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REPORT OF THE 2ND MEETING OF THE JOINT BYCATCH WORKING GROUP OF ACCOBAMS AND ASCOBANS

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Online

5-6 February 2025

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1. Opening of the Meeting

Co-Chair Peter Evans (Sea Watch Foundation) welcomed participants to the second virtual meeting of the Joint Bycatch Working Group (JBWG) and delineated housekeeping rules.

2. Adoption of the Agenda

Co-Chair Ayaka Amaha Öztürk (Turkish Marine Research Foundation) introduced the Provisional Agenda (ACCOBAMS-ASCOBANS/JBWG2/Doc.2a/Rev.2) and the Provisional Annotated Agenda and Schedule (ACCOBAMS-ASCOBANS/JBWG2/Doc.2b/Rev.1). The agenda was adopted without objection.

3. Introduction

Clara Monaco (ACCOBAMS) welcomed all participants to the meeting, and introduced the ACCOBAMS Agreement. Jenny Renell (ASCOBANS) introduced the ASCOBANS Agreement and the mandates of the Joint Bycatch Working Group (JBWG).

4. Bycatch monitoring and mitigation: Updates from ASCOBANS and ACCOBAMS Areas

4.1. ASCOBANS area

a) Policy Situation in the Baltic Proper for the Harbour Porpoise

Ida Carlén (Swedish Society for Nature Conservation) presented on the policy situation of the harbour porpoise in the Baltic Proper.

The Baltic Proper harbour porpoise is the most endangered whale in Europe. There are a few hundred individuals left, and less than 100 are thought to be fertile females. The main distribution is around the offshore banks south of the island of Gotland in the Baltic Proper. This area is also thought to be the main reproduction area. In 2019, a coalition of NGOs submitted a request for emergency measures, and in 2020 ICES published special request advice on minimising bycatch of the population, specifying measures in MPAs and other important areas, as well as in the entire population range. An infringement procedure was also initiated against Sweden for not adhering to the habitats directive in relation to harbour porpoise bycatch. In 2022, a delegated act came into effect, mitigating bycatch in MPAs and some other important harbour porpoise areas, but measures are still missing in the rest of the population range. In 2024, the Swedish infringement case moved to a reasoned opinion, and ICES published new advice, however, the original ICES recommendation from 2020 still stands; measures are needed in the entire population range. It is remarkable that the most endangered cetacean in European waters still remains without protection in a large part of its range.

During the discussion, the European Commission reported that seven infringement cases are currently open against different EU Member States.

Responding to a question about detection of harbour porpoises under SAMBAH 2 -project and any available data on bycatch, Ms. Carlén confirmed that regular detections occur but stated that she was not aware of any registered bycatch events.

Mr Evans recalled the joint ASCOBANS and ACCOBAMS workshop with Navies on underwater noise and cetaceans, held in November 2024, where some confusion regarding the use of pingers was observed. Ms. Carlén noted that, given the current geopolitical situation, resolving the issues surrounding pingers might be challenging.

b) Interactions between marine mammals and fisheries: Assessing impacts and possible solutions

Sara Königson (Swedish University of Agriculture Science) presented on interactions between marine mammals and fisheries, with a focus on assessing impacts and possible solutions.

There is a widespread need to estimate the impact of fisheries on marine mammals to improve management, better protect populations, and reduce bycatch. Since marine mammal bycatch occurs sporadically, large sample sizes over extended periods are necessary to obtain reliable bycatch rate estimates. SLU has developed effective methods for monitoring marine mammal bycatch. The Electronic Monitoring (EM) systems developed by SLU are considered a reliable alternative to onboard observers and have been implemented within the national data collection framework (DCF). There is a high compliance rates, where the fishers are part of the data collection wich enables a large data collection. The Swedish monitoring program now includes 25 vessels, covering more than 10% of the fishing effort. However, collecting, storing, and analyzing this data can be costly and time-consuming. A promising area for future research is the use of machine learning (ML) to automate species identification in onboard electronic monitoring systems, which would significantly enhance data collection. More reliable monitoring data on bycatch can provide new insights into the key factors influencing bycatch rates of marine mammals in small-scale fisheries.

Assessing the interactions between marine mammals and fisheries helps identify where mitigation measures are needed. One effective approach is developing alternative selective fishing gears for fisheries experiencing high levels of interaction. In the Baltic Sea, ongoing efforts have led to the development of alternative and selective gears that reduce bycatch of protected species. One example is the pontoon trap, now used for multiple species in several countries, including Finland, Sweden, and Germany. Another mitigation measure involves the use of acoustic deterrent devices, known as pingers, to reduce bycatch. While some pingers have proven effective, newly developed devices using novel sound frequencies require evaluation to assess their impact and effectiveness. SLU is currently testing pingers with loud sound levels to reduce bycatch, as well as evaluating their functionality and practicality.

c) Updated models and numbers of bycatch of harbour porpoise in the North Sea and Western Baltic

Lotte Kindt-Larsen (DTU AQUA) presented updated models and numbers regarding the bycatch of harbour porpoises in the North Sea and Western Baltic, emphasizing the shift from traditional methods (Bycatch Per Unit Effort (BPUE)) to more sophisticated models (Generalized Linear Mixed Models (GLMM)). These models incorporate factors such as mesh sizes, vessel length, net length, and soak time, significantly improving accuracy compared to earlier approaches. Initial estimates for the Western Baltic and North Sea indicate bycatch figures of around 1,000 individuals each—half of what traditional methods would have predicted. However, incomplete logbook data remains a challenge, requiring expert judgment to fill gaps. Since 2020, expanded data collection has enhanced model reliability, particularly in the North Sea.

The latest results show a significant decline in bycatch estimates, largely due to a reduction in fishing effort. In the Greater North Sea, bycatch projections have dropped to approximately 250 individuals, reflecting a 50% decrease in fishing activity since 2020. In the Western Baltic, estimates now stand at around 120 individuals, influenced by the collapse of the cod fishery and the full closure of the lumpsucker fishery in Denmark. These figures do not yet account for mitigation measures such as pingers, and further quality checks are underway. The research team is also working to integrate German and Swedish data to provide a more comprehensive assessment.

While sustainable bycatch limits are estimated to range between 25 and 100 individuals, preliminary findings suggest total bycatch across all national fleets exceeds this threshold. Future work will focus on refining models, incorporating additional data sources, and expanding predictions to include seals and birds. The overarching goal is to assess the broader impact of fishing activities on marine populations and ensure fisheries management aligns with sustainability targets.

During the discussion, participants addressed the population threshold for bycatch and its calculation, as well as the implications of the findings.

d) The PearlNet: Progress and Perspectives

Andrea Milanelli (Thünen Institute) presented the progress and perspectives on PearlNet, an application of acoustic reflectors in set nets designed to reduce bycatch of harbour porpoises and other odontocetes.

The incidental catch in fishing gear, especially in gillnets, is one of the main threats to marine mammals around the world, including harbour porpoises. Since porpoises use echolocation for orientation, one way to reduce their bycatch might be to increase the acoustic detectability of the gillnets. This can be achieved by the so-called PearlNet – a gillnet equipped with small plastic beads to it as those “pearls” were found to give a strong echo, helping the animals to recognize these nets as impenetrable barriers. The PearlNet's design aimed to find an ideal acoustic reflector that is highly reflective, omnidirectional, small, and neutrally buoyant. Through larger simulations, acrylic glass (Polymethyl methacrylate, PMMA) has been identified as one suitable material due to its resonance properties at relevant frequencies.

The presentation provided an overview of the PearlNet's current development and assessment status, including considerations regarding its efficiency of catch for targeted fish species, its potential to reduce bycatch of harbour porpoise, and advancements in production. The positive results in the German and Danish Baltic Sea regarding catch efficiency (for cod and different species of flatfish) and handling time comparison between standard net and the PearlNet showed no differences, confirming its effectiveness for catching targeted fish species. Regarding the effect in bycatch rate, despite positive preliminary results from Turkey in 2021, it was still not possible to confirm the PearlNet efficacy in reducing bycatch of harbour porpoises. A large-scale trial in Iceland in 2024 registered no bycatch in either standard nets or the PearlNet, leaving the question open.

In terms of production, it was first explored changing the pearl material to nylon to simplify recycling, as most nets are made from nylon. However, simulations and measurements showed that the acoustic properties of nylon were not as effective as of PMMA. Regardless of material choice, redesigning the pearl attachment method was necessary. Initially, pearls were manually glued to the net, a process that was both toxic and time-consuming, thus also costly. To improve efficiency, the project was now shifting from gluing to a pressing method. The latest design features pearls made of two identical PMMA half spheres that can be pressed together, streamlining production.

Moving forward, main project objectives are to determine the PearlNet’s true effectiveness in reducing harbour porpoise bycatch and to automate its industrial manufacturing process. These steps are crucial for making the PearlNet a practical and scalable solution for sustainable fisheries.

e) Close encounters: Porpoise ALerting device (PAL) and insights into harbour porpoise behaviour around fishing nets

Thaya Dinkel (Thünen Institute of Baltic Sea Fisheries) presented findings on the Porpoise Alerting Device (PAL) and its impact on harbour porpoise behaviour around fishing nets. The device emits sounds recorded from a captive porpoise to deter wild porpoises from approaching nets. Previous studies have shown an 80% reduction in bycatch when using PAL. However, a new project, PAL-CE, has been initiated to determine whether this effect is due to habitual behaviour rather than an active deterrence mechanism. An experimental setup using fishing nets and FPODs was used to study porpoise behaviour in proximity to nets. Through experimental observations, porpoises were

recorded swimming around nets, avoiding them, or crossing them at close distances. Data on swim speed, respiration rates, acoustic activity, and reaction distances were collected and analyzed using generalized additive models (GAMs).

Results showed that porpoises displayed minor behavioural changes near the nets, with slight increases in swim speed as they approached, but no significant overall reactions to either the nets or PALs. Respiration rates remained stable across different conditions, with only a slight decrease observed during PAL treatments. Acoustic activity did not show notable variations before or after encounters with the nets or PALs. Reaction distances varied, with porpoises noticing flagpoles at around 7 meters, nets at 5 meters, and PALs at 7.5 meters—shorter than the estimated detection ranges in previous studies. Importantly, no entanglements were observed, suggesting that bycatch may often result from accidental encounters rather than failure to detect the nets.

The findings indicate that PALs do not cause significant displacement of porpoises and could serve as a viable alternative to pingers for bycatch mitigation. As porpoises were still observed swimming within the experimental area and crossing nets with PALs attached, this suggests that a combined approach—using acoustic deterrents alongside modifications to net materials—may be the most effective strategy for reducing bycatch. These results contribute to the broader effort to implement sustainable fisheries management in the Baltic Sea while minimizing negative impacts on harbour porpoise populations.

Participants discussed the individual dolphins involved in the treatments and Ms Dinkel explained that they switched the treatments randomly. It could have been that the same individuals were involved, but different interactions took place on different days, and they were unable to identify individuals during the process.

f) Scottish Entanglement Alliance (SEA) - Project updates

Ellie MacLennan (University of Glasgow/Scottish Entanglement Alliance) presented updates on the Scottish Entanglement Alliance, highlighting its objective to collaborate with Scottish fishers and industry to better understand the scale and impact of entanglements in Scottish waters.

Launched in 2018, the Scottish Entanglement Alliance (SEA) is a collaboration between seven organisations across industry, academia, research, rescue and conservation, dedicated to promoting and protecting Scotland's wildlife, heritage and sustainable marine industries. SEA works closely with the Scottish inshore fishing industry to provide a co-ordinated, comprehensive and collaborative monitoring and engagement programme to better understand the scale and impact of marine animal entanglements in our waters, and work towards developing bottom-up strategies to reduce this threat. More information on our aims and work to date by SEA can be found here.

Regarding recent and ongoing work, Ms MacLennan mentioned the following:

Choice experiments: fisher preferences for gear and fisheries management - Two online choice experiments with fishermen focussed on preferences and incentives for 1. disposal of end-of-life and damaged fishing gear, and 2. Future fisheries management have been conducted with 116 usable responses received. Results are currently being analysed and will be available in the coming months.

Understanding the welfare impacts of entanglement: In Scotland we are seeing more and more chronic entanglement cases, where animals have been entangled for prolonged periods of time and suffered significant and debilitating injuries. However, it is difficult to capture this welfare impact in an objective and repeatable way, which has led us to the develop the Cetacean Bycatch Injury Impact Scoring System (CBIIS), a tool which uses pathology to better inform the welfare impact assessment of bycatch and entanglement. This tool was trialled during a workshop at the 2024 ECS conference in Catania. Proceedings of this can be found here. Following this a two-phase Delphi assessment was conducted where participants were asked to score one PUE case and one chronic entanglement case and score the severity of each relevant lesion or injury as mild, moderate or severe based on four criteria - pain, impact on function, sensory disruption, and systemic effects. For the chronic

cases participants were also asked to score the duration of injuries as acute, sub-acute or chronic. Over 200 cetacean experts invited to participate. 84 and 73 responses were received and are currently being analysed.

Fisher knowledge exchanges: In March 2024 we facilitated a knowledge exchange between fishermen in Scotland and Mexico and the USA facing the same issues in regard to entanglement, to learn from one another how they are addressing this. More details of this can be found here. We also delivered a workshop at the SMM conference in Perth, WA in November 2024 which was attended by 45 participants from 12 countries. The workshop included presentations from fishermen from Scotland, England, the USA, South Africa.

Gear trials: Please see Susannah Calderan's summary and recent work on gear trials. In addition to trialling the use of sinking groundline to reduce entanglement risk in the creel sector, we are investigating whether endline length and configuration can be optimised to minimise entanglement potential.

Beep: The Scottish Marine Animal Stranding Scheme (SMASS) is currently trialling the Bycatch Evidence Evaluation Protocol (BEEP). The aim of BEEP is to improve bycatch estimations for cases that cannot undergo postmortem. Bycatch is the leading cause of mortality for short-beaked common dolphins (Delphinus delphis) across the ASCOBANS region, yet it is seldom reported in Scotland. However, spatiotemporal analyses of strandings revealed an unexplained winter peak in common dolphin strandings on Scotland's west coast which coincides with increased fishing activity. The trial is running from Oct 2024 – Mar 2025 and of 66 animals examined to date, 6 (9%) have been identified as probable bycatch cases that were previously unreported. Any questions or further details can be directed to r.lennon.3@research.gla.ac.uk.

g) Successful collaborative trials of simple gear modifications to reduce entanglement of whales and other megafauna in Scotland's static pot (creel) fisheries

Susie Calderan (Scottish Entanglement Alliance) presented findings from trials aimed at reducing whale entanglements in Scotland's static pot (creel) fisheries through simple gear modifications. presented findings from trials of negatively buoyant (sinking) rope in Creel fisheries on Scotland's West Coast. The project aimed to assess the feasibility of using sinking rope to reduce marine animal entanglement. One of the key modifications tested was the use of negatively buoyant (sinking) rope, which was expected to significantly reduce entanglement risks. However, its practicality for fishers was a major consideration. Conducted over two years, the trial involved 15 fishermen re-rigging 60 fleets with the new rope and providing feedback on its practicality. Data was collected through over 1,500 hauls, remote-operated vehicle (ROV) footage, and sensor-based analysis, confirming that sinking rope remains on the seabed and minimizes entanglement risks. Contrary to concerns, the rope did not cause seabed abrasion or accumulate mud, and fishermen found it easy to handle.

The primary concern with adopting sinking rope is cost, as it is more expensive than traditional floating rope. As a result, ongoing discussions are exploring potential financial support mechanisms, including subsidies or gear exchanges, to assist fishermen in making the transition. The trial was a highly collaborative, fisherman-led initiative, ensuring that practical industry knowledge guided its implementation. Wider consultations are now taking place across Scotland's coastline to determine where the approach would be most effective. While sinking rope may not be necessary in shallow coastal waters, deeper-water prawn and crab fisheries—where entanglement risks are highest—stand to benefit significantly. The findings indicate a promising opportunity to reduce entanglements in key marine species, including whales and sharks.

With Scotland's legal obligations under the 2020 Fisheries Act, there is optimism that the government will support the transition to safer fishing gear. The data highlights that 83% of minke whales and 50% of humpback whales got entangled in ground lines where entanglement occurred, reinforcing the potential of sinking rope to mitigate risks. Recent increases in humpback whale presence around Scotland's coast, including winter residency and entanglement incidents, further emphasize the need for proactive measures. As marine animal populations and fishing activities evolve, implementing

effective and fair entanglement prevention strategies remains a priority for conservation and the fishing industry.

During the discussion, Mr. Evans questioned whether this issue was widespread or specific to Scottish waters. Ms. Calderan acknowledged that while the research focused on Scotland, entanglement risks could vary in other regions depending on fishing practices and environmental conditions. Antonio Teixeira added that similar entanglement issues have been observed in Portugal, particularly affecting minke whales, highlighting the need for broader research and mitigation efforts beyond Scotland.

h) Insights in the patterns of bycatch rates and fine-scale animal behaviour: implications for mitigation

Al Kingston (University of St Andrews) presented findings from two research papers on marine mammal bycatch in UK static net fisheries, based on long-term data from the UK Bycatch Monitoring Programme (BMP). The first paper, recently submitted to the ICES Journal of Marine Science, analysed over 20,000 monitored hauls, including a subset of 5,000 hauls from the offshore netting fleet where pingers have been mandatory for a decade. Statistical modeling was used to examine factors influencing bycatch and the effectiveness of pingers in mitigating risks for different species. The research builds on decades of work by multiple contributors, including the late Simon Northridge, and aims to inform future fisheries management strategies.

The second study involved tracking cetacean interactions with fishing nets using acoustic devices and depth sensors. This technology allowed researchers to triangulate the movements of vocalizing animals around nets, providing valuable behavioural insights. Notably, one deployment unexpectedly captured a live bycatch event, revealing how the entrapped animal attempted to escape by pulling the net upwards before likely succumbing. Acoustic recordings showed the bycaught animal continued vocalizing for part of the entrapment, while another nearby porpoise exhibited a change in vocal behaviour. These findings offer unprecedented insights into the physical and acoustic responses of small cetaceans when caught in nets.

Understanding the forces exerted by animals during entanglement could help refine static net designs with optimized breaking strengths. Additionally, the distress vocalizations recorded during entrapment may inform the development of bioacoustic deterrents to prevent bycatch. Further analysis of these signals is underway, with early indications that they differ from normal foraging and communication calls. Both studies contribute data that could support the implementation of more effective bycatch reduction measures, with findings expected to be published in the coming months.

Participants discussed the occurrence of regional and seasonal trends in porpoise bycatch rates, noting that if there are equivalent datasets from other countries, merging the data together could provide new insights. Participants also discussed whether the decline in porpoises in the Celtic Sea could be due to higher bycatch rates elsewhere causing porpoise movement. It was not certain why a decline in porpoise bycatch rates was observed in recent years, but there was less data available so wider confidence intervals were used, and there was an indication of lower density in the Celtic Seas.

i) Clean Catch: Combining a stakeholder-led approach and technological innovation to support evidence-based management

Joanna Murray (Cefas) presented an overview of the Clean Catch program, a collaborative research initiative to develop and implement bycatch monitoring and mitigation strategies for sensitive marine species, including marine mammals, seabirds, and elasmobranchs. Since its inception in 2019, the program has progressed through two phases, expanding in late 2023 with the inclusion of multiple consortium partners. The initiative emphasizes equitable co-design to enhance engagement with fishers and address barriers to participation. The first phase of trials involved testing bycatch mitigation tools, such as pingers, but faced challenges with complex study design, technological malfunctions, and lower-than-expected bycatch rates, leading to a re-evaluation of the approach.

To improve efficiency, the program adopted a simplified methodology, focusing on testing banana pingers as deterrent for common dolphins in fisheries with higher bycatch risks. The trial expanded to include nine skippers operating in three high-risk areas in the Southwest, identified using BMP data. A paired-net design, featuring control nets alongside nets equipped with pingers, was implemented to ensure accurate comparison. The trial, which commenced in mid-2023 after securing the necessary wildlife license, incorporates Remote Electronic Monitoring (REM) on all vessels, with data being reviewed and shared with skippers regularly. Efforts have been made to enhance fisher participation by addressing concerns about the Clean Catch app's usability, allowing alternative data submission methods such as paper records.

In addition to ongoing trials, Clean Catch is collaborating with the BMP on REM analysis to improve species identification and data collection methodologies. The program aims to build an image reference library to enhance the accuracy of bycatch assessments. Regular engagement with participating fishers ensures that trials remain practical while yielding scientifically robust results. Looking ahead, Clean Catch is initiating partnerships with new fishery stakeholders to inform the next phase of development, with the ultimate goal of refining and implementing bycatch mitigation strategies that are both effective and feasible for the fishing industry.

Participants discussed why using an app was more challenging for fishers than paper records, to learn how to successfully move away from paper to digital records. Fishers were part of the design of the app and are happy using it, so it is an individual preference, but making it simple and accessible is key. Participants also discussed whether the app was developing AI for species recognition. Though the current app allows photos to be taken, and a reference library will be created that could be used to train AI, it is currently not used in Clean Catch.

j) Fishery closure in French waters during winter 2024

Hélène Peltier (Pelagis, La Rochelle University) presented on the fisheries closure in French waters during winter 2024.

Following the infringement procedure initiated by the European Commission in 2020 against France for non-compliance with the Habitats Directive, due to excessively high mortalities of common dolphins in the Bay of Biscay, closures of gear at risk of bycatch have been put in place during the winter of 2024. These closures concern all vessels >8m in length operating with OTM, PTM, PTB, GNS, GTR and PS gear. The measure is applied in waters under French jurisdiction in ICES zone 8, and extended to all flags operating in the zone as an emergency measure under the Common Fisheries Policy. A closure of at-risk gear is made compulsory, with no derogation possible, by decree of the Council of State in December 2023, between January 22 and February 20, 2024, 2025 and 2026.

During the winter of 2024, a total of 938 strandings of small cetaceans, including 693 common dolphins, were recorded along the French Atlantic coast. Of these, 148 common dolphins stranded during the closed season (100 in the closed area <48°N and 46 north of the closed area). In the closed area, 18 individuals showed signs of death in fishing gear. These common dolphins were mainly found north of the Bay of Biscay, south of Brittany.

The apparent stranding rate (fresh and slightly decomposed animals examined with bycatch evidence as a proportion of the total number of fresh and slightly decomposed animals examined) was particularly low this winter. It was estimated at 52% south of 48°N before the closure, down to 29% during the closure period, and then to 53% after the closure. It should be noted that since 2017, it has generally been estimated at between 60% and 90% during the winter period.

Weather conditions in winter 2024 were dominated by strong westerly winds. This generated drift conditions favourable to strandings, which were therefore representative of mortalities at sea.

Reverse drift models estimated common dolphin bycatch at 1,450 (CI95% [1,090; 2,050]) between December 2023 and March 2024. In the closed area, 190 (CI95% [140; 270]) bycatch were estimated before the closure, 210 (CI95% [160; 300]) during and 760 (CI95% [570; 1,070]) after. Residual bycatch during the closure period indicate that gear not affected by the decree is nevertheless at risk for common dolphins.

The closure of at-risk gear has had a significant effect in reducing common dolphin bycatch in the Bay of Biscay during the winter of 2024. However, the effectiveness of the measure will also need to be assessed at the end of the 3-year period, and even in the longer term. Indeed, it could be subject to variations depending on the distribution of dolphins from one year to the next, the seasonal nature of the risk of bycatch, and the effects of deferring fishing effort. The risk of missing the mortality peak was highlighted by ICES for the shortest closures (WKEMBYC 2020, WKEMNBYC 2023).

k) Bio-inspired acoustic beacons to limit fishery bycatch of dolphins

Bastien Merigot (University of Montpellier / Marine Biodiversity, Exploitation and Conservation lab (MARBEC)) presented research on bycatch mitigation in the Bay of Biscay, focusing on a bio-acoustic beacon designed to reduce common dolphin entanglement in fishing nets. The project aims to improve dolphin awareness of nets by developing a prototype of a beacon emitting returning echolocation signals when dolphins are detected nearby. These signals are designed to alert dolphins to the presence of nets, potentially reducing the risk of entanglement. The beacon operates only when dolphin presence is detected and emits complex signals at varying frequencies and power levels to enhance effectiveness.

Field experiments were conducted to assess the beacon's impact on dolphin behaviour. Researchers monitored the echolocation and communication patterns of nearly 50 dolphin groups in different behavioural states, both with and without the presence of fishing nets. Results indicated that dolphins increased their echolocation activity and altered their communication when the beacon was active, suggesting greater awareness of nets. Observations from the surface showed dolphins engaging in prospecting behaviour rather than stress-induced escape responses, which are commonly associated with deterrent devices like pingers. Complementary tests were carried out with fishermen, involving over 1,000 fishing operations using nets of varying lengths, but results were inconclusive due to operational issues such as device malfunctions and battery failures.

Further testing with additional vessels is required to statistically validate the beacon's effectiveness in reducing bycatch. Despite the need for more data, initial findings indicate potential benefits, leading to the beacon's inclusion in the French government's action plan for bycatch reduction. Plans are underway to deploy the DolphinFree project for 2024-2026, involving 65 vessels post-fishery closure in February, and to develop additional signals for other echolocating species. The research team aims to refine and expand the technology to improve marine species conservation while maintaining sustainable fishing practices.

4.2. ACCOBAMS area

a) Fishery interaction evidence on stranded cetaceans in Italy from 38 years of monitoring presented[1]

Guido Pietroluongo (University of Padova) presented an analysis of fisheries interaction evidence on stranded cetaceans of 38 years data from Italy.

[1] Fishery interaction with cetaceans: insight from 38 years of stranding monitoring (1986-2023) along the Italian coastline. Pietroluongo, G.[A,B], Centelleghe, C.[A,C], Mazzariol, S.[A,C]
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[B] Consorzio Nazionale Interuniversitarioper le Scienze del Mare (CoNISMa), 00196 Roma, Italy
[C] Interuniversity Center for Cetacean Research (CIRCE), 16132 Genova, Italy

The Italian Stranding Network aims to monitor fishery interaction on stranded cetaceans to identify risk patterns and support targeted conservation policies through improved forensic methods and collaboration. Historical and new data spanning 38 years on fishery-related findings and mortalities were analysed in 5355 cetaceans stranded in Italy, focusing on the most represented species. Literature review and evidence of interaction on stranded carcasses supported the findings' categorization, from animal history to pathological findings. Evidence assessment and post-mortem investigation methods evolved over three macro-periods, from non-standardized reporting (1986–2014, Tier 1) to an integrated national stranding network (2015–2019, Tier 2), and finally to the creation of a new standardized, evidence-based diagnostic framework under the EU-funded LIFE DELFI project (2020–2023, Tier 3).

Evidence of fishery interactions was reported in 12.9% of carcasses (690/5355), with significant differences observed between species, sexes, and geographic areas. Geographic analysis identified distinct risk hotspots, such as geographical sub-areas (GSA) 17 for bottlenose and GSA 10 for striped dolphins. The most represented categories of interaction were the "presence of fishing gears" and the "larynx entanglement", particularly affecting bottlenose dolphins. The adoption of the new diagnostic framework attributed fishery-related causes of death to 12.07% of necropsied carcasses during Tier 3 (21/174), with adult male bottlenose dolphins more represented.

For the first time in Italy, these results supported recommendations for species- and region-specific mitigation strategies, including gear modifications, seasonal bans, and marine protected areas. Engaging fishing communities in conservation efforts and standardizing forensic investigations across the Mediterranean are crucial for advancing cetacean conservation. This research represents a new model within the ACCOBAMS area and highlights the value of stranding networks in monitoring anthropogenic threats and shaping effective conservation policies.

The discussion covered commercial hunting and the observed increase in bycatch numbers. Concerns were raised about potential biases in sampling and their impact on statistical significance. These points were acknowledged and agreed upon during the discussion.

b) Addressing dolphin bycatch in eastern Sicily – bridging data gaps and implementing mitigation measures

Alessandra Raffa (Marecamp ODV) presented on efforts to address dolphin bycatch in eastern Sicily, focusing on bridging data gaps and implementing mitigation measures.

Marecamp, an NGO, is actively engaged in the conservation of cetaceans in Eastern Sicily, particularly in the waters of the Western Ionian Sea (GSA19). This region, characterised by a diverse coastline, supports a rich marine ecosystem, including vulnerable species such as cetaceans, seabirds, elasmobranchs, and sea turtles. The strong presence of small-scale artisanal fisheries has led to frequent interactions between fishers and dolphins, as they share the same fishing areas and target species. One issue is bycatch, the accidental entanglement of dolphins (and other vulnerable species) in fishing gear.

A documented case in the Gulf of Catania, the first worldwide on an artisanal net, revealed that an entangled dolphin and its pod significantly increased vocalisation distress signals. The study identified two peaks, the first corresponding to a depredation event when dolphins were feeding near the net and the second occurring during the entanglement. During the Depredation-2 project, these findings highlight the potential of real-time acoustic monitoring systems to detect and possibly prevent bycatch incidents. Losing even a single sub-adult male can significantly affect small, localised dolphin populations' social structure and genetic diversity, making conservation efforts even more critical.

To address this issue, Marecamp, in partnership with ACCOBAMS and the support of FAO-GFCM, developed a comprehensive project focused on data collection, mitigation strategies, and community engagement: the Depredation-3 project. Passive acoustic monitoring devices (F-PODs and hydrophones) have been deployed to assess dolphin presence and activity patterns. At the same

time, surveys, questionnaires, logbook data, and direct observation from fishing and research vessels provide valuable insights into the extent of dolphin-fishery interactions. Recent data confirm cases of bycatch involving both a bottlenose dolphin calf and an adult striped dolphin.

Mitigation efforts to reduce dolphin bycatch during this project include collecting more data for the Acoustic Alert System (invented during the Depredation-2), testing lights applied to trammels and modifications to gillnets. Training programs for fishers focus on safe handling and release techniques to minimise harm to the dolphins and the fisher. Training programs focus on safe handling and release techniques to minimise harm. However, fishers' reluctance to report bycatch due to legal concerns and public backlash is a major challenge. Dolphins, being highly charismatic, often receive more attention than other marine animals, complicating the relationship between conservationists and fishers.

To overcome these obstacles, Marecamp has implemented initiatives like the Floating Laboratories network (Depredation-1 project, LIFE) and citizen science programs to encourage real-time data collection and greater involvement from the local community. Fishers are provided with structured, non-intrusive tools such as logbooks to report interactions with marine life while maintaining transparency and fostering cooperation. Despite regional differences in fishing gear, species distribution, and practices, those mitigation trials serve as a valuable foundation for broader conservation efforts across the Mediterranean. A recommendation is expanding these experiments to other areas where bottlenose and striped dolphins are similarly affected by bycatch, which could improve conservation strategies on a larger scale. Continued collaboration among fishers, researchers, and conservation organisations remains essential in addressing this issue while promoting sustainable fishing practices.

c) On a new smart acoustic deterrent device based on dolphin recognition through artificial intelligence

Alessandro Lucchetti (CNR-IRBIM) presented new smart acoustic deterrent devices on dolphin recognition through artificial intelligence.

Depredation is widely recognized as the most concerning type of interaction between dolphins and fishing activities. To address this issue, various mitigation devices have been developed, with the most well-known being “pingers”. These devices emit acoustic signals designed to deter dolphins from approaching fishing nets. However, a major limitation of commercially available pingers is their lack of "interactivity" (i.e. the ability to detect the presence of cetaceans in the surrounding area), the acoustic pollution caused in the marine environment and the possible habituation by dolphins.

To overcome this limitation, in the framework of the European Life Delfi project and the National Biodiversity Future Center (PNRR) new AI-based pingers have been developed. These innovative devices use artificial intelligence to automatically detect cetaceans near fishing nets by analysing dolphin vocalizations in real time. When dolphins are detected, the device activates an acoustic emission to deter them. This approach achieves two key goals: reducing underwater noise pollution and preventing dolphins from becoming habituated to the deterrent signal, which would enable them to bypass it. The smart pinger consists of four fundamental components: a receiving part or hydrophone, a computational system for dolphin recognition based on AI, an emitting part, and a battery pack. The entire system has been developed with the aim of minimizing both the size and cost of the device (less than €500). This innovative device employs advanced algorithms to analyse dolphin vocalizations in real time, detecting their presence near fishing nets (whistle detection > 95%; other emissions > 60%). Once the cetacean is identified, the device emits customized acoustic signals to deter it from approaching. Compared to traditional pingers, which emit continuous and non-reactive acoustic signals, this new technology introduces an unprecedented level of interactivity. The development of the smart pinger involved a huge amount of work, including a) the collection of acoustic recordings at sea, b) the processing of acoustic data, c) the search for suitable technologies (also considering cost-effectiveness criteria to produce an economically affordable tool for fishermen), d) the miniaturization of various components (including the computing system), e) sea trials to test the performance. The device, designed in every aspect to be small and inexpensive

(making it affordable for fishers), is highly flexible. It can be used as a simple recording tool and respond to the presence of dolphins with a sound, an alarm message, or other alerts. Another groundbreaking feature of Smart Pingers is their remote configurability via a smartphone app. Smart Pingers are the result of a collaboration between the CNR-IRBIM and ANcybernetics, a spin-off of the Marche Polytechnic University with extensive experience in underwater and educational robotics research. The result is a ground-breaking innovation on a global scale.

During the discussion, participants raised concerns about the transmission component of the device, noting that it had not yet been tested. It was suggested that it might be beneficial to first evaluate the effectiveness of signal transmission through modulation before fully implementing the device's receiving function. In response, Mr. Lucchetti explained that the development process had prioritized the receiving capabilities first to ensure that the device could function in flexible environments, including both land and water settings, and testing in a closed environment was not possible because of ethical issues.

Another question was whether the device could also be used for passive fishing gears. Mr. Lucchetti responded that the device can also be used for passive gears. Participants also discussed the optimal distance between the pingers and fishing nets. Based on tests conducted in a lake environment, the effective distance for pingers was found to be 600 meters, though further verification of these values was encouraged.

d) What's going on with the common dolphins in the western Turkish Black Sea coast?

Arda Tonay (Istanbul University, Faculty of Aquatic Sciences – Turkish Marine Research Foundation (TUDAV)) presented an update on bycatch events in the Black Sea, focusing on the increasing number of stranding data.

The western Black Sea of Türkiye is an area of rich biodiversity, a traditional fishing area and a region with high vessel traffic due to the straits. It includes the prebosphoric area, which is a part of the Turkish Straits System IMMA. Three cetacean species live there: bottlenose and common dolphins and Black Sea harbour porpoises. Between 2003 and 2016, more than a thousand strandings were reported. Almost 80 % of them were harbour porpoises and three mass strandings affecting harbour porpoises of unknown cause were recorded. In overall annual distribution, there is an increase in strandings during spring and early summer months due to porpoises bycaught in turbot nets, followed by newborns dying from starvation as a result of maternal losses. However, since 2021 there has been a different situation.

During winter months, fishing-related deaths of common dolphins have started to be observed. In 2021, 4 common dolphins stranded in 2 days in the Istanbul Strait. In 2022, 22 common dolphins stranded in Istanbul in only 3 days in February. Not only in Istanbul, however, a large increase in common dolphin mortality was observed along the almost entire Turkish Black Sea coast. More than 90 common dolphins died in the last week of February and March. Two juvenile female and one adult male common dolphin stranded with the evidence of bycatch.

In 2024, approximately 30 common dolphins stranded in Istanbul in one month, 4 of which died due to bycatch as there were net marks on the rostrum and mandibles, and their stomachs were full of undigested horse mackerel. The main suspects for these abnormal stranding cases are purse seine and midwater trawls, because common dolphin bycatch has been reported with these metiers before. While purse seining is allowed in the Strait, midwater trawling is not.

Meanwhile, due to the intense underwater/surface military activities in the northern Black Sea started in winter 2022, it is possible that common dolphins migrated south to safer shores, resulting in higher bycatch rates in 2022. But the question is why these strandings were not happening when industrial fishing was always intense in the region during winter. According to the Global Fishing Watch, although bottom trawl and midwater trawl are given together in their algorithm, it is seen that between February 15 and March 15, 2024, purse seines were fishing in the Marmara Sea while trawls were in the western Black Sea. Mid-trawls are therefore the main suspect for these bycatches in 2024.

Therefore the changes in the fishing grounds of midwater trawlers over the years should be investigated. Onboard monitoring is needed to understand what causes common dolphin mortality, especially in midwater trawls. As a precautionary measure, it is advised to ban/limit all industrial fishing in the prebosphoric area.

e) The war may increase bycatch risk

Co-Chair Amaha Öztürk presented on behalf of Pavel Gol'din (Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine) who had technical difficulties to join this session, regarding the increasing bycatch risk due to war, emphasizing that current assessments are largely based on assumptions rather than scientific evidence, which should be addressed. The presentation highlighted potential dangers posed by underwater noise, blast trauma, and displacement due to military activities in the Black Sea (due to the conflict between Ukraine and Russia that recommenced in 2022) and construction. These disturbances can have both immediate lethal effects and long-term stress on marine mammals and their prey, leading to changes in their distribution. A significant overlap between important marine mammal areas and zones affected by war and industrial activities was noted, suggesting that the displacement of species could be linked to human-induced environmental disruptions.

The presentation reviewed records from 2022, which showed high mortality rates for harbour porpoises and common dolphins across the Black Sea. The causes of these deaths remain unclear, with possibilities including infections, pollution, underwater explosions, or a combination of these factors. At the same time, increased instances of bycatch were reported, particularly in the southern Black Sea, as marine mammals sought refuge from war-affected regions. Additionally, non-combat activities such as coastal construction and the destruction of barriers further disrupted cetacean migration patterns. A significant environmental event in 2023, where a reservoir discharge contaminated the Black Sea, was also identified as a major contributor to marine biodiversity loss, including porpoise deaths.

Co-Chair Amaha Öztürk concluded by stressing the complexity and overlapping nature of these environmental threats, which require urgent attention. Even seemingly minor disturbances, such as stress and displacement, can lead to increased bycatch and long-term ecosystem shifts. The ACCOBAMS Scientific Committee has proposed a post-war action plan focused on multi-task monitoring of all mortality factors, urging regional cooperation among Black Sea nations to implement mitigation measures.

f) Update on bycatch events in the easternmost Mediterranean Sea

Aviad Scheinin (Morris Kahn Marine Research Station, University of Haifa / Delphis NGO) presented updates on bycatch in Israeli waters, based on three key data sources: strandings, boat surveys, and passive acoustics. Between 1993 and 2024, 440 marine mammals were recorded as stranded, the majority belonging to the *Tursiops truncatus* (T.T.) species. Stranding data have remained stable over the years. Necropsies of stranded animals are conducted to determine the cause of death, with entanglement in fishing gear identified as the primary cause. Additionally, the team has identified various pathogens in stranded animals, including Toxoplasma and Streptococcus, indicating that some dolphins may have been weakened by disease before becoming bycatch victims.

Israeli fisheries primarily operate using bottom trawling, gillnets, and bottom longlines. Of the 100 fresh bottlenose dolphin carcasses examined, approximately 50% showed signs of bycatch, while for common dolphins, about one-third of the 17 examined carcasses were entangled in fishing gear, mainly gill nets. Bycatch related to bottom trawling is particularly difficult to assess because it leaves no marks on the dolphins; however, a full stomach with fresh fish in the forestomach, combined with good body condition and no external signs of bycatch, suggests possible bottom trawl-related mortality. Israeli bottom trawlers use a safety line, which is estimated to capture one young *Tursiops truncatus* approximately every two years. Mr Scheinin highlighted the need for further research into this phenomenon and invited colleagues to share similar observations from other regions.

Entanglement also occurs from bottom longline and gill net fisheries, but precise data on the extent of this issue are not yet available.

5. International transboundary activities

5.1. Update from CIBBRiNA project

Graham Pierce (Consejo Superior de Investigaciones Cientificas / Instituto de Investigaciones Marinas, CSIC-IIM) presented the LIFE CIBBRiNA project, whose mission is working together to minimise the bycatch of priority marine mammals, birds, turtles, sharks, skates and rays in European fisheries. The project involves numerous partners and stakeholders, including the fishing industry, and employs various monitoring techniques and mitigation strategies for multiple species, including cetaceans. There are several “method” work packages including stakeholder engagement, incentives, perceptions and socio-economics, bycatch mitigation toolkit, data collection toolkit and bycatch assessment toolkit. There are 8 case studies, 3 on gillnets, 3 on longlines and two on trawl-fisheries, all of which are regularly evaluated.

The key focus is on understanding and mitigating bycatch in gill net and trawl fisheries, using tools such as hydrophones, escape panels, pingers, and onboard cameras. Research teams have been studying net deformation and the effectiveness of different deterrent measures to minimize the accidental capture of marine species.

Several case studies within the project have tested monitoring and mitigation strategies across different fisheries. Mr Pierce gave examples of some. In the UK, hydrophones have been deployed to track dolphin activity around gill nets, revealing interactions but no recorded bycatch. In trawl fisheries, particularly in Denmark, cameras and escape panels have been installed to assess bycatch reduction effectiveness. Ongoing efforts include industry collaboration, regular stakeholder meetings, and the integration of findings across case studies to improve project coordination. One of the main challenges is ensuring efficient communication and synergy between different work packages and case studies, given the project's complexity.

The project also engages with other bycatch-related initiatives, including the REDUCE and Marine Beacon projects, as well as international organizations such as ASCOBANS and ACCOBAMS. Recent activities include workshops on turtle bycatch mitigation, a meeting on the use of cameras in fishing gear and a meeting on mitigation approaches in gill net fisheries. Additionally, monthly webinars on bycatch-related topics have been introduced to facilitate knowledge-sharing. Several events are planned for 2025, including workshops, a capacity building course, the monthly webinars and a CIBBRiNA meeting in April in Vigo.

5.2. CetAMBICion bycatch mitigation trials in bottom-set net and purse seine fisheries

Ana Marçalo (Centre of Marine Sciences (CCMAR) presented the latest results from the CetAMBICion bycatch mitigation trials in bottom-set net and purse seine fisheries. The only new development is that the study has been accepted for publication.

The work examined bycatch across multiple fishing gears, including bottom-set nets, purse seines, and beach seines, using harbour questionnaires, observer data, and strandings. Pilot studies tested acoustic deterrent devices (DDDs and DiDs), comparing hauls with and without alarms. Data collection was carried out through observers and vessel crew logbooks on the southern Portuguese coast, and analysis was performed using generalized additive models (GAMLSS) and a two-stage Zero Adjusted Poisson (ZAP) model.

For set nets, significant differences were observed between hauls with and without DDDs, with depredation rates reduced. Interactions with cetaceans were positively linked to latitude, year, and vessel, but negatively related to the CPUE of red mullet. DiD interactions followed a similar trend. Over three years, a habituation effect was noted, leading to a decline in effectiveness, though the

devices still remained 70% effective. In purse seine fisheries, bycatch was only recorded in control groups, while hauls using DDDs showed zero bycatch, reducing risk by 100%. DDDs also decreased depredation, though their impact on bycatch in set nets remains uncertain. CPUE increased with DDD use, while DiDs had no significant effect. Effectiveness varied depending on mesh size, season, and cetacean behaviour, and habituation remains a concern. Best practices, such as optimizing soak times, gear length, and seasonal alarm use, were identified as key mitigation strategies. One fishers' association has already adopted DDDs on six to eight vessels. Purse seining proved to be particularly effective, showing a significant reduction in bycatch while being economically viable.

Portugal implemented Despacho n° 12140/2023 in November 2023, creating a working group to develop an action plan for reducing cetacean, seabird, and sea turtle bycatch. The technical aspects of the plan are nearly complete, with the next steps involving political approval and public consultation. Proposed measures include low-intensity pingers along the West Coast to protect harbour porpoises and DDDs along the South Coast. Technical issues with the devices were noted, including short battery life, rusting screws, and uncertainty about differences between DiDs and DDDs. Environmental noise and habituation are also concerns in passive nets, and opposition exists to DDDs in Western Coast fisheries due to potential habitat exclusion effects on Iberian harbour porpoises.

5.3. ICES Bycatch Advice 2024

Marie-Julie Roux (ICES) presented the ICES Bycatch Advice for 2024 (see Information Documents ACCOBAMS-ASCOBANS/JBWG2/Inf.5.3a and ACCOBAMS-ASCOBANS/JBWG2/Inf.5.3b).

ICES provides both recurring advice and responses to special requests from policymakers. In 2024, two key special requests were addressed: one focused on developing appropriate bycatch monitoring systems at the EU Member State level, including recommendations for regional coordination, while the other provided support for the implementation of the Action Plan for harbour porpoises in the Baltic Sea (Baltic Proper). Additionally, ICES revised and published its Bycatch Roadmap, aiming to improve the scientific basis for bycatch assessments through better data collection, monitoring methodologies, and risk evaluation.

To assess bycatch risks, ICES continues to use the Bycatch Evaluation and Assessment Matrix (BEAM), which incorporates key factors such as the availability and quality of bycatch per unit effort (BPUE) data, fishing effort data, estimates of bycatch numbers, and population abundance estimates. A benchmark review of this approach is scheduled for autumn 2025 to refine the methodology further. For data-limited species, which are at high risk of extinction but lack sufficient data for quantitative bycatch estimates, a semi-quantitative risk assessment method is currently being developed.

The EU request on bycatch monitoring systems led to a study assessing different monitoring strategies from 2017 to 2020. The study found that no single monitoring method is universally applicable to all species, and increasing vessel monitoring coverage generally improves bycatch rate estimates. However, for species with very low bycatch rates, significantly higher monitoring coverage is required to obtain reliable estimates. A simulation study demonstrated that for species with a high probability of bycatch, a monitoring coverage of about 1% was sufficient, while species with medium probability required around 5–7%. For rarely caught species, the required coverage increased to 30–50%, and for extremely rare species, reliable estimates were unachievable at any monitoring level. Stratified monitoring by fishery type improved accuracy for rarely caught species but had little effect on those with higher bycatch rates.

ICES also assessed the risk of harbour porpoise bycatch in the Baltic Sea for 2021 and 2022. The analysis identified set gillnets and trammel nets as the highest-risk gears. High-risk areas were mapped based on the overlap of high harbour porpoise habitat suitability and intense fishing effort, particularly for set gillnets with medium and large mesh sizes. However, the study had several

limitations, including data gaps, outdated habitat models from 2011 to 2013, and the use of fishing effort metrics such as days at sea, which do not account for net length or soak time.

ICES provided bycatch estimates for 116 species in 2023, marking a significant expansion from previous assessments. This improvement resulted from methodological refinements and an extension of the data coverage from five to seven years. Among marine mammals, common dolphins had the highest estimated bycatch, particularly in trammel nets and gillnets in the Bay of Biscay and Iberian Coast, which accounted for nearly 70% of common dolphin bycatch across all assessed regions. Harbor porpoises were most affected by set gillnets in the Norwegian Sea.

During the presentation, a question arose regarding the unexpectedly high bycatch rates of bottlenose dolphins in gillnets. Ruth Fernandez from the secretariat explained that this increase was likely due to a combination of higher fishing effort with this gear and improved reporting, which resulted in greater estimated bycatch numbers.

The ICES Bycatch Advice for 2024 emphasizes the need for improved monitoring and risk assessment strategies to mitigate bycatch of endangered species. Special attention is required for rare species, harbour porpoises in the Baltic, and common dolphins in the Bay of Biscay. The upcoming benchmark review in 2025 will aim to further refine methodologies for assessing and addressing bycatch risks.

5.4. Bycatch Evaluation and Assessment Matrix: development of an iterative process for high throughput of bycatch estimation and providing guidelines on bycatch monitoring

David Lusseau (Technical University of Denmark) presented the Bycatch Evaluation and Assessment Matrix (BEAM), developed within the ICES Working Group on Bycatch (WGBYC). The purpose of BEAM is to move from an inability to assess bycatch to a structured framework that identifies what data is needed to conduct an assessment. It provides a systematic approach to estimating bycatch, assessing its impact on populations, and informing monitoring efforts. A key challenge in providing scientific advice on bycatch is the difficulty in estimating bycatch rates and total bycatch, linking these estimates to species or management units, and establishing thresholds for sustainable bycatch levels. BEAM helps address these challenges by creating a scalable system capable of processing thousands of assessments efficiently rather than relying on case-by-case estimations.

The BEAM framework includes several assessment criteria, such as Bycatch Per Unit Effort (BPUE), data quality and analysis, fishing effort (days at sea), bycatch mortality estimates, population/stock abundance estimates, and bycatch reference points (T). The estimation process within BEAM relies on multiple BPUE estimates across various fishing conditions, including location, métier level, vessel length, year (2017–2023), sampling protocols, and monitoring methods. One of the main questions is whether these estimates are consistent and, if not, which factors contribute to the observed variance. Heterogeneity is analysed through meta-analysis methods, using negative binomial modeling to determine whether BPUE values belong to the same statistical population. If heterogeneity is detected, the next step is to determine whether it can be explained with available data.

BEAM includes several quality control checks:

- QC1: Comparing monitoring effort vs. fishing effort to ensure a sufficient monitoring rate.
- QC2: Ensuring data availability for total bycatch estimation.
- QC3: Identifying factors influencing BPUE and verifying their presence in fishing effort data.

The ultimate goal is to predict bycatch based on fishing effort data, enabling a more efficient assessment process. In 2024, BEAM processed 788 BPUE estimates at the ecoregion × species × métier L4 level, though many were zero BPUE values requiring reliability checks. Additionally, 319 total bycatch estimates were generated at the same level, and 31 total bycatch estimates across all métiers. If BPUE cannot be estimated, BEAM provides monitoring recommendations based on PETSAMP 3 and SCOTI simulations, which help refine data collection strategies. For the first time,

regional-level bycatch estimates have been produced across multiple ecoregions, with 31 cases where total bycatch was estimated at the ecoregion × species level. Work is ongoing to improve spatial resolution and align bycatch assessments with management units, ensuring that estimates are scientifically robust and relevant for conservation efforts.

6. Recreational fishing

6.1. ICES Roadmap on recreational fisheries

Lara Salvany (ICES) presented the ICES Roadmap on recreational fisheries.

The ICES Working Group on Recreational Fisheries Surveys (WGRFS) tackles the challenges associated with marine recreational fisheries (MRF). Despite the social and economic value of recreational fisheries, their environmental impact remains largely unknown, and they are not yet integrated into marine governance or regularly included in ICES advice.

WGRFS compiles and validates MRF data, provides guidance on data collection methods, and works to incorporate MRF data into the ICES advisory process. Recognizing the growing importance of MRF, ICES has developed a roadmap to guide the inclusion of MRF data in its advisory process. This roadmap includes a diagram of the actors and processes involved and a stepwise model for embedding MRF data into ICES advice.

Starting in 2023, ICES issues an annual data call for Marine Recreational Fisheries data to monitor fishing efforts. This includes catch estimates for all fish species and fishing effort estimates (in fishing days), along with information on the gear used. The 2024 data call submissions are currently being analyzed.

Bycatch is not a primary focus for WGRFS at the moment, as most countries allow gear with minimal bycatch impact. However, WGRFS acknowledges that some countries still permit gear with potential for ETP bycatch and recognizes the need to improve bycatch monitoring as established by the EU Marine Action Plan. WGRFS plans to address bycatch issues in its next terms of reference.[2]

6.2. Recreational fishing in Finland

Penina Blankett (Ministry of the Environment Finland) presented an update on recreational fishing in Finland.

Management of the Finnish marine area: Finland's sea area consists of EEZ and territorial waters. Territorial waters are divided to external waters and in internal waters. Metsähallitus controls ca. 2,8 million hectares of seas, more than one half of the Finland external territorial waters. Significant portions of internal waters are privately owned and often managed by co-operatives.

Fishery legislation (Fishing Act 379/2015): Recreational fishing is defined as fishing for recreation and domestic needs (section 4). Common fishing rights (section 7) means that everyone can engage in angling, ice fishing, and fishing Baltic herring for free of charge. These provisions apply to state-owned water areas. Every citizen of a state belonging to the EEA and who has paid the fisheries management fee and everyone under 18 or at least 65 years of age has the right to engage in recreational fishing in the Finnish EEZ and public water areas (section 8). Regarding fishing with e.g. passive gear, such as nets or traps, needs permission from the owner of the water area and all 18–64-year-old must also have paid the state fishery management fee.

Regarding bycatch of whales and seals, the owner or user of the fishing gear shall notify bycatches to the National Resources Institute Finland (section 62). In the last 30 years there has been recorded three bycaught harbour porpoises in recreational fishing (1996, 1999 and 2018). In 2018 the

[2] References: https://www.ices.dk/community/groups/Pages/WGRFS.aspx; ICES Roadmap for Marine Recreational Fisheries (MRF). 17 pp. https://doi.org/10.17895/ices.pub.27930003

bycaught animal was released alive. To get better information of the status of endangers fish species, recreational fishermen must report their catch of endangered fish species e.g catch of salmon, seatrout, eel and marine spawning grayling (section 62a).

Nature Conservation Act (9/2023) stipulates that common fishing rights are valid also in MPAs. Fishing acts section 8 applies also in state owned MPAs located in EEZ. If fishing endangers the purpose of the establishment of the MPA, fishing can be restricted temporally or spatially.

Åland islands have their own fishery legislation, and the main difference compared to mainland Finland is that fishing is not free. In private or jointly owned water areas, a permit from the owner of the water area is required to fish, which is partly organized through the sale of fishing licenses. Individual water area owners can separately decide on the regulations, as long as the decision is not against the law. Åland's nature reserves may, depending on the area, set fishing restrictions.

There are 1.8 million recreational fishermen (2020) of which 43 % men and 23 % women in Finland. Ca 350 000 fish in the marine areas of which 70 000 is using nets. In the Archipelago Sea area there are ca. 157 000 fishermen, of which 30 000 uses nets.

The total catch of recreational fishermen using gillnets in the marine areas is ca. 2.3 mil. kg (2022). The most common prey species were perch, whitefish (Coregonus), common bream, herring and pike.

Participants discussed that seeing the critical status of the harbour porpoise, recreational fishing could become a conservation concern, though noting that monitoring and controlling this type of fishing in Finland is difficult. In Sweden, Finland and Estonia recreational fishers are allowed to use nets, and harbour porpoise has been bycaught, which was noted as a possible threat, and it is a sensitive legal rights issue.

6.3. Welsh inshore gill net bycatch risk project: using iVMS data, species distribution models and on-board observer programme to understand bycatch risk

Frazer Coomber (Bangor University / Sea Watch Foundation) presented findings from the Welsh Inshore Gill Net Bycatch Risk Project, a study assessing bycatch risks in static net fisheries using multiple data sources and methodologies.

To understand the risks posed by small-scale inshore static net fisheries to marine species in Wales, a team from Bangor University have conducted a bycatch risk assessment by investigating the spatial and temporal distribution of this fishery to the modelled distribution and density of marine species. The project included several objectives from conducting a literature review to understand the global and regional information on static net fishing, to provide a thorough understanding of the level and distribution of studies covering these fishing practices and identifying the knowledge gaps. Previously, fishing activity in the Northeast Atlantic has been monitored using Vessel Monitoring Systems (VMS) and Automatic Identification Systems (AIS). However, these systems are only required on fishing vessels greater than 12 metres in length and this has led to a knowledge gap on the distribution of fishing effort for inshore small-scale fisheries.

Since February 2022 all fishing vessels in Wales less than 12 metres in length are required to use Inshore Vessel Monitoring System (iVMS). iVMS devices provide the at sea positions of vessels at regular intervals of roughly 10 minutes, which combined with reported landings provides detailed information on the daily activity of vessels from this fishery. Using these data the distribution, effort and catches were mapped for the Welsh National Marine Plan area, thus providing fine-scale information on the spatial distribution and effort of this fishery at the national scale of Wales. Furthermore, with over two years of iVMS data available the temporal variation in this distribution between seasons, months and years of this fishery was also mapped.

The results of the fishery maps, along with available modelled data on the distribution and density of marine mammals, sea birds, elasmobranchs and diadromous fish were used to calculate and present

relative risk index maps to understand the areas where these species are most at risk of being bycaught in static nets. These maps included the risk for two seal species, five cetaceans, 13 seabird species and two diadromous fish, several of which presented the temporal component of this risk at monthly, seasonal and annual scales. Alongside these objectives, the team also conducted an onboard observer programme with the static net fishery to record and calculate the actual observed bycatch per unit effort for Wales.

To date the observer programme has collected information on bycatch from 267 sets across seven different static net fishers with 152 bycaught individuals recorded across the four different taxonomic groups of interest. The project objectives have successfully identified and filled a few existing knowledge gaps, including the spatial distribution of a small-scale inshore fishery, the spatial risk of 22 marine species and the recording of actual bycatch specific to Welsh waters.

7. Results from the assessment process of the EU-MSFD and UNEP-MAP EcAp, and associated targets, regarding cetacean bycatch

7.1. EU MSFD: Comparison between the Agreement Areas

Sinead Murphy (Atlantic Technological University) presented an update on the EU Marine Strategy Framework Directive (MSFD), focusing on the assessment of cetacean bycatch. She provided an overview of OSPAR activities, particularly the Quality Status Report (QSR) and the OSPAR marine mammal bycatch indicator. In addition to the results of the HELCOM D1C1 indicator 'Number of drowned mammals and waterbirds in fishing gear'.

The presentation detailed the methodology behind the indicator, its conservation objectives, and the application of both the Potential Biological Removal (PBR) and the Removal Limit Algorithm frameworks, which set Assessment Unit (AU)-based anthropogenic removal thresholds. She reported that for all harbour porpoise and common dolphin assessment units, the thresholds were exceeded, and thus OSPAR's conservation objective, to recover or maintain AUs 'at 80% of carrying capacity, with 80% probability, within a 100-year period' was not achieved.. While for the Iberian porpoise AU, the threshold was set at zero, due to small population size and their vulnerable status. The ICES WGBYC advice, which provided bycatch estimates for the assessment, highlighted major data deficiencies, including incomplete submissions, imbalanced reporting, and significant variability in data quality and quantity across Member States. These issues pose challenges for accurate bycatch assessment and the implementation of effective mitigation measures. HELCOM adopted a similar conservation objective for harbour porpoises in their bycatch indicator, and bycatch estimates also exceeded threshold values – the Baltic Proper harbour porpoise threshold was also set to zero.

Additionally, Ms. Murphy summarized the reported data from the second round of MSFD reporting and noted that the third round of Articles 8, 9, and 10 assessments is currently underway. However, as of the time of the presentation, only three ASCOBANS Parties had submitted their third-cycle reports. As a result, it remains unclear how the marine mammal bycatch indicators developed by OSPAR and HELCOM are being applied within the ASCOBANS region—raising concerns about the ability to effectively assess bycatch trends at a regional level.

7.2. ABIOMMED project

Caterina Fortuna (Italian Institute for Environmental Protection and Research) presented on the EU MSFD comparison between different Agreement Areas, as well as findings from the ABIOMMED project. She outlined a bycatch risk assessment framework, emphasizing the need to evaluate risk per species and identify the most dangerous fishing gears contributing to bycatch. A key recommendation was to establish a threshold value for bycatch that should not be exceeded and to monitor bycatch rates per species and per fishing métier in each GFCM geographical subarea. However, she also noted that not all third-cycle MSFD reports had been received, making it difficult to fully assess compliance and effectiveness of current conservation efforts.

The presentation included an overview of ICES WGBYC Table A, which compiles bycatch estimates from different fisheries and provides a crucial dataset for evaluating trends. Ms. Fortuna emphasized that although some EU infringement procedures on bycatch are currently open, the overall number remains low, indicating either a lack of enforcement or incomplete reporting from Member States. Ms. Fortuna concluded her presentation by engaging participants in a discussion about the status of MSFD reporting among countries that had not yet submitted their third-cycle reports. She strongly encouraged Member States to improve conservation efforts through better data collection, assessment, and implementation of mitigation strategies. She also reiterated that, according to the EU Action Plan for reducing incidental catches of sensitive species, all species must be assessed for bycatch and mitigation measures adopted by 2030, underscoring the urgency of action in the coming years.

8. Discussion and Recommendations

Mr. Evans introduced the Recommendations from JBWG1. Participants reviewed them, assessed which ones were completed, decided which should be kept, and agreed on new ones.

The finalized Recommendations from JBWG2 are available in Annex 1 of this report.

9. Terms of Reference

Ms. Renell introduced the *Proposed amendments to the Terms of Reference of the Joint Bycatch Working Group of ACCOBAMS and ASCOBANS* (ACCOBAMS-ASCOBANS/JBWG2/Doc.9). There were small updates in the TOR that were outlined on screen. These were agreed on. The TOR will be presented at the next meetings of the ASCOBANS Advisory Committee and the ACCOBAMS Scientific Committee for endorsement.

An additional point was raised about whether regular meetings should be agreed on or not, but it was decided to not define a meeting interval and keep it flexible.

10. Programme of Work for 2025-2027

Ms. Amaha Öztürk introduced the Draft Programme of Work for 2025-2027 (ACCOBAMS-ASCOBANS/JBWG1/Doc.10) and outlined key revisions. The finalized POW is available as Annex 2 to this report.

11. Election of Co-Chair of the Working Group 2025-2027

Ms. Monaco explained that Ms. Amaha Öztürk had announced stepping down as Co-Chair, and had nominated Dimitar Popov as new Co-Chair. Mr. Peter Evans had offered to continue as Co-Chair.

With no objections, Mr. Popov was elected as the new Co-Chair. Co-Chair Evans and the newly elected Co-Chair Popov extended their thanks to Ms. Amaha Öztürk for chairing the Working Group for the past six years.

12. Any Other Business
No other business was raised.

13. Closure of the Meeting
After the customary expressions of thanks, Mr. Evans declared the meeting closed at 17:04 CET on 6 February 2025.

Annex 1

RECOMMENDATIONS FROM THE 2ND MEETING OF THE JOINT BYCATCH WORKING GROUP OF ACCOBAMS AND ASCOBANS

General

1. In pursuance of regional conservation initiatives (e.g. national plans of action under the EU Biodiversity Strategy, Barcelona Convention, Bucharest Convention, Bern Convention, HELCOM, OSPAR) and their bycatch reduction / elimination targets, Parties and Range States should have in place national plans of action to tackle cetacean bycatch. (JBWG1/Rec1)

2. Regional and sub-regional cooperation projects/programs are encouraged to be undertaken by Parties, research, fisheries and other relevant organisations, supported by national funding or other funding organisations. Countries are encouraged to support regular wide-scale surveys including SAMBAH (Spatio-temporal Assessment of the Baltic Proper Harbour Porpoise and its Habitat Quality), SCANS (Small Cetaceans in European Atlantic waters and the North Sea), and ASI (ACCOBAMS Survey Initiative), and international projects on cetacean bycatch. (JBWG1/Rec2*)

3. The current sampling level needs to be increased and directed towards fishing métiers known to cause cetacean bycatch in order to improve bycatch estimates. Monitoring on small vessels in particular needs to be increased. Where some bycatch information already exists[3,4], this can be refined to target specific fisheries. (JBWG2/Rec3*)

4. Studies on the interactions between Black Sea cetaceans and fisheries indicate a high bycatch level for the Black Sea harbour porpoise population which threatens the viability of the subspecies. Measures to refine estimates of porpoise abundance and bycatch are required, along with measures to reduce bycatch levels, as a matter of urgency. (JBWG2/Rec4*)

5. Given the critically endangered status of the Baltic Proper harbour porpoise population, bycatches in the population range need to be eliminated as a matter of urgency. Countries are urged to implement the ICES special request advice published on 26 May 2020, relating to the Baltic Proper porpoise population. Taking into account the efforts made, if pingers cannot be used in the full area, countries are urged to find and implement alternative effective bycatch mitigation measures. (JBWG2/Rec5*)

6. Recognizing the OSPAR conservation status of the Iberian harbour porpoise, the requirement to eliminate bycatch of this population is also urgent, and should be a priority for bycatch mitigation action.

Data Collection towards better Bycatch Monitoring and Assessment

7. In most cases, legal instruments and standardised data reporting/monitoring mechanisms are already in place, but their implementation should be strengthened and harmonised to ensure scientifically robust cetacean bycatch assessments, including extending those mechanisms across all Range States. Information on the amount of effort directed at sensitive/vulnerable species bycatch monitoring (in units that allow raising to total fleet effort) should be included in bycatch data reporting. The ongoing development of BEAM (Bycatch Evaluation and Assessment Matrix) by ICES (to be reviewed in December 2025) is endorsed. To supplement

[3] ICES. 2024. Third Workshop on appropriate sampling schemes for Protected, Endangered and Threatened Species bycatch (WKPETSAMP3). ICES Scientific Reports. 6:1. 96 pp. https://doi.org/10.17895/ices.pub.25061522

[4] ICES. 2024. DGENV request on appropriate bycatch monitoring systems at Member State level and on regional coordination. In Report of the ICES Advisory Committee, 2024. ICES Advice 2024, sr.2024.04, https://doi.org/10.17895/ices.advice.25562220

onboard monitoring, DG MARE is strongly encouraged to implement the use of logbooks within the EU DCF (Data Collection Framework) as recommended by ICES. It is essential that there is an obligation for the fishers independent of the vessel size to record necessary data as advised by ICES in relation to bycatches, in addition to onboard monitoring and other surveillance methods. (JBWG2/Rec6*)

8. Consider ways to better address bycatch monitoring in cetacean populations where bycatch problems may largely go undetected within existing monitoring programmes, for example by nature of their ecology or low population size. In the case of data poor species, the ongoing development by ICES of the semi-quantitative risk assessment process is strongly supported. (JBWG2/Rec11*)

9. Accurate and standardised spatio-temporal recording of fishing effort should be carried out in appropriate metrics (including gear characteristics, mesh sizes, soak times, net lengths and height/dimensions, target species catches) on all métiers irrespective of vessel size. Any changes in spatial or temporal fishing effort should be monitored in terms of implications for potential bycatch. (JBWG1/Rec7*)

10. Monitoring plans/efforts should be carefully designed taking into consideration monitoring objectives and characteristics of cetacean species at risk (in particular, their distribution, abundance and population demography), following PETSAMP 3 recommendations. (JBWG1/Rec8*)

11. The retrieval of bycaught animals from vessels should be encouraged by the appropriate authorities in order to obtain biological data, including tissue samples, for a wide range of analyses (e.g. genetics, life history parameters, diet), and to collect information on other parameters that may contribute to bycatch (e.g. hearing damage). (JBWG1/Rec9)

12. Missing bycatch data from IUU (illegal, unreported and unregulated) fishing, recreational fisheries, and drop-outs in gillnet fisheries, should be taken into consideration when assessing bycatch numbers, and a precautionary approach (e.g. Regulation (EU) 1380/2013, Article 4) when evaluating bycatch estimates is advised. (JBWG1/Rec10*)

13. The application of cost-effective monitoring approaches allowing higher coverage, including those of drop-outs, such as Remote Electronic Monitoring (REM), should be considered on a wider scale and across the two Agreement Areas, in collaboration with authorities, fishers and other relevant fisheries stakeholders. Voluntary schemes, including monitoring effort, should be considered as they may be more acceptable and cost effective. (JBWG1/Rec12*)

14. REM should be implemented as a wider tool than just helping to increase cetacean bycatch sampling coverage. It is potentially useful in improving other datasets, such as fishing effort, particularly if combined with Vessel Monitoring System (VMS) information, for example. (JBWG1/Rec13)

15. A better understanding is needed of factors relating to bycatch risk. Studies to increase understanding should include the spatio-temporal overlap of particular cetacean populations and gear types, local environmental characteristics, ecology and behaviour of the bycaught species (before and during the entanglement), and their prey, across both Agreement Areas. (JBWG1/Rec14)

16. Strandings schemes should be supported and their data integrated and utilised across the two Agreement Areas. Use of standardised protocols (e.g. the Joint ASCOBANS-ACCOBAMS strandings protocol) can inform estimates of bycatch and help establish proximal cause of death and underlying metrics of health and human impact. There is considerable value in stranding networks undertaking comprehensive, expert pathological examinations, including histopathology, neurohistopathology, estimation of disease burden (parasitology, virology, microbiology), contaminant assessments, and evaluation of auditory pathology, even in cases

where bycatch is the assumed cause of death. The results of these scientific studies should be made widely available to the interested public and the relevant data should be published on official sites at regular intervals. Integrating strandings data with wider oceanographic and ecological sources of data should be considered, for example developing carcass drift models to aid bycatch estimates from strandings where there is spatio-temporal overlap of mortality areas with fishing effort. Existing drift models developed for search and rescue (SAR) missions or pollution spread surveillance and control must also be considered. There is a need to harmonise the diagnosis of bycatch across national stranding networks, and for training and capacity-building of those making veterinary assessments. (JBWG1/Rec15*)

Measures to Prevent and Mitigate Bycatch

17. Encourage EC to request special advice from ICES regarding the Iberian harbour porpoise and the Black Sea harbour porpoise where there are serious concerns over the impacts of bycatch on their conservation status. In the case of the Iberian harbour porpoise, there is an urgent need to collect more biological information on the population and to obtain more accurate estimates of bycatch, and to act quickly with the appropriate conservation measures.

18. Encourage Parties, Research Institutes, and Private Sector bodies supported by funding bodies, in collaboration with fishers throughout the process, to develop or improve mitigation measures with new technology and/or materials, alternative (more selective) gears, the shifting of fishing effort etc. (JBWG1/Rec16)

19. The success of particular mitigation measures depends upon a variety of elements including the particular cetacean population, specifics of the gear and its deployment, as well as local conditions. The Working Group should keep a watching brief of case studies relevant to the Agreement Areas that describe which measures have or have not worked. This should be undertaken in liaison with other bodies (e.g. ICES, WGBYC, FAO, IWC, HELCOM, OSPAR) so that actions complement one another rather than duplicate effort. (JBWG1/Rec17)

20. There is a need to improve the involvement of fishers from the start, including transfer of knowledge, in adopting good practices and to contribute prevention and monitoring of bycatches and careful release of entangled animals. Better outreach would help to inform and reduce bycatch and entanglement. Parties should consider the provision of incentives where appropriate. (JBWG1/Rec18)

21. Support the development or review of guidelines, as appropriate, to policymakers, authorities, and the scientific community on how to best incentivise and engage fishers in prevention, mitigation and monitoring programmes. (JBWG1/Rec19*)

22. Where the current mitigation measures (e.g. pingers or more selective fishing gears) don't solve the problem, spatio-temporal closures may be the only immediately available solution, although care is needed that this does not simply move the problem elsewhere. Consideration should be given to moving away from métiers of concern, in which case national authorities should consider some means of compensation to help cover fishers' income loss, where appropriate. The precautionary principle should be adopted. Insufficient technology development should not be considered as a reason to postpone decision-making. In the case of the common dolphin in the Bay of Biscay, spatio-temporal closures should be in place for longer to be able to better assess their effectiveness. In order to achieve this, it is important that the regional abundance of the species is monitored over the same period. (JBWG1/Rec20*)

23. The need to move towards an internationally standardised approach for dealing with potential interventions (or lack thereof) of free-swimming, chronically entangled cetaceans should be considered. Expansion of the IWC Global Whale Entanglement Response Network across the regions should be encouraged, including dedicated training of entanglement responders. (JBWG1/Rec21)

24. The humane release of live bycaught and entangled animals according to best practices should be encouraged to help ensure their survival (e.g. *Guidelines for the Safe and Humane Handling and Release of Bycaught Small Cetaceans from Fishing Gear* - CMS Technical Series No.43[5], *FAO/ACCOBAMS Good Practice Guide for the Handling of Cetaceans caught incidentally in Mediterranean Fisheries[6], IWC Guidelines for entanglement responders[7], IWC Best Practices for the disentanglement of free-swimming small cetaceans[8]*) and fishers should be encouraged to report releases of bycaught individuals. (JBWG1/Rec22*)

25. Countries should be encouraged to establish and effectively manage Marine Protected Areas (MPAs) and apply Other Effective area-based Conservation Measures (OECMs) where appropriate, and to develop and implement management plans to reduce cetacean bycatch, noting the value of MPAs that have been created and already have management plans (e.g. in the Baltic), with the purpose of cetacean conservation and bycatch reduction. (JBWG1/Rec23*)

26. Methods (such as pingers, time-area closures, selective gears) to monitor the performance of mitigation measures as well as compliance in their usage by fisheries in real world conditions should be improved and become standard. (JBWG1/Rec24*)

[5] https://www.cms.int/en/publication/guidelines-safe-and-humane-handling-and-release-bycaught-small-cetaceans-fishing-gear
[6] https://openknowledge.fao.org/server/api/core/bitstreams/27a3201b-9fe4-41c8-a5de-596c08ece2b9/content
[7] https://iwc.int/management-and-conservation/entanglement/best-practice-guidelines-for-entanglement-responde
[8] https://iwc.int/document_3761.download

Annex 2

PROGRAMME OF WORK 2025-2027 FOR THE JBWG

TOR	Task description		Lead	Priority	Timeframe	Reporting
1.	Collate and prepare an overview of scientific information relevant to bycatch of affected cetacean species.					
	1.1.	ACCOBAMS Area. Engage Parties.	ACCOBAMS Co-Chair	High	Ongoing	SC17
	1.2.	ASCOBANS Area. Engage Parties.	ASCOBANS Co-Chair	High	Ongoing	AC30
2.	Review available information on IUU (Illegal, Unreported and Unregulated) fishing, recreational fishing, identification of bycatch risk areas, fishing techniques and gears applied in both agreement areas related to bycatch					
	2.1.	IUU: ACCOBAMS Secretariat to contact Parties, including illegal driftnets	ACCOBAMS Secretariat	High (ACC); Medium (ASC)	Ongoing	ACC Bureau meeting; AC30
	2.2.	Recreational fishing	ICES WGRFS	Medium	Ongoing	JBWG2; JBWG3?
	2.3.	Identification of bycatch risk areas	Peter Evans et al. (ASC); Dimitar et al. + GFCM rep (ACC)	High	Ongoing; Before SC17	AC30
	2.4.	Fishing techniques and gears	Leave to ICES WGBYC / CIBBRiNA; GFCM	High (ACC); Medium (ASC)	Ongoing	SC17; AC30
3.	Contribute to the assessment process of the EU-MSFD criteria and/or UNEP-MAP EcAp, and associated targets					
	3.1.	EU MSFD: Comparison between the Agreement areas. Intermediate report.	Sinéad Murphy Caterina Fortuna (tbc)	High	Ongoing	JBWG2; JBWG3
	3.2.	UNEP-MAP EcAp: Report on SPA-RAC in ACCOBAMS Area	SPA/RAC	High	Ongoing	SC17
4.	Review and provide updates on bycatch mitigation reduction measures currently available or under development and their effectiveness, using existing sources		JBWG; Co-chairs & Secretariats	Medium	Ongoing	JBWG2; JBWG3; AC30

TOR	Task description		Lead	Priority	Timeframe	Reporting
5.	Prepare an overview of national and international legislation and other measures relevant to the monitoring and management of cetacean bycatch, and include an overview of actions taken to deliver on ACCOBAMS and ASCOBANS obligations		Secretariats; ICES WGs Richard Caddell	Low	Ongoing	JBWG3
6.	Prepare, as appropriate, and in coordination with ICES WGBYC, advice on:					
	6.1.	Target setting (bycatch limits) including potential conservation and user objectives, in accordance with the policies of the two Agreements;	Co-chairs	High (ACC); Medium (ASC)	Ongoing	SC17; AC30
	6.2.	Monitoring cetacean bycatch and fishing operations	ICES WGBYC; GFCM	Medium	Ongoing	SC17; AC30
7.	Provide technical support to facilitate dialogue with relevant bodies that have certification schemes, such as the Marine Stewardship Council (MSC), including by actively contributing to the assessment of relevant fisheries with respect to cetacean bycatch		Secretariats	High	Ongoing	AC30
8.	Comment on requests for information or advice received through the Secretariats		Secretariats; JBWG Co-chairs	High	Ongoing	As requested
9.	Engagement with fishers					
	9.1.	Support for the development of guidelines on how to best incentivise and engage fishers in mitigation and monitoring programmes.	CIBBRINA +?	High	Ongoing	AC30; SC17
	9.2.	Develop an outreach strategy (include sociologists)	CIBBRINA	High	Ongoing	JBWG3
10.	Identify future pilot studies for bycatch mitigation, taking into account the outputs of the review of mitigation measures in fisheries with high bycatch within the ASCOBANS Agreement Area, and in close liaison with other initiatives (e.g. IWC Bycatch Mitigation Initiative and CIBBRiNA, Marine Beacon).		Co-chairs	High	Ongoing	AC30; JBWG2; JBWG3
11.	Look at fisheries-generated marine debris.		Pine Eisfeld-Pierantonio	Medium	Ongoing	AC30

Annex 3

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* Updated/edited.