



SCOTTISH  
ENTANGLEMENT  
ALLIANCE

# Scottish Entanglement Alliance (SEA) - Project updates

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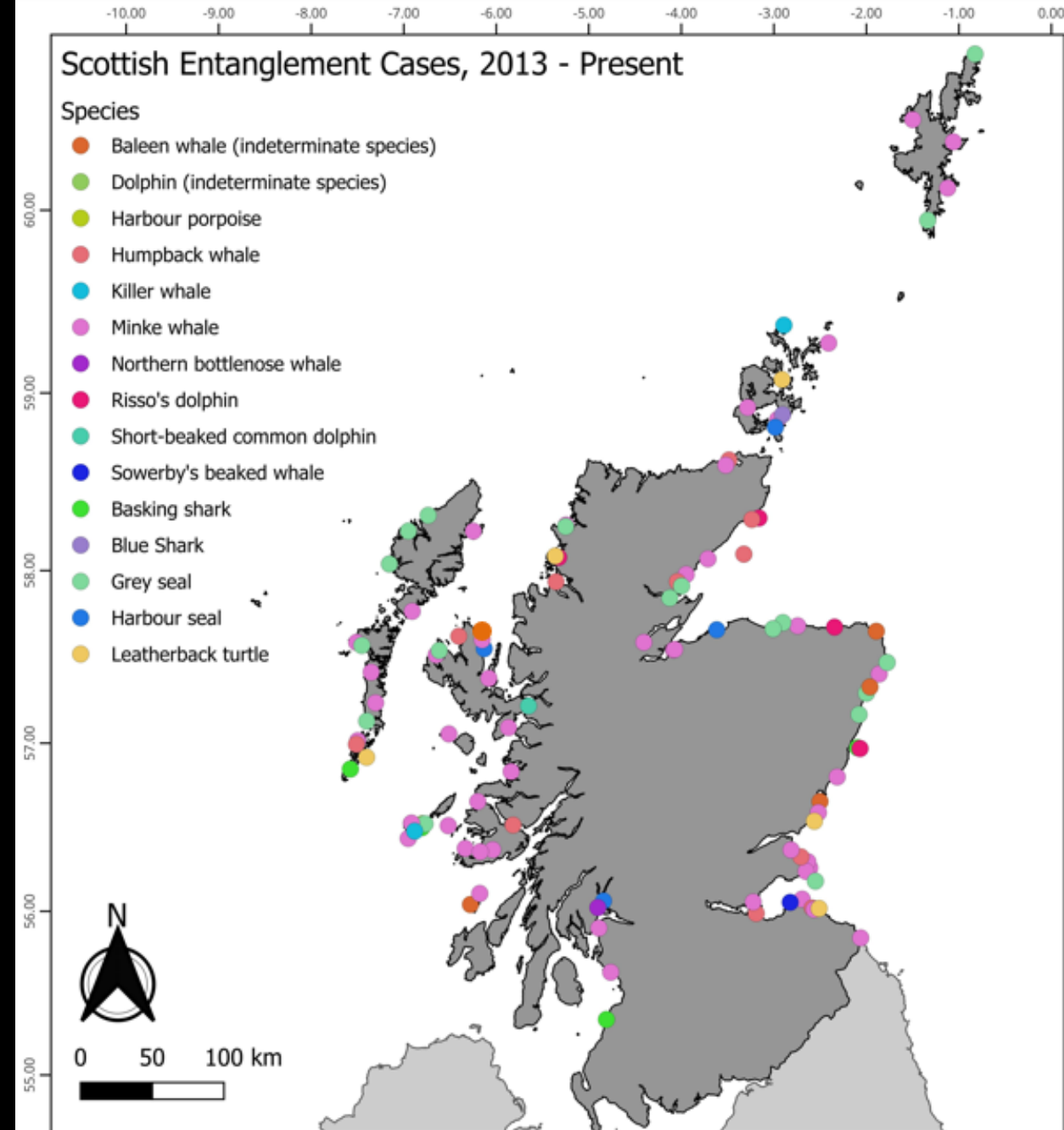
Ellie MacLennan

[ellie.maclennan@glasgow.ac.uk](mailto:ellie.maclennan@glasgow.ac.uk)

Meeting of the ACCOBAMS-ASCOBANS Joint Bycatch Working  
Group, February 2025

# Entanglement

- At least 19 species of cetacean, seal, shark and turtle known to have been entangled
- 103 diagnosed cases since 1992 involving mysticetes
  - 53 in last six years
- Largest identified cause of non-natural mortality in baleen whales
- Number and severity of entanglements increasing



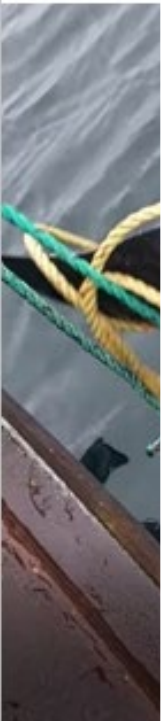
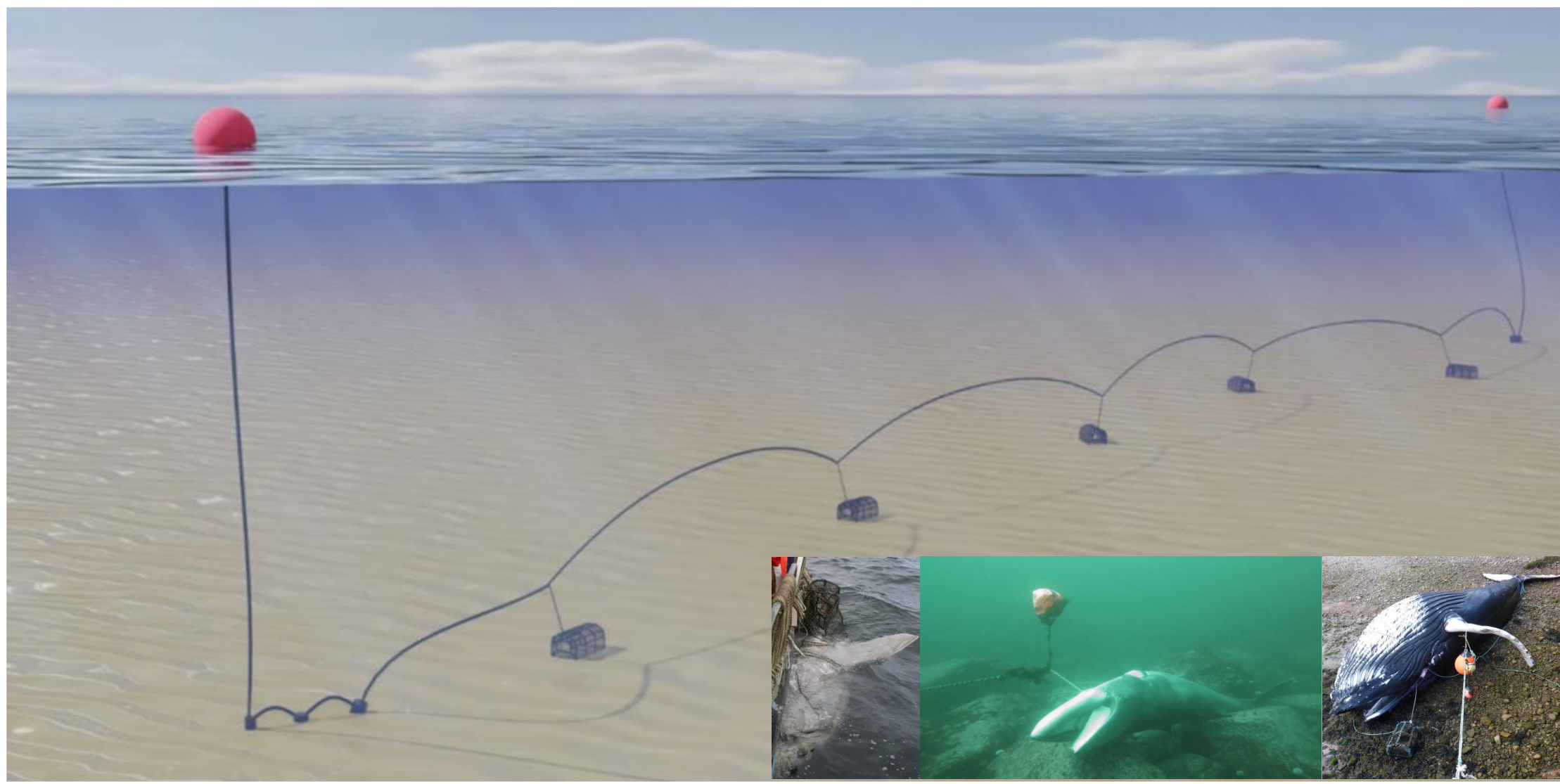
(SMASS 2025)



## SCOTTISH ENTANGLEMENT ALLIANCE

AIM - To bring together the combined expertise of Scottish fishermen and partner organisations to provide a co-ordinated, comprehensive monitoring and engagement programme to better understand the scale and impact of marine animal entanglements in our waters





# Recent and ongoing projects

## Capturing fishermen's knowledge (2018/19)

- **159** commercial creel fishermen interviewed (12% registered fleet)
- **49%** reported  $\geq 1$  entanglements in previous 10 years
- **146** entanglements recorded during interviews involving at least 12 species
- Fishing depth, gear hauling frequency and target species associated with entanglement
- **>95%** entanglements previously unrecorded

Species	Alive	Dead	Total
Minke whale	8	43	51
Basking shark	10	39	49
Humpback whale	8	3	11
LB 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
Orca	2	0	2
Fin whale	0	1	1
Sei whale	1	0	1
White-sided dolphin	0	1	1
			146



## Estimates of humpback and minke whale entanglements in the Scottish static pot (creel) fishery

Russell Leaper<sup>1,\*</sup>, Ellie MacLennan<sup>2</sup>, Andrew Brownlow<sup>2</sup>, Susannah V. Calderan<sup>3</sup>,  
Katie Dyke<sup>4</sup>, Peter G. H. Evans<sup>5</sup>, Lauren Hartny-Mills<sup>6</sup>, Dan Jarvis<sup>7</sup>, Lauren McWhinnie<sup>8</sup>,  
Alistair Philp<sup>9</sup>, Fiona L. Read<sup>4</sup>, Kevin P. Robinson<sup>10</sup>, Conor Ryan<sup>11</sup>

“Considerably more whale entanglements occur in the Scottish creel fishery than previously thought based on strandings alone, with estimates of 6 humpback whales and 30 minke whales becoming entangled each year. Where entanglement type was reported, 83% of minke and 50% of humpback whales were caught in groundlines between creels.”

[www.scottishentanglement.org](http://www.scottishentanglement.org)



# Recent and ongoing projects

## Welfare impacts of entanglement

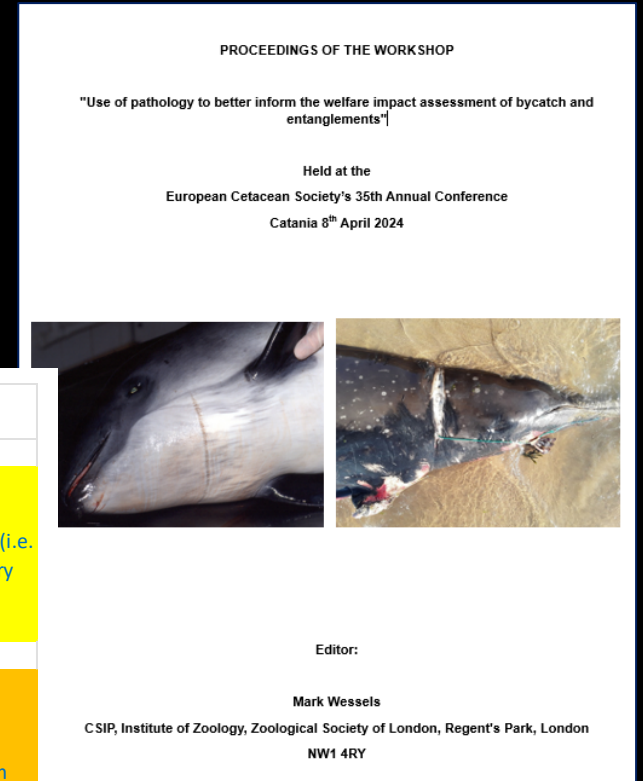
- Use of pathology to better inform the welfare impact assessment of bycatch and entanglement
- Development of a welfare assessment tool
  - Cetacean Bycatch Injury Impact Scoring System (CBIIS)
  - Delphi assessment – expert opinion (84 and 73 responses)

### Scoring system re impacts of Chronic Entanglement injuries

Mild – minimal to mild pain/discomfort, no loss of function/physical impairment (i.e. can swim normally), no sensory loss, no systemic effects

Moderate – moderate pain, mild/moderate loss of function/physical impairment, variable sensory loss if system involved, systemic effects seen

Severe – severe pain, marked loss of normal function/physical impairment, sensory loss if system involved, pronounced systemic effects (e.g. shock, hypovolaemia, effects on 'energetics' etc), death





# Recent and ongoing projects

## Promoting fisher-led approaches to entanglement mitigation



### FISHING NEWS

THE VOICE OF THE INDUSTRY SINCE 1913

#### Avoiding entanglement: a fisherman's view

By **DUNCAN ANDREW**  
 North West Fisheries  
 Fisheries Association

It was a privilege to be invited to the 25th Biennial Conference of the Scottish Creel Fishermen's Federation in Perth, Scotland, last month. The conference was a great opportunity to meet with other fishermen and industry professionals, and to discuss the challenges of entanglement mitigation. As a fisherman, I have a unique perspective on this issue, and I want to share my views with you.

Entanglement is a major problem for fishermen, and it can have a significant impact on their livelihoods. It can damage fishing gear, injure fishermen, and even result in the loss of lives. However, there are ways to avoid entanglement, and I want to share some of the most effective strategies that I have used on my boat.

First, it is important to use the correct type of fishing gear. For example, using creel nets instead of trawls can help to reduce the risk of entanglement. Additionally, using escape panels on fishing gear can help to prevent animals from becoming entangled. It is also important to ensure that fishing gear is properly maintained and that fishermen are trained in safe practices.

Second, it is important to be aware of the local environment. Fishermen should avoid fishing in areas that are known to be high risk for entanglement. Additionally, fishermen should be aware of any changes in the local environment that may increase the risk of entanglement.

Finally, it is important to work together. Fishermen should share their knowledge and experiences with each other, and they should work together to develop and implement effective mitigation strategies. This is the only way to ensure that we can continue to fish safely and sustainably.

Culture and Conservation: Fishing for Change  
**25th Biennial Conference & Biology of Marine Mammals**  
 11-15 November 2024 • Perth, Western Australia

**WORKSHOP DAY 1**  
**DISENTANGLING A WHOLE OF A PROBLEM**  
 HOW FISHER-LED APPROACHES ARE CRITICAL TO SOLVING ENTANGLEMENT

JOIN US FOR A FULL-DAY WORKSHOP AT SMM2024, OPEN TO ALL. WE ENCOURAGE PARTICIPATION FROM ALL REGIONS OF THE GLOBE AND ALL STAKEHOLDERS.

VISIT [SMMCONFERENCE.ORG](https://smmconference.org) TO REGISTER (FULL CONFERENCE REGISTRATION NOT REQUIRED)

### Entanglement down under

The Scottish Creel Fishermen's Federation was in Western Australia last month, helping to ensure that working fishermen were front and centre at a conference sharing global expertise on mitigating conflicts between fisheries and marine mammals.

It would be a lie to say I don't have an opinion. Entanglement is a real problem for fishermen, and it can have a significant impact on their livelihoods. However, there are ways to avoid entanglement, and I want to share some of the most effective strategies that I have used on my boat.

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# Recent and ongoing projects

## Gear trials

- Investigating the use of sinking groundline to reduce entanglement risk
- Can endline length and configuration be optimised to minimise entanglement potential?



Collaborating with Scotland's creel fishers to reduce entanglement of minke whales, basking sharks and other megafauna through gear modifications

Susannah Calderan, Bianca Cisternino, Russell Leaper, Ellie MacLennan, Bally Philp, March 2024



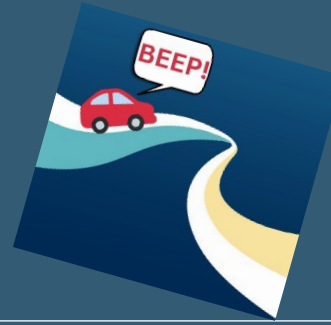
Cite as: Calderan, S., Cisternino, B., Leaper, R., MacLennan, E., Philp, B. (2024) Collaborating with Scotland's creel fishers to reduce entanglement of minke whales, basking sharks and other megafauna through gear modifications. Whale and Dolphin Conservation report for Scottish Government Nature Restoration Fund

**A WORLD WHERE EVERY WHALE AND DOLPHIN IS SAFE AND FREE**

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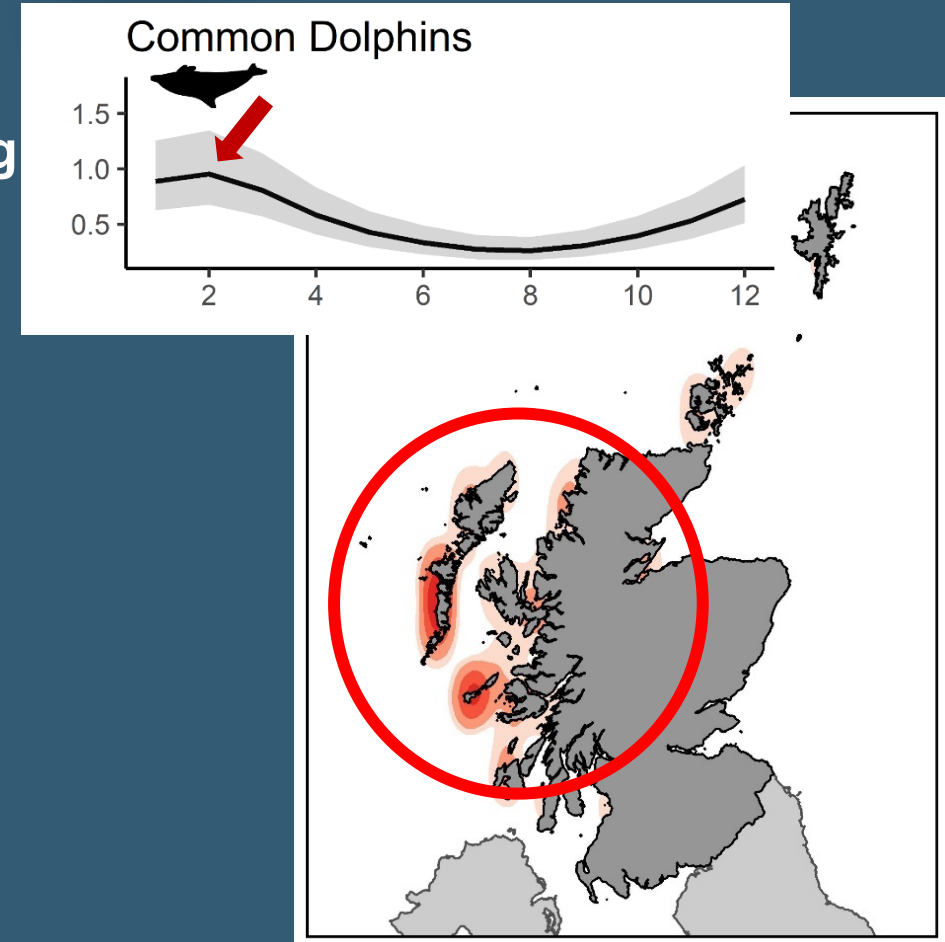
# Bycatch Evidence Evaluation Protocol



Project lead: Rachel Lennon (PhD under supervision of Andrew Brownlow)  
Contact: r.Lennon.3@research.gla.ac.uk

## Bycatch rarely reported in Scotland despite stranding trends mirroring bycatch peaks in rest of NE Atlantic

- Unexplained increase in winter strandings of common dolphins
- Minimal PMs due to remote location of strandings



## BEEP project undergoing trial in Scotland

- Aiming to improve bycatch estimations for cases that cannot undergo PM

# Bycatch Evidence Evaluation Protocol



Project lead: Rachel Lennon (PhD under supervision of Andrew Brownlow)  
Contact: r.Lennon.3@research.gla.ac.uk

## BEEP Trial undergone from Oct 2024 – March 2025:

- SMASS volunteers trained to collect specific & detailed images of carcasses
- Examination of 13 features of bycatch identified by CWT as important (validated by cetacean pathologists)

## Project still underway but preliminary findings:

- 66 animals examined
- 6 (9%) identified as probable bycatch cases that were previously unreported

Evidences need for enhanced monitoring of bycatch in remote improve accuracy of bycatch estimations



# Thank you

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