortality, health status, diet and life history analysis (agenda item 6).

Since 2018, there had been no reported bycatch in Irish fisheries but as this was the COVID-19 era there had been a substantial reduction in bycatch monitoring effort. There were some data available in the ICES WGBYC 2021 report on monitoring effort (see Table 10 for combined years 2020/2021). No pinger mitigation trials were undertaken over the last two years in relation to common dolphins and the amount of pinger use was not known in relation to Irish fisheries.

ObSERVE I was a three-year Irish project (aerial and acoustic surveys) looking at seasonal changes in cetacean and sea bird distribution in the Irish offshore waters (2015-2017). In the follow-up study ObSERVE II (2021-2025), the principal scientific objectives were to (i) to assess the importance of waters within the inshore and offshore study areas for a wide range of marine mammal, bird and turtle species; (iii) to identify, where possible, key areas that indicate a higher conservation importance; and (iv) to derive multi-annual summer and winter density and abundance estimates for selected cetacean, marine bird and turtle species[4]. Ireland did not participate in SCANS 2016 or 2022 but was running the ObSERVE project at the same time, collecting data in the same way so it would be possible to collate these data with SCANS data, to develop cetacean abundance estimates for the North-east Atlantic.

[1] Collaborative Oceanography and Monitoring for Protected Areas and Species
[2] Static Acoustic Monitoring of Scottish Atlantic Seas
[3] Planning Offshore Wind Strategic Environmental Impact Decisions
[4] https://www.ucc.ie/en/ornithology/projects/observe/

The Irish Marine Institutes' operational programme 2014-2020 supported by the EMFF (European Maritime and Fisheries Fund) undertook an 'Assessment of species catch composition in fisheries posing a risk to biodiversity' (MB/2017/04 & MB/2019/04 project), which funded a 3-year necropsy project (2017-2019) assessing causes of mortality for a sub-sample of stranded common dolphins (n = 84), and the occurrence of bycatch, both spatially and temporally. Funding that was awarded to the Irish Whale and Dolphin Group, Cork Regional Veterinary Laboratory, and the Galway-Mayo Institute of Technology (now ATU).

Other studies at ATU included recently completed studies undertaking a large-scale analysis of sexual development and seasonal changes in testicular morphology (using samples for 600+ individuals) of NE Atlantic common dolphins and ovarian follicle counts as a potential reproductive toxicity endpoint in the species; on-going projects looking at assessments of adrenal stress responses and gastro-intestinal parasites, as well as a doctoral study on the foraging ecology and the nutritional status of the common dolphin in the NE Atlantic which would be presented under agenda item 6; an MI-EMFF funded contaminants project undertaken by ATU and the Institute of Zoology London, analysing data from common dolphins for a range of pollutants to assess for evidence of temporal changes and their association with age, nutritional status and cause of death, as well as furthering the development of a Polychlorinated biphenyls (PCB) pollutant indicator for mammals, which would be presented under agenda item 6.

Mr Simmonds asked why Ireland was running its own survey separate from SCANS. Ms Murphy explained the ObSERVE surveys covered multiple years, and were undertaking both summer and winter surveys. They were, however, using similar techniques and working alongside SCANS and those data were accessible through application to the Irish government.

Portugal

Marina Sequeira (Department of Fisheries & Marine Research (DFMR), Portugal) presented on activities in Portugal. The entire Portuguese coast had been covered by stranding networks since the end of 2021, with dedicated teams for all four regions (Norte, Lisboa and Vale do Tejo, Alentejo, Algarve). Portugal had participated in SCANS-IV, including an offshore aerial survey to 150 nautical miles. Pingers had been distributed to beach seine fisheries mainly in the northern part of the country in late 2019. Due to lack of funding, it had not been possible to monitor these, although they hoped to be able to do so in 2023. The focus of activities was on harbour porpoise, but most actions planned for the harbour porpoise would also benefit and be applicable to the common dolphin.

She highlighted a study on age structure and organic contaminants of common dolphins using samples collected from the stranding networks and said she would share the results once available.

Ms Murphy asked which type of pinger was deployed to the beach seine fisheries, and Ms Eira said it was the 70 kH pinger with 145 dB intensity and that she could report more on this under agenda item 2.3.

Spain

Graham Pierce (Spain) reported on activities in Spain, focusing on Galicia. He referred to the ICES WGBYC 2021 report which noted few common dolphin bycatches reported from the Bay of Biscay and the Iberian coast, highlighted MITICET (a project using REM and acoustic deterrents and strandings monitoring), a project on monitoring gillnets, Mediterranean pilot studies on bycatch (bottom trawls, longlines, set nets) and ongoing training for strandings networks. CEMMA had a few current and recent projects but none specifically focusing on common dolphins. At the international level, Spain was involved in OMMEG and ICES WGMME, WGBYC, WKMOMA, and WKEMBYC2.

He outlined several projects on bycatch monitoring and mitigation, the effects of pollutants, diet and health, and strandings, including:

- the CetAMBICion project (bycatch mitigation and monitoring) where one of the current tasks was a bycatch risk assessment based on vessel monitoring system (VMS) data for gillnetters and trawlers – the project was trying to obtain data for smaller vessels – and cetacean sightings data obtained from sources such as surveys run by Instituto Español de Oceanografia (IEO) along the northern Spanish coast. Preliminary results indicated that the highest bycatch risk was for otter bottom trawlers on the French border and for bottom pair trawlers on the North Galician coast and French border. This project was also doing various mitigation trials which would be reported on under agenda item 5.2. On strandings, around half of the stranded animals showed evidence of fishery interactions.

- The Transfer of Anthropogenic and Natural Stressors involving Trophic Interactions of Ocean Nekton (TRANSITION) project on pollutants and parasites involving collection of data on PCB concentrations in common dolphin and some other cetaceans from Galicia, a review of threats, some modelling work relating concentrations in individuals to population effects and inclusion of polychlorinated biphenyls (PCB) effects in a small ecosystem model, and some work on parasite transfer. Initial results indicated that pollutant concentrations were lower in common dolphins than in some of the other species. They were also looking into the effects of nematode parasites in the digestive tract on individuals and the population.

- A survey of strandings networks (via ICES WGMME) where recent updates pointed to increased strandings in Galicia (common dolphins being around 50% of strandings) and in some other places (common dolphins being a lower proportion of strandings). He hoped for a final version of the report in early 2023.

- The *Using fishers' knowledge to understand the use of alternative gears to static gillnets in the ASCOBANS Region* project led by Fiona Read (Whale and Dolphin Conservation) (see agenda item 5.3) which had included 60 interviews in Rias Bajas where two common dolphins had been noted as caught by trawlers and fishers had reported that pingers led to a substantial decrease of interactions. The suggestion was that there were not many common dolphins bycaught but strandings findings told a different story.

He concluded by referencing ongoing PhD research by Marie Petitguyot (threats, health, abundance), Andrea Fariñas (threats), Alberto Hernandez (diet, microplastics) and Paula Gutierrez (sightings, habitat use) (see agenda item 6).

Under agenda item 11 (any other business), Mr Pierce presented further information provided by Camilo Saavedra (IEO) on pilot trials under CetAMBICion Work Package Four (WP4) in relation to mitigation, in particular the use of cetacean excluder devices (CEDs) and pingers and shared a table of hauls with and without CEDs. He also highlighted data on cetacean interactions, noting there were no bycaught dolphins in hauls with or without CEDs, although there were several around the boats, the target species were blue whiting and mackerel and there were sightings of pilot whales, bottlenose, minke whale. The preliminary results were promising, and more evidence was needed to get more robust results and evidence-based information.

2.2. Population dynamics of the common dolphin in the NE Atlantic

Etienne Rouby (Observatoire PELAGIS, France) presented his PhD research *Insights of Common Dolphin Demography: Vital rates temporal variation evidenced for a data-poor species (Etienne Rouby, Vincent Ridoux, Matthieu Authie*r).

Pressure from strandings and bycatch had brought into question the viability of the common dolphin population in the NE Atlantic. Monitoring was challenging as it was not easy to recognise individuals with capture/mark/recapture protocols and so it was necessary to rely on cross-sectional population monitoring which allowed estimation of the population vital rates by monitoring all dead individuals at a given time (Caughley 1966). In the work done by Monnocci et al in 2021, the sampling was associated with a time period with the least pressure on the population and there was no sampling

control which meant it was not possible to estimate the temporal variation in the vital rates. The aim of his research was therefore to rethink the approach to estimating population growth and consider how to obtain up-to-date demographic information on the common dolphin population and estimate temporal variations.

He outlined the methodology used to define the sampling plan and address the issue of bias in the selection process through a stratified method. For teeth samples they drew from methodology in Perrin and Myrick (1980) and Murphy et al (2009) to obtain the age-of-death dataset and for the gonads they carried out histological analysis to obtain the reproductive status of the individuals. To estimate the vital rates with the year effect, they had developed a joint modelling approach using both the survival rate and reproduction component. Finally, they had projected the future population state using a population matrix model (Leslie matrix). Findings included:

- Stratified random sampling and modelling allowed highlighting of temporal variations in vital rates;
- Stratified random sampling allowed the addressing of sampling bias in the sample obtained from strandings;
- The common dolphin may respond demographically to bycatch pressure; and
- The state of the population seemed to have worsened over the time period under consideration.

On seasonal effects, there had been many stranded individuals from the winter period due to bycatch pressure, with cause of death being 50% bycatch and 50% natural death in all datasets. Initially, Mr Rouby had been most concerned about the size of the individuals within the dataset, as it was linked to the age for youths which were under-represented in the stranding population. If there was a decline in the average age of sexual maturity which would suggest a density dependent mechanism, an increase in the pregnancy rate should be seen. Ms Murphy wondered whether there was any indication of varying population numbers in French waters. Mr Rouby said this was a problem of interpretation as the French data and overall SCANS data indicated there were changes in abundance and recently individuals seemed to be smaller in size than before, notably if the two time periods were compared, so the density dependent effect was difficult to assess but they were in contact with some demographers about this. Ms Murphy suggested he look at the Eastern Tropical Pacific study where they had seen some differences in the age of sexual maturity in tuna fisheries. She recommended to look at mature animals to see if the average age had declined.

Mr Evans asked whether the common dolphins were reaching sexual maturity at a smaller size or growing faster but reaching a smaller adult size and Mr Rouby said the latter. Ms Murphy noted there was potential for a further genetic study in France using more discriminatory markers (other than mtDNA and microsatellites) in collaboration with Ms Caurant.

2.3. Updates on strandings on common dolphins

The UK

Mr Deaville presented on work in the UK on common dolphin strandings (1990-2019). In the UK there had been circa 17,000 strandings between 1990-2019, mostly animals found dead on the shore, a small number of live strandings and some animals found floating dead at sea or entangled in fishing gear. The common dolphin was the second most numerate species found stranded historically. He highlighted peaks in mortality in 1992 and 2002-2004 in SW England, largely driven by bycatch mortality. In recent years, numbers had started to climb again in SW England, Scotland and Wales, with more strandings further north. He referenced a paper[5] looking at shifts in distribution response to climate change driven effects of warm water species, which reported more strandings of common and striped dolphins further North and a reduction of strandings of cold-water species like white-beaked dolphins and white-sided dolphins.

[5] Williams M. W, ten Doeschate, M. T. I., Deaville, R., Brownlow, A. C. and Taylor N. L. (2021) Cetaceans as sentinels for informing climate change policy in UK waters. Marine Policy 131 https://doi.org/10.1016/j.marpol.2021.104634.

Strandings data had been analysed in three broad decadal series to show distribution of stranding seasonally. Typically, the winter period indicated more bycatch mortality but in the past decade there was a bi-modal distribution of strandings with a peak over the summer months too – and more sightings of dolphins in the summer months than seen historically. Causes of death over the 30-year period included bycatch mortality, ship strike, live stranding, parasites, a few cases of gas embolism, and interspecies aggression, with a decrease in bycatch and increase in cases of infectious disease in the latter period (see below).

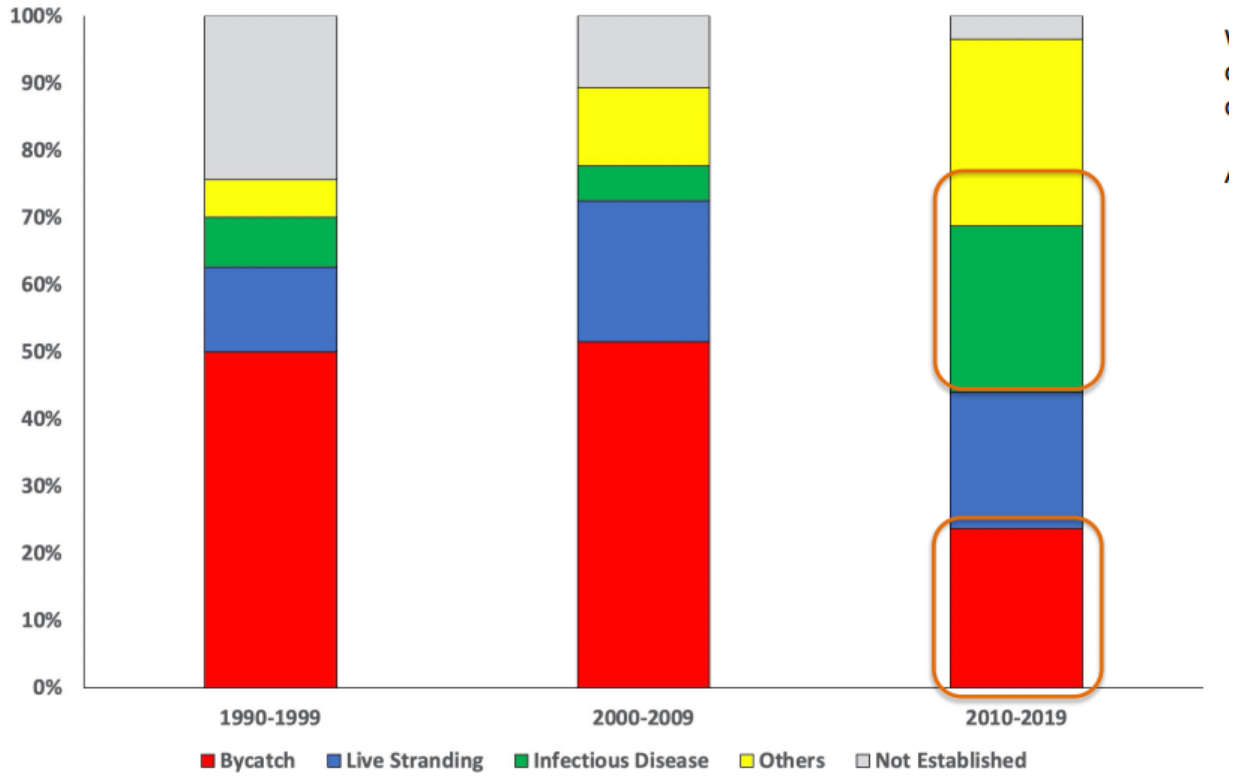

Figure 1: A slide from presentation 'UK Common Dolphin Strandings (1990-2019)' by Rob Deaville.

The Institute of Zoology was involved in a Natural Environmental Research Council (NERC) consortium now looking at contaminant exposure on an ecosystem basis[6]: assessing whether common dolphins were exposed to increasing levels of PCBs and whether increasing exposure to contaminants might play some role in this apparent shift in causes of death in the UK.

France had seen an increase of strandings for 2016 but not a decrease of bycatch as observed in the UK. Ireland had seen a peak in 2021. Ms Caurant (Co-chair) wondered whether he had noticed a change in fishing gears or practices and Mr Deaville explained that historically injuries were more consistent with trawl gear, but current injuries were more consistent with set gear. There were also more sightings closer to shore and perhaps this had led to more interaction with fisheries. There was a ban in UK territorial waters in 2006 on a particular form of pair trawling in bass fisheries and this might have pushed some of those fishing fleets further offshore meaning bycaught animals might not wash up. The increase in disease mortality was the most striking thing and they were seeing several animals in poorer condition.

Several members emphasised the value of collaborating and sharing information as they were seeing similar pictures in different regions.

[6] https://www.ceh.ac.uk/ourpscience/projects/chempop-does-discharge-chemicals-environment-harm-wildlife-populations

Mr Simmonds asked whether there had been a change in infectious diseases being seen. Mr Deaville explained the broad conclusion was that there appeared to an overall increase in disease mortality related issues and as POPs can have an immunosuppressive effect, they had decided to investigate contaminant exposure. Common dolphins were prone to gastric parasites and other diseases, and it was the relative proportion of diagnoses that had changed. The question was whether this was due to change in practices or other factors such as the fact that dolphins are closer to shore and exposed to land runoff. Ms Murphy (Co-chair) reported a similar overall worsening in health and nutritional status of common dolphin stranded in Ireland, which led on to Sofia Albrecht's PhD study at ATU looking at nutritional stress (which would be discussed under agenda item 6).

France

Ms Caurant then reported on work relating to common dolphin strandings in France. There had been a clear increase in strandings from 2016. Data since 2021 indicated 895 common dolphins stranded along the Atlantic coast, with not much change along the North Sea and Channel coasts and no stranding reports for the Mediterranean coast. Most common cause of death was bycatch. She emphasised that volunteers in the national stranding network underwent training – and were provided a clear protocol on the external examination of carcasses, to ensure accurate diagnosis of bycatch.

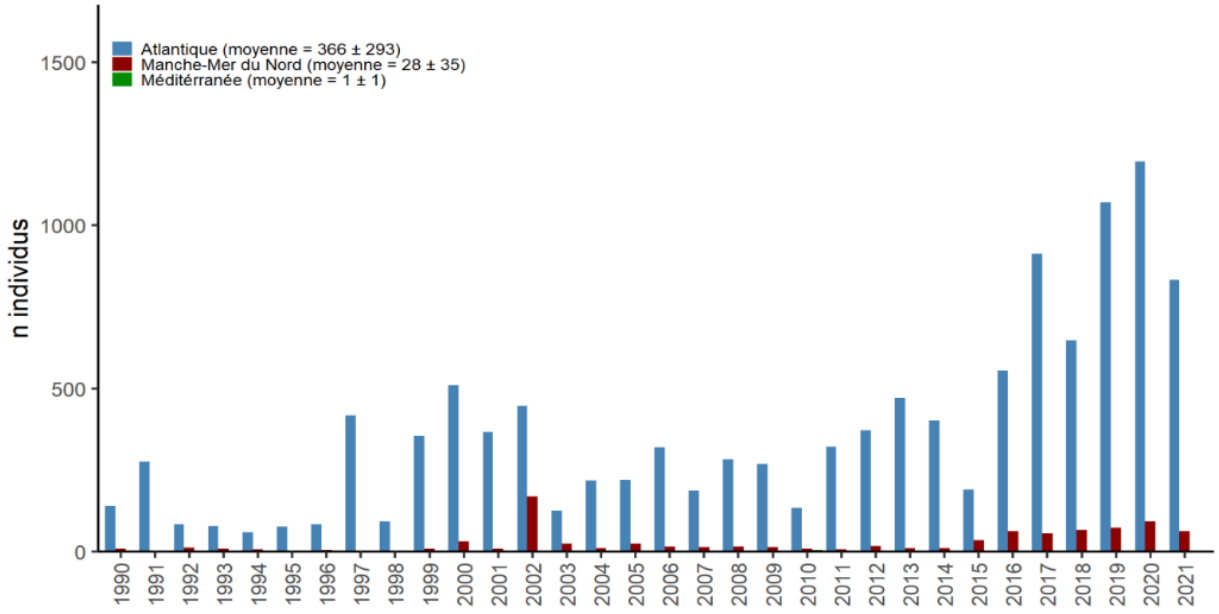

Figure 2: A slide from presentation 'Updates on Strandings on Common Dolphins: 2021 and Winter 2022' by Florence Caurant.

In 2021, there were slightly fewer individuals stranded on the Atlantic coast. In 2020 there were strandings in winter with several unusual mortality events whereas in 2021 and 2022 there was a very short period of stranding due to bad weather conditions. In winter 2021, weather conditions changed only in late February and early March, so they only received very decomposed carcases and it was hard to make a diagnosis. In winter 2021/2022, 20% of the cetaceans stranded were fresh and 27% decomposed.

Ireland

Stephanie Levesque (Irish Whale and Dolphin Group) provided an update on common dolphin strandings in Ireland.

An increase in common dolphin strandings was first noticed in 2011 (> 50 animals), with a peak in 2021 and lower numbers reported in 2022 comparatively (see below).

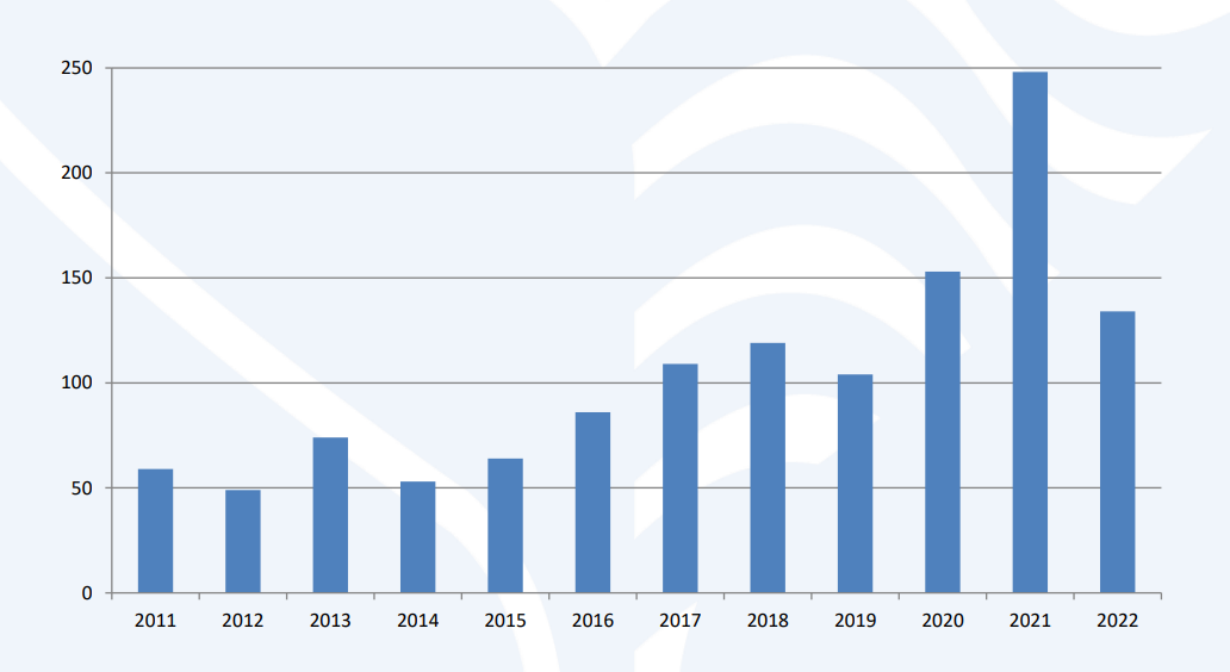

Figure 3: A slide from presentation 'Irish Whale and Dolphin Group Common Dolphin Stranding Records' by Stephanie Levesque.

Since 2017, there tended to be more males than females stranded. The regions with most reported common dolphins (and all strandings) was County Kerry, with County Cork also having high levels due to the predominant westerly winds and accessible coastlines. Counties Kerry and Mayo were hotspots for live strandings for the species. For the period 2017-2022, the peak stranding period was January to March and May also had high levels of strandings, indicating the summer months tended to be increasing.

A necropsy scheme (2017-19) had examined 53 common dolphins with the most common cause of death being infectious disease. In 2019, 30 common dolphin carcasses were necropsied, and the leading causes of death were infectious disease (23%) and bycatch (23%). The overall condition of the necropsied carcasses was better in 2019.

Strandings records were currently mainly based on high-quality photographs collected through a volunteer network with circa half of the animals being visited. Ms Levesque had developed a guidance booklet (based on the BEEP protocol) which was given to volunteers. Confirmed/suspected bycatch indicated very low numbers compared to the UK and France.

Ms Murphy commented that there might have been more evidence of bycatch in 2019 because the condition of the carcasses was better. Ms Caurant commented on the high level of live strandings, and Ms Levesque noted it was a popular feeding area and many seemed in poor nutritional condition.

Portugal

Ms Eira reported on strandings in Portugal in 2021-2022. There was now a dedicated strandings network team in Portugal. There had been 389 common dolphins stranded and of those whose were examined to assess cause of death (decomposition state 2/3), 69 % were deemed bycaught. The largest amount of stranded common dolphins was in Northern Portugal. In northern Portugal, bycatch was identified as cause of death in 102 individuals (considering individuals in decomposition stage ≤3 only) corresponding to 80% of all analysed individuals in the area (71% in 2021; 88% between January and October 2022). . In the northern region there was seasonality with peaks in winter and summer; similar to the Atlantic French coast. . In the summer the number of stranded common

dolphins in the northern coast was spread out through the three months of the season (July, August, September).

The most concerning fishing gears for bycatch were gill and trammel nets, with many fishing licenses. Ms Eira also showed a video of beach fishing, a traditional small fishery practice, as an example of a large bycatch event of common dolphins.

Ms Murphy asked if there was any funding in the pipeline from the government to increase bycatch observer coverage in fisheries, to improve bycatch estimates but Ms Eira and Ms Sequeira were not aware of any. Ms Murphy also asked how many animals were necropsied per year within the programme and Ms Eira responded that in 2021, 95 animals were necropsied and in 2022, 99 common dolphins were necropsied. She also flagged that the blubber layer appeared to be thinner and that internal organ issues were identified although those data had not been properly analysed yet .

Initiated by Mr Simmonds, discussion then focused on how the CDG could address the deployment of the beach seine fishery. Ms Eira stressed the difficulties in identifying when dolphins were in the vicinity once the fishing operation was in process, and that these were traditional fisheries with a low income. They had wanted to initiate a project involving a protocol with observers, but it was complicated so there had not been very much progress. The fishers tried to release the dolphins but, given that the animals are dragged through the beach during the hauling of the net and the large number of dolphins caught, it was almost impossible to get all the animals free in time. Also, the released animals suffer injuries which lead to a low survival probability It was agreed a recommendation should be made to improve bycatch monitoring and mitigation in Portugal.

2.4. Updates on UK environmental legislation

Eunice Pinn (UK) presented on UK environmental legislation, opening with the reminder that on 1 January 2021, the UK ceased to be a member of the European Union (EU) and that whilst much of the EU legislation already in place through the national legal system was rolled over, several new key pieces of national legislation and policy had been introduced:

- The Fisheries Act 2020 established the legal commitment to fish sustainably, to achieve maximum sustainable yield for each stock and to regulate fishing to protect the marine environment. There are eight key objectives relating to: fishery sustainability; adopting a precautionary approach; adopting an ecosystem approach; using scientific evidence; bycatch of commercial species and non-targeted fish; and climate change. Under the Act, the UK will take an ecosystem-based approach to ensure that any negative impacts on marine ecosystems are minimised and, where possible, reversed, and ensure that incidental catches of sensitive species are minimised and, where possible, eliminated. Fisheries management in the UK is largely devolved, and the draft Joint Fisheries Statement (JFS) sets out the agreed policies for achieving or contributing to the achievement of fisheries objectives. There was a public consultation held between January to March 2022 and the finalisation of the JFS was expected soon.

- The Marine Wildlife Bycatch Mitigation Initiative (August 2022) outlines how the UK will achieve its ambitions to minimise and, where possible, eliminate the bycatch of sensitive marine species. It brings together the UK Bycatch Monitoring Programme and Clean Catch UK.

- The Environment Act 2021 establishes the legal commitment for targets, plans and policies to improve the natural environment. The UK Government have indicated that these targets will include marine biodiversity through a focus on protected areas, resource productivity and plastic pollution. Key indicators for the marine environment, however, will be those developed under the UK Marine Strategy and implemented through OSPAR at the regional scale.

- By the end of 2023, all EU legislation that was either written over or retained in UK law must either be converted to UK law or lost, repealed or replaced.

Ms Caurant (Co-chair) mentioned that mandatory requirements to declare bycatch were in place in France, but it was difficult to monitor this. Ms Pinn noted that the fishing licence process in the UK was currently difficult for the fishers to use, and it was thought that it would take a year or two to bed in.

The JFS was made by the four nations: the Marine management organisation (MMO) for England, Welsh and Scottish governments and DEFRA for Northern Ireland until they had a parliament in place. Mr Evans asked whether individual VMS on small vessels were going to be implemented throughout the UK and Ms Pinn said the intention was there, but the deadlines had been pushed back. Gaining the buy-in of industry was key, in particular relating it to the sustainability aspect. Mr Evans asked whether there were joined-up actions planned between the devolved nations in relation to the Environment Act and Ms Pinn explained they were acting independently but consulting each other and there was an agreement in place between the organisations taking action to act in tandem. There would be a consultation on indicators next year.

The MFSD would become the UK Marine Strategy which would be updated, and UK-specific indicators were being developed, such as indicators related to the sustainability of fisheries, and noise in relation to marine mammals. Ms Taylor noted that for indicators being developed through OSPAR, there is the intention that those indicators would be taken up by the UK through the Marine Strategy – and linked with the EU MFSD. There was a possibility that things might diverge but the UK was trying to keep a consistent picture across the North-east Atlantic.

3. Large area surveys

3.1. Update on SCANS-IV

Anita Gilles (Invited Expert) presented an update on SCANS-IV, an international survey covering shelf and offshore waters of the European Atlantic. The main objectives were to: obtain abundance estimates and trend assessment of the regularly occurring cetacean species through population-wide surveys; provide outputs for Member State reporting under the MFSD and Habitats Directive for example, and indicator applications; provide outputs for impact assessments; and develop a governance framework for future SCANS surveys conducted in six-yearly cycles to ensure long-term sustainable implementation.

The survey area (1.75M km^3) covered shelf and offshore waters of the European Atlantic. Most teams had undertaken surveys between 28 June to 15 August 2022, there had been a second attempt (due to bad weather and high military activity) by the NW Scotland team between 7 – 12 September 2022. Due to logistical reason, the aerial surveys in the coastal waters of Spain were delayed and took place between 7 September and 22 October 2022.

Ms Gilles shared a draft map of sightings for the common dolphin which showed sightings mainly in the southern parts of the study area. The map also showed the unidentified common or striped dolphin sightings. She concluded by outlining next steps, saying that they were still in the data validation stage and would produce a draft of the first abundance estimates in January 2023 for use in the MFSD cycle. This would be followed by trend analyses and model-based estimates of abundance and drivers of distribution, development of the governance framework, the final report and dissemination of results.

Ms Murphy (Co-chair) asked about the unidentified group and whether the issue of species identification in aerial surveys for the Bay of Biscay, as reported by previous work, was an issue further south as well. Ms Gilles said it occurred also nearer the Spanish strata, and results from Ms Laran's research (item 3.4) would be used to try and address this.

On this topic, Philip Hammond (University of St Andrews, UK) referred to his presentation under agenda item 3.3 which would include a map of common, striped and unidentified common/striped dolphins from SCANS-III to compare with the SCANS-IV findings. There were quite a lot of unidentified dolphins in SCANS-III. Emer Rogan (Ireland) commented it was a ubiquitous problem. In the ICES WKEMBYC report which estimated common dolphin abundance using SCANS-III and ObSERVE data, they had added on to common dolphin sightings data, a proportion of animals that were unidentified common or striped.

Mr Simmonds asked about the area to the west of the Hebrides and whether the military had asked them to stop the survey and if this affected the recorded distribution. Ms Gilles explained that for SCANS-III, the block in question could not be covered due to heavy military activity as there was a requirement to get permission which was challenging and often last minute. This time (SCANS-IV), the military had been cooperative, but was nevertheless very active in that area and the survey team had then been hindered by bad weather.

3.2. Update on the ObSERVE project

Ms Rogan provided an update on the ObSERVE II survey of marine megafauna in Irish offshore waters for 2021 and 2022. In summer 2021, there were many sightings of common dolphins and a smaller number of sightings of unidentified common/striped dolphins. She shared distribution plots indicating quite wide distributions, with only one sighting in the Irish Sea, the rest being mostly on the continental shelf. There were more frequent sightings than in ObSERVE I. She did wonder about this as the summer survey took place from July to September and commented they were reasonably well-distributed in contrast to previous years. Ms Rogan noted, it had not been possible to do a winter survey because of a plane crash in 2021 and it was not yet clear about whether there would be a future winter survey.

Ms Murphy (Co-chair) noted that ObSERVE involved similar training to SCANS and had similar transects, and Ms Rogan added they also used the same software to do recordings so the data should over time be compatible. Ms Murphy asked what the plan was to collate this information and Ms Rogan thought that once the report was published these data would be available so it would be reasonably straightforward to do the combined estimate.

3.3. Updated (SCANS-II and CODA) abundance estimate from Hammond et al. 2021

Mr Hammond presented on the paper *Distribution and abundance of cetaceans in the European Atlantic: results from SCANS-III aerial and ship surveys in 2016* which concerned the revised common dolphin abundance estimate for SCANS-II (2005) & CODA (2007).[7]

A series of large-scale surveys for cetaceans in European Atlantic waters was initiated in 1994[8] and continued in 2005[9] and 2007 (CODA 2009). SCANS-III took place in 2016. To enable proper historic comparison, SCANS-III re-analysed the abundance estimates from SCANS-II and CODA.

In SCANS-III, a two-team analysis had been used for the ship surveys, with primary observers on the main bridge who searched relatively close in front of the boat (500m) and another team higher on the mast (tracker team) searching further ahead with bigger binoculars. The tracker would sight animals far ahead of the vessel, track them as the vessel approached and record whether the same group was seen by the primary. This would form the basis of a mark recapture estimate. The data collected by the primary team were used in a conventional detection function analysis within distance to estimate the average probability of detection. The tracker and primary data together go into the mark-recapture analysis to estimate g(0). While for the aerial surveys, a circle-back method was

[7] https://scans3.wp.st-andrews.ac.uk/resources/
[8] SCANS; Hammond et al. 2002
[9] SCANS-II; Hammond et al. 2013

used. These data were used in a programme called Racetrack to come up with a probabilistic estimate of g(0).

When the shipboard data were analysed for SCANS-II, there were two different models available for analysis of track-configuration from two-team data, the: "point (trackline) independence" model which is the most robust model to be used as a default, and the "full independence" model which is much less robust and only to be used if there is evidence of responsive movement. This assumes that the primary and tracker sightings data are completely independent of all perpendicular distances.

In the original SCANS-II analysis, there was thought to be evidence of responsive movement to boats (i.e. attraction) for common dolphins, so they had used the full independence model – responsive movement assessed.[10] However, evidence of responsive movement was later found to be the result of an error in the analysis. This caused a potential problem for comparison with later abundance estimates and so the SCANS-II data had been re-analysed using the point independence model. For the aerial surveys, they were able to revise the SCANS-II estimates using SCANS-III circle-back estimates of g(0), instead of dive data from elsewhere as undertaken previously. This however, only led to a minimal difference in estimated abundance using the aerial survey data.

Based on the new analysis, the revised estimates of abundance for common dolphins are well over two times the original estimates for 2005/2007.

In 2016, ICES WGMME summed old estimates using full independence models to inform the OSPAR M4 Intermediate Assessment – though the estimate has since been updated[11]. And in 2021, WGMME combined SCANS-II and CODA datasets analysed using point independence models to inform the OSPAR M4 Assessment for the 2023 Quality Status Report. Doing that provided (a table of) much higher estimates (see below).

Survey	Platform	N	CV	95% CI
CODA	Ship	345,694	0.43	154,962 - 771,186
SCANS-II	Ship	103,932	0.27	61,809 - 174,762
CODA + SCANS-II	***ShipTotal***	***449,626***	***0.5***	***223,684 - 903,792***
SCANS-II	Aerial	18,730	0.47	10,818 - 28,347
CODA + SCANS-II	**Total**	**468,356**	**0.33**	**247,921 - 884,789**

Figure 3: A slide from presentation 'Distribution and Abundance of Cetaceans in the European Atlantic: Results from SCANS-III Aerial and Ship Surveys in 2016' by Philip Hammond.

Mr Hammond concluded by sharing a map showing density surface modelling in the SCANS-II/CODA and SCANS-III (2016) as well as ObSERVE data and the NASS ship survey. The plan was to combine the ObSERVE I and SCANS-III data. SCANS-III indicated a high density on the shelf and around the Iberian coast. In SCANS-II and CODA, the predicted density was more spread out but there is still higher density off the Iberian coast. It indicated more density also on the shelf edge than on the shelf itself.

[10] Using Palka and Hammond (2001). Can. J. Fish. Aquat. Sci. 58: 777-787

[11] https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/biodiversity-status/marine-mammals/abundance-distribution-cetaceans/abundance-and-distribution-cetaceans/

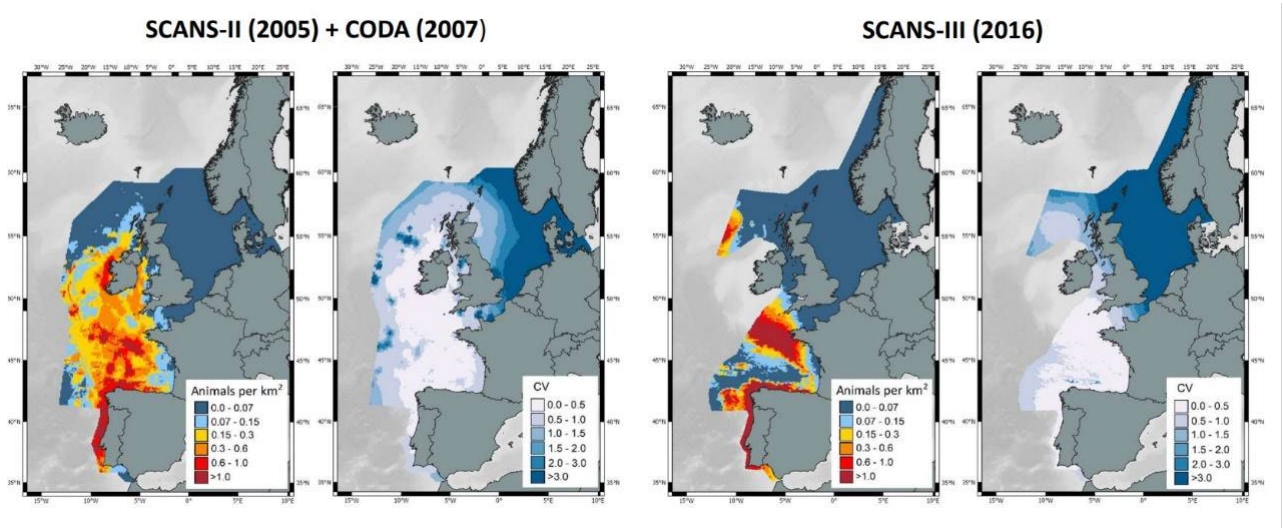

Figure 4: A slide from presentation 'Distribution and Abundance of Cetaceans in the European Atlantic: Results from SCANS-III Aerial and Ship Surveys in 2016' by Philip Hammond.

Ms Krampe commented on the higher density shown along the Iberian coast and Galicia which contradicted what was currently being said about there being little bycatch in Galicia. Mr Evans clarified that it was not a case of there being little bycatch in Galicia, but rather that there was not much bycatch reporting as monitoring was deficient. Ms Krampe was surprised to see low density in the Bay of Biscay. Mr Hammond explained SCANS-IV data which would show current densities would not be available until later in 2023. He emphasised that the SCANS surveys presented the big picture rather than "drilling down" to the specific. The sightings for SCANS-IV showed a lot of sightings on the shelf. Ms Caurant (Co-chair) explained the surveys were not carried out at the same time of year; in the Bay of Biscay there was a lot of bycatch in the winter, whereas SCANS surveys took place in summer.

Mr Evans asked if a comparison had been made with the ObSERVE surveys and Mr Hammond explained they did not have a design estimate in a block equivalent to the ObSERVE one but could derive abundance estimate from the model-based estimates.

Ms Murphy (Co-chair) confirmed it was the revised estimate for SCANS-II/CODA that was being used for the OSPAR M4 indicator for the trend assessment[12], but that for the M6 marine mammal bycatch indicator a slightly different estimate was being used for common dolphins, which included sightings data of both common dolphins and unidentified dolphins (common/striped) from SCANS-III (634,286 dolphins, CV = 0.31). SCANS-II/CODA were largely ship-based where there would not be the same issue with unidentified dolphins and she wondered if this would increase the estimate, and would it be comparable to the abundance estimate employed by the M6 indicator, and ICES advice (2020;2023). Mr Hammond said the challenge of identifying dolphins was still an issue for shipboard surveys.

3.4. Update from France on current work regarding aerial survey monitoring

Sophie Laran presented the results for common dolphin aerial surveys 2021-2022.

Common dolphins in the Bay of Biscay were at high risk of by-catch. Results from aerial surveys conducted by Pelagis in winter 2011-2012 and in winter 2021-2022 suggested a change in distribution, with common dolphins becoming more abundant over both offshore and shelf areas in winter 2021-2022 compared to 2011-2012. Abundance was estimated by conventional distance sampling (CDS) to be 164,100 common/striped dolphins in 2011-2012 and 195,600 individuals in 2021-2022 for the Bay of Biscay and Channel blocks (area: 308,390 km²).

[12] Abundance and Distribution of Cetaceans (ospar.org)

An uncertainty, however, lay in distinguishing common from striped dolphins from a plane. STORMM[13] was therefore used to supplement visual data acquisition on 32% of the effort conducted in the Bay of Biscay in the winter 2021-2022 (SAMM II). The proportion of common dolphins was estimated as 96% of the individuals on the neritic strata of the Bay of Biscay, and 85% of the individuals for the oceanic one. These results allowed estimation of a relative abundance of 181,000 common dolphins in winter 2021-2022. Density surface modelling obtained from analysis of pooled data from winters and summers SAMM I (2011-2012) and II (2021-2022) surveys and SCANS III (summer 2016), revealed a higher density in the south of the Bay of Biscay during winter 2021-2022.

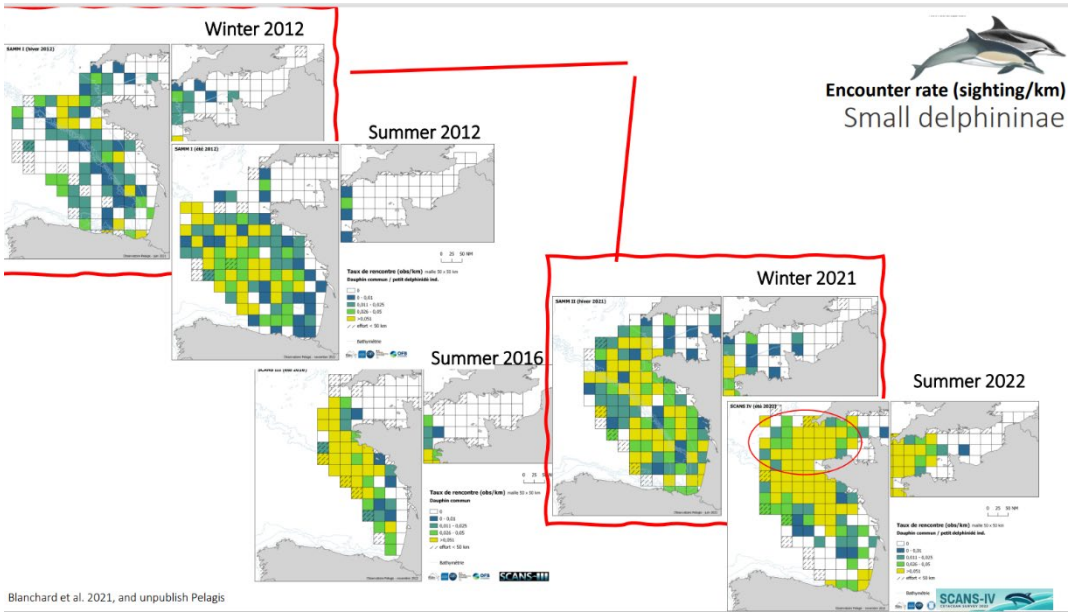

Figure 5: A slide from presentation 'Aerial Survey for Megafauna (2023-2022): Results for Common Dolphins' by Sophie Laran.

At a smaller scale, SPEE (Suivi de la mégafaune marine au large des PErtuis charentais, de l'Estuaire de la Gironde et de Rochebonne par observation aérienne) seasonal surveys, focusing on the central neritic part of the Bay of Biscay around the Marine Park *Estuaire de la Gironde et mer des Pertuis (an MPA)* revealed a two-fold increase in density between the winters 2021 and 2022, compared to winters 2019 and 2020. Nevertheless, within the winter of 2020, to better understand the rapid shift of dolphin distribution during winter in the area, the CAPECET surveys were repeated four times, an approach that would be undertaken again in winter 2023. These results showed a rapid increase in common dolphin density between the end of February and the beginning of March 2020. This high within-season variation could explain the differences observed between SPEE surveys in winters 2020 and 2021.

In all recent surveys, a strong increase in sightings of floating carcasses of small dolphins was registered. The number of sightings was sufficient to perform CDS and estimate an overall abundance of floating carcasses in the SPEE surveyed area (15 000km², including the MPA) which peaked at about 100 individuals both in February 2019 and February 2022. These data (effort and sightings) are available at https://pelabox.univ-lr.fr/pelagis/PelaObs/.

Discussion focused on how the fisheries move-on rule could potentially be implemented, assisted by real-time aerial survey monitoring. However, given the poor weather conditions during the wintertime, when most bycatches occur, it was not deemed feasible.

[13] airborne optical remote sensing system to assist the detection and mapping of marine megafauna (https://vitrine-innovation.campusinnov.fr/innovation/22)

3.5. Other surveys of interest

No additional surveys were reported on.

4. Reports from relevant meetings

4.1. Update from ICES WGMME

Mr Evans provided an update on the latest ICES WGMME meeting, held online in February 2022. Five terms of reference (TORs) had been addressed, covering the following topics:

- Review and report on any new information on cetacean and seal population abundance, distribution, population/stock structure, including information on vagrant marine mammals. WGMME had tried to include information from North America and had quite a lot of information from the US and Canada, as well as information on vagrant species of marine mammals;
- Review and report on any new information on seal and cetacean management frameworks in the North Atlantic;
- Review and report on any new information on seal and cetacean anthropogenic threats to individual health and population status in the North Atlantic;
- In collaboration with the WG on Biodiversity Science (WGBIODIV), identify foraging areas and estimate prey consumption by harbour seal, grey seal and harbour porpoise in the North Sea. This approach could be applicable to common dolphins; and
- In collaboration with WGBYC, contribute to the Roadmap for ICES protected, endangered and threatened species (PETS) bycatch advice by reviewing selected aspects of marine mammal-fishery interactions and assembling data and qualitative information available from other sources, not fully covered by WGBYC on marine mammals.

The focus of the 2022 meeting was not particularly on the common dolphin. Some information that was presented included: data from SAMM-II French surveys 2021; density estimates of common and/or striped dolphins; and data from surveys undertaken by IEO and AZTI in the Bay of Biscay and Iberian coast ecoregion. Although the spatial coverage between surveys was unequal, evidence indicated distribution along the continental shelf of the Spanish Iberian coast in early Spring with some aggregations in Galicia and in the central part of the Cantabrian coast. In May, they appeared to move towards the slope area, and in September they covered both the continental shelf and the slope. A recent paper looking at the spatial distribution of common and bottlenose dolphin in the Ria de Arousa, NW Spain (2014-2019), showed common dolphins mainly offshore and bottlenose dolphin mainly inshore. There was also evidence that the two species were interacting.

A recent model of density distributions of cetaceans and sea birds in the Irish Sea looking at the changes that had taken place by decade, funded by Natural Resources Wales[14] included a model of density distributions of common dolphins by season showing that the period between July to September had the highest densities and animals were concentrated in the deeper waters at the Southern end of the Irish Sea. The decadal distributions indicated an apparent increase with the concentrations in the Southern part of the region. These corroborated other analyses of common dolphin trends in the NE Atlantic in terms of increasing numbers by year and by temperature.[15]

They had undertaken a gap analysis and digital aerial surveys under the Poseidon Project were going to be undertaken trying to cover the winter season offshore in the Celtic Seas and in the central part of the North Sea and maybe Scotland.

[14] Evans and Waggitt (2022). Modelled Distributions and Abundance of Cetaceans and Seabirds of Wales and Surrounding Waters.
[15] Evans and Waggitt (2020). MCCIP Science Review

4.2. Update from ICES WGBYC

Mr Evans provided an update from the latest ICES WGBYC meeting that was held online on 28 September - 1 October 2021. There had been eight TORs:

a) Review and summarise data on bycatch rates and mortality estimates through the annual data call and other sources;
b) Collate and review recent published information on protected species bycatch mitigation methods and trials;
c) Evaluate the range of impacts of bycatch on protected species population to assess likely conservation threats, including feedback on the results from WKMOMA (see 4.4 below);
d) Review ongoing monitoring of different taxonomic groups in relation to spatial bycatch risk and fishing effort to inform coordinated sampling plans;
e) Coordinate with other ICES WGs to ensure complete compilation of data on protected species bycatch and develop and improve on bycatch monitoring methods (using strandings information and drift modelling);
f) Identify data requirements on fishing effort, monitoring effort and bycatch incidents by considering spatial, temporal and gear type aspects on bird bycatch;
g) Identify potential research projects and funding opportunities (not much had been done on this); and
h) Continue developing, improving, populating and maintaining the database on bycatch monitoring and relevant fishing effort through data calls.

A table of reported fishing and monitoring days and number of specimens and incidents in 2019 provided by the ICES 2021 data call by ecoregion indicated that the number of reported common dolphin bycatch was quite low but this might have been affected by COVID restrictions being in place.

Mr Evans focused on TOR d), noting that the work had concentrated on identifying where there was a lot of fishing effort and high risk but low monitoring effort to ascertain which métiers need to be targeted for monitoring. This was done by comparing fishing effort (days at sea) and observer effort. They had taken the different parameters, e.g. fishing effort by métier, observer effort and bycatch rate, and used “Fishpi” to calculate the risk of bycatch.

The results indicated high fishing effort in the Western Channel, French Biscay Shelf and Portuguese west coast. Monitoring was low in western Scotland, the Celtic Seas, and Portuguese west coast. Annual variation in fishing effort was also analysed, finding little variation, and by country (2015-2018), taking seasonal variation in common dolphin densities into account and incorporating these into common dolphin bycatch risk maps by gear types. The greatest overlap between high common dolphin densities and fishing effort occurred in the eastern Bay of Biscay but also along the West Iberian coast, particularly regions such as Galicia and part of Portugal.

The fishing effort results determined by AIS v VMS[16] were then compared and indicated reasonably good concordance. The conclusion was that the areas with high fishing effort using VMS days at sea were the Western Channel, French Bay of Biscay and Portuguese west coast, whereas the areas with high fishing effort using AIS hours/km^2 were often the same ones, except also included the Celtic Sea and northern Spain.

Ms Murphy (Co-chair) proposed a CDG3 recommendation to continue to encourage Member States to improve monitoring and Mr Evans agreed, in particular relating to around the Iberian Peninsula. Mr Simmonds supported this recommendation. Ms Eira emphasised that in Portuguese waters, the main problem was gillnets and trammel nets with large fleets composed of very small boats where it was not possible to put observers on board making it very difficult to monitor the fleet. Ms Murphy pointed out this was an issue for many countries, and discussions focused on how best to make recommendations – focusing on monitoring and mitigation in the Iberian Peninsula. Mr Evans

[16] Evans et al 2021

referenced the Norwegian work on small vessel monitoring and using REM, compulsory VMS and small units which had become less expensive such as those trialled in the UK for monitoring effort. Mr Simmonds also suggested establishing an intersessional Working Group to discuss this further.

4.3. Update on any outputs from the ICES 2022 Workshop WGEMBYC2

Ms Murphy (Co-chair) provided an update from the recent ICES 2022 Workshop on mitigation measures to reduce bycatch of short-beaked common dolphins in the Bay of Biscay (WGEMBYC2) which had taken place from 24 to 28 October 2022 in ICES HQ Copenhagen. It was a follow-up to the work undertaken by ICES in 2020 on Emergency Measures. There were three TOR:

a) Consider recent data (2019-2021) on bycatch of short-beaked common dolphins in commercial fisheries and total fishing effort in the Bay of Biscay and off the Iberian coast to estimate bycatch mortality. Estimates will be based on at-sea observer schemes as well as reverse drift modelling of strandings;
b) Evaluate the scenarios that consider the application of specific bycatch mitigation measures and the proposed management objectives as previously recommended in the ICES Special Request Advice *eu.2020.04*. Results from the mitigation trials should be taken into account in scenarios development and recommendations as appropriate; and
c) For each scenario tested in the ICES Special Request Advice *eu.2020.04*, revisit and, if necessary update i) relative risk of not achieving the specific management objective and ii) comment on the scenario risk, as previously documented in the ICES Special Request Advice *eu.2020.04*.

The outputs were not yet available and needed to go through the ICES review and advisory process, with advice released in early 2023.

4.4. Update from ICES WKMOMA

Allen Kingston (University of St Andrews, Scotland) presented on the ICES Workshop on Estimation of Mortality of Marine Mammals due to bycatch (WKMOMA) which had taken place in September 2021 and addressed a special request from OSPAR regarding bycatch mortality of three marine mammal species: harbour porpoise, common dolphin and grey seal within parts of the OSPAR maritime area. His presentation focused on the common dolphin. The workshop had the following TORs related to common dolphins:

a) Generate bycatch rates and associated confidence intervals for static and towed gears.
b) Generate an assessment unit (AU) and métier-specific bycatch mortality estimate for each species and their associated confidence intervals. For common dolphin, AUs were OSPAR II, Regions III and IV (little evidence of bycatch except in from the west of Scotland (sub-area 6) to the west coast of Portugal (sub-area 9)).
c) Compare the bycatch mortality estimates against thresholds for the relevant species/AUs as provided by OSPAR and identify any critical issues relevant for the comparison.
This wasn't fully developed as there was some concern within ICES that the thresholds had not been validated by ICES, so a comparison was not made.

Prior to the workshop, a sub-group had issued a data call for the period 2005-2020, which included data on fishing effort from Norway, Iceland and Russia. They had obtained EU and UK fishing effort data from the ICES regional database (RDB), which was soon to be superseded within ICES by a more enhanced database.

During the workshop, sub-groups carried out the following work:

- Summarising existing biological knowledge and previous common dolphin bycatch estimates from II, II and IV;

- Combining the various fishing effort datasets and running checks with several corrections being required including the re-submission of data;
- Processing the monitoring and bycatch data and running checks with several corrections being required. Only the 2015-2020 data was to be used in the assessment as prior to 2015 many of the programmes collecting data did not have any explicit requirement to record sensitive species bycatch information;
- Generating modelled bycatch rates and confidence intervals (Cis) by métier; and
- Generating bycatch estimates by métier and total estimate using 2020 fishing effort data.

Results included that the highest frequency of bycatch events was recorded in mid-water pair trawls (PTM) and otter trawls (OTM) in the Bay of Biscay, common dolphin bycatch was estimated as 6,404 individuals in 2020 for the entire assessment area, and the highest estimate for PTM was 1,543 common dolphin followed by 1,152 for GNS/GND and 925 for GTR. These estimates were higher but covered a larger area and different period than those calculated in WKEMBYC in 2020. Strandings analyses indicated bycatch of several thousand common dolphin per annum with bycatch occurring in several areas/métiers. One country (France) had submitted revised effort data to WKMOMA which explained part of the difference.

Ms Krampe commented the report contrasted with the ICES 2020 advice that static nets were responsible for 50% of the bycatch. Mr Kingston explained the 2022 analysis related to a much wider area and the final figure was calculated slightly differently than ICES Advice – the former being related to frequency of bycatch events overall in different types of nets. Ms Murphy stated that while the bycatch rate for common dolphins may be higher in pelagic trawls, it is the number of fishing boats that elevates the overall bycatch estimate for static gear. Mr Kingston also noted there could also be behavioural aspects such as common dolphins associating more with trawl nets than static nets. With regard to pingers, Mr Kingston stated that there was no clear evidence whether pingers were a suitable approach for common dolphins. There was discussion on the need for further work on pingers in relation to common dolphin.

Ms Caurant asked if they had compared the bycatch estimate rates between the North and South. Mr Kingston said the University of St Andrews had produced more recent estimates (likely to be published in January 2023) repeating the analysis from 2020 and extending the analysis into the Celtic Sea. There looked to more significant bycatch in the Celtic Sea than before but the métiers were not changing significantly. Ms Rogan wondered if there was any seasonal component to the fishing effort and Mr Kingston said most of the bycatch was occurring in the Bay of Biscay and this was between January and March. There was a less obvious seasonal pattern in other areas. The fishing effort levels depended on the métier.

Noting challenges in preparing this analysis, Mr Kingston explained the new RDBES was in development and hoped that within the next year or two it would be usable. The intention within WGBYC was to keep going with the data call for a few years after the RDBES was operational. It would be mandatory to report days at sea in the RDBES and haul-level data would be included.

5. Reports on other relevant work

5.1. Update from OSPAR QSR 2023 biodiversity indicators assessments

Ms Murphy (Co-chair) introduced this agenda item, referring to an OSPAR statement that the M4 and M6 indicators were pending finalisation and approval within the OSPAR process and so should not be circulated or cited as OSPAR products at this point.

Steve Geelhoed (Wageningen Marine Research, the Netherlands) presented on the draft M4-indicator from OSPAR (abundance and distribution of cetaceans), stressing that the common dolphin could not be *quantitatively* assessed against a threshold for OSPAR's QSR 2023 M4-indicator. The M4-threshold stated that the population size would be maintained at or above baseline

levels (the first abundance estimate available or the closest to the date of the Habitats Directive; with (i) no absolute decrease of more than 30%; (ii) a rate of decrease no greater than 30% over three generations; and (iii) corresponds to an annual rate of decline of -0.9% for common dolphin.

Fitting of a surface density model was unsuccessful due to time constraints and difficulty in fitting the model to the common dolphin, to predict annual abundance estimates. Therefore, a qualitative assessment was made of the updated abundance estimates, based on the large-scale surveys in 2005/2007 and 2016 used in OSPAR's Intermediate Assessment 2017 (see agenda item 3.3 for the presentation on how this was done). The QSR assessment concludes: *no decline in abundance of common dolphin in the North-East Atlantic AU.*

Ms Geelhold noted that to allow a quantitative assessment in the future, regular surveys are needed: six-yearly large-scale surveys to provide design-based abundance estimates, as well as small-scale surveys to provide data that enables a model approach to obtain annual abundance estimates and thus a more robust detection of a population trend.

Ms Caurant (Co-chair) asked for a further explanation on why it had not been possible to make the estimate. Mr Geelhoed explained that there were large CIs around these abundance estimates, and it was not possible to assess a trend from two estimates. Discussion then focused on the benefits of doing smaller ship surveys, with Mr Geelhoed commenting that ship surveys could lead to attraction or avoidance of animals so aerial surveys were better although offshore areas were harder to reach by plane. Ms Murphy stressed the impact of weather, noting aerial surveys were quicker to mobilise during opportune weather conditions. Mr Evans suggested it would be better to organize several smaller-scale surveys in different geographical areas to consider for trends. Mr Geelhoed explained that the shorter-term survey was preferable, but lack of funding had meant the Spanish survey had been delayed in the case of SCANS-IV. Ms Murphy proposed the CDG recommend urging countries to provide funding so that the survey could be completed in as short a period as possible during the summer, as this was such a mobile species.

Ms Taylor presented on the OSPAR M6-indicator (marine mammal bycatch). The indicator had been adopted by the OSPAR Biodiversity Council so no changes were anticipated, but it would not be published until 2023.

There was an intermediate assessment on harbour porpoise bycatch in 2017, mainly for the North Sea. Though for the pilot assessment, no threshold values were agreed/published. In QSR23, three species were being assessed: harbour porpoise; common dolphin; and grey seal. The threshold approach was agreed for all three species, and a common indicator assessment was undertaken for Regions II, III and IV, while a candidate assessment was completed in Region I (where there was only data for Iceland, but the common dolphin was not involved in that). There was a dedicated workshop (WKMOMA) (see agenda item 4.4 for the report on this) to obtain bycatch estimates to compare against the threshold values.

Harbour porpoise assessment units (AUs) were based on the units agreed at the OSPAR/HELCOM meeting in 2019. The common dolphin AU was the same as that used in the WKMOMA workshop (OSPAR Regions II, III and IV). It was concluded that marine mammal bycatch is a significant pressure affecting populations in the NE Atlantic. Thresholds for bycatch had been exceeded for both species of cetacean: 4/4 AUs exceeded for harbour porpoise and 1/1 AUs exceeded for common dolphin.

The threshold setting approach varied for the different species. The Removals Limit Algorithm (RLA) framework was used in the Greater North Sea for the harbour porpoise, and the modified Potential Biological Removal level (mPBR) (based on the US approach but modified for the European text) for the Irish and Celtic Seas, W Scotland and Ireland, Iberian Peninsula. For the common dolphin in the NE Atlantic, mPBR was used. For the common dolphin, they had included the unidentified species in the abundance estimates which had been agreed through OMMEG as the best way forward. A caveat had been introduced for the harbour porpoise in the Iberian Peninsula, that if the Nmin was less than 2,500 individuals, a threshold value of "0" would automatically be applied. While fisheries

observer data were limiting, there were data from stranding programmes which indicated that bycatch was above "0." This was more of a qualitative assessment, but it was clearly not meeting the threshold. For common dolphin the threshold value was 985 individuals, and the bycatch estimate was significantly higher than that threshold.

As part of the assessment, they had tried to assign a confidence value. In the indicator results confidence was moderate in the data availability, moderate/high in consensus on the methodology or maturity of methodology, high confidence in the threshold setting method but the issue around the conservation objective feeding in the values needing to be developed further led to it being moderate confidence. On knowledge and data gaps they hoped that the new database being developed by ICES would tackle some of the issues including biases in bycatch data, difference in coverage and methods, difference in how data are collected and stored resulting in challenges in collating for assessment.

Ms Murphy commented that different abundance estimates (and geographical scales of assessment) were being used for the common dolphin in the M4 and M6 indicators which should be addressed in the future, once work has been completed by France in addressing how best to include data from unidentified common/striped dolphins from aerial surveys.

Mr Evans asked for clarification about the minimum abundance estimate (Nmin). Ms Taylor explained that for grey seals Nmin linked to PBR, while for cetaceans Nbest (best available abundance estimate) had been used for the mPBR and RLA. Bycatch estimates were based on the 2020 data and compared with the 2019 data to see if there was interannual variation due to Covid lockdowns, but found results to be fairly consistent.

Noting how much higher the common dolphin bycatch was than the threshold levels, Mr Simmonds asked whether this was a call to action by the CDG or whether there was a need to wait until the indicators were formally signed off by OSPAR. Ms Taylor explained that policymakers had been involved in the process so far and that OMMEG feeds into the OSPAR Biodiversity Council which was compiled of policymakers from the countries involved in OSPAR so policymakers were already aware. The UK were already translating the OSPAR indicators into marine policy, so it was clear there was a need to have policy decisions based on this. Ms Murphy explained further that OSPAR developed their indicators to support EU Member States in their reporting under the MFSD. Through this process Member States would need to implement a programme of measures to reduce bycatch below the threshold.

5.2. Update on CetAMBICion project in relation to the common dolphin

Mr Pierce briefed on the MFSD project CetAMBICion in relation to the common dolphin. He referred to the report provided to the 27th meeting of the ASCOBANS Advisory Committee (AC27) and noted there had been a few more deliverables completed, and they were closer to conclusion.

In practice there was little activity in the Mediterranean and so the project mainly focused on the Atlantic. The project was divided into six work packages (WPs), those looking at monitoring under the MFSD and trying to coordinate monitoring across Spain, Portugal and France and those dealing with mitigation and trying to reduce bycatch:

- WP1 set out to review the MFSD second cycle reports and state-of-the-art for cetaceans. There were considerable differences between the three countries in how cetaceans had been assessed under the MSFD, in part due to the differences in monitoring. Even where the species and criteria were the same, the assessment methodology often differed.
- WP2 aimed at developing proposals for harmonising, monitoring and assessment for cetaceans and proposals were under development.
- WP3 focused on how to assess and monitor cetacean bycatch. Risk mapping was in progress.
- WP4 concerned mitigation measures. The first part of this was a review of the range of different measures available. In trials, the utility of CEDs, including a rigid device and a semi-

rigid device, was still unclear, one issue being that the nets were not easy to handle but there did not seem to be any impact on the fish but also there had been no cetacean bycatch during the trial, so it was not easy to assess the effectiveness. Two other pilot projects were being run by iNOVPESCA, Portugal: employing pingers on fixed nets indicating some success in reducing predation; and bycatch of common dolphins in purse seine, comparing boats using pingers and boats not using pingers. There was strong evidence that pingers reduced bycatch; the presence of dolphins did not change much but there was no encirclement and no mortality when the pingers were present. "Move on" procedures were explored in an IAO workshop and what was acceptable for the fishermen.

- WP5 concerned communication, website, stakeholder engagement and so on.
- WP6 concerned coordination.

Ms Murphy (Co-chair) remembered that they had trialled a version of the move on rule in Ireland in the tuna pelagic trawl fishery in that if dolphins were in the near vicinity, nets would not be put out. Mr Pierce agreed that to make the move on rule work there was a need to have an idea of the dolphins' location and for fishers to be engaged. Ms Murphy commented that moving on could be difficult when the fishers were actively trawling as it is a long process.

5.3. Update on project "Using fishers' knowledge to understand the use of alternative gears to static gillnets in the ASCOBANS region"

Ms Read presented a progress report on the project "Using fishers' knowledge to understand the use of alternative gears to static gillnets in the ASCOBANS Region" which covered the Baltic, Southeast England and Spain. They had first reviewed fishers' data to determine the best harbours to approach fishers for interviews, then designed a questionnaire, and translated the questionnaire into German and Spanish. Sixty interviews had been undertaken in Galicia, 43 so far in SE England with another 16 planned and there had been a delay in interviews in Germany. They had been offered match funding from Seas At Risk to add a fourth country and had so far approached France, Denmark and Sweden.

The principal observations from SE England were that: most fishers were polyvalent; bycatch was rarely reported, although seal depredation was an issue for all gear; seabass caught with hooks commanded a higher price, but hooks could only be used in the summer months; and morale was very low with Brexit, fuel prices, increased and constantly changing regulations and no recruitment of young fishers into the industry. All the fishers complained about the lack of information in consultations from the renewables industry as windfarms were often planned for good fishing and spawning areas.

The principal observations from Galicia were that: most fishers were also polyvalent; bycatch was rarely reported although bottlenose dolphin depredation was reported, causing catch and gear damage; two common dolphins were caught in trawls and one in a gillnet; and morale was also very low, with the industry being less profitable than previously, increased regulation, no opportunities for older fishers to change jobs and no recruitment of younger fishers.

Ms Murphy (Co-chair) noted similar issues relating to morale in Ireland. In the UK, Ms Read stressed, fishers were unhappy about not being involved in marine spatial planning discussions and consultations in relation to renewables and wanted to push for MPAs for fishing. Mr Simmonds commented there might be similar feedback with the farming industry in terms of morale. He also asked whether there was hard evidence of depredation and Ms Read noted nearly all fishers complained of depredation issues. Ms Murphy said Bord Iascaigh Mhara (BIM) had done work on this in Ireland and said she would send on the details.

5.4. Update on the DELMOGES project

Ms Caurant (Co-chair) presented on the French DELMOGES project, noting it had been initiated by the French government and several institutes, including four different laboratories. The objective was

to better understand the environmental and human factors behind the increase of bycatch since 2016 during the wintertime in French Bay of Biscay.

The three-year project had started in March 2021 with a budget of €5m, 60% funded by government, 20% by research institutes and 10% by the French fishing industry. The intention was to further develop ecological and fisheries knowledge to better understand the increase of the non-intentional captures of dolphins in French waters of the Bay of Biscay, and to identify sustainable solutions for reducing the impact on marine biodiversity and commercial fishing. Her concern, however, was that the project would delay decisions being made for common dolphins. She outlined the Work Packages as follows:

- WP1 aimed to define the structure of common dolphins to better characterise the population(s) impacted by bycatch, work that is aided by additional targeted sampling of individuals. In June 2021, they had sampled individuals inhabiting offshore waters, and intend to use both genetic markers and ecological tracers (contaminants) to provide a more detailed assessment of structure within the region. The health status of the bycaught dolphins would also be explored - as some fishermen were noting that bycaught dolphins were in a poorer health status;
- WP2 considered the cascades in the ecosystems, linking common dolphin distribution to their environment. Physical and trophic conditions and different temporal and spatial scales would be considered.
- WP3 involved analysis of new and historical data on interactions between dolphins and fisheries, to map risk and understand the interactions that lead to capture;
- WP4 involved coordination between all the stakeholders to co-construct (through workshops and through an online digital platform) scenarios and remediation options using the research from WP2 and 3; and
- WP5 on coordination and governance.

Ms Caurant also briefly spoke about the DELGOST sailing boat used to do the survey in June 2022 where they had carried out 39 biopsies of common dolphins in offshore groups. Mr Evans asked how the biopsies were taken, saying given their mobility, as in the past, they had found common dolphins challenging to biopsy without injuring them. Ms Méndez Fernandez explained they used cross bows with arrows with a dart. Most of the time the common dolphins stayed around the boat during this process.

6. Update on any hazardous substances, causes of mortality, health status, nutritional status, diet or like history analysis on the common dolphin

Ms Caurant (Co-chair) introduced this agenda item, noting there would be several presentations on research on hazardous substances, causes of mortality, health status, nutritional status, diet and life history analysis on the common dolphin.

Temporal evolution of toxic trace elements in common dolphins from the Bay of Biscay and English Channel

Paula Méndez Fernandez (University of La Rochelle, France) made this presentation. She explained she would outline the strategy used to monitor the chemical contamination of marine mammals in French waters developed in 2017 to meet, among other things, the requirements of the MSFD for contaminants. They had used samples collected by the French national stranding network and developed a strategy report summarising all the choices made concerning the matrices to be analysed, molecules, relevant species, numbers and so on.

This monitoring allowed them to analyse the temporal evolution of the concentrations of three regulatory toxic trace elements (mercury (Hg); cadmium (Cd); and lead (Pb)) in common dolphins stranded between 2001 and 2019 along the French coast of the Bay of Biscay and English Channel.

They selected a Dynamic Linear Model (DLM) and WAIC selection (to align with other groups working on MFSD Descriptor 9) to consider and identify the potential co-founding factors that may influence these temporal trends, selected the best models for each chemical element showing a significant increase of Hg and Cd concentrations with an increase per year of 1.9 and 0.4 μg/g dry weight, respectively. Contrasting this, Pb concentrations decreased over the time. However, this trend was not significant as the annual decrease was of 0.001 µg/g dry weight. For all of these models, biological factors had an effect, including age and sex. Further, for Cd and Pb, nitrogen had an effect and for Hg, carbon had an effect. These data and code to reproduce the analysis are available here.

She concluded by noting that they observed an increase for Hg and Cd concentrations in common dolphins in the past 18 years but had also observed the effect of ecological factors demonstrating the complexity of properly assessing the contamination exposure of biota and the need to also monitor changes in prey or in foraging areas. For Hg, even if in theory there is a low risk for toxicity, the continued monitoring of Hg in tandem with Se:Hg ratios is recommended in order to develop a more accurate indicator of what these concentrations mean in terms of compromising cetacean health.

With regard to sex, Ms Méndez Fernandez explained that the majority were males, but they had enough females to use sex differences as a variable. Co-chair Murphy noted they were doing similar studies in Ireland where the dataset was much smaller.

Ms Simmonds recalled that the Hg:Se complex was that at some point Se could be overwhelmed when Hg gets to very high levels at which point lesions could be seen on the liver. The liver had evolved in cetaceans to protect with this. Marine mammals have a better capacity to detoxify trace metals than terrestrial animals. He asked whether the levels being seen were anywhere near the historic levels where the liver protection system breaks down and Ms Méndez Fernandez confirmed this could happen. Mr Simmonds, supported by Ms Murphy proposed a recommendation be made by the CDG. Ms Caurant (Co-chair) reminded the group that *organic* Hg gave a more toxic effect. She, supported by Ms Murphy, suggested the recommendation be to try to do real epidemiological studies. Ms Murphy stressed the need to analyse trace element, in addition to other contaminants.

Evaluation of a candidate marine mammal trends and status contaminants (persistent chemicals) indicator for European waters

Ms Murphy first briefly provided an updated on the progress of OSPAR's 'Pilot assessment of status and trends of persistent chemicals in marine mammals' (led by Germany). The indicator was being developed for the OSPAR QSR and pollutant data had been collated through an OSPAR data call[17]. Pilot indicator text had been produced, largely summarising high-level information, and identifying regions where there was better knowledge, with a spatial distribution of blubber PCB concentrations by OSPAR Regions and MSFD subregions for small-toothed cetaceans and pinnipeds. The aim was to broaden out the indicator, to include other persistent chemicals, such as mercury.

Findings included:

- Small-toothed cetaceans presented with the highest concentration range of total PCBs;
- The harbour porpoise is the most represented species in PCB studies;
- For certain Contracting Parties, continuous data series are available from 2009 onwards; and
- They discussed the methodology for the assessing trends and status indicator by considering other indicator approaches.

Ms Murphy then reported on an EMFF-Marine Institute funded study, referencing a recently published paper, work undertaken by ATU in collaboration with the UK Cetacean Strandings Investigation Programme.[18] While the focal species was the harbour porpoise, the methodology

[17] https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/indicator-assessments/pcb-marine-mammals-pilot/

[18] Trend and Status Assessment of PCBs in UK Harbour Porpoises (Rosie S. Williams, Andrew Brownlow, Andrew Baillie, Jonathan L. Barber, James Barnett, Nicholas J. Davison, Robert Deaville, Mariel ten Doeschate, Rod Penrose, Matthew Perkins, Ruth Williams, Paul D. Jepson; Olga Lyashevska; Sinéad Murphy, Science of the Total Environment).

developed could also be applied to other species. The intention was to see if they could detect a trend in PCB concentrations and undertake a status assessment using the UK pollutant dataset spanning from 1990 onwards. OSPAR harbour porpoises assessment units were employed for the analysis, as well as OSPAR contaminant assessment areas (AAs)– so results could be compared with other species.

Mean PCB blubber concentrations in juvenile harbour porpoises were observed to decline in all harbour porpoise AUs and OSPAR AAs. A provisional status assessment was undertaken for all age-maturity groups but there was a lot more work to do on agreeing on the thresholds. The thresholds were those used in previous studies for the harbour porpoise, and it was found that a high proportion of animals were exposed to concentrations deemed to be a toxicological threat, though the relative proportion declined in most Assessment Units/Areas over the last 10 years of the assessment. Adult males had the highest mean ∑PCB concentrations in all AUs/AAs. While, adult females had the lowest mean ∑PCB concentrations in all the AAs/AAs, except for the Channel Assessment Area and the Western Scotland Assessment Unit, which suggested females in both those regions had not been offloading successfully.

Ms Murphy also discussed a follow-up paper assessing the statistical power to detect significant trends in the UK juvenile harbour porpoise ΣPCBs data, work that takes into account the variability of concentrations and confounding factors, as well as sampling frequency.

Ms Caurant (Co-chair) commented that the Celtic Sea was different from the other areas in terms of trends and Ms Murphy confirmed that within the current study, the mean concentration of juveniles for that AU, and the Channel AA, were higher suggesting some continued input within those regions.

Mr Evans commented that where the samples were collected could have an influence on levels in particular in localised areas of high pollutant levels.

Assessment of pollutant burdens and associated risks to small cetaceans in Irish waters – MI-EMFF funded study

Additional work under the MI-EMFF funded pollutant study analysed samples from 24 stranded common dolphins for a range of pollutants, including PCBs congeners, polybrominated diphenyl ethers, organochlorine pesticides, including as DDT, per- and polyfluorinated alkyl substances and trace elements such as mercury, methylmercury, selenium, cadmium and zinc. Age and reproductive status were also assessed and evidence of interactions involving chemical pollutants and age, sex, nutritional condition, maturity status, pathogens and disease were being examined. Historical data had been included where available. Preliminary results of trace elements showed correlations between mercury, selenium and cadmium with age and length, and also between selenium and both mercury and methylmercury. All animals had a liver Hg : Se molar ratio of <1 (n = 42).

Ms Murphy referred to the 2017-2019 necropsy scheme mentioned under agenda item 2.1[19]. Causes of death for the 84 common dolphins included trauma (19%; bycatch (n=11), suspected bycatch (n=3), suspected boat strike and bottlenose dolphin attack), infectious disease (36%), and other (45%; starvation, hypothermia, mass embolism, gastric impaction or not established). Comparing this with her PhD dataset from early 2000s which looked at stranded animals from 1990 to 2003, of the 154 stranded dolphins necropsied, 21% were live stranded and 11% were bycaught. However, for large parts of that period there had been no vet working on the project and thus for a large proportion of animals (68%), the cause of death was not established. This was different to the recent necropsy project in Ireland, as the necropsies (of animals largely in good to moderate decomposition state) were undertaken by the Regional Veterinary Laboratory in Cork.

[19] https://oar.marine.ie/handle/10793/1782

Impacts of anthropogenic activities and environmental change on the foraging ecology and nutritional status of common dolphin and its implications towards sustainable resource management

Sofia Albrecht presented this paper. Overfishing has massively depleted several target species in European waters, altering marine food webs. The common dolphin is one of the most abundant cetaceans in the NE Atlantic, playing a key functional role as a top predator. Due to their high energy requirements, common dolphins target energy-dense prey and increasingly, stranded dolphins are showing evidence of starvation/emaciation. Through examination of samples and data collected by Irish stranding and observer bycatch programmes over a 25-year period and a multi-disciplinary approach, Ms Albrecht's PhD was investigating temporal changes in diet and nutritional status in this species and identify drivers of change.

Work includes undertaking conventional stomach contents analysis as well as progressing novel molecular approaches for detecting prey DNA, to assess occurrence of dietary shifts, potential consumption of lower quality prey, annual energy requirements and prey biomass consumption. Spatial modelling would assess spatio-temporal variations in prey energy densities, and potential drivers of dolphin distribution patterns. While nutritional status indicators focusing on stress physiology would provide a deeper/new understanding of the biological pathways underpinning nutritional deficiencies in cetaceans.

Mr Evans commented that prey resources are very different in different areas which could affect body condition. Ms Murphy emphasised they unfortunately had not been funded to sample from the east coast of Ireland, as the aim of the necropsy project had been to assess evidence of bycatch in stranded animals. Although they had recommended to the funding body, expanding the scope of the study, to cover this area in the future. Mr Evans said there was a lot of fishing activity in the southeast, so sampling would be beneficial.

Mr Simmonds asked whether she had access to data from fisheries and Ms Murphy said that those are available for inclusion within the study.

Ms Caurant asked what she expected from the cortisol analysis and Ms Albrecht said they wanted to compare the effects of nutritional stress on animals with good body condition and poor condition to develop the method and see if cortisol could be used as an indicator.

Historical killings of common dolphins in the NE Atlantic and Mediterranean & changes in trophic positions and body condition of common dolphins in Galician waters

Marie Petitguyot presented on her research on historical killings of common dolphins in the NE Atlantic and Mediterranean Sea between the 18th century and 20th century, and on changes in trophic positions and body condition of common dolphins in Galician waters between the 1990s and 2020

The aim of the work on historical killings was to characterise conflicts between fishers and small cetaceans in French-speaking countries (France, Algeria, Tunisia, Morocco) with a particular interest in the French Mediterranean to:

- Understand the context and chronology of the conflicts;
- Describe methods used to kill cetaceans;
- Identify species of cetaceans killed; and
- Quantify the number of cetaceans killed.

The research was based on historical documents from the 16th to the 20th century and French osteological collections from 18 institutions from the 19th and 20th century. There was evidence of conflicts from the end of the 16th century to the mid-20th century, conflicts that intensified from the 18th century onwards, with culling campaigns and bounties principally in the 1850s-1950s.

The fishing community blamed the small cetaceans for a decrease in catches of commercially important fish (sardines, anchovies, mackerels) through scaring fish away from nets, and damaging nets when taking fish from the nets (depredation) or getting themselves entangled in nets (bycatch). This resulted in a loss of money for the fishing community, leading to complaints to governments. Culling campaigns were subsequently organised by the fishing community and seafarers, who were encouraged by bounties paid by governments or fishers associations, and by the military.

The evidence indicated that tens of thousands of common dolphins and other small cetaceans were killed in the NE Atlantic and Mediterranean Sea during the 18th and 20th century. This work was a step towards having historical baselines of abundance and distribution.

Similarly to Ms Albrecht's research, they were also looking at temporal changes in the body condition and the trophic position of common dolphins that stranded along the Galician coastline. To look at body condition, they used morphometric data (length, blubber thickness and girth) collected by CEMMA between 1998-2019. The residuals of Generalised Additive Models (GAMs) of morphometric data against body size were used as indices of body condition, and subsequently used in GAMs to investigate temporal changes. Temporal changes in the trophic position of dolphins were explored by performing bulk stable isotopes analysis in skin samples collected by CEMMA between 2004 and 2021, and using bulk δ15N as a proxy for the trophic position in GAMs.

Preliminary results using two body condition indices indicated a similar pattern: an increase in body condition from 1998-2009, and a decrease thereafter (2009-2019). The trends observed could be due to health-related issues, poor prey availability and/or quality. Results from bulk stable isotopes analysis showed a significant increase in the trophic level of common dolphins between 2004 and 2021, which was mainly driven by the increasing trophic level of females. Future steps include using a subset of samples to perform amino acid compound-specific isotopic analyses in order to determine whether the trends observed from results using bulk δ15N are driven by a change in the diet of dolphins and/or a change in the isotopic baseline of the pelagic food web. This work will contribute to understanding how dolphins may have been affected by recent changes in the composition and structure of the Galician pelagic food web.

Mr Evans asked if she knew what happened to the animals that were killed and Ms Petitguyot said some were eaten, others sold in markets, used as fertilisers, or left to rot.

7. Discussion on the development of a strategic bycatch reduction plan by the CDG

Ms Murphy (Co-chair) opened the discussion on the development of a strategic bycatch reduction plan by the CDG to address CDG2 Recommendation 3: "While emergency short-term measures are imperative to reduce bycatch of Common Dolphins in the North-east Atlantic, a strategic long-term population level plan is recommended to ensure the favourable conservation status of this European protected species in the long term. The strategic bycatch reduction plan, detailing monitoring and mitigation requirements, could be co-developed by the ASCOBANS CDG in association with other stakeholders, including ACs and the fishing industry."

Ms Murphy presented options for developing a bycatch reduction plan and referred for example to the "Flow chart for developing a Marine Mammal Bycatch Prevention and Reduction Plan under the FAO Code of Conduct for Responsible Fisheries" (p.7 of the FAO guidelines). Ms Murphy described the current process for bycatch monitoring and mitigation and provision of scientific advice within the North-east Atlantic, where many different actors are at play, including national governments, EU and intergovernmental agreements and associated scientific groups – see below – with each of these actors having a different role in the process. While work is in progress to ensure that the negative impacts of fishing are minimised, a plan is required detailing prescribed steps for which Contracting Parties could evaluate their current efforts against, as well as detailing the measures required to safeguard and improve the conservation status of the species.

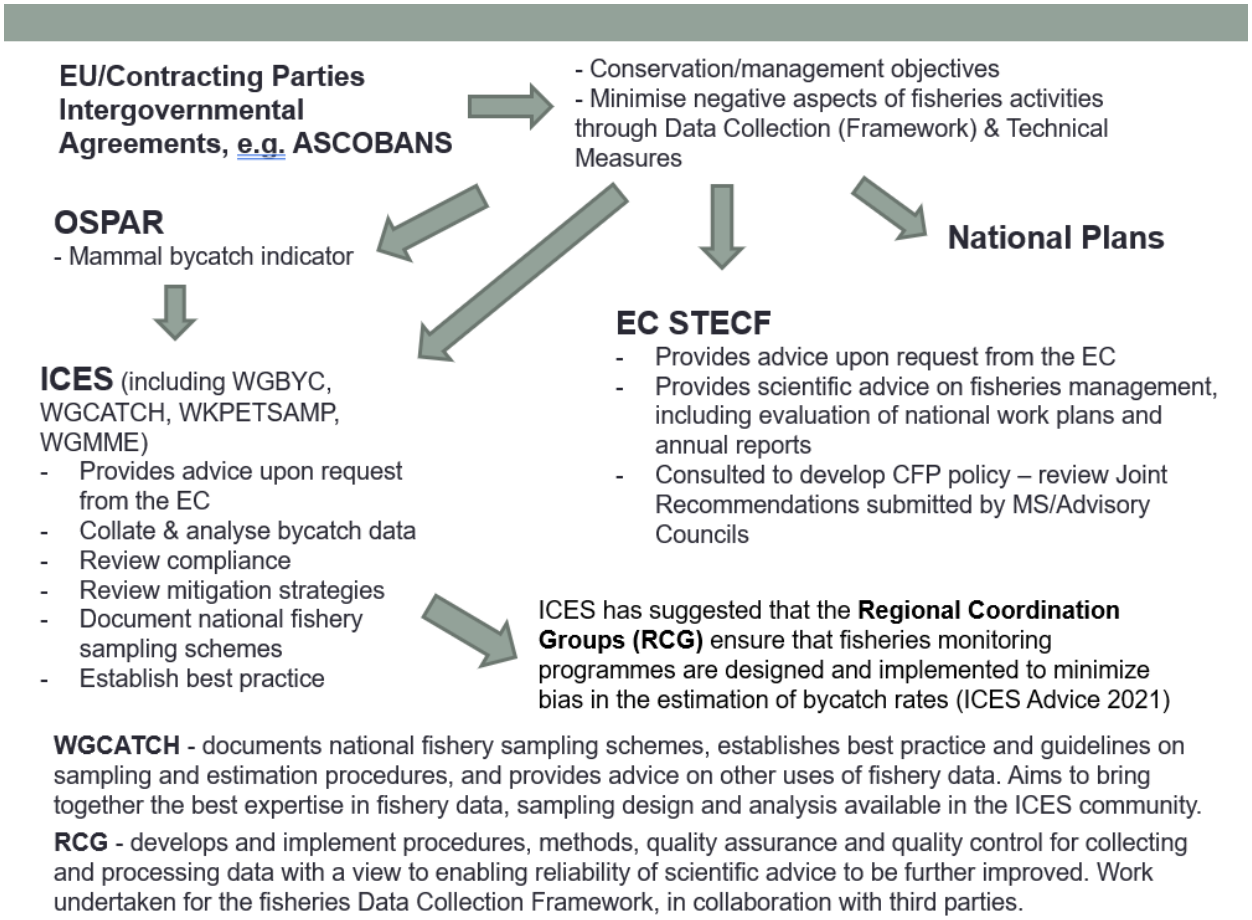

Figure 6: A slide from the presentation by Sinéad Murphy.

Following guidance of the FAO, the proposal was that a bycatch prevention and mitigation plan for the common dolphin could consider regulatory mitigation measures, voluntary measures, identification of research needs and include timelines for implementation and evaluation, akin to the US Take Reduction Plans. A long-term population level plan is required as the CetAMBICion project would soon be completed, and there was a need to bring that work on further, and expand the geographic scope of that work, focusing on all waters of the population's distributional range. The plan could take a holistic approach, incorporating all available information on the species, not just on bycatch.

Ms Murphy proposed that ASCOBANS had a role to play in coordinating the work being undertaken by different organisations through the plan – which sets out the strategy. She invited comments on this proposal and whether this could be a task for the Common Dolphin SAP Coordinator.

In ensuing discussion, participants discussed how the CDG could provide added value to what other groups and organisations were already doing (and members of ASCOBANS and the CDG were involved in). Ms Murphy explained she saw it as providing a clear outline in terms of process.

The US approach of a take-reduction team for one species/stock which continued its work until that species/stock moved into good status or below the bycatch limit was floated as a possible approach. Mr Evans saw ASCOBANS's WGs role as providing a watching brief and encouraging Parties and other bodies to fill the gaps. Mr Simmonds felt ASCOBANS could do more than having a watching brief and pointed out that the US had strong measures under the Marine Mammal Protection Act and the take reduction teams suggesting what was lacking in the European context was the strong

legislation and the take reduction teams. The CDG could develop a plan to mitigate the issue to share with other partners with a coordinating role.

Ms Caurant welcomed the idea of a holistic approach using common dolphins. She, supported by Ms Eira, felt it would be helpful to define the one common objective in relation to bycatch and a strategy to fulfil on this.

It was agreed that Ms Murphy would share her presentation and draft an outline plan. Mr Simmonds emphasised considering the potential of a take reduction team. Ms Taylor explained that the UK through the Clean Catch UK programme was trying to move towards regional application of work and drawing on information outside the UK where relevant using a holistic approach including all species. They were trying to move away from a single species approach. Mr Evans agreed there was an emphasis on Member States addressing these issues at the regional level and considering the impact on other species as well as stakeholder needs. He felt that CDG had the benefit of sharing information to get consensus and gaps in knowledge and align and make recommendations. He also said CDG should be complementary with what the WGBYC were doing. He welcomed a concrete proposal to consider.

8. Discussion on a Transboundary Assessment for the common dolphin for reporting under Article 17 of the EU Habitats Directive

Ms Murphy (Co-chair) shared a table of EU Member States Conservation Status Assessments for common dolphin undertaken for reporting under the EU Habitats Directive Article 17. There had been three assessments and the next one would be of the period 2019–2024 to be published in 2025. Within the previous assessment, the Marine Atlantic status had moved from “unknown” (2007) to “unfavourable – inadequate” (2013) to unknown (2019). There were varying conclusions from countries, partly due to whether Member States included just their own EZ, or if they considered how the population was doing overall. Further, some Member States did not fully consider future prospects, encompassing a full review of their main pressures and threats, and still weighed heavily on expert judgment.

She also shared the Explanatory Notes and Guidelines on Reporting under Article 17 of the Habitats Directive highlighting the option of providing a Transboundary Assessment working with other countries within the range of a species which had been done for terrestrial species but not yet for marine. As the common dolphin ranges into non-EU waters such as the UK, it would be beneficial to take an overall regional population level assessment this way, and each Member State could use it to fulfil their reporting obligations. The Guidelines also acknowledged that for marine species where there were large surveys being undertaken such as SCANS, a coordinated assessment of pressures and threats, conservation measures and future projects should be undertaken. Such a combined assessment may be based on diverse data sources and include information on how the assessment was carried out. In addition to this, reporting under Article 17 allows each Member State to report on the respective proportion of the population size and range area.

Ms Murphy proposed the CDG could undertake a transboundary assessment for the common dolphin which could be used by Member States as a case study for reporting within the next round of assessment for the EU Habitats Directive. Such a conservation status assessment would include results of OSPAR’s QSR23 indicator assessments on abundance and distribution, and marine mammal bycatch, for example. Ms Taylor urged more of a discussion in the wider context but agreed the common dolphin could potentially be a pilot for such an approach alongside such assessments. The UK had transposed the Habitat Directive into UK legislation so while the intention was to continue with reporting, there was potential for some change in the UK but still a strong will to fit together as part of the puzzle.

Mr Evans suggested discussing this idea with DG Environment and it was agreed that the CDG would instruct the Secretariat to do so with a view to considering this for the next round of reporting (period 2019-2024) under Article 17 (by 31st July 2025[20]).

9. Update on the Action Plan for the Mediterranean Sea Common Dolphin

Joan Gonzalvo (ACCOBAMS) briefed on development of the ACCOBAMS Conservation Management Plan (CMP) for the Mediterranean Sea Common Dolphin. A preliminary first draft had been prepared two years ago but further development had been delayed through COVID. In March 2022, a three-day workshop in Monaco was convened to continue the work. This led to the draft CMP containing 16 actions, labelled in terms of importance and priority level, and grouped into five sections focusing on coordination, regional networks, public awareness and education, research including assessment of population structure and assessments of abundance and distribution, and the impacts of stressors such as ambient noise.

Actions in relation to monitoring included: developing and maintaining effective long-term monitoring programmes at the local level to establish trends through dedicated surveys, monitoring threats and developing and maintaining monitoring of stranding data at the local and national level. Mitigation actions included: promotion and implementation of fisheries management measures to reduce overfishing and preserve marine ecosystems; development, promotion and implementation of fisheries bycatch mitigation measures; wider adoption and implementation of standardised codes of conduct (IWC, CMS, ACCOBAMS) to mitigate adverse impact of dolphin watching; and compliance with existing adopted measures and guidelines.

Ms Murphy (Co-chair) commented that there were many activities and Mr Gonzalvo referenced a table cross-referencing all the actions and explained the next step once the CMP was finalised was to seek a coordinator to merge efforts with ACCOBAMS's other CMPs (for fin whales and Risso's dolphins) and consider the timelines for each of the actions and how these could overlap between the CMPs.

Ms Murphy asked if they were planning to include monitoring of fisheries interactions and Mr Gonzalvo said it was a high priority to analyse bycatch and depredation in each state following the standardised protocol developed in collaboration with the General Fisheries Commission for the Mediterranean (GFCM) which would be released for the next ACCOBAMS MOP. They had established a small expert group for a four-year action included training observers, identification of fishers to collaborate with onboard or questionnaire surveys, collection of data from stranding networks.

Ms Murphy asked who was funding the CMP and Mr Gonzalvo said they had identified the costs and actors responsible for coordination and the Secretariat would develop on this and fundraise. Ms Sequeira added that the ACCOBAMS Programme of Work would be presented to the MOP in late November 2022 for approval, and implementation and all the main activities identified by the Scientific Committee would be financed through the budget or through voluntary contributions to the Conservation Fund.

10. Development of the joint ASCOBANS/ACCOBAMS workshop on the Common Dolphin

Ms Renell (Secretariat) introduced this item, noting ASCOBANS AC25 and CDG1 had requested the Secretariat to organise a joint workshop with ACCOBAMS at the European Cetacean Society (ECS) conference in 2021. However, that conference was held in a virtual platform, as was the most recent one in April 2022. The next ECS conference would be held in April 2023 in Galicia, Spain with the theme "Our Oceans, Our Future. Marine Mammal Behavioural Ecology and the Sustainable Use

[20] https://cdr.eionet.europa.eu/help/habitats_art17

of Marine Resources." The deadline for workshop applications was 9 December 2022 and she invited input on whether a joint workshop should be pursued.

Mr Gonzalvo supported the idea given that ACCOBAMS and ASCOBANS were working in parallel on CMPs and this was agreed, with the decision to hold off a year or so to allow more progress under the ACCOBAMS CMP. Mr Simmonds flagged that ASCOBANS were proposing a joint ACCOBAMS/ASCOBANS workshop on marine debris for the ECS.

11. Any Other Business

A discussion was held on potential tasks for the Common Dolphin SAP Coordinator including completing the report from the meeting; finalising the Achievements Table; working on the bycatch mitigation reduction plan; collating information for the status review in 2024; linking with other fora. Mr Simmonds suggested convening a meeting to talk about take reduction teams and other issues to progress such as a discussion on common dolphin health. Mr Evans proposed preparing a progress report on actions and Ms Murphy agreed this would be circulated before each CDG meeting. She asked participants to let her know if there were meetings to attend, in particular virtual ones.

12. Date and venue of the CDG4

Ms Renell introduced this item and proposed holding CDG4 in 2023 Q4 which was agreed. She noted dates to avoid as 26-28 September 2023 (AC28) and October 2023 (CMS COP14 date to be confirmed). She also invited participants to consider hosting and flagged the following hosting requirements: a meeting room for 20 people; remote participation readiness; the host provides coffee breaks and lunch options close by; and identifies accommodation options close by.

Ms Murphy (Co-chair) emphasised the benefits of meeting in-person but also noted that online made it possible for more presentations. She proposed holding the meeting around the AC which was welcomed.

13. Review and update of Recommendations

Ms Murphy (Co- chair) introduced the CDG2 Recommendations and draft Recommendations from CDG3. ASCOBANS AC27 had given guidance regarding Recommendations from WGs (see AC27 Recommendation 21). The list was shared on screen and each Recommendation was discussed in turn. In some cases, no changes were made, while in others, edits were made and new Recommendations were added.

The final Recommendations can be found in Annex 1 of this report and on the ASCOBANS website.

14. Close of the Meeting

After the customary expression of thanks, the Co-chairs declared the meeting closed on 16 November 2022 at 17:22 CET.

Annex 1:

RECOMMENDATIONS FROM THE

3RD MEETING OF THE ASCOBANS COMMON DOLPHIN GROUP

(Adopted by the Advisory Committee)

These recommendations were made at the 3rd Meeting of the Common Dolphin Group (CDG, 15-16 November 2022), which reviewed the latest information related to bycatch and other significant threats. The CDG made the following recommendations:

Surveys

1. Parties and Non-Party Range States are encouraged to allocate adequate funding to future SCANS surveys in a timely manner to ensure that such surveys are ideally undertaken in June-July, and in as short a time as possible, noting the common dolphin is a highly mobile species and the abundance in an area may vary greatly between summer and autumn.

Strandings

2. Considering the increase in cases of infectious disease and starvation reported in the UK and Ireland, Parties should ensure sufficient funding is available for stranding programmes to assess health status, and monitor changes in causes of death. The CDG also recommends this to Non-Party Range States. The need for a consistent and holistic approach to collection and analysis of data and samples from stranded animals should be borne in mind.

3. Parties should include trace metals in national pollution monitoring programmes, given the increasing temporal trends in cadmium and mercury observed in individuals in France.

4. Parties are recommended that North-east Atlantic-wide information on life history parameters be collected and analysed from strandings and bycaught animals to assess for evidence of temporal changes in those parameters at the population level that may have resulted from anthropogenic activities. (CDG2/Rec7)

Bycatch

5. Parties are encouraged to continue to review and test a range of mitigation options to reduce bycatch of common dolphins, including acoustic deterrents, gear modifications, fishing practices, time-area closures, move-on procedure etc., mitigation measures that could be implemented at the fleet level. (CDG2/Rec4)

6. Parties and non-Party Range States should better target their bycatch monitoring efforts at the areas and métiers of high bycatch risk for the common dolphin. These include particularly static net fisheries (GNS and GTR) over the Biscay shelf (subareas 8a and 8b) and the coastal zone of the Iberian Peninsula (subareas 8c, 9a, 9b) where current monitoring effort covers only a very small fraction of fishing effort.

7. Portugal and Spain are encouraged to actively increase observer coverage and remote electronic monitoring in small vessel fisheries for estimating bycatch and also monitoring the effectiveness of mitigation measures, given the increase in strandings of bycaught common dolphins in recent years.

8. The Secretariat to establish a Working Group to further explore potential bycatch mitigation measures for beach seine and static gear small scale coastal fisheries operating in Portuguese waters. Members include Catarina Eira, Fiona Read, Graham Pierce, Marina Sequeira, Mark Simmonds, Sinéad Murphy. Others are welcome to join.

9. Parties and other relevant EU Member States should continue efforts to harmonize and coordinate assessments for common dolphin and other cetaceans under the MSFD, as presently underway in France, Spain and Portugal under the EU CetAMBICion project.

10. Parties and other relevant EU Member States should seek mechanisms to continue current bycatch mitigation trials and pilot projects, aimed at reducing bycatch of common dolphins and other cetaceans (sometimes also benefiting other PET species), for example those carried out in the EU CetAMBICion project by Spain and Portugal.

11. Further to Recommendation 10, Parties and other relevant EU Member States should take into account, even where results have been promising, the need for further efforts to implement the findings (for example to ensure ongoing industry collaboration and seek mechanisms to cover added costs associated with mitigation) and to continue data collection until sufficient data are available to show whether a (statistically) significant reduction in bycatch is achieved.

12. Parties are encouraged to continue to conduct further analysis towards fine-scale risk-mapping to better understand factors determining high bycatch and to direct resources to high-risk areas and times. (CDG2/Rec5)

Other

13. Letters of invitation to be sent from the Secretariat to request Non-Party Range States' participation in implementation of the SAP on Common Dolphins. (CDG2/Rec10)

14. SAP Range States to complete the 'Achievements Table' by end of the year to identify data gaps, as well as actions and funding that are required going forward. The Steering Group should then set priorities for each country. (CDG2/Rec11)

Annex 2:

LIST OF PARTICIPANTS

MEMBERS OF STEERING GROUP

Name	Affiliation	Email
France		
Florence CAURANT *(Co-Chair)*	La Rochelle University	florence.caurant@univ-lr.fr
Ireland		
Sinead MURPHY *(Co-Chair)*	Atlantic Technological University	sinead.murphy@atu.ie
Portugal		
Catarina EIRA	CESAM, University of Aveiro	catarina.eira@ua.pt
Marina SEQUEIRA	Institute of Nature Conservation and Forests	marina.sequeira@icnf.pt
Spain		
Graham PIERCE	Instituto de Investigaciones Marinas	g.j.pierce@iim.csic.es
United Kingdom		
Nikki TAYLOR	JNCC	nikki.taylor@jncc.gov.uk
Allen KINGSTON	University of St Andrews	ark10@st-andrews.ac.uk
IGOs		
Joan GONZALVO	ACCOBAMS	joan.gonzalvo@gmail.com
NGOs		
Mark SIMMONDS	OceanCare	mark.simmonds@sciencegyre.co.uk
Peter EVANS	Sea Watch Foundation	peter.evans@bangor.ac.uk
Nicola HODGINS	Whale and Dolphin Conservation	nicola.hodgins@whales.org
Fiona READ	Whale and Dolphin Conservation	fiona.read@whales.org
Fishing industry		
Eunice PINN	Seafish	eunice.pinn@seafish.co.uk

OBSERVERS

Ursula KRAMPE	European Commission, DG MARE	ursula.krampe@ec.europa.eu
Nadya Carolina RAMIREZ MARTINEZ	University of Veterinary Medicine Hannover - Foundation, Institute for Terrestrial and Aquatic Wildlife Research (ITAW)	Nadya.Carolina.Ramirez.Martinez@tiho-hannover.de

INVITED EXPERTS

Name	Affiliation	Email
Sofie ALBRECHT	Marine and Freshwater Research Centre, Atlantic Technological University	sofia.albrecht@research.atu.ie
Rob DEAVILLE	Institute of Zoology/Zoological Society of London	rob.deaville@ioz.ac.uk
Steve GEELHOED	Wageningen Marine Research	steve.geelhoed@wur.nl
Anita GILLES	University of Veterinary Medicine Hannover, Foundation	anita.gilles@tiho-hannover.de
Philip HAMMOND	University of St Andrews	psh2@st-andrews.ac.uk
Sophie LARAN	La Rochelle University	sophie.laran@univ-lr.fr
Stephanie LEVESQUE	Irish Whale and Dolphin Group	Stephanie.levesque@iwdg.ie
Paula MÉNDEZ FERNANDEZ	La Rochelle University	paula.mendez_fernandez@univ-lr.fr
Marie PETITGUYOT	Institute of Marine Research - Spanish National Research Council	mpetitguyot@iim.csic.es
Emer ROGAN	University College Cork	E.Rogan@ucc.ie
Etienne ROUBY	Observatoire PELAGIS (UAR 3462)	etienne.rouby@univ-lr.fr

SECRETARIAT

Jenny RENELL	Coordinator	jenny.renell@un.org
Bettina REINARTZ	Administrative Assistant	bettina.reinartz@un.org
Bethany DYKSON	CMS Intern	bethany.dykson@cms.int
Franziska FEIST	CMS Intern	franziska.feist@cms.int
Esteban RODRÍGUEZ MACÍAS	CMS Intern	esteban.macias@cms.int