ECS 37th Annual Conference 2026 Dundee, Scotland – workshop

„Tackling marine mammal bycatch challenges through different mitigation approaches in collaboration with stakeholders“



BASICS TO BENEFITS
EUROPEAN CETACEAN SOCIETY
37th Annual Conference
22–24 April 2026
DUNDEE • SCOTLAND

Organisers: Cecile Dargentolle, Dunja Jusufovski, Graham Pierce and Marije Siemensma

CIBBRINA
Marine Beacon
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Introduction

Bycatch or incidental catch of non-target species, is widely recognized as one of leading anthropogenic threats to marine mammals globally. Among the marine mammal taxa, small cetacean and pinniped species are especially vulnerable to entanglement in both active and passive fishing gear while large toothed and baleen whales tend to entangle in ropes of different pots and traps.

The issue of bycatch is multifaceted, stemming from ecological, technological, to socio-economic and governance dimensions. Mitigation approaches are challenged by the diversity of fisheries, gear used and marine mammal behaviours as well as the trade-off between conservation objectives and fishing practices.

Multiple mitigation approaches have been developed however, their uptake and effectiveness at scale remain variable due to technical limitations, regulatory constraints and stakeholder acceptance. Mitigation approaches to bycatch, require collaborative and cross- sector approaches integrating both scientific knowledge and fishers' expertise and operational realities. This collaboration is often the key to long-term success.

Purpose and objectives

This workshop was created through a joint initiative by the 5 ongoing EU-funded bycatch projects in order to present new insights gained through recent research on marine mammal bycatch mitigation. The work presented here goes beyond the scope of the mentioned projects, but focuses on the bycatch in the narrow sense (excl. depredation and other forms of marine mammal-fisheries interactions) addressing:

- Current knowledge on marine mammal bycatch;
- Recent developments, trials and challenges in the uptake of different bycatch approaches in experimental and commercial fisheries settings;
- Wider implications and long-term effects of bycatch mitigation measures on endangered marine mammal species;
- Best practices for co-creation of bycatch solutions with fishers, scientists, gear developers and other stakeholders;
- Addressing challenges in bycatch trial designs and data analysis.

Workshop venue:

Discovery Point building (www.dundeeheritagetrust.co.uk/attraction/discovery-point/)

Discovery Suite meeting room (1st floor, ♿)



Organizers (contact):

Cecile Dargentolle (cecile@matis.is)

Dunja Jusufovski (dunja.jusufovski@hafogvatn.is)

Graham Pierce (g.j.pierce@iim.csic.es)

Marije Siemensma (m.siemensma@msandc.nl)

Workshop programme

Morning session

Chair: Dunja Jusufovski, Marine and Freshwater Research Institute, Iceland

8:30 – 8:55 Registration & morning coffee

9:00 – 9:20 Workshop introduction

9:20 – 9:35 Testing Solutions to Reduce Cetacean Bycatch in Spanish Iberian waters and Bay of Biscay by Nair Vilas Arrondo & Iago Izquierdo (IEO-CSIC, Vigo)

9:35 – 9:50 From Observation to Action: Building Cetacean-Friendly Beach Seine Practices in Portugal by Claudio Brandão (CCMAR, Portugal)

9:50 – 10:05 Stakeholder consensus suggests strategies to promote sustainability in an artisanal fishery with high rates of poaching and marine mammal bycatch by Simon Goodman (University of Leeds, UK)

10:05 – 10:20 Q & A

10:20 – 10:50 Coffee break

Morning session continued

Chair: Sam L. Cox, University College Cork, Ireland

10:50 – 11:05 Using acoustic monitoring to inform bycatch mitigation in static nets by Jamie Macaulay (University of St Andrews, UK)

11:05 – 11:20 Estimating bycatch in European waters and learning about bycatch along the way by David Lusseau (DTU Aqua, Denmark)*

11:20 – 11:35 Mitigation of seal-fishery interactions: examples from the northern Baltic Sea by Petri Suuronen (ISCG, Italy/Finland)*

11:35 - 11:50 Game of Trawls: towards a real-time reaction to bycatch events inside fishing trawls by Robin Faillettaz (IFREMER, France)*

11:50 – 12:05 Overview of bycatch mitigation toolkits by Dunja Jusufovski (MFRI, Iceland) & Alessandra Bielli (CEFAS, UK)

12:05-12:15 General Q & A

12:15 – 13:15 Lunch break (Mezzanine, Discovery Point)

Afternoon session

Chair: Marije Siemensma, Marine Science & Communication on behalf of Ministry of Agriculture, Fisheries, Food Security and Nature, The Netherlands

13:15-13:20 Introduction to the afternoon session by Marije Siemensma

13:20-13:40 The Life CIBBRiNA stakeholder engagement approach by Marije Siemensma (MS&C on behalf of LVVN, The Netherlands)

13:40-13:55 Challenges and successes in attempts to reduce cetacean bycatch in UK waters by Sarah Dolman (EIA, UK)

13:55-14:10 Integrating Bycatch Mitigation into Operational Fisheries Management by Maria Hermida (Hooktone Group, Spain) & David Anderson (AFPO, UK)*

14:10 – 14:20 General Q & A

14:20-15:30 Interactive perspective exercise by Marije Siemensma

15:30-16:00 *Coffee break (Group photo)*

Afternoon session continued

Chair: Graham Pierce, IIM-CSIC, Vigo, Spain

16:00-17:10 Interactive session with Hanne Hjelle Hatlebrekke (SINTEF Ocean, Norway)
17:10 – 17:30 Closing discussion by Dunja & Graham

**Online presentation*

Abstracts

Testing Solutions to Reduce Cetacean Bycatch in Spanish Iberian waters and Bay of Biscay

Presenters: Nair Vilas Arrondo, IEO-CSIC, Vigo, Spain **Email:** nair.vilas@ieo.csic.es
Iago Izquierdo, IEO-CSIC, Vigo, Spain **Email:** iago.izquierdo@ieo.csic.es

"We are marine biologists at the Spanish Institute of Oceanography (IEO-CSIC) working on the development and evaluation of mitigation measures to reduce cetacean bycatch in commercial fisheries. Our work relies on close collaboration with the fishing sector to better understand the scale and drivers of the problem, while also designing and testing solutions that can be applied under real fishing conditions."

Authors: Nair Vilas-Arrondo, Iago Izquierdo-Ferreiro, Graham J. Pierce and Julio Valeiras

Cetacean bycatch mitigation remains a major management challenge in European fisheries, particularly in trawl and gillnet fleets operating in the Northeast Atlantic.

Several recent projects from the fishing sector and the Spanish National Research Council (CSIC) have developed mitigation trials within the framework of the international projects CETAMBICION, CIBBRiNA, and MARINEGUARDIAN, as well as the national projects DESCARSEL and MERMACIFRA, These projects focus on two complementary approaches: (1) testing Cetacean Exclusion Devices (CEDs) in trawl fisheries, and (2) evaluating acoustic deterrent devices (pingers) in gillnet fisheries, alongside socio-ecological assessments.

In trawling, pilot trials conducted in Iberian waters took place with the pair trawl fleet, targeting demersal and pelagic species such as blue whiting, hake, and mackerel, and where bycatch of common dolphins occurs. Five innovative exclusion devices were tested, consisting of net tunnels with grids placed along the net extension and dorsal escape openings. Underwater video observations provided valuable insights into species-specific behavioural responses, showing that large organisms were effectively excluded, while target species were retained. This work is ongoing within the MARINEGUARDIAN project.

In gillnet fisheries, four types of commercial acoustic were tested under real fishing conditions at sea. Their performance was evaluated in relation to variables such as gear type, target species, and fishing area. The results contribute to building a scientific basis for their applicability allowing assessment of their technical feasibility and their potential

integration into fisheries management strategies aimed at reducing impacts on cetaceans. This work continues within the CIBBRiNA project.

Beyond technical performance, the results highlight the importance of operational feasibility, economic considerations, and stakeholder engagement. Although these mitigation measures show promising results, their adoption is still influenced by fishers' perceptions and concerns, making collaboration with the sector essential for successful implementation.

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From Observation to Action: Building Cetacean-Friendly Beach Seine Practices in Portugal

Presenter: Cláudio Brandão, Center of Marine Sciences (CCMAR). Portugal

Email: cabrandao@ualg.pt

"I am working on monitoring cetacean interactions in Portuguese beach seine fisheries (arte-xávega), with a focus on quantifying bycatch risk and testing mitigation measures. My current work explores the use of acoustic deterrent devices (pingers) under real fishing conditions, aiming to support the development of practical, science-based solutions for small-scale fisheries."

The traditional beach-seine fishery (*arte-xávega*) operates along the north-central Portuguese coast. During summer –early fall, when fishing effort peaks, this fishery has a documented history of cetacean bycatch, posing risks to the critically endangered harbour porpoise (*Phocoena phocoena*). To help achieve European bycatch-reduction objectives, a monitoring and mitigation program was initiated in 2025 under the EU Horizon Marine Guardian project, combining observer data, and pilot deployment of acoustic deterrent devices (pingers). Fishers were interviewed prior to fieldwork across multiple beaches to identify areas of greatest concern, enabling targeted mitigation testing and strengthening collaboration between the fishing community and scientific team. From June to October of 2025, 45 hauls were monitored. Overall sighting, bycatch and mortality rates were 1.29, 0.58 and 0.13 animals per haul, respectively. All interactions involved only common dolphins (*Delphinus delphis*). During pinger trials (Aug-Oct 2025), 16 hauls were controls and 13 carried pingers (Fishtek/Future Oceans; 60-120 kHz). Common dolphins were

sighted during net deployment in 5 hauls (1 control; 4 pinger), corresponding to sighting rates of 1.13 sightings/haul (controls) and 2.69 sightings/haul (pingers), indicating that pingers did not consistently exclude animals from the fishing area. In total, 11 dolphins were captured: 10 in controls versus 1 with pingers. This resulted in a bycatch rate of 0.63 captures/haul in controls compared with 0.08 captures/haul using pingers — an 87 % reduction. Mortality also decreased substantially, from 3 fatalities in controls (0.19 mortalities/haul) to 1 with pingers (0.08 mortalities/haul). However, the post-release fate of animals surviving bycatch remains unknown. These early results provide a significant coordinated baseline for cetacean interactions in the Portuguese beach-seine fishery and highlight the value of co-developed solutions with fishers to refine mitigation strategies, support communities as new regulations emerge, and guide towards genuinely cetacean-friendly beach-seine practices in mainland Portugal.

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Stakeholder consensus suggests strategies to promote sustainability in an artisanal fishery with high rates of poaching and marine mammal bycatch

Presenter: Simon Goodman, School of Biology, University of Leeds, UK

Email: s.j.goodman@leeds.ac.uk; **Web:** www.goodmanlab.org

"I am an ecologist and conservation biologist with a focus on marine mammal conservation, with one of my main research projects over 20 years being on the ecology and conservation of Caspian seals. I am particularly interested in interdisciplinary collaborations, to help translate research findings into policy impact. I also act as co-chair of the IUCN Pinniped Specialist Group."

Illegal fishing for high value species in artisanal fisheries drives incidental catch and declines of large marine vertebrates of conservation importance around the world. Engaging with stakeholders is essential to understand which strategies will be effective in motivating the development of more sustainable practices, and disengagement from illegal fisheries. Here we discuss how a social science approach known as the 'Q-method', can be used evaluate stakeholder perspectives on conservation, management and mitigation, in an illegal fishery targeting sturgeon in the Caspian Sea, which drives bycatch of 10s of thousands of endangered Caspian seals (*Pusa caspica*) each year.

We carried out a Q-study in autumn 2018 with 50 stakeholders from the Caspian Sea coast of Dagestan (Russian Federation), including fishers illegally targeting sturgeon (Acipenseridae) and Caspian seals, traders and fisheries managers. We assessed viewpoints on biodiversity governance; illegal, unreported and unregulated (IUU) fishing; illegal wildlife trade (IWT) and conservation. Three distinct viewpoint groups emerged from a factor analysis, which we designated as 'Nostalgists', 'Optimists' and 'Pessimists'. Nostalgists were concerned with decline in environmental quality and emphasised a need for increased centralised involvement of authorities reminiscent of the old Soviet system. Optimists expressed support for a well-regulated legal fisheries sector, while Pessimists were very aware of the negative impact of illegal fisheries and IWT, but felt they could not be controlled. Among all groups we found a strong desire for alternative livelihoods, improved sustainability and agreement on the potential effectiveness of marine protected areas and increased regulation, even if some stakeholders felt they were not achievable goals.

The results informed three workshops in which Dagestani fishers and fishery experts discussed potential conservation interventions, and the barriers to their implementation. Six action types were identified including enhanced law enforcement, increased regulation, protected areas, alternative livelihoods, reducing demand for sturgeon and seal products and the need for further research to guide policy development.

This consensus suggests that communities are willing to reduce participation in illegal fishing given appropriate support. The socioeconomic factors driving illegal fisheries and bycatch for Caspian seals parallel those for other endangered marine mammals such as vaquita (*Phocoena sinus)* and suggest that Q studies could be applied in other artisanal fisheries with high rates of marine mammal bycatch to help identify policy interventions supported by involved communities.

Reference:

Svolkinas, L., Holmes, G., Dmitrieva, L., Ermolin, I., Suvorkov, P., & Goodman, S. J. (2023). Stakeholder consensus suggests strategies to promote sustainability in an artisanal fishery with high rates of poaching and marine mammal bycatch. *People and Nature*, **5**: 1187–1206. https://doi.org/10.1002/pan3.10490

The work presented here was supported by a PhD studentship from the UK government's Natural Environment Research Council and grant from Marine Mammal Commission of the United States Government

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Using acoustic monitoring to inform bycatch mitigation in static nets

Presenter: Jamie Macaulay, University of St Andrews, UK

Email: jdjm@st-andrews.ac.uk

"I am a Senior Research Fellow at the Scottish Oceans Institute, University of St Andrews. My research focuses on how cetaceans interact with renewable energy developments and fisheries, and how understanding their behaviour can help us better understand their broader ecology, for example, in improving abundance and distribution estimates. To do this, I often develop technology and software to allow us to collect data on cetacean behaviour that has either been difficult or impossible to obtain before. For the last few years, I have primarily been working on the CIBBRiNA project to study dolphin and porpoise behaviour around static nets. "

Bycatch in static fishing nets is one of the most prevalent causes of anthropogenic mortality in small, toothed whales. Some mitigation measures, such as pingers, have been shown to be effective in reducing bycatch in certain areas. However, there remains no overall effective solution that does not have practical or ecological drawbacks. One of the issues in designing mitigation solutions is that we have very little data on why toothed whales, which have highly sophisticated biosonar that can detect monofilament twine, become entangled in nets. Such data would help us better identify the most promising and effective mitigation technologies and strategies. Once a potential mitigation approach has been identified, it often takes a long time to prove it works because statistically valid control trials are complex and time-consuming; thus, the process of assessing bycatch mitigation in static nets is generally slow, and it can be difficult to fund long-term studies.

Over the last decade, we have developed acoustic monitoring technology to investigate the fine-scale behaviour of porpoises and dolphins around static nets. With this technology and our close collaboration with fishers, we have been able to explore how and why porpoises and dolphins interact with nets, providing new insights into why bycatch occurs. Working within CIBBRiNA, we now have a comprehensive dataset on baseline behaviours around static nets and have begun to deploy this technology to test new mitigation approaches, such as pearl nets. Our hope is that by using behavioural data, we can provide a new tool to speed up the search for effective bycatch mitigation

strategies, ultimately to promote sustainable fisheries and reduce the number of toothed whales that are killed in static nets.

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Estimating bycatch in European waters and learning about bycatch along the way

Presenter: David Lusseau, DTU Aqua, Denmark **Email:** davlu@aqua.dtu.dk

"I am Professor of Marine Sustainability at the National Institute of Aquatic Resources, DTU, Denmark. I work on understanding how human activities affect the conservation of marine mammals and finding sustainable solutions to wicked problems that emerge in that space."

Authors: David Lusseau, Marjorie Lyssikatos, Morgane Pommier, André Moan, Paula Gutiérrez Muñoz, Henrik Pärn, Kim Magnus Bærum, Torbjörn Säterberg, Amaia Astarloa Diaz, Ailbhe Kavanagh, Caterina Fortuna, Guðjón Már Sigurðsson, Katja Ringdahl, Sara Königson, Ruth Fernandez, Allen Kingston, Lotte Kindt-Larsen and Carlos Pinto

Incidental catches of untargeted species, often called bycatch, remain a key sustainability challenge for fisheries and a key contributor to conservation threats of marine megafauna. We need to understand how species prevalence and fishing characteristics contribute to bycatch levels to effectively manage this global fisheries impact. We cannot do so without precise and accurate estimates of the number of individuals removed in incidental catches every year for all species of special concern. Annual bycatch estimation to guide fisheries management becomes too complex to be "hand-curated" as the number of species of concern increases and the number of fishing practices that can cause bycatch are multiple. In European waters, there is a requirement to estimate bycatch for 244 species occurring in 16 ecoregions and 25 fishing practices. This results in having to produce close to 14,000 bycatch estimates annually by coordinating aggregated data collected from 22 national monitoring programmes. Here we will present the Bycatch Evaluation and Assessment Matrix (BEAM) developed by the ICES Working Group on BYCatch to produce these estimates. BEAM is designed to be an adaptive procedure which appraises the representativeness of estimates and feedback improvement required in monitoring when a representative estimate cannot be computed. Meta-analyses of BEAM outputs provide

a unique opportunity to understand monitoring coverage requirements, as well as species traits and fishing characteristics that are associated with bycatch rates. These provide the scope to manage bycatch at a community level, rather than one species at a time, therefore providing options to avoid unintended consequences associated with single-species bycatch management.

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Game of Trawls: towards a real-time reaction to bycatch events inside fishing trawls

Presenter: Robin Faillettaz, IFREMER, France **Email:** robin.faillettaz@ifremer.fr

"I'm a marine biologist at IFREMER, focused on applying individual-based approaches to fish-gear interactions. I use a lot of AI to handle various image databases, since I believe that wise use of AI might open the door to more sustainable fishing practices."

Authors: Robin Faillettaz, Ludvig Krag; Pierre Le Bourdonnec; Valentina Melli; Julien Simon

Trawling is still largely a blind process, driven by fishers' experience and local ecological knowledge. This limits fishers' ability to avoid bycatch of marine mammals due to the sporadic nature of their encounter and the high mortality rate post-capture. Air-breathing species are frequently taken as bycatch in pelagic trawl fisheries and require rapid escapement to get access to the surface. Consequently, reducing bycatch of air-breathing species such as dolphins requires selective systems that ensure immediate, unobstructed escape, even at the expense of the target catch. Real time detection and response to the presence of these species in the net are key aspects to improve the sustainability of these fishing gears, which contribute substantially to the seafood supply worldwide. The Game of Trawls system transforms blind fishing into a real-time active process, where bycatch species can be released without interrupting fishing operations. It combines acoustic communication, embedded computer vision, and AI, along with actuators that trigger a reversible hatch to release or retain species. Here, we present a 1:3 scale-model prototype of an emergency release system specifically developed in the MarineBeacon project for airbreathing species, like dolphins for which a larger section of the trawl needs to be opened for their survival, and evaluate its operational performance in controlled flume

tank experiments. When triggered, the system collapses the entire top panel of the trawls last tapered section, creating a rapid, upward-facing escape opening. The systems single trigger point simultaneously actuates two running lines, that when released swiftly create a 3 m long and 1.5m wide opening, within 4 s at a flow velocity of 0.9 m s^{-1}. When matured, this new application of the Game of Trawls system could thus inform on the interaction between ETP species and trawl fisheries while limiting the latter's negative impacts.

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Mitigation of seal-fishery interactions: examples from the northern Baltic Sea

Presenter: Petri Suuronen, International Seafood Consulting Group (ISCG), Finland

Email: petri.suuronen@iscg.fi

"I have over 40 years of work experience in the development of sustainable fishing technologies and solutions that help to reduce bycatches in fisheries. During the last 25 years, I have participated in studies that aim to find solutions to mitigate harmful seal-fisheries interactions in the northern Baltic Sea."

Harmful interactions between seals and fisheries occur when seals actively seek to prey on fish captured in fishing gear. This often causes catch losses and gear damage, and occasionally also entanglement or entrapment of seals, which in the worst case leads to their death. There is a particularly high risk for seals to entangle in gillnets, but seals can be entangled or entrapped in many other gears too. Finding effective non-lethal methods to prevent these interactions is challenging mainly due to seals' excellent skills in seeking food in fishing gears. Nonetheless, promising results in preventing interactions have been achieved especially in trap and trawl fisheries by technologies that eliminate the exposure of catch during the capture process. This presentation focus on approaches that have been developed in the northern Baltic Sea to prevent harmful seal-fisheries interactions.

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Overview of bycatch mitigation online toolkits

Presenters:

Dunja Jusufovski, Marine and Freshwater Research Institute, Iceland

Email: dunja.jusufovski@hafogvatn.is

"I see myself more as a marine ecologist than biologist with a background in fisheries science and prey-predator interaction. Currently, I am a postdoc at MFRI in Iceland involved in the research and exploration of optimal mitigation practices for the bycatch of marine mammals and seabirds."

Alessandra Bielli, Centre for Environment, Fisheries and Aquaculture Science, UK

Email: alessandra.bielli@cefas.gov.uk

"I am a Fisheries Data Scientist at Cefas (UK) with a background in marine conservation and long-term experience in community-based sea turtle conservation. My current work focuses on participatory fisheries research and bycatch-reduction technologies for small cetaceans."

Online toolkits have become an increasingly popular and practical approach in engaging and informing different stakeholder groups, especially when co-creation of solutions is needed. Here, we opted to present some best practice and currently in-development online toolkits used to inform and improve bycatch mitigation approaches that can lead to sustainable fishing practices. One such example is the Clean Catch (CCUK) Bycatch Mitigation Hub, an accessible and intuitive platform designed to share learning and provide practical resources on bycatch mitigation across an exhaustive list of fishing gears and taxa. Funded by the UK Department for Environment, Food and Rural Affairs (Defra), the Hub supports UK government ambitions to minimise, and where possible eliminate, bycatch of sensitive species, while also offering valuable guidance for stakeholders worldwide. Following this example, an additional, cetacean-oriented tool was developed through CCUK bycatch mitigation trials with a focus on acoustic deterrent devices (ADDs). This toolkit ultimately supports the CCUK Consortium during trial planning, including decisions on focal species and statistical methodology, and has potential for broader stakeholder use.

Now, Life CIBBRiNA and Marine Beacon projects are further expanding the use of online tools to support a more diverse group of stakeholders providing wider range of information on developing and/or developed bycatch mitigation methods. While Life

CIBBRiNA aims to encompass all known bycatch mitigation approaches with regards to effectiveness, practical and socio-economic aspects, Marine Beacon toolkit provides more updated and detailed information on the potential of interactions and bycatch risk for specific fishery and sensitive species of interest. Both toolkits complement each other and provide a more holistic approach to assessing and managing bycatch while facilitating collaboration among different stakeholders.

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The Life CIBBRiNA stakeholder engagement approach

Presenter:
Marije Siemensma, Marine Science & Communication on behalf of the Ministry of Agriculture, Fisheries, Food Security and Nature, The Netherlands

Email: m.siemensma@msandc.nl

"Within the Life CIBBRiNA project I support, encourage and optimise collaboration between fisheries, scientists, policy makers and NGO's to achieve a reduction in bycatch of threatened species where possible by offering stakeholders tools to improve fruitful collaboration and communication in the marine realm. I believe in the strength of collaboration within an environment of mutual trust, respect and shared understanding, although I acknowledge that finding solutions can be challenging."

EU-LIFE CIBBRiNA aims to minimise bycatch of marine mammals and other Endangered, Threatened and Protected species across the North-East Atlantic, Baltic, and Mediterranean regions. The project unites fishers, authorities, scientists, and stakeholders from 13 European countries to establish effective mitigation, monitoring, and assessment programmes.

We conduct eight case studies across diverse small- and large-scale fisheries. Our goal is to develop measures that are both feasible for fishers and effective in reducing and where possible eliminating bycatch. Through collaborative research and openness to innovative solutions, we produce new knowledge on mitigation and monitoring resulting in a

practical toolbox for integration into European fisheries policy and fisheries best-practices.

Bycatch is a sensitive issue. This makes meaningful engagement challenging. CIBBRiNA's distinctive approach recognises that technical solutions alone are insufficient. We actively integrate fisher perspectives, ensuring their voices are heard and valued as they need to work with the technology and believe in it to ensure it's being used in practice. Success requires building mutual trust. Therefore, we proactively foster a "Safe Working Environment" characterised by trust, dialogue, and co-creation. Here, tools can be tested and optimised by combining fisher expertise with scientific knowledge.

Successful cooperation requires continuous effort and dedication. We provide guidance on best practices, including a video series, to inspire and support ongoing engagement with fishers and other stakeholders for any project that aims to minimise bycatch. Our science partners attend masterclasses on industry collaboration and communication skills. For fishers, we host peer-to-peer meetings that facilitate exchange and dialogue.

First results demonstrate that reducing bycatch demands more than technology. It requires recognising fishers as essential partners in conservation who can make the change happen. By creating spaces for genuine collaboration and integrating diverse expertise, solutions can be developed that protect cetaceans and other marine species while remaining practical for fishing operations.

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Challenges and successes in attempts to reduce cetacean bycatch in UK waters

Presenter: Sarah Dolman, Environmental Investigation Agency, UK

Email: sarahdolman@eia-international.org

"I have been Vice-Chair of the International Whaling Commissions Bycatch Standing Working Group since 2024 and a member of its Expert Panel since its inception in 2016. I'm a member of the ASCOBANS-ACCOBAMS bycatch working group and chair of the UK Wildlife and Countryside Link bycatch working group. I've published a number of reports and formal publications on cetacean bycatch, particularly relating to policy, as well as welfare aspects."

Challenges and successes will be identified from efforts to prevent cetacean bycatch in UK waters, focusing on static creel (pot), bass pair-trawl and gill net fisheries and approaches taken to tackle entanglements in these different parts of the fishing fleet.

The context is the international planetary crisis, the deaths of tens of thousands of cetaceans within European waters every year and failure to meet regional and national legal requirements to prevent sensitive species bycatch. Research conducted since the 1990s has identified bycatch as being a serious problem. Challenges associated with common dolphin bycatch will be discussed, with marine mammal bycatch associated with the use of pingers in part of the UK offshore gillnet fleet, as well as developments in the use of negatively buoyant rope to prevent entanglements in the Scottish creel fishery. The bycatch challenges faced in the UK are relevant to other European and global nations.

Potential solutions will be provided. These include development of a UK cetacean bycatch reduction programme and associated bycatch action plan, alternative gear development for static net fisheries, along with implement of sinking groundlines in the creel fishery within Scotland, working with fishers and stakeholders to develop implementation strategies, setting precautionary bycatch thresholds towards bycatch elimination, mandatory monitoring with observers and REM in high-risk fisheries alongside implementation of bycatch measures and the application of ambitious timeframes to achieve legally mandated bycatch requirements.

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Integrating Bycatch Mitigation into Operational Fisheries Management

Presenters:
Maria Hermida, Hooktone Ltd, Spain

Email: mariahermida@hooktone.com

"I am the co-owner and CEO of Hooktone Ltd based in Coruna Northern Spain. I have been involved with bycatch avoidance and mitigation measures for many years, which includes experimental work providing solutions to bycatch from fishing industry aspect. As the Hooktone

vessels are UK registered, I have worked closely with both Governments in UK and Scotland as well as with the University of St Andrews."

David Anderson, Aberdeen Fish Producers Organisation (AFPO), UK

Email: david@afpo.co.uk

"I have 40 years of experience working in the fishing industry, while I assumed the CEO position of AFPO since 2008. I have been working closely with Maria on bycatch mitigation to offer practical solutions both from the environmental and socio-economic perspectives. Aberdeen FPO has many Hooktone vessels as well as other UK Producer Organisations as members, where a collaborative approach is necessary to achieve the goals of bycatch elimination."

The offshore static gear sector consisting of longline and gillnet vessels generally operate around the West and North coasts of the UK. In recent years, this type of fishing activity was attracting negative comments from various environmental NGO's regarding the interaction with endangered, threatened and protected (ETP) species, particularly seabirds. While many of the claims were unfounded, it became clear that industry had to take action to implement avoidance gear and procedures with an independent verification of vessels activities.

Here we aim to present the current situation of this issue: the pressures that surround the vessels activities and the solutions that allow wider society to have confidence that the products we produce are not detrimental to the environment. Furthermore, we highlight the importance of development based on the experience of other fisheries and the development of simple, but effective mitigation techniques.

Based on our experience in promoting bycatch mitigation measures, we demonstrate the importance of bringing the vessel operators, skippers and crews as well as scientists and administrators along with the process using their knowledge and experience to develop solutions. Lastly, such co-creation of solutions ensures not just a positive environmental outcome, but a positive impact in socio-economic terms.

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What factors influence the optimization and uptake of bycatch mitigation approaches to minimize marine mammal bycatch? A conceptual mapping session

Presenter: Hanne Hjelle Hatlebrekke, SINTEF, Norway

Email: hanne.hatlebrekke@sintef.no

"I am a Research Scientist at SINTEF Ocean, in Bergen, Norway. I am a marine and fisheries biologist working to make European fisheries more sustainable, with a special focus on the intersection between research, management, and the fishing industry."

The *MarineGuardian* project is funded by the European Union under Grant Agreement number 101212608. The project will provide impact-driven solutions to reduce fisheries' environmental impacts on marine species and habitats, especially by reducing bycatch. Activities and results are tested in six case studies: the Barents Sea, Greenland, West of Scotland, Newfoundland in Canada, Iceland, and the Bay of Biscay and Iberian waters. In all these areas we conduct workshops with local stakeholders using Conceptual mapping with back casting, where we ask the stakeholders to imagine they are in the future where bycatch has been successfully eliminated in their case study. How did we get here? What challenges did we overcome and what opportunities presented itself? The discussions are structured around the predetermined development drivers Regulations, Market, Technology, Nature Resource Management, Research, Climate change, and Industry, and during the session we create a live conceptual map, akin to a mind map, to capture how different variables relate to these drivers and to each other. In this session we will use the same method to discuss the question "What factors influence the optimization and uptake of bycatch mitigation approaches to minimize marine mammal bycatch?"