



# CLEAN CATCH UK

National Steering Group

Fourth meeting

Meeting will begin at 10am



Department  
for Environment  
Food & Rural Affairs



Centre for Environment  
Fisheries & Aquaculture  
Science





# **WELCOME AND HOUSEKEEPING**

Cat Bell -  
Defra



# DEFRA UPDATE

Emma Day -  
Defra



# **CCUK ROLES AND RESPONSIBILITIES**

Stu Hetherington -  
Cefas

# FROM THE LAST NATIONAL STEERING GROUP MEETING, SEPTEMBER 2021

“I’m feeling confused about the role of NSG”

“Perhaps an infographic to explain the interplay of different workstreams”.

“Does the NSG work go further than just NSG?”

“bycatch reduction plans – first time we’ve seen this. Why is this different to the Implementation Plan?”

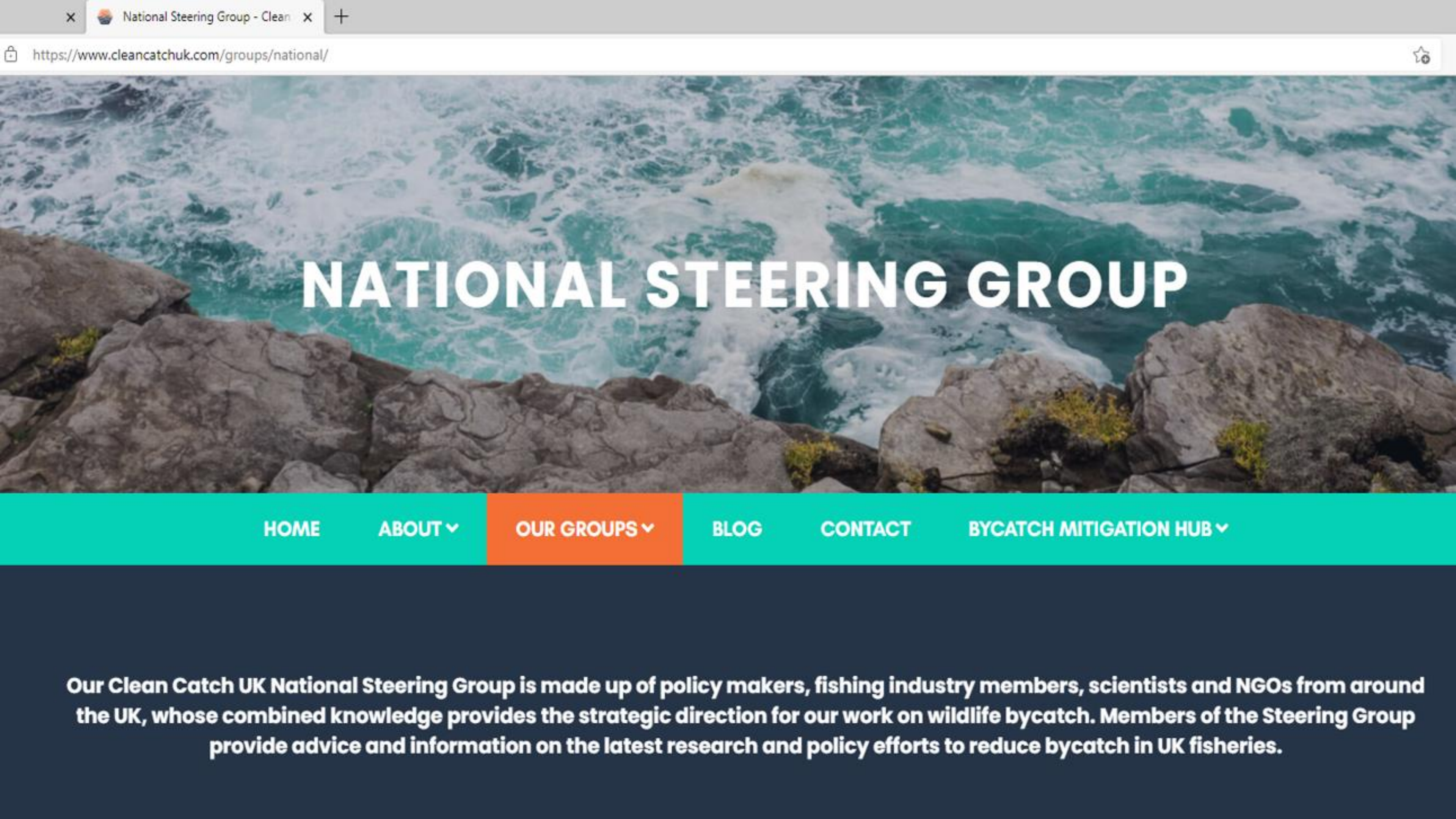
“Need to understand the spatial scale of the programme”

“Would be good to also understand the longevity of the project”.

“Who will be leading on this if not the NSG”







# NATIONAL STEERING GROUP

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[OUR GROUPS ▾](#)

[BLOG](#)

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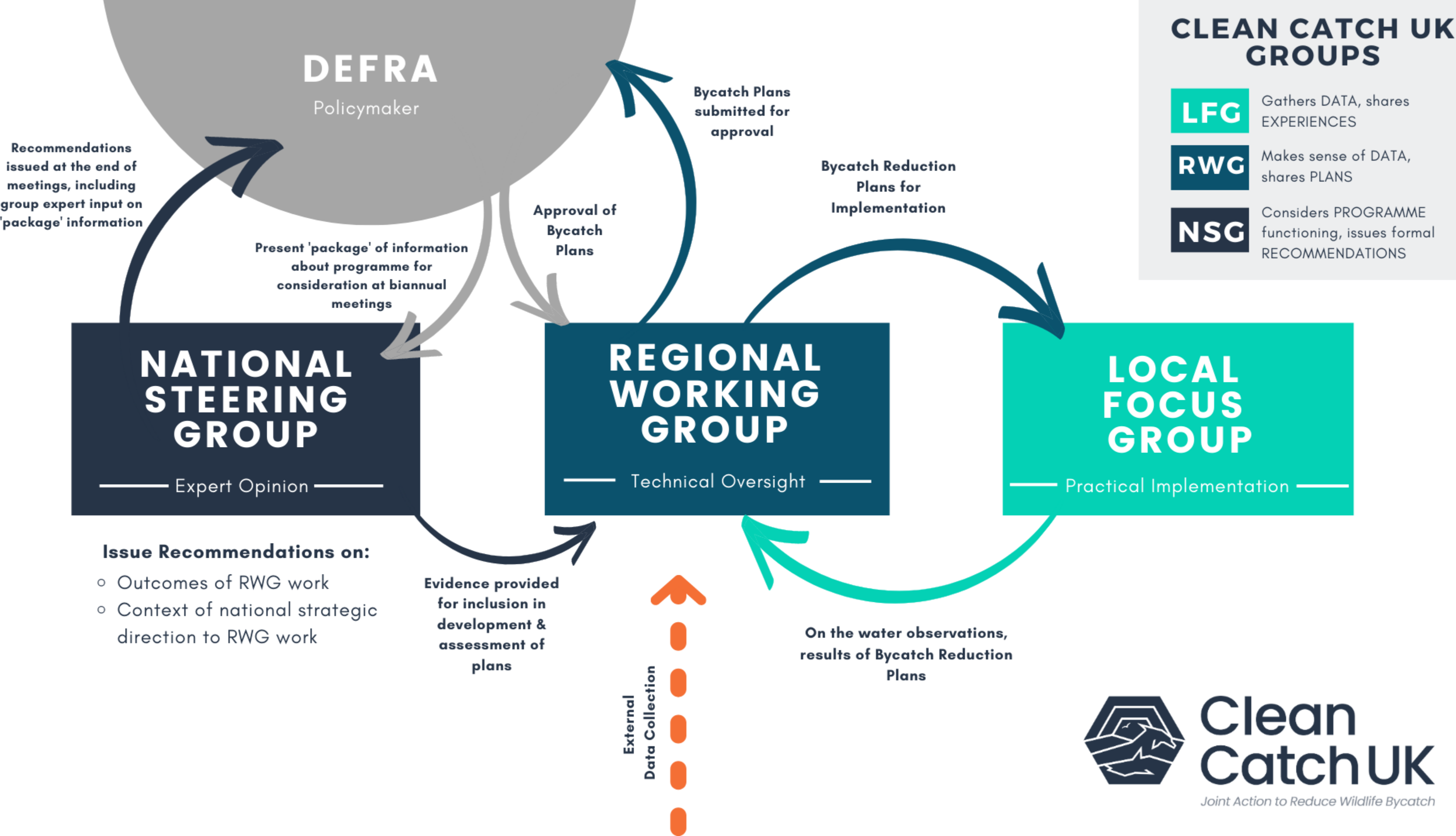
[BYCATCH MITIGATION HUB ▾](#)

**Our Clean Catch UK National Steering Group is made up of policy makers, fishing industry members, scientists and NGOs from around the UK, whose combined knowledge provides the strategic direction for our work on wildlife bycatch. Members of the Steering Group provide advice and information on the latest research and policy efforts to reduce bycatch in UK fisheries.**



# CLEAN CATCH UK GROUPS

- LFG** Gathers DATA, shares EXPERIENCES
- RWG** Makes sense of DATA, shares PLANS
- NSG** Considers PROGRAMME functioning, issues formal RECOMMENDATIONS



# NATIONAL STEERING GROUP

## Expert Opinion

Issues formal Recommendations after biannual meetings on the functioning of the Clean Catch UK programme, which Defra is required to take into account when preparing their own reports on the programme.

Cannot direct the on-the-water or technical work within other parts of the Clean Catch UK programme, but may comment on the value and functioning of these within Recommendations issued.

Consensus is the goal, but can deliver **RECOMMENDATIONS** that are: 'consensus' or 'majority / minority'

### MEMBERSHIP

- Scientific institutes
- Academia
- Wildlife-focused NGOS
- Fishing industry reps
- Defra ALBs
- Defra
- Cefas

# REGIONAL WORKING GROUP

## Technical Oversight

Pulls in data from experts on the National SG (left) and their institutes/programmes, and from the LFG (right) where monitoring and mitigation are underway on the water.

Also pulls in data from other relevant sources.

Assesses and finds meaning in available data to develop or review bycatch monitoring and mitigation plans.

Supplies proposed bycatch reduction plans upwards to Defra for sign-off, and downwards to the LFG to be enacted.

### MEMBERSHIP

- Scientific institutes
- Academia
- Technicians
- Industry technicians
- Cefas
- Defra

# LOCAL FOCUS GROUP

## Practical Implementation

Conducts studies alongside fishing-as-usual (FAU) activity to:

- build a foothold of trust with the fishing industry around the issue of wildlife bycatch
- test approaches to gathering data or using new equipment, during FAU activity.

Meets to discuss experience of fishing with the test equipment or data gathering requirements, feeds this information along with data gathered upwards to the RWG to continually refine plans.

### MEMBERSHIP

- Active fishers
- Fleet-leaders / POs
- Local NGOS
- Engineers
- Local enforcement
- Defra
- Cefas





# DECISION PROCESS >>> A STUDY OF A NEW DEVICE <<<

CONTEXT

## DEFRA

**CONTEXT:** Makes policy and National Plans of Action for minimising bycatch in UK fisheries and requires evidence to guide policy and/regulation development. Facilitates flow of information between the Clean Catch UK groups.

## NATIONAL STEERING GROUP

**CONTEXT:** Can issue Recommendations on the functioning of the overall Clean Catch UK system, as well as on the outcomes of the RWG studies and analysis, in light of the UK Government's strategic direction for wildlife bycatch mitigation.

## REGIONAL WORKING GROUP

**CONTEXT:** RWG pulls in information (from NSG or externally) of a new device that should be studied alongside fishing-as-usual (FAU) to reduce bycatch. Prepares a Bycatch Reduction Plan (BRP) featuring this device, and submits the BRP to Defra for approval.

## LOCAL FOCUS GROUP

**CONTEXT:** As guided by the RWG, the LFG contributes to the design of the FAU study. The LFG also ensures fishers take part in the study and reports all data and observations back to the RWG.

## ACTIONS

**DEFRA ACTION:**  
Take RWG analysis and NSG Recommendation into account for reporting on programme or making policy decisions

**RWG ACTION :**  
Devises a BRP, including a study of the new device, and outlines how the LFG can conduct the study alongside FAU activity - submits to Defra

**DEFRA ACTION:**  
Pass RWG's outcomes and recommendations to NSG.

**NSG ACTION:**  
Receives information packet at biannual meeting and can issue a Recommendation on the outcome of the study and functioning of the overall programme.

**Defra ACTION:**  
Approves BRP with new device.

**RWG ACTION:**  
RWG reviews and evaluates the output of the study, and any external data, to present recommendations for broader uptake of the new device.

**RWG ACTION:**  
Passes BRPs to LFG for FAU implementation.

**LFG ACTIONS:** LFG leads the study alongside their FAU activity. Fishers provide feedback, data and observations of efficacy back to the RWG.  
If the gear is not fit for purpose, the LFG can work with the RWG to tweak the design of the study or how it is used in a locally appropriate way.



# AND FINALLY

We're all here for the same reason, from different backgrounds and with different drivers, strengths, and aspirations, but a similar desired outcome.

As well as identifying weaknesses, let's propose solutions.

With kindness and respect.

A quote about teamwork overlaid on a background image of three people walking on a beach. The quote is: "I can do things you cannot, you can do things I cannot; together we can do great things." The background image shows three silhouetted figures walking away from the camera on a sandy beach, holding hands. The sky is a pale, hazy blue.

“I can do things you cannot, you can do things I cannot; together we can do great things.”

# FOR DECISION

## Cetacean Bycatch Mitigation Study: Next Steps

Stu Hetherington  
– Cefas





# STUDY UPDATE

## Progress update on the Clean Catch UK cetacean bycatch mitigation study



### Purpose of this document

This document has been prepared to share a preliminary analysis of the study to date and highlight potential next steps of the study, for discussion.

### Clean Catch UK

Clean Catch UK is a collaborative research programme in support of the UK Government's commitments to minimise and, where possible, eliminate sensitive species bycatch, through a stakeholder-led approach. Government policy advisors, scientists, the fishing industry and an environmental non-governmental organisation (eNGO) work together to develop solutions to better monitor and reduce the accidental capture of wildlife in UK commercial fisheries.

### A participatory research, cetacean bycatch mitigation study

As part of Clean Catch UK, we are using a participatory research approach to study the use of both existing and novel Bycatch Reduction Technologies (BRTs) during fishing as usual, to reduce cetacean bycatch.

The aim of the study is to demonstrate if Acoustic Deterrent Devices (ADD's), more commonly known as pingers, and if Light Emitting Diodes (LEDs) commonly known as lights, and their combinations, are practical, robust and effective at reducing bycatch of common dolphin (*Delphinus delphis*) and harbour porpoise (*Phocoena phocoena*) in an inshore net fishery, typical of that along the south Cornish coast, without increasing the bycatch of other Protected, Endangered, and Threatened species (PETS). There are 2 fishing vessels (under 10m in length) from the Cornish fishing port of Mevagissey involved in the study. These vessels typically operate in a mixed fishery, using fixed nets soaked on average for 5 hours to primarily target mackerel (*Scomber scombrus*), and comprise part of a larger fleet that are an essential component of Cornwall's small coastal communities.

Five treatments are being trialled: 2 different types of pingers, 1 set of lights and 2 combinations of pingers and lights: (i) Pinger 1 (P1) - Future Oceans Netguard, 70 kHz, 145dB, seal-safe dolphin pinger; (ii) Pinger 2 (P2) - Fishtek Banana Pinger, 50-120 kHz, 145dB, seal-safe, dolphin & porpoise 'banana' pinger; (iii) Light (L) - Fishtek Netlight, green wavelength at 2.6 lumens; (iv) a combination of P1 & lights (P1L); and (v) a combination of P2 & lights (P2L). These Bycatch Reduction Technologies (BRTs) are shown in Figure 1.

### Study design

Since the end of 2019, through the pandemic, the 2 participating vessels have been fishing as usual, with 'paired' nets, one net with BRTs attached and one net as a control, testing each BRT (or combination) over one lunar cycle. These paired nets are positioned 400m apart (based on the pingers' effective range of 200m) to avoid any effect of the treatment on the control nets.

9TH MARCH 2022



# BACKGROUND

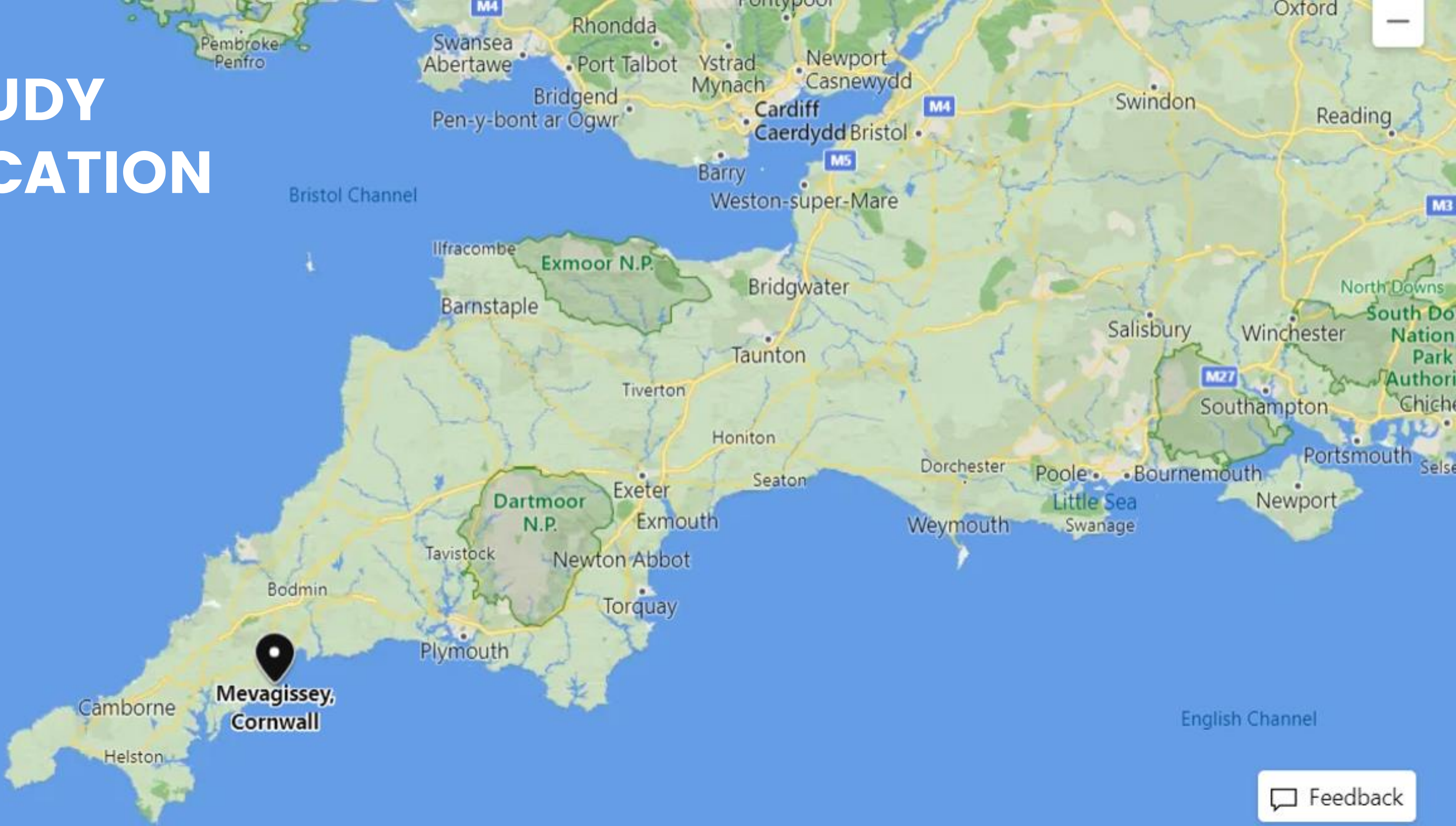
“The small fishing fleet (12 vessels) in Mevagissey, Cornwall bycaught 2 to 3 individuals per vessel per week before fishers willingly started using pingers 2 years ago. They have not caught a single harbour porpoise or common dolphin since (pers. comm. B. Preston), thus highlighting how implementing pingers in a very temporal and short-lived fishery can be very effective at reducing high bycatch rates rapidly and with likely no long-term impacts”.


Omeyer et al., 2020





# STUDY LOCATION



 Feedback

20 miles 25 km



# STUDY AIM

To demonstrate if pingers, and lights, and their combinations, are practical, robust and effective at reducing bycatch of common dolphin (*Delphinus delphis*) and harbour porpoise (*Phocoena phocoena*) in an inshore net fishery, typical of that along the south Cornish coast, without increasing the bycatch of other Protected, Endangered, and Threatened species (PETs).



# BYCATCH REDUCTION TECHNOLOGIES (BRTS)

- Pinger 1 (P1) – Future Oceans Netguard, 70 kHz, 145dB, seal-safe dolphin pinger
- Pinger 2 (P2) – Fishtek Banana Pinger, 50 –120 kHz, 145dB, seal-safe, dolphin & porpoise ‘banana’ pinger
- Light (L) – Fishtek Netlight, green wavelength at 2.6 lumens
- Combination of P1 & lights (P1L)
- Combination of P2 & lights (P2L)



# WHERE ARE WE WITH THE STUDY? WHAT HAVE WE LEARNED SINCE WE BEGAN?

- A pre-study power analysis identified that for 3 inshore commercial fishing vessels a minimum study duration of 25 lunar cycles was required
- The study began on 28th December 2019, with 3 vessels.
- Data collection was predicted to be required until at least January 2022
- 23rd March 2021!
- 1 skipper withdrew due to impracticality of the lights





# DEMONSTRATING EFFECTIVENESS

- An estimated study end date to achieve at least 80% statistical power to detect any changes in cetacean bycatch probability as a result of the BRTs, with the 2 current vessels, is at least May 2022
- This estimate is very sensitive to bycatch observations (or lack of bycatch) between July 2021 and May 2022
- Early indications are that the self-reported bycatch data since 15th July 2021, contain fewer cetacean bycatch events
- The study may need to be further extended beyond May 2022



# WE HAVE A DECISION TO MAKE ON NEXT STEPS

## OPTION 1 - CONTINUE WITH CURRENT DESIGN

## OPTION 2 - REFINE AND CONTINUE

- (i) increasing the number of vessels to increase the number of hauls, and/ or
- (ii) remove lights as the least favoured BRT by fishermen, and/ or
- (iii) remove P1 as its not sufficiently robust in a commercial fishery context.

## OPTION 3 - STOP AND CHANGE BRT

With cetacean bycatch in treatment nets and with an increasing study duration, the current study could be stopped and a Passive Acoustic Reflector (PAR), trialled instead, beginning from May 2022.



The background features a dark blue-grey gradient. On the right side, there are several overlapping geometric shapes. At the top, there are three nested, trapezoidal shapes in shades of orange and peach, each with a dark outline. Below these, there are grey, jagged, mountain-like shapes with dark outlines, appearing to be layered or reflected. A solid teal horizontal bar spans across the middle of the image, containing the text.

# DISCUSSION AND Q&A





**TIME FOR A BREAK**



# WORK PLAN WORKSHOP

**ALL MOVE UPSTAIRS FOR  
BREAKOUT SESSIONS**

Chaired by:

Stu Hetherington - Cefas

Emma Day - Defra

Cat Bell - Defra



# **UPDATES ON RSPB BYCATCH-RELATED WORK IN THE UK**

Ruby Temple-Long - RSPB




# LOOMING EYES BUOY AND PREDATOR SHAPED KITES – CORNWALL TRIALS

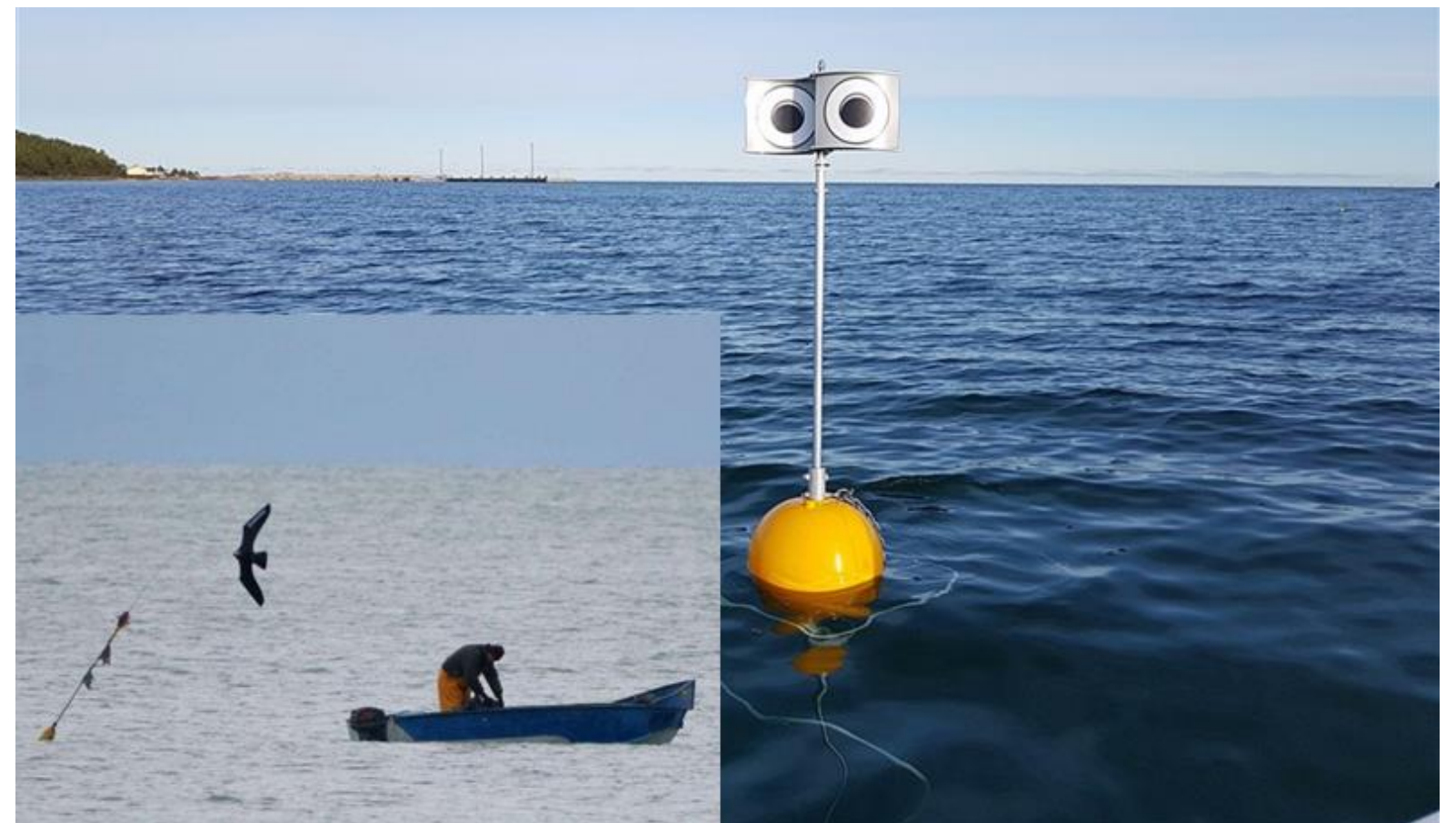
- Above water deterrents
- LEB shown promise in Estonia
- Cornwall fishery trials 2021–2022
- Tested measures in collaboration with Cornish gillnet fishers in the Falmouth Bay to St Austell Bay Special Protection Area (SPA)
- Analysis underway



## Buoys with looming eyes deter seaducks and could potentially reduce seabird bycatch in gillnets

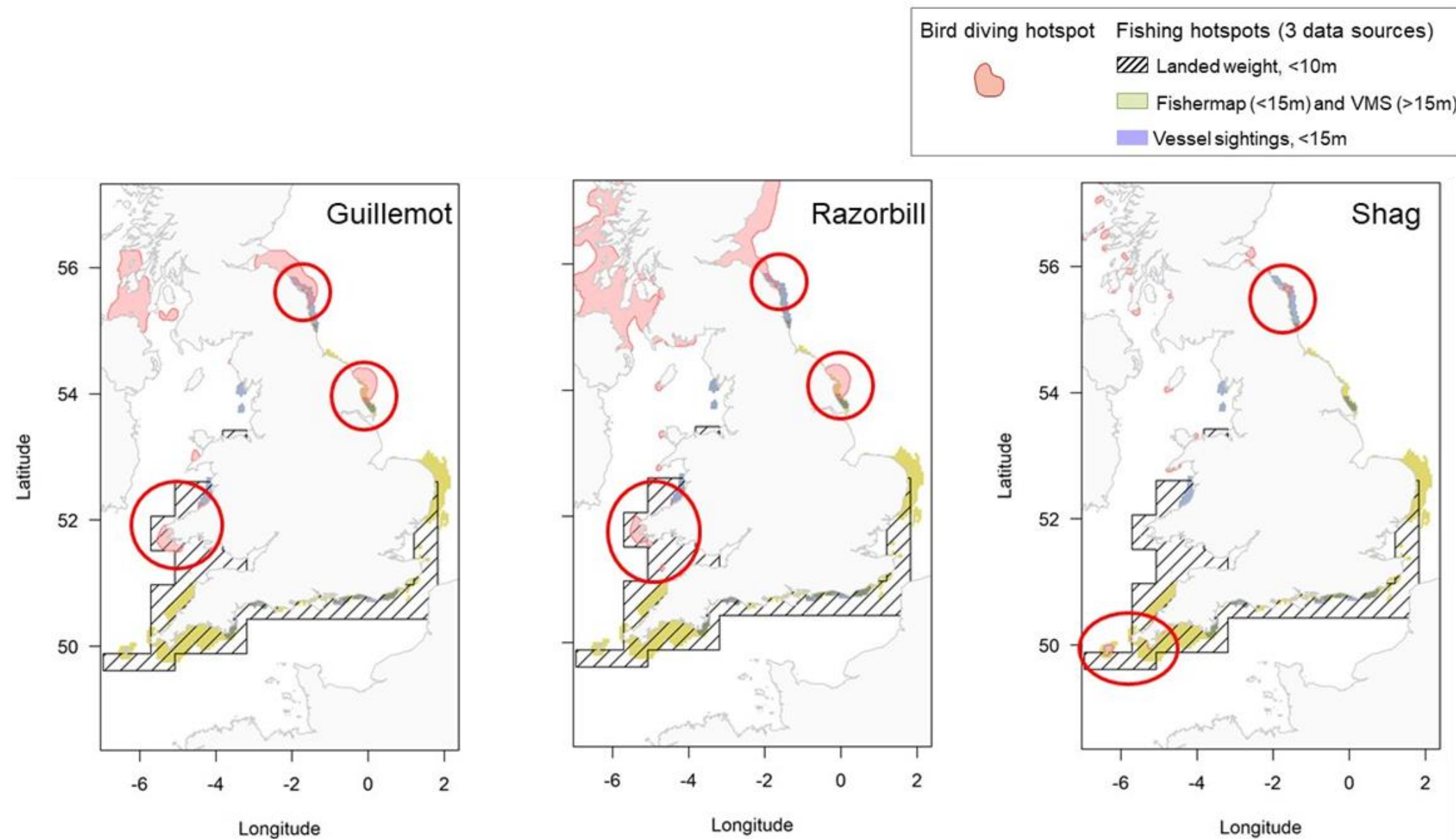
Yann Rouxel , Rory Crawford, Ian R. Cleasby, Pete Kibel, Ellie Owen, Veljo Volke, Alexandra K. Schnell and Steffen Opperl

Published: 05 May 2021 | <https://doi.org/10.1098/rsos.210225>



# GILLNET BYCATCH SPATIAL RISK ASSESSMENT

## CLEASBY ET AL., 2022



(1) Northumberland; (2) N. Yorkshire; (3) SW. Wales; (4) Cornwall & Scillies

- Modelled diving locations and activity
- Diving and fisheries effort data = areas of elevated bycatch risk
- Results can inform mitigation, trials and monitoring



# TIME AREA CLOSURE AND GEAR-SWITCHING REVIEW

## O'KEEFE ET AL., 2021

- Review of global case studies
- Aimed to understand the effectiveness of time-area fishing restrictions and gear switching
- Demonstrated the importance of a holistic approach to tackling seabird bycatch in gillnets

REVIEWS IN FISHERIES SCIENCE & AQUACULTURE  
<https://doi.org/10.1080/23308249.2021.1988051>

 **Routledge**  
Taylor & Francis Group

REVIEW

 OPEN ACCESS  Check for updates

**Efficacy of Time-Area Fishing Restrictions and Gear-Switching as Solutions for Reducing Seabird Bycatch in Gillnet Fisheries**

Catherine E. O'Keefe<sup>a</sup> , Steven X. Cadrin<sup>a,b</sup> , Gildas Glemarec<sup>c</sup>  and Yann Rouxel<sup>d</sup> 

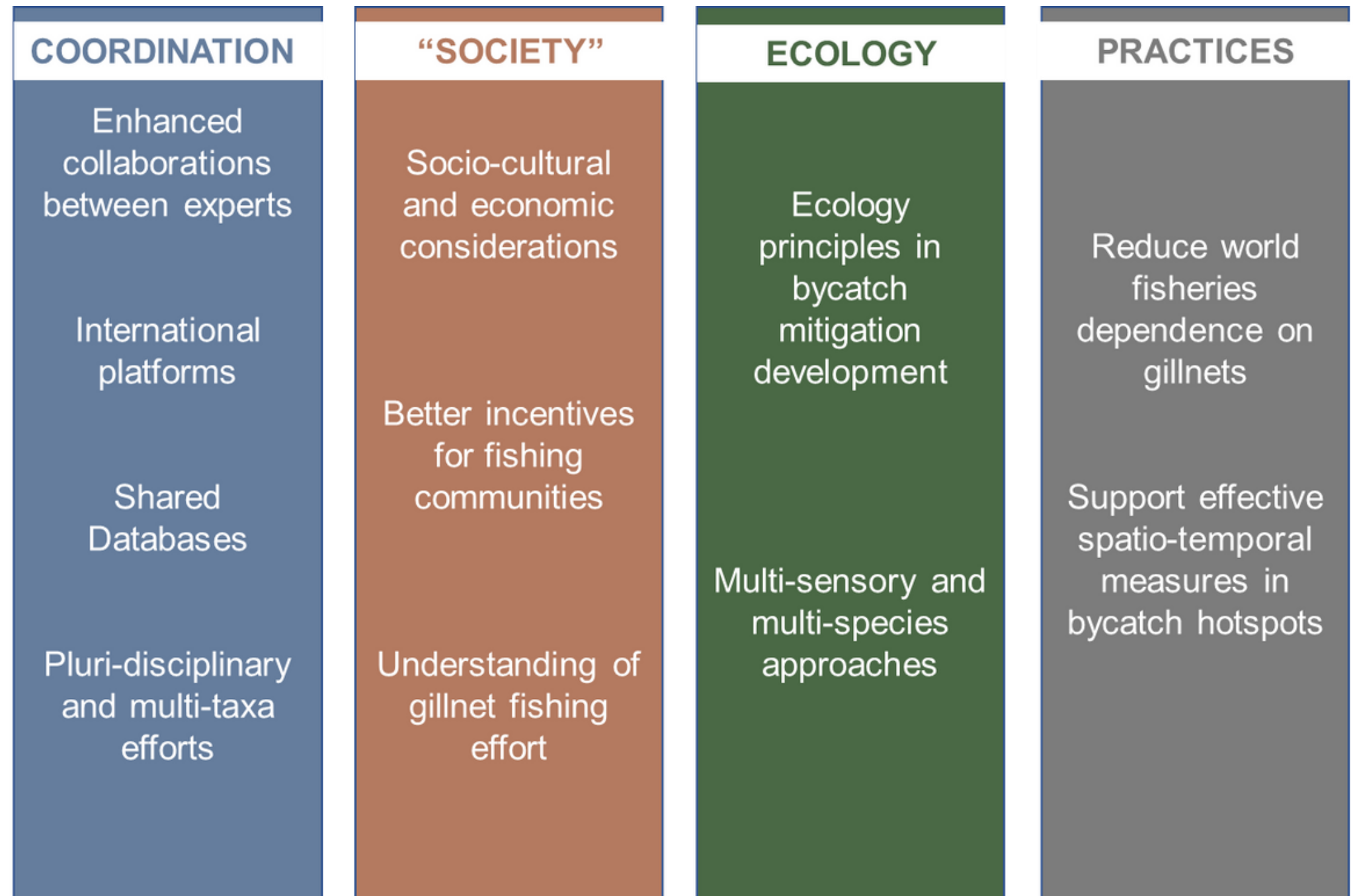




# GLOBAL GILLNET WORKSHOP REPORT

## ROUXEL, 2021

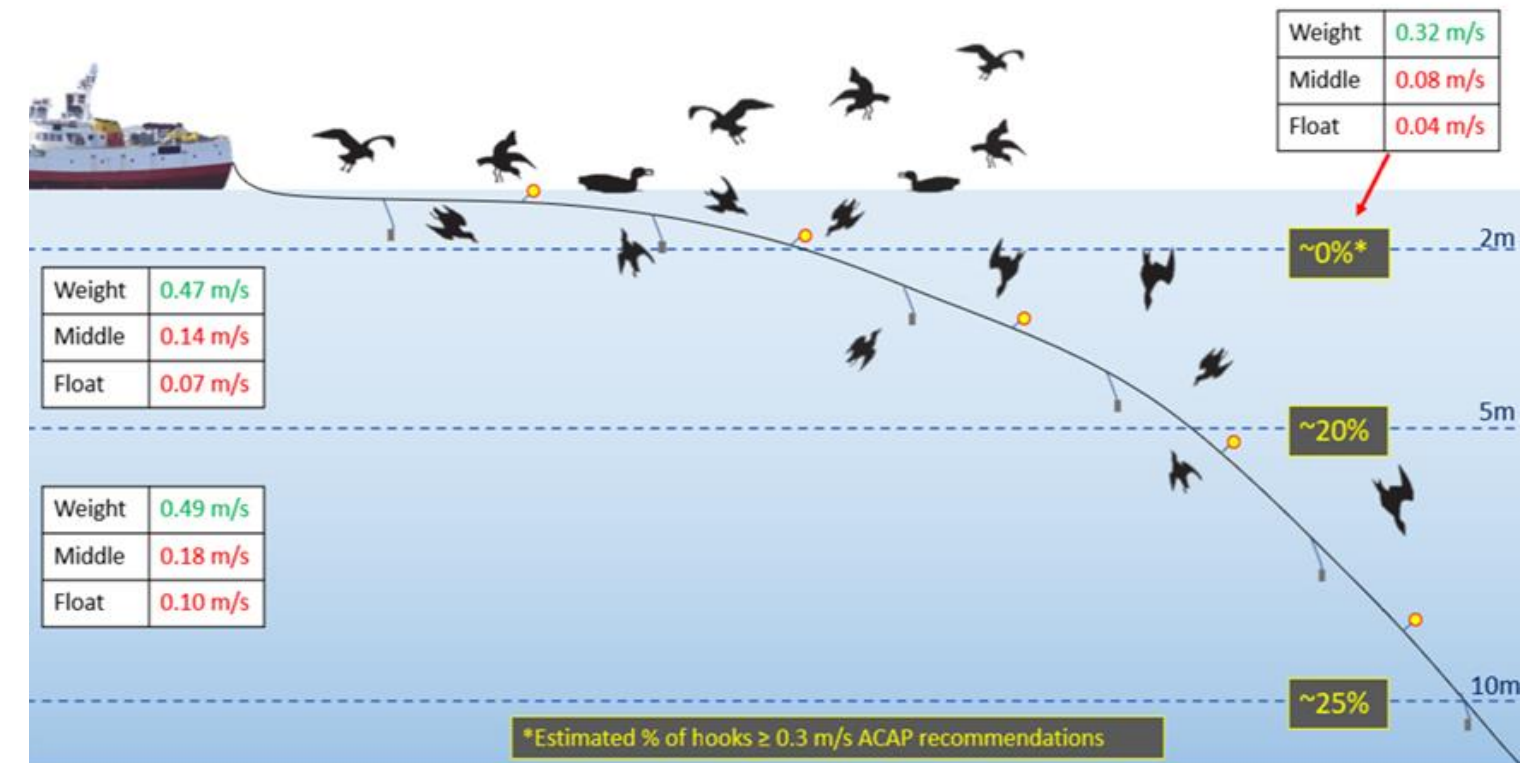
- Tackling the bycatch of Marine Megafauna in global gillnet fisheries
- Workshop March 2021
- Identified several priority actions to help tackle gillnet bycatch across taxa



# FLOATED DEMERSAL LONGLINE RESEARCH

## ROUXEL, 2022

- Seafood Innovation Fund feasibility study
- Project with industry to understand sink profile of commercially used gear
- Found slow sink rates = hooks available → high risk to seabirds
- Improved understanding of the threat and need for effective solutions





# **SCOTTISH ENTANGLEMENT ALLIANCE REPORT**

**UNDERSTANDING THE SCALE  
AND IMPACTS OF MARINE  
MAMMAL ENTANGLEMENT IN  
THE SCOTTISH CREEL FISHERY**

Sarah Dolman -  
WDC



# SCOTTISH ENTANGLEMENT ALLIANCE

Report authors: Read, F.L., MacLennan, E., Hartny-Mills, L., Dolman, S.J., Philp, A., Dearing, K., Jarvis, D. and Brownlow, A.C.

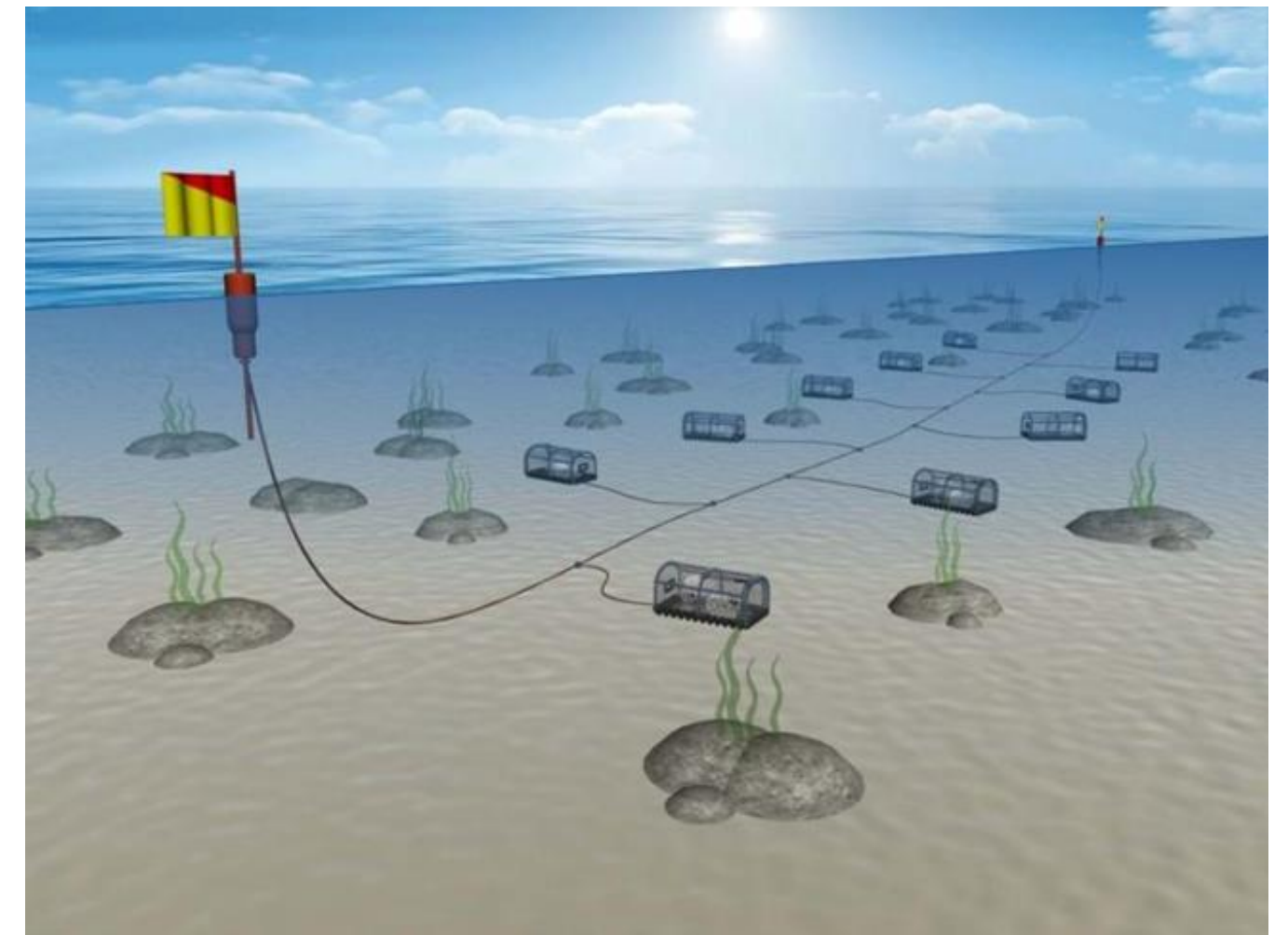
Scottish Entanglement Alliance (SEA) was initiated after entanglement concerns raised by the Scottish creel fishing sector. Two year project funded by the EU European Maritime and Fisheries Fund.



# SCOTTISH ENTANGLEMENT ALLIANCE

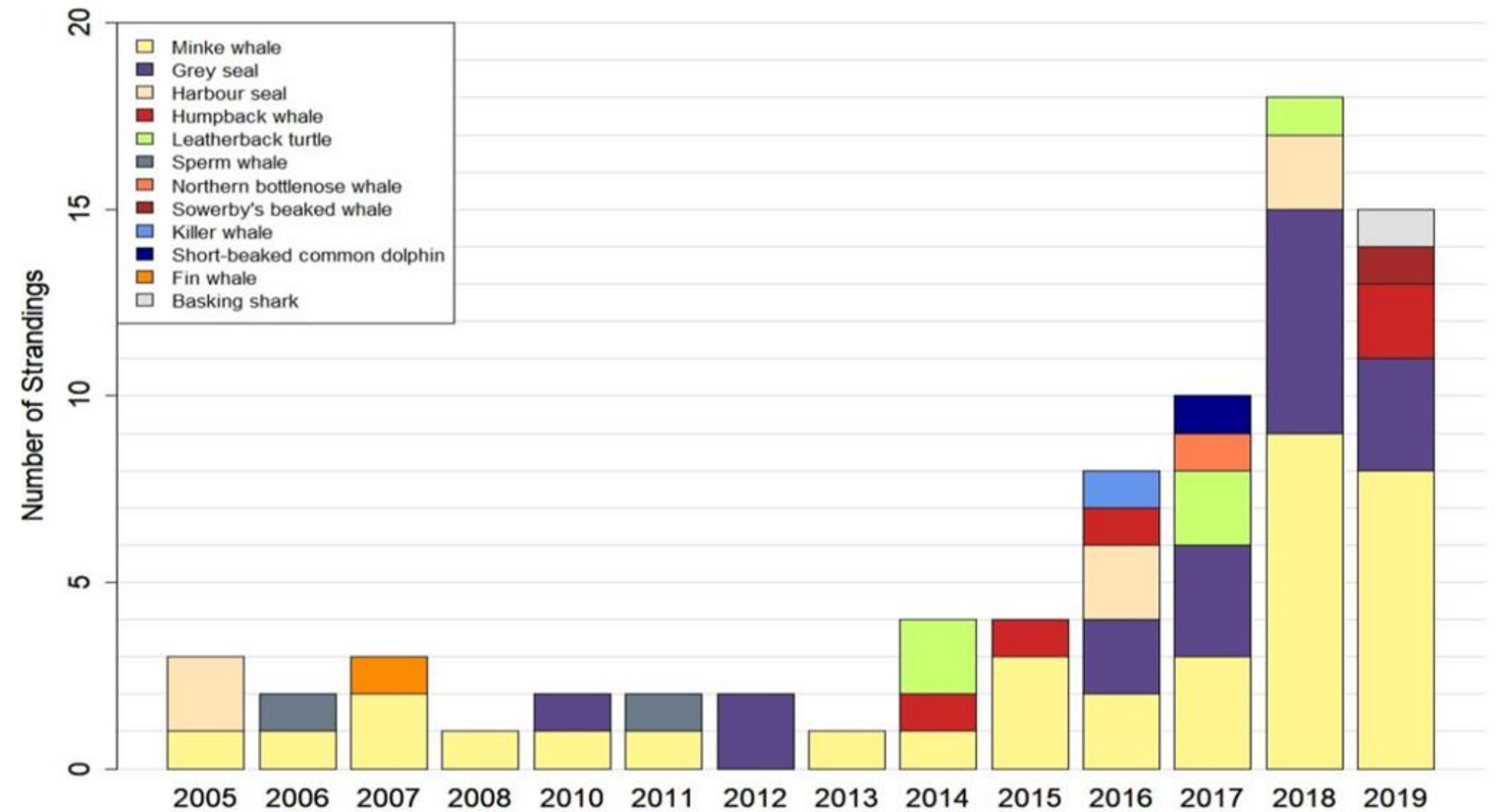
## GOALS

- Raise awareness of marine animal entanglements
- Assess the risk of entanglements for individuals and populations
- Provide opportunities for fishermen to become involved in entanglement research and disentanglement efforts
- Understand socio-economic impacts of marine animal entanglements on the Scottish creel fishing fleet



# STRANDING ENTANGLEMENT DATA

- Strandings data 2005–2019
- Range of species entangled
- Increase in reporting of entanglement cases since 2014
- Minke whales most commonly reported cetacean





# INTERVIEWS

159 interviews representing 11% of the creel fleet.

146 entanglements reported, only 3 previously known to SEA (2%).

12 species reported entangled (see table): those found dead vs alive.

- Entanglement reported by most fishers to be a 'once in a life-time' occurrence
- Majority of fishers willing to trial mitigation measures and attend training events for reporting, sampling and/or disentanglement
- Economic impact is minimal (~280 Euros per event), concern for the animal was paramount






	Alive	Dead	Total
Minke whale	8	43	51
Basking shark	10	39	49
Humpback whale	8	3	11
Leatherback turtle	6	4	10
Harbour porpoise	0	6	6
Pilot whale	3	1	4
Unidentified dolphin	3	1	4
Porbeagle shark	0	3	3
Risso's dolphin	2	1	3
Killer whale	2	0	2
Fin whale	0	1	1
Sei whale	1	0	1
White-sided dolphin	0	1	1
-	-	-	146

# HOW MUCH OF A PROBLEM IS ENTANGLEMENT IN SCOTTISH WATERS?

- Entanglement is a significant welfare issue, causing serious injury, distress & death
- May also be affecting local populations of minke whales (MacLennan et al. 2020)
- Preventing humpback whales recovering from old whaling days (Ryan et al. 2016)
- Concern for Risso's dolphins (Dolman et al. in prep.)



# CONCLUSIONS AND RECOMMENDATIONS

-  The creel industry is actively and positively engaging with issue
-  Technical solutions exist: Trials to assess feasibility, costs and implications: sinking groundlines
-  Improved reporting systems for fishers to fill data gaps
-  Industry needs to be regulated to reduce creel fishing effort: No. of vessels, creels deployed, hauling freq.
-  Study extended to other sectors: trawls, purse-seine & static nets





**ANY OTHER BUSINESS**



# CONCLUSIONS AND PLANS FOR NEXT MEETING

Cat Bell –  
Defra



**THANK YOU FOR ATTENDING**